



Strategic Plan for Interdisciplinary Faculty Development:

Arming the Nation's
Health Professional Workforce
for a New Approach to
Substance Use Disorders

Edited by

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The conclusions and opinions expressed herein are those of the authors and do not necessarily represent the views and policies of HRSA or of SAMHSA.

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LETTER FROM THE PRESIDENT

of the Association for Medical Education and Research in Substance Abuse

On behalf of the Association for Medical Education and Research in Substance Abuse (AMERSA) I am delighted and privileged to congratulate Mary Haack, PhD, and Hoover Adger, Jr., MD, MPH, on bringing forth this *Strategic Plan for Interdisciplinary Faculty Development: Arming the Nation's Health Professional Workforce for a New Approach to Substance Use Disorders*.

Since 1976, AMERSA has been working to expand education in substance abuse for all health care professionals. AMERSA has achieved national prominence for its role in faculty development, in curriculum design, implementation, and evaluation, and in the promulgation of an interdisciplinary approach to substance abuse education and clinical services. Providing leadership for improved training for health care professionals in the management of problems related to alcohol, tobacco, and other drugs is central to our mission. Cultural competence and inclusiveness are an integral part of this effort.

This *Strategic Plan* presents a thoughtful and comprehensive approach to broad-based interdisciplinary development of the faculty, educational tools, and clinical skills needed for our country to address this high-priority health problem. Alcohol and other drug use problems are simply too common for us to ignore. We must not settle for an undertrained health professions workforce and inconsistent clinical practices.

Almost every American has been influenced by alcohol or other drug use problems through personal or family experience. One in four children lives in a family affected by alcohol abuse or dependence. There are more deaths, illnesses, and disabilities from substance use disorders than from any other preventable health condition. Despite having this health crisis all around us, health care professionals continue to struggle to recognize it and prioritize a response.

We know too much to do nothing. All health care professionals should feel called to action to address this urgent health problem. It is imperative that health professionals, health policy leaders, health insurers, health educators, legislators, and others advocating the well-being of families, children, and communities share this commitment. The *Strategic Plan* outlined by this special supplement is a critically important place to start. Are we each ready to do our part? Active support of this *Strategic Plan* and the road map it presents is the right place to begin. The letter from Project Director Richard L. Brown, MD, MPH, which follows, outlines the other goals under the overall project that will help move this agenda forward.

Mark J. Werner, MD, FAAP, FSAM

President, AMERSA

LETTER FROM THE PROJECT DIRECTOR

I am pleased to help introduce this *Strategic Plan*, an important product of the 5-year cooperative agreement entitled the “HRSA-AMERSA-SAMHSA/CSAT Interdisciplinary Project to Improve Health Professional Education in Substance Abuse.”

This project is funded by a cooperative agreement between the Health Resources and Services Administration (HRSA) and the Association for Medical Education and Research in Substance Abuse (AMERSA), in collaboration with the Center for Substance Abuse Treatment (CSAT) of the Substance Abuse and Mental Health Services Administration (SAMHSA).

AMERSA was charged with three goals:

Goal 1: To produce a document to inform the Federal government and others how to improve substance abuse education for generalist health professionals—i.e., those who do not specialize in the addictions yet routinely see patients and clients who use alcohol, tobacco, and other drugs in a risky or problematic manner.

Goal 2: To administer an interdisciplinary faculty development program to improve the substance abuse curricula in training programs for such professionals.

Goal 3: To establish an electronic and regional infrastructure to support a vast expansion in faculty development in substance abuse

This *Strategic Plan* responds to Goal 1. Mary Haack, PhD, RN, FAAN, and Hoover Adger, Jr., MD, MPH, the editors of this publication, directed the effort with fortitude, diligence, and wisdom. They and the document benefited greatly from the guidance of our Federal Program Officers. Thanks are also due to each of the authors who contributed chapters to this book.

Goals 2 and 3 of the project are being carried out through a faculty development program entitled Project MAINSTREAM. The purpose of Project MAINSTREAM is to establish ways of conducting faculty development and of fostering curriculum improvement at health care professional education and training institutions around the Nation.

Pursuant to Goal 3, we have established a new Web site (www.projectmainstream.net) that provides public access to project curriculum materials, annotated learning resource databases, profession-specific learning resources, and electronic newsletters.

As Project Director, I have been fortunate to be able to observe all aspects of this project unfold over the last 3 years. The initial support and direction from HRSA, and the subsequent funding and additional guidance from SAMHSA’s CSAT, have been essential to the project. The project has benefited substantially from the collaboration between academicians and Government officials with complementary experience and skills and a shared vision and commitment to improve public health.

Out of this project is emerging a tremendous national resource—an interdisciplinary, unified group of health care professionals who are able, positioned, and motivated to improve public health by training a new generation of health care professionals to acquire new competencies with documented effectiveness in preventing and treating SUD.

My project colleagues and I call on you to take advantage of this resource to enhance the responsiveness of our health care system to the nation’s number-one public health problem. Working together, we can make a difference.

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FOREWORD

Within the American health care system, primary care providers are the gatekeepers to all services. The ability to identify a problem, to provide the indicated prevention and treatment service, or to refer a patient to a specialist is key to the efficacy of the system. Most Americans believe that primary health professionals know how to identify and treat individuals with substance use disorders (SUD). They assume that people with SUD could get help within the health care system if they wanted it. Recent studies indicate that neither statement is true. The National Center on Addiction and Substance Abuse at Columbia University reported that 94% of primary care physicians and 40% of pediatricians, when presented with a classic description of a person with a SUD, failed to properly diagnose the problem. If similar studies were conducted with nurses, social workers, dentists, psychologists, pharmacists, public health workers, physical therapists, and others, the findings would likely be comparable. The reasons are complex, but lack of knowledge and skills is the primary cause. Curricula in most health professions education programs either inadequately address SUD or fail to include them at all. The impact of this deficiency is extensive.

Over the past three decades, the National Institutes of Health's National Institute on Alcoholism and Alcohol Abuse and the National Institute of Drug Abuse have supported rigorous research programs that have demonstrated the effectiveness of specific SUD prevention and treatment strategies, many of which could be delivered in a primary care or community setting. The tragedy is that this research remains in the pages of scientific journals and rarely gets implemented in the primary care settings where most individuals with SUD present. This breakdown in the transfer of science into practice has major consequences that impact the health of our Nation. Without effective prevention and treatment, people with SUD continue the physical deterioration, crime, child abuse and neglect, and domestic violence that accompany their disease. In addition, the transmission of HIV/AIDS, which is integrally related to intravenous drug use, continues to threaten our youth and other vulnerable populations. The cost to the health care, criminal justice, and child welfare systems and to families is devastating both in monetary and psychosocial terms. Moreover, it has the impact of diminishing the potential outcomes of one of our most valuable resources, the health and well-being of children who grow up in affected families.

According to the Substance Abuse and Mental Health Services Administration (SAMHSA), between 13 million and 16 million people need treatment for SUD each year, but only 3 million receive care. This health care disparity could be overcome to a large extent in a non-hospital setting, if primary care providers knew what to do and could be reimbursed for their services. Training can greatly increase the degree to which health professionals screen, intervene, and refer for treatment, but health professions schools will not include this training without incentives and direction. Thanks to the vision, foresight, and support of the Health Resources and Services Administration and the Center for Substance Abuse Treatment of SAMHSA, the *Strategic Plan for Interdisciplinary Development: Arming the Nation's Health Professional Workforce for a New Approach to Substance Use Disorders* was developed to meet this challenge. This supplement presents the *Strategic Plan*, which includes the state of the art on what works in substance use prevention, assessment and intervention, and treatment, as well as a status report on training of the health professionals most likely to encounter individuals and families with SUD. It also provides recommendations for policy makers and individual health care disciplines, as well as for interdisciplinary collaboration and training.

It is our hope that this *Strategic Plan* will lead to a day when all primary care gatekeepers are competent to diagnose, prevent, intervene, treat, or refer an individual with or affected by SUD. When that day comes, no child will be placed in foster care because their mother's nurse, obstetrician, or nurse midwife did not know how to care for their mother's cocaine addiction. No parent will die of cirrhosis of the liver because a nurse practitioner, family practitioner, or

internist did not know how to provide brief intervention and refer him or her to alcoholism treatment. No student will suffer in silence or fail in school because the school social worker lacked the skill to recognize that the child's problem stemmed from a parent who had a heroin addiction. No wage earner will lose time from work because the employee assistance psychologist did not understand that her depression stemmed from living with a spouse with SUD. No adult or adolescent will die from oral and lung cancer because their dentist did not know how to treat or refer them for tobacco-dependence treatment.

Mary R. Haack, PhD, RN, FAAN

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Editors

Strategic Plan for Interdisciplinary Faculty Development: Arming the Nation's Health Professional Workforce for a New Approach to Substance Use Disorders

MARY R. HAACK, PHD, RN, FAAN
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Scope of the Problem

America today faces a host of new threats—the threat of bioterrorism, the possibility of chemical weapons, and the reality of war. This nation also continues to face a threat that is even more real for millions of citizens: substance use disorders (SUD). SUD accounts for more deaths, illnesses, and disabilities than does any other preventable health condition. In a recent survey conducted by the Center for Addiction and Substance Abuse at Columbia University (CASA), 23 states reported an increased demand for alcohol and drug treatment since September 11, 2001. SUD are associated with many of this country's most serious and tragic problems, including violence, injury, human immunodeficiency virus infection, cardiovascular disease, and cancer. Of the more than 2 million deaths in the United States each year, approximately one in four is attributable to alcohol, tobacco, or illicit drug use. More than 400,000 deaths annually are attributed to tobacco, more than 100,000 to alcohol abuse, and some 16,000 to illicit drugs. These problems put an enormous strain on America's health care system and its economy. The total annual costs associated with SUD are currently estimated at more than \$414 billion.

In recent decades, our Nation has invested heavily in programs designed to reduce or eliminate the threat of SUD. Many of these programs today are showing encouraging results. Progress in drug treatment and prevention during the past decade, for example, has shown great promise. Unfortunately, we have not invested sufficient resources in another key area that holds tremendous potential: the education and training of the millions of men and women who constitute our health professions workforce. Far too little attention has been paid to educating primary care health professionals—physicians, nurses, dentists, physician assistants, psychologists, pharmacists, social workers, and others—to respond to the needs of the millions of individuals and families affected by SUD.

Lacking the necessary training, primary care health professionals do not identify and diagnose SUD with the same degree of accuracy as they do other preventable diseases. The role of these front-line health professionals in prevention, early identification, and referral remains largely untapped. As a result, many patients with SUD go unidentified; for others, the disease goes unrecognized far too long and becomes more difficult and more costly to treat.

Ensuring that all health professionals are equipped with the knowledge and skills to respond appropriately to the needs of patients and families affected by SUD is vital to addressing substance abuse, the number-one health problem in America. The education and training of health professionals in all disciplines is key to ensuring that SUD are prevented, identified, and appropriately treated.

Furthermore, in the wake of the tragedies associated with the attacks on the World Trade Center and the Pentagon and the launching of a war on terrorism, it is essential that this country be prepared to deal with a rise in mental health disorders and SUD. Based on history, there is reason to believe that the need for substance abuse-related services will rise as a result of the traumatic events that our country is undergoing. Our Nation must be prepared to meet the needs of its citizens in this difficult time.

Initiation of the Strategic Plan for Interdisciplinary Faculty Development

To bring about the systemic changes needed to prepare health professionals to take on an expanded role in addressing the Nation's substance abuse problem, the Health Resources and Services Administration's Bureau of Health Professions (HRSA/BHPr) in 1999 entered into a cooperative agreement with the Association for Medical Education and Research in Substance Abuse (AMERSA). One objective of the cooperative agreement was to develop a Strategic Plan for Interdisciplinary Faculty Development. Interagency support for this effort is provided by the Substance Abuse and Mental Health Services Administration's Center for Substance Abuse Treatment (SAMHSA/CSAT). The initiative was sparked by the Department of Health and Human Services (DHHS) goal of reducing substance use and its related health and social consequences as stated in *Healthy People 2010*.

AMERSA is a 25-year-old national interdisciplinary organization. A key element of AMERSA's mission is the training of health professionals in the prevention and treatment of SUD. HRSA/BHPr programs help ensure access to quality health care professionals in all geographic areas and to all segments of society. HRSA/BHPr puts new research findings into practice, encourages health professionals to serve individuals and communities where the need is greatest, and promotes cultural and ethnic diversity within the health professions workforce. SAMHSA/CSAT aims to improve the lives of individuals and families affected by alcohol and drug abuse by ensuring access to clinically sound, cost-effective addiction treatment that reduces the health and social costs to our communities and the Nation.

Overview of This Executive Summary

The purpose of this Executive Summary is to highlight seminal points of the Strategic Plan for Interdisciplinary Faculty Development. The summary describes how the Plan was developed and outlines the critical role of health professionals in SUD prevention and treatment. It summarizes the content of the two major sections of the Strategic Plan. The first section consists of a set of eight papers that review the scientific evidence in support of the Plan; the second section, consisting of 11 papers, presents a discipline-specific perspective on health professions training in SUD. The summary then lists the core knowledge, attitudes, competencies, and skills needed by health professionals in all disciplines in order to effectively identify, intervene with, and refer patients with SUD.

It concludes with 12 comprehensive recommendations for improving health professionals' training in SUD. Each recommendation is accompanied by a rationale and a list of responsible agents.

Background of the Strategic Plan

A review of the literature, conducted at the start of the planning process, identified six key issues as fundamental to the development of this Strategic Plan. These issues are as follows:

- The documented effectiveness of SUD screening and early intervention in health care settings;
- The documented effectiveness of community SUD prevention programs;
- A consensus that parents with SUD and their children need to be recognized and offered assistance;
- The lack of substance-related treatment services in general health care settings; such services could be provided if health professionals were appropriately trained to do so. Such services would include screening, assessment, brief intervention, and referral for specialized treatment when indicated;
- The lack of competence and comfort of many health care professionals in providing substance-related services; and
- The lack of a sufficient number of health professional faculty to teach substance abuse-related competencies to current and future health professionals.

Developing the Strategic Plan

The development of this Strategic Plan began with the formation of a Strategic Planning Advisory Committee (SPAC). Individuals recruited for membership in the SPAC were nationally recognized experts representing each of the disciplines involved the project—dentists, dietitians, nurse-midwives, nurses, nurse practitioners, occupational therapists, pharmacists, physical therapists, physicians, physician assistants, psychologists, public health professionals, rehabilitation counselors, social workers, speech pathologists, and audiologists (see Executive Summary Appendix A). These experts were convened in 2000 to discuss the issues associated with improving interdisciplinary training in SUD. Using a modified consensus-development approach, they defined a set of core competencies for all health professionals, irrespective of discipline (see section entitled "Core Knowledge, Skills, and Attitudes in SUD for Health Professionals" below).

In addition, members of the SPAC, in conjunction with other national leaders in substance abuse, developed discipline-specific papers that summarize the state of the art

regarding education of health professionals about SUD and provide recommendations and action steps for achieving desired goals within each of the respective disciplines. Each of the papers was subjected to peer review and was modified before being accepted for inclusion in the Strategic Plan. Following further review of the papers, an exhaustive stratification process was used to derive key recommendations that cut across the professional disciplines represented by the authors. The recommendations (see section entitled “Recommendations” below) represent the collective input from SPAC members and outside experts from all of the disciplines and hundreds of other individuals who assisted in the review of materials in the Strategic Plan.

Expanding the Role of Health Professionals in SUD

Recognition of the deleterious effects of SUD is not a new phenomenon. More than 200 years ago, America’s first Surgeon General, Benjamin Rush, labeled “intemperance” a disease. Four decades ago, the American Medical Association formally acknowledged alcoholism as a medical illness and, a decade later, as a disease. In *Mental Health: A Report of the Surgeon General*, issued in 1999, and in *Healthy People 2010*, issued by DHHS, addressing substance abuse is seen as a vital strategy for improving the health of the nation.

Although the consequences of substance abuse have long been recognized as pressing health concerns, health professionals, including dentists, nurses, physicians, psychologists, social workers, and others, still do not identify and diagnose SUD with the same accuracy as they do other illnesses or chronic conditions. For example, one study has shown that only 19% of physicians feel confident about diagnosing alcoholism, and just 17% feel comfortable diagnosing drug use. At the same time, there is evidence that training in SUD can have a sustained effect on health professionals’ ability to intervene with patients: Five years after participating in a seminar on detection of and brief intervention for substance abuse, more than 91% of participants, who included physicians, nurses, physicians assistants, social workers, and psychologists, stated they were still using techniques they had learned at the interdisciplinary seminar.

The questions to be answered are straightforward: Why do health professionals lack the knowledge and skills they need to help their patients with SUD? What steps are necessary to ensure a minimal level of competence for all health professionals who are being trained? What infrastructure is necessary to ensure that all health professionals receive adequate training?

Much of the morbidity and mortality, as well as the associated suffering and economic costs of substance abuse, could be reduced or eliminated if the millions of men and

women who make up our nation’s health professional workforce were equipped with the knowledge and skills to intervene in an appropriate manner and to facilitate changes in the behaviors of those who are affected by this disease.

Summary of Evidence Supporting the Strategic Plan

To ensure that the Strategic Plan had a strong scientific base, key content areas were identified. Experts in each of these areas were then invited to submit papers for publication in the document. Two types of papers were commissioned: scientific and discipline-specific. The papers in Section I of the Strategic Plan present a thorough review of the literature and are intended to serve as a scientific foundation for the recommendations. These papers also provide a context within which to view the discipline-specific papers that appear in Section II.

Each of the papers in Section I provides a synthesis of the seminal work in its respective content area and validates the relevance of the Plan’s recommendations. Karol Kumpfer, Ph.D., reviews the major areas of SUD prevention that are supported by research and indicates why funding to support the development of health professional curricula and faculty development in SUD would help ensure the implementation of evidence-based prevention practices. Michael Fleming, M.D., M.P.H., reviews the scientific evidence that supports the implementation of screening and brief intervention and the associated cost benefits. A. Thomas McLellan, M.D., reviews data over the past 15 years from clinical trials, treatment matching studies, and health services studies. This review suggests that societal investment in treatment would provide an attractive return on investment. Mary Haack, Ph.D., and Farrokh Alemi, Ph.D., propose a method for expanding reimbursement for SUD prevention and treatment services and its potential impact on enabling health professionals to better address the needs of patients and their families. Kristen Barry, Ph.D., and colleagues review the research on SUD in older adults and discuss the need for screening and intervention procedures focused on the unique issues associated with drinking and drug use in later life. Hoover Adger, M.D., M.P.H., and Michelle Leff, M.D., discuss substance abuse in children and adolescents; they review the literature on children of substance-abusing parents, co-occurring psychiatric disorders and SUD in children and adolescents, and the challenge of screening in this population. Kathleen Brady, M.D., Ph.D., discusses the importance of early detection and appropriate treatment of SUD in individuals with psychiatric disorders or symptoms. Finally, Martha Brown, M.D., and colleagues review the topic of health professionals impaired by SUD. A brief overview of each of these chapters may be found in Executive Summary Appendix B: Evidence Supporting the Strategic Plan.

Section II of the Strategic Plan includes 11 discipline-specific chapters authored by leaders in allied health, dentistry, medicine, nurse-midwifery, nurse practitioners, nursing, pharmacy, physician assistants, psychology, public health, and social work. Each of these chapters provides a historical overview of prior efforts to educate health professionals in SUD; a discussion of critical issues, obstacles, and challenges; a distillation of critical core competencies for the profession; a vision for the future; and a set of discipline-specific recommendations. A brief overview of each of these chapters may be found in Executive Summary Appendix C: Discipline-Specific Perspectives on Interdisciplinary Faculty Development.

Core Knowledge, Skills, and Attitudes in SUD for Health Professionals

In 2000, members of the SPAC participated in a modified consensus-development process in order to identify the core knowledge and skills needed by health professionals. The following four-point statement was developed on the basis of the group's deliberations. Its purpose is to broadly describe the minimum knowledge and skills related to SUD for all health professionals.

- All health professionals should receive education in their basic core curricula to enable them to understand and accept alcohol and other drug abuse and dependence as disorders that, if appropriately treated, can lead to improved health and well-being.
- All health professionals should have a basic knowledge of SUD and an understanding of their effect on the patient, the family, and the community. Each practitioner should have an understanding of the evidence-based principles of universal, selected, and indicated substance abuse prevention as defined by the Institute of Medicine.
- All health professionals should be aware of the benefits of screening for potential or existing substance-related problems, as well as of appropriate methods for intervention.
- All health professionals should have core knowledge of treatment and be able to initiate treatment or refer patients for further evaluation and management. At a minimum, all health professionals should have the ability to communicate an appropriate level of concern and the requisite skills to offer information, support, follow-up, or referral to an appropriate level of services.

In addition, the following cross-disciplinary core knowledge, skill, and attitude competencies for health professionals in SUD were identified by the SPAC:

Knowledge Competencies

General Concepts

- Common definitions and diagnostic criteria
- Epidemiology of substance use and related disorders
- Relationship of substance use disorders to family function and stability
- Risk and protective factors

Prevention

- Universal, selected, and indicated prevention strategies, their effectiveness, and their application at the individual, family, and community levels
- Risk and protective factors, including familial and sociocultural influences

Alcohol and Other Drug Effects

- Acute and chronic health effects of substance use
- Pharmacology and behavioral effects of commonly abused substances

Evaluation and Management

- Treatment approaches, including outcomes, effectiveness, and costs
- Behavioral change and motivational enhancement strategies
- Relationship and interaction of substance use disorders and other psychiatric disorders
- Cultural context of drug use and impact of gender, culture, and ethnicity on intervention and treatment

Legal and Ethical Aspects

- Confidentiality and protecting patients' rights
- Rules and regulations governing controlled substances

Health Professional Impairment

- Identification, management, reporting, recovery
- Resources for health professionals impaired by substance use

Skill Competencies

- All health care professionals should be able to
- Recognize early the signs and symptoms of substance use disorders
 - Screen effectively for substance use disorders in the patient or family
 - Provide prevention and motivational enhancement to assist the patient in moving toward a healthier lifestyle, or referral for further evaluation or treatment

Attitude Competencies

- All health professionals should
- Approach patients in a culturally sensitive and caring manner
 - Recognize SUD as a preventable, treatable condition

Recommendations

The 12 recommendations presented here are based on input from leaders in the disciplines of allied health, dentistry, medicine, nurse-midwifery, nurse practitioners, nursing, pharmacy, physician assistants, psychology, public health, and social work. They were ratified by a consensus-building process and found relevant to all represented disciplines. The recommendations are designed to inform policy makers, educators, and representatives of government and nongovernment agencies, foundations, and others; to address improvements in the education of health professionals; and to serve as a basis for improving the lives of persons affected by SUD and their families. *Resources will be needed to implement these recommendations.* Therefore each recommendation includes advice to responsible agencies to redirect present government funds, provide leadership to change legislation, or seek new legislation, that would provide the required resources. The recommendations presented recognize the reality that in order to garner the support needed to address this important health problem, there must be a strong voice in Congress to provide leadership in addressing SUD. The Health Professions Substance Abuse Education Act of 2002, introduced in February 2002 as S. 1966 by Senator Joseph Biden, Jr. (D-DE), in the U.S. Senate and as H.R. 3793 in the U.S. House of Representatives by Representative Patrick Kennedy (D-RI), addresses some of the important funding issues necessary to make substantial gains in this area. Senators Michael DeWine (R-OH) and Carl Levin (D-MI) are cosponsors of the Senate version. Recommendations 1, 4, and 5 are specifically addressed in the companion bills, which are of great significance, given the historical lack of desperately needed support for health professions education.

Recommendations to the Secretary of the Department of Health and Human Services and to the U.S. Surgeon General

- 1. The Secretary of the Department of Health and Human Services should create a Secretary's Advisory Committee on Health Professions Education on Substance Use Disorders. A key task of this committee should be to develop and issue an annual report that summarizes progress made on implementing the recommendations made in this strategic plan as well as the status of other recommendations for improving interdisciplinary academic training for all health professionals and health professional faculty.**

Rationale. The problem of substance abuse in the United States is of such magnitude, and training of health professionals is currently so insufficient to address it, that a Secretary's Advisory Committee is needed to ensure that this issue receives the high-level priority it requires. In addition, there needs to be a means through which advice and recommendations concerning policy and program development in SUD (substance use disorder) education can be examined and progress can be monitored. The committee should present its first report to the Secretary in Fiscal Year 2003.

The Secretary of DHHS has unique visibility, decision-making powers, and authority. His support would stimulate thought and action about the issue of interdisciplinary health professionals training in substance abuse. By creating an advisory committee, the Secretary would publicly signify his recognition of the urgency of the issue and his commitment to resolving it. The committee would ensure that the education, prevention, and treatment communities and constituencies they serve would have an ongoing voice in DHHS policy making and priorities. It would ensure greater public visibility of the issue of health professionals training in SUD. It would also ensure a means through which the Federal government could respond rapidly to emerging issues in the field, such as bioterrorism and its link to mental health problems and co-occurring substance use and misuse.

It is essential that the advisory committee be broadly representative of the health professional education, prevention and treatment communities and their constituencies. Thus, its members should comprise representatives of vulnerable populations from rural and urban settings; practicing health professionals engaged in training; leaders from health professions organizations; faculty from health professionals institutions; health professionals from public or private teaching hospitals or community-based settings; representatives from key private foundations with an interest in SUD; and health professionals engaged with business, labor, and private and Federal agencies that already fund or could fund SUD training, prevention, intervention, referral, and treatment.

Responsible Agents. A legislative mandate does not presently exist to support this recommendation. However, S. 1966 designates that an interagency oversight committee be established for this purpose. The responsibility for convening this group and for Committee management should appropriately be assigned to the Director of the Office of the National Drug Control Policy in coordination with the Health Resources and Services Administration's Bureau of Health Professionals (HRSA/BHPr) and the Substance Abuse and Mental Health Services Administration (SAMHSA), particularly its Center for Substance Abuse Treatment (CSAT). The Centers for Medicare and Medicaid Services (CMS, formerly the Health Care Financing Administration, or HCFA) and representatives of private health insurance companies, private foundations with interest and experience in SUD, such as the Robert Wood Johnson Foundation, the Macy Foundation, the Liberty Foundation, and the Hartford Foundation, and advocacy groups such as the National Association for Children of Alcoholics would be invited to participate in committee deliberations and to offer their input into its decisions.

2. The U.S. Surgeon General should develop and disseminate a *Surgeon General's Report on the State of Substance Use Disorders Prevention and Treatment in the United States.*

Rationale. A *Surgeon General's Report on the State of Substance Use Disorders Prevention and Treatment in the United States* is needed to inform policy makers and the public of the extent, nature, and consequences of SUD.

One section of this report should be devoted to an exploration of the current status of health professionals training in SUD and to recommendations for improving the knowledge and skills of health professionals in preventing, diagnosing, and treating SUD. This document could guide the training of health professionals in science-based prevention and treatment of SUD. Disseminated to policy makers, health professionals, the media, and the public, the report would galvanize needed action on the part of public and private organizations and agencies at the local, State, and Federal levels.

Historically, reports issued by the Office of the U.S. Surgeon General have been a powerful and persuasive force for positive change in our nation's health. For example, the recent publication of the Surgeon General's Report on Mental Health has been hailed by many as an important breakthrough. Such reports have saluted the improvements of the public health through medical science. They have disseminated information on ambitious, often innovative, approaches to health care services. Equally important, they have raised national awareness of the disparities in the availability of and access to effective mental health care. A Surgeon General's report on the State of Substance Use Disorder Prevention and Treatment could have an enormous impact on improving access to prevention and treatment services for all Americans.

Responsible Agents. Office of the Surgeon General, in partnership with HRSA and SAMHSA.

Recommendations to Federal Agencies

3. Convene a National Forum on Health Professions Education on Substance Use Disorders.

Rationale. The National Forum on Health Professions Education on Substance Use Disorders would serve as a dynamic and high-profile event from which to launch a national, ongoing program to improve health professions education in SUD. The 2-day Forum would ensure that valuable information that has been developed through Federal research and program development grants is brought to the attention of stakeholders. The forum could serve as a catalyst for promoting a shared perception of the problem and a coordinated plan for moving forward. This recommendation is already partially being implemented and a work plan is in place.

The National Forum should have four purposes:

- To launch the *Strategic Plan for Interdisciplinary Faculty Development*, which contains the consensus on recommended core competencies in SUD prevention and treatment for health professionals in medicine, nursing, nurse-midwifery, social work, dentistry, pharmacy, allied health, psychology, and public health. The Strategic Plan could be an important and timely resource to the newly formed Secretary's Advisory Committee, which is proposed in Recommendation 1.
- To provide a national showcase for the activities and accomplishments of Project MAINSTREAM (see Recommendation 4).
- To disseminate key information and supporting documentation on substance abuse services that could and should be provided by generalist health care professionals. Of particular importance is the dissemination of documents that contain information on evidence-based principles of universal, selected, and indicated prevention strategies; screening protocols for identifying potential or existing substance-related problems; and methods for intervention, initiation of treatment, and referral. The national forum would serve as a means to bring together new scientific findings related to SUD, particularly from the National Institute on Drug Abuse (NIDA) and its Clinical Trials Network, the National Institute on Alcohol Abuse and Alcoholism (NIAAA), the Human Genome Project, the Office of Social Sciences and Behavioral Science of the National Institutes of Health, and others.
- To focus on the role of technology in substance abuse prevention and treatment and its utility in the education and training of health professionals.

Responsible Agents. HRSA/BHPr and SAMHSA/CSAT, through the cooperative agreement with AMERSA and in partnership with private foundations that have demonstrated a commitment to SUD.

Recommendations for Translating Research into Education and Practice

4. Expand Project MAINSTREAM, a federally supported, university-based interdisciplinary faculty development program in substance use disorders.

Rationale. HRSA/BHPr and SAMHSA/CSAT currently support an interdisciplinary faculty fellowship program entitled Project MAINSTREAM (Multi-Agency Initiative on Substance Abuse Training and Education for America) Administered by AMERSA, Project MAINSTREAM trains interdisciplinary faculty teams in SUD in university settings. The objectives of the project are to have in every U.S. health professional education and training program at least two faculty with demonstrated competencies in substance use screening, intervention, and referral; identifying and assisting children of parents with SUD; advising communities on implementing substance abuse prevention programs; and training others in these competencies.

The objectives of Project MAINSTREAM were established to help achieve the goals set forth in *Healthy People 2010*. To meet these objectives, it has been determined that (1) 80% of all graduating health professionals will have training in basic competencies for prevention and treatment of individuals and families with SUD by the year 2010; and (2) every health professional education or training program university will have at least two faculty members who are qualified to develop and implement the necessary curriculum changes.

Project MAINSTREAM has had remarkable success; however, it is limited in scope and penetration. As currently structured and funded, it will provide only a small percentage of the workforce capability needed to have a substantial effect on public health. Moreover, this project is slated to conclude in 2004. Continued support for this or another markedly expanded initiative is needed to ensure that competent faculty are available to carry out these important training roles. Once trained, this critical mass of faculty would ensure that the prevention and treatment of SUD receives due emphasis in health professions training. Health professional education is addressed in Section 3 of S. 1966.

Responsible Agents. HRSA/BHPr, SAMHSA/CSAT.

5. Create a HRSA Interdisciplinary Faculty Development Fellowship Specialist Training Program in substance use disorders.

Rationale. In addition to the university-based team training provided under Project MAINSTREAM, as outlined in Recommendation 4, support is needed for developing interdisciplinary specialist-educators in substance abuse. This advanced specialty training would be available to alumni of Project MAINSTREAM and other advanced-level specialist-educators. The existence of a trained corps of specialist-educators would enable each State to make available to its health professional education and training programs dedicated specialists in SUD education. These individuals would serve as resources or on an advisory basis for all health professions training institutions. These specialists should have expertise in such areas as culturally competent and gender-specific SUD prevention and treatment strategies for vulnerable populations (e.g., adults and adolescents with dual diagnoses, older persons, children in families affected by SUD, and individuals and families involved in the justice system) in underserved areas.

The HRSA/BHPr Faculty Training Program in Geriatrics is a prototype of this proposed fellowship. However no legislation currently exists to support such a program in SUD. New legislation that includes a substance abuse faculty fellowship similar to that proposed in S. 1966 is needed.

Responsible Agents. HRSA/BHPr, SAMHSA/CSAT, and Center for Substance Abuse Prevention (CSAP), in collaboration with private foundations.

6. Establish funding for six to ten regional interinstitutional consortia that would serve as national centers of excellence for leadership in Interdisciplinary Faculty Development in Substance Use Disorders.

Rationale. The mission of the proposed regional interdisciplinary consortia would be to develop and maintain a transorganizational base of affiliated individuals and organizations concerned with specific issues related to SUD. The consortia would be centers of excellence that would initiate, promote, and implement training, research, and clinical activities related to targeted issues or special areas of focus such as brief intervention in the general health setting, children and families, older persons, maternal and child health issues, persons with dual diagnoses, prevention in the general health setting, and clinical practice standards for primary care providers.

The consortia would provide opportunities for interdisciplinary and interinstitutional collaboration in curriculum development, course development, clinical practice, research and

translation of research into practice, policy analysis and formulation, resource development, and networking to advance knowledge and practice. These activities could be carried out through distance-based learning and online instructional technology.

The current Geriatric Education Centers (GEC) program is a prototype for these consortia.

Responsible Agents. *Currently, no legislation exists to support national centers of excellence for leadership in interdisciplinary faculty development in SUD. To carry out this recommendation, new legislation would be required.* It is suggested that HRSA/BHPr consider including national centers of excellence in SUD when it seeks reauthorization of Title VII. HRSA/BHPr would be responsible for implementing the program. Collaboration should also be sought from the SAMHSA/CSAT, NIAAA, NIDA, the National Institute of Mental Health (NIMH), and private foundations.

7. Use established grant mechanisms to ensure that funding priorities or opportunities are assigned to grant proposals submitted for funding under Title VII (faculty development for physicians and dentists), Title VIII (faculty development for nurses), Title I (HIV/AIDS Ryan White Care Act), and Title V (Maternal Child Health Bureau) programs that place appropriate emphasis on training in substance use disorders.

Rationale. These four programs have played key roles in health professional faculty development. They have served as a vital link for many of today's leaders in the field and have facilitated the development of the curricula currently used in many health professional schools. The focus of these programs should be broadened to provide mechanisms for upgrading training and education for physicians, dentists, and nurses in SUD. This could be done by using an existing HRSA mechanism, which is to give grant applicants that include certain designated areas in their proposals funding preference, funding priority, or special consideration during the grant review process.

Responsible Agents. HRSA. New priorities for Titles VII and VIII would require a change in the legislation. During reauthorization efforts, it is suggested that HRSA seek legislative change in order to create funding priorities for grant proposals that address SUD.

8. Increase funding for existing federally supported regional infrastructures in order to maximize the documentation and dissemination of information for improving health professionals education in substance use disorders.

Rationale. At a time of limited funding, it is particularly important to avoid duplication of services and to use existing programs and resources as fully as possible. Within the past decade, the Federal government has taken significant steps to create regional infrastructures to support the dissemination of evidence-based strategies for educating and training health professionals in SUD. Two hubs of regional activity, each with a distinct focus, are the Area Health Education Centers (AHECs), supported by HRSA/BHPr, and the Addiction Technology Transfer Centers (ATTC) supported by SAMHSA/CSAT. Another is the Clinical Trials Network supported by the National Institutes on Drug Abuse. Greater effort is needed to enhance these programs and to ensure dissemination to the field of information about their programs and resources, especially those transmitted by distance-based learning and online instruction technologies. Of particular importance would be to ensure that Web sites of these organizations are easy to access, and that a means is found for updating them frequently to incorporate emerging research findings and trends. Programmatic attention is needed to focus on health professionals education in SUD. This most likely will require a redirection of funds.

Responsible Agents. DHHS, HRSA/BHPr, SAMHSA/CSAT, NIDA, NIAAA.

Recommendations to Agencies and Organizations in the Public and Private Sectors

The goals set forth in this Strategic Plan for Interdisciplinary Faculty Development: Arming the Nation's Health Professional Workforce for a New Approach to Substance Use Disorders call for a profound and pervasive change in the education of health professionals. Achieving these goals will require the cooperation of public and private organizations and agencies; it cannot be done by the Federal government alone. The following four recommendations suggest a role for the Federal government, as well as State and private organizations and agencies, in creating systemic changes in the interdisciplinary training of health professionals and health professional faculty in SUD.

9. Convene representatives of licensure, certification, and accreditation bodies in the health professions to consider how their examinations and certification requirements address key knowledge and concepts relating to the prevention and treatment of substance use disorders.

Rationale. Core curricula in the health professions are strongly influenced by licensing examinations and certification requirements. If items on the prevention and treatment of SUD were included in the licensing and certification examination, the topic of SUD would receive more emphasis in the core curriculum of each discipline.

Licensing and certification examinations should include questions relevant to methods of screening; brief intervention; motivational interviewing; pharmacotherapy and psychosocial interventions for relapse prevention; treating and referring for comorbid medical and psychiatric conditions; and recognizing and referring professional colleagues impaired by substance use. Questions should also focus on the legal and ethical issues involved in the care of individuals with SUD and their families. The first opportunity for such discussion would be the National Forum proposed in Recommendation 3, to which key representatives from these bodies would be invited.

Responsible Agents. Liaison representatives for Federal agencies, in partnership with private and public organizations, should take the lead in bringing this issue to the attention of key organizations with which they interact. Groups that should collaborate in this effort include State and discipline-specific organizations, including the Liaison Committee for Medical Education, the Residency Review Committees of the Association of Colleges of Graduate Medication Education, the American Medical Association, the American Osteopathic Association, the United States Medical Licensure Exam, the American Board of Medical Specialties, the National Council of State Boards of Nursing, the American Association of Colleges of Nursing, and the licensing and accrediting bodies of other disciplines in the health professions.

10. Expand health care workforce studies to examine the impact of the current health professional shortage on the capacity to deliver substance use disorder prevention and treatment and to educate health professionals and faculty in substance use disorders.

Rationale. Current labor projections forecast continuing and worsening shortages in many of the health professions. The impact of this shortfall on the nation's health care system has not been fully explored. Whatever its impact may be, it is certain that a significant shortage of health care professionals will have a direct and negative effect on the delivery of SUD prevention and treatment services. The number of treatment facilities may decrease; in addition, primary providers, forced to see more patients in less time, will find it necessary to focus on their chief presenting complaints. They may have even less time to question patients about substance abuse, perform brief interventions, or refer patients for evaluation for SUD.

A study of the predicted extent and impact of the workforce shortage would enable the health care system to better allocate human and financial resources and help ensure their equitable distribution. Federal leadership is needed to seek additional funding for this purpose.

A prototype of this study is the Genetic Workforce Study now being carried out by HRSA's National Center for Workforce Development.

Responsible Agents. HRSA/BHPr and National Center for Workforce Development, Department of Labor, State agencies that monitor workforce needs, foundations interested in health care professionals workforce issues, Association of American Medical Colleges, Council on Graduate Medical Education, American Association of Colleges of Nursing, and other professional associations concerned with workforce data.

11. Support efforts by individual health care disciplines to develop baseline data on substance use disorder curricula currently in place and on required competencies in the prevention, diagnosis, and treatment of substance use disorders.

Rationale. Improvements in the education of health professionals must be based on awareness of existing curricula. The development and implementation of new curricula must be guided by accurate data. For this reason, each discipline in the health professions must collect data on the curricula being offered in schools and universities, analyze the data, and use the findings to make recommendations for the future.

Federal support is needed to seek additional funds to enable all disciplines in the health professions to engage in similar surveys of the state of the art in health professional education and training in their fields. A representative example of such a study, which was supported by HRSA is an article by Fleming and colleagues entitled "Medical Education about Substance Abuse: Changes in Curriculum and Faculty between 1976 and 1992" (*Acad Med.* 1994;69:362).

Responsible Agents. Federal agencies, in collaboration with discipline-specific health professional organizations, schools, colleges, and universities.

12. Enable and provide incentives to the Centers for Medicare and Medicaid Services (CMS) to study and set rates for reimbursement for SUD prevention and treatment services in nonhospital settings for qualified primary care health professionals.

Rationale. The mental health and SUD fields are plagued by disparities in the availability of and access to services. Part of the problem is due to poorly conceived policies concerning reimbursement for services provided for SUD.

Reimbursement is often dependent on the location in which a service is provided, rather than on the service itself. For example, physicians can be reimbursed for prevention and treatment services provided in acute care and other specialized substance use treatment settings; however, physicians and other primary care providers cannot be reimbursed for the same services when they are provided in their offices or other primary care settings. Moreover, there is a lack of reimbursement in any setting for screening, intervention, case management, and referral for treatment of coexisting and psychiatric conditions, as well as for prevention and treatment for affected family members. Yet another issue is that reimbursement, if given at all, is often restricted to physicians. Other front-line providers, such as physician assistants, nurse practitioners, nurse-midwives, allied health professionals, dentists, pharmacists, psychologists, and social workers, cannot be reimbursed for these services. This is unfortunate, since these providers are in an optimal position to screen, recognize, diagnose, and treat SUD.

Reimbursement should also be comprehensive, i.e., it should cover such key interventions as pharmacotherapy, psychosocial interventions, management of withdrawal, relapse prevention,

case management, and referral for treatment of coexisting medical and psychiatric conditions, as well as prevention and treatment for affected family members.

Responsible Agents. CMS, private insurance companies, with advice from SAMHSA/CSAT.

Conclusion

The recommendations contained in this Executive Summary are based on the input of the most knowledgeable scientists and health professionals in practice and teaching. A number of the recommendations will require new legislation or a change in existing legislation. It is essential that the Federal government take the lead in making these changes. It is impossible for any one professional association or private foundation to accomplish what is needed. No doubt successful implementation will require the concerted effort of organizations and individuals in the public and private sectors, but without Federal leadership and support the Nation's health professional workforce will be inadequately armed to address the public health fight against SUD and the many problems associated with it. The cost to the Nation is simply too great. Every day, a child is placed in the foster care system because the mother's nurse-midwife knew how to deliver her baby but did not know how to address the mother's cocaine problem, a promising athlete drops out of school because his physical therapist knew how to treat his injured knee but not how to appropriately refer him for help with his heroin problem, a father dies of cirrhosis because his physician knew how to diagnose his liver disease but not the alcohol dependence that caused it, and a talented actor dies of lung cancer because his dentist knew how to care for his teeth but not his tobacco dependence. Every day individuals are brought before judges in family and criminal court because of a substance use-related charge, and every day judges grapple with the fact that punishment does not stop addiction, treatment does.

Ensuring that all health professionals are equipped with the knowledge, skills, and attitudes to respond appropriately to the needs of patients and families affected by SUD is vital to addressing the number-one health problem in America. The education and training of health professionals in all disciplines is key to ensuring that SUD are prevented, identified, and appropriately treated. The assistance of the Federal government is critical to this effort.

Executive Summary Appendix A

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Executive Summary Appendix B

Evidence Supporting the Strategic Plan

Key points of evidence supporting this Strategic Plan, drawn from eight scientific papers commissioned in conjunction with the interdisciplinary faculty development project, are as follows:

Prevention

- After 20 years, the substance use disorder (SUD) prevention field has matured past the early scare-tactic interventions and is now characterized by well-researched, comprehensive, and effective prevention programs. Best practices are those with research evidence in decreasing substance use, delaying age of onset of use, improving protective factors, and decreasing risk factors related to later use.
- This chapter describes in detail six major SUD prevention approaches: (1) community partnership strategies, which involve coalitions of community leaders, organizations, and citizens who conduct community assets or needs assessments, develop comprehensive strategic plans, and implement prevention projects, including advocacy for policy change; (2) community environmental change, which focuses on enacting laws, policies, ordinances, and sales or server practices that reduce the production, sale, distribution, and thus availability of and access to alcoholic beverages or tobacco products; (3) family-strengthening strategies, which promote a positive family environment; (4) individual social competency strategies, which involve intensive social or life skills training and are implemented in school settings; (5) school climate strategies, which seek to shift school norms and practices to be more supportive of non-use and address many of the risk and protective factors that mediate use, such as school bonding, self-esteem, association with non-using friends, a supportive school climate, and positive family relations; and (6) multicomponent prevention approaches.
- The greatest challenge facing the SUD prevention field is to disseminate to community prevention practitioners and health professionals information about the best prevention programs, approaches, and principles of effectiveness. In many communities, such practitioners are health professionals; in others, health professionals could serve as advisors. Funding to support the development of health professional curricula and faculty development in SUD prevention would help ensure the implementation of evidence-based prevention practices.

Assessment, Screening, and Brief Intervention for SUD in General Health Settings

- Studies suggest that 50 million Americans drink alcohol above recommended limits or use illicit drugs. The U.S. health care system offers an ideal opportunity to identify and treat these people and thereby reduce associated adverse effects on health, family, and society.
- This chapter reviews the scientific evidence that supports the implementation of alcohol screening, brief intervention, and pharmacotherapy in the U.S. health care system. Although the paper focuses on efficacy research, information on effectiveness studies and on the integration of primary care with specialized alcohol and drug treatment programs is included.
- The cost benefits of screening and brief intervention can be considerable. One study found that nearly \$1,000 in costs relating to crime, motor vehicle crashes, and health care can be saved for every individual who undergoes alcohol screening and, if necessary, brief intervention.

SUD Treatment

- Doubts about the value of substance abuse treatment appear to be based primarily on public perceptions about addiction and about what would be an effective addiction intervention. There is widespread skepticism about the advisability, effectiveness, and value of treatments for addiction. This chapter considers these questions from several perspectives. Part I explores whether there is evidence to suggest that addiction could be an illness. Part II examines the evidence base for recently developed medications and medically oriented behavioral interventions. Part III reviews the research on specific treatment processes and components. This review covers the past 15 years and includes data from clinical trials, treatment matching program studies, and health services studies in which the patients were adults who were clearly alcohol- or drug-dependent and in which there were measures of treatment processes and post-treatment outcome. Part IV discusses why addiction treatment, when considered in an appropriate framework, is not as effective as are treatments for other medical disorders. The examination of this issue leads to important conclusions regarding how the public conceptualizes addiction treatment, how treatment programs typically provide it, and how researchers have evaluated it. Suggestions are

made concerning how addiction might be treated and insured and how treatment outcomes would be evaluated if it were considered a chronic illness.

- The research reviewed suggests that societal investment in treatment would provide an attractive return on the investment. Both controlled clinical trials and large-scale field studies have shown statistically and clinically significant improvements in drug use and in the drug-related health and social problems of treated individuals. Further, these improvements translate into substantial reductions in social problems and costs

Reimbursement for SUD Services

- Traditionally, health professionals in out-of-hospital settings have not provided primary, secondary, or tertiary interventions for patients with SUD. There are at least two key reasons. First, most primary care providers lack the training and skills to provide SUD treatment; second, reimbursement rates have not been determined for these services. This is unfortunate, because primary care providers may detect SUD sooner, treat patients in fewer visits, require fewer specialist referrals, and produce better outcomes than other providers do.
- This chapter describes a method for expanding reimbursement for SUD treatment services that would require major changes in Medicaid, the system under which thousands of individuals with SUD receive primary care treatment. Many more individuals would undoubtedly benefit from SUD treatment if Medicaid were structured to cover SUD prevention and treatment services provided by primary care providers in out-of-hospital settings.
- If primary care providers were trained in standardized protocols that met Medicaid requirements for treatment of patients with SUD in out-of-hospital settings, then the treatment capacity in the United States would dramatically increase. If rates for Medicaid reimbursement of primary care providers in out-of-hospital settings were established, then every eligible health professional would be motivated to learn the necessary skills, and to meet the objectives set forth in *Healthy People 2010*.

SUD in Older Adults

- As a growing number of people reach later life, the promotion of healthy lifestyles and primary disease prevention among older adults is a critical issue. The occurrence of a number of acute and chronic diseases in late life leads to the high utilization of health care among the elderly. (1989 #1230) Many of these medical and psychiatric diseases are influenced by lifestyle choices and behaviors, including the consumption of alcohol and other drugs.

- This chapter reviews the research on substance abuse in older adults. Older adults with alcohol or other drug problems are a special and vulnerable population who require screening and intervention procedures focused on the unique issues associated with substance use in later life. Drinking problems are by far the largest class of substance abuse problems seen in older adults today. Prescription drug abuse is also of concern. However, as the “baby boom” generation reaches later life, clinicians may see a greater use of illicit drugs in their older patients.
- Despite the high prevalence of alcohol problems, most elderly patients with alcohol problems go unidentified by health care personnel. Given the high utilization of general medical services by the elderly, physicians and other health care professionals can be crucial in identifying those in need of treatment and providing appropriate interventions.

Impact of SUD on Children and Adolescents

- Alcohol, tobacco, and other drug use poses a serious threat to the health of children and adolescents. It is estimated that one out of four children in the United States under 18 years of age is exposed to alcohol abuse or alcohol dependence in the family. This figure is magnified by the countless numbers of other children adversely affected by parents who are impaired by other psychoactive drugs.
- Primary care providers and other health care professionals are in an ideal position to provide preventive guidance, education, and intervention to children, adolescents, and their families.
- This chapter discusses the problem of substance abuse in children and adolescents and reviews the literature on children of substance-abusing parents, co-occurring psychiatric illness and SUD in children and adolescents, and the challenges of screening in this population.

Patients with Dual Diagnosis

- Patients with both psychiatric disorders and SUD are commonly found in primary care settings. This chapter discusses why detecting and treating SUD in individuals with psychiatric disorders or psychiatric symptoms is essential to successful treatment.
- It is of critical importance that individuals treated for psychiatric disorders be screened and assessed for SUD, because it is likely that the threshold for damaging use of substances is lower for individuals with psychiatric disorders than for other individuals. Persons with psychiatric disorders are also at greater risk for developing abuse and dependence than are individuals in the general population, who may abuse substances without developing harmful and long-lasting sequelae.

- The comorbidity of psychiatric disorders and SUD is common and has a substantial impact on the course of illness and treatment outcome. This chapter discusses some of the promising discoveries and improvements in the treatment of dually diagnosed patients and the importance of integrating information concerning the assessment and treatment of these individuals into SUD training curricula.

Health Professionals Impaired by SUD

- The lifetime prevalence of substance abuse and dependency is 23.8% for men and 6.2% for women. If the rate for health professionals even approaches that of the general population, the threat to the integrity of the health care system and to patients is significant if health professionals impaired by SUD go unrecognized and untreated.

- The research reviewed in this chapter suggests that successful treatment programs have been developed for physicians, nurses, dentists, pharmacists, and other health professionals, but that few if any prevention programs exist. Research is needed to develop effective prevention programs and to identify the most effective treatment programs for professionals impaired by SUD. Research is needed to identify best-practice programs that promote the recovery of health professionals impaired by SUD and protect the public.
- Health professional curricula and licensing examinations should be modified to include content on the recognition and referral for treatment of health professionals impaired by SUD.

Executive Summary Appendix C

Discipline-Specific Perspectives on Interdisciplinary Faculty Development

Key points of evidence for improving interdisciplinary faculty development in substance use disorders (SUD), drawn from the 11 discipline-specific papers commissioned in conjunction with the preparation of this Strategic Plan, are as follows:

Allied Health

- Practitioners in six allied health disciplines—dietetics, physical therapy, occupational therapy, rehabilitation therapy, speech-language pathology and audiology, and therapeutic recreation—are most directly involved in patient assessment and treatment. Some 475,000 professionals work in these fields. Most have no training or very little training in SUD screening, assessment, and intervention.
- Currently there is no infrastructure to support allied health faculty participation in educating allied health professionals about SUD.
- Among the six major disciplines of allied health, there have been no studies on curriculum content or educational methodologies related to SUD, impaired professionals, or the continuing education (CE) needs of allied health professionals in SUD.
- Core competencies in substance abuse are not considered an essential component of professional education by most allied health accrediting bodies. However, the accreditation bodies of many of the disciplines have identified specific knowledge, skills, and core competencies that are directly related to screening and assessment for SUD.
- Traditionally, education in SUD for allied health professionals has focused on biomedical concepts and pharmacology; there has been little emphasis on skills development.
- Of the six disciplines, physical therapy has made the greatest strides in developing curricula and in addressing SUD within the profession. Practice standards are outlined in the Commission for the Accreditation of Physical Therapy Education Criteria, two of which support the physical therapist's role in screening, wellness, and prevention. Absent is a means for training physical therapists for assuming these roles.
- Federal support for improving the training of allied health professionals is very limited. In 1999, the budget for allied health project grants offered by the Health Resources and Services Administration's Bureau of Health Professionals was \$5.3 million, which is only

1.2% of the BHP budget. No grants have been awarded in SUD education for the allied health professions. One chief reason is the lack of faculty prepared to teach such programs.

Dentistry

- The American Dental Association (ADA) directed its Council on Dental Practice to form the Advisory Committee on Chemical Dependency Issues and to serve as a clearinghouse for SUD treatment programs for dentists in 1984. This group focuses on providing resources for impaired dentists.
- ADA adopted a policy statement on chemical dependency in 1986. That statement urges institutions responsible for dental education to allocate adequate curricula to SUD.
- Many dental schools base their curricula on core content outlined in 1988 by the Pharmacology and Therapeutics Section of the American Association of Dental Schools. The guidelines cover nicotine and tobacco, controlled substances, and illegal drugs. These guidelines are not sufficient for today's dentists, who should play active roles in the prevention, intervention, and referral and need to acquire the skills necessary to take on these responsibilities.
- Licensure requirements in dentistry do not include core competencies and skills in SUD, and no studies on the curriculum content or education methodologies related to SUD exist. Dentists have never had federal support for faculty development programs in SUD.
- With respect to SUD, the dental profession has been most active in tobacco-cessation programs. This commitment began with the issuance of a resolution by the ADA at the time of the publication of the Surgeon General's 1964 report. The profession has taken an active role in encouraging and training members of the oral health team to become active in tobacco-cessation efforts. Dentists were trained as smoking-cessation change agents under the National Cancer Institute Community Intervention Trial for Smoking Cessation and the follow-up effort, American Stop Smoking Intervention Study.

Medicine

- A 1998–1999 survey showed that of 125 allopathic medical schools, training in substance abuse was provided as part of a larger required course in 119

schools; only 10 had separate required courses. Forty-five schools offered an elective course on this topic. The greatest emphasis in these courses is on biomedical complications of substance abuse. There is less emphasis on skill building for SUD prevention, intervention, and referral.

- All colleges of osteopathy responding to a survey reported offering substance abuse content in their curricula in 1998–1999; however, only 3 of 11 respondents to another survey, which involved 17 schools, offered separate courses in the first two years of medical school, and none had required clerkships.
- Despite the recommendations of professional organizations, most residency programs have not taken measures to more fully integrate substance abuse into the curriculum. There are Residency Review Committee standards regarding substance abuse in only 5 of 99 specialty training programs. Among allopathic and osteopathic residency programs, the average percentage that offered substance abuse education was 65%.
- Among programs that do exist, there is a heavy emphasis on lectures and little clinical contact with treatment professionals and little focus on skill building for substance abuse prevention, intervention, and referral. Barriers to further integration of training in SUD include lack of time, faculty experts, training sites, and institutional support.
- Physicians can obtain advanced training in addiction medicine through psychiatry fellowship programs sponsored by the American Board of Psychiatry. Physicians may also seek advanced certification through the American Society of Addiction Medicine. The American Osteopathic Association offers certificates of added qualifications in addiction medicine.
- Beginning in the 1960s, efforts to train physicians in the care of patients with SUD have been enhanced. Among the early programs was the Career Teacher Program in the Addictions, which provided faculty support to 59 medical schools. More recently, support for faculty development in substance abuse education has come through the National Institute on Alcohol Abuse and Alcoholism and NIDA Health Professions Education Program and SAMHSA's Faculty Development Program (FDP). The FDP has provided grants to 14 medical schools to support 69 faculty fellows. These programs have made significant contributions to the current pool of leaders in the field of SUD prevention, intervention, and treatment.
- Project SAEFP (Substance Abuse Education for Family Physicians) is a model of faculty development with demonstrated outcomes. This 5-day, learner-centered curriculum has trained 165 faculty. Similar programs, sponsored by such organizations as the Society of General Internal Medicine, the Ambulatory Pediatric

Association and the Society of Teachers of Family Medicine, have been responsible for significant contributions to the development of existing curricula.

Nurse-Midwifery

- Core competencies, developed by the American College of Nurse-Midwives (ACNM), include SUD as part of the knowledge base needed to provide care for childbearing women. There are no specific requirements concerning content, and ACNM does not have a policy regarding the provision of care to women with SUD during other times of their life cycles.
- A survey of the 42 ACNM-accredited programs (50% response rate) revealed broad variance in how they address SUD. Some address it narrowly (e.g., only as it relates to pregnancy and childbirth); others address it more broadly. There has been increased interest in strengthening the primary care component of the nurse-midwifery curriculum, and assessment for SUD falls under this area; however, attention to these issues is often minimal in the educational and clinical settings.
- A model exists for strengthening curricula in a focused area. In the mid-1990s, ACNM participated in a national Domestic Violence Education Project (DVEP), which was funded by the Maternal and Child Health Bureau of the Department of Health and Human Services. The DVEP, which included resources to educate both faculty and practicing midwives on issues related to partner violence, has resulted in greater identification and treatment of women with domestic violence issues. Similar support for training in SUD is critical.
- ACNM provides two venues through which midwives may obtain continuing education units (CEUs)—a journal and an annual meeting. During the past 10 years, four journal articles have related to prenatal substance use; however, there has not been a comprehensive home-study module on the topic. Nurse-midwives may obtain CEUs in other nursing- or physician-based workshops, if approved by ACNM.
- No formal subspecialty education or training in SUD is available to midwives. There has been no Federal support for faculty development in SUD for midwives.

Nurse Practitioners

- In the early 1990s, the NNSA and the ANA defined the practice of addiction nursing. Nine key knowledge and skill domains of the graduate curriculum in addiction nursing were defined. Those skill domains need to be updated and modified so that they can be implemented in nurse practitioner curricula. All nurse practitioner curricula should address general concepts related to addiction, prevention, alcohol and other drug effects,

evaluation and management of SUD, legal and ethical aspects, and health professional impairment.

- The Texas Commission on Alcohol and Drug Abuse in coordination with the regional ATTC and funding from HRSA/Division of Nursing supported a program at the University of Texas Houston School of Nursing that identified a faculty team with expertise in SUD to design and implement a comprehensive curriculum to prepare nurses for advanced practice in psychiatric/mental health nursing with a focus on addiction. This program is a model for advanced-practice nursing and should be replicated throughout the country.
- SAMHSA's CSAP funded an interdisciplinary faculty development program that supported the delivery of SUD prevention programs in community-based settings. The program significantly enhanced the development of undergraduate and graduate curricula in the area of SUD prevention at the University of Texas Houston and the University of Kansas. The program is a successful model that should be replicated in other communities to help strengthen the links between academic programs and community-based organizations.

Nursing

- Nursing education on SUD began in the 1980s, when the American Nurses Association (ANA) and nurse specialty organizations began to issue position statements and policies. *The Care of Clients with Addictions: Dimension of Nursing Practice*, published in 1987 by the ANA, the Drug and Alcohol Nurses Association, and the National Nurses Society on Addictions (NNSA), laid the groundwork for developing nursing interventions and standards of care.
- Beginning in 1989, FDP grants supported the participation of nursing faculty in teaching and training activities. A number of training materials, including model curricula, were developed as a result of this program. These products served to advance the profession in SUD training and education, especially in those institutions that received the FDP grants, but many more schools of nursing need this support.
- Questions related to care of patients with SUD are included in items on psychiatric nursing in the American Nurses Credentialing Center examination for baccalaureate-level nurses. The International Nurses Society on Addictions offers an advanced-practice certificate as a certified addictions registered nurse—advanced practice.
- CE programs for nurses on SUD began to occur with increasing frequency in the 1980s and continued through the early 1990s. These events were often supported by FDP projects, employers, and nursing organizations. Several federally funded FDPs developed

community-based education for nurses in the public health workforce. Since then, restructuring of the health care delivery system and funding cutbacks have had serious negative effects on CE offerings in SUD.

- Nurses have been involved in a number of interdisciplinary programs in SUD education. Nursing faculty, particularly those associated with previously funded faculty development program projects, are active participants in the Addiction Technology Transfer Centers (ATTCs), which are funded by the Substance Abuse and Mental Health Services Administration's Center for Substance Abuse Treatment. ATTC programs have been a powerful vehicle for translating research into practice and for regional training and curriculum dissemination. Expanded linkages between schools of nursing and regional ATTCs could be key to improving nursing education in SUD prevention, intervention, and treatment.
- There are insufficient numbers of nurse researchers, nursing practitioners, and nursing educators to teach students and practitioners core knowledge and skill competencies in SUD. Compounding this problem today is a national nursing faculty shortage. Nursing can no longer rely on a small pool of experts in SUD. The profession needs competent faculty to ensure that all its members are better prepared to deal with patients with SUD.
- The limited funds available to nurses who wish to pursue specialization in addictions or psychiatric mental health nursing at the master's level through Title VIII is having a negative effect on enrollment in these areas and subsequently on the ability of the nursing workforce to identify and treat patients with SUD.

Pharmacy

- Pharmacists are among the nation's most accessible and respected health care providers. Their potential to prevent SUD and to identify and refer patients for screening remains untapped.
- Pharmacy has not participated in any Federal initiative for faculty or curriculum development in SUD education. There is no Federal mandate or other mandate for the education of the pharmacist in SUD.
- No professionwide effort has been made to determine the core competencies in SUD education needed by pharmacists.
- There is no systematic SUD education in pharmacy school curricula. No formal training in SUD education is universally required at the undergraduate or graduate levels. Training is not uniform. Some schools have comprehensive programs, others have elective programs, and some have no program whatsoever

- There are no pharmacy residencies or fellowships dedicated to postgraduate training in SUD.
- The American Association of Colleges of Pharmacy published curriculum guidelines for pharmacy in SUD education in 1991. When schools of pharmacy were asked about implementation of these guidelines in 1994, 82% responded. Among the responding schools, only 50% of the recommended curriculum material had been implemented.

Physician Assistants

- The Accreditation Review Commission on Education for Physician Assistants (ARC-PA), formed in 2001, has not defined specific requirements for PAs with respect to knowledge and skills in SUD education. The Commission on Accreditation of Allied Health Education Programs, ARC-PA's parent organization, does have an "applied behavioral sciences" requirement, but substance abuse is not specified as a content area under it.
- A 1993 evaluation of the training in 59 PA training programs found that all of the programs included content in the diagnosis and treatment of SUD, but the depth and detail of this content varied considerably. In many cases, basic skills, such as screening, were neglected while advanced skills, such as how to manage detoxification, were emphasized.
- One survey revealed that 35% of PA training programs had an elective in SUD; only 15 programs reported any students taking these electives.
- There are no postgraduate faculty development fellowships for PAs in addiction medicine.
- Only 18 of 300 questions on the national certification examination for PAs relate to the psychiatric/behavior system; questions on SUD are among several topics covered in this short segment of the exam.
- The majority of respondents to a 2000 survey expressed an interest in and desire for faculty development workshops on curriculum development and methods of instruction regarding SUD.
- The number of PAs with teaching experience who serve as academic and clinical role models is inadequate. A shortage of faculty and clinical preceptors with experience in addiction medicine is an obstacle to expanding teaching about SUD.
- Federal funding priorities can have a strong influence on PA training. Among these is a recent HRSA/BHPr training program that gives preference to projects addressing the needs of special populations, including persons with SUD. Since these grants are awarded to only a few programs, their impact is small.

Psychology

- Most psychologists receive little preparation to deal with patients with SUD during their training. Such training should be integrated into the core course work of psychologists.
- There is little baseline information concerning exactly what psychology programs are doing to prepare graduates to address SUD problems. One survey, however, noted that 91% of psychologists encounter patients with SUD in their daily work but that 75% had received no formal course work on the subject. Half had received no training in SUD even during their internships. Training in treatment of nicotine dependence is even poorer.
- The NIAAA/NIDA Faculty Development Program was expanded to include psychology in 1991; however, only one grant was awarded before the program moved to SAMHSA; no further psychology applications have been accepted since that time. NIAAA developed a curriculum guide for psychology faculty; however, it was never released.
- A foundation for training psychologists exists; three societies in the field promote research in alcohol, nicotine, and other drug problems, and psychologists are involved in all three. In addition, the discipline, under the direction of the American Psychological Association (APA), has developed a detailed outline of core competencies.
- In 1996, APA began to offer a certificate of proficiency in the treatment of alcohol and other SUD. More than 1,000 psychologists hold this certificate. In addition, the Addictions Division is one of the APA's largest, with 1,000 members.

Public Health

- Few schools of public health have instituted curricula that address SUD prevention, and many practitioners enter the field with a professional public health degree but with little understanding of the core theory, knowledge, and skills essential to effective practice.
- Until recently, SUD prevention was ancillary to the field of public health, and today it is taught sparsely and inconsistently. A 1996 questionnaire revealed that only 14 of 27 schools of public health offered courses in SUD prevention. Six of the 14 schools offered a track in SUD prevention as an area of concentration, a certificate program, or a postdoctoral program.
- Some exemplary SUD-related programs have taken hold; an example may be found at the University of Minnesota. Extensive replication of this program is needed in order to form a cadre of professionals with the credentials needed to train the developing public health workforce in academic programs.

- The standards of the main accrediting body for schools of public health, the Council on Education for Public Health, make no mention of SUD-related course work or practice.
- Licensing requirements for public health prevention professionals are virtually nonexistent, although the American Public Health Association has begun to explore the idea of credentialing the public health workforce. As the demand for an evidence-based record of effectiveness of programs increases, this is an idea that may have increasing appeal.
- There is little communication between the public health field and Federal agencies that support the Nation's SUD prevention goals and initiatives. Likewise, greater interdisciplinary communication is needed between public health and other professions. In light of the contemporary threat of bioterrorism and its consequences, the need to expand the knowledge and skills of the public health workforce is critical.

Social Work

- Schools of social work do not provide all undergraduate students with a basic knowledge of SUD. Some graduate schools offer a concentration in SUD treatment; others offer elective courses, but they are generally not popular. Because there are so few post-graduate training programs in SUD in social work school programs, individuals interested in this field must take courses in non-social-work educational settings. Many social workers who specialize in SUD treatment obtain State certification as substance abuse counselors in order to demonstrate expertise in their field.
- The Council on Social Work Education does not mandate SUD content in the social work curriculum.
- In 1990, the faculty development program of NIAAA, NIDA, and the Office for Substance Abuse Preventing (OSAP, now CSAP) expanded its support of clinical teaching programs in SUD in medicine and nursing to include funding for schools of social work. Between 1990 and 1999, the government awarded grants to seven schools of social work to develop faculty experts in SUD. This Federal support has had a significant impact on the academic programs funded by these grants.
- In 1997, the National Association of Social Workers (NASW) issued a policy statement that supports the expansion of SUD content in social work education for graduate and undergraduate programs. NASW is also developing specialty certification in SUD; this is the first certification designed specifically for social workers in this field. As part of this project, NASW has recommended 11 knowledge domains and 10 skill domains be required for certification.

PART I

Evidence Supporting the Strategic Plan

Chapter 1. Prevention of Alcohol and Drug Abuse:
What Works?

Chapter 2. Screening, Assessment, and Intervention for
Substance Use Disorders in General Health Care
Settings

Chapter 3. Is Addiction an Illness? Can It Be Treated?

Chapter 4. Medicaid Reimbursement of Primary Care
Providers for Treatment of Substance Use Disorders

Chapter 5. Substance Abuse in Older Adults: Review
and Recommendations for Education and Practice in
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Chapter 6. Substance Use Disorders in Children and
Adolescents and the Impact on Children in Families
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sionals: Review and Recommendations

Prevention of Alcohol and Drug Abuse: What Works?

KAROL L. KUMPFER, PH.D.

Introduction

The prevention of alcohol and drug abuse should be a major concern for primary health care professionals, and the topic should be included in their training and continuing education programs. Some studies have estimated that up to half of all health care costs are related to excessive use of alcohol and drugs. However, substance abuse seems to have become less visible as a public health issue, partly because it has increasingly been branded as a “criminal justice issue” and partly because illicit drug use has steadily decreased in adults. As a consequence, businesses, the military, government agencies, institutions of higher education, and public policy makers have had less concern about abusing or addicted workers and students. Fewer employee assistance programs are operating in businesses, and the military has cut back its drug prevention and treatment services. Few health care professionals routinely screen patients for addictions.

The recent inattention to substance abuse may be about to change. Health care professionals will be faced with many more patients with addiction problems. Why? Although unheralded by the media, parent groups, or government agencies, the abuse of tobacco, alcohol, and illicit drugs by teenagers increased dramatically in the 1990s. There was an 85% increase (from 14% to 26%) in the percentage of high school seniors who used any illicit drug monthly between 1992 and 1997. (That trend did, however, level off in the last three years of the 1990s.)¹ In 1997, 42% of all high school seniors had used an illegal drug in the past year. In the last 3 years, use of most illegal drugs remained at high levels, but legal drug use decreased slightly. Daily tobacco use among high school seniors has decreased in the last 3 years, from 25% to 21%, but is still higher than the low of 17% in 1992. Binge drinking (i.e., consuming five or more drinks at one sitting) in the past month decreased from a high of 34% in 1997 to 32% in 2000 in high school seniors. The largest increase in 2000 in regular drug use was for “club drugs”—MDMA or ecstasy—whose regular use among high school seniors more than doubled in 2 years, from 1.5% to 3.6%. The National Household Survey shows that although a higher *percentage* of teenagers were drug abusers during the adolescent drug epidemic that peaked in 1979, a higher *number* of youth are abusing drugs than ever before.²

Federal efforts to reduce the supply of drugs into this country, launched in 1989 with the appointment of a drug “czar” and the creation of the White House Office of National Drug Control Policy (ONDCP) have not been as effective as had been hoped, at least for our nation’s youth. With demand increasing in young people, illicit drugs are a \$60-billion-per-year industry. When the alcohol misuse cost of over \$166 billion is added to this sum, the total cost of substance abuse was estimated at over \$226 billion yearly by 1995.³ Youth are reporting approximately the same availability of drugs in 2000 as in 1989.¹ While perceived availability of crack and cocaine has decreased somewhat, that of heroin has increased. According to the National Household Survey, serious drug abuse, such as heroin use, increased fourfold in adults and youth between 1992 and 1997, from 68 million users to 325 million users. The bulk of the 171 million new users of heroin were adolescents and young adults, who found that with the new high purity of heroin they could smoke and snort heroin, rather than inject it. Regular heroin use among high school seniors is at an all-time high.¹ Heroin overdoses in teenagers have increased in the past decade. Also of concern are increases in drug use by young girls. The largest increases for juvenile offenses for girls in the last 10 years were drug abuse violations (up 132%) and person offenses (up 155%).⁴

Health problems related to aggressive, violent, and delinquent behaviors are also on the rise and are significantly related to substance abuse.⁵ The current “get tough” approach, which has focused on criminal penalties and incarceration, has not been sufficient. The number of people incarcerated for drug problems has more than doubled, as has the number of prisons, since this tactic was adopted. Funding for drug treatment and prevention has not kept pace with the need. While the national drug control budget rose from \$12.2 billion to \$19.2 billion between 1994 and 2001, prevention funds increased only 33% and treatment funds increased by just 44%. International efforts increased by 175%, interdiction efforts increased by 68%, and domestic law enforcement increased by over 60%.³ It is difficult to reduce the demand for drugs without providing increased funding for prevention and treatment.

What Works in Substance Abuse Prevention?

Although skeptics may continue to say that nothing works in prevention, the literature contains many research-based prevention strategies with sufficient evidence of program effectiveness in Phase III controlled trials to warrant dissemination.^{6,9} This is an exciting time for alcohol and drug abuse prevention. In the past 20 years, the prevention field has matured past the early attempts of drug education or “scare-tactic” interventions to well-researched, comprehensive, and effective prevention programs. A large number of such approaches have been identified by Federal agency scientific review committees conducting national searches and publishing their lists of evidence-based practices. “Best practices” are those with research evidence in decreasing substance use, delaying age of onset of use, improving protective factors and decreasing risk factors related to later use.

Three levels of primary prevention programs should be considered when planning a prevention policy.¹⁰ These levels are (1) *universal* prevention approaches targeting an entire population, such as a school, a church, or a total community; (2) *selective* prevention approaches targeting high-risk groups (e.g., children of substance abusers or prisoners, American Indian children); and (3) *indicated* prevention approaches targeting youth or adults with identified precursors of alcohol or drug abuse such as aggressive or conduct-disordered youth or juvenile delinquents. Syntheses of best practices in research-based prevention practices have been published by the Institute of Medicine,¹⁰ the Center for Substance Abuse Prevention (CSAP),^{7,11-13} the National Institute on Drug Abuse (NIDA),^{14,15} Office of Juvenile Justice and Delinquency Prevention (OJJDP),¹⁶⁻¹⁸ the University of Utah family-strengthening Web site (www.strengtheningfamilies.org), and individual researchers.¹⁹

Identifying Groups at Risk

A major issue in the prevention field is the degree to which programs should be targeted to specific at-risk groups or spread across all groups. A growing body of research suggests rather stable developmental trajectories for

childhood problems leading to drug use in adolescence.²⁰ Researchers are encouraging prevention providers to target the highest-risk youth through selective or indicated prevention programs. Childhood antisocial behaviors or conduct disorders, anger, rebelliousness, and anxiety and shyness are predictive of adolescent delinquency and substance use and abuse.²¹⁻²³ In recent years, early childhood aggression has become a major focus for prevention research because it has been found to be a developmental marker for a variety of negative adolescent outcomes, including delinquency and substance use.^{24,25} Aggressive children do not improve without some type of early intervention. If no preventive intervention is provided, their behaviors deteriorate as they grow older,²⁶ leading to increased risk for substance use.²⁷ Recent studies suggest that youth today are more anxious and depressed and feel less connected to family and community; these factors, too, can be precursors of substance abuse.

Children of alcohol- and drug-abusing parents (COAs or CODAs) are one of the highest-risk groups for substance abuse problems, for both genetic and family environmental reasons.^{28,29} Most prevention programs designed for children of alcohol or drug abusers have struggled with identifying, attracting, and maintaining drug-abusing families in preventive interventions. Appropriate measurement of outcomes for COAs has also been a concern of practitioners, but good family and youth measures exist.³⁰

According to Adger,³¹ “the first step in intervention and treatment is identification.” Identification of these children, however, is difficult for prevention programs in schools and communities. If the parents are in alcohol or drug treatment programs or self-help groups, it is easier to locate and recruit these children. However, only a small percentage of drug-abusing parents are in treatment. Because of the stigma of being a substance abuser, the parents and the children are less likely to allow themselves to be identified. Primary health care professionals can play a role in helping provide early identification and referrals for these children and parents. Sometimes the health, behavioral, or academic problems of children of alcoholics or drug abusers bring these children to the attention of health care professionals before the parental substance abuse is diagnosed.³¹

Need to Disseminate and Adopt Evidence-Based Prevention Programs

The Nation's war on drugs has been criticized because of its failure to reduce the use of illicit drugs.³³ The highly publicized failure to prevent drug use of one of the most widely used school-based programs, DARE (Drug Abuse Resistance Education), has highlighted the importance of enhanced dissemination of programs that work.^{34,35} Hence, a major task for the prevention field and the funding agencies is to improve the dissemination of information on effective prevention programs.^{36,37} Researchers tend not to be marketers and have needed support by the Federal Government in marketing and developing training systems for their effective programs. For example, the nation's most successful dissemination system for scientific knowledge is the U.S. Department of Agriculture's system of land grant universities and the Cooperative Extension Service, which spends one dollar on dissemination for every dollar on research.^{38,39} We have a long way to go in the substance abuse area. Our major dissemination efforts include Web sites, publications, and conferences showcasing research-based programs. For instance, national and regional conferences have been conducted in recent years by CSAP, NIDA, the National Institute on Alcohol Abuse and Alcoholism (NIAAA), OJJDP, and the Department of Education to showcase their pick of the most effective prevention programs. CSAP hosted a symposium on how to improve dissemination of evidence-based practices.^{37,39}

In an ideal world, research would flow smoothly from basic research to efficacy trials, effectiveness trials, and finally to nationwide adoption.⁴⁰ In reality, in the prevention field, there are major gaps between research and dissemination. The most commonly used programs are not those with the strongest research results but those that are most widely marketed. While some popular prevention programs say they are based on "principles of effectiveness," they are ineffective because they are shorter, do not control quality or fidelity, or do not have as well-trained implementers.

The research-based programs that have documented effectiveness results are generally those developed and tested in federally funded Phase III clinical efficacy trials under the leadership of university researchers. Few of these researchers have the time or the knowledge to market their programs. Additional support is needed by the funding sources to support the dissemination of research-based approaches. Practitioners also have a responsibility to ask hard questions about the effectiveness of the programs they are planning to implement rather than to select a program because it looks good or would be fun to implement. Even when lists of effective prevention programs are located, decisions concerning the best program for a given population must be based on matching the program outcomes to the needs of the proposed participants.

Despite the progress that has been made, much remains to be done. Only about 10% of substance abuse prevention programs are replications of effective programs, and possibly only about a quarter of those are implemented with fidelity.⁴¹ Additionally, with respect to alcohol policies, an analysis comparing the research with current bills pending in State legislatures concludes, "Most alcohol policies currently under debate and being enacted across the U.S. do not have a scientific research base available to inform public policy decision-making."⁴²

Overview of Substance Abuse Prevention Approaches

Research on effective alcohol and drug abuse prevention approaches has been slowed because of the broad range of potential interventions (e.g., social skills, parenting and family strengthening, school climate change, community partnerships, community environmental change). No single prevention approach has emerged as clearly superior, although the social competency approach is most widely implemented.

This chapter discusses what has been learned about the most effective school-, community-, and family-focused strategies for altering individual dispositions toward drug abuse. In this chapter, "evidence-based programs" are defined as research-based drug abuse prevention programs that have been shown to reduce licit or illicit drug use, initiation, or major risk factors, or to increase protective factors for drug use. Changes in knowledge and attitudes about drugs, without behavior changes, are not considered in this analysis as sufficient criteria for effectiveness.

This paper summarizes the research literature in each of the following six major areas of substance abuse prevention:

- Community Partnership Strategies
- Community Environmental Change or Policy Strategies
- Family-Strengthening Strategies
- Individual Social Competency Strategies
- School Climate Change Strategies
- Comprehensive, Multicomponent Strategies

The chapter concludes with recommendations for future research and for the training of health care professionals to improve their ability to identify and treat individuals with substance use disorders and to support substance abuse prevention programs.

Community Partnership Strategies

The community partnership approach involves developing a coalition of community leaders, organizations, and citizens to create teams to conduct community assets or

needs assessments, develop comprehensive strategic plans, and implement prevention projects, including advocacy for policy change. This comprehensive, coordinated approach is considered the most effective prevention approach if it includes research-based prevention activities at its core. The only discretionary prevention grant program that Congress allocated to the ONDCP is the Anti-Drug Community Coalition program, which funds approximately 100 coalitions a year. The Community Anti-Drug Coalitions of America (CADCA) has more than 4,000 communities as members. The Robert Wood Johnson Foundation supports the Fighting Back Initiative, consisting of 15 communities,⁴³ and the Join Together network provides technical assistance to about 4,000 communities to fight drug abuse. The Kaiser Family Health Foundation supports 10 communities to implement drug prevention programs.⁴⁴

This community mobilization approach is particularly useful for changing policies and laws concerning alcohol and tobacco misuse. Members can launch public awareness campaigns and advocate stronger substance misuse legislation and ordinances.^{45,46} Coalitions often focus on reducing access to tobacco or alcohol in minors. Anti-drug community coalitions were mobilized to implement the Synar amendment, which aimed at reducing access by minors to tobacco purchases. Sting operations staffed by coalition youth, when added to increased enforcement and limiting licenses, resulted in a reduction in tobacco sales to minors from an average across all States of about 50% in 1997 to 20% in 2000. Access to alcohol and tobacco can also be reduced by limiting licenses to sell these products, mapping and publicizing the relationship of geographic availability and health-related problems, developing planning and zoning policies to regulate density, reducing the density of outlets, enforcing penalties and revoking licenses of outlets selling to minors, enacting zoning laws that restrict sales near colleges and schools, and restricting the hours of sales.⁴⁷⁻⁵¹ Studies show that when community coalition members become educated, stage protests against problem outlets, oversee license renewals, and help planning and zoning departments develop policies, they can be successful in increasing the distance between outlets and in getting problem outlets closed.

Examples of Projects

Several cross-site community research trials have been funded by NIAAA to study the effectiveness of different coalition-generated policy changes on the prevention of alcohol misuse. The aim of the Community Trials Project (CTP) is to reduce injury and deaths related to drinking alcohol.^{52,53} The CTP tested three community coalitions and found they successfully implemented their own activities in five major target areas: (1) use of media to increase community awareness and change knowledge and attitudes; (2) server training; (3) reducing sales to minors through police sting operations; (4) increased police enforcement of drunk driving; and (5) reducing alcohol

availability by regulating alcohol outlets. These coalitions were successful in getting new regulations passed regarding special-event permits and banning alcohol at some public events.

Hingson and associates⁵⁴ tested Saving Lives, a community mobilization approach in six communities in Massachusetts. Many interventions were tested, primarily targeting reducing drinking and driving, but some included preschool alcohol education and alcohol-free proms. Results showed reductions in traffic highway crashes and arrests for driving while intoxicated (DWI), both of which are indications of possible reductions in alcohol use. Project Northland^{55,56} is a comprehensive community alcohol prevention program with positive results in reducing alcohol use. This program includes developmentally appropriate activities for classrooms from elementary school to junior high school with parent involvement through homework assignments.

Community Partnership Evaluation Results

Most of the early evaluations of community coalitions focused on process evaluations of what coalition characteristics contribute to successful implementation.^{57,58} These evaluations found that community coalitions were effective if they were organized in communities with a high degree of readiness,^{59,60} progressed from planning to implementation within the first 2 years,⁶¹ implemented proven prevention strategies, and had strong leaders who promoted a shared vision, utilized members' talents, and avoided or resolved conflict.^{58,62,63}

High-quality outcome evaluations became possible with Federal funding, primarily from NIDA and CSAP. The Midwestern Community Prevention Project, implemented in Kansas City and Indianapolis with NIDA research and local corporate funding, tested one of the first effective coalition models.^{46,64,65} This research-driven model consisted primarily of a school-based program, Project SMART, parent involvement through homework assignments, media, policy changes, and community organizing. The Communities That Care (CTC) coalition model was also tested with NIDA funds and found successful.¹⁹ One of the major contributions of the CTC "epidemiologically based risk-reduction model" is the development a framework for planning and managing comprehensive prevention activities based on a community risk and protective factor needs-assessment system that includes individual household surveys conducted by community members or use of archival data on key indicators.⁶⁶

Congress appropriated funds to CSAP to implement and conduct a cross-site process and outcome evaluation of 251 community partnerships between 1990 and 1996 and of about 60 community coalitions (coalitions of individual partnerships or megacoalitions) between 1994 and 2000. One of the largest community health studies ever conducted, the 48 Community Partnerships Cross-Site Study,⁵⁸

included a 10% sample of the community partnership grantee communities matched with similar communities in their State without a coalition. Results showed that coalitions were effective in reducing use of both alcohol and illicit drugs by male adults and adolescents—except in 10th graders. There were no positive results for girls or women.

This was a wake-up call to the need to analyze results separately for boys and girls. When preventionists did this, they found that many prevention approaches that appear to be effective for boys do not work for girls. New approaches may be needed for girls. The OJJDP is funding a National Girls' Institute and a Girls' Study Group of national experts in women-centered prevention approaches. Little research exists on how to design prevention programs for girls and women, and more work in this area is needed.

Community Environmental Change or Policy Strategies

The environmental approach focuses on changing or implementing laws, policies, ordinances, and sales or server practices that can reduce the production, sale, distribution, and marketing of alcoholic beverages⁶⁷ or tobacco products. Environmental approaches can be categorized by the three major types of prevention within the Public Health Service (PHS) Triangle Model of Prevention,⁶⁸ namely (1) reducing *access* (raising the minimum legal drinking age, reducing density of sales outlets, keg registration, server training, banning discounted drinks, increasing enforcement of laws and carding minors); (2) reducing *demand* (increasing taxes, warning labels, health education); and (3) changing *community environments* (media campaigns and counter-advertising, warning labels). Environmental policy approaches have been researched primarily in the area of the reduction of misuse of legal drugs (i.e., alcohol and tobacco). Although this paper focuses only on alcohol, most of the approaches that have been effective in reducing alcohol use also have been shown effective for tobacco.

Policy approaches sometimes include legislation to reduce the negative consequences of using licit drugs, rather than the use itself. This “harm-reduction” approach is popular in other countries, and it includes efforts to reduce the effects of drunkenness on oneself and others (e.g., car crashes, drowning, accidents, family disputes). The CTP, cited in the previous section, is a harm-reduction policy approach.^{52,53} If one begins to think of harm reduction, many environmental changes are possible, such as providing public education to increase the number of designated drivers, offering rides to drunk friends, or arranging sleep-overs after drinking parties. The impact of car crashes caused by drunk or drugged driving can be reduced by increased use of seat belts and air bags and better highway design (e.g., warning or rumble strips in shoulders, reflectors in the center strip, and side reflectors). Under development are cars whose ignition locks if the

driver cannot pass a quick sobriety test (i.e., complete a series of number punches quickly). In Europe and Australia, harms associated with drug use have been reduced by developing needle exchanges and injecting rooms, providing heroin through doctors, and offering drug-testing stations and free water at raves. These approaches are not popular with some prevention researchers, who are concerned that reducing the negative consequences of illegal use of alcohol or drugs could lead to increased use. Binging on alcohol or overdosing on drugs has additional negative consequences youth may not consider (e.g., passing out, rape, respiratory failure) and other less immediately lethal health consequences (e.g., cirrhosis, diabetes, high blood pressure, ulcers, and malnutrition).

Effectiveness of Environmental Policy Approaches

The results of research on the most widely used approaches are described below by target of change within the PHS Model of Prevention:⁶⁸ reducing demand, reducing access and availability, and changing community environments.

Reducing Demand. The policy approach with the most evidence of effectiveness in reducing alcohol consumption and associated health problems appears to be to raise taxes.^{69,70} The higher the cost, the lower the interest consumers have in purchasing tobacco or alcohol. This is particularly true of younger, less affluent individuals who are not addicted to drugs. In general, a 1% increase in taxes decreases alcohol use rates of 16- to 21-year-olds by about 1%.⁷¹ The decreases are greater for youth who drink heavily (i.e., three to five drinks at one sitting) than for youth who drink less. Coate and Grossman⁷² found that increasing beer taxes to keep up with inflation, so that the cost of beer is equivalent over time, would reduce infrequent drinking minors 24%–28% and frequent drinking by minors 32%–35%. Several studies suggest that increasing the alcohol tax in 1989 reduced drinking more than did raising the minimum drinking age (MDA) from 18 to 21 years.^{73,74} The savings to society of such changes have been estimated at \$0.5 to \$4 billion per year.

Reducing Access and Availability. Raising the MDA to 21 years was found to decrease alcohol use by 25% in 18- to 20-year-olds immediately after Congress passed the bill.⁷⁵ Related accidents and problems (e.g., arrests, health and social problems, and traffic casualties) were also reduced.^{75,76} This approach appears to be quite influential on youth who are light drinkers (one or fewer drinks).⁷⁷ Using the annual Monitoring the Future high school and college surveys, O'Malley and Wagenaar⁷⁵ found the positive effects persisted even after the respondents were of legal age. In addition, high school seniors spent less time in bars, and alcohol-related traffic collisions declined in the 18- to 20-year-olds. For college students, a 21-year MDA law appears to reduce drinking in controlled locations (i.e., bars, restaurants, clubs) but not in uncontrolled locations (e.g., dormitories, fraternity houses).⁷⁸

A number of studies have found a 21-year MDA reduced traffic crashes,⁷⁹⁻⁸³ reduced driver-involved crashes by 9% to 22%,⁸⁴⁻⁸⁷ and reduced driver fatality crashes by 5% to 28% in multi-State studies⁸⁸⁻⁹¹ and by 1% to 35% in single-State studies.^{86,92,93} Voas and associates⁸³ estimated that enacting the uniform age-21 minimum drinking law decreased fatal crashes by about 19% after controlling for confounding variables (e.g., beer consumption, driving exposure, zero-tolerance laws, and other differences between State laws).

Keg registration laws require purchasers of beer kegs to sign a form that links their names to a number on the keg in order to prosecute adults who supply alcohol to youth. These laws are being considered in many States; however, there are no studies that indicate their effectiveness.⁹⁴ Banning discount drinks during “happy hour” promotions can reduce consumption and impaired driving.^{95,96}

The impact of reducing the density of outlets and of zoning restrictions to reduce access to alcohol or alcohol consumption is unclear. Alcohol consumption by adults was found to increase in several States after the elimination of State monopolies of the retail sales of distilled spirits or privatization of wine sales.^{97,98} No studies have been conducted of the effects of State monopolies on adolescent drinking in this country. However, several studies in Scandinavia suggest that increasing the availability of alcohol does increase adolescent consumption. Skog⁹⁹ found that changing from over-the-counter alcohol sales to self-service resulted in a 17% increase in amount of alcohol sales in seven Swedish townships. Rahkonen and Ahlstrom¹⁰⁰ studied drinking trends in youth in Finland from 1973 to 1987 and found increased consumption in youth after increased alcohol availability. Valli¹⁰¹ found that allowing the sale of medium-strength beer in Finnish grocery stores increased drinking in 13- to 17-year-olds. Legalizing beer sales in Iceland in 1989 resulted in increased alcohol and beer consumption among adolescents.^{102,103} According to Grube,⁹⁴ research evidence on the effectiveness of these strategies for youth is limited. Preusser and associates¹⁰⁴ did find that more high school students (43%) in New York had ever attempted to purchase alcohol from an outlet than in Pennsylvania (30%), which has State-controlled liquor stores. Alcohol consumption rates were lower in minors in Pennsylvania than in New York, but the differences were not significant.

Server training reduces alcohol misuse by training beverage servers to monitor and pace the delivery of drinks to intoxicated customers, promote consumption of food and nonalcoholic beverages, avoid “two-for-one” sales, and attempt to prevent intoxicated patrons from engaging in risky behaviors (e.g., fights, driving). Some research suggests that while server training can improve server practices in a given bar or restaurant, it has little effect on the community as a whole if only a portion of a

community’s establishments participates.¹⁰⁵ Saltz¹⁰⁶ found that after an 18-hour server training course in a Navy enlisted men’s club compared with a matched club, rates of intoxication were reduced by half for both men and women, but the absolute consumption and rate of consumption were unaffected.

None of these prevention approaches works well unless the laws and regulations are enforced. For instance, refusal to serve “pseudo-patrons” simulating intoxication increased dramatically, from 17.5% to 54.3%, following increased enforcement of laws prohibiting sales to intoxicated persons.¹⁰⁷ Alcohol is easily purchased by minors in the United States. Studies show that 40% to 90% of outlets sell to minors.^{94,108-110} Unlike the massive effort to reduce sales of tobacco to minors through Synar amendment enforcement with police and sting operations, there is little enforcement of alcohol sales to minors, and police feel there is little public support for such activities.^{111,112} A number of studies have found that increasing police enforcement of the laws against selling alcohol to minors can reduce sales to minors.^{94,113} Sending letters warning about enforcement, conducting sting operations, and issuing citations to clerks who sold alcohol and commendations to those who did not increased compliance from 17% to 67%.¹¹⁴ Adding press conferences or media coverage to this mix of enforcement activities was found to reduce sales to minors by about 35%.¹¹⁵⁻¹¹⁷ Using a similar prevention approach, but repeating the sting activities twice, reduced alcohol sales to minors from 59% to 39% to 26%.¹⁰⁴ Unfortunately, as has been found for tobacco following enactment of the Synar amendment, decreased sales to minors do not result in reduced use. Youth simply get older friends to make purchases for them. Hence, the failure to reduce tobacco or alcohol use by minors suggests this type of enforcement approach is not worth its cost.

Changing Community Environments or Norms.

Advertising, restrictions on alcohol ads, counter-advertising, and public awareness campaigns are all methods for changing community norms. Alcohol advertising has been found to have a small, but statistically significant, effect on increasing adolescents’ alcohol consumption.¹¹⁸⁻¹²¹ However, there is little research on the impact of restricting alcohol advertising on adults, and there are no studies of the effects on adolescents.⁹⁴ Suggestive positive evidence has been found by Saffer^{122,123} that restricting broadcast alcohol advertising between 1970 and 1983 in 17 European and North American countries reduced alcohol consumption rates by 11% to 16%.

Media education is part of the social influence prevention approach that seeks to educate youth about methods the media use to influence people.¹²⁴ It is based on McGuire’s^{125,126} persuasive communication theory. Few studies have tested the efficacy of this approach alone; instead it has been used in combination with other social competency or peer-resistance strategies.

Public Awareness, Counter-Advertising, and Media Campaigns. Examples of information strategies include media campaigns, films, pamphlets, clearinghouse resource centers, radio and TV public service announcements, health fairs, advertisements, hot lines, and speaking engagements. These are major methods for providing information for adults. Such programs are also being implemented in schools and communities to target youth. Research shows that media campaigns provide needed information and, when combined with other community prevention strategies, do slowly affect community norms.¹²⁷

The public demand for credible information about drugs is increasing. Since 1987, the Partnership for a Drug-Free America¹²⁸ has disseminated thousands of anti-drug ads for its national campaigns. The partnership matches each ad financed by the ONDCP National Youth Anti-Drug Media Campaign. This campaign costs about \$198 million each year, but Congress has authorized the funds to be used to target only illegal drugs—not alcohol. A NIDA evaluation of this media campaign is under way.¹²⁹ Preliminary results suggest that the media campaign is having a small but important effect in helping reduce drug use in youth. According to communications researchers,^{130,131} communication campaigns can be effective when (1) there is widespread acceptance of the campaign; (2) media create awareness and knowledge of the issues; (3) they are used to recruit individuals, and (4) interpersonal communication channels such as peer networks or action groups are used to reinforce behavior changes.

Media campaigns have played a major part as well; these are often spearheaded by citizens' groups such as Mothers Against Drunk Driving (MADD). Counter-advertising is much more sophisticated than it was a decade ago and now includes the use of interactive CD-ROMs to teach media literacy and Web sites that include media messages, hot lines, and opportunities for electronic ordering of materials from clearinghouses such as the National Center for Alcohol and Drug Information.

Counter-advertising and educating the public about the dangers of alcohol through warning labels appear to have little impact on adolescent drinking^{132,133} or adult drinking.^{134,135} MacKinnon and associates¹³² found increased awareness of warning labels, but no changes in beliefs or alcohol use, in adolescents following exposure to warning labels.

Summary of the Effectiveness of Environmental Policy Approaches

The effects of community-based alcohol prevention policy approaches have been described as “quite modest,” even though a great deal of effort and funds have been expended on them.¹³⁶ Cost-benefit studies are needed to help communities understand how much improvement they can expect, in the light of alternative approaches. Increasing the cost of alcohol and increasing the legal drinking age or

maintaining it at 21 years appear to be very effective approaches to reducing consumption among youth.

Family-Strengthening Strategies

Strong families are key to preventing adolescent problems, including substance abuse. New longitudinal research suggests that parents have a larger impact on their teenage children than previously thought.¹³⁷ Although peer influence is the major reason adolescents initiate substance use, a positive family environment (e.g., positive parent/child relationships, parental supervision and consistent discipline, and communication of family values) is the major reason youth do not use drugs or engage in delinquent or unhealthy behaviors.^{138,139} These protective family factors are even stronger predictors for minority youth¹⁴⁰ and girls.¹⁴¹

A CSAP expert review of family-focused approaches determined that four family-based approaches demonstrated the highest level of evidence of effectiveness in reducing behavioral and emotional problems in children 5 years of age and up: (1) behavioral parent training (primarily cognitive/behavioral parent training); (2) family skills training; (3) family therapy (structural, functional, or behavioral family therapy); and (4) in-home family support.¹⁴² Newer research suggests that parent involvement in homework assignments about drug prevention can also be effective in reducing substance abuse in students.¹⁴³ For more information including contact information on 34 model family programs, see Kumpfer,¹⁴⁴ Kumpfer and Alvarado^{17,145} and the University of Utah's and OJJDP's Web site (www.strengtheningfamilies.org). Family interventions with insufficient evidence of effectiveness include parent education approaches. These programs are characterized by short (less than 8 hours) didactic sessions or affectively based parent education.¹⁴²

Behavioral Parent Training

This highly structured approach includes parents only, generally in small groups led by a skilled trainer following a curriculum guide and including at least six 1- to 2-hour sessions in child management. Parents are encouraged to increase interactions with their children through positive play, increased rewards for good behavior, ignoring unwanted behavior, and improved communication. Sessions include review of homework, video presentations contrasting more and less effective ways of parenting, lectures and discussions to elicit parenting principles, interactive exercises, modeling and role plays of the parenting behavior to be changed, charting and monitoring of parenting and children's behaviors, assignment of homework, and effective discipline.

Patterson and associates¹⁴⁶ pioneered behavioral parent training and found that at least 45 hours are needed with high-risk families. Research suggests that modeling the

therapist and practice through role plays are more effective than are reading and discussion with lower socioeconomic status parents.¹⁴⁷ Webster-Stratton¹⁴⁸ developed effective video-based versions for preschool and elementary school children that have been replicated by Taylor and associates.¹⁴⁹ From an analysis of these studies, this approach works best with young children (3 to 10 years old). A meta-analysis of 26 behavioral parent training studies found the mean age of children involved in the studies was 6.05 years.¹⁵⁰ The effect sizes (E.S.) for children's outcomes were very high (0.84 for parental report, 0.85 for observer report, 0.73 for teacher report, and 0.44 for parents' reports on their own behavioral and emotional changes). Some researchers have increased positive outcomes by adding components such as family sessions on parent concerns not related to the child (e.g., marital, job, and health concerns);¹⁵¹ social problem-solving training for single parents;¹⁵² "synthesis training" to discuss stressful parent experiences;¹⁵³ self-control training;¹⁵⁴ and marital adjustment support.¹⁵⁵

Family Skills Training

This approach combines behavioral parent training, children's social and life skills training, and family practice sessions. The family goes to a community center, school, or place of worship. For the first hour, the parents and children are split into separate groups. In the second hour, the parents and children reunite to practice what they learned in the first hour. Family meetings are implemented and practiced. Parents are taught special therapeutic play or parent/child interactive therapy.¹⁵⁶ The parents learn through observation, practice, and trainer and child reinforcement how to improve positive play. Teaching parents therapeutic play has been found to improve parent/child attachment and improve child behaviors in psychiatrically disturbed and behaviorally disordered children.^{157,158} After the parents master special play, they begin family communication sessions and, finally, practice effective discipline and request techniques to improve compliance.

Recruitment and retention are higher when the whole family attends than they are when only parents or only children attend. Preliminary results of a NIDA-funded randomized controlled trial of the 14-week Strengthening Families Program (SFP) show that retention was 74% for the three-component SFP that both parents and children attended, 62% for the SFP children's social skills training class only, and 50% for the SFP parent training class only.¹⁵⁹ Parents are more likely to enroll in a family skills training program because their children will receive preventive services while they learn parenting skills. Children encourage their parents to enroll and attend more sessions because they enjoy seeing their friends and like the classes. Contents of the children's skills training program often include identification of feelings, anger and emotional management, accepting and giving feedback and criticism

or praise, problem solving, decision making, assertion and peer-resistance skills, communication skills, and how to make and keep positive friends. Food, transportation, and child care are often provided.

Family skills training appears to work best for elementary and middle school children. Examples include the Strengthening Families Program,¹⁶⁰ which has culturally modified versions for African-American,¹⁶¹ Pacific Islander, American Indian, and Hispanic families of 6- to 12-year-olds, as well as for pre-teens and teens;^{158,59,162} Focus on Families¹⁶³ for methadone maintenance parents; the Nurturing Program¹⁶⁴ for physically and sexually abusive parents; Families and Schools Together (FAST)^{165,166} for students in schools; and Family Effectiveness Training (FET)¹⁶⁷ for Hispanic adolescents.

Family Therapy

This approach is typically implemented by trained clinicians or interns with adolescents who have diagnosed problems (e.g., conduct disorder, depression, and school or social problems) that, if not treated, may lead to serious delinquency or drug use.¹⁶⁸ Sometimes called family-based, empirically supported treatments (FBESTs), these interventions have preventive value for younger siblings because of positive changes made in the maladaptive family processes.¹⁶⁹ In the CSAP 1998 review, four family therapy models were found effective: Szapocznik's Structural Family Therapy;¹⁶⁷ Alexander and Parsons's Functional Family Therapy;¹⁷⁰ Gordon's interactive computer program, called Parenting Adolescents Wisely;¹⁷¹ and Liddle's Family Therapy.¹⁶⁸

In-Home Family Support

The CSAP Family Prevention Enhancement Protocol (PEP) found a moderate level of evidence for this approach.¹⁷² In an unpublished report to CSAP, Tobler and Kumpfer¹⁷³ found a high effect size (1.64) for 14 well-implemented, in-home family support programs. This approach is used primarily for helping parents with children younger than 5 years of age.¹⁷⁴

Parent Involvement Drug Prevention Approaches

This approach seeks to involve parents with their children in school activities or homework assignments about substance abuse. Its objectives are to increase parent and child communication and sharing of family substance use norms. In-school programs have had difficulty in attracting parents; even when stipends for participation are offered, only about one-third of parents attend.¹⁷⁵ If parents are requested only to complete homework assignments with their children, about 66% to 94% of parents are willing to participate.¹⁷⁶⁻¹⁷⁸ Bauman and associates¹⁴³ found that 84% of families completed at least one of four "Family Matters" booklets at home. With phone support (averaging eight calls) by health educators, 62% of families completed all

four booklets, devoting about an hour to each. The cost per family was about \$140. The program was associated with significant reductions in risk factors and substance use in the youth.

Multicomponent Mixed Family Programs

Few comprehensive family approaches involve universal, selective, and indicated approaches, because family approaches are designed for specific populations. One example, the school-based Adolescent Transitions Program, begins by providing a family resource room, selective family services, and more intensive family services to identified youth with conduct disorders and aggressive behaviors.¹⁷⁹

Individual Social Competency Strategies

Individual social competency or life skills programs are generally implemented with universal populations of school children in junior high schools or in selective high-risk populations in after-school community programs. Universal school-based and community-based programs have been reviewed several times.^{9,180-186} This section reviews several approaches to social competency building: social influence programs (social skills, life skills, peer resistance), mentoring, tutoring, cultural pride programs, and alternative programs.

Youth-only change programs aiming to reduce interest in or demand for alcohol and drugs had a rocky beginning. When research evaluations were begun in the 1970s and 1980s, the most popular drug prevention programs—scare-tactic drug education, alternatives, and affective education programs—were found to have little effect. Having discovered that knowledge or attitudinal changes do not necessarily lead to behavioral change, researchers began in the early 1980s to test a variety of social competency approaches that focused on behavior change. Best practices are increasing in schools. According to Tobler, 60% of the recently published school-based programs are the more effective types of school-based youth competency programs—the Social Influences and Comprehensive Life Skills Programs.¹⁸⁷ In 1992, Hansen¹⁸³ classified the school-based approaches into 12 activities, including information, decision making, pledges, values clarification, goal setting, stress management, self-esteem building, resistance skills training, life skills training, norm setting, student assistance (peer counseling, peer leadership, professional counseling, hot lines), and alternatives.

Examples of Effective Social Competency Programs

The most effective universal prevention programs implemented in schools appear to be those that involve intensive social or life skills training and that often include homework assignments with parents. NIDA has funded the development and evaluation of many of these programs. *Preventing Drug Use Among Children and Adolescents: A*

*Research-Based Guide*⁸ includes descriptions of some of these exemplary programs, including the universal, research-based programs listed below:

Adolescent Alcohol Prevention Trial (AAPT).¹⁸⁸ A classroom program for 5th graders, with booster sessions in the seventh grade. It offers normative education and resistance skills training.

Alert Drug Prevention Curriculum.^{189,190} A largely video-based resistance skills program with 10 weekly lessons in the seventh grade and three booster sessions in the eighth grade developed and evaluated by the Rand Corporation. It had a positive effect on reducing cigarette and marijuana use in students in California.

All Stars.¹⁹¹ This universal, 13-session, school-based prevention program for seventh graders, with boosters in the eighth and ninth grades, aims to reduce substance use, delinquency, and early sexual activity. An independent evaluation found All Stars more effective than DARE, particularly for reducing sexual intercourse and number of sexual partners.¹⁹²

Life Skills Training Program.¹⁹³⁻¹⁹⁶ This 30-session, 3-year, personal and social skills program for middle school students was found to reduce tobacco, alcohol, and drug use 40% to 66% immediately and up to 1 year after high school.¹⁹⁷

Project STAR.^{198,199} A 2-year middle-school social influence curriculum (10 to 13 sessions in seventh grade and 5 to 7 sessions in eighth grade) implemented by trained teachers, combined with comprehensive community interventions as part of the Midwestern Prevention Program, was found to reduce substance use.²⁰⁰

Seattle Social Development Project.²⁰¹ A comprehensive teacher training, social skills training (based on Shur and Spivack's "I Can Problem Solve" Program^{202,203}), and parent training program, the Seattle Social Development Project has been shown to improve school performance, family relationships, and student alcohol involvement at various grades. Outcomes from the first four years demonstrated that by the end of grade 11, Project students, compared to control students, reduced involvement in violent delinquency and sexual activity, and also showed reductions in being drunk and in drinking and driving.²⁰¹

Selective Social Competency Programs

Few social competency programs are designed for youth who are identified as being at risk for substance abuse, delinquency, or other problems because they belong to a high-risk group, such as low-income youth or children of alcoholics. Well-evaluated examples include the SFP Children's Social Skills Training Program²⁰⁴ and Smart Moves.²⁰⁵ The latter, a 40-session program for high-risk 10- to 11-year-old youth is implemented after school, often in

boys' and girls' clubs. This skills training program includes role plays and recreational activities and is facilitated by peer leaders.

Indicated Social Competency Programs. These programs are designed for youth who are identified by schools or communities as having conduct problems or emotional problems. Examples include Lochman's Anger Coping Program and Coping Power Programs,²⁰⁶ Shure's I Can Problem Solve Program,^{202,203,207} Social Skills Training in the Fast Track Program,²⁰⁸ Kazdin's Problem-Solving Social Skills Training Intervention Program,^{209,210} and Eggert's Reconnecting Youth Program, with is Personal Growth Class for high school students at risk of dropping out of school.²¹¹

Reconnecting Youth Program.²¹² This prevention program is for high school students who are at risk for dropping out of school because of declining grades or other behavioral or mental problems, such as substance abuse, depression, or suicidal ideation. The program's Personal Growth Class involves students in a credit class taught by carefully selected and trained teachers. It includes a peer support group that teaches social and life skills that increase resilience to drug use.²¹³

Alcohol Prevention Programs. Reducing the number of adolescents who begin to use alcohol is harder than reducing the initiation of tobacco or drugs. The average ES for tobacco prevention programs in schools is about ES=0.16, broader substance abuse prevention programs average ES=0.11, and alcohol prevention programs average ES=0.10.¹⁸⁷ Examples of effective universal programs funded by NIAAA to reduce alcohol use include the following:

Project Northland.^{55,56} A comprehensive program with developmentally appropriate activities for elementary school and junior high school students. Unique features include a cartoon series and parent involvement in homework assignments.

Alcohol Misuse Prevention Project.²¹⁴ This middle school program was found to reduce alcohol use significantly, but only in the highest-risk youth, whose parents allowed them to drink at home and not until the eighth or ninth grades, when alcohol initiation normally begins.²¹⁵

These programs include teaching social competencies or peer-resistance skills. Some effective programs focus more on broader life skills (Botvin's Life Skills Training); others focus on normative changes (Hansen's All Stars). These theory-based social competency programs differ from other school-based programs found to have minimal effects,^{9,186,187} such as DARE,²¹⁶ in a number of ways. They have longer curricula targeting a larger number of primary risk factors for drug use, improved fidelity to their curricula in implementation, increased dosage or intensity, better training of implementers, and booster sessions.

Other Types of Social Competency Programs

Mentoring Programs. Mentoring programs can be implemented in school or community settings with high-risk youth, but, because of the cost and need for staff time to coordinate, they are most often found in community agencies employing volunteers. Mentoring programs attempt to convey positive values, attitudes, and life skills through a one-to-one relationship with a positive role model, who may be a culturally matched community volunteer, college student, parent, or business professional.

One of the only evaluations of mentoring was the Big Brothers' and Big Sisters' Program evaluation, which found positive results only if the mentor spent at least a year with the young person.²¹⁷ Some intergenerational mentoring programs using retired or older persons have been implemented and evaluated. These include Across Ages, a CSAP model program, and Full Circle, implemented in four urban and rural sites in Colorado. Another program, Partners in Denver, combines a Big Brother/Big Sister programs with wilderness outings.

Tutoring Programs. Academic achievement is a protective factor for drug use, and academic tutoring has been found to lead to decreased peer rejection, fewer disruptive behaviors, and significant gains in math and reading skills.²¹⁸ For these reasons, tutoring programs are used to reduce future drug use in high-risk youth with academic problems. Some programs use a cross-age tutoring approach in which high-risk students tutor younger students. Other programs use mentors, college students, or teachers to tutor students in school or after school.

Cultural Competency or Pride Programs. Many of the targeted prevention programs developed for ethnic youth and families have been based more on practitioners' responses to ethnic community needs than on theoretical advances involving ethnic youth. Kim and associates²¹⁹ state, "Prevention practitioners frequently place more emphasis on the personality styles of the fieldworkers and their level of commitment than on a particular theoretical orientation." Promising approaches being tested with different ethnic groups are described in *Drug Abuse Prevention with Multiethnic Youth*.²²⁰ The theoretical models that could inform these programs include acculturation theory, differential family acculturation, and orthogonal cultural identification theory.²²¹

Multicultural Competencies or Skills Training Programs. Although etiological studies have not found a consistent relationship between cultural pride and substance use, the research of

Oetting and Beauvais²²¹ suggests that youth with more multicultural competencies are less vulnerable to substance use than are those without such competencies. Many of the high-risk youth programs implemented with ethnic youth include sessions on cultural pride or history and

teaching of cultural dances, art, and theater. They employ attractive role models to increase cultural pride. Intensive experiential wilderness programs and youth clubs organized around activity programs have been evaluated in CSAP high-risk youth programs with ethnic students, primarily Native American youth, and found to be culturally relevant and effective in reducing risk factors.²²²

Alternatives Programs involve high-risk youth in drug-free activities (“alternative highs”) during their leisure time. Because research on mediators of drug use supports a link between thrill seeking in adolescence and drug use,²²³ alternatives programs frequently involve wilderness challenge experiences (i.e., wilderness survival, mountain climbing, backpacking, river rafting, sky diving) and extreme sports. The rationale for such programs is based in part in findings that high-risk youth are often bored during their free time, and that their customary leisure activities do not provide sufficient arousal. Other types of positive alternatives to drug use include sports, the arts, community service or restoration projects, house building, vocational training, drug-free dances or graduation events, entrepreneurial ventures, teen hot lines, and drop-in centers.²²⁴⁻²²⁶ Because of their cost, these selective or indicated prevention strategies are reserved for at-risk individuals. This indirect approach to prevention avoids labeling and stigmatizing youth as being at high risk for drug use, because the programs often never mention their underlying purpose.

Critical elements of programs such as these include (1) promotion of new skills, knowledge, and anti-drug attitudes, (2) occupation of free time with positive activities, (3) community service that provides meaningful involvement in socially responsible activities, (4) opportunities to interact in positive ways with peers, and (5) adult supervision or development of positive relationships with adults. These programs do not include drug education content directly. More than 75% of CSAP’s community partnerships included youth alternative activities.¹¹ One of the few well-researched alternatives programs is Amazing Alternatives.²²⁷ This program helps youth identify health-enhancing alternative activities for each function that substance use provides for them. Often leisure activities are added to other prevention approaches, such as school climate change programs²²⁸ or indicated prevention programs for school drop-outs.²¹²

Alternative programs are very popular, even though research is limited²²⁹ and meta-analyses suggest only a weak positive effect.¹⁸⁶ Malvin and associates²³⁰ found the effectiveness of this approach was equivocal. A review of CSAP’s prevention programs suggests that alternative programs were not as effective as were family-oriented approaches or youth-led drug education approaches.¹¹ Harmful effects have been found if the type of alternative activity (some rock bands, sports, or vocational training) exposes non-using youth to older, substance-abusing peers

or adults. Positive effects are found if the activities provide pro-social, non-drug-using role models, such as academic activities, religious activities, and active hobbies.²³¹

CSAP cross-site studies suggest the most effective alternatives programs involve youth in their development and include social skills training and recreational outings.¹¹ They promote attachment to social institutions (e.g., family, school, and places of worship), academic achievement, educational aspirations, social competency, and unfavorable attitudes toward substance use. The outcome research suggests that community service-oriented programs produce mixed results. Cultural competence programs are popular with participants and effective in several respects. The most effective programs are those that are more intensive (i.e., offering activities several days a week or booster sessions) and provide opportunities for creating positive relationships with adult role models or mentors. Alternative programs can enhance their effectiveness if they also focus on environmental change by having youth work on legislative advocacy to reduce the availability of tobacco, alcohol, and drugs.

Effectiveness of Social Competency Programs

A review of the effectiveness of school-based programs by Hansen¹⁸³ suggests that social influence programs, including resistance skills training, norm setting, and life skills, have the largest percentage of positive findings (51% positive, 38% neutral, and 11% negative). When corrections were made for programs with insufficient power to detect a significant change, 63% of the programs had positive results, 26% were neutral, and 11% were negative. After this power correction, comprehensive school programs looked more effective: 72% positive, 28% neutral and no negative effects reported. The information/values clarification programs had mixed results—30% positive, 40% neutral, and 30% negative outcomes. Affective education also had positive effects (42%) balanced by 25% negative effects and 33% no effect. There were not enough studies with reported results to determine overall effectiveness of the alternatives approach. Among the comprehensive programs, two models—Life Skills Training^{193,194} and STAR¹⁹⁹—and two other similar programs—SMART and AAPTC—were found to contribute to successful outcomes.

A meta-analysis of school-based prevention programs conducted by Tobler and Stratton⁹ found that social competency approaches have only small-to-moderate effect sizes. (A meta-analysis involves collecting data on all the researched programs, categorizing types, and comparing their relative effectiveness by averaging the size of the effects.) Tobler¹⁸⁷ in 1998 updated her 1993 meta-analysis of the effectiveness of school-based substance abuse prevention programs by adding 87 studies that had taken place between 1990 and 1997. The results reported below are from 207 programs with acceptable evaluations from a total of 700 school-based substance abuse prevention

Table 1: School-Based Prevention Programs, Ranked in Order of Effect Size (ES)

1. Comprehensive life skills training (0.30 ES)
2. "Other" programs (e.g., peer counseling, parent involvement, behavioral token economy, community partnerships) (0.21 ES)
3. Social influences (0.20 ES)
4. Health education (0.18 ES)
5. DARE-type (0.08 ES)
6. Knowledge only (0.07 ES)
7. Decisions, values, and attitudes (0.06 ES)
8. Affective only (0.04 ES)
9. Knowledge and affective (- 0.05 ES)

studies dating from 1978 to 1997.¹⁸⁷ Whereas Tobler's 1993 study coded programs into six categories, the present study classified them into nine types (see Table 1).

Comprehensive life skills training programs such as Botvin's produce the largest decreases in tobacco, alcohol, and drug use; the least effective program type is a combination of knowledge-only and affective education, which actually produces negative effects. This statistical analysis of social competency revealed that interactive, skills training methods were more effective (0.14 versus 0.04 ES) than were didactic methods in reducing substance use or risk. The successful programs sought to change behaviors by teaching skills and competencies rather than by seeking to change knowledge and attitudes by providing lectures on the consequences of tobacco, alcohol or drug use.

The Tobler¹⁸⁷ meta-analysis also clarified the core elements of the more effective substance abuse prevention program. These included (1) interactive delivery style (0.14 to 0.04 ES); (2) smaller programs with fewer students served, particularly if they allow students to interact with each other (0.43 ES for 20 students compared with 0.14 if serving over 2,000 students); (3) minority-serving programs with interactive experiential content (0.13 to 0.11 ES); (4) programs staffed by leaders trained in behavior change psychology and mental health therapy, such as mental health clinicians (0.24 ES), rather than peer-led or teacher-led programs (0.10 ES), or other staff, such as police officers (0.08 ES); (5) longer programs with booster sessions, because program effects do decay with time; (6) program incentives, such as food, child care, attendance rewards, and transportation, that reduce attrition, because programs with high attrition had reduced effectiveness (.09 to .16 ES); and (7) fidelity to original research-based models, because tight implementation and quality assurance lead to increased effectiveness.

Donaldson and associates²³² analyzed social influence-based drug abuse prevention programs. They concluded that this type of programming produced the most consistently successful preventive effects with the general population, but that it may not be as effective with high-risk youth. Unfortunately, most of these programs rely on a mixture of several prevention approaches, so it is difficult to determine the most salient content. Donaldson and colleagues concluded that the most essential ingredient for success appears to be changing social norms or peer norms. These authors warn against implementing only a subset of the lessons of exemplary programs because of the potential of implementing only the less effective lessons.

School Climate Change Strategies

This comprehensive, universal prevention approach seeks to shift school norms and practices to be more supportive of non-use. These programs also address many of the risk and protective factors for drug use that mediate use, such as school bonding, self-esteem, association with non-using friends, a supportive school climate, and positive family relations.¹³⁹ School climate change approaches resemble community change approaches but focus on the school or school district. Task forces are mobilized to plan, implement, and evaluate locally developed solutions to empirically identified problems derived from a baseline needs assessment. Many different prevention solutions are implemented by the planning teams to address multiple risk and protective factors.

Project PATHE was one of the first comprehensive school climate change programs to be tested and to demonstrate positive results.²³³ The program involves students, parents, teachers, school officials, and communities in planning teams following a specific planning process called the Program Development Evaluation (PDE) method, which includes a needs assessment, development and implementation of plans to address the substance abuse risk factors, and explicit standards for performance with constant feedback.²³⁴ School/community teams are free to develop many different strategies and to evaluate their effectiveness, making this project the precursor for the popular community partnership approaches. This program was implemented in Charlotte, North Carolina, junior high schools and found to affect many mediators and to reduce tobacco, alcohol, and drug use in students in the schools implementing the programs compared with students in nonparticipating schools.

Project HI PATHE is unique because in each site program activities are planned locally by teams of students, teachers, administrators, parents, and community members based on the PDE model.^{233,234} The activities are designed by the school teams after a review of local school needs assessment data¹³⁹ and include *universal* school activities (e.g., school policy revisions, school pride days, plays and

assemblies, and educational reform with cooperative learning training for teachers combined with universal health promotion and substance abuse prevention curricula, and parent training); *selective* school activities (e.g., children of alcoholics groups, minority youth after-school programs, buddy programs and welcome wagons for transferring students); and *indicated* activities (e.g., student hotlines run by peers with professional training and support, treatment after-care groups at school, in-school suspension for suspended students, and tutoring and mentoring for students performing poorly academically). Unfortunately, due to the short-term nature of Project HI PATHE's funding from the Department of Education, the evaluation results were not conclusive.²²⁸ However, because of the effectiveness of this approach as demonstrated by Gottfredson,²³³ the school climate approach is worthy of additional research.

Comprehensive, Multicomponent Strategies

Some schools and communities conduct comprehensive programs that include a mixture of various prevention approaches. These frequently involve a community or school planning and development approach, with local solutions developed by planning committees matched to needs assessment data on risk and protective factors.

The advantage of comprehensive approaches is that they address the risk and protective factors of many different types of individuals. These programs include locally designed solutions that are grounded in research-based models but sometime also involve new approaches. The disadvantages of these models are that they require significant fiscal resources, require substantial amounts of school- and community-readiness, are volunteer- and staff-intensive, and require a prevention director. Also, an effective planning process cannot proceed without needs-assessment data on risk and protective factors. This could require that a school or community survey be conducted before beginning planning of services.

Probably the best-known comprehensive programs are the Mid-West Prevention Project^{46,198} and the Seattle Social Development Program.⁶⁰ Other effective comprehensive programs that are primarily school based include the School Transitional Environment Project (STEP),²³⁵ which is a school climate change program, the Aban Aya Project in Chicago,²³⁶ and Project PATHE²³³ and its variant targeted for universal, high-risk, and in-crisis youth through a comprehensive student and community team approach, Project HIPATHE.²²⁸ The 10 new CSAP Developmental Predictor Variable grants are conducting research on the effectiveness of providing comprehensive prevention services to students, selective families, and indicated youth and families.

What Health Care Professionals Can Do Become knowledgeable about effective prevention approaches.

Health care professionals need to become better educated about which prevention programs are most effective. Health care professionals can improve their knowledge through reading and participating in continuing education classes, workshops, and online courses at some universities. The author has designed an online graduate-level prevention science course at the University of Utah. The Society for Prevention Research is developing undergraduate and graduate distance learning courses in substance abuse prevention.

Support collection of needs-assessment data.

This paper has covered the most recent research on effective prevention practices. However, knowledge of these evidence-based practices is still not equivalent to good prevention practice, any more than knowledge of best medical practices equates to high-quality care. The cure must fit the disease. A sophisticated diagnostic process must occur to determine whom to treat with which evidence-based practices. The most effective prevention programs are tailored to the most salient risk and protective factors for a particular group. For instance, if the most salient risk factors are excessive family conflict, lack of supervision, harsh discipline, and poor parent/child bonding and attachment, combined with a very high risk neighborhood for substance abuse, "strategic parenting" is needed.²³⁷ These families need an age-appropriate, evidence-based parenting program to improve parenting skills.¹⁶

Eventually, the PDSS will include a matching expert system module for matching local needs to the selection of the best practice. Needs assessments are currently on the PDSS Web site. States and counties are becoming more sophisticated in conducting epidemiological surveys to determine risk and protective factors for substance abuse. Some States are implementing Web-based needs-assessment systems that allow counties to conduct surveys using a standardized needs-assessment instrument, enter the data, and have geocode maps created that compare their county or towns on risk and protective factors for substance abuse with State and national norms and with other similar counties or towns.^{183,136,238} A number of effective needs-assessment systems are available.²³⁹

Advocate evidence-based prevention practices.

Health care professionals can advocate more effective, evidence-based prevention in their communities. Educating mayors, county commissioners, and State legislators that substance abuse prevention not only works but can substantially reduce health care costs is a role that health professionals can credibly play. Many health professionals

serve on boards of directors of private, nonprofit agencies. They are in a position to advocate that funds be allocated to effective prevention approaches.

Seek consultation from prevention specialists when planning programs.

Health care professionals can look to a number of resources to help them select the best prevention services. These resources include State or county prevention specialists or local university prevention researchers. Those involved with prevention planning should ask to see the evaluation results. Increased knowledge and changed attitudes are not sufficient changes—evidence of behavioral changes in risk precursors (e.g., conduct disorders, aggression, depression, school failure, family conflict, poor parent/child relations) and actual drug use must also be clear. Additionally, implementation and community readiness variables must be considered when selecting the best prevention program for your local community. Help in these areas can be found in Wandersman and associates, “Comprehensive Quality Programming: Eight Essential Strategies for Implementing Successful Prevention Programs,”²⁴⁰ and Kumpfer, Whiteside, and Wandersman’s *Community Readiness for Drug Prevention: Issues, Tips, and Tools*.²³⁹

Advocate for a public health approach to substance abuse prevention.

A more effective approach to prevention is clearly needed. Availability of drugs has not decreased, and drug use is up 85% in youth since 1992. Funding for prevention and treatment has not kept pace with the demand or increases in funding for supply-reduction efforts. Primary health care professionals need to work together to request a Surgeon General’s report on substance abuse treatment and prevention. Now that a Surgeon General’s report on mental illness has been completed, the nation needs a thoughtful and complete review of what a more humane public health approach could contribute to reducing SUD.

Summary

There is no single “best” prevention program, and no one program or approach will stop all drug use. There are many effective research-based programs; the best approach for any particular population requires selecting the best intervention for the target population on the basis of a knowledge of the risk and protective factors in that population. Unfortunately, the most highly marketed school or family programs are generally not those programs with the best outcomes.

The best approach to prevention is to begin early to reduce emerging behavioral and emotional problems in youth. Longer-lasting effects should accrue from changing school, community, and family environmental conditions that promote and maintain drug problems in youth. More and more prevention specialists are considering moving from a focus on the individual to changes in total systems or the environmental contexts that promote or hinder drug use. On the basis of economic considerations, the “whole family” systems-change approach of family skills training classes is becoming popular even in the managed care environment.²⁴¹

The greatest challenge facing the drug abuse prevention field is to get information out to practitioners and communities about the best prevention programs, approaches, and principles of effectiveness. Researchers and funding agencies must learn how to effectively market the most successful programs to bridge the gap between research and practice. We must become as effective at marketing drug prevention programs as drug dealers are at promoting and selling drugs. Communities need health care professionals who are knowledgeable about substance abuse prevention and who can advocate the implementation and ongoing improvement of prevention programs with known effectiveness.

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Screening, Assessment, and Intervention for Substance Use Disorders in General Health Care Settings

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Introduction

Alcohol- and drug-related problems are among the leading causes of death and morbidity in the United States. Studies suggest that 50 million Americans drink alcohol above recommended limits or use illicit drugs. The general health care system in the United States offers an ideal opportunity to identify and treat these people and thereby reduce associated adverse health, family, and societal effects. Practitioners from various disciplines, including physicians, nurses, pharmacists, dentists, social workers, psychologists, and allied health professionals, are essential participants in national efforts to deal with these problems. This paper reviews the scientific evidence that supports the implementation of alcohol screening, brief intervention, and pharmacotherapy in general health care settings. Although the paper focuses on efficacy research, it also includes information on effectiveness studies and on the integration of primary care with specialized alcohol and drug treatment programs.

Definitions and Criteria

Persons with alcohol use disorders may be grouped into three categories: (1) at-risk or hazardous drinkers; (2) problem, abusive, or harmful drinkers; and (3) dependent or alcoholic drinkers. The adjectives “hazardous” and “harmful” are in common use throughout the world and are used for International Classification of Diseases (ICD)-10 coding. The definitions of the three terms vary by clinician, scientist, and country, but for the purpose of this paper we will use the definitions incorporated in a 1995 publication by the National Institute on Alcohol Abuse and Alcoholism (NIAAA).¹ At-risk drinkers are defined as men who drink more than 14 standard drinks per week or more than 4 drinks on one occasion, or women who drink more than 7 standard drinks per week. (A standard drink contains 14 grams of alcohol and is equivalent to a 12-ounce bottle of beer, a 5-ounce glass of wine, or 1-1/2 ounces of hard liquor.) Problem drinkers are persons who drink above these limits and also have one or more alcohol-related problems or adverse events (e.g., accident, injury, hypertension, or employment problems). Dependent drinkers are persons who are unable to control their alcohol use, have experienced one or more adverse consequences of alcohol use, and have evidence of tolerance or withdrawal.

Persons with substance use disorders (SUD) include those who use illicit drugs as well as those who use mood-altering or over-the-counter prescription drugs at variance

with recommendations. SUD are divided into (1) at-risk or hazardous use; (2) problem or harmful use, or abuse; and (3) drug dependence or drug addiction. Any use of an illegal substance is considered at-risk use. Problem drug users are those persons who have experienced drug-related harm (e.g., financial loss, family problems, school problems, legal problems, or health problems). Drug dependence or drug addiction criteria include loss of control, adverse consequences, and evidence of physical dependence.

The criteria for a diagnosis of addiction may vary by drug class. Opioids, for example, often cause physical dependence when used to treat chronic pain, without any other evidence for addiction. Other drugs of abuse, such as hallucinogens and inhalants, do not appear to cause physical dependence.

Prevalence of Substance Use Disorders

Patients with SUD are commonly seen in clinical settings. Using the criteria just described, a study was conducted to assess the 90-day prevalence of alcohol and drug use disorders in 22 primary care practices. The authors found that 9% of patients screened were at-risk drinkers, 8% were problem drinkers, and 5% were alcohol-dependent.² Rates of alcohol use are high in pregnant women. The 1995 National Behavioral Risk Factor Survey reported that 3.2% of pregnant women were exposing their fetuses to teratogenic doses of alcohol.³

This paper focuses to some degree on the identification and treatment of alcohol and drug addiction disease; however, the primary goal is to help health care professionals recognize and encourage behavioral change in nondependent persons who are drinking and using drugs above recommended levels. The majority of health, family, and social problems related to alcohol and drug use in the United States, as in most countries of the world, occur in this nondependent, high-risk group. For example, most persons involved in fatal alcohol-related motor vehicle accidents are not alcoholic. There is a direct dose-response relationship between alcohol and accidents and injuries in young men. Similar effects have been documented between alcohol and cancer, and alcohol and stroke. Alcohol-related accidents, stroke, and cancer are all directly related to the amount of alcohol consumed. The data illustrate the public health importance of decreasing risky alcohol use in the general population.

Screening for Alcohol Use Disorders

Screening methods for use in clinical settings include (1) direct questioning by a health care professional; (2) self-administered questionnaires completed with pencil and paper or computer; and (3) laboratory tests. Many of these methods have excellent psychometric properties that are comparable to a single measurement of blood pressure as a screening test for hypertension, a fasting blood glucose test to detect diabetes, a mammogram to identify early breast cancer, or a prostate-specific antigen test to detect prostate cancer. The reliability and validity of screening methods to detect alcohol and drug use vary by the method of administration of the test, the clinical setting, and the population of interest.

Consumption questions that focus on frequency, quantity, and binge drinking are widely recommended as initial screening questions for use in clinical settings.^{1,4} These questions, which can be incorporated into routine patient care, are very sensitive and specific for the detection of at-risk and problem drinkers. Two studies suggest that these questions are more sensitive than is the CAGE or the Alcohol Use Disorders Inventory Test (AUDIT) for trying to detect at-risk or problem drinking.^{5,6} While some patients will minimize their alcohol use, especially those who are alcohol-dependent, a number of interview techniques can minimize underreporting. These include asking about alcohol use in the context of other health behaviors, asking direct questions in a nonjudgmental manner, observing nonverbal cues, asking about very heavy drinking days, and checking with a family member. Consumption questions also facilitate determining the level of risk for alcohol-related health effects. For example, young men who drink more than 400 grams (30 standard drinks) of alcohol per week have a five times greater risk of dying from an alcohol-related problem than do young men who drink less than 100 grams per week.⁷

Indirect behavioral questions such as those contained in the CAGE⁸ were developed to detect persons who are alcohol-dependent.^{9,10} Two or more positive responses to the CAGE suggest an alcohol problem that needs to be further assessed. CAGE variants include the T-ACE or TWEAK,^{11,12} which were developed for pregnant women. The T-ACE substitutes a question on tolerance for the question on guilt. The TWEAK adds to the T-ACE a question on blackouts. A recent study by Volk et al.¹³ found important differences in the psychometric properties of the CAGE when it is used with African-American and Mexican-American populations.

Simplicity, low cost, and accuracy are important characteristics of effective screening tools. Numerous researchers have tried to develop one- or two-question alcohol screening tests. The single question, "How often in the past month have you had five or more drinks on one occasion?" was found to have a sensitivity of 62% and a specificity of 92%. This study, by Taj, Devera-Sales, and Vinson,¹⁴ used NIAAA criteria for at-risk drinking and DSM-IV criteria for alcohol dependence or abuse as the standard.

Brown and colleagues¹⁵ found that two questions had a sensitivity of 79% in a large primary care sample. These questions were "In the last year, have you ever drunk or used drugs more than you meant to?" and "Have you felt you wanted or needed to cut down on your drinking or drug use in the last year?" Another pair of questions with high psychometric properties is "Have you had a drink in the past 24 hours?" and "Have you ever had a problem with your drinking?"¹⁶ Cherpitel^{17, 18} developed a four-question alcohol screening questionnaire, the RAPS4 (Rapid Alcohol Problems Screen) for use in emergency department settings.

A number of authors have reported that current alcohol screening tests are less sensitive in women. A review of the alcohol screening literature by Bradley¹⁹ found that the CAGE, AUDIT, Skinner's trauma scale,²⁰ and the MAST (Michigan Alcoholism Screening Test) had poorer psychometric properties in women than in men.

A series of studies have examined the psychometric properties of screening instruments in special settings and with special populations. Saitz⁹ found the CAGE a useful screening test in a Latino population. The CRAFFT alcohol screening test was developed for adolescents. This nine-question test showed strong psychometric properties in a sample of 99 young people between the ages of 14 and 18.²¹ Peters²² developed two new instruments, the Texas Christian University Drug Screening Test and the Simple Screening Instrument, and compared these with six other alcohol screening instruments. All eight instruments had comparable psychometric properties in a sample of 400 adult male prisoners.

A recent study confirmed the utility of the 25-question MAST in general psychiatric settings.²³ Hermansson²⁴ screened 540 employees in the workplace and found the

combined use of the AUDIT, CDT (carbohydrate-deficient transferrin), and GGT (gamma-glutamyl transferase) was the most sensitive method of detecting hazardous drinking. Each of the tests identified a group of hazardous drinkers not recognized by the other two tests. A number of studies have found that physicians are less likely to screen women than men. A study reported by Gentilello²⁵ found that women admitted for trauma had alcohol problem severity scores similar to those of men, and that gender was not a protective factor for alcohol-related trauma. A new instrument called the CUGE was developed to detect hazardous alcohol use in young adults. The “Annoyed” question in the CAGE was replaced by “driving under the influence.” This substitution resulted in a significantly greater sensitivity and area under the curve (ROC analysis) in a sample of 3,564 college students at a Catholic university in Belgium.²⁶

Another screening approach is the self-administered questionnaire. These include the AUDIT,²⁷⁻²⁹ the MAST,³⁰ the SAAST (Self-Administered Alcohol Screening Test),³¹ and instruments that embed alcohol use questions in the context of other health behaviors such as smoking, exercise, and weight (Health Screening Survey).³² The Prime-MD³³ combines alcohol questions in the context of a screening test to detect depression. These pencil-and-paper tests can also be used as an adjunct to questions asked by a clinician or administered by a computer in the waiting room.

Laboratory tests such as the GGT, mean corpuscular volume (MCV), and CDT may be used as screening tests.³⁴ Limitations include cost, low sensitivity in general population samples (under 20%), and false positives.³⁵ The CDT is a new test that is expected to be available in the United States for general clinical care in the next year. While the test has been widely used by American-based life insurance companies to identify heavy drinkers, it has not received Food and Drug Administration approval. The test is very sensitive in men who have been drinking five or more drinks per day for at least 30 days. It is less useful in detecting binge-drinking patterns and in women. It is primarily used in Europe to screen high-risk patients, to detect relapse, and to predict withdrawal risk in surgical patients.

Blood alcohol levels (BALs) can provide unique information in emergency departments and trauma centers, where as many as 30% of patients will have detectable levels of alcohol.^{17,36-38} While BALs may not be as sensitive as direct questions are, a positive BAL is very specific and can be used to predict risk of postoperative alcohol withdrawal. A number of important alcohol–medication interactions (e.g., alcohol and sedatives, opioids, warfarin, and phenytoin) may justify the use of Breathalyzer™ testing in general clinical settings. At the present time, there are no low-cost biological markers with a sensitivity over 20% that can be used for routine alcohol screening.

Recommendations on the Use of Alcohol Screening Questions and Tests

The following recommendations are based on the NIAAA publication *The Physicians' Guide to Helping Patients with Alcohol Problems*.¹

Everyone over the age of 10 should be asked about alcohol use on a routine basis. Patients with alcohol-related medical problems, or those who take medication that may interact with alcohol, should be screened on a more frequent basis than persons at low risk. This recommendation applies to adolescents, men and women, all racial groups, and older adults.

1. The questions should begin by focusing on frequency, quantity, and frequency of binge drinking. Direct questions by a clinician should be asked in the context of routine care. Asking questions about alcohol use along with questions on smoking, safety issues, exercise, nutrition, and sexual activity appears to reduce patient and clinician resistance. The following cut-off levels are based on risk. A positive screen is as follows:
 - a. Men younger than age 21: Any alcohol use is a positive screen. Such use is illegal in most states and potentially harmful to the maturing brain.
 - b. Men age 21–64: More than 2 drinks per day or more than 14 drinks per week; more than 4 drinks per occasion.
 - c. Men age 65 or older: More than 1 drink per day or 7 drinks per week; more than 3 drinks per occasion.
 - d. Women younger than age 21: Any alcohol use is a positive screen.
 - e. Women who are pregnant or are trying to conceive: Any alcohol use is a positive screen.
 - f. Women age 21–64: More than 1 drink per day or more than 7 drinks per week; more than 3 drinks per occasion.
 - g. Women 65 or older: More than 1 drink per day or 7 drinks per week; more than three drinks per occasion.
 - h. Men and women with serious health problems affected by alcohol use (e.g., diabetes, depression, anxiety, and hypertension): Any alcohol use is a positive screen..
 - i. Men and women who take medications that may interact with alcohol: Any alcohol use is a positive screen.
2. If the person is drinking above recommended limits or if the clinician has additional time, clinicians should ask the CAGE questions to screen for alcohol dependence. A positive CAGE is usually defined as two or more positive responses. Clini-

icians may want to use the T-ACE for pregnant women. A positive T-ACE screen includes women who need more than two drinks to feel high or those who have two or more positive responses.

3. The AUDIT is recommended for clinicians and health care systems that want to use a self-administered questionnaire by pencil and paper or computer.³⁹ A positive score is between 6 and 8. The AUDIT is more sensitive at a cut-off of 6, but there will be more false positives. Persons with an AUDIT score of over 15 may be alcohol-dependent. The AUDIT contains three questions on frequency, quantity, and binge drinking; three of the four CAGE questions on control, guilt, and the eye-opener; and four additional questions on blackouts, alcohol-related injury, physician/family advice, and expectation failure.
4. A number of methods are under investigation to find the best and least expensive way to administer an alcohol or drug screening test. These include the use of computers in the clinic waiting room, dental office, or pharmacy. Computers can be used to administer alcohol and drug questions as well as to provide immediate feedback. Some health care systems are including alcohol and drug questions on mailed questionnaires as part of an annual health check. Others are setting up Web-based systems. These alternative methods have many advantages, especially in less traditional settings such as dental offices, student health centers, podiatry offices, optometrist offices, social service agencies, alternative medicine clinics, and pharmacies. These methods are likely to become one of the many ways we are able to regularly screen the U.S. population for alcohol use disorders.
5. Biological markers are useful for special populations. BALs are recommended for all patients receiving care in the emergency department for trauma or injuries. BALs should be conducted as part of the preoperative assessment in high-risk cardiac, orthopedic, and transplant patients. Persons receiving certain medications such as narcotics, benzodiazepines, and antiseizure medications should have their BALs checked. Other markers, such as GGT, MCV, and CDT, are indicated for patients with potential alcohol-related health problems such as hypertension, diabetes, depression, and chronic anxiety, as well as for persons who drink three to four drinks per day. CDT is used in many European countries to monitor patients for relapse.
6. The CAST-6 (Children of Alcoholics Screening Test) can be used to ask children about alcohol problems in their parents. The six-question version has similar psychometric properties as the longer version^{40,41}

Screening for Drug Use and Drug Dependence

There is less information on effective screening tests to detect illicit drug use in general clinical settings than on tests for alcohol. While the evidence is weak, a number of questions and methods are available. Some screen for drug use; others assess for symptoms of abuse or dependence. Screening questions and instruments include those focused on quantity and frequency, the modified CAGE, single screening questions developed for the DIS (Diagnostic Interview Schedule) and other diagnostic schedules, and self-administered screening/assessment questionnaires such as the DAST (Drug Abuse Screening Test). Screening questions should include five drug classes: cannabinoids, cocaine, opioids, amphetamines, and benzodiazepines. Other drugs may be included when screening specific populations. For example, inhalants should be added when interviewing adolescents, hallucinogens for teenagers and young adults, amphetamines for young adults, and anabolic steroids for athletes or persons who are trying to increase muscle mass.

If clinicians have limited time and prefer to inquire about a single drug, marijuana is the drug most frequently reported by patients to physicians. A primary care study of 1,928 patients in Wisconsin found that 19% of patients coming into a primary care clinic reported using an illicit drug five or more times in their lifetime. Of this group, 88% reported using marijuana. Marijuana was also the drug of choice for those who had used an illicit drug in the last 6 months. Twenty-three percent of the drug users reported marijuana use in the last 6 months, and 7% reported cocaine use. Other drugs were reported by less than 1% of the population.² While there was multiple drug use in this sample, it was unusual for polydrug users not to smoke marijuana. This study suggests that clinicians will be able to detect more than 80% of drug users if they limit their initial screening question to marijuana.

Frequency Questions⁴²

“Have you used marijuana (... cocaine, narcotics, sedatives ...) five or more times in your life?” (DIS question)

“Have you used marijuana in the last 6 months?”

Quantity Questions

“How many joints do you smoke in a single day?”

“How many joints did you smoke in the last month?”

“How many lines of cocaine did you snort in the last day (...week, ...month)?”

“On a heavy day, how many bags of heroin do you use?”

“How many times did you shoot up heroin in the last 24 hours?”

Screening Questions to Detect Abuse or Dependence⁴³

“Have you ever felt the need to cut down on your drug use?”

“Do you get annoyed when someone criticizes your drug use?”

“Do you feel guilty about your drug use?”

Urine drug screens are recommended in a number of clinical situations. Patients being treated in the emergency room for trauma, cardiac problems, drug overdose, or behavioral or mental health problems, especially those being admitted, should have a toxicology screen for marijuana, cocaine, narcotics, amphetamines, and sedatives. Many clinical centers conduct toxicology screens as part of routine preoperative assessments. A muscle relaxant such as carisoprodol (Soma) is a common street drug and is metabolized to meprobamate. Patients being given opioid prescriptions should be screened for narcotics and mood-altering drugs prior to the first prescription. One of the best ways a provider can avoid being duped by a patient with an addiction problem is to require a random urine toxicology screen before initiating therapy with mood-altering drugs such as opioids, benzodiazepines, hypnotics, or muscle relaxants. Clinicians may want to talk to the clinical pathologist who is running the referral lab, because the accuracy of these tests varies widely.

Recommendations on the Use of Drug Screening Questions and Tests

1. All patients over the age of 10 should be screened on a regular basis for marijuana use. The rationale for using marijuana as the primary screen is based on its far greater frequency of use. Clinicians should ask questions on frequency and quantity as part of routine care.
2. Other drugs (e.g., cocaine, narcotics, amphetamines, and sedatives) can be added to the screen for high-risk populations or persons who have admitted to marijuana use in the last 6 months.
3. Any illicit drug use is considered a positive screen.
4. Populations at greatest risk for serious medical or social consequences of drug use are adolescents and young adults, pregnant women or women who are trying to become pregnant, college students, and patients with a variety of medical problems.
5. Clinicians may want to ask high-risk patients one or two questions about the use of over-the-counter mood-altering drugs when inquiring about current medications.
6. Clinicians who prefer to use self-administered screening tests embedded in a general health form should consider the CAGE-AID.

Assessment for Alcohol Abuse or Dependence

There is limited information on how to conduct an assessment in a general clinical setting in a patient who has screened positive for a possible alcohol and drug use disorder. While clinicians may want to refer a patient who screens positive to an alcohol and drug treatment specialist for a full assessment, it is important to try to classify patients as low-risk, at-risk, problem, or dependent

drinkers. Falsely labeling someone as a “problem drinker” or “dependent drinker” can have serious adverse effects if such a diagnosis is recorded in the medical record or if an alcohol ICD code such as 305.0 (alcohol abuse) or 303.9 (alcohol dependence) is used for reimbursement. On the other hand, missing someone who is alcohol dependent can delay the diagnosis for many years and result in serious harm to the patient or others.

The Physicians' Guide to Helping Patients with Alcohol Problems' recommends that the alcohol assessment include a brief review of alcohol-related medical problems, symptoms of physical dependence, behavioral effects, and legal or social problems. Examples of alcohol-related medical problems include repeated injuries when drinking, depression or suicide ideation, poorly controlled hypertension or diabetes, hepatic dysfunction, chronic epigastric pain, and blackouts. Symptoms of physical dependence include drinking in the morning to get over a hangover, sweats or shakes if the patient stops drinking, history of alcohol withdrawal, lack of evidence of intoxication with BALs over 100 mg/dL and prolonged periods of intoxication. Social and legal effects may include arrests for drunk driving or disorderly conduct, employment difficulties, and problems maintaining long-term relationships. Behavioral effects include preoccupation with use, inability to control drinking, and loss of interest in hobbies or other activities due to drinking.

A number of self-administered pencil-and-paper assessment instruments can be used to get a better idea of the extent of the alcohol problem and to develop a treatment plan. These include the 25-question MAST,³⁰ the 12-question Alcohol Dependence Scale,⁴⁴ and the 35-question Substance Abuse Assessment Test (SAAST).³¹ These tools can be completed by the patient while the physician works with another patient. Diary cards are another method that may provide more accurate information on recent alcohol use.⁴⁵ Diary cards have also been widely used in brief intervention studies as a self-monitoring method.^{46,47}

Recommendations for an Alcohol Assessment

1. Consider asking a few questions focused on medical, social, family, and physical effects.
2. Ask patients to complete a self-administered assessment test.
3. Perform biological tests to confirm an alcohol problem such as BAL, GGT, MCV, or CDT.
4. Refer to an alcohol specialist for a complete assessment.

Assessment for Drug Abuse or Dependence

Information on how to conduct a drug assessment with patients who screen positive for illicit drug use in a general clinical setting is limited. Clinical guides suggest a drug

abuse assessment could include (1) a urine toxicology test for marijuana, cocaine, amphetamines, narcotics, and sedatives; (2) a physical exam to look for intravenous track marks and nasal perforations or hyperemia; (3) questions on prior attempts to cut down or stop; (4) previous treatment for drug problems; (5) legal problems related to use; (6) social, financial, employment, or family problems related to drug use; (7) continued use despite serious consequences; and (8) evidence of tolerance or drug withdrawal.

Many drugs are not detected by routine toxicology screens. Drugs such as methadone, propoxyphene, and fentanyl may not be detected unless special assays are utilized. Clinicians may want to use a self-administered questionnaire such as the DAST to save time. If providers have limited time or interest, referral to an alcohol and drug specialist for a full drug assessment may be the best option.

Recommendations for a Drug Assessment

1. Perform urine toxicology screen.
2. Ask a few questions about adverse drug effects.
3. Administer a pencil-and-paper assessment test such as the DAST.
4. Refer patient for a full assessment.

Brief Intervention Therapy for Alcohol Use Disorders

Definition and Evidence

Brief interventions are time-limited, patient-centered counseling strategies that focus on changing behavior and increasing medication compliance. Brief intervention is not unique to the treatment of alcohol problems; in fact, this strategy is widely used by physicians and other health care professionals for other behaviors. This method is used to help patients change dietary habits, reduce weight, stop smoking, reduce cholesterol or blood pressure, and take medications as prescribed. The following is a brief review of the evidence. Recent reports in the NIAAA *10th Annual Report to Congress on Alcohol and Health*⁴⁸ and the NIAAA journal *Alcohol Research & Health* provide a more comprehensive review of the subject.⁴⁹

The clinical elements of brief intervention for the prevention and treatment of alcohol problems vary across trials and clinical programs. However, a number of common elements can be identified:

1. Conduct an assessment: *“Tell me about your drinking.” “What do you think about your drinking?” “What does your family or partner think about your drinking?” “Have you had any problems related to your alcohol use?” “Have you ever been concerned about how much you drink?”*

2. Provide direct clear feedback: *“As your doctor/therapist, I am concerned about how much you drink and how it is affecting your health.” “The car accident is a direct result of your alcohol use.”*
3. Establish a treatment contract through negotiation and goal setting: *“You need to reduce your drinking. What do you think about cutting down to three drinks two or three times per week?” “I would like you to use these diary cards to keep track of your drinking over the next two weeks. We will review these at your next visit.”*
4. Apply behavioral modification techniques: *“Here is a list of situations when people drink and sometimes lose control of their drinking. Let’s talk about ways you can avoid these situations.”*
5. Ask patients to review a self-help booklet and to complete diary cards: *“I would like you to review this booklet and bring it with you at your next visit. It would be very helpful if you could complete some of the exercises in the book. I’d also like you to write down how much you drink on these diary cards.”*
6. Set up a continuing care plan for nurse reinforcement phone calls and clinic visits: *“I would like you to schedule a follow-up appointment in 1 month so we can review your diary cards and I can answer any questions you might have. I will also ask one of the nurses to call you in 2 weeks. When is good time to call?”*

There are a number of techniques that clinicians can use to increase the efficacy of brief intervention. Provider empathy and body language are powerful change agents. Creating a safe, protective environment is another key element, especially for women. Developing trust and mutual respect can often lead to risk taking and behavioral change. Creating cognitive dissonance and dealing with a patient’s ambiguity toward change is another effective strategy. Other tools include self-monitoring diary cards, self-help booklets, and reading materials. Many patients respond to stories about persons who have changed their alcohol use. Asking a patient to bring his/her partner or a close family member to the counseling may be helpful.

In studies testing brief intervention, the number and duration of sessions varied by trial and setting. The classic brief intervention is performed by a physician or nurse and usually lasts 5 to 10 minutes and is repeated one to three times over a 6- to 8-week period. Other trials that utilized therapists or psychologists as the interventionist usually had 30- to 60-minute counseling sessions for one to six visits. Trials that utilized therapists as the intervenor made extensive use of motivational interviewing techniques. Some trials developed manuals or scripted workbooks. Others studies left it up to the interventionist to decide how to conduct the intervention based on a training

program. Some studies used the FRAMES mnemonic developed by Miller as a guide for the intervention.⁵⁰

Brief intervention is useful in three clinical situations. First, it can reduce alcohol use and the risk of alcohol-related problems in nondependent drinkers who are consuming alcohol above recommended limits. The goal of brief intervention with this population is to reduce consumption or negative consequences, not abstinence. Second, brief intervention may be used to facilitate medication compliance and abstinence with patients being treated with pharmacological therapies. For example, patients on disulfiram or naltrexone for alcohol dependence or persons on antidepressant medications are more likely to respond and remain on medication with client-centered brief counseling.⁵¹ Noncompliance is a major issue with patients receiving medication for alcohol dependence and comorbid conditions. A NIAAA-funded multisite pharmacotherapy trial, Project COMBINE, is making extensive use of brief intervention protocols to increase medication compliance.

Finally, brief intervention may be used to facilitate the referral of persons who do not respond to brief counseling alone or with patients who are alcohol-dependent. Most patients who are referred for an assessment or counseling by a primary care provider either do not schedule an appointment or fail to keep the scheduled assessment. Brief intervention can greatly facilitate this process and increase the probability that the patient will successfully complete an assessment and enter a treatment program.⁵² The goal of brief advice in this situation is to move patients along the readiness-to-change-scale, from precontemplation to action.⁵³ Dealing with ambivalence, resistance, and patient fears is critical to a successful referral.

The evidence on the efficacy of brief intervention may be summarized as follows:

1. Brief intervention talk therapy, delivered by primary care providers, nurses, therapists, and research staff, can decrease alcohol use for at least one year in nondependent drinkers in primary care clinics, managed care settings, hospitals, and research settings.^{45-48,54-61} In positive trials, reductions in alcohol use varied from 10% to 30% between the experimental and control groups.
2. The effect size for men and women is similar.^{46,47,56,62} A 48-month follow-up study of 205 women ages 18 to 40 who participated in Project TrEAT found sustained reductions in alcohol use.⁵⁹ This study also found significant reductions by women who received brief intervention and became pregnant during the 48-month follow-up period compared with women from the control group who became pregnant. Nonetheless, there is insufficient evidence on the efficacy of brief intervention with pregnant women.⁶³
3. The effect size for persons over the age of 18 is similar for all age groups, including older adults.^{46,47,56,58,60,62,64} One unique difference in older adults is that there appears to be minimal reductions in alcohol use by control groups.⁶⁵
4. Brief intervention can reduce health care utilization.^{46,61,66-68} Fleming's Project TrEAT and Kristenson found reductions in emergency room visits and hospital days. Gentilello found reductions in hospital readmissions for trauma. Israel reported reductions in physician office visits.
5. Brief intervention can reduce alcohol-related harm. A number of studies found a reduction in laboratory tests such as GGT levels,^{62,66,67,69} sick days,^{66,70} drinking and driving,⁶⁴ and accidents and injuries.^{61,68}
6. Brief intervention may reduce health care and societal costs. An analysis of 12-month outcome data for Project TrEAT found a benefit-cost ratio of 5.6 to 1 for health care and societal costs.⁶⁸ Preliminary analysis of the 48-month outcome data for Project TrEAT indicates a benefit-cost ratio of 3.8 to 1 for health care costs and 39 to 1 for societal costs.⁷¹ Cost estimates performed by Holder⁷² using indirect data reported a cost saving of 1.5 to 1. Additional cost studies are in progress by investigators funded by the NIAAA and private foundations.
7. Brief interventions may have a more powerful effect if delivered by the patient's personal physician or provider. While there have been no direct comparisons among types of provider, the strongest trials had the patient's personal physician and nurse deliver the intervention.^{46,47,49,59,62,73,74}
8. Based on a number of trials, the minimum number of brief intervention contacts required to achieve a reduction in alcohol use is three to four. These can include screening and assessment, a 10- to 15-minute counseling session, and a follow-up phone call. The length of the intervention appears less important than is the number of contacts.⁷⁵
9. Over half of the brief intervention trials conducted in the United States and Europe demonstrated minimal differences between control and intervention groups at follow-up. While the lack of effect in many of these studies can be attributed to methodological problems, brief intervention may not work as well in some clinical settings as in others.^{63,76} The majority of the negative trials have not been published.
10. Nontraditional settings such as the workplace, dental offices, adult education centers, social service agencies, and pharmacies offer significant promise for screening and brief intervention. A study conducted in 67 work sites in Australia suggests that employees will participate in alcohol screening and brief intervention if they are incorporated into lifestyle-based interventions.⁷⁷

11. The role of readiness to change in helping hazardous drinkers change their alcohol and drug use is not clear. None of the brief intervention trials reported to date has found a strong relationship between readiness to change and actual changes in alcohol use. Studies with alcohol-dependent patients have been more promising. While the model has a strong research base in other areas, there is limited support in efficacy studies conducted to date in the alcohol and drug field.

Unanswered questions about brief intervention include the following:

1. Does brief intervention work in adolescents, pregnant women, women of childbearing age, African Americans, Latinos, and other population groups?
2. Can brief intervention reduce illicit drug use in dependent or nondependent drug users? If yes, does it work for marijuana, cocaine, and amphetamines?
3. Is it important to assess readiness to change, and does it matter?
4. What is the long-term (i.e., beyond 12 months) efficacy of brief intervention?
5. Does the effect of the intervention diminish with time?
6. Does brief intervention reduce morbidity (e.g., hypertension, depression, diabetes, accidents) and mortality?
7. What are the most effective intervention components (e.g., normative review, contracting, self-help booklets, motivational interview techniques)?
8. Is brief intervention effective when delivered by dentists, pharmacists, and other health care professionals?
9. Can brief intervention be delivered by computer in the clinic waiting room, by telephone, or by Web-based programs?
10. What is the efficacy of brief intervention combined with pharmacotherapy?
11. Does brief intervention work with persons who are alcohol-dependent?
12. Are certain groups of patients more likely than others are to respond to brief intervention treatment?
13. How are screening, brief intervention, and referral best implemented in general health care settings?
14. Should there be a stepped-care approach for the treatment of patients who are adversely affected by alcohol use?
15. Should there be a continuum of care from primary care to specialized treatment for patients who do not respond to brief intervention?

Recommendations for Brief Intervention for an Alcohol Use Disorder

1. All patients who drink above recommended limits of alcohol should receive brief intervention treatment.
2. Patients who are resistant or who fail brief intervention should be referred to an alcohol treatment specialist.
3. Change is a long-term process. Physicians may have to conduct brief intervention multiple times before patients change their behaviors.
4. Brief intervention should be used to increase medication compliance in patients who are receiving pharmacotherapy for alcohol use disorders.

Treatment for Drug Use Disorders

The efficacy of brief intervention for drug use disorders has not been widely tested. It may offer great promise, but there is little evidence to support the use of brief talk therapy in general medical settings with patients who use illicit drugs. Stephens⁷⁸ conducted a trial in the Seattle area with persons smoking marijuana daily and found a reduction in use with brief therapy. Patients were recruited by newspaper advertisements and received counseling and support by a trained therapist. The counseling primarily focused on cognitive behavioral therapy techniques.

Several studies are using a variety of brief counseling methods to facilitate reductions in use or abstinence. A NIDA-funded study conducted by Bernstein⁷⁹ is testing the efficacy of a brief negotiated interview and active referral process for recruiting cocaine- and heroin- abusing patients from a general medical program into a local drug treatment system. In another NIDA-funded study, Svikis⁸⁰ is testing the efficacy of brief intervention in a population of pregnant women who are using illicit substances. The study is comparing usual care with motivational enhancement therapy.

Pharmacotherapy

Patients who do not respond to brief intervention, self-help groups such as Alcoholics Anonymous (AA), or specialized alcohol treatment may benefit from pharmacological management.⁸¹ Disulfiram (Antabuse), naltrexone (ReVia), and calcium acetylhomotaurinate (acamprosate). Serotonin reuptake inhibitors and tricyclic antidepressants may be helpful for patients with alcohol and certain psychotic disorders.⁸²⁻⁸⁵ Medications used to treat opioid dependence include methadone, buprenorphine, and naltrexone. New evidence suggests a role for disulfiram in the treatment of cocaine addiction. Primary drugs used to treat alcohol and drug withdrawal include benzodiazepines, propofol, clonidine, promethazine hydrochloride (Phenergan), and loperamide hydrochloride (Imodium).

The following discussion of medications can help primary care clinicians to treat alcohol use disorders. All of the medications reviewed, with the exception of acamprosate, have FDA approval. Dozens of other medications are currently being tested in animals and humans.

Disulfiram is the medication most commonly used to deter patients from drinking alcohol during recovery. While the efficacy of this medication is variable, it is used throughout the world in tablet and implant form.^{86,87} If patients who are alcohol-dependent take disulfiram daily, it can be an effective deterrent.^{88,89} Disulfiram inhibits several enzyme systems, including aldehyde dehydrogenase (ADH) and dopamine hydroxylase. The normal dose range is 250–500 mg per day; the most common dose is 250 mg per day. Spousal monitoring can significantly increase compliance and reduce rates of relapse.⁹⁰

Recent studies suggest disulfiram may reduce cocaine use in patients on methadone maintenance. The normal dose is 250 mg per day. The length of treatment in the initial studies has been limited to 6 weeks.^{91,92}

Naltrexone is an opioid receptor antagonist that binds primarily to mu-type opioid receptors. It was initially found to reduce alcohol use in laboratory animals. Subsequent randomized controlled trials found reductions in alcohol use and craving in alcohol-dependent persons.^{85,93-95} The drug does not appear to be effective when used without counseling and other standard treatment; for this reason, it is viewed as a treatment adjunct, rather than as a replacement for traditional treatment. The efficacy of naltrexone in nondependent problem drinkers is an area of active research.^{96,97}

The normal dose of naltrexone is 50 mg/day, with a recommended duration of 6 to 12 weeks. The optimum dose has not yet been established, and some clinical trials are using doses of up to 150 mg/day. The most common side effect is nausea (10%), which usually resolves in a few days. Vomiting is uncommon. Naltrexone appears to cause reversible elevations in GGT levels at high doses (200 mg/day). Idiosyncratic reactions include fatigue, dizziness, restlessness, and insomnia. In an open-label trial with 530 subjects, 5% developed symptoms similar to those of narcotic withdrawal, including abdominal cramps, joint pain, myalgia, and nasal stuffiness. It is important to inform patients of the interaction between naltrexone and narcotics.

Naltrexone is also widely used for patients who are addicted to opioids. The normal dose is 25 mg per day for 1 to 2 years. Patients must be abstinent for at least 30 days before initiating this medication. Naltrexone is often used with recovering health care professionals who are participating in monitoring programs to minimize relapse. Liver function tests should be ordered every three months.

Calcium acetylhomotaurinate (acamprosate) is an orally available, nonmetabolized, modified amino acid that

is not protein-bound.⁹⁸ It has a relative specificity for brain NMDA and GABA receptors, which themselves are involved in learning and anxiety relief.⁹⁹ Alcohol has activity at NMDA receptors.^{100,101} Acamprosate appears to act at glutamate receptors as a competitive antagonist and to decrease craving in alcohol-dependent persons. Eleven controlled trials have been conducted in Europe. Ten of these trials demonstrated that acamprosate was superior to placebo when the medication was combined with psychosocial treatment.¹⁰²⁻¹⁰⁴ These trials used doses of up to 2000 mg per day for periods of up to one year. There was only one major side effect—diarrhea in 10% of the cases. Unfortunately, small sample size, 40% to 60% loss-to-follow-up rates, and noncompliance with treatment compromised the scientific strength of these trials. A number of U.S. trials are ongoing.

Animal studies have found lower concentrations of serotonin and its metabolites (5-HIAA) in the cerebrospinal fluid in alcohol-dependent persons.¹⁰⁵ As a result, researchers have proposed a number of methods to increase the amount and activity of serotonin in the brain. L-tryptophan, the amino acid precursor to serotonin, appears to have some effect in laboratory animals and may directly increase concentrations of serotonin. The serotonin receptor agonist bupirone has reduced alcohol use in small studies.¹⁰⁶

The use of serotonin reuptake inhibitors to reduce craving is being studied by pharmaceutical companies.¹⁰⁷ Serotonin reuptake inhibitors (e.g., fluoxetine [Prozac]) appear to enhance serotonin activity in the central nervous system. These drugs have been traditionally used to treat depression, panic attacks, lack of self-esteem, and obsessive-compulsive disorders. A number of small clinical trials with zimelidine, citalopram, viqualine, and fluoxetine suggest a modest treatment effect in reducing alcohol use in both heavy drinkers and alcoholics.¹⁰⁸⁻¹¹⁰ The effect size ranges from 10% to 26%; however, a number of serious design problems make it difficult to interpret the results. Common serotonin reuptake inhibitors such as fluoxetine and sertraline (Zoloft) are not recommended for alcohol abuse until more compelling evidence is presented.

Methadone maintenance is the primary treatment for opioid dependence. Patients are often treated with 80 to 100 mg per day, given as a single dose under direct observation. Studies have demonstrated long-term efficacy and reduced societal costs. There is an effort in the U.S. to allow primary care providers to prescribe methadone for addiction, with methadone being dispensed daily at local pharmacies.

Buprenorphine is also being used for the treatment of opioid dependence. It is available as a liquid or given sublingually or as a tablet, with or without naloxone, which is not orally absorbed, which discourages parenteral use and diversion. Subcutaneously administered buprenorphine is also used for opioid detoxification.

In summary, a number of medications are available for the pharmacological treatment of alcohol and drug problems; however, the field is at the point of mental health treatment in the 1970s. We have one or two medications that are very expensive and that have limited efficacy. We need additional medications with stronger effect than those currently available. Combinations of medications need to be tested. There has been limited research with non-treatment-seeking patients conducted in primary care settings with medication administration by the patient's physician. The development of effective medications will have important effects on physician behavior. As with depression and many other problems, the development of effective drug treatment dramatically changes the rates of screening, referral, and treatment by front-line clinicians.

Recommendations for Pharmacotherapy for Alcohol and Drug Problems in General Clinical Settings

Alcohol

- 250 mg per day of disulfiram may reduce alcohol use by patients who participate in daily observed therapy.
- 50–100 mg per day of naltrexone may decrease craving and reduce rates of heavy drinking and relapse when used in combination with counseling for up to 12 weeks.
- Selective serotonin reuptake inhibitors may reduce alcohol use by persons who are alcohol-dependent and depressed for 3–6 months.
- 2–3 grams per day of acamprosate can reduce craving and alcohol use by persons who are alcohol dependent, when combined with counseling.
- Benzodiazepines are the drugs of choice for alcohol detoxification.

Drugs

- Methadone maintenance treatment reduces opioid use by persons who are opioid-dependent. The average dose is 80–100 mg per day for 2 to 5 years. The use of methadone for addiction treatment requires a special license. Some States license primary care physicians to prescribe methadone for addiction.)
- Naltrexone 25 mg per day facilitates opioid abstinence in patients being closely monitored for opioid dependence.
- Disulfiram may reduce cocaine use in persons with cocaine dependence on methadone maintenance.
- 100–300 mg of subcutaneous buprenorphine every 4 to 6 hours for 3 to 5 days or decreasing doses of oral methadone over 10 to 21 days is the preferred method for opioid detoxification.

Implementation Strategies

Implementing screening and brief intervention for the prevention and treatment of SUD in the U.S. health care system will not be an easy task. Experience with many other medical issues like hypertension, hypercholesterolemia, depression, cancer, and tobacco cessation suggests a time lag of at least 20 years between the development of effective treatment methods and changes in standards of care. This section summarizes the more promising types of brief interventions.

Clinicians need to become more comfortable with alcohol screening questions, brief intervention techniques, and motivational interviewing. They need to say the appropriate words; they also need to learn to focus as much on what patients don't say (nonverbal cues) as what they do say. Role playing with colleagues or recovering persons and the use of standardized patients (persons trained to play a specific role) are effective strategies to teach health care professionals how to screen patients for alcohol problems. Role playing can be conducted with large groups using a paired technique (workshop participants turn to the person next to them) or small-group sessions.

Use of Opinion Leaders

Opinion leaders are colleagues who are trusted sources of clinical information. These leaders can be local, State, or national experts. Often they are trained in the same specialty as the health care professionals to whom they are speaking. Presentation of new information involving changes in clinical practice can be very effective when done by a trusted colleague. This is of special importance in the alcohol field, where societal and system barriers block the incorporation of alcohol screening into routine clinical care.

One of the most promising developments in the alcohol field is the expanding number of faculty in primary care, obstetrics, emergency medicine, and surgery who are teaching their colleagues how to prevent and treat alcohol problems. A recent study identified over 1,000 faculty across seven clinical specialties who teach medical students and residents about this area.¹¹⁴ These faculty are serving as role models within academic medical centers. While this group is not sufficient to change the U.S. health care system, it can begin to change practice norms and standards of care so that all physicians and residents will be encouraged to obtain an alcohol history on all patients and provide effective treatment and referral.

Performance Feedback and Comparisons with Peers

Changing provider behavior is not an easy process, but feedback is one of the most powerful change methods available, especially when a physician perceives a need to change. Examples of effective feedback include (1) conducting confidential performance reviews based on

medical record audits; (2) providing written feedback from quality assurance committees; and (3) giving feedback derived from patient satisfaction questionnaires. Peer-review feedback and “report cards” are other methods utilized by managed care organizations to modify and change physician behavior.¹¹⁵

According to Greco,¹¹⁶ feedback includes various ways of giving health care providers information about their practice performance and/or patient outcomes compared with those of other providers. Feedback can be used to introduce a new procedure or it can be part of a quality assurance system. Eisenberg¹¹⁷ suggest that feedback “plays on the provider’s sense of achievement and desire to excel.” Through more than 30 years of research, Bowers¹¹⁸ has shown that organizational change can be greatly facilitated when data about systems functioning are collected, fed back to members, and used to provide opportunities for diagnosis and action.

Schwartz¹¹⁹ described some of the ways in which feedback can be given. These include impersonal means, such as computer profiles or reports, or personal interactions such as peer-review groups or committees. Feedback is most effective in changing behavior when it is provided in a timely fashion, provided relative to peers, and combined with education and either incentives or administrative changes

Health maintenance organizations (HMOs) increasingly have begun to use provider report cards or provider profiles on specific diseases to assess provider performance. A recent study on the use of report cards to assess the care of patients with diabetes suggests that HMOs need to interpret these data cautiously.¹¹⁵ The study found that the report cards were often based on fewer than five patients. Less than 4% of the variance in hospitalization rates, number of outpatient visits, and blood sugar control could be explained by report card differences among providers. They estimate it would take 50 to 100 diabetics to detect meaningful differences among physicians. However, since most full-time primary care providers can expect to have 100 to 150 patients with an alcohol use disorder, provider report cards may be an effective feedback strategy. To the best of the author’s knowledge, HMOs have not used this strategy to increase rates of alcohol screening and treatment.

Feedback may be an especially powerful tool in the alcohol field, where rates of alcohol screening and treatment in primary care settings are low and the clinical consequences are high. For example, it is difficult for surgeons and anesthesiologists to justify not including alcohol screening as part of routine preoperative care when delirium tremens can and does develop during the postoperative period. Alcohol withdrawal can severely compromise a patient’s recovery from surgical procedures. Similar

consequences occur in trauma units and coronary care units when patients are not carefully screened for alcohol problems. Patients who have alcohol or drug problems and also have hypertension, depression, and anxiety are other examples of those requiring identification and appropriate treatment.

Implementation of Clinic-Based Systems

Clinic-based systems designed to facilitate prevention and treatment can include (1) routine screening procedures such as self-administered health history forms; (2) manual or computerized patient- or provider-reminder systems; and (3) standardized prevention messages using protocol-driven treatment methods. Effective clinic-based systems acknowledge the complexity of implementing new clinical activities into a busy practice and the need to systematize the activity as part of routine clinical care.

A clinic-based system requires the participation of all members of the clinic staff. Reminder letters can be mailed to patients who have not participated in a prevention activity within a specified time limit (e.g., Pap test every 3 years).¹²⁰ Clinic receptionists can hand out alcohol screening questionnaires to patients and attach reminder print-outs to their charts. Nursing assistants can score the questionnaires and follow protocols designed to manage positive and negative responses. Medical record clerks record the information in the chart and in databases. Primary providers use the data for clinical decision making. In many practices, screening for high blood pressure, cancer, elevated cholesterol, and tobacco use have become a routine element of care.

The effectiveness of clinic-based systems has been an active area of research since the early 1980s. A number of studies have been supported by the National Institutes of Health, the Agency for Healthcare Research and Quality, and private foundations. Kottke¹²¹ conducted a physicians’ office-based organizational intervention designed to establish a smoking-cessation program. The project included the use of screening, chart labels (color-coded stickers placed on the outside of the chart to indicate smoking status), brief intervention messages, a manual reminder system, and follow-up phone calls by clinic nurses. They reported smoking-cessation rates greater than 20% at 1 year.

A study was conducted in Sweden to increase alcohol screening and brief intervention in four primary care health centers.¹²² The research team worked with staff and providers in each of the clinics to develop protocols specific for that clinic. General practitioners reported increases in early detection and intervention after the program. The author concluded that office-based interventions should include educational programs, supervision and feedback, and clinical examples of successful outcomes.

Academic Detailing and Office-Based Outreach Interventions

“Academic detailing” refers to a clinic- or hospital-based educational activity focused on individual practitioners. This intervention usually involves educational or skills programs that are conducted at the provider’s office or at a hospital. The intervention may include (1) short didactic presentations; (2) skills training using role playing; (3) performance feedback; and (4) strategies on how to overcome staff resistance. Pharmaceutical companies have used this method successfully to market new medications.

Two recent studies compared academic detailing with other methods. Both were part of the Phase IV World Health Organization (WHO)-sponsored alcohol intervention program.¹²³ One study, conducted in Denmark, tested the effectiveness of academic detailing, telephone contact, and direct mailing to convince physicians to undertake screening and brief intervention for problem drinking.¹²⁴ One hundred forty-three general practitioners were randomized to one of the three conditions. Academic detailing was found to be significantly more effective than were the other two interventions in convincing physicians to read educational materials and to utilize them in their practices. A second study, conducted in Australia, compared academic detailing, telemarketing, and direct mailing in a sample of 628 family physicians.¹²⁵ Academic detailing was found to be twice as effective as were the other strategies in convincing physicians to utilize the alcohol screening and brief intervention protocols and to participate in a 3-month follow-up medical record review. Telemarketing was the least expensive method.

Incentives

Studies suggest that incentives can change clinician behavior. These incentives can be based on a variety of positive and negative indicators such as the number of patients immunized, the frequency of screening for a selected health problem (e.g., mammography for women over the age of 50), the number of prescriptions written for selected medications (e.g., expensive antibiotics), the number of patients referred to specialty care, or the number of patients hospitalized. Positive financial incentives can include bonuses, higher base salaries, or increases in HMO capitation payments. Negative financial incentives are less common but are being used in some health care systems. No reports were identified in the alcohol literature on the use of incentives to change provider behavior.

Clinical Guidelines

Evidence-based clinical guidelines have been developed for a variety of health behaviors and diseases, including the prevention and treatment of tobacco use, heart disease, diabetes, back pain, breast cancer, prostate cancer, alcohol use disorders, and dozens of other topics.¹²⁶ Clinical guidelines for the alcohol field have been developed by the NIAAA

(*The Physicians’ Guide to Helping Patients with Alcohol Problems*),¹ the Center for Substance Abuse Treatment,¹²⁷ and the Agency for Healthcare Research and Quality.¹²⁸

Cabana¹²⁹ reviewed 76 published reports that described at least one barrier to adherence to clinical practice guidelines, clinical policies, or national consensus panel reports. The studies reported a total of 293 potential barriers clustered into the following categories: (1) not aware that a guideline had been developed; (2) lack of detailed knowledge about the guideline; (3) disagreement among providers on the efficacy or safety of the guideline; (4) self-doubt about having the skills or knowledge to implement the guideline; (5) outcome expectancy and belief that patients will not improve; (6) lack of interest in changing clinical practice; and (7) belief that the guideline is too complex, impractical, or costly. This study offers a number of testable hypotheses that are applicable to the alcohol field and emphasizes the importance of attitudes, self-efficacy, and beliefs in clinical care.

Quality Improvement

Quality improvement (QI) programs offer a range of research opportunities to change provider behavior in the alcohol area. QI programs utilize a variety of assessment methods and intervention strategies in order to improve processes of care, outcomes, and efficiency of complex systems of health care. Interventions include educational programs; development of task forces consisting of clinic personnel to develop goals, clinical guidelines, and implementation strategies; clinic-based reminder systems and screening methods; incentives; academic detailing; and addition of clinical staff. QI programs are often specific to a particular clinical system or community. One of the strengths of this strategy is the potential involvement of the whole system of care—from receptionist to provider to administrative leaders to financial officers of the organization.

A recent QI study designed to improve the outcomes of patients with depression found significant improvements in the number of patients receiving appropriate doses of antidepressants and counseling.¹³⁰ The intervention consisted of systematic screening, provider education using standardized treatment protocols, and nurse follow-up to monitor compliance and provide supportive care. This study also noted increased rates of employment. A second QI study, which did not supply additional providers to implement and support the treatment protocols, found minimal changes in rates of depression, compliance with medication, and employment status.¹³¹ These two studies suggest that office-based QI programs can be effective if additional resources are provided for direct patient care activities. A number of other studies have documented the challenges of implementing QI programs in clinical settings. The effectiveness of utilizing QI methods focused on the prevention and treatment of alcohol problems has not been tested in primary care settings.

Policy and Systems Issues

Implementing alcohol screening, brief intervention, motivational interviewing, pharmacotherapy, and referral protocols is best approached as a systems issue. Clinical services and the providers who deliver them need to be linked in terms of both location and reimbursement. Health care settings are complex systems with multiple competing agendas. Implementation strategies include convincing purchasers (e.g., employers and government agencies) and payers (e.g., insurance companies and HMOs) to provide financial support and leadership. Both purchasers of health insurance and providers need to be convinced that the prevention and treatment of alcohol problems will improve the health of their populations and reduce health care and social costs. Professional organizations need to take a more active role in working with payers and providers to allocate a level of resources that matches the impact of substance abuse on the health care industry and the health of the American people.

Consideration of the clinic delivery system is crucial. Clinical settings encompass a wide range of clinical tasks and prevention activities. These range from performing routine physicals (e.g., sports, well-woman, insurance), treating acute medical problems (e.g., trauma, infections, anxiety, headaches), managing chronic conditions (e.g., depression, hypertension, diabetes), and conducting prevention programs (e.g., breast cancer screening, nutrition and diet counseling, immunizations). In order to implement and maintain prevention and treatment protocols, the procedures must be incorporated into routine clinical care.

Another important component of a clinic-based system is the integration of specialized treatment with the general medical care system. Substance abuse treatment has historically occurred outside the traditional medical care system. Many alcohol treatment programs are self-standing community-based programs. A lack of communication between these specialized alcohol or drug treatment programs and the client's primary care physicians and nurses can have a serious adverse effect on a patient's long-term sobriety. Unlike other specialty referral systems (e.g., medical and surgical specialty clinics), alcohol and drug programs do not routinely send electronic or mailed copies of the assessment, treatment plans, or discharge summaries to the client's primary health care providers. Alcohol and drug specialists do not routinely call the client's physician or therapist to coordinate and develop long-term treatment plans. Clinicians and therapists could also increase communication by sending referral letters to alcohol treatment programs. Studies are needed to test the effectiveness of improving links between primary care providers and alcohol and drug specialists.

One way to facilitate an integrated treatment process and to increase communication is to locate alcohol treatment programs in close proximity and to "carve in" alcohol specialty services as opposed to "carving out" systems of behavioral care. Physicians are more likely to refer clients to

a trusted colleague whose office is down the hall than to a stranger located many miles away in a different system of care. It is also easier for clients to accept and follow through with an in-house referral. Concerns about sharing confidential information between physicians and alcohol counselors can be handled through informed consent procedures that ask clients to sign medical release forms. Clinicians and alcohol/drug specialists need to be part of the same medical staff and care team. Clients need their treatment providers to communicate and work together to provide coordinated comprehensive care.

Leadership Issues Within Universities and Academic Medical Centers

A recent study performed by the Center on Addiction and Substance Abuse (CASA) at Columbia University and the University of Chicago Survey Lab found that physician performance in the alcohol and drug area is below acceptable standards of practice.¹³² While health care professional schools, residency programs, faculty development programs, and continuing education programs are beginning to develop educational programs focused on the prevention and treatment of SUD,¹³³ the effect of these programs on clinical practice appears minimal.

One of the primary problems in addressing this deficiency is the lack of faculty expertise and leadership in our universities and academic medical centers. Simply adding educational programs is unlikely to have a significant effect on clinical practice, in the absence of a commitment from chancellors and university presidents, deans of schools of medicine, nursing, dentistry, and social science; university hospital chief executive officers; and administrative directors of academic practices. Every clinical department, including surgery, emergency medicine, anesthesiology, obstetrics and gynecology, and psychiatry, as well the primary care specialties, needs at least one faculty member with clinical and teaching expertise in the alcohol and drug area. Every academic medical center needs 8 to 10 physician faculty who view the prevention and treatment of SUD as an essential part of their jobs. This is the minimal critical mass necessary to change the system.

Leadership and a core group of faculty can increase curriculum time and teaching programs and, more important, can change standards of care in academic medical centers. They can ensure that every patient is screened for alcohol and drug problems, just as every patient coming into an academic hospital or clinic has a blood pressure measurement taken. They can provide direct feedback to physicians whose patients go into delirium tremens following routine surgical procedures or whose trauma patients with positive BALs do not receive appropriate referral to an alcohol treatment program. They can provide leadership on university campuses to deal with the college student drinking epidemic.

Facts That May Facilitate Provider- and System-Level Behavioral Change

The following list enumerates reasons why providers, payers, and payees should support the implementation of systematic screening for SUD in all persons over age 10. Attention to these issues is critical for providing quality care.

1. Numerous alcohol–medication interactions result in patient morbidity and mortality. These interactions include altered blood levels of medications that are metabolized by the cytochrome P450 system, such as warfarin and phenytoin. Alcohol in combination with sedative drugs such as Valium, Fiorinal, Soma, and Flexeril is associated with falls, injuries, motor vehicle accidents, suicide attempts, and respiratory depression. There is also the additive hepatotoxicity of alcohol and medications such as isoniazid. All patients receiving a medication that interacts with alcohol need to be screened and assessed for alcohol use. Pharmacists can play a critical role in the prevention of these interactions.
2. Alcohol can seriously affect treatment for a number of chronic medical and mental health problems, including hypertension, diabetes, heart disease, cancer, arthritis, chronic pain syndromes, depression, anxiety, asthma, cognitive problems in older adults, hyperlipidemia, and dental problems. Heavy alcohol use in the presence of these chronic disorders often results in less effective pharmacotherapy, medication and behavioral change compliance issues, and direct toxic effects of alcohol.
3. Patients who experience delirium tremens following an elective surgical procedure (e.g., hip or knee replacement or cardiac bypass) have received poor medical care. All patients should be screened and detoxified prior to elective surgical procedures. This is a serious liability issue that is beginning to reach the courts. Alcohol and drug screening needs to be an essential element of the preoperative evaluation. In addition, serving patients beer and other alcohol in the hospital to prevent withdrawal is not an acceptable standard of care.
4. Expensive medications are being used to treat the wrong medical problems. Prilosec, Prozac, antihypertensives, and diabetic medications are often prescribed for conditions that are caused or exacerbated by alcohol abuse. These conditions include chronic gastritis, depression, hypertension, and diabetes. Medication costs could be reduced if alcohol disorders were identified and treated as the primary problem.
5. Costs due to alcohol-related accidents and injuries are escalating, especially if patients require hospitalization and emergency surgery. Among patients admitted for trauma, 30% to 40% have positive blood alcohol levels, suggesting that alcohol played a role in many of these events. Gentilello⁶¹ found reductions in hospital readmissions for trauma if patients are identified and

treated with brief therapy. Data from Project TrEAT suggest that for every \$10,000 a health care system invests in conducting systematic alcohol screening and brief intervention, the health care organization will save \$43,000 in utilization costs.⁶⁷ The cost savings are from fewer emergency department visits, hospital days, and serious accidents.

6. Young children who present to their providers with headaches, chronic stomach pain, fatigue, or vague complaints of “just not feeling well” or who are exhibiting behavioral problems at home and school may have a heavy-drinking parent as an underlying problem. Ordering expensive tests and telling the child and parent that “everything is fine” is poor medical practice. Routine screening for parental alcohol abuse may facilitate early intervention and help these children to avoid future problems such as adolescent suicide attempts, drug use, or early sexual activity.
7. Fetal alcohol exposure is very common. A 1995 Centers for Disease Control and Prevention survey found that 3.2% of all pregnant women drank two or more drinks per day or reported binge drinking early in their pregnancy. This suggests that of the 4 million children born in 1995, 140,000 were exposed to potentially teratogenic doses of alcohol. Identification and treatment of all women of childbearing age who use alcohol above recommended levels before they become pregnant is critical. The focus on “cocaine babies” is misplaced; there is limited scientific research to confirm that this syndrome is distinct from the nicotine, alcohol, and other drug problems seen in these infants.
8. Confidentiality and protection of a patient’s insurability is a major concern for providers and patients and is often a barrier to routine screening and diagnosis. A recent study reported by Rivara³⁴ surveyed insurance commissioners in all 50 States and assessed current State and Federal laws. The study found that current confidentiality laws offer sufficient protection for patients who suffer alcohol-related injuries.

Recommendations for Improving Group Education Programs (Continuing Education)

Recommended group training strategies for promoting substance abuse screening and intervention include (1) educational programs at the providers’ workplaces; (2) use of step-by-step, evidence-based clinical protocols; (3) peer group discussion; (4) skills-based role-playing; and (5) use of a credible expert trainer/educator. Educational programs are more effective when used in combination with other intervention strategies such as peer feedback and changes in workplace systems.¹¹¹

Attempts to modify provider behavior should be evidence based. Davis^{111,112} surveyed the physician perfor-

mance literature from 1975 to 1998 and found 224 intervention studies, 113 of which were randomized clinical trials involving practicing physicians. Seventy percent of these interventions reported changes in physician performance, and 48% reported positive health outcomes. Formal courses using lectures and handouts had limited impact. Educational programs including peer discussion and skills practice sessions were more effective than were programs limited to lectures. The most effective strategies included physician reminder checklists, patient-mediated interventions, outreach visits, academic detailing, and use of opinion leaders.

One of the first studies of the effectiveness of training, support, and systems for the implementation of alcohol screening was reported by Kaner.¹¹³ The study randomly assigned 128 general practitioners to one of three conditions. Group A received a brochure in the mail containing recommended methods for screening and brief intervention. Group B received a training program based on the

same clinical protocols mailed to Group A. Group C received training as well as on-site and telephone support. The physicians in Group C had significantly increased rates of screening and treatment compared with the other two groups. The cost of the program was about \$16 per patient.

Summary

Health care settings offer an important opportunity to reduce the burden of harm associated with SUD. This paper provides health care professionals with a range of clinical protocols and implementation methods that can improve the care of patients and their families who are affected by these disorders. It is time for health care professionals to change the system. It is time for university presidents, chancellors, and deans to take responsibility for a problem too long neglected. Through education and united efforts, we can effect changes that will improve the health of our patients and communities.

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Is Addiction an Illness—Can It Be Treated?

A. THOMAS MCLELLAN, PHD

Introduction

Problems of alcohol and drug dependence produce dramatic costs to society in terms of lost productivity, social disorder, and health care utilization.^{1,2} One recent study estimated that alcohol abuse and dependence cost society approximately \$90 billion annually, and that abuse of other drugs cost approximately \$67 billion each year.³ A recent study funded by the Robert Wood Johnson Foundation reported that more than one-quarter of all deaths in this country were associated in some way with alcohol, drug, or tobacco use.⁴ Perhaps more subtle, but no less significant, is the fact that more than three-fourths of all foster children in this country are the products of alcohol- or drug-dependent parents.⁵ In response to this threat to the general welfare, there has been renewed interest in the development and expansion of treatment programs. Yet, while some segments of the public are demanding greater availability of and more funding for substance dependence treatments, there are those in government, insurance, managed care, and the public who question the efficacy of these treatments, and whether they are “worth it.”⁶ As recently as 1997, *The Wall Street Journal* questioned the effectiveness and value of substance abuse treatment, saying “the success rate of treatment programs is highly uncertain.”⁷

The negative opinions about the value of substance abuse treatment appear to relate to core public perceptions about addiction and about what would be an “effective” addiction intervention. The first perception is that drug addiction is primarily a social problem requiring a social-judicial remedy, rather than a health problem requiring prevention and treatment. This perception is understandable, given the relative prominence of the social problems caused by drug and alcohol abuse. Crime, family disruption, loss of economic productivity, and social decay are the most observable, dangerous, and expensive effects of drugs on the social systems of our country. Thus, it is not surprising that many legislators and public citizens alike expect law enforcement and interdiction efforts instead of public health efforts to correct the “drug problem.”

There also is widespread skepticism about the advisability, effectiveness, and value of treatments for addiction. For example, many individuals believe that a medical or treatment-oriented approach to substance abuse conveys uncomfortable implicit messages. Some believe that to call addiction an “illness” suggests that the addicted person is responsible neither for the addiction nor for the addiction-related problems—that such persons “can’t help themselves.” Many people find such messages offensive and unfair. There is also the pervasive view that treatments are designed to help the drug user, but not to help society. Why should society expend public resources to help individuals who may have produced many social problems? Finally, many in the public do not believe that treatment works. They do not believe that any treatment can get addicted persons “off drugs and alcohol” and keep them off.

This view is apparently shared by many physicians. Few medical schools have adequate required courses in addiction. Studies over three decades have shown that a majority of physicians do not screen for signs of alcohol or drug dependence during routine examinations.^{8,9} Apparently, there is the feeling that such screening efforts are wasted, given that in a 1997 survey a majority of general practice physicians and nurses indicated that none of the currently available medical or health care interventions would be appropriate or effective in treating addiction.¹⁰

Many persons who have received treatment have indeed returned to alcohol and drug use. The “failure” of substance abuse treatments to reliably produce longstanding abstinence is seen as confirming the suspicions about treatment held by many Americans. Interventions that admittedly cannot cure the addiction and that may be seen as focusing only on helping an addicted individual—at great cost to society—are not widely popular.

But are these perceptions true? Is there a role for addiction treatment in public policy aimed at reducing demand for drugs and reducing the social harms and costs associated with drug abuse? And, if treatments were considered a wise public investment, which ones—behavioral interventions, medications, or combinations thereof—should be provided? Finally, is there evidence that these addiction treatments can be effective and valuable, not just to the patient but to the society that would be expected to support those treatments?

This chapter considers these questions from several perspectives. It begins by exploring whether there is evidence to suggest that addiction could be an illness. Questions include the following:

- Is it possible to reliably diagnose “dependence” or “addiction” and to differentiate it from simple “drug use”?
- Is there a predictable onset and course to the addictive disorders? Is there evidence for genetic heritability in the susceptibility to addictive disorders?
- Are there brain and physiological changes associated with the progression from drug use to addiction, and, if so, how long do these changes last?

It is important to acknowledge that even substantial evidence in these areas will not prove that addiction is an illness. Such evidence will only suggest that the onset, course, and presentation parameters seen in addiction are similar to those seen in other diseases. Moreover, even if we were able to prove that addiction were an illness, it is an entirely separate question whether currently available medical interventions would be effective in addressing addiction problems.

Next, this paper examines the evidence base for recently developed medications and medically oriented behavioral interventions. It explores whether there is evidence that medically oriented treatments for addiction could be effective and valuable to a society, and whether incarceration and other forms of criminal justice interventions could be effectively combined with treatments.

The next major section of the paper reviews the research on specific treatment processes and treatment components. This review covers the past 15 years and includes only data from clinical trials, treatment matching program studies, and health services studies in which the patients were adults who were clearly alcohol- or drug-dependent (tobacco was not included as a drug) by contemporary criteria, where the treatment provided was a conventional form of rehabilitation (any setting or modality), and where there were measures of treatment processes and post-treatment outcome.

The final section discusses why addiction treatment is apparently not as effective as are treatments for other medical disorders. To inform and frame this discussion, addiction treatments are compared with treatments for three well-studied chronic medical illnesses—adult-onset hypertension, diabetes, and asthma. The examination of this issue leads to important conclusions regarding how addiction treatment is conceptualized by the public, how it is typically provided by treatment programs, and how it has been evaluated by researchers. Suggestions are made concerning how addiction might be treated, insured, and evaluated if it were considered a chronic illness.

Is Addiction an Illness? How Could You Know?

There has been much debate regarding the inappropriate “medicalization” of various conditions and problems.¹¹ The public has grown skeptical of new syndromes and conditions that do not appear to conform to common-sense diagnostic criteria for true medical illnesses and of conditions that have no known treatments. For example, a recent *New York Times* editorial suggests that to consider cigarette smoking a medical disorder “shifts responsibility away from the individual, . . . helps doctors profit, and has . . . little to do with improving the public health.”¹² Many believe that medicalization of addiction is simply a way for physicians to declare more territory under their jurisdiction. Much of this skepticism is understandable, given that the word “addiction” has been applied to sex, gambling, work, and even chocolate. In view of this background, it is reasonable to ask how any “condition” comes to be considered a “medical illness.”¹² In this paper, we have tried to apply the same standards and methods that are currently used in the study of the etiology, diagnosis, and course of other disorders (e.g., diabetes, asthma, hypertension) to the study of drug dependence.

Advances in Diagnosing Drug Dependence

The first question a physician might ask to determine if a presenting condition is actually a medical disorder is whether that condition can be reliably differentiated from a nonpathologic state. This contrast has not always been clear in the area of alcohol and drug dependence, partly because most adults have used alcohol or other drugs during their lives, sometimes to the point of abuse but rarely to the point where it could reasonably be called an illness.

Compounding this difficulty has been the lack of a laboratory test for dependence, or even of standardized definitions for the words “addiction” and “dependence.” The vagueness of these terms meant that diagnoses were often unreliable across different practitioners or different parts of the country. This situation has changed dramatically as a result of the concept of the dependence syndrome formulated by Edwards and Gross¹³ and translated operationally through the *Diagnostic and Statistical Manual of Mental Disorders* (DSM).¹⁴ In the fourth and current edition of the DSM, dependence is defined as “a pathologic condition that is manifested by a “compulsive desire for the drug (or drugs) despite serious adverse consequences.”¹⁴

There are seven specific criteria that a practitioner must consider in making a DSM diagnosis of dependence, and three or more of these criteria must be satisfied for a valid diagnosis of dependence. Two of these criteria, tolerance and withdrawal, are considered evidence of neurological and behavioral adaptation to a drug. Tolerance is operationalized in the criteria through evidence that “greater quantities must be used to produce the same

effect.”¹⁴ Withdrawal is evidenced by physical signs indicating “a syndrome of unpleasant and often dangerous health condition developing hours to days following the cessation of the drug use.”¹⁴ While tolerance and withdrawal have been cardinal features of drugs such as nicotine, alcohol, opioids, benzodiazepines, and barbiturates for many years, there has been recent evidence for tolerance and withdrawal associated with tetrahydrocannabinol (THC), the most prominent active ingredient in marijuana.^{15,16}

Additional DSM criteria inquire about whether a patient has “reduced or eliminated previously pleasurable activities in order to concentrate on obtaining the substance” and whether the patient has “used the substance instead of or while performing important responsibilities or functions.”¹⁴ Answers to these seven diagnostic questions have been found to be more sensitive and specific than are many laboratory tests used in diagnosing other illnesses such as prostate and breast cancers.¹⁷

Genetic Factors in Substance Abuse

While many diseases (e.g., tuberculosis) are not genetically transmitted and many heritable traits are not diseases (e.g., eye color), genetic transmission is one of the many criteria that a physician might use to decide whether a presenting condition is a medical illness. Rounsaville and colleagues^{18,19} used standard diagnostic criteria to examine rates of alcoholism and drug dependence in the general population and among family members of diagnosed alcohol- and drug-dependent individuals. They found prevalence rates of approximately 11% for alcoholism and 6% for any type of other drug dependence in the general population. This compared with rates of 38% for alcoholism and 41% for drug dependence in family members of diagnosed alcohol- or drug-dependent individuals. In a separate study of siblings of diagnosed drug-dependent individuals, 92% who tried a drug went on to meet diagnostic criteria for dependence.¹⁹ This compared with an 18% rate of drug dependence among siblings of non-drug-dependent individuals who tried the same drugs.

While these studies suggest that drug dependence “runs in families,” many factors are known to operate in familial transmission, of which direct genetic heritability is only one. One of the best methods for estimating the level of genetic contribution within all the cultural and environmental variables that are operational in familial transmission is to examine the relative rates of a disorder in monozygotic and dizygotic twins. For example, heritability estimates (H^2) from twin studies of hypertension range from 0.25 to 0.50, depending upon the sample and the diagnostic criteria used.^{20,22} Similarly, twin studies of diabetes offer heritability estimates of approximately 0.80 for Type 1 (insulin-dependent)²³ to 0.30 to 0.55 for Type 2 (non-insulin-dependent) diabetes.²⁴ Twin studies of adult-onset asthma have produced a somewhat broader range of heritability estimates, ranging from 0.36 to 0.70.^{25,26}

In the addiction field, four twin studies have been published in recent years.²⁷⁻³⁰ All found significantly higher rates of alcoholism or drug dependence among twins than among siblings, and higher rates among monozygotic than dizygotic twin pairs. A recent twin study of heroin dependence produced a heritability estimate of 0.34 among males.²⁸ Similar studies of alcohol dependence have produced heritability estimates of 0.55 to 0.65 among males.²⁹⁻³¹ Though there are still very few studies of heritability in the field of addiction and there is a need for studies of specific heritabilities by substance and by gender, the evidence suggests significant contribution of genetic influence in approximately the same range as for chronic illnesses such as asthma and hypertension.

Comparing the Factors Associated with the Onset and Course of Illness in Drug Dependence and in Other Illnesses

The evidence presented thus far suggests that drug dependence can be reliably and validly diagnosed, and that there is evidence of genetic, as well as familial, transmission associated with contracting the illness. However, because the use of drugs is, at least initially, a voluntary action, behavioral control or willpower is an important factor in the onset of addictive disorders. At some level, and particularly in the case of dependence on illegal substances, the addicted individual is believed by some to be at fault for initiating the behaviors that later combine with social, environmental, and genetic factors to produce the dependence disorder. Though an addicted person may have been genetically predisposed to contract the illness and may have been raised in an environment that contained known risk factors, it remains a fact that this individual's behavioral choices played a prominent role in the onset and course of the disorder. Does this voluntary initiation set drug dependence apart, etiologically, from other medical illnesses?

In fact, there are many illness where voluntary choice contributes significantly to initiating and sustaining a disease process, especially when these voluntary behaviors interact with genetic and cultural factors. For example, there is clear evidence, at least among males, that salt sensitivity is genetically transmitted (heritability estimate is 0.74),^{32,33} and salt sensitivity is a known risk factor for at least one form of hypertension. However, not everyone who inherits salt sensitivity goes on to develop hypertension. This is because the use of salt is much more likely to be determined by familial salt use patterns, cultural factors, and individual choice. Similarly, factors such as obesity, stress level, and exercise are the joint product of familial, cultural, environmental, and personal choice factors.³⁰⁻³² Thus, while a diabetic, hypertensive, or asthmatic patient may have been genetically predisposed to contract a disorder and may have been raised in an environment that contained known risk factors such as poor parenting, poor

diet, smoking, and high stress, it is also true that behavioral choices, such as the ingestion of high-sugar or high-cholesterol foods, smoking, and failure to exercise, also played a role in the onset and severity of the disorders.

Another aspect to the issue of voluntary choice as a contributor to the initiation of a disease process is the role of *involuntary* components embedded within seemingly volitional choices. For example, although the choice to try a drug the first time appears to be completely voluntary, it can be influenced by uncontrolled cultural, economic, and ecological factors such as peer pressure, price, and, especially, availability, which are not completely determined by individual choice. None of our grandmothers had the choice to use crack cocaine, ecstasy, or lysergic acid diethylamide (LSD). In contrast, many children today are regularly offered these choices and are faced with substantial external pressures to accept them.

Further, it is clear that only a small minority of those who use alcohol or another drug go on to develop addiction. Is this merely evidence that some people are “weak willed” while others “come to their senses?” In fact, the effects of the initial sampling of a drug are also influenced by genetic heritability and, in turn, are likely to modify the course of continued use in an *involuntary* manner. A person whose initial physiological response to alcohol or other drugs is extremely pleasurable may be more likely to repeat the drug taking than someone whose involuntary physiological reaction is neutral or even negative. Work by Schuckit and colleagues^{34,35} with sons of alcohol-dependent fathers has shown that these sons are born with more tolerance to alcohol's effects than are sons of non-alcohol-dependent fathers, and that this effect is highly influenced by direct genetic transmission (heritability estimate is 0.67). Thus, the positive effects of alcohol that may be experienced at relatively low doses by most individuals may be experienced only at higher doses by sons of alcohol-dependent fathers. In turn, the negative, “hangover” effects of alcohol that may be felt by sons of normal fathers may not be experienced at the same level by sons of alcohol-dependent fathers.

In contrast, an example of inherited hypersensitivity to alcohol has been shown in a large proportion of Chinese and Japanese individuals, who experience an involuntary skin “flushing” response to alcohol. This effect has been traced to the presence of an aldehyde dehydrogenase gene that controls a central part of alcohol metabolism.³⁶⁻³⁸ Individuals who are homozygous for this allele (approximately 35% of Chinese population) have an especially unpleasant reaction to alcohol. This negative reaction reduces the appeal of alcohol to the point where there have been no alcoholics found with this genotype.³⁶

For those who do not have an initially negative reaction to their first drug administration, continued repetition of voluntary drug use begins to change, often imperceptibly, into involuntary drug use, to the point

where the behavior is driven by a compulsive craving for the drug. The physiological and molecular bases for these changes are explained below.

Pathophysiology Associated with Drug Dependence

The evidence presented thus far suggests that drug dependence has many of the elements of onset and presentation that are exhibited by other illnesses. However, it is a separate question whether drug dependence is accompanied by a predictable pattern of pathophysiological changes such as those generally seen in the course of other medical illnesses. How does the voluntary choice to use alcohol or another drug ultimately become an involuntary compulsion? The acute effects of alcohol and many other drugs have been well characterized for many years; however, even a complete understanding of these acute effects is inadequate to address fundamental questions regarding the mechanisms by which repeated doses of alcohol and other drugs produce paradoxically increasing tolerance to the effects of those drugs concurrent with decreasing volitional ability to forgo the drug. As suggested by Koob and Bloom,³⁹ the challenge is to find an internally consistent sequence by which molecular events modify cellular events and, in turn, produce profound and lasting changes in cognition, motivation, and behavior.

Research into the neurochemical, neuroendocrine, and cellular changes associated with drug dependence has led to volumes of remarkable findings over the past decade. These advances have been summarized in recent special issues of *Science*⁴⁰ and *The Lancet*⁴¹ and in two volumes produced by the Institute of Medicine of the National Academy of Sciences.^{42,43} Three areas of investigation that have produced clinically relevant information leading to medications to treat drug dependence are summarized in the following paragraphs.

There is now clear evidence that most addictive drugs have well-specified effects on the brain circuitry that is involved in the control of motivated and learned behaviors. This evidence originated from studies in animals⁴²⁻⁴⁴ and, with recent developments in brain imaging techniques, has been confirmed in humans.^{45,46} Anatomically, the brain circuitry principally involved in most of the actions of the major addictive drugs is the ventral tegmental area, which connects the limbic cortex through the midbrain to the nucleus accumbens.^{39,47} Neurochemically, all of the major drugs of abuse (alcohol, opiates, cocaine, nicotine) have significant effects on the dopamine system, although through different mechanisms. For example, cocaine increases synaptic dopamine by blocking reuptake into the presynaptic neuron; amphetamines produce increased presynaptic release of dopamine; and opiates and alcohol disinhibit dopamine neurons, thereby producing increased firing rates.^{39,44}

Opiates and alcohol also have a direct effect on the endogenous opioid system.^{39,44} This finding has led directly

to the development and wide clinical use of four effective medications (see below). Evidence is also emerging that the GABA (gamma-aminobutyric acid) system plays a central role in alcohol dependence, and this has led to the development of an effective medication to treat alcohol dependence (see below). Finally, recent work on the stress response system suggests that lasting changes in neurochemical and neuroendocrine function may occur with the development of cocaine and opiate dependence.^{48,49}

Significantly, the ventral tegmental area and the dopamine system are part of what has been called “survival circuitry,” which accounts for some of our most basic behaviors, including feeding, “flight or fight” responses in dangerous situations, and sexual activity. These brain areas have also been associated with the feelings of euphoria produced by naturally occurring reinforcers such as food, sleep, and sex.^{50,51} In experiments, animals that receive mild electrical stimulation of the dopamine system, contingent upon a lever press response, rapidly learn to press that lever tens of thousands of times, ignoring normal needs for water, food, or rest, in order to maintain the stimulation of that system.⁴³ Cocaine, opiates, and several other dependence-producing drugs stimulate this reward circuitry in a supernormal manner,⁴⁷ producing extremely powerful reward sensations. It is not hard to understand how addictive drugs can produce an immediate and profound desire for their readministration. What is less clear is why simply preventing the administration of these drugs for some period of time (for example, by “detoxifying” or incarcerating the person with an addiction) would not correct the situation, set the system back to normal, and, like the child who burned his fingers, lead to a sadder but wiser individual who would be less (instead of more) likely to readminister those drugs.

Two explanations seem possible from the research done thus far. The most direct answer is that use of a drug at some dose, frequency, and chronicity will reliably produce enduring and possibly permanent pathophysiological changes in the reward circuitry,^{43,51,52} in the “normal” levels of many neurochemicals,^{52,54} and in the stress response system.^{51,52} It is not clear just how much drug use is required to create these changes, how enduring the various effects are, or whether these effects will ever return to normal. Physical signs of withdrawal generally last several days, motivational symptoms of withdrawal and cognitive impairment may last several months,⁴³ and the learned aspects of tolerance to the drug may never return to normal.^{45,46,55} For example, Volkow^{52,53} found impairments in the dopamine system (reduced D₂ binding) of abstinent former cocaine users for as long as 3 months after their last cocaine use. In addition, her research team found reduced glucose metabolism in dopamine projection areas during cocaine abstinence,⁵⁴ and the degree of metabolism reduction correlated with the long-term reductions in radioligand binding.⁵³ Another human imaging study found decreased uptake of radiolabeled DOPA into the striatum of

cocaine users tested 1 week after their last cocaine dose, indicating decreased dopamine synthesis at this early time point.⁵⁶ Still other studies have documented areas of poor cortical blood flow (“patchy defects”) and reduced prefrontal metabolism⁵⁷ in abstinent cocaine abusers.^{58,59} Research suggests sustained changes in the stress response system following the development of opiate or cocaine dependence.^{48,49} Taken together, these studies suggest that the neurochemical, and possibly the neuroendocrine, systems of abstinent but formerly drug-dependent patients are functioning irregularly and at a reduced level for a very long time.

A second explanation for the enduring pathology seen among drug-dependent persons and for their tendency to become readdicted lies in the integration of the reward circuitry with the motivational, emotional, and memory centers that are co-located within the limbic system. Connections among these “survival circuits” are apparently designed to give prominence and emotional significance to the normal biological events that usually precede arousal of those circuits (e.g., food, danger, sex). These circuits are also intimately involved in the control of emotion, motivation, and “biologically significant memories.”^{50,51} These interconnected regions allow the organism not only to experience the pleasure of rewards but also to learn the signals for them and to respond in an anticipatory manner.

This pairing of a person (drug-using friend), place (corner bar), thing (paycheck), or even an emotional state (anger, depression) with drug use, including the supernormal activation of the reward circuits, leads to rapid and entrenched learning or conditioning, to the point where these cues or signals acquire some of the properties of the drug itself. Thus, if previously drug-dependent individuals who have been abstinent, even for long periods of time, encounter a person, place, or thing that was associated with their drug use, it may produce significant physiological reactions. In the case of cocaine, these reactions include palpitations and other signs of sympathetic arousal, such as ear ringing, chest tightness, lightheadedness, and a cocaine “taste” in the back of the throat.⁵⁵ In the case of heroin, this reaction includes pilo-erection, stomach cramps, fever, and withdrawal-like symptoms.⁶⁰ These responses are usually accompanied by profound desire or craving for that drug.^{55,60} Ingrained through learning, the confluence of the physiological, emotional, and craving symptoms combine to produce the loss of control that has been considered a hallmark of drug dependence.¹⁴ For example, Childress and colleagues⁶¹ have shown the profound neurostimulation effects of cues that had been previously associated with use of drugs, even among stably abstinent former users. Using positron emission tomography (PET), these authors compared regional cerebral blood flow in limbic and control brain regions of 14 detoxified male cocaine users and 6 cocaine-naive controls during exposure to neutral videos and to videos of cocaine-related scenes. During the cocaine video, former cocaine-dependent subjects experienced increased craving and showed a pattern of limbic

(amygdala and anterior cingulate) increases and basal ganglia decreases in regional cerebral blood flow. This pattern did not occur in cocaine-naive controls, nor did it occur among cocaine-dependent patients, in response to the neutral video or even to a different drug video.⁵⁵ These findings indicate that even rather artificial video scenes of cocaine-related stimuli, presented in the sterile and remote context of a PET laboratory, produce excitation of brain reward regions that mimic the effects of the drug itself.

It is likely that both the direct and sustained physiological changes produced by the drugs themselves and the acquired effects produced by conditioned cues are involved in the ultimate explanation of the continued vulnerability to relapse even among motivated, abstinent former drug-dependent individuals.⁴⁸ At the same time, there is much left to explain. As Childress⁵⁵ has noted, all individuals have reward circuitry, and most people have had their reward circuitry associated with natural reinforcers such as food, sex, sleep, and even some drug or alcohol use. Why don't all people use natural rewards compulsively? What distinguishes the brain function of persons who use alcohol and other drugs but do not become addicted from that of those who use similar amounts or at similar frequencies but do become dependent? Considered in combination with the heritability data from twin studies discussed above and data on congenital preference for alcohol and other drugs in specially bred strains of rats and mice, it may be that alcohol, nicotine, and other drugs have especially excitatory effects on particular types of individuals; or that the excitation of this circuitry is simply a parametric function of amount, duration, interval, and frequency of drug administration; or both. Much more work needs to be done to identify the learned and innate aspects of vulnerability to drugs.

Are There Effective Medical Treatments for Addictive Disorders?

Regardless of whether the etiology and course of addictive disorders are similar to those of other chronic diseases, the question of most import is whether these supposed diseases will actually respond to medical treatment. To address this, it is necessary to review the efficacy and effectiveness of treatment approaches for drug dependence compared against the untreated course of drug dependence. Continuing the comparison with other forms of chronic medical illness, it is also necessary to consider whether and in what ways the effectiveness of drug treatment compares with that of treatments for other chronic diseases such as hypertension, asthma, and diabetes.

Standards for Evaluating the Effectiveness of Drug-Dependence Treatments

For patients and for the many treatment stakeholders in society, the effectiveness of any medical treatment is measured only in part by that treatment's initial effects on

the presenting or primary symptoms. Most treatments, especially those for chronic conditions and public health problems, are also evaluated in terms of their extended effects on the disease-related problems that have limited personal function in the patient, that may have been costly to the health care system, and that may have become a public health concern to society.⁶² These considerations also apply in the evaluation of treatments for addictive disorders. Typically, the immediate goal of reducing alcohol and drug use is necessary, but rarely sufficient, for the achievement of the longer-term goals of improved personal health and social function. Thus, from both the patient's and society's perspectives, a truly effective treatment is one that not only provides lasting reduction of substance use but also significantly improves personal and social functioning, particularly in areas of special public health and public safety concern. Again, these broad and diverse expectations of treatment are not peculiar to the addiction field. As Stewart and Ware⁶² note in their recent text on outcome evaluation in general medical care, "Since the 1970s, however, the emphasis in America on what patient outcomes to measure to determine health status has been shifting . . . to the assessment of functioning, or the ability of the patients to perform the daily activities of their lives, how they feel, and their own personal evaluation of their health in general."

Given that these issues are important in the treatment of drug dependence, not only to patients but also to society, addiction treatment outcomes have been measured on at least three domains.⁶³

1. **Reduction of alcohol and drug use.** The foremost goal of drug-dependence treatment, measured objectively by urinalysis for drug screening and Breathalyzer% readings of blood alcohol content.
2. **Improvement in personal health and social function.** Measures such as general health status inventories, psychological symptom inventories, family function, and days worked and dollars earned can be reliably and validly collected directly from the patient via confidential self-report and from medical/psychiatric evaluations and employment records.
3. **Reduction in public health and public safety threats.** Threats to public health come from behaviors that spread infectious diseases and can be measured using standard laboratory tests for acquired immunodeficiency syndrome (AIDS), sexually transmitted diseases (STDs), tuberculosis, and hepatitis. The commission of personal and property crimes can also be measured from public arrest and conviction records, although these measures typically underestimate the extent of the criminal and dangerous behaviors actually performed.⁶⁴

The first two domains are quite consistent with the "primary and secondary measures of effectiveness" typically used by the Food and Drug Administration (FDA)

to evaluate new drug or device applications in controlled clinical trials⁶⁵ and, as indicated above, are quite consistent with mainstream thought regarding the evaluation of other forms of health care.⁶³ The final outcome dimension is more specific to the treatment of drug dependence, because it acknowledges the significant public health and public safety concerns associated with drug addiction. In the text that follows, these three domains are used to evaluate published reports of drug-dependence treatments, with emphasis on medically oriented treatments.

Do Treated Patients Show Better Outcomes Than Untreated Patients?

While it is not ethically possible to deny treatment to those who require it, there are situations where treatments have not been applied to substance-dependent persons. These situations offer some indication of what happens to substance use, personal function, and the public health and safety problems of addicted individuals in the absence of treatment. Four recent studies provide information pertinent to this question.

Intravenous Drug Users. Metzger et al.⁶⁶ examined the drug use and needle-sharing practices and human immunodeficiency virus (HIV) infection rates of two large samples of opiate-addicted patients in the Philadelphia area. Earlier studies of untreated intravenous drug users had shown reductions in drug-injection and needle-sharing rates from HIV testing alone.⁶⁷⁻⁶⁹ However, in all of these studies, one-third to one-half of intravenous drug users showed no reductions in behaviors known to increase risk for the spread of infectious disease. Metzger and colleagues⁶⁶ attempted to assess the effects of a medically oriented treatment for opiate dependence (methadone) in reducing HIV risk behaviors and the actual rates of HIV infection in two groups of heroin-dependent individuals. The in-treatment group comprised 152 patients randomly selected at admission to a large methadone maintenance program. These subjects were asked to refer their heroin-using friends from the same neighborhoods who had been out of all substance dependence treatment for at least one year. This resulted in a group of 103 out-of-treatment heroin-dependent individuals who were matched for age, race, gender, neighborhood, and many other relevant background and social factors associated with drug use.

Both groups of patients were interviewed and tested for HIV status (90% contact rates at each interview) every 6 months over the next 6 years. At the initial assessment point, 13% of the in-treatment sample and 21% of the out-of-treatment sample tested positive for HIV infection. By the 6-year point, 51% of the out-of-treatment group, but only 21% of the in-treatment group, tested HIV-positive.⁶⁶ It is important to note that without the untreated comparison group, data from the methadone group might have led to a conclusion that treatment did not work, i.e., drug use had not been reduced to zero, and there was still needle

sharing in the treated group. However, these risky behaviors were far less prevalent and less severe than they were among the matched group of untreated individuals.

Although the difference between the groups was quite remarkable, these data do not prove that treatment was the causal agent responsible for the different infection rates. It is possible, and even likely, that the out-of-treatment subjects lacked the motivation for treatment found among the treated subjects, and that this lack of desire for personal change, rather than the treatment itself, produced the differences. For this reason, it is necessary to equate level of motivation, at least at the start of treatment, in order to make any valid judgment regarding the effectiveness of treatment.

Waiting List Patients. An ongoing study of male veterans who applied for cocaine abuse treatment at the Philadelphia Veterans Administration Medical Center helps shed light on the relative outcomes of treated versus untreated patients who were approximately equal in their initial motivation for treatment. In this 4-week study,⁷⁰ 68 cocaine-dependent individuals were contacted at the time of their application for inpatient substance abuse treatment. Because of the unavailability of treatment beds, these individuals were put on a waiting list. These individuals were followed each week of their waiting period and asked questions regarding their drug use and health status by independent evaluators. The question of interest was whether the cocaine use and the related problems would change without treatment in a group of individuals who were all, at least initially, motivated to change.

Over the following 4 weeks, only 16% of the group received any treatment-related services (typically detoxification, temporary housing at a community shelter, or both). This small subgroup did show some reductions in their alcohol and other drug use, but no improvements in health and social function. Among those who received no treatment services, 57% reported increased severity of medical problems and 81% reported worse employment and support problems over the 4-week waiting period. Thus, there was little evidence from these data that the drug use or the related health problems showed significant improvement without treatment, despite the fact that the subjects were clearly motivated to change.

Unmotivated Individuals. Another way to separate the effectiveness of drug-dependence treatment from the direct effects of motivation would be to compare treated and untreated substance-dependent individuals who were not initially interested in treatment. Such a study was performed by Booth and associates⁷¹ among intravenous drug users seeking HIV testing and AIDS services as part of a multisite AIDS initiative involving 4,000 subjects recruited from 15 cities. In each city, out-of-treatment injection drug users were offered an opportunity to participate in drug abuse treatment as a part of AIDS risk-reduction services.

Subjects were randomly assigned either to a standard HIV counseling and testing intervention or to an enhanced intervention that consisted of the standard intervention plus one to three sessions of motivational counseling from a health educator. At 6-month follow-up, subjects in the enhanced intervention showed half the rates of drug injection (20% versus 45%), four times the rates of abstinence (confirmed by urinalysis), and significantly lower arrest rates (14% versus 24%) than those randomly receiving just HIV counseling and testing.⁷¹

This study is significant for several reasons. First, the very modest public health efforts to reduce needle sharing and drug use through HIV counseling and testing were associated with significant reductions in these target behaviors, even among subjects who were not initially motivated to receive these interventions. Second, more extended but still modest efforts at referring patients into more formal treatment at seven of the study sites were associated with broader, more sustained improvements not only in the target problems but also in other areas, such as abstinence, needle sharing, and arrests. This suggests that treatment entry is not simply a matter of a preconceived desire for change that would have occurred anyway; were that the case, the rates of treatment entry among these randomly assigned groups would have been approximately equal. Studies of other diseases show that even brief advice from physicians and other health care workers can affect the motivation for treatment among patients and the longer-term course of their health.^{72,73} This is the very foundation of primary care medicine and, as Booth et al.⁷¹ suggest, this also pertains even for seriously and chronically addicted individuals. Appointments for a health care service of any type may set the occasion for brief screening and health counseling that can have important and lasting benefits not only for the addicted patient but also for the broader public health.

The Costs of Untreated Addiction: An Example from Prenatal Care

A final study comparing the effects of drug abuse treatment with no treatment was performed by Svikis et al.⁷⁴ among one of the most problematic and costly subgroups of substance-dependent individuals—pregnant women. The dangers of drug use during pregnancy are extreme, both for the mother and the child.⁷⁵⁻⁷⁷ Moreover, the costs associated with even the acute care of neonates born to addicted women can be very high.⁷⁸ The Svikis et al. study was designed to test the effects of standard drug dependence treatment combined with a standard program of prenatal and perinatal care on the health status and costs of mothers and their children. As had Booth et al., these authors assessed the effects of drug abuse treatment among individuals who did not originally apply for treatment. All subjects had simply applied for prenatal care services and were found to be cocaine-positive on a routine drug screen.

Two groups of pregnant women were compared: the first 100 women admitted to the combined drug-dependence treatment plus prenatal care program and 46 comparison women drawn from the same geographic catchment area and matched with the treatment women for race, mental status, insurance coverage, and parity and who were identified during the year prior to the opening of the experimental treatment program. Drug-dependence treatment consisted of 1 week of residential care focused on stabilizing the women and engendering commitment for continued treatment, delivered in the context of their prenatal care. This was followed by twice-weekly addiction counseling that was coordinated with the women's prenatal care visits.

With regard to the primary measure of drug use, 37% of the treated patients had evidence of drug use (urinalysis) at the time of childbirth. Considered in the absence of a comparison group, these data could lead to the conclusion that the treatment had failed. However, 63% of the untreated women had cocaine-positive urine tests at delivery. The treated women kept twice as many appointments as the untreated women did (eight versus four); the average birthweight of the infants of the treated women was higher (2934 g versus 2539 g); and the gestational age of the babies of the treated women was more than 1 month older at delivery (39 weeks versus 34 weeks). Following the deliveries, 10% of the babies in the treated group had to be placed in the neonatal intensive care unit at an average length of stay of 7 days; 26% of the babies of women in the untreated group had to be placed in intensive care, and their average stay was 39 days. The total costs of care for the mother and the baby in the treated group averaged approximately \$14,500, including the costs for the drug abuse treatment. The average cost for the women and babies in the group that received prenatal care but no treatment for drug dependence was more than \$46,700. The authors point out that these cost calculations were quite conservative because they did not include expenses such as criminal and family court costs, child and family services, and continued health care costs for mother and child. Nonetheless, the data present striking evidence that drug dependence treatment can be cost-effective in this severely affected population and such treatment can be combined effectively with traditional perinatal medical care with mutual benefit.

Are Drug-Dependence Disorders Responsive to Medications?

If physicians are expected to play a role in the treatment of drug dependence, it is reasonable to ask whether there are effective medications available. Perhaps the best-known and well-studied medications in the treatment of drug dependence are those used in the treatment of smoking cessation, such as nicotine gum, nicotine skin patches, and bupropion. All of these medications were developed under

FDA guidelines and researched in randomized clinical trials. Many have now reached the over-the-counter market. There is no doubt that these medications, plus an educated physician population, have made an important contribution to public health efforts to reduce cigarette consumption.

A review of the evidence regarding the development of medications for the treatment of alcohol, cocaine, and opiate addiction suggests many commonalities.^{40,43,79,80} These medications have also been developing in the same manner as did the tobacco products, albeit more slowly, in part because of the lack of a large commercial market. The identification, development, and testing of new drugs and the necessary accompanying physician education practices have been major efforts in both the national institutes on addictive disorders (i.e., the National Institute on Drug Abuse and the National Institute on Alcohol Abuse and Alcoholism) for the past 5 years.⁴³ These efforts have brought approval of several medications (e.g., levo alpha acetyl methadol [LAAM], buprenorphine), identified important new uses for existing medications (e.g., naltrexone in alcohol treatment), and led to the development of some promising new medications (e.g., buprenorphine, acamprosate). At the same time, there has been frustration in the development of an effective medication for cocaine addiction. The following paragraphs review several of the most prominent medications now available and some of the work in progress.

Medications for the Treatment of Opioid Addiction

Agonists, partial agonists, and antagonists are the three primary types of medications available for the treatment of opioid dependence. All act directly upon the opiate receptors, particularly mu-receptors.⁴³ Agonist medications are prescribed acutely as part of an opioid detoxification protocol (gradually reducing doses to minimize discomfort as the patient becomes acclimated to lower and finally zero doses of opiate), or chronically in a maintenance regimen (gradually increasing doses of long-acting pharmaceutical opiates to maximize the patient's tolerance and reduce or eliminate the effects of lower-potency "street" opiates). Methadone has been an approved agonist medication for both the acute detoxification and the long-term maintenance treatment of opiate dependence for more than 25 years. The long-acting form of methadone (48 to 72 hours' duration), LAAM, has received FDA approval and has been accepted by 16 States for use on a prescription basis, but only at methadone maintenance programs.⁸¹ Double-blind, placebo-controlled trials have shown methadone to be effective in detoxifying opiate-dependent patients safely and comfortably in both inpatient and outpatient settings.⁸²⁻⁸⁵ Used for maintenance purposes, methadone has many advantages, including an oral route of administration, slow onset of action, and long half-life, and it has been very effective in reducing opiate use, crime, and the spread of infectious diseases through needle sharing (e.g., AIDS,

hepatitis, tuberculosis) for the past three decades. Recently, the effectiveness of methadone was reaffirmed by a panel of impartial physicians and scientists at a National Institutes of Health consensus conference.⁸⁶

Partial agonist medications such as buprenorphine have been widely used in Europe.⁸⁷ Buprenorphine is administered sublingually and has an effective duration of action of approximately 24 to 36 hours. Like methadone, buprenorphine significantly reduces craving for opiates and is being reviewed by the FDA. Large-scale, double-blind, placebo-controlled trials with buprenorphine have shown reductions in opiate use that are comparable to those seen with methadone.⁸⁸ The partial agonist actions of buprenorphine may have some advantages over methadone; for example, unlike methadone, it produces few or no withdrawal symptoms upon discontinuation of use.⁸⁷

Opioid receptor antagonists such as naltrexone have also been used for more than 20 years in the treatment of opiate dependence.⁸⁹ Naltrexone is an orally administered opiate antagonist that blocks actions of externally administered opiates such as heroin through competitive binding for 48 to 72 hours.⁹⁰⁻⁹² Like methadone and buprenorphine, naltrexone is a maintenance medication, designed as an “insurance policy” in situations where the patient is expected to be confronted with situations that might lead to relapse. Opiate antagonists produce neither euphoria nor dysphoria when prescribed to abstinent opiate addicts, but, as is true with so many maintenance medications in other areas of medicine, compliance has been generally poor. Most field studies show retention rates of less than 20% after 1 month of treatment. Perhaps for this reason, several studies have combined this antagonist medication with social or criminal justice sanctions to increase compliance and sustain the benefits from the medication. For example, naltrexone is routinely used in the monitored treatment of physicians, lawyers, nurses, and other professionals⁹³ where the maintenance of a license to practice is contingent upon continued abstinence. In a recent controlled trial with opiate-dependent Federal probationers, Cornish and colleagues⁹⁴ showed that naltrexone added to standard probation produced 70% less opiate use and 50% lower reincarceration rates than did standard probation alone. Like the Svikis study, the Cornish study also showed that drug-dependence treatments could be combined with other medical or social interventions with the potential for great cost savings.⁹⁴

Antagonist Medications in the Treatment of Alcohol Dependence

Naltrexone (Revia) has been found to be effective in the treatment of alcohol dependence.^{95,96} Naltrexone at 50 mg/day was approved by the FDA for use with alcohol-dependent patients after independent studies showed it to be a safe, effective pharmacological adjunct for reducing heavy alcohol use among alcohol-dependent patients. Its mechanism of action appears to be the blocking of at least

some of the “high” produced by alcohol through competitive binding with mu opiate receptors.^{95, 96}

European researchers have found encouraging results using acamprosate to block craving and return to alcohol abuse. While acamprosate acts on different receptor systems than does naltrexone, the clinical results are remarkably similar.⁹⁷ Alcohol-dependent patients who take acamprosate have shown 30% greater post-treatment abstinence rates at 6-month follow-up than patients randomly assigned to placebo. Further, those who have returned to drinking while receiving acamprosate report less heavy (greater than five drinks per day) alcohol use than those in the placebo group who returned to drinking.⁹⁷ While both of these medications can be used for extended periods, in practice they are generally prescribed for about 1 to 3 months as part of a general rehabilitation program that includes behavioral change strategies.⁷⁹

Medications for the Treatment of Stimulant Dependence

Over the past 10 years, many medications have been tried for the treatment of dependence on cocaine and other stimulants. While this literature is quite extensive, results are disappointing.⁸⁰ At this writing, there is no convincing evidence that any of the various types of cocaine-blocking agents are truly effective for even brief periods of time or for even a significant minority of affected patients. Research continues in this area, and there have been indications of a “vaccine” that may be able to immediately metabolize and inactivate active metabolites of cocaine.⁹⁸ This promising product is being tested in animal models, and clinical trials will not be scheduled for several years.

Medications in the Treatment of Comorbid Psychiatric Conditions

There is a large and important literature examining the use of medications to reduce psychiatric problems among addicted individuals.⁹⁹⁻¹⁰¹ This is an important area for physician involvement. Psychiatric disorders such as depression, anxiety, and phobia are prominent among nicotine-, alcohol-, opiate-, cocaine-, and benzodiazepine-dependent individuals. There is abundant evidence that addicted individuals with concurrent psychiatric problems are more likely to drop out of standard drug-dependence treatments, to perform poorly during those treatments, and to relapse early following those treatments than are individuals without psychiatric comorbidity.¹⁰²⁻¹⁰⁴ Finally, there is increasing evidence that the prescription of appropriate antidepressant medications can alter that prognosis for these “psychiatrically more severe” individuals.⁹⁹⁻¹⁰¹

In summary, there are medications currently available for use in the treatment of nicotine, alcohol, and opioid dependence and for the treatment of comorbid psychiatric disorders associated with all forms of substance dependence. These medications have been tested in multiple trials and have been shown to be effective. At the same

time, there are still relatively few patients who receive, or practitioners who prescribe, these medications. Moreover, as in the treatment of other medical illnesses, managed care companies have been slow to authorize maintenance medications.^{42,43 80} There is a need for additional studies of the appropriate use of these medications in the treatment of drug dependence disorders.

Is Drug Dependence Responsive to Brief Physician Interventions ?

One of the most interesting and potentially important developments over the past decade has been the research in physician-administered brief interventions as part of office-based primary care.¹⁰⁵⁻¹¹¹ The interventions follow the identification of at-risk drinking or drug use through any number of simple screening instruments. Once the problem has been identified, the physician begins a nonchallenging discourse with the patient designed to get the patient to accept that there is a problem and that the patient has the ability to correct it. Getting the patient to accept that he or she has a drug problem can be difficult, but direct assessment of the problem and simple feedback of normal behaviors (e.g., simple charts showing normal levels of drinking by age and gender) can be much more helpful than scolding or confrontation.¹¹² Patient behavioral change is accomplished through negotiation of some behavioral goals that are agreed upon by contracting with the patient.¹⁰⁵⁻¹⁰⁷ These brief (usually 10 to 20 minutes) sessions of physician time in the office are typically accompanied by booklets or self-help manuals and regular follow-up, usually over the phone. These brief interventions for problematic alcohol and drug use are similar in many ways to those used in the office-based primary care management of other chronic illnesses.

Clinical research in office-based settings has shown these approaches to be both effective and cost-saving.¹⁰⁸⁻¹¹¹ For example, a study of office-based brief interventions by Kristenson¹⁰⁸ in Sweden showed sustained reductions in alcohol use (verified by liver function tests) and health care utilization. A study performed by the Medical Research Council in England with 47 general practitioners found more significant reductions in alcohol use in the intervention group than in the randomly assigned control (no intervention) group at 12 months following the intervention.¹⁰⁹ A World Health Organization study of brief interventions in 10 countries also looked at brief interventions in both physician offices and in general clinic settings.¹¹⁰ When the total sample was analyzed, there were approximately equal reductions in alcohol use among the control group (who had simply had their alcohol use identified and reported to them) and the brief-intervention group. However, when data from just the physicians' offices were analyzed, there was a significant effect of the brief intervention. Brief interventions were also studied in 17 community physician office practices by Fleming and

colleagues.¹¹¹ In that study, "at-risk drinkers" were screened and offered two 10- to 15-minute interventions by the physician, or simply provided a health booklet. "Risk" was defined as the self-reported drinking of more than 13 drinks in the past week for men or 10 drinks for women. At both 6- and 12-month follow-up, the intervention group was drinking on fewer days, drinking significantly less, reporting fewer binge drinking episodes (greater than four or five more drinks per occasion for women and men, respectively), and hospitalized for fewer days than the control group. A follow-up study of costs and benefits showed a 5:1 savings per dollar invested in the intervention; most of the savings came from reduced hospital days and emergency room visits as well as avoided crime and motor vehicle accidents.¹¹³

Several points are relevant here. First, these interventions do require training (about 1-1/2 hours for the physician and the same for an office nurse).¹¹³ The training is designed to help physicians avoid confrontation and develop constructive methods of engaging the patient in the required behavioral change. Second, these interventions require some form of screening for alcohol and drug problems. There are, however, many patient-administered screening instruments available. Third, while these interventions have been studied in the context of alcohol treatment, these behavioral change initiation skills would be broadly useful in the treatment of most other forms of chronic illness. Finally, while the results reported here have been broadly replicated, it is likely that these brief forms of intervention are more appropriate for, and will be accepted more readily by, individuals with lower levels of problem severity than by individuals with more serious dependency problems. Further, these brief interventions have not been studied in individuals who use drugs other than alcohol. Their effectiveness with these persons remains unexplored.

Treatment Adherence in Drug Dependence and Other Chronic Diseases

There is no reliable cure for drug dependence. Persons dependent on nicotine, alcohol, opiates, cocaine, barbiturates, or marijuana who attempt to reduce their use are likely to have problems in maintaining controlled use. Among persons who become addicted, those who comply with the recommended regimen of education, counseling, and medication that characterizes most contemporary forms of drug-dependence treatment have the most favorable outcomes during and following treatment.¹¹⁴⁻¹¹⁸ Despite this, most of those who start any type of treatment drop out prior to completion or ignore advice to continue medications or in aftercare or Alcoholics Anonymous (AA) participation following formal treatment. Even those who do comply fully with treatment have problems sustaining abstinence, with 1-year follow-up studies indicating that only 40% to 60% of treated patients are able to remain completely abstinent throughout that time period, although

an additional 15% to 30% do not resume dependent use or develop problems associated with drug use.¹¹⁸⁻¹²⁰

It is discouraging that so many patients fail to comply with the recommended course of treatment and that so many of those who complete treatment subsequently resume substance use. Recent reviews of the treatment literature have indicated that factors such as low socioeconomic class, comorbid psychiatric conditions, and lack of family or social supports for continuing abstinence are among the most important variables associated with lack of treatment compliance and with relapse following treatment.¹²¹ Several medications have demonstrated effectiveness in the treatment of alcohol and opiate dependence; however, to be effective, they must be taken on a regular basis. Lack of patient compliance has severely limited the potential impact of these medications.¹²² Clinical research in this area is focused on the development of longer-acting or depot forms of these medications, as well as on behavioral strategies to increase patient compliance.¹²²

Hypertension, diabetes, and asthma are also chronic disorders that require continuing care. These disorders are not necessarily unremitting or unalterably lethal, as long as the treatment regimen of medication, diet, and behavioral change are followed. Treatments for these disorders are heavily dependent upon behavioral change and medication compliance to achieve their effectiveness. In a review of more than 70 outcome studies of treatments for these disorders, patient compliance with the recommended medical regimen was the most significant determinant of treatment outcome.^{123,124} However, studies have shown that less than 50% of Type 2 insulin-dependent adult diabetics fully comply with their medication schedule,¹²⁵ and that less than 30% of hypertensive or asthmatic patients comply with their medication regimens.^{126,127} The problem is even worse for the behavioral and dietary changes that are so important for the maintenance of short-term gains in these chronic disorders. A review of recent studies in the fields of adult-onset diabetes, hypertension, and asthma revealed that less than 30% of patients in treatment for these disorders comply with the recommended diet or behavioral changes that are designed to reduce risk factors for reoccurrence of the disorders.^{128,129}

Relapse Rate in Drug Dependence and Other Chronic Diseases

This review suggests important parallels with the treatment of drug dependence. Lack of patient compliance with the treatment regimen for these disorders, like that for drug dependence, is a major contributor to recurrence and to the development of more serious and more expensive disease-related conditions. For example, outcome studies indicate that 30% to 60% of insulin-dependent adult diabetic patients, and 50% to 80% of adult hypertension and asthma patients, suffer recurrences of their symptoms each year to the point that they require, at least,

rehabilitation of their medication or additional medical interventions.¹²⁵⁻¹²⁹ Many of these recurrences result in more serious additional health complications. For example, limb amputations and blindness are common results of treatment nonresponse among diabetics.^{130,131} Stroke and cardiac disease are common problems associated with exacerbation of hypertension.^{132,133}

What Are the Active Ingredients in Addiction Treatment? What Contributes to Treatment Effectiveness?

The Detoxification-Stabilization Phase of Treatment

Medical detoxification has been the initial and acute stage of virtually all forms of addiction treatment. However, the word “detoxification” has been used to describe treatments of a true withdrawal syndrome (i.e., neuroadaptation) as well as the stabilization of acute physiological and emotional symptoms associated with the cessation of drug use that might not produce a bona fide withdrawal syndrome. True detoxification is required only for certain types of drug dependence, most notably dependence on nicotine, alcohol, opiates, barbiturates, and benzodiazepines. In each of these cases (particularly barbiturate use) persistent use of a substance at gradually escalating doses and for escalating time periods produces neuroadaptation, or “tolerance,” to the drug—to the point where greater amounts of the drug are typically required to produce euphoria and, equally important, to eliminate withdrawal symptoms. Withdrawal symptoms reflect the rebound of a physiological system that has been perturbed by drug use for a substantial period of time. They include headaches, bone pain, fever, chills, watery eyes, runny nose, diarrhea, and profound emotional upset. Opiate drugs in particular can produce these symptoms, which, while profoundly uncomfortable, are rarely life-threatening. Alcohol, barbiturates, and benzodiazepines may produce not only many of the previously described symptoms but also seizures and cardiac irregularities, which can be life-threatening.

Virtually all drugs—caffeine, amphetamines, cocaine, and hallucinogens—produce acute periods (typically 1 to 3 days) of physiological and emotional instability following abrupt discontinuation of regular use. While uncomfortable, this instability will almost always subside without formal medical attention. In the United States, few patients are admitted to a hospital, or even to residential care, for the acute treatment of the instability produced by these drugs. Although cocaine withdrawal has been recognized in DSM-IV,¹⁴ there is continued debate regarding the treatment and even the existence of a bona fide withdrawal syndrome following cocaine use.^{134, 135} At the same time, there is clear agreement that patients who have used cocaine or crack continuously over sustained periods suffer 2- to 5-day periods of measurable physiological and

psychiatric instability.^{136, 137} For this reason, cocaine “stabilization” is included in this review along with formal detoxification.

Goals of Detoxification-Stabilization

Patients and Treatment Settings. The detoxification and stabilization phase of treatment is designed for patients who have been actively abusing alcohol or street drugs or both, and who are suffering physiological or emotional instability or both. In cases of severe withdrawal potential or extreme physiological or emotional instability, detoxification-stabilization helps prevent serious medical consequences of abrupt withdrawal, reduce the physiological and emotional signs of instability, and motivate behavioral change. This stage of treatment may take place in inpatient settings, either a hospital or a non-hospital residential setting, or in outpatient settings, such as in a hospital-based clinic or a residential or social setting.

Treatment Elements and Methods. Medications are available both for physiological withdrawal signs and for the temporary relief of acute medical problems associated with physiological instability (e.g., sleep medications, antidiarrheal medications, vitamins, and nutritional supplements). Motivational counseling is widely used to address shame and ambivalence, as well as to increase adherence to recommendations for continued rehabilitation.

Duration. Regardless of the setting, stabilization of acute problems is typically completed within 2 to 10 days, with the average being 3 to 5 days.¹³⁸ True detoxification is necessary only for cases of severe alcohol, opiate, benzodiazepine, or barbiturate use, although many cocaine-dependent and other drug-dependent patients suffer from significant physiological and emotional instability that precludes immediate participation in rehabilitation. The duration of the detoxification-stabilization process depends on the presence and severity of the patient’s dependence symptoms as well as concurrent medical and psychiatric problems. Treatments longer than 5 days are unusual and typically are due to conjoint medical or psychiatric problems or physiological dependence upon some forms of sedatives (e.g., alprazolam).

Effective Components of the Detoxification-Stabilization Stage

Setting of Care (Medical or Nonmedical, Inpatient or Outpatient). Debate regarding the appropriate setting of care in which to detoxify alcohol-dependent patients has been substantial. Since the mid-1970s, medical settings such as residential treatment facilities or even outpatient treatment centers have conducted detoxification or stabilization treatments for alcohol, opiates, and, more recently, cocaine. Although studies have not systematically compared social settings with medical settings for detoxification from alcohol dependence, there are reports of favorable outcomes in both.

In the presence of significant physiological signs of alcohol, opiate, benzodiazepine, or barbiturate withdrawal, however, the standard treatment includes medical supervision either in a hospital or an outpatient medical clinic.¹³⁸ Although research is not extensive, medical settings are generally viewed as being more appropriate for detoxifications involving medical problems (particularly for patients with a history of seizures) and psychiatric problems (particularly for individuals with depression and at risk of suicide), as well as in cases of patients who have concurrent cocaine dependence.

Alcohol Detoxification. Within the framework of medically supervised alcohol detoxification, the relative effectiveness and costs of inpatient versus outpatient alcohol detoxification have been examined.^{139, 140} In a study by Hayashida et al.,¹³⁹ chronic alcohol-dependent patients without histories of serious psychiatric or medical complications were randomly assigned to receive medically supervised alcohol withdrawal in either an inpatient or a day-hospital setting. On two of the outcome domains considered important for detoxification treatments (i.e., safe elimination of withdrawal signs and engagement in ongoing rehabilitation), the inpatient group showed significantly better performance, but the re-addiction rates were less than 12% for both groups. Despite this statistically significant advantage for the inpatient setting, it was 10 times more costly than outpatient detoxification.

There may be some advantage to inpatient detoxification when a patient does not have the social or personal supports necessary to comply with the outpatient attendance requirements. However, despite somewhat lower retention rates for outpatient than for inpatient alcohol detoxification,^{139, 140} outpatient detoxification may be more acceptable to a wider range of drinkers who wish to avoid the stigma of treatment in a designated detoxification facility.¹⁴⁰

Opiate Detoxification. Opiate detoxification can be accomplished with many medications, including clonidine, lofexidine, buprenorphine, and methadone. Recently there have been reports of rapid (24 hours or less) opiate detoxification under general sedation.¹⁴¹ At least four reports in the literature show the efficacy of this method, but there are also some elevated dangers associated with this modality as applied in general practice.¹⁴² Apart from these relatively new procedures, a wealth of studies over the past 10 years have shown that opiate detoxifications can generally be accomplished in outpatient settings under medical supervision with gradually reduced doses of methadone.^{143, 144} However, completion rates for treatment of opioid dependence may be higher in inpatient than in outpatient detoxification programs.^{145, 146}

Cocaine, Crack, and Other Stimulant Stabilization. Few studies have examined the appropriate setting for the stabilization of physiological and psychiatric signs and

symptoms associated with extended cocaine or crack use. The prevailing practice has been to attempt to stabilize all but the most severely affected patients through outpatient care. Patients who are in the acute stages of cocaine cessation and who are more severely affected (medically or psychiatrically) are placed in a hospital if they have significant cardiac problems or significant psychiatric symptomatology or are at least placed in inpatient social settings for the first three to five days of cocaine treatment.¹³⁶⁻¹³⁸

The literature is replete with accounts of dropouts during the first 2 to 3 weeks of outpatient cocaine treatment, with attrition rates ranging from a low of 27% to a high of 47% in the first few weeks of care.¹⁴⁷⁻¹⁴⁹ It is reasonable to conclude that the patients with the most severe medical and psychiatric problems are most likely to drop out of treatment early.

Length of Stay and Criteria for Completion of Detoxification

Alcohol and Opiates. Several detoxification studies have measured detoxification as three consecutive days of abstinence from observable withdrawal signs or symptoms (opiate or alcohol), using standardized inventories of these physical measures.^{139, 143} Using these criteria, the great majority of detoxifications can be accomplished in 3 to 5 days,¹³⁸ and there is no evidence of greater effectiveness from extended stays.

In an early study by Cushman et al.,¹⁴³ only 3% of 525 opiate-dependent patients who failed to provide an opiate-negative urine specimen following the outpatient detoxification (signifying at least 3 days of abstinence) were able to engage in the suggested abstinence-oriented rehabilitation program following detoxification. All these patients were re-addicted to opiates at 6-month follow-up.

Cocaine. A recent study of cocaine-dependent patients entering outpatient rehabilitation also offers some relevant information on the clinical importance of developing a criterion for successful completion. In a study of cocaine-dependent veterans, Alterman et al.¹⁴⁷ found that the single best predictor of engagement in the rehabilitation process, and ultimately program completion (elimination of cocaine use verified by urinalysis), was the presence or absence of cocaine metabolites in the urine sample submitted upon admission to the rehabilitation program. Of those patients without cocaine metabolites present in their urine on admission, 79% engaged in and completed the outpatient treatment, whereas only 39% of those with positive urine samples on admission engaged in and completed the outpatient treatment.

Indicators of Effectiveness in the Detoxification-Stabilization Stage

The goal of detoxification-stabilization is to remove the physiological and emotional instability that has impeded

direct entry to rehabilitative treatment, as well as to motivate the patient to recognize the severity of the drug use, to accept that there is a problem that the patient must and can address, and to engage the patient in continued rehabilitative care. The acute detoxification-stabilization stage cannot be considered complete treatment; it is only preparation for continued treatment. Research over the past 20 years in most countries has concluded definitively that detoxification is associated with lasting improvements only when there is continued rehabilitative treatment.¹ Thus, detoxification can be said to have succeeded if shortly (i.e., two to three weeks) after discharge the patient has

- Shown significant reductions in physiological and emotional instability (at least to levels appropriate for outpatient rehabilitation admission);
- Not had serious medical or psychiatric complications; and
- Been integrated into and engaged in an appropriate ongoing rehabilitation program.

The Rehabilitation-Relapse Prevention Phase of Treatment

Patients and Treatment Settings

Rehabilitation is appropriate for patients who are no longer suffering from the acute physiological or emotional effects of recent substance use and who need behavioral change strategies to regain control of their urges to use substances. Rehabilitation may be initiated in a residential setting, but sustained benefits require that it continue beyond that setting, because life in a controlled environment does not permit the patient to practice the skills necessary to prevent a relapse to substance use. Thus, most rehabilitation takes place in outpatient clinics or social settings. A practical goal of this stage of treatment is to prevent a return to active substance use that would require re-detoxification-stabilization; to assist the patient in developing control over urges to use alcohol or drugs or both, usually through sustaining total abstinence from all drugs and alcohol; and to assist the patient in regaining or attaining improved personal health and social function, both as a secondary part of the rehabilitation function and because these improvements in lifestyle are important for sustaining control over substance use.

Treatment Elements and Methods

Professional opinions vary widely regarding the underlying reasons for the loss of control over alcohol or drug use typically seen in treated patients. Genetic predispositions, acquired metabolic abnormalities, learned negative behavioral patterns, deeply ingrained feelings of low self-worth, self-medication of underlying psychiatric or physical problems, character flaws, and lack of family and community support for positive function have been suggested. There is an equally wide range of treatment strategies and treatments that can be used to correct or ameliorate these

underlying problems and to provide continuing support for the targeted patient changes.

Strategies have included such diverse elements as psychotropic medications to relieve underlying psychiatric problems; medications to relieve alcohol and drug cravings; acupuncture to correct acquired metabolic imbalances; educational seminars, films, and group sessions to correct false impressions about alcohol and drug use; group and individual counseling and therapy sessions to provide insight, guidance, and support for behavioral changes; and peer help groups (e.g., AA and Narcotics Anonymous [NA]) to provide continued support for the behavioral changes thought to be important for sustaining improvement.

Duration of Treatment

Typically, residential rehabilitation treatments range from 30 to 90 days; outpatient, abstinence-oriented forms of treatment range from 30 to 120 days; and therapeutic community modalities typically range from 6 months to 1 year. Methadone maintenance can have an indefinite time period.

Many of the more intensive forms of outpatient treatment (intensive outpatient and day hospital) begin with full- or half-day sessions five or more times per week for approximately 1 month. As the rehabilitation progresses, the intensity of the treatment reduces to shorter-duration sessions of 1 to 2 hours delivered twice per week and tapering to once per week. The final part of outpatient treatment is typically called “continuing care” or “aftercare,” with biweekly to monthly group support meetings (in association with parallel activities in self-help groups) continuing for as long as 2 years.

Maintenance Medications

Although the majority of rehabilitation treatment programs in the United States are abstinence oriented, a significant number of rehabilitation programs maintain patients on a medication that is designed to block the effects of the abused drugs (e.g., acamprosate, disulfiram, or naltrexone to block alcohol abuse) and thereby prevent the re-emergence of drug use. In the case of opiates and nicotine, many patients are “maintained” on a medication designed to override the effects of the abused drugs in what may seem a paradoxical way, namely, through the development of greater physiological tolerance to the same class of drugs. While more tolerance is typically developed during the course of medication with these maintenance drugs, the tolerance is to a safer, more potent, and longer-acting medication from within the class of abused drugs. For example, the nicotine patch provides significant doses of nicotine, elevating tolerance to nicotine but preventing withdrawal that abstinence would induce and obviating the need for cigarettes. In the same way, methadone, LAAM, and buprenorphine produce more opioid tolerance in an opioid abuser, but there are no worries about withdrawal and no need for heroin.

Maintenance forms of treatment are always controversial, because many in the public, and even those in the treatment field, believe that medications are just another form of “drug,” and that all drug usage should be eliminated. However, if one takes a broader, medical perspective, these medication-maintenance approaches are quite similar to current strategies for ameliorating the physiological or emotional problems in individuals with other chronic medical conditions, such as long-term maintenance on antidepressant, antipsychotic, or other psychotropic medications for psychiatric patients; maintenance on beta-blockers and other normotensive agents for patients with hypertension; antiasthmatics for asthma sufferers; and insulin for diabetics. A substantial amount of research has shown that these medications can be very effective in the rehabilitation of several forms of addiction.^{144,150,151}

Defining Outcome

All forms of rehabilitation-oriented treatments for addiction have the same four goals, regardless of the setting, modality, philosophy, or methods of rehabilitation. These goals are to

1. Maintain the physiological and emotional improvements that were initiated during detoxification-stabilization phase, preventing need for re-detoxification;
2. Enhance and sustain reductions in alcohol and drug use (most rehabilitation programs suggest a goal of complete abstinence);
3. Teach, model, and encourage behaviors that lead to improved personal health, improved social function, and reduced threats to public health and public safety; and
4. Teach and motivate behavioral and lifestyle changes that are incompatible with substance abuse.

A purposely broad perspective on measuring effectiveness was discussed in the first section of this chapter. Specifically, for any form of substance abuse rehabilitation intervention to be worthwhile to society, *there must be lasting improvements in those problems that led to the treatment admission and that are important to the patient and to society.* This definition purposely emphasizes improvements that have an enduring or lasting quality.¹⁵²⁻¹⁵⁵ Because these disorders are chronic and relapsing, a “cure” for substance use disorders (SUD) is not now achievable in most cases. Nonetheless, there are many illnesses that cannot be cured, and yet there are effective treatments for these illnesses that arrest and contain symptoms and permit improved function. The definition also emphasizes those improvements that are important to society. For the many parts of society affected by substance abuse, the effectiveness of treatment will be measured by the extended effects of treatment on the addiction-related problems that have become public health and public safety concerns. Given

this framework, it can be seen that achievement of the primary goal of reducing alcohol and drug use is necessary, but not always sufficient, to improve the addiction-related problems that are typically so prominent among individuals seeking treatment. Furthermore, without additional improvements in these associated problems, addiction treatment may not be worthwhile either to the patient or to society.¹⁵²⁻¹⁵⁵

Effective Components in the Rehabilitation–Relapse Prevention Stage of Treatment

Using the framework just described for defining outcome, this section summarizes some of the studies that have investigated treatment processes and treatment components in order to determine the “active ingredients” of the rehabilitation stage of treatment and to identify what individuals would appear to benefit most from these ingredients. Until recently, patient factors had been more thoroughly studied than treatment process factors with regard to their role in treatment outcome. With the development of new medications and behavioral interventions, there are now many studies devoted to the exploration of treatment “ingredients” or elements and their role in post-treatment outcome. The more prominent factors are as follows:

Medications

Great progress has been made over the past 10 years in the development of new medications and in the application of existing medications for the treatment of particular conditions associated with substance dependence and for particular types of substance-dependent patients.

Setting of Treatment

There have now been many studies investigating differences in outcome between various forms of inpatient and outpatient rehabilitation. For example, studies by Alterman et al.¹⁵⁶ and McCrady et al.¹⁵⁷ randomly assigned alcohol-dependent patients to an equal length (28 to 30 days) of either inpatient or day-hospital rehabilitation; the treatment elements were also designed to be similar. Both studies had similar findings. Patients in both the inpatient and outpatient arms of both studies showed substantial and significant reductions in alcohol use, as well as improvements in many other areas of personal health and social function, which suggests that both settings of care were able to produce substantial benefits. At the same time, a wide range of outcome measures collected at 6-month follow-up in both studies showed essentially no statistically significant or clinically important differences between the two settings of care, which suggests that the setting of care might not be an important contributor to outcome.

Other reviews of the literature on inpatient and outpatient alcohol rehabilitation by Miller and Hester¹⁵⁸ and Holder et al.¹⁵⁹ also concluded that across a range of study designs and patient populations, there are few

significant advantages provided by inpatient care over outpatient care in the rehabilitation of alcohol dependence, despite the substantial difference in costs. In contrast, a widely cited study by Walsh et al.¹⁶⁰ did find a significant difference in outcome favoring an inpatient program. However, this difference was shown among employed alcohol-dependent patients who were assigned to either an inpatient program plus AA or to AA meetings only, rather than to formal outpatient treatment. One recent review of the alcohol inpatient–outpatient literature did conclude that in studies that found an advantage to inpatient care over outpatient treatment, outpatients did not receive inpatient detoxification. It also concluded that these studies tended not to have social stability inclusion criteria and not to require randomization.¹⁶¹ This review points to the need to consider real-world factors when evaluating the effectiveness of different treatment settings.

In the field of cocaine-dependence treatment, there have also been several studies examining the role of treatment setting. Again, while there have typically been high attrition rates,¹⁴⁸ there is still evidence indicating that outpatient treatments for cocaine dependence can be effective, even for patients with relatively limited social resources. For example, Alterman and his colleagues¹⁵⁷ followed up a prior comparison study of inpatient and day-hospital treatment of alcohol dependence with an identical examination comparing the effectiveness of 4 weeks of intensive, highly structured day hospital treatment (27 hours weekly) with that of inpatient treatment (48 hours weekly) for cocaine dependence. The subjects were primarily inner-city, African-American men treated at a Veterans Administration medical center. The inpatient treatment completion rate (89%) was significantly higher than the day-hospital completion rate (54%). However, 7 months after treatment entry, self-reported outcomes indicated considerable improvements for both groups in drug and alcohol use, family/social, legal, employment, and psychiatric problems. The reductions in self-reported cocaine use were supported by urine screening results. Both self-report and urine data indicated 50% to 60% abstinence for both groups at the follow-up assessment. The comparability of both treatment settings was also evident in 12-month outcomes in both randomized and self-selecting patients.¹⁶²

There have been at least two attempts to formalize clinical decision processes regarding who should and should not be assigned to inpatient and outpatient settings of care (Cleveland Criteria; American Society of Addiction Medicine [ASAM] Criteria). McKay et al.¹⁶³ failed to show evidence for the predictive validity of the Cleveland Criteria, at least when applied to the assignment of alcohol- and drug-dependent patients to day hospital or inpatient care. That is, patients who met the Cleveland Criteria for inpatient treatment did not have worse outcomes than did those who met criteria for day hospital-only when both

groups received day hospital treatment. If the Cleveland Criteria had been valid, those who “needed inpatient treatment” but did not receive it should have had poorer outcomes than those who were appropriately matched to day hospital. In a similar study evaluating the psychosocial predictors from the ASAM criteria, McKay et al.¹⁶³ found at least partial support for the predictive validity of these placement variables. That is, among patients who “needed inpatient treatment,” as defined by the psychosocial elements of the ASAM criteria, those who were randomly assigned to outpatient care showed somewhat worse abstinence rates and generally poorer social outcomes than did those who were randomly assigned to inpatient rehabilitation. The retrospective nature of this study made it impossible to complete a full evaluation of these criteria.

The most recent versions of the ASAM criteria have attempted to make very fine-grained decisions regarding placements to levels of care defined by the amount and quality of medical supervision and monitoring. Research is needed to establish the predictive validity of these finer distinctions and to determine whether placements to settings and modalities with more medical supervision actually receive more medical contact or services than placements that are not expected to receive such services.

Length of Treatment/Compliance with Treatment

Perhaps the most robust and pervasive indicator of favorable post-treatment outcome in all forms of substance abuse rehabilitation is length of stay in treatment. Virtually all studies have shown that patients who stay in treatment longer or attend more treatment sessions have better post treatment outcomes than those who do not.¹⁶⁴⁻¹⁶⁸ Specifically, several studies have suggested that outpatient treatments of less than 90 days are more likely to result in early return to drug use and generally poorer response than treatments of longer duration.^{164, 67, 168}

Although length of stay is a very robust, positive predictor of treatment outcome, the nature of this relationship is ambiguous. One possibility is that patients who enter treatment gradually acquire new motivation, skills, attitudes, knowledge, and supports over the course of their stay in treatment; that those who stay longer acquire more of these favorable attributes and qualities; and that the gradual acquisition of these qualities or services is the reason for the favorable outcomes. An equally plausible possibility is that better-motivated and better-adjusted patients come into treatment ready and able to change; that their decisions to change their lives were made in advance of their admission; and that because of this greater motivation and treatment readiness, they are likely to stay longer in treatment and to do more of what is recommended. These two interpretations have very different implications for treatment practice. If treatment produces gradual positive changes over time, it is clinically sound practice to retain patients longer, perhaps even through

coercion, and to provide them with more services during treatment. On the other hand, if well-motivated, high-functioning, compliant patients enter treatment with the requisite skills and supports necessary to do well, then efforts to provide more services or to coerce patients into longer stays may not add to the effectiveness of more streamlined and less expensive rehabilitation efforts.

Participation in AA and NA

AA is a self-help or mutual support organization, not a formal treatment. For this reason, and because of the anonymous quality of the group, little research has been done to evaluate this important part of substance abuse rehabilitation.^{169, 170} While there has always been consensual agreement on the value of AA and other peer-support forms of treatment, new evidence has emerged showing that patients who have an AA sponsor or who have participated in the fellowship activities have much better abstinence records than patients who have received rehabilitation treatments but have not continued in AA. McKay and colleagues¹⁷¹ found that participation in post-treatment self-help groups predicted better outcomes among a group of cocaine- or alcohol-dependent veterans in a day hospital rehabilitation program. Timko et al.¹⁷² found that more AA attendance was associated with better 1-year outcomes among previously untreated problem drinkers, regardless of whether they received inpatient, outpatient, or no other treatment. Finally, a recent review of the literature on the impact of self-help programs concluded that greater participation was generally associated with better alcohol and psychosocial outcomes, although the magnitude of the effects tended to vary as a function of the quality of the study and of whether patients were treated in inpatient or outpatient settings.¹⁷³

There has been less research in the use of self-help organizations among cocaine- or opiate- dependent patients. However, a recent study of cocaine patients participating in outpatient counseling and psychotherapy showed that while only 34% attended a Cocaine Anonymous (CA) meeting, 55% of those who did became abstinent, compared with only 38% of those who did not attend CA.

It is difficult to sort out the extent to which AA attendance is an active ingredient of successful treatment from the extent to which it is simply a marker for general treatment compliance and commitment to abstinence. Several investigators have studied the relationship of completing various 12-step processes during the course of rehabilitation and relapse following treatment. Morgenstern and colleagues¹⁷⁴ reported that patients who adopted more of the attitudinal and behavioral tenets of the 12-step model of rehabilitation, such as admission of powerlessness, acceptance of a higher power, commitment to AA, and agreement that alcoholism is a disease, were neither more nor less likely to relapse following treatment

than patients who had adopted very few of the 12-step tenets by the end of the rehabilitation treatment. At the same time, two tenets found in all rehabilitation models, i.e., greater commitment to abstinence and greater intention to avoid high risk situations, did predict a lower likelihood of relapse.¹⁷⁴ In another analysis from the same study, greater affiliation with AA following treatment predicted better outcomes. AA affiliation was positively associated with self-efficacy, motivation, and coping efforts, which were themselves significant predictors of outcome.¹⁷⁴ More research is warranted to determine how participation in AA exerts its positive effects.

The Therapist or Counselor

Research also suggests that access to regular drug/alcohol counseling can make an important contribution to the engagement and participation of the patient in treatment and to the post-treatment outcome. One example of the role of the counselor and of individual counseling was shown in a study of methadone-maintained patients, all within the same treatment program and all receiving the same methadone dose, who were randomly assigned to receive counseling or no counseling.¹⁷⁵ Results showed that 68% of patients assigned to the no-counseling condition failed to reduce drug use (confirmed by urinalysis) and 34% of these patients required at least one episode of emergency medical care. In contrast, no patient in the counseling group required emergency medical care, 63% showed sustained elimination of opiate use, and 41% showed sustained elimination of cocaine use over the 6-month trial.

A study by Fiorentine and Anglin¹⁷⁶ as part of a larger "Target Cities" evaluation also showed the contribution of counseling in drug rehabilitation. Group counseling was the most common modality (averaging 9.5 sessions per month), followed by 12-step meetings (average 7.5 times per month) and individual counseling (average 4.7 times per month). Greater frequency of both group and individual counseling sessions was shown to decrease the likelihood of relapse over the subsequent 6 months. One important contribution of this study is that the relationships shown between more counseling and lower likelihood of relapse to cocaine use were seen even among patients who completed treatment, that is, who had approximately the same tenure in the programs. Thus, it may be that beyond the simple effects of attending a program, more involvement with the counseling activities is important for improved outcome.

At least four studies of substance abuse treatment have documented between-therapist differences in patient outcomes. These differences have emerged both among professional psychotherapists with doctoral-level training and among paraprofessional counselors. Luborsky et al.¹⁷⁷ found outcome differences in a variety of areas among nine professional therapists providing ancillary psychotherapy to methadone maintenance patients. McLellan et al.¹⁷⁸ found that assignment to one of five methadone maintenance

counselors resulted in significant differences in treatment progress over the following 6 months. Specifically, patients transferred to one counselor achieved significant reductions in illicit drug use, unemployment, and arrests while concurrently reducing their average methadone dose. In contrast, patients transferred to another counselor evidenced increased unemployment and illicit drug use while their average methadone dose went up. In a study of two different interventions for problem drinkers, Miller, Taylor, and West¹⁷⁹ found significant differences between paraprofessional therapists in the percentage of their patients who improved by 6-month follow-up. These percentages varied from 25% for the least effective therapist to 100% for the most effective therapist. McCaul et al.¹⁸⁰ reported significant differences in post-treatment drinking rates and in several other outcomes among alcohol-dependent patients assigned to different counselors within an alcohol treatment program.

Although it is relatively clear that therapists and counselors differ considerably in the extent to which they are able to help their patients achieve positive outcomes, it is less clear what distinguishes more effective from less effective therapists. In an experimental study of two different therapist styles, Miller, Benefield, and Tonigan¹⁸¹ found that a client-centered approach emphasizing reflective listening was more effective for problem drinkers than was a directive, confrontational approach. In a review of the literature on therapist differences in substance abuse treatment, Najavits and Weiss¹⁸² concluded, "The only consistent finding has been that therapists' in-session interpersonal functioning is positively associated with greater effectiveness." Among indicators of interpersonal functioning were the ability to form a helping alliance,¹⁷⁷ measures of the level of accurate empathy and a measure of "genuineness," "concreteness," and "respect."¹⁸³

There are a variety of certification programs for counselors. They include Committee on Addiction Rehabilitation (CARF) and Certified Addictions Counselor (CAC), as well as other professions treating substance-dependent patients (e.g., American Society of Addiction Medicine; American Academy of Psychiatrists in Addiction). There is also an added-qualifications certificate for psychologists available through the American Psychological Association. Added-qualifications certificates are offered throughout the country, usually by professional organizations. Although the efforts of these professional organizations to bring needed training and proficiency to the treatment of addicted persons are commendable, there have been no studies validating whether patients treated by certified addictions counselors, physicians, or psychologists have better outcomes than patients treated by noncertified individuals. This is an unfortunate gap in the literature. Results from such studies would be quite important for the licensing efforts and health policy decisions of many States and health care organizations.

Community Reinforcement and Contingency Contracting

Azrin and colleagues¹⁸⁴ initially developed the community reinforcement approach (CRA) and tested it against other standard treatment interventions. CRA includes conjoint therapy, job-finding training, counseling focused on alcohol-free social and recreational activities, monitored disulfiram, and an alcohol-free social club. The goal of CRA is to make abstinence more rewarding than continued use.¹⁸⁵ In a study in which patients were randomly assigned to CRA or to a standard hospital treatment program, those getting CRA drank less, spent fewer days away from home, worked more days, and were institutionalized less over a 24-month follow-up.¹⁸⁴

A recent set of studies by Higgins et al.¹⁸⁶⁻¹⁸⁹ used the CRA approach with cocaine-dependent patients. In one of these studies, cocaine-dependent patients seeking outpatient treatment were randomly assigned to receive standard drug counseling and referral to AA or to a multicomponent behavioral treatment integrating contingency-managed counseling, community-based incentives, and family therapy comparable to the CRA model.¹⁸⁹ The CRA model retained more patients in treatment, produced more abstinent patients and longer periods of abstinence, and produced greater improvements in personal function than did the standard counseling approach. Following the overall findings, these investigators systematically “disassembled” the CRA model and examined the individual “ingredients” of family therapy,¹⁸⁸ incentives,¹⁸⁷ and contingency-based counseling¹⁸⁶ as compared against groups who received comparable amounts of all components except the target ingredient. In each case, these systematic and controlled examinations indicated that these individual components made a significant contribution to the outcomes observed, thus proving their added value in the rehabilitation effort.

Matching Patients and Treatments

A number of research studies have attempted to match particular kinds of patients with specific types, modalities, or settings of treatment. The approach to patient-treatment matching that has received the greatest attention from substance abuse treatment researchers involves attempting to identify the characteristics of individual patients that predict the best response to different forms of addiction treatments (e.g., cognitive-behavioral versus 12-step, or inpatient versus outpatient).¹⁶⁹ The majority of these patient-to-treatment matching studies have not shown robust or generalizable findings.¹⁹⁰ Another approach to matching has been to assess patients’ problem severity in a range of areas at intake and then to match the specific and necessary services to the particular problems presented at the assessment. This has been called “problem-to-service” matching.¹⁹¹ This approach may have more practical application because it is consonant with the individually tailored treatment philosophy that most practitioners have espoused.

Substance abusers with comorbid psychiatric problems may be particularly good candidates for the problem-to-service matching approach, especially the addition of specialized psychiatric services for those most severely affected by psychiatric problems. For example, recent studies suggest that tricyclic antidepressants and the selective serotonergic medication fluoxetine may reduce both drinking and depression levels in alcoholics with major depression.¹⁹²⁻¹⁹⁴ Similarly, the anxiolytic buspirone may reduce drinking in alcoholics with a comorbid anxiety disorder.¹⁹⁵ Highly structured relapse-prevention interventions may also be more effective in decreasing cocaine use than are less-structured interventions in cocaine abusers with comorbid depression.¹⁹⁶

Woody and colleagues¹⁹⁷ evaluated the value of individual psychotherapy when added to paraprofessional counseling services in the course of methadone maintenance treatment. Patients were randomly assigned to receive standard drug counseling alone or drug counseling plus one of two forms of professional therapy: supportive-expressive psychotherapy or cognitive-behavioral psychotherapy. Over a 6-month period, patients receiving psychotherapy showed greater reductions in drug use, more improvements in health and personal function, and greater reductions in crime than did those receiving counseling alone. Stratification of patients according to their levels of psychiatric symptoms at intake showed that the main psychotherapy effect was seen in those with greater than average levels of psychiatric symptoms. Specifically, patients with low symptom levels made considerable gains with counseling alone, and there were no differences between types of treatment; however, patients with more severe psychiatric problems showed few gains with counseling alone but substantial improvements with the addition of the professional psychotherapy.

Another type of substance abuser who can pose particular problems for outpatient treatment is the cocaine-dependent patient who is unable to achieve remission from cocaine dependence early in outpatient treatment. Several randomized studies suggest that highly structured cognitive-behavioral treatment is particularly efficacious with such individuals. In two outpatient studies with cocaine abusers, those with more severe cocaine problems at intake had significantly better cocaine use outcomes if they received structured relapse-prevention rather than interpersonal or clinical management treatments.^{104,149} In a third study, cocaine-dependent patients who continued to use cocaine during a four-week intensive outpatient treatment program had much better cocaine use outcomes if they subsequently received aftercare that included a combination of group therapy and a structured relapse-prevention protocol delivered through individual sessions rather than aftercare that consisted of group therapy alone.¹⁷¹

McLellan and colleagues¹⁹¹ recently attempted to match problems to services in two inpatient and two

outpatient private treatment programs. The 130 patients in the study were assessed with the Addiction Severity Index (ASI) at intake and placed in a program that was acceptable to both the employee assistance program referral source and to the patient. At intake, patients were randomized to either the standard or matched services condition. In the standard condition, the treatment program received information from the intake ASI, and personnel were instructed to treat the patient in the “standard manner, as though there were no evaluation study ongoing.” The programs were instructed not to withhold any services from these patients. Patients assigned to the matched services condition were also placed in one of the four treatment programs and ASI information was forwarded to that program. However, the programs agreed to provide at least three individual sessions in the areas of employment, family/social relations, or psychiatric health delivered by a professionally trained staff person. In fact, matched patients received significantly more psychiatric and employment services than did standard patients, but not more family/social services or alcohol and drug services. Matched patients were more likely to complete treatment (93% versus 81%) and showed more improvement in the areas of employment and psychiatric functioning than did the standard patients. While matched and standard patients had sizable and equivalent improvements on most measures of alcohol and drug use, matched patients were less likely to be retreated for substance abuse problems during the 6-month follow-up. These findings suggest that matching treatment services to adjunctive problems can improve outcomes in key areas and may also be cost-effective by reducing the need for subsequent treatment for relapse.

Summary

This section has reviewed the substance abuse treatment research literature to identify treatment process variables and treatment components that have been shown to be important in determining outcome from addiction rehabilitation efforts, and in this way to contribute to the discussion of what aspects of treatment are “worth it” to society. The major treatment variables or components were staying longer in treatment, reinforcement (i.e., financial incentives or vouchers) for attendance and abstinence; having an individual counselor or therapist; receiving specialized services for psychiatric, employment, and family problems; medications to block drug craving and drug effects; and participation in AA or NA following rehabilitation.

It was surprising that some of the treatment elements that are most widely provided in substance abuse treatment have not been associated with better outcome. For example, this review of the literature has shown little indication that any of the following lead to better or longer lasting outcomes following treatment:

- Alcohol/drug education sessions
- General group therapy sessions, especially “confrontation” sessions
- Acupuncture
- Patient-relaxation techniques
- Treatment program accreditation or professional certification criteria.

Holder and colleagues¹⁵⁹ have reviewed the available research on effectiveness of various treatment components in the alcohol rehabilitation field. They also concluded that a number of therapeutic practices and procedures that remain prevalent in the field have not yet shown indication of success.

It is important to note that the absence of evidence does not prove a treatment element is ineffective. Some of the treatment practices or conventions cited may actually have benefits for some patients or under some circumstances, even though there is little support for them in the existing literature.

Why Aren't Addiction Treatments Considered as Effective as Treatments for Other Illnesses?

The previous parts of this paper have examined the addiction treatment field from the perspective of its value to society. It would seem that this review would provide a relatively simple answer to what appears to be a direct question of cost and value. However, it is not a direct question at all. The reasonable expectations of a society regarding any form of intervention designed to take care of the drug problem must address many issues, all of which are related to the addiction-related problems that are so frightening and costly to society. Multiple perspectives on outcome are not typical in evaluations of medical illnesses. In the treatment of most chronic illnesses effective treatments are expected to reduce symptoms, increase function, and prevent relapse—especially costly relapse. Thus, a final perspective on the issue of the effectiveness and worth of addiction treatments must be an evaluation of the effectiveness of addiction treatments using the criteria typical for evaluations of other chronic illnesses.

A Chronic Illness/Continuing Care Perspective: Implications for Treatment and Evaluation

There are no cures for any of the chronic medical illnesses reviewed in this paper. Nonetheless, it is interesting that despite rather comparable rates of compliance and relapse across all of the disorders examined, there is no serious argument as to whether the treatments for diabetes, hypertension, or asthma are effective or whether they should be supported by contemporary health insurance. However, this issue is very much in question with regard to treatments for drug dependence.^{7,12} In this regard, it is

interesting that the relatively high relapse rates among diabetic, hypertensive, and asthmatic patients following cessation of their medications have been considered evidence of the effectiveness of those medications and of the need for compliance enhancement strategies. In contrast, relapse to drug or alcohol use following cessation of addiction treatments has often been considered evidence of treatment failure.

One major difference is that drug-dependence treatments are not provided, evaluated, or insured under the same assumptions as are treatments for other chronic illnesses. Particularly important is that drug-dependence treatments are rarely delivered under a continuing-care model that would be appropriate for a chronic illness. Indeed, with the exception of methadone maintenance and AA/NA forms of treatment (which are among the most effective forms of treatment currently available), most contemporary treatments for drug dependence are acute care episodes. For example, it is common for a drug-dependent individual to be admitted to a 30- to 90-day outpatient rehabilitation program, rarely accompanied by medical monitoring or medication. This period of treatment is typically followed by discharge with referral to community sources. While the intentions and overall goals of addiction treatment might be conceptualized as ongoing by those in the treatment field, from an operational perspective, addiction treatments are delivered in much the same way as are follow-up treatments that might be offered a patient who has undergone hip-replacement surgery. Outcome evaluations are typically conducted 6 to 12 months following treatment discharge. A major (sometimes the exclusive) measure in all these evaluations is whether the patients had been continuously abstinent since leaving treatment.

Consider these goals and this treatment and evaluation strategy applied to a hypertension treatment regimen. Patients who meet diagnostic criteria for hypertension would be admitted to a 30- to 90- day outpatient “hypertension rehabilitation” program, where they might receive medication, behavioral change therapy, dietary education, and an exercise regimen. Because of insurance limits and evaluation goals, the medication would be tapered during the last days of the treatment, and the patient would be referred to community sources. The evaluation team would contact the patient 6 months later and determine whether he or she had been continuously normotensive throughout that post-treatment period. Only those patients that met this criterion would be considered “successfully treated.” Obviously, this hypothetical treatment management strategy and its associated outcome evaluation approach are absurd for any chronic illness, including drug dependence.

Conclusions

Although science has made great progress over the past several years, we cannot yet fully account for the physiological and psychological processes that transform controlled, voluntary use of alcohol or other drugs into uncontrolled, involuntary dependence on these substances. We cannot cure this condition once it has been contracted. But can we treat it effectively.

Would a societal investment in treatment provide an attractive return on the investment? The research reviewed here suggests the answer is clearly yes. Both controlled clinical trials and large-scale field studies have shown statistically and clinically significant improvements in drug use and in the drug-related health and social problems of treated individuals. Further, these improvements translate into substantial reductions in social problems and costs to society. Recent pharmaceutical research has produced effective medications for the treatment of alcohol, nicotine, and opiate dependence, and has identified promising candidate medications that will provide even more assistance to physicians in treating these illnesses. Thus, we conclude that drug and alcohol dependence are treatable medical illnesses.

If this conclusion is true, then why does it seem so surprising to so many parts of society? The thesis of this paper is that there are two main reasons for this.

Addiction Is a Chronic Condition

Much of society believes that addiction to drugs or alcohol is simply the product of poor impulse control complicated by the physiological problems associated with dependence and withdrawal. This assumption leads to a view that these acquired habits and withdrawal symptoms ought to be correctable with some education, some severe consequences associated with use (to teach the user a lesson), and some period of brief stabilization. The research, however, is quite clear on these points. It shows that education does not correct drug dependence; it is not simply a problem of lack of knowledge. Consequences for drug use appear to be important stimuli leading to drug abuse treatment entry. Indeed, more than half of all treatment entrants in the United States are under some form of coercion.¹⁹⁸ At the same time, very few addicted individuals are able to profit from a corrections-oriented approach by itself. Relapse rates are over 70% for all forms of criminal justice interventions. Finally, addiction is not simply a matter of becoming stabilized and “getting the drugs out of one’s system.” Relapse rates following detoxifications are approximately the same as those following incarceration.^{86, 94,123,153,199}

The evidence is compelling that, at the present state of medical knowledge, addiction is best considered as a chronic relapsing condition. (The word “condition” is used here because there are many who do not wish to call it an

illness.) Once alcohol or drug abuse is considered a chronic condition, it is no longer surprising that incarceration or brief stabilization would not be effective. The research evidence is clear that for those with alcohol, cocaine, opiate, or other drug dependence the best available treatments are those that are ongoing, able to address the multiple problems that are risks for relapse—such as medical and psychiatric symptoms and social instability, and well integrated into society, thereby permitting ready access for monitoring purposes and to forestall relapse. The research has shown that while motivation for treatment plays an important role in maintaining treatment participation, most substance-abusing patients enter treatment with combinations of internal motivation and external motivation from family, employer, the legal system and society at large.

Addiction Treatments Must Address the Concerns of Society

While addiction may be compared to other chronic illnesses, there are many differences. One of the most prominent differences is the breadth of treatment focus. The major foci of most treatments for other chronic illnesses are symptom remission and return of function for the benefit of the patient. This has also been true for many addiction treatments, and it has left much of society with the view that the major goal of addiction treatment is to simply make the patient feel better. This goal is not one

that those who have suffered from the crime, lost productivity, and embarrassment of addiction are eager to accept. Addiction treatment providers must broaden their views of their responsibilities. To achieve the potential social value of addiction treatment, it will be necessary for providers to focus on such socially important goals as

- Working with employers and social welfare agencies toward the goals of returning to or initiating work;
- Working with criminal justice agencies and parole/probation officers toward the goals of keeping the patient from returning to drug-related crime and incarceration; and
- Working with family agencies and the families themselves toward the goals of returning to or initiating responsible parenting.

These are the addiction-related conditions that most affect society. Reduction or elimination of these problems are the goals that society expects from any effective intervention. This review indicates that addiction treatments can, but do not always, show evidence of being able to meet these societal expectations of effectiveness. With application of the treatment elements that have been shown to be effective under a continuing-care model of treatment, addiction treatment can be an effective and valuable part of a social policy on drug abuse problems.

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Medicaid Reimbursement of Primary Care Providers for Treatment of Substance Use Disorders

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Introduction

For purposes of this paper, primary care is defined as “the provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community.”¹ According to this definition, primary care providers include physicians, nurses, psychologists, midwives, social workers, dentists, pharmacists, and allied health professionals. The definition excludes care provided by specialists and care provided in acute settings.

Traditionally, health care professionals in primary care settings have not provided primary, secondary, or tertiary interventions for patients with substance use disorders (SUD). There are at least two reasons why primary care providers have not been reimbursed for SUD treatment. First, most of them lack the training and skills to provide SUD treatment; and second, reimbursement rates have not been determined for these services. This situation is unfortunate, because primary care providers may detect illness sooner, treat patients in fewer visits, require fewer specialist referrals, and produce better outcomes than other providers.² If primary care health professionals were trained to provide SUD interventions and could be reimbursed for such services, then the Nation’s capacity for treatment of patients with SUD would grow enormously. These expanded services are greatly needed and could be an important step in attaining the *Healthy People 2010* objectives.³

Expanding reimbursement for SUD treatment services requires major changes in Medicaid, the system under which thousands of individuals with SUD receive treatment. Almost 20% of Medicaid hospital costs are associated with untreated SUD.⁴ Many more individuals would undoubtedly benefit from treatment if Medicaid were structured to respond to the unique nature of SUD and to cover successful treatment of individuals affected by it. U.S. taxpayers pay \$276 billion per year for untreated SUD.⁵ Medicaid can make a difference by making effective SUD treatment more widely available.

This paper begins by discussing some of the problems in the current Medicaid system with respect to coverage for SUD treatment. It then focuses on the need for setting standards for core services and establishing reimbursement rates for SUD services offered under Medicaid. The paper concludes by proposing a rate-setting model that may help determine the most effective and cost-beneficial means of delivering substance abuse services.

How SUD Treatment Services Are Provided and Reimbursed

In United States, there are two methods of providing and paying for substance abuse treatment: one method for the private sector and another for the public sector. In the private sector, individuals whose employers offer health care benefits may choose an insurance company, such as Blue Cross/Blue Shield, or a health maintenance organization (HMO) plan. These programs usually have mental health “carve-outs” that cover private treatment providers. Carve-out plans distinguish mental health providers from SUD treatment providers. According to Frank and colleagues,⁶ a private plan requires higher copayments for mental health and substance abuse (MHSA) care than for general services, limits the number of MHSA office visits, limits MHSA hospital stays to 30 to 60 days, and often imposes annual or lifetime limits on plan costs for MHSA care. Coverage for medical services is not subject to these limitations, a fact that creates a significant disparity between medical services and MHSA services.

The public sector provides treatment for SUD for unemployed persons and for employed persons whose employers do not offer health insurance. The public system is funded through several parallel mechanisms. Federal block grants to States fund SUD prevention and treatment programs in underserved areas through competitive contracts. Federal, State, and local governments fund 46% of all SUD treatment in the United States.⁷ The Medicaid program, which is funded by the Federal government and the States, provides reimbursement for some components of SUD treatment (e.g., in-hospital detoxification); however, it rarely pays for other components, such as outpatient counseling.

The responsiveness of Medicaid, a major source of health care for persons living in poverty and for women and children, to persons with SUD can clearly be improved. In 1990, the Institute of Medicine (IOM) published several recommendations to improve coverage of SUD by Medicaid and private insurers.⁸ More than a decade later, these recommendations are still relevant. For example, the IOM report stated that Medicaid should “assume a consistent role across the board in financing the public tier of drug treatment.” To accomplish this, Federal legislation governing Medicaid must be altered. Such legislation would delineate eligibility criteria and the kinds of services and the types of providers eligible for reimbursement. It also would set minimum reimbursement levels. The IOM also recommended that the provisions covering drug treatment benefits, including deductibles, copayments, stop-loss measures, and schedule caps, be similar to those for treatment of other chronic, relapsing health problems.

There is widespread public support for insurance programs that reimburse providers for SUD treatment in the same way as they reimburse for treatment of any other

chronic disease.⁹ In recent years, policy changes at the Federal and State levels show some movement in this direction. For example, in 1999, the Clinton Administration mandated the U.S. Office of Personnel Management to achieve parity for MHSA treatment services in all Federal health benefits programs by 2001.¹⁰ Congress passed a limited parity law in 1996 for mental health services but not for substance abuse treatment services. Several States have introduced similar legislation. A recent U.S. General Accounting Office study reported, however, that a large percentage of U.S. businesses are either ignoring or circumventing parity regulations.¹¹

Meanwhile, the need for treatment expands. The U.S. “war on drugs,” for example, has begun to give greater emphasis to treatment.¹² At the State level, the passage of legislation such as Proposition 36 in California has begun to divert large numbers of offenders from the criminal justice system into treatment. Without widespread availability of treatment, however, such programs are likely to fail.

Medicaid Coverage for Substance Use Treatment: The Problems

The challenge, in brief, is to find a way to ensure Medicaid coverage for treatment of individuals with SUD and to identify a means of reimbursing primary health care providers for such services in primary health care settings.

Medicaid has two mechanisms for paying for treatment of SUD: the clinic option and the rehabilitation option. The clinic option allows substance abuse treatment services to be delivered in an outpatient setting, as long as a physician provides them. The rehabilitation option allows coverage for non-physician providers. Numerous issues must be resolved if Medicaid options for treatment of SUD are to be put to further use. These include (1) inconsistent coverage; (2) restrictions governing program eligibility; (3) exclusions of institutions for mental disorders from Medicaid eligibility; (4) lack of coverage for SUD treatment within Medicaid managed care plans; (5) lack of Medicaid standards for SUD treatment; and (6) lack of set reimbursement rates for interventions in primary care settings. Each of these issues is addressed in the paragraphs that follow.

Inconsistent Coverage

In order for a provider to be reimbursed under Medicaid, the patient whom he or she cares for must be Medicaid-eligible. Not all unemployed or uninsured individuals are eligible to be enrolled in Medicaid. Furthermore, many persons periodically lose and regain Medicaid eligibility, which creates inconsistent coverage for SUD treatment.¹³ For example, most treatment programs last a minimum of 4 months, and it is not uncommon for a patient to lose Medicaid eligibility during that time period. Welfare-to-work programs and children in foster care present enormous challenges to continued coverage. For example,

mothers with SUD lose their Medicaid benefits when they lose custody of their children. To be reunified with their children, they must successfully complete SUD treatment, but they have no insurance to pay for treatment. Many parents permanently lose custody of their children because they do not receive adequate treatment for their SUD.

Restrictions Governing Program Eligibility

To many SUD treatment providers, particularly those working in outpatient settings, it seems as though Medicaid has erected a series of hurdles that they must overcome to be eligible to be reimbursed for services they provide. These hurdles include the following:

Certificate of Need

In order for Medicaid to pay for SUD treatment, providers and their institutions, like their patients, must be Medicaid-eligible. To be eligible for Medicaid reimbursement, in many States an SUD treatment facility must hold a certificate of need. Treatment programs have been traditionally exempted from the need to obtain a certificate of need. Applying for certification is a time-consuming and expensive process. By forcing treatment programs to go through this process, Medicaid makes it difficult for new programs to enter the market and thereby restricts program expansion and competition.

Lack of Reimbursement for Care in Non-Hospital Settings

Most SUD treatment services occur outside hospitals and therefore cannot be reimbursed under Medicaid rules for hospitals. Historically, Medicaid has paid for services offered in hospital settings, in particular inpatient detoxification. Over time, as SUD treatment has moved to outpatient settings and more and more services have begun to be provided by non-physicians, Medicaid has played a smaller and smaller role. Medicaid continues to focus on hospital care, even though the majority of SUD treatment has shifted to the outpatient setting. Furthermore, Medicaid utilization and review systems are set up to discourage use of health services. The assumption is that, left to their own devices, patients will overutilize health services. This assumption is not reasonable for patients with SUD, who attend outpatient settings and who should be constantly encouraged to continue to attend treatment.

In most States, Medicaid does not reimburse for basic screening, assessment, brief intervention, or motivational interviewing in primary care settings. If Medicaid covered these services, a primary care provider could provide them. Few primary care providers have been trained to provide these services. Certified addiction counselors, nurses, and social workers, who are not eligible for Medicaid reimbursement, provide most of the services in public and private treatment settings. Therefore, very few patients in primary care settings, whether or not Medicaid insures them, receive services that would identify or treat SUD.

The Clinic Option

The clinic option within a State Medicaid plan allows physician-provided substance abuse treatment services in non-hospital settings. While the option can be used for any SUD treatment, it has been used predominantly for methadone maintenance. Methadone maintenance services provided in freestanding clinics are eligible for Medicaid reimbursement, because these programs operate under direct physician supervision; however, Medicaid covers methadone maintenance in only 41% of the State plans.

The U.S. Congress recently authorized the training of physicians and advanced-practice nurses to prescribe buprenorphine in primary care settings. This legislation is significant because it extends SUD treatment services for persons with an opiate disorder in a primary care setting and eliminates the gap that often occurs between referral and placement in a SUD treatment program. It also allows services for persons with opiate disorders to be provided by advanced-practice nurses, who usually spend more time with primary care patients than physicians do. This legislation would also expand the number of qualified providers and therefore the availability of services. It is not yet clear whether these services will be eligible for Medicaid reimbursement under the clinic option.

The Rehabilitation Option

The only provision under Medicaid that allows direct reimbursement of providers other than physicians in traditional treatment settings is the section on rehabilitation. Under it, Medicaid usually pays for rehabilitation services by a physical therapist. Seeking to use this option to broader advantage, States such as Missouri and Massachusetts have successfully argued that certified addiction counselors are providing “therapy” to patients going through mental “rehabilitation,” and that they should therefore be eligible for Medicaid reimbursement under the rehabilitation option, if it is part of the State plan. It is an awkward argument, but one that enables programs to secure Medicaid reimbursement for outpatient SUD treatment provided by nurses, counselors, and social workers in traditional settings. This option infuses additional Federal money into the substance abuse treatment system, requires programs to meet a high standard of care, and improves the possibility for continuity of care.

Exclusion of Institutions for Mental Disorders

Even when a State plan includes the rehabilitation option, Medicaid has a number of limitations on reimbursement. For example, the institution for mental disorders (IMD) exclusion prevents the program from making payments to institutions with more than 16 beds. Most residential treatment programs have more than 16 beds and are therefore not eligible for reimbursement.

Faced with this dilemma, programs must separate room and board from clinical services—a separation that is

often not clinically reasonable for wrap-around comprehensive treatment programs. To overcome this barrier, programs sometimes use separate funding streams for drug-free housing and other services not covered by Medicaid.

Lack of Coverage Under Medicaid Managed Care Plans

Medicaid in several States has aggressively encouraged the use of managed care programs, and enrollment in such programs is growing. Coverage of SUD treatment under current Medicaid managed care programs, however, is often narrow. For example, only 12 States include methadone services in their Medicaid managed care contracts. Some managed care programs limit coverage for outpatient counseling and require authorization by a primary care provider for treatment of patients with dual diagnoses. As noted earlier, primary care providers are generally ill prepared to screen and assess for SUD or coexisting a psychiatric disorders. It is unclear how primary health care professionals can act as gatekeepers to services of which they have little or no knowledge. These limits may undermine the effectiveness of treatment programs.

The central problem between linking managed care to treatment programs is the complex nature of addiction. Even when appropriate referrals are made, most patients who seek treatment cannot and do not follow through. An opportunity to treat is often lost as the patient is shuffled between primary care offices and SUD and mental health treatment programs.

Lack of Standards of Care for SUD Treatment

To earn Medicaid certification, a program must meet standards that are set by a designated State agency. Many States do not have a formal standards or certification procedures for treatment programs (although the rehabilitation option provides an incentive for States to develop standards so that treatment programs can meet this requirement). Standardization and certification encourage improvement in the quality of care and promote the development of comprehensive treatment approaches. Medicaid further requires that a certifying authority regularly review treatment programs to maintain their quality.

States have taken varying approaches to this issue. In the District of Columbia, the need to meet requirements for Medicaid reimbursement led to the adoption of a certification process and a comprehensive reporting system for treatment outcomes. In keeping with the IOM recommendations, the District of Columbia has adopted regulations that require providers to participate in regular, publicly distributed, severity-adjusted reports of treatment outcomes. Adoption of these regulations was part of the District of Columbia's attempt to increase Medicaid reimbursement under the rehabilitation option. Primary health care providers should advocate these changes in their communities as well. The ability to use Medicaid

reimbursement to extend services under the rehabilitation option can vastly improve the quality and quantity of SUD treatment services in many communities.

Certified addiction counselors typically provide tertiary prevention SUD services. Primary care providers provide primary, secondary, and tertiary prevention treatment services. Treatment in a primary care provider's office is different in nature and duration from treatment by a certified addiction counselor in a SUD treatment program. This distinction must be acknowledged in any Medicaid policy concerning standards of care.

Primary care providers may provide

- Screening and assessment for SUD for individuals and their families;
- Brief intervention and motivational interviewing;
- Outpatient detoxification using prescribed medication to alleviate symptoms and complications associated with withdrawal;¹⁴
- Relapse prevention;
- Primary and secondary prevention interventions for spouses and children affected by a family member's SUD;
- Prescription medication for treatment of a dual diagnosis problem, prevention of relapse, or as a substitution therapy; and
- Case management and referral.

A significant body of literature documents the effectiveness of brief intervention,² motivational interviewing,¹⁵ outpatient detoxification,¹⁴ relapse prevention,^{16,17} and family strengthening;^{18,19} however, these interventions have never been standardized for Medicaid purposes. Establishing standards for Medicaid entails more than describing an evidence-based treatment protocol or reporting the outcome data. Standards must include a description of treatment components, steps for patient safeguards, methods of process improvement, data reporting requirements, unit-cost reporting, procedures for follow-up and record keeping, minimum qualification and experience for providers, and public reporting of outcomes. Public reporting of outcomes is important because it enables consumers to go to the most effective treatment providers. It also enables programs to learn from each other.

Medicaid has not established standards governing what services should be included in or excluded from primary care settings. Before primary care providers can be reimbursed for SUD services, a detailed manual for standards of care must be developed, and an outside national or statewide agency must be identified to certify to Medicaid that standards have been met. An organization such as the Association for Medical Education and Research in Substance Abuse (AMERSA) could help by establishing standards for this purpose.

Lack of Set Reimbursement Rates for Interventions in Primary Care Settings

No legal restrictions prevent Medicaid from reimbursing primary care providers for SUD services in primary care settings; however, two practical barriers stand in the way. The first, as seen above, is the absence of standards of care. The second is that Medicaid has not set reimbursement rates for SUD prevention and treatment interventions in primary care settings. The following paragraphs discuss some of the issues that must be resolved in order to set reimbursement rates.

Caps on Services and Rates

Medicaid requires that standardized services have established rates in order to control costs and prevent fraud. The safeguards typically take the form of caps on the number of visits per year, deductibles or copayments, requirements for preauthorization before services can be offered, or utilization reviews. In the treatment of physical problems, such as hypertension, diabetes, and asthma, health care professionals are given wide discretion regarding frequency of services, regardless of outcomes. For patients with chronic diseases that are difficult to control, clinicians can schedule frequent visits. This is not the case in reimbursement for substance abuse treatment; in this area, significant restrictions are imposed to restrict unnecessary use of services. These restrictions, which may be justifiable for other forms of treatment, may pose particular problems in the case of patients with SUD. With most other health care problems, patients want and seek treatment. With SUD, readiness for treatment changes radically over time. Patients may seek treatment while they are in the primary care provider's office, but when referred to treatment they may refuse to participate. Some may even act in a contradictory manner, i.e., seeking help but resisting treatment. Given the nature of SUD, it is critical to make treatment services available when a patient needs them. Because of the unique character of SUD treatment, provisions intended to prevent fraud can become barriers to treatment.

Patients with Dual Diagnoses

Patients generally visit a primary care provider for treatment of a physical illness. During an assessment related to the patient's physical complaint, the primary care clinician may identify substance use as a problem. In such a case, the provider ends up treating the patient for more than one diagnosis. For example, the provider may treat an HIV-positive patient with SUD, a patient with liver problems and SUD, or a depressed elderly patient with SUD.

When it comes to setting the reimbursement rate for all of the needs of a dually diagnosed patient, it is difficult to estimate both the duration and the number of visits. For example, if a primary care provider treats a patient with a dual diagnosis, should the provider be paid for two visits, one visit, or somewhere in between? If a mental health professional treats the client's SUD, should he or she be

paid an additional amount equal to what would be paid to a substance abuse counselor? The tendency is to argue for a rate that is higher than that for one visit but less than that for two visits. What this rate should be is a question that needs to be studied.

Differing Rates for Services Offered by Members of Different Professions

The rates that different types of professionals charge for counseling patients in recovery differ considerably. To some extent, these rates reflect market valuation of the profession in question. By setting different rates, insurers amplify existing differences in the market and discourage certain disciplines from participating.

Historically, insurers have set rates by examining the cost of the provider's time and effort. An ideal program is identified, and the total program budget is divided by the number of units of services provided in order to set unit costs (F. Alemi and M. Haack, unpublished data, 2001). An alternative is to conduct time studies of each profession and to cost out its various activities, including mental activity, by the value of the professional's time.²⁰ Rates set in this fashion perpetuate and in some way contribute to disparities in professional incomes. None can be defended without accepting that (1) the profession's income is justified, and (2) the profession's educational preparation and experience are necessary. In SUD treatment, where persons from different professions are simultaneously active, where wide income disparities exist, and where professions have different levels of educational preparedness, these assumptions cannot be justified. The cost of 15 minutes of a primary care provider's time exceeds by severalfold the cost of 15 minutes of the time of a certified addiction counselor. Therefore, encouraging primary care providers to treat patients with SUD might be viewed as increasing the cost of treatment, if it were not for the differential outcomes these providers can achieve. In fact, primary care providers may screen and treat patients at an earlier stage and thus prevent expensive consequences of SUD. Certified addiction counselors typically see patients much further along in their illness, have a harder time keeping them in treatment, and have more visits with their patients than primary care providers do. The goal of rate setting should be to be fair to the provider by taking into account his or her profession's cost structure and ability to detect SUD, and the length and the effectiveness of treatment. In the following paragraphs, we propose an approach that overcomes difficulties of setting one rate for multiple professions.

Outcome-Based Reimbursement and Rate Setting

Medicaid and other insurers face the daunting task of deciding which type of provider they should reimburse and at what level. The traditional approach has been to pay

inconsistent amounts to different providers on the grounds of market value. However, insurers are price-setters, and they can shape the market. The traditional approach does not make economic sense if both the high- and the low-cost professions produce the same results.

One solution is to price treatment at the rate charged by the lowest-cost provider and thus by design exclude higher-cost providers. This approach takes into account neither the differential outcomes of different providers nor the fact that primary and secondary prevention services in the primary care setting can decrease the probability that a patient may need more costly tertiary care. A primary care provider has the advantage of detecting the condition earlier, not losing the patient to referral, providing a shorter intervention, and, perhaps, producing a better recovery. Medicaid and other insurers should consider these factors, not just cost per visit, when setting rates.

In setting prices for the various providers, we recommended that Medicaid bear in mind the following criteria:

- The costs to Medicaid if the patient's problems would go undetected and contribute to other health care costs.
- The probability that the patient would not complete treatment.
- The probability that the provider would neither refer the patient nor provide the needed treatment.
- The probability that the provider would refer the patient to SUD treatment, but that the patient would not follow through on the referral.
- The unit cost of care for the provider.
- The number of service units needed to complete the mental health and SUD treatments.
- The effectiveness of the care provided.

These factors are different for primary care physician, advanced-practice nurse, psychologists, pharmacists, and substance abuse counselors. One profession may cost more per visit but may treat the patient in fewer visits and be less likely to lose the patient in the shuffle of referrals to treatment programs. Medicaid should set the prices in such a fashion that the expected price of delivering services in a primary care setting does not exceed the expected cost of current alternatives. "Expected cost" refers not only to cost per visit but also to the probability of detecting illness, of retaining clients, and of reducing drug use. From Medicaid's economic perspective, it does not matter who treats the client, as long as the client recovers at the same

cost. Medicaid reimbursement rates should not favor one profession over the other, unless there are data that one group of providers can provide more effective services than the others can. Since professions differ in their frequency of contact with patients, length of contact with patients, ability to retain patients in treatment, and effectiveness in helping patients recover, different providers will receive different rates.

A physician may be paid severalfold higher for a 15-minute contact with the patient if his or her brief treatments are more effective than are longer and more frequent treatment visits with a drug counselor. Since the price is based on outcome, not on effort, professions that have better outcomes should receive higher reimbursement per visit under this approach. This reimbursement approach encourages more effective providers to be most active in treating the patient.

Outcome-based rates are not new; they have been used by Medicaid programs to set rates for HIV-positive patients.²¹ The application to substance abuse, however, is new. The appendix to this article provides details of how this can be done in the context of SUD treatment.

Vision for the Future

If primary care providers were trained in standardized protocols that met Medicaid requirements for treating patients with SUD in primary care settings, then the treatment capacity in the United States would dramatically increase. If rates for Medicaid reimbursement of primary care providers in primary care settings were established, then every eligible health professional would be motivated to learn the necessary skills, and the objectives set forth in *Healthy People 2010* would be attainable. The shame and stigma associated with entering a freestanding SUD treatment program would decrease. Patients would be treated more effectively, and treatment would begin earlier. SUD would be seen less as a moral failing and more as a chronic disease. If reimbursement were based on outcomes, not effort, then professions with better outcomes would become more active and there would be an economic incentive to improve outcomes. If more and better treatment were available, the number of individuals with SUD might decrease. There would be less prenatal exposure to alcohol and other drugs. Drug-related crime rates would decrease. The population's general health might increase.

Recommendations

1. Studies should be done to establish standards of care for SUD services acceptable to Medicaid for primary care providers in primary care settings.

Rationale. Before Medicaid can set reimbursement rates for primary, secondary, or tertiary treatment of SUD by primary care professionals in primary care settings, the service must be described and standards established that meet Centers for Medicaid and Medicare Services (CMS, formerly the Health Care Financing Administration, or HCFA) requirements.

Responsible Agents. CMS, Substance Abuse and Mental Health Services Administration/Center for Substance Abuse Treatment (SAMHSA/CSAT).

Expected Outcomes. A detailed manual for standards of care would be developed, and an outside agency would be designated that would bear responsibility for determining and certifying that the Medicaid standards have been met.

2. Medicaid should perform the studies needed to set reimbursement rates for the treatment of SUD by primary care providers in primary care settings. Such rates should be set for all 50 States in a manner that is fair to all professions, including physicians, nurses, social workers, psychologists, dentists, and pharmacists, and should reflect outcomes, including expected relapse and chronicity of the disease.

Rationale. Most primary care providers are ineligible for reimbursement for SUD services in primary care settings. Primary care providers should be reimbursed because they can screen and assess for SUD sooner, treat in fewer visits, and reach individuals who would not otherwise have access to treatment.

Responsible Agents: CMS, SAMHSA/CSAT.

Expected Outcomes. The capacity to identify and treat individuals with SUD would dramatically expand. The objectives of *Healthy People 2010* would become a reality.

3. Resources should be allocated for the development and dissemination of standardized Medicaid protocols for treating patients with SUD in primary care settings.

Rationale. Establishing standards for Medicaid services requires more than a research-based protocol. Primary care providers need to be informed of what is expected in regard to patient safeguards, methods for process improvement, data reporting requirements, procedures for follow-up and record keeping, and qualifications for providers.

Responsible Agents. CMS, SAMHSA/CSAT.

Expected Outcomes. Dissemination efforts would inform potential primary care providers, who would provide the SUD services and increase the number of providers willing to offer such services.

4. Studies should be done on the impact of reimbursement for primary health professionals other than physicians who provide SUD services in primary care settings.

Rationale. Data are needed to establish the added value of providing SUD services within a primary care setting.

Responsible Agents. CMS, SAMHSA/CSAT.

Expected Outcomes. Impact data would establish if this strategy is effective for overcoming the disparity between the number of citizens who need treatment and the number who actually get treatment.

Appendix: Decision Analysis of Reimbursement Rates

The decision tree in Figure 1 illustrates what must be done to apply outcome-based reimbursement to SUD treatment. In it, the cost of primary care intervention to the insurer is shown as C_1 ; this is the unknown variable to be estimated. The cost to the insurer for untreated SUD is shown as C_2 ; a number of studies provide estimates for cost to insurers for untreated SUD. The probability that a patient's SUD is detected is shown as "d"; this probability may be higher for primary care offices than for self-referral to outpatient drug counseling. The probability that a patient who has been diagnosed with a SUD will show up for treatment is "s." This probability is "1" when the professional who detects the SUD also treats it. When the patient is referred to other settings, this probability drops significantly (with the exception of court-ordered referrals). The probability of a day of recovery is shown as "r"; note that as patients have more recovery days, this probability increases (F. Alemi, M. Haack, L. Weisman, unpublished data, 2001).

Moving from left to right, the decision tree shows the chances of detection, of successful referral, and of successful treatment. Some clients do not participate in treatment

consistently, and as a consequence, their probability of recovery is reduced. The analysis shows the average recovery rate among subjects. The expected cost of primary care providers' intervention is expressed in the following equation:

$$\text{Expected Cost} = d (s (r C_1 + (1 - r) (C_1 + C_2)) + (1 - s) C_2) + (1 - d) C_2$$

We can estimate the expected cost from the cost of treatment by drug counselors. In the equation, all values are known except the cost of the intervention to the insurer (C_1). By solving for C_1 , the rate for an average treatment course is set. If the treatment takes an average of four visits, then the cost per visit can be calculated.

This analysis allows primary care providers to be more cost-effective if they detect illness sooner, treat the patient in fewer visits, offer more coordinated care, and provide more effective treatment. The approach proposed takes advantage of these unique characteristics of primary care interventions.

The cost for outpatient treatment for an early-stage recovering patient by a drug counselor and by the primary care provider is shown in Table 1. The decision tree analysis in Figure 1 would peg the maximum cost of treatment by a primary care clinician at \$1,983 per patient. If primary care providers can treat a patient within these costs, they will have the same outcomes as drug abuse counselors do. From Medicaid's perspective, it does not matter who treats the patient, as long as the same outcomes are obtained at the same cost. Under other assumptions regarding rates of detection and effectiveness, different maximum rates can be set.

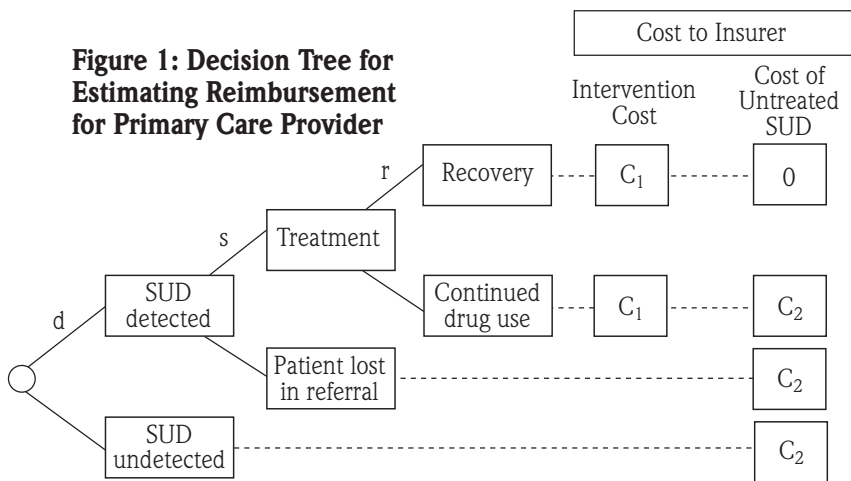


Figure 1: Decision Tree for Estimating Reimbursement for Primary Care Provider

Table 1: Hypothetical Data for Decision Tree

Probability of detection from general population	Drug counselor	0.1
	Primary care providers	0.65
Probability that the patient shows for treatment	Drug counselor	0.3
	Primary care providers	0.75
Probability of recovery after treatment	Drug counselor	0.7
	Primary care providers	0.5
Cost to Medicaid of continued drug use	Drug counselor	\$4,000
	Primary care providers	\$4,000
Cost of outpatient treatment	Drug counselor	\$3,000
	Primary care providers	?

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Substance Abuse in Older Adults: Review and Recommendations for Education and Practice in Medical Settings

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Introduction

As a growing number of people reach later life, the promotion of healthy lifestyles and primary disease prevention among older adults is a critical issue. The occurrence of a number of acute and chronic diseases in late life leads to the high utilization of health care among the elderly.¹⁻⁴ Many of these acute and chronic medical and psychiatric diseases are influenced by lifestyle choices and behaviors such as the consumption of alcohol. Because of the increased incidence of health care problems, elderly adults are more likely to seek health care on a regular or semi-regular basis than are younger adults.¹⁻⁴ In addition, older adults are more vulnerable to the effects of alcohol than are younger people, and, with their increased risk of comorbid diseases and their use of prescription and over-the-counter medications, may seek health care for a variety of conditions that are not immediately associated with increased alcohol consumption. This is why systematic alcohol screening and intervention methods are particularly important components of high-quality health care for older adults. Older adults with alcohol problems are a special and vulnerable population who require elder-specific screening and intervention procedures focused on the unique issues associated with drinking in later life. As a group, this generation of adults (age 65 and over) is less likely than younger cohorts to abuse illicit drugs. Drinking problems are by far the largest class of substance abuse problems seen in older adults today and are the primary focus of this paper. However, as the “baby boom” generation reaches later life, clinicians may see a greater use of illicit drugs in their older patients.

Heavy alcohol use is associated with a number of adverse health effects in this population. These include greater risk for harmful drug interactions, injury, depression, memory problems, liver disease, cardiovascular disease, cognitive changes, and sleep problems.⁵⁻⁸ Screening and interventions that focus on lifestyle factors, including the use of alcohol, may be the most appropriate way to maximize health outcomes and minimize health care costs among older adults.⁹

Core Values and Paradigms

A number of theoretical models have been applied to SUD (SUD). This chapter addresses the five most widely used models: (1) the moral model, (2) the family interaction model, (3) the disease or medical model, (4) the social learning model, and (5) the self-medication model.¹⁰ Most of these models have not been applied directly to older adults with SUD, but each has played a role in how health care providers and others view and address at-risk use, problem use, and substance dependence in older adults. The models do not represent specific theories about alcoholism but general trends in thinking and attitudes. The models provide a glimpse into how the substance use

disorder treatment field and our culture, in general, have developed in terms of dealing with substances and their associated problems. All of the models described are used to varying degrees in a variety of treatment venues.

The *moral model* states that SUD result from a moral weakness or lack of willpower.¹¹ The individual with a substance use disorder is viewed as someone with a weak character. This model can include an *impaired* submodel: “Alcoholics can’t change.” Many older adults in the United States were raised with this cultural paradigm. Because the current U.S. elderly population experienced numerous social and historical changes in alcohol availability and acceptability of drinking during the 20th century, such as

the Prohibition era, many older individuals with drinking problems suffer great shame and guilt. Therefore, it is critical that nonjudgmental language and a sensitive approach be used when addressing alcohol problems with elderly individuals.¹²

The *family interaction model* is focused primarily on the family's interactions rather than on the behavior of the person with the alcohol problem. In the extreme, the family is thought to select the member who has a substance use disorder for his/her role and to keep that person drinking through a complex series of interpersonal transactions.¹³ A positive outcome of this model is that it focuses on the effect of SUD on families. Family-oriented models have been used extensively in the mental health treatment community. This paradigm applies to older adults in two important ways. Family members in contact with the older relative may also have a substance use disorder, which makes recognition and treatment of the older person's drinking problem difficult. In addition, family members may know that their older relative has a drinking problem but may believe they should not interfere because the older adult "has no other pleasures left in life." Stereotypical views of drinking in older adulthood can impede help-seeking behavior with health care providers.

The *disease or medical model* follows the tenet that alcohol dependence is a disease. Genetic and other biological factors are considered important in this model.¹⁴ An underlying assumption of this paradigm is that the disease is chronic and always present; therefore, the goal of treatment is complete abstinence. This model assumes that there is a fundamental change in brain functioning that leads to increased consumption of alcohol or another substance. Simplistically, this represents either an up-regulation of craving or a disinhibition of normal controls or limits on drinking. Without abstinence, the disease is regarded as progressive and often fatal. Treatment focuses on substance abuse as the primary problem, rather than on a lack of willpower, lack of self-control, or mental health disorder. Newer innovations in treatment focus on pharmacological treatments to lessen craving or disinhibition. This remains one of the dominant models among specialized substance abuse treatment programs and, as such, is often applied to older adults in substance abuse treatment. The model works well with some older adults who have SUD. However, older adults present a complex picture to treatment providers, and they often have negative health or social consequences related to low levels of alcohol consumption and low craving states that would not be consistent with the disease model. Important consideration should be given to additional nonjudgmental, nonconfrontational approaches in any treatment plan with this population.

The *social learning model* states that problems with alcohol use are the result of learning maladaptive habits through environmental, cultural, social, peer, and family

influences.¹⁵ It is a product of external forces (e.g., poverty, family dysfunction). This model does not place blame on the person who has problems related to substance abuse. Interventions and treatments are designed to improve social functioning by altering the social environment or coping responses. Treatment focuses on changing behavior and cognition to allow the old habits to be controlled through new learning. This model has been demonstrated to be effective in reducing drinking among older at-risk and problem drinkers receiving health care in a primary care setting. Brief alcohol interventions are often used (based on cognitive behavioral therapy [CBT] and motivational interviewing).¹²

The *self-medication model* states that SUD are either symptoms of another primary psychiatric disorder or coping mechanisms.¹⁶ Individuals with SUD use chemicals to alleviate painful symptoms or to fill a void in functioning. This paradigm can be most easily applied to older adults who begin a pattern of at-risk drinking later in life. Older adults with this late-onset pattern often begin drinking or misusing medications after major life events (e.g., retirement, a move to new surroundings, physical health losses, loss of spouse, or loss of close friends).

The *biopsychosocial model* incorporates essential features and expands the parameters of the five models in a manner that may be particularly useful for those working with older adults. Integrating the traditional medical model with psychosocial approaches, especially the social learning and self-medication models, is salient in this age group because of the array of physical and mental health concerns common among older adults with at-risk or problem substance use. This integration of theoretical models can provide a background and a basis for thinking about training the myriad professionals who work with older adults in health care settings. The next section of this chapter addresses the number of clinical work settings in which older adults are seen and the potential audience for state-of-the-art training to most effectively treat substance abuse problems in this population.

Work Settings

To understand the impact of training regarding problems related to substance use in older adults, one must first address the potential number of health care professionals in different fields who can benefit from that training. The American Medical Association (AMA)¹⁷ reports the following numbers of physicians and residents in specialties appropriate for further training in substance abuse screening and intervention with geriatric populations. There were 97,707 internal medicine physicians (of which geriatrics is a subspecialty) and 20,685 internal medicine residents practicing in the U.S. Family practice physicians numbered 68,663, with 9,472 family practice residents. There were 39,056 psychiatrists and 4,407 psychiatry residents

practicing. The American Medical Student Association reported that there are 170 medical schools across the country, with an average incoming class size of approximately 200 students each year (B. Escobar, personal communication, May 2000).

According to the Bureau of Labor Statistics (BLS),¹⁸ 2,218 million registered nurses (RNs) were employed in 1999. A recent survey by the American Association of Colleges of Nursing¹⁹ reported that there were 111,186 students enrolled in bachelor's-degree nursing programs in the fall of 1999. Included in this total were 75,909 entry-level students and 35,277 registered nurses (with two-year associate degrees or hospital diplomas) who returned to school to obtain a bachelor's degree in nursing in "RN-to-baccalaureate" programs. In master's degree programs, nursing schools graduated 10,342 students between August 1998 and July 1999. Enrollment in doctoral programs that prepare nurse researchers and nurse faculty totaled 2,879 students at responding schools in the fall of 1999.

The American Academy of Physician Assistants (AAPA)²⁰ estimates 41,421 individuals were eligible to practice as physician assistants (PAs) as of March 1, 1999. The AAPA Physician Assistant Census (2000) reported that 52% of respondents reported their primary specialty in one of the primary care fields: family/general practice medicine (38%), general internal medicine (9%), general pediatrics (3%), or obstetrics/gynecology (2%). Other prevalent areas of practice for PAs include general surgery/surgical subspecialties (20%), emergency medicine (10%), and the subspecialties of internal medicine (7%). There are 120 accredited PA programs nationwide; these programs produced approximately 4,000 new graduates in 1999.²⁰ The BLS¹⁸ reported 813,000 social workers employed during 1999. The Council on Social Work Education²¹ reported the following statistics for 1998 social work student enrollments: 35,816 full-time/6,627 part-time students in bachelor's of social work (B.S.W.) programs; 12,409 full-time/11,350 part-time students in master's of social work (M.S.W.) programs; 1,127 full-time/975 part-time students in doctoral social work (Ph.D.) programs. The American Psychological Association (Research Department, oral communication, May 2000) estimates there are 65,000 to 75,000 licensed psychologists practicing nationwide and approximately 13,000 master's-level and 4,000 doctorate-level psychologists graduate each year.

In 1999, 206,002 pharmacists were licensed to practice nationwide.²² The American Association of Colleges of Pharmacy²² reports that in the fall of 1998, a total of 33,090 men and women were enrolled in the nation's schools and colleges of pharmacy in pursuit of their initial professional pharmacy degree (12,248 in BS programs and 20,842 in doctor of pharmacy [Pharm.D.] programs).

The American Geriatrics Society (AGS) is the professional organization of health care providers dedicated to improving the health and well-being of all older adults. It

has an active membership of more than 6,000 health care professionals. Current membership comprises primarily geriatrics health care professionals, including physicians, nurses, researchers, medical educators, pharmacists, physician assistants, social workers, physical therapists, health care administrators, and others. Historically, the Society's membership has been predominantly physicians.²³

Each of these organizations and training institutions can play a critical role in preparing clinicians to deal with substance abuse issues in the older adult population. As the U.S. demographic composition shifts to include larger numbers of older adults, the need for a sound knowledge and skill base in this area will become even more imperative. We are at a critical juncture in which clinicians will need new techniques and skills to work with a growing at-risk population of older adults—those with problems related to their substance abuse.

Historical Profile of Work in Substance Abuse and Educating Health Professionals about SUD in Older Adults

Scope of the Problem

Despite significant advances over the past two decades in the understanding of the aging process with its attendant health problems and of alcohol problems and alcoholism, little attention has been paid to the intersection of the fields of gerontology/geriatrics and alcohol studies. In recent years, however, there has been an increased interest in alcohol problems among the elderly. Although studies in this area are limited, prevalence estimates and typical characteristics of older problem drinkers now are being reported.²⁴⁻²⁷ Specific treatment and intervention strategies for older adults who are alcohol-dependent²⁸ or hazardous drinkers¹² are beginning to be disseminated.

Prevalence estimates of problem drinking in older adults using community surveys have ranged from 1% to 15%.^{24,27,29,30} These rates vary widely, depending on the definitions of "at-risk," "problem drinking," or "alcohol abuse/dependence" and on the methodology used in obtaining samples. Among clinical populations, however, estimates of alcohol abuse/dependence are substantially higher because problem drinkers of all ages are more likely to present in health care settings.^{31,32}

Despite the high prevalence of alcohol problems, most elderly patients with alcohol problems go unidentified by health care personnel. Signs and symptoms of potential problems related to alcohol abuse in older adults are shown in Table 1. Many of these signs and symptoms can be applied to other age groups but, because of the predominant lack of recognition in health care settings, they are delineated here with a focus on older adults. Moreover, few elderly patients with alcohol problems seek help in specialized addiction treatment settings. Given the high

Table 1: Signs and Symptoms of Potential Alcohol Problems in Older Adults

Anxiety	Increased tolerance to alcohol
Blackouts, dizziness	Legal difficulties
Depression	Memory loss
Disorientation	New difficulties in decision making
Excessive mood swings	Poor hygiene
Falls, bruises, burns	Poor nutrition
Family problems	Seizures, idiopathic
Financial problems	Sleep problems
Headaches	Social isolation
Incontinence	Unusual response to medications

Adapted from Fleming and Barry, 1992.¹³⁶

utilization of general medical services by the elderly, physicians and other health care professionals can be crucial in identifying those in need of treatment and in providing appropriate interventions.³³

Most research conducted on substance abuse in older adults has focused on alcohol abuse. The rates of illegal drug abuse in the current elderly cohort are poorly documented but are thought to be very low.³⁴ While nicotine dependence is common among older adults and interventions at reducing smoking have tremendous benefits, issues related to the consequences, identification, and treatment of smoking are not unique to older adults and are not be a focus of this report. Prescription drug misuse is a broad issue with multiple determinants, causes, and consequences. With the exception of psychoactive drugs, most misuse can be addressed without formal treatment. Alcohol/medication interactions remain a significant concern.³⁴

Drinking Guidelines

Older adults pose special concerns in developing alcohol consumption guidelines. Compared with younger people, older adults have an increased sensitivity to alcohol as well as to OTC and prescription medications. There is an age-related decrease in lean body mass versus total volume of fat, and the resultant decrease in total body volume increases the total distribution of alcohol and other mood-altering chemicals in the body. Liver enzymes that metabolize alcohol and certain other drugs become less efficient with age, and central nervous system sensitivity increases with age. Of particular concern in this age group is the potential interaction of medication with alcohol. For some patients, any alcohol use, coupled with the use of specific OTC or prescription medications, can be problematic. Because of the age-related changes in how alcohol is metabolized and the potential interactions between medications and alcohol, alcohol use recommendations for

older adults are generally lower than those set for adults under age 65.

The National Institute on Alcohol Abuse and Alcoholism (NIAAA) and the Center for Substance Abuse Treatment's (CSAT's) Treatment Improvement Protocol (TIP) on older adults³⁴ recommend that persons age 65 and older consume no more than one standard drink per day or seven standard drinks per week.^{26,35}

The drinking limit recommendations for older adults are consistent with data regarding the relationship between consumption and alcohol-related problems in this age group.^{36,37} Recommendations are also consistent with the current evidence on the beneficial health effects of drinking.³⁷⁻³⁹

Classification of Alcohol Use Patterns and Problems in Older Adults

Two classic methods are used to understand alcohol problems in older adults—the *medical diagnostic* approach and the *spectrum-of-use* approach. Both approaches use criteria that may not always apply to older adults and can lead to underidentification of alcohol use problems in this population.⁴⁰

Medical Diagnostic Approach

Clinicians often rely on the medical diagnostic approach using criteria published in the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV), for classifying alcohol-related problems in both younger and older adults. DSM-IV criteria are widely used and distinguish between abuse and dependence.⁴¹ These criteria may not apply to older adults with substance abuse problems, because older individuals often do not experience the legal, social, or psychological consequences specified in the criteria. For example, "a failure to fulfill major role obligations at work, home, or school" may be less applicable to a retired person than to a younger person who is working full-time and raising a family.³⁴ A lack of tolerance to alcohol may not indicate that an older adult does not have problems related to alcohol use. Moreover, DSM-IV criteria for tolerance are mostly based on increased consumption over time and ignore the changes of aging that would account for physiologic tolerance in the setting of decreased alcohol consumption. An important aspect of the DSM criteria relates to the physical and emotional consequences of alcohol use. This criterion may be especially important in identifying alcohol problems in older adults if the association between alcohol use and the physical or mental health problem is made. Table 2 summarizes some of the problems associated with applying DSM-IV criteria to older adults.

Spectrum-of-Use Approach

The following definitions and examples are provided to help the reader understand this approach. The spectrum-of-use categories are derived from the clinical and research

Table 2: DSM-IV Diagnostic Criteria for Substance Dependence and Special Issues of Aging⁴¹

The DSM-IV defines the diagnostic criteria for substance dependence as a maladaptive pattern of substance use, leading to clinically significant impairment or distress, as manifested by three or more of the following occurring at any time in the same 12-month period. The following considerations should be borne in mind when applying DSM-IV criteria to older adults.

Criterion	Special Considerations for Older Adults
Tolerance	May have problems with low intake because of increased sensitivity to alcohol with aging.
Withdrawal	Symptoms may be more subtle and more protracted. Many late-onset alcoholics do not develop physiological dependence.
Taking larger amounts over a longer period than was intended	Increased cognitive impairment can interfere with self-monitoring; drinking can exacerbate cognitive impairment.
Unsuccessful efforts to cut down or control use	No special considerations; same issues across life span.
Spending much time to obtain or use drugs or recover from their effects	Negative effects can occur with relatively low use.
Giving up activities because of use	May engage in fewer activities, making detection of problems more difficult.
Continuing use despite physical or psychological problems caused by use	May not know that problems are related to use.

expertise of professionals in the field. Definitions for older adults regarding low risk, at-risk, and problem use focus primarily, but not exclusively, on alcohol.⁴²

Abstinence refers to drinking no alcohol in the previous year. Approximately 60% to 70% of older adults are abstinent. If an older patient is abstinent, it is useful to ascertain why he or she does not use alcohol. Some individuals are abstinent because of a previous problem with alcohol. Some are abstinent because of recent illness, while others have life-long patterns of low-risk use or abstinence. Patients who are currently abstinent but who have a history of alcohol problems may require preventive monitoring to determine if any new stressors could exacerbate an old pattern.

Low-risk use is alcohol use that does not lead to problems. Older adults in this category drink within recommended drinking guidelines (no more than one drink per day or seven drinks per week, and never more than two drinks on any one day); are able to employ reasonable limits on alcohol consumption; and do not drink when driving a motor vehicle or boat or when using contraindicated medications. Low-risk use of medications would include using them following the physician's prescription. However, the provider should perform a careful check of the number and types of medications, because medication interactions and reactions are not uncommon in older adults. These individuals can benefit from preventive messages but may not need interventions.⁴²

Use that increases the chances that an individual will develop problems and complications is *at-risk use*. Persons over 65 who drink more than seven drinks per week (one per day) are in the at-risk use category. Although they may not currently have a health, social, or emotional problem caused by alcohol, they may experience family and social problems and, if this drinking pattern continues over time, health problems could be exacerbated. Brief interventions are useful for older adults in this group as a prevention measure.

Older adults engaging in *problem use* are drinking at a level that has already resulted in adverse medical, psychological, or social consequences. Potential consequences include injuries, medication interaction problems, and family problems, among others. It is important to reiterate that some older adults who drink even small amounts of alcohol can experience alcohol-related problems. Quantity and frequency of alcohol use may not be the first determinants of the usefulness of intervening. The presence of consequences also drives the need for intervening.

Alcohol or drug dependence refers to a medical disorder characterized by loss of control, preoccupation with alcohol or drugs, continued use despite adverse consequences, and physiological symptoms such as tolerance and withdrawal.⁴¹ Formal specialized treatment is generally used with persons who meet criteria for alcohol abuse or dependence and who cannot discontinue drinking with a brief intervention. Pretreatment strategies are also appropriate for individuals with the highest problem severity. Brief

interventions may be found in CSAT's TIP on Brief Interventions and Brief Therapies. These may be used as a pretreatment strategy to assist individuals on waiting lists for formalized treatment programs, for some patients who meet abuse or dependence criteria with no physical dependence or withdrawal, or as an adjunct to specialized treatment to assist with specific issues (e.g., completing homework for treatment groups, attendance at work, adherence to the treatment plan).⁴³

Issues Unique to Older Adults

Recent research has suggested that elderly individuals have unique drinking patterns and alcohol-related consequences, social issues, and treatment needs.⁴⁴ Because of this, early identification and secondary prevention of alcohol problems in late life are likely to require elder-specific approaches. Older adults present challenges in applying brief intervention strategies for reducing alcohol consumption. Because drinking guidelines are lower for older adults and because of historical and cultural factors that lead to feelings of disgrace, older adult problem drinkers find it particularly difficult to identify their own risky drinking. In addition, chronic medical conditions may make it more difficult for clinicians to recognize the role of alcohol in decreased functioning and quality of life. These issues present barriers to conducting effective brief interventions for this vulnerable population.

There is a paucity of research on the treatment outcomes and on the unique needs of older adults who meet criteria for alcohol abuse/dependence. Because traditional residential alcoholism treatment programs provide services to very few older individuals, sample sizes for treatment outcome studies have often been inadequate. The development of elder-specific alcoholism treatment programs in recent years may facilitate studies of this special population's needs.⁴⁴

Lifetime Patterns of Drinking

Clinical models of alcoholism and recovery were traditionally thought to follow a natural progression from early signs and symptoms through end-stage disease. When patients "hit bottom," they either died or began the long road to recovery ("Jellinek curve").

Most older individuals with alcohol problems do not fit this model. The clinical course of SUD across the life span is often marked by periods of abstinence or low-risk use. The patterns in consumption for persons with problematic use include the following: early-onset problem drinking marked by heavy use throughout most of adulthood; cyclical heavy drinking; and late-onset problem drinking. Late-onset problem drinkers often begin drinking because of stressors in later life (e.g., retirement, death of spouse, diminished physical capacity). Although original clinical estimates of late-onset problems, which were based on treatment-seeking individuals, indicated that about one-

third of older problem drinkers were in this category,⁷ some newer research is beginning to place the rate at 10% or less.²⁸

Comorbid Medical and Psychiatric Conditions

The medical and emotional consequences of heavy or excessive alcohol consumption are well chronicled in mental health texts. However, there is emerging evidence of the medical risks of moderate alcohol use among older adults. Moderate alcohol consumption has been demonstrated to increase the risk of strokes caused by bleeding, although it decreases the risk of strokes caused by blocked blood vessels.⁴⁵ Moderate alcohol use has also been demonstrated to impair driving-related skills, even at low levels of consumption, and it may lead to other injuries such as falls.⁴⁶ Of particular importance to the elderly is the potential interaction between alcohol and both prescribed and OTC medications, especially psychoactive medications such as benzodiazepines, barbiturates, and antidepressants. Alcohol is also known to interfere with the metabolism of medications such as digoxin and warfarin.⁴⁷⁻⁴⁹ The risk of breast cancer has been shown to increase by approximately 50% in women who consume three to nine drinks per week compared with women who drink fewer than three drinks per week.⁵⁰

Although the impact of excessive alcohol use on activities of daily living (ADLs) is not fully understood, several studies have demonstrated a relationship between alcohol use and functional abilities, especially among older subjects. In a recent study by Ensrud and colleagues,⁵¹ a former history of alcohol use had an odds ratio of 2.2:1 in predicting impairment in ADLs among older women. Alcohol use was more strongly correlated with impairment than was smoking, age, use of anxiolytics, stroke, or lower grip strength. In contrast to this finding, several authors have demonstrated that among older community-dwelling persons, moderate alcohol use is associated with fewer falls, greater mobility and improved physical functioning when compared with a group of non-drinkers.⁵²⁻⁵⁵ These studies did not include many heavy drinkers or subjects with alcohol abuse disorders. Together, these studies suggest that alcohol consumption in older persons may exhibit a protective effect in moderate doses similar to the protective effect on cardiovascular morbidity. On the other hand, more excessive use has a detrimental effect.⁵⁶

An important aspect to alcohol-related functional impairment is the reversibility of this impairment. Joseph and colleagues⁵⁷ found that a recent history of alcohol abuse predicted discharge from a Veterans Administration (VA) nursing home care unit. In a similar study of veteran nursing home residents by Oslin and colleagues,⁵⁸ the prevalence of a history of alcohol abuse was 29%, with 9% of the residents drinking within 1 year of admission. The most interesting finding from this study was the degree of improvement in performing ADLs among residents who had recently or formerly been abusing alcohol. Improvements

in ADLs have a tremendous impact upon caregiver burden, and this study suggests that alcohol abuse is a potentially common source of reversible disability among institutionalized elderly men. Residents with a recent history of alcohol abuse improved an average of 2.2 points (1.3 points in the formerly abusing group) in the degree of assistance required for completing ADLs. This degree of improvement was demonstrated in a time period of nearly 18 months. Among nursing home patients, this may translate into a decrease in staff time necessary to care for the patient. Among patients at home or in other clinical settings, this improvement may translate into a decrease in caregiver burden. Reduced disability may not only improve quality of life but also reduce the economic burden to the patient and society for providing care to disabled older persons. The improvement in function among the residents who have recently been drinking may be secondary to improvement associated with forced abstinence. However, the improvement in the formerly abusing group is less likely to be related to abstinence. This improvement possibly demonstrates prolonged benefits from a decrease in abusive drinking.

Epidemiologic studies have clearly demonstrated that comorbidity between alcohol use and other psychiatric symptoms is common in younger age groups. Less is known about comorbidity between alcohol use and psychiatric illness in later life. A few studies do indicate that dual diagnosis with alcoholism is important among the elderly. Among 216 elderly persons presenting for alcohol treatment, Finlayson and associates⁵⁹ found that 25% had an organic brain syndrome (dementia, delirium, amnesic syndrome), 12% had an affective disorder, and 3% had a personality disorder. In a similar study, Blow and colleagues²⁵ reviewed the diagnoses of 3,986 VA patients (aged 60 to 69) presenting for alcohol treatment. The most common comorbid psychiatric disorder was an affective disorder, found in 21% of the patients. Of these patients, 43% had major depression. Blazer and Williams⁶⁰ studied 997 community-dwelling older adults of whom only 4.5% had a history of alcohol abuse. However, of these subjects almost half had a comorbid diagnosis of depression or dysthymia. The Liverpool Longitudinal Study found a fivefold increase in psychiatric illness among elderly men who had a lifetime history of five or more years of heavy drinking.⁶¹

Comorbid depressive symptoms are not only common in late life but are also an important factor in the course and prognosis of psychiatric disorders. Depressed alcoholics have been shown to have a more complicated clinical course of depression with an increased risk of suicide and more social dysfunction than nondepressed alcoholics.^{62,63} Moreover, the former were shown to seek treatment more often. Relapse rates for those who were alcohol-dependent, however, did not appear to be influenced by the presence of depression. Alcohol use prior to late life has also been shown to influence treatment of late-life depression. Cook

and colleagues⁶³ found that a prior history of alcohol abuse predicted a more severe and chronic course for depression.

The relationship between alcohol use and dementing illnesses such as Alzheimer's disease is complex. Alcohol-related dementia may be difficult to differentiate from Alzheimer's disease. Determining whether alcohol use, especially heavy use, influences Alzheimer's disease requires autopsy studies that can establish neuropathologic diagnoses of Alzheimer's disease. Although the rates of alcohol-related dementia in late life differ according to diagnostic criteria used and the nature of the population studied, there is a consensus that alcohol contributes significantly to the acquired cognitive deficits of late life. Among subjects over the age of 55 evaluated in the Epidemiological Catchment Area (ECA) study, the prevalence of a lifetime history of alcohol abuse or dependence was 1.5 times greater among persons with mild to severe cognitive impairment compared with those with no cognitive impairment.⁶⁴ Rains and Ditzler⁶⁵ showed that, of 383 patients presenting for assessment of dementia, 9% consumed alcohol regularly. Similarly, there is a high rate of dementia in alcohol-dependent or alcohol-abusing populations. Finlayson and colleagues⁵⁹ found that 49 of 216 (23%) elderly patients presenting for alcohol treatment had dementia associated with alcoholism. In a study of older veterans presenting for alcohol treatment, Blow and associates²⁵ found 9% of the 60-69 age group ($n = 3,986$) and 18.4% of those over 70 ($n = 543$) had comorbid dementia.

Sleep disorders and disturbances are another group of comorbid disorders associated with excessive alcohol use. Alcohol causes well-established changes in sleep patterns such as decreased sleep latency, decreased stage IV sleep, and precipitation or aggravation of sleep apnea.⁶⁶ There are also age-associated changes in sleep patterns, including increased REM episodes, a decrease in REM length, a decrease in stage III and IV sleep, and increased awakenings. Age-associated changes in sleep can be worsened by alcohol use and depression. Moeller and colleagues⁶⁷ demonstrated in younger subjects that alcohol and depression had additive effects upon sleep disturbances when occurring together. Furthermore, sleep disturbances (especially insomnia) have been implicated as a potential etiologic factor in the development of late-life alcohol problems or in precipitation of a relapse.⁶⁸ This hypothesis is supported by Wagman and colleagues,⁶⁶ who demonstrated that abstinent alcoholics did not sleep well because of insomnia, frequent awakenings, and REM fragmentation. When these subjects ingested alcohol, however, sleep periodicity normalized and REM sleep was temporarily suppressed, suggesting that alcohol could be used to self-medicate for sleep disturbances. Patients commonly report that they drink alcohol to help with sleep problems. Sleep quality and sleep disorders have not been fully examined as factors associated with initiating or maintaining alcohol use in later life.

Health Benefits of Alcohol Use

There remains conflicting evidence regarding the positive and negative aspects of alcohol consumption. Confounding the need to target levels of alcohol use that are often considered moderate but above guidelines (i.e., no more than one drink per day) is the potential benefit of moderate alcohol consumption, especially with regard to cardiovascular disease.^{56,69} Alcohol in moderate amounts may improve self-esteem or provide relaxation. Alcohol is often consumed socially and may help to reduce stress, at least temporarily.⁷⁰ A recent study of moderate and heavy drinking among older adults found that the greater number of drinks consumed per day, the poorer the psychosocial functioning reported by the subject.⁷¹ The frequency of drinking was not related to psychosocial well-being, suggesting that binge drinking was a more significant factor. There is growing evidence that, among otherwise healthy adults, especially middle-aged adults, moderate alcohol use may reduce cardiovascular disease, may reduce the risk of some dementing illnesses, and may have benefits in reducing cancer risk.⁷²⁻⁷⁹ Little research in these areas, however, has been conducted with older adults.

With the mixed results regarding the detrimental effects and potential benefits of alcohol use, clinicians may be uncertain whether they should recommend no change in consumption or a reduction in consumption for older adults who do not meet criteria for abuse or dependence. This confusion regarding the best course of action can lead to recognition of at-risk drinking levels without providing any recommendations regarding use. Conigliaro and colleagues⁸⁰ surveyed patients in all age groups identified as “problem drinkers” who recently had a primary care visit. The majority of the patients remembered having a discussion with their doctor about drinking, but only half remembered being advised to reduce consumption. For older adults, who are more susceptible to both the physiological and the psychosocial effects of substance abuse, erring on the side of caution with nonconfrontational messages and follow-up is generally the most practical and effective approach.

Significance

One of the priority goals of *Healthy People 2010* guidelines⁸¹ is to increase to at least 75% the proportion of primary care providers who screen for SUD and provide counseling and referral as necessary. Specialty care providers have the same need to understand issues of SUD in older adults. They need to know how to screen, intervene, and refer in their particular settings. One of the challenges is meeting this goal within the context of a managed care environment, where providers are expected to deliver quality medical care for a wide variety of health problems within greater time constraints. As managed health care gains prominence, short, effective techniques to address substance use issues in a growing population of older adults become imperative. Furthermore, a comprehensive

spectrum of prevention, intervention, and specialized treatment options needs to be available for this increasingly complex population.

Critical Issues, Obstacles, and Challenges

Screening and Detection of Alcohol Problems in Older Adults

To practice prevention and early intervention with older adults, clinicians need to screen for alcohol use (frequency and quantity), drinking consequences, and alcohol/medication interaction problems. Screening can be done as part of routine mental and physical health care and updated annually, before the older adult begins taking any new medications, or in response to problems that may be alcohol- or medication-related. Clinicians can obtain more accurate histories by asking questions about the recent past; embedding the alcohol-use questions in the context of other health behaviors (e.g., exercise, weight, smoking); and paying attention to nonverbal cues that suggest the patient is minimizing use (e.g., blushing, turning away, fidgeting, looking at the floor, changing his or her breathing pattern). The “brown bag approach,” where the clinician asks the patient to bring all of his or her medications, OTC preparations, and herbal medications in a brown paper bag to the next appointment, is often recommended. This provides an opportunity for the provider to determine what the patient is taking and how these medications, herbal products, and other substances may interact with each other and with alcohol.

Screening may be done by verbal interview, by paper-and-pencil questionnaire, or by computerized questionnaire. All three methods have equivalent reliability and validity.^{82,83} Any positive responses can lead to further questions about consequences. To successfully incorporate alcohol and other drug screening into clinical practice with older adults, it should be simple and consistent with other screening procedures already in place.⁴²

Before asking any screening questions, the following conditions are needed: (1) the interviewer needs to be empathetic and nonthreatening; (2) the purpose of the questions should be clearly related to the patient's health status; (3) the patient should be alcohol-free at the time of the screening; (4) the information provided by the patient must be kept confidential; and (5) the questions need to be easy to understand. In some settings (e.g., waiting rooms), screening instruments are given as self-report questionnaires, with instructions for patients to discuss the meaning of the results with their health care providers.

The following interview guidelines can be used. For patients requiring emergency treatment and for those who are temporarily impaired, it is best to wait until their condition has stabilized and they have become accustomed to the setting where the interview will take place. Signs of

alcohol or drug intoxication should be noted. Patients who have alcohol on their breath or appear intoxicated give unreliable responses; in such a case, consideration should be given to conducting the interview at a later time. If this is not possible, findings and conditions of the interview should be noted in the medical record. If the alcohol questions are embedded in a longer health interview, a transitional statement is needed to move into the alcohol-related questions. The best way to introduce alcohol questions is to give the patient a general idea of the content of the questions, their purpose, and the need for accurate answers.⁸⁴ This statement should be followed by a description of the types of alcoholic beverages typically consumed. If necessary, clinicians may include a description of beverages that may not be considered alcoholic (e.g., cider, low-alcohol beer). Determinations of consumption are based on “standard drinks.” A standard drink is 12 ounces of beer, 4 ounces of wine, or 1 1/2 ounces (a shot) of liquor (e.g., vodka, gin, whiskey).

Screening for alcohol-related problems is not always standardized, and not all standardized instruments have good reliability and validity with older adults. The following section covers four widely used screening instruments. In addition to quantity and frequency questions to ascertain use, the Michigan Alcoholism Screening Test-Geriatric Version (MAST-G) and the shortened version (the SMAST-G), the CAGE, and the Alcohol Use Disorders Identification Test (AUDIT) are often used with older adults. The MAST-G and SMAST-G were developed specifically for older adults.

The Michigan Alcoholism Screening Instrument—Geriatric Version was developed at the University of Michigan as an elderly alcoholism screening instrument for use with the elderly in a variety of settings.²⁶ Psychometric properties of this instrument are superior to those of other screening tests for the identification of elderly persons with alcohol abuse/dependence. The MAST-G was the first major elder-specific alcoholism screening measure to be developed with items unique to older problem drinkers. It is a 24-item scale with a sensitivity of 94.9%, specificity of 77.8%, positive predictive value of 89.4%, and negative predictive value of 88.6%. Similar values were found after excluding those subjects who did not currently drink. The *Short Michigan Alcoholism Screening Test-Geriatric Version* is a validated shortened form of the MAST-G that contains 10 items.²⁸

The *CAGE* questionnaire is the most widely used alcohol screening test in clinical practice.⁸⁵ It contains four items regarding alcohol use: felt they should Cut down, felt Annoyed that people criticized their drinking, felt Guilty about their drinking, and had a drink upon awakening in the morning to get rid of a hangover (an “Eye-opener”). In the primary care setting, one positive response is considered a positive screen and indicates that further assessment may be warranted. *CAGE* alcohol items can be asked alone

but are sometimes embedded along with *CAGE*-like items about exercise, smoking, and weight.⁸⁶ Like most of the screening instruments reviewed, the sensitivity and specificity of the *CAGE* vary from 60% to 95% and 40% to 95%, respectively.^{87,88}

The *CAGE* has not been well validated with at-risk drinkers, women, older adults, and non-Caucasian ethnic groups. Older adults may not screen positive on the *CAGE* while still having problems with alcohol use. For example, they may not report they have been annoyed by others who spoke to them about their drinking because their family may not know and they may not have close contact with friends. In addition, very few older adults need an “eye-opener” upon rising in the morning. They may consume alcohol at a level they used when younger and not believe they need to cut down. On the other hand, older women may be likely to say they feel guilty about drinking, even when they use very little alcohol. Follow-up questions are always needed for positive screens on these questions to determine what prompted each positive response.

The *Alcohol Use Disorders Identification Test* is well validated in adults under 65 in primary care settings^{89,91} and has had initial validation in a study of older adults.²⁸ The *AUDIT* comprises two sections: a 10-item scale with alcohol-related information for the previous year only, and a clinical screening procedure that includes a trauma history and a clinical examination. The questionnaire is introduced by a section explaining to the respondent that questions about alcohol use in the previous year only are included. The questionnaire is often used as a screen without the clinical examination. The recommended cut-off score for the *AUDIT* has been 8, but Blow and colleagues²⁸ found a Cronbach’s alpha reliability of 0.95, sensitivity of 0.83, and a specificity of 0.91 in a sample of older adults with a cut-off score of 7.

Broad-Based Assessment of Substance Use Problems

Clinicians can follow up the brief questions about consumption and consequences, such as those in the *MAST-G*, *AUDIT*, and *CAGE*, with a few more in-depth questions about consequences, health risks, and social and family issues. In addition, information obtained in the “brown bag approach” regarding medication and herbal use can assist in making any diagnoses and brief intervention or treatment plans.

To assess *dependence*, questions should be asked about alcohol- or drug-related problems, a history of failed attempts to stop or cut back, and withdrawal symptoms such as tremors. Clinicians should refer any patient thought to be dependent for a diagnostic evaluation and possible specialized alcohol treatment, with an emphasis on treatment targeted to older adults. Medication assessments include questions about prescriptions, particularly antidepressants, benzodiazepines, and codeine, as well as about

OTC medications and herbal remedies. If there is evidence of prescription drug problems, the patient should be referred to a specialist for a diagnostic assessment and possible specialized treatment.

For older adults with positive screens, assessments are needed to confirm the problem, characterize its dimensions, and develop individualized treatment plans. For purposes of insurance or other funding resources, the assessment should follow criteria in the DSM-IV⁴² or other relevant criteria, with the recognition that these criteria may not apply directly to planning older adults' treatment. The unqualified application of such criteria is problematic in older adult populations because the symptoms of other medical diseases and psychiatric disorders overlap to a considerable extent with substance use-related disorders (see Table 2).

Substance Abuse Assessment Instruments

Validated substance abuse assessment instruments can be of great help to clinicians, because they provide a structured approach to the assessment process as well as a checklist of items that should be evaluated with each older adult receiving a substance abuse assessment. Specialized assessments are generally conducted by substance abuse treatment program personnel or trained mental and physical health care providers. Structured assessment interviews "possess (at least potentially) the desired qualities of quantifiability, reliability, validity, standardization, and recordability."⁹²

Despite problems with criteria used to assess older adults for SUD, two structured assessment instruments are recommended:³⁴ the Structured Clinical Interview for DSM-III-R (SCID)⁹³ and the Diagnostic Interview Schedule (DIS) for DSM-IV. The SCID is a multimodule assessment that covers disorders of substance use, psychosis, mood, anxiety, somatoform, eating, adjustment, and personality. It takes a trained clinician approximately 30 minutes to administer the 35 SCID questions that probe for alcohol abuse or dependence. The DIS was originally developed by Robins and colleagues⁹⁴ with DSM-III criteria and has been updated as DSM criteria have evolved. The DIS is a highly structured interview that does not require clinical judgment and can be used by nonclinicians. The DIS assesses both current and past symptoms and is available in a computerized version. It has been translated into a number of languages, including Spanish and Chinese.

Brief Alcohol Interventions with Older Adults

Low-intensity, brief interventions have been suggested as being cost-effective and practical techniques that can be used as an initial approach to at-risk and problem drinkers in primary care settings.⁹⁵ Over the last two decades, there has been an increasing interest in conducting controlled clinical trials to evaluate the effectiveness of early identification and secondary prevention using brief intervention

strategies for treating problem drinkers, especially those with mild-to-moderate alcohol problems who are at risk for developing more severe problems.^{32,96,97}

Brief intervention studies have been conducted in a wide range of health care settings, ranging from hospitals and primary health care locations^{12,96,98-100} to mental health clinics.¹⁰¹ Individuals recruited from such settings are likely to have some contact with a health care professional over the course of study participation and therefore have potential alcohol-related professional assistance available. Nonetheless, many or most of these patients would not be identified as having an "alcohol problem" by their health care provider and therefore would not ordinarily receive any alcohol-specific intervention. Finally, even if identified and referred, heavy drinkers are least likely to seek formal alcoholism treatment.³² A major drawback of many brief intervention studies, regardless of patients' ages, is the lack of generalizability to minority populations because of the underrepresentation of minorities in these trials.

A number of large, randomized, controlled trials of brief alcohol interventions with younger adults have found significant differences between treatment and control conditions (*i.e.*, *time by condition effects*). *The largest* of the primary care trials was the Trial for Early Alcohol Treatment (Project TrEAT), the first randomized clinical trial in the United States to test the effectiveness of brief physician advice with problem drinkers between the ages of 18 and 64 in community-based primary care settings.⁹⁹ The study was conducted in 17 community-based primary care practices in 10 counties in southern Wisconsin. The 64 physicians participating in this trial were family physicians and internists. Patients were asked to complete a 5-minute screening questionnaire, the Health Screening Survey (HSS). The HSS, validated in two treatment samples and one primary care sample,⁸⁶ was based on a scale developed by Wallace and colleagues¹⁰⁰ for a large clinical trial in England. Out of 17,695 patients screened with the HSS, 1,705 patients participated in a face-to-face assessment; 482 males and 292 females reported drinking above the limits set for the trial and were randomized into a control ($n = 382$) or intervention ($n = 392$) group.

Subjects enrolled in Project TrEAT were followed for an initial 12-month follow-up phase, with longer-term follow-up projected to 60 months. Follow-up procedures included telephone interviews, yearly medical record audits, and reviews of legal records and cost data. Outcome variables of interest included changes in alcohol use, reductions in health care utilization, improvements in health status, improved social functioning, and reductions in long-term health care costs. The follow-up rate at 12 months was 92%. At the time of the 12-month follow-up, there was a significant reduction in 7-day alcohol use, episodes of binge drinking, and frequency of excessive drinking. The relative differences in alcohol use between the groups at 12 months were 17% in the male sample and

34% in the female sample. A twofold significant decrease in inpatient hospital days was noted in the intervention group compared with the control group.

Among other new studies in this area, brief alcohol randomized intervention trials have mostly been extended to emergency departments with injured patients^{84,102} and nursing personnel¹⁰³ with positive results. There have also been naturalistic studies of brief intervention educational strategies for training students and practitioners in medical settings.^{104,105}

In general, the results of brief intervention studies do support the recommendations of the expert committee report³² and the NIAAA,¹⁰⁶ which state that early identification and screening and brief interventions are effective and should be routine practice in primary and other health care settings to detect patients with hazardous or harmful patterns of alcohol use. Early identification and secondary prevention of alcohol problems directed in straightforward, nontechnical terms at an audience likely to be motivated to change could have broad positive public health implications. It appears that brief interventions with one or a few sessions have the potential for reaching the largest number and broadest spectrum of individuals from diverse settings.⁹⁹

Effectiveness of Brief Alcohol Interventions with Older At-Risk Drinkers

Until recently, little attention had been given to brief intervention research in older adults. The spectrum of alcohol interventions for older adults ranges from prevention and education for persons who are abstinent or low-risk drinkers, to minimal advice or brief structured interventions for at-risk or problem drinkers, to formal alcoholism treatment for drinkers who meet criteria for abuse or dependence.³⁴ Formalized treatment is generally used with persons who meet criteria for alcohol abuse or dependence and cannot discontinue drinking with a brief intervention protocol. Nonetheless, preintervention strategies are also appropriate for this high-problem population.

Studies of brief interventions for alcohol problems have employed various approaches to change drinking behaviors. Strategies have ranged from relatively unstructured counseling and feedback to more formal structured therapy,^{98,99,107,108} and have relied heavily on concepts and techniques from the behavioral self-control training (BSCT) literature.¹⁰⁹⁻¹¹² A number of brief alcohol intervention studies have been conducted in primary care settings with younger adults,^{98,99,107,108} with primarily positive results. Both brief interventions and brief therapies have been shown to be effective in a range of clinical settings.⁴³ Brief alcohol interventions have particular usefulness with older adults.^{34,99,113}

To date, there have been two brief alcohol intervention trials with older adults. Fleming and colleagues¹¹⁴ and Blow and colleagues¹¹⁵ conducted randomized clinical brief intervention trials to reduce hazardous drinking in older

adults using advice protocols in primary care settings. These studies showed that older adults can be engaged in brief intervention protocols, the protocols are acceptable in this population, and there is a substantial reduction in drinking among the at-risk drinkers receiving the interventions compared with a control group.

The first study, Project GOAL: Guiding Older Adult Lifestyles,¹¹⁴ was a randomized, controlled clinical trial conducted in Wisconsin with 24 community-based primary care practices (43 practitioners) in 10 counties. Of the 6,073 patients screened for problem drinking, 105 males and 53 females met inclusion criteria and were randomized into a control ($n = 71$) or intervention ($n = 87$) group. One hundred forty-six subjects participated in the 12-month follow-up procedures. The intervention consisted of two 10- to 15-minute physician-delivered counseling visits that included advice, education, and contracting using a scripted workbook. No significant differences were found between groups at baseline on alcohol use, age, socioeconomic status, smoking status, rates of depression or anxiety, frequency of conduct disorders, lifetime drug use, or health care utilization. At baseline, both groups consumed an average of 15 to 16 drinks per week. At 12-month follow-up, the intervention group drank significantly less than the control group ($p < 0.001$).

The second study, the Health Profile Project, is larger and elder-specific. It is being finalized in primary care settings in southeast Michigan.¹¹⁵ The elder-specific intervention contains both brief advice and discussion by a psychologist or a social worker, as used in the World Health Organization (WHO) studies, and motivational interviewing techniques, including feedback.¹¹¹ A total of 452 subjects were randomized in this trial, with over 26% being African American. Follow-up rates of 92% were obtained at the 12-month follow-up. Blow and colleagues found preliminary results similar to those of Fleming's group¹² in terms of 7-day alcohol use and binge drinking at 12-month follow-up. These randomized, controlled clinical trials extend the positive results of trials with younger at-risk drinkers to even more vulnerable populations of older adults.

Brief Alcohol Intervention Goals

Drinking goals of the brief treatment intervention are flexible, allowing the individual, with guidance from the clinician, to choose drinking in moderation or abstinence. The goal of brief counseling is to motivate problem drinkers to change their behaviors, not to label themselves. Studies of brief interventions have avoided labeling of individuals as "alcoholic" or "suffering from alcoholism." Babor and colleagues¹¹⁶ point out that the use of such terms may be inappropriate for at-risk drinkers.

Brief alcohol interventions can be conducted using guidelines and steps⁴² adapted from work by Wallace, Cutler, and Haines,¹⁰⁰ Fleming and colleagues,⁹⁹ and Blow and associates.¹¹⁵ The brief alcohol intervention is designed

for use in busy clinical settings. Auxiliary issues included in the brief alcohol intervention for older adults vary, according to individual patient issues and the time available for the intervention. Brief alcohol screening and intervention techniques can be particularly useful with older adults who are at-risk and problem drinkers.

Importance of Assessing Predictors of Change

Several brief intervention studies have attempted to identify factors or moderators that result in differential treatment response by varying patient characteristics or by conducting subgroup analyses. This may be of particular importance with older adults, who present somewhat different patterns of use and problems when compared with younger adults. One significant limitation of most brief intervention studies has been that relatively minimal subject assessments have been conducted; nonetheless, exploration of predictors of improvement has been attempted in a limited fashion. Individual differences generally have not been shown to predict differential response to brief interventions, suggesting that brief interventions may be applicable to a wide range of individuals from many cultures.^{96,116} More minimalist interventions, however, place greater emphasis on patient resourcefulness and initiative. Some patients may require the compensation of social influence or support in the form of a home visit by a health care professional. Attention to the role of such patient characteristics is important not only for identifying limits on the effectiveness of minimalist interventions but also for illuminating the mechanisms and processes that would allow these treatments to be refined and improved.

There appears to be an important relationship between the identification of an individual's drinking problem and readiness to change. Research on stages of change, initially applied to smoking-cessation studies, has demonstrated that smokers enrolled in treatment trials can be classified as falling into one of five stages: precontemplation, contemplation, ready for action, action, and maintenance.¹¹⁷ This categorization has proven useful in predicting those most likely to succeed in quitting smoking and in targeting specific kinds of interventions to smokers at different stages.¹¹⁷⁻¹¹⁹ The stages-of-change model is useful in alcohol brief interventions to highlight the importance of motivating patients to change drinking behavior.

Brief Intervention Characteristics and Strategies

Studies of brief interventions for alcohol problems have employed various approaches to change drinking behaviors. Strategies have ranged from relatively unstructured counseling and feedback to more formal structured therapy,^{98,107,108} and have relied heavily on concepts and techniques from the BSCT literature.^{109,110,112}

Drinking goals of the brief treatment intervention have been flexible, allowing the individual to choose drinking in moderation or abstinence. Categorizing patterns of alcohol

use (e.g., at-risk use, problem use, abuse or dependence) provides both clinicians and researchers with flexible guidelines for identifying individuals at risk for alcohol problems who may not meet criteria for alcohol dependence.

Brief Alcohol Intervention Components with Older Adults

A brief semistructured intervention can be conducted after identification of at-risk or problem drinkers through screening techniques. The content of the intervention needs to be elder-specific and include the following steps:

1. Identification of future goals for health, activities, hobbies, relationships, and financial stability.
2. Customized feedback on screening questions related to drinking patterns and other health habits (may include smoking, nutrition, tobacco use, etc.).
3. Discussion of types of older drinkers in the population, where the patient's drinking pattern fits into population norms for his or her age group, and definitions of "standard" drinks.
4. Pros and cons of drinking. This is particularly important because the practitioner needs to understand the role of alcohol in the context of the older patient's life, including coping with loss and loneliness.
5. Consequences of heavier drinking. Some older patients may experience problems in physical, psychological, or social functioning even though they are drinking below cut-off levels.
6. Reasons to cut down or quit drinking. Maintaining independence, physical health, and mental capacity can be key motivators in this age group.
7. Sensible drinking limits and strategies for cutting down or quitting. Strategies that are useful in this age group include developing social opportunities that do not involve alcohol, getting reacquainted with hobbies and interests from earlier in life, and pursuing volunteer activities.
8. Drinking agreement. Agreed-upon drinking limits that are signed by the patient and the practitioner are particularly effective in changing drinking patterns.
9. Coping with risky situations. Social isolation, boredom, and negative family interactions can present special problems in this age group.
10. Summary of the session.

Brief intervention protocols often use a workbook containing these 10 steps. Workbooks contain opportunities for both patient and practitioner to discuss sections on drinking cues, reasons for drinking, reasons to cut down or quit, a drinking agreement in the form of a prescription, and drinking diary cards for self-monitoring. Providers are trained to administer the intervention protocol through role-playing and general skill training techniques in

educational programs. The approach to patients is nonconfrontational and generally follows motivational interviewing principles as described Miller and Rollnick.¹¹¹

Screening as an Intervention

An issue often raised in brief intervention research is the effect of screening questions on drinking behavior. Data from brief intervention studies suggest that as many as 25% of patients with at-risk or problem drinking patterns at initial screening lowered their consumption to below cut-off levels (in progress) #250” prior to the intervention.¹²⁰ Flynn and colleagues⁸⁴ examined a group of older primary care at-risk drinkers who spontaneously changed their drinking behaviors prior to a brief alcohol intervention. The study included adults over the age of 55 who originally screened positive for at-risk drinking but, when reassessed within 1 month following screening, reported alcohol consumption below these criteria. These subjects were then recontacted approximately 6 months after the second assessment. One hundred fifty-seven men and 78 women with a mean age of 67.4 years (SD = 7.29) completed all three phases of this data collection. A total of 83% reported safe levels of drinking 6 months after original screening; 13% reported drinking at hazardous levels at 6 months. Participants who reported two or more binge episodes (defined as four or more drinks) in the past 3 months at the final follow-up had significantly more fatigue and less energy than those who reported no binge occasions in the 6-month interval. The majority of the participants who originally drank at hazardous levels but changed their drinking spontaneously to stay within the guidelines maintained those gains for at least 6 months. This points out the importance of systematically screening older adults for alcohol use in primary care settings. Recommendations include screening yearly and after major life events (e.g., retirement, death of spouse, change in living situation).

Detoxification and Withdrawal

Alcohol withdrawal symptoms commonly occur in patients who stop drinking or markedly cut down their drinking after regular heavy use. Alcohol withdrawal symptoms can range from mild and almost unnoticeable to severe and life-threatening. The classical set of symptoms associated with alcohol withdrawal includes autonomic hyperactivity (increased pulse rate, increased blood pressure, increased temperature), restlessness, disturbed sleep, anxiety, nausea, and tremor. More severe withdrawal can be manifested by auditory, visual, or tactile hallucinations; delirium; seizures; and coma. Other substances of abuse such as benzodiazepines, opioids, and cocaine have distinct withdrawal symptoms that are also potentially life-threatening. Elderly patients have been shown to have a longer duration of withdrawal symptoms than younger persons, and withdrawal has the potential for complicating other medical and psychiatric illnesses. There is no evidence, however, to suggest that older patients are more prone to alcohol with-

drawal or need longer treatment for withdrawal symptoms.¹²¹

Highlighted by the potential for life-threatening complications, all clinicians caring for patients who abuse substances need to have a fundamental understanding of withdrawal symptoms and the potential complications. All clinicians should demonstrate knowledge of the most common withdrawal symptoms and the anticipated time course of the symptoms. In addition, all clinicians should be able to complete a standardized assessment of withdrawal such as the Clinical Institute’s Withdrawal from Alcohol (CIWA).^{122,123} Clinicians in settings where withdrawal management or treatment is available need also to be competent in providing detoxification management. This includes the use of benzodiazepines for the management of alcohol withdrawal.

Formal Substance Abuse Treatment Outcomes for Older Adults

Although alcoholism is a significant and growing health problem in the United States,¹²⁴ there have been few systematic studies of formal alcoholism treatment outcome for older adults.⁴⁴ The study of treatment outcomes for older adults who meet criteria for alcohol abuse or dependence has become a critical issue because of their unique needs for targeted treatment intervention. Because traditional residential alcoholism treatment programs generally provide services to few older adults, sample size issues have been a barrier to studying treatment outcomes for elderly alcoholics in most settings. The development of elder-specific alcoholism treatment programs in recent years has provided sufficiently large numbers of older alcoholics to facilitate studies of this special population.⁴⁴ A remaining limitation with this population is the lack of longitudinal studies of treatment outcomes.

Previous research on elderly alcoholism treatment can be divided into two broad categories— treatment compliance studies and prospective studies of treatment outcomes.

Treatment Compliance Studies

Most treatment outcome research on older adults with SUD has focused on compliance with treatment program expectations, in particular the patient’s fulfillment of prescribed treatment activities and goals, including drinking behavior.⁴⁴ Results from compliance studies have shown that age-specific programming improved treatment completion and resulted in higher rates of attendance at group meetings compared with mixed-age treatment.^{125,127} In addition, older adults with SUD were significantly more likely to complete treatment than were younger patients.^{30,126} Atkinson and colleagues¹²⁷ found that the proportion of older male alcoholics completing treatment was twice that of younger men.

Age of onset of alcohol problems has been a major focus of research for treatment compliance studies in the elderly. In a study by Schonfeld and Dupree¹²⁸ using a

matched-pairs, post hoc design, rates of completion of 6-month day treatment for 23 male and female alcoholics age 55 and older whose problem drinking began before age 50 (early onset) were compared with 23 other alcoholics who began problem drinking after age 50 (late onset). Those classified as late-onset problem drinkers were significantly more likely to complete treatment; however, in a subsequent report including the larger sample of 148 from which these patients were selected, there was no difference in completion rate based on age of onset.¹²⁸

In another study of 132 male alcoholic veterans 60 years of age and older, the sample was divided into the following subgroups: early onset (age 40 and younger; $n = 50$), midlife onset (41 to 59; $n = 62$), and late onset (age 60 and older; $n = 20$).¹²⁹ Age of onset was related to program completion and to weekly meeting attendance, with the late-onset subgroup showing the best compliance. However, a subsequent analysis of 128 men, age 55 and over, in alcoholism treatment found that drinking relapses during treatment were unrelated to age of onset.¹²⁷ Furthermore, onset age did not contribute significantly to variance in program completion but was related to meeting attendance rate.¹²⁷ Studies on the effect of age of onset on treatment compliance have yielded mixed results.

In a study of treatment matching, Rice and colleagues¹³⁰ compared drinking outcomes for randomly assigned male and female alcoholics 3 months after beginning one of three mixed-age outpatient treatment protocols scheduled to last for 4 months. The sample included 42 individuals age 50 years and older, 134 patients who were 30 to 49 years old, and 53 patients who were 18 to 29 years old. There were no main effects of age or treatment condition on treatment compliance. There were significant age by group effects by treatment protocol effects. For older patients, the number of days abstinent was greatest and the number of heavy drinking days fewest among those treated in an individual-focused rather than a group condition. This study suggests that elderly alcoholics may respond better to individual-focused interventions than to traditional mixed-age, group-oriented treatment.

Major limitations remain in the treatment compliance literature, including a lack of drinking outcome data, failure to report on treatment drop-outs, and variations in definitions of treatment completion. Few carefully controlled, prospective treatment outcome studies including sufficiently large numbers of older subjects who meet criteria for alcohol dependence have been conducted to address the methodological limitations of prior work.

Prospective Studies of Treatment Outcomes

Few prospective treatment outcome studies have been reported in the literature, in part because of the complexity of studying older adults in treatment and also because of difficulties in following them after completion of treatment.

Sample sizes tend to be too small to provide definitive results. An exception is a study of 137 male veterans (age 45 to 59 years, $n = 64$; age 60 to 69 years, $n = 62$; age 70 years and older, $n = 11$) with alcohol problems who were randomly assigned after detoxification to age-specific treatment or standard mixed-age treatment.¹³¹ Outcomes showed that elder-specific program patients were 2.9 times more likely at 6 months, and 2.1 times more likely at 1 year, to report abstinence compared with mixed-age group patients. Treatment groups could not be compared at baseline because baseline alcohol consumption and alcohol severity data were not included in the study.

Limitations of Treatment Outcome Research

While the examination of factors related to completion of programming is important for the identification of characteristics of patients who are more likely to remain in treatment, existing studies have an inherent selectivity bias and provide no information on treatment drop-outs or on short- or long-term treatment outcomes. Other issues with sampling may also limit the generalizability of previous studies. For example, the majority of reports on alcoholism treatment outcome for older adults have included only male subjects. Furthermore, age cut-offs for inclusion in studies have varied widely, and have included nonelderly individuals in the "older" category, with several studies including individuals as young as age 45. In addition to these issues, the majority of studies have utilized relatively unstructured techniques for assessing alcohol-related symptoms and consequences of drinking behavior. Finally, the manner in which outcomes have been assessed has been narrow in focus. Most studies have dichotomized treatment outcome (abstinence versus relapse) based solely on the basis of drinking behavior. Given evidence from numerous studies that heavy or binge drinking is more strongly related to alcohol consequences than is moderate alcohol consumption,^{36,132,133} it is possible that there are important differences in outcome for nonabstinent individuals, depending on whether their reuse of alcohol following treatment involves binge drinking. For these reasons, researchers have suggested that nonabstinent drinking outcomes be categorized along dimensions such as whether drinkers ever drink to the point of intoxication.¹³⁴ Furthermore, most studies have not addressed other relevant domains that may be positively affected by treatment, such as physical and mental health status, and psychological distress.

The development and testing of elder-specific treatment programs, as well as further assessment of outcomes for older adults in treatment programs that include younger and older adults,³⁴ need to be further addressed. As the U.S. population ages, new challenges in the treatment of SUD can be anticipated.

Settings for Screening, Intervention, and Treatment

A limited number of public health strategies are available to identify and intervene with older adults who are at-risk or problem drinkers, because many older adults are retired and some are isolated or have mobility problems. There are a number of venues in which to detect persons at risk for SUD and provide brief alcohol interventions, including primary care clinics, specialty care settings involving the emergency department, home health care, elder housing, and senior center programs.¹¹³ Professionals in these areas have a unique opportunity to identify and help older adults who drink at risky levels.

The range or scope of prevention and intervention strategies for older adults—prevention and education for persons who are abstinent or low-risk drinkers; minimal advice, structured brief intervention protocols; and formalized treatment for older persons with alcohol abuse and dependence—provides the tools for health care providers to work with older adults across a spectrum of drinking patterns. A report by the Institute of Medicine⁹² found that most alcohol-related problems occur in nondependent drinkers.

Brief intervention protocols can be incorporated into routine practice by nurses, counselors, psychologists, social workers, physicians, and other professionals. Screening and brief intervention protocols can be inexpensive and less costly than a single emergency department visit for an alcohol-related injury.

Providers of care require training and systems in which screening, brief interventions, and referral for the treatment of alcohol problems are essential clinical activities. Workshops that focus on skills training activities are most useful. To effectively implement alcohol screening and brief intervention strategies for older adults in clinical practice, systematized protocols that provide easy service delivery will be required. From both a public health standpoint and a clinical perspective, there is a critical need to implement effective intervention strategies with older drinkers who are at risk for more serious health, social, and emotional problems.

Vision for the Future

The final section of this paper presents a list of recommendations. While the recommendations are clear and relatively straightforward, incorporating them into existing educational programs will be difficult. The difficulties lie in the diversity of providers who are affected as well as the diversity of medical specialties affected. From a policy

perspective, there has been no centralized voice or authority to maintain and implement a core set of recommendations focused on late-life substance use. Despite the lack of a coordinated effort, there are organizations (both Federal and guild) that have recognized the need for and have implemented similar recommendations in their respective guidelines or regulatory requirements. These organizations include the American Medical Association, the American Board of Psychiatry and Neurology, the American Psychiatric Association, the Center for Substance Abuse Prevention, the American Academy of Addiction Psychiatry, the Department of Veterans Affairs, and the American Society of Addiction Medicine. While there are similarities in the documents produced, many of these statements are outdated and there are some conflicting recommendations between the guidelines. For instance, the focus of many of the documents from subspecialty organizations is on persons who meet criteria for alcohol dependence, with a strong endorsement of specialty provider care. Such a position ignores issues of prevention and hazardous or problematic drinking as well as the role of primary care providers and nonaddiction health providers.

Separate from the clinician-level recommendations that are outlined below is the need for *interdisciplinary policy-level leadership* in developing educational programs for substance use that span all age groups and all levels of providers. All too often, clinical issues such as late-life substance use problems serve more to highlight administrative and policy differences and the lack of cooperation that can divide the fields of geriatrics, mental health, and addictions than to foster a coordinated effort to address the problem. From an administrative policy perspective, greater cooperation between these organizations and agencies should be advocated, as should the possible development of a leadership resource panel that could be called upon by various organizations, training programs, and Federal and local agencies to assist in the development and implementation of recommendations. A recent example of an effort to bring together an interdisciplinary resource panel was the support for the development of the TIP focused on late-life substance abuse.³⁴

An exciting aspect to implementing training recommendations is the expanding range of tools available to train and educate potential patients, providers, and administrators. In addition to traditional methods of published articles, book chapters, and lectures, there is the opportunity to use interactive video or telemedicine approaches, Internet applications, video and voice teleconferencing, and computer-based applications as educational tools. Few of these tools have been used specifically for education about late-life substance use, but that is likely to change in the near future.

Recommendations

The core competencies to address the growing need for training of health care professionals in working with older adults regarding at-risk and problem substance use include the following broad categories: recognition and assessment; initial management and referral; specialized management; acute treatment and rehabilitation; faculty development; accreditation; and certification and recertification.

Recognition and Assessment

1. All clinicians should be knowledgeable in assessing the quantity and frequency of alcohol and other drug use among older patients. This includes knowledge about standard drinks.

Rationale. Approximately 8% to 15% of older adults are at-risk drinkers or drink at relatively low levels that compromise cognitive or medical conditions.²⁴ Additionally, some older adults also use prescription and OTC medications that may have a negative impact on their physical and mental health. Clinicians who work with older adults need to systematically address alcohol and medication/drug use as part of routine care. Very few clinicians are trained in alcohol and medication/drug screening techniques that are most effective with older adults.

This core competency includes the following: (1) increased training and knowledge of current and future health professionals about alcohol and medication/drug screening techniques to determine frequency and quantity of use; and (2) increased screening of older adults for problems related to substance use in clinical settings

2. All current and future health care providers should be knowledgeable about the recommended upper limits of moderate drinking for all age groups.

Rationale. The NIAAA guidelines for alcohol consumption are not generally part of preclinical curricula or clinical training (internship, residency, practica, continuing medical education [CME], or continuing education [CE]).¹²⁰ There has been even less training focused on issues of alcohol consumption and drinking guidelines for older adults. To determine whether older adults are at risk for problems related to alcohol use and whether they use medications or drugs that may interact with alcohol, up-to-date guidelines and research evidence should be included in training.

Knowledge regarding the recommended upper limits for alcohol consumption includes (1) increased training and knowledge about alcohol, medication, and drug guidelines; and increased use of guidelines in screening older adults for problems of substance use in clinical settings

3. All current and future health care providers working with older adults should have comprehensive knowledge of the physical, emotional, and social problems associated with alcohol use and abuse, misuse of medications, and alcohol/medication interactions among older patients.

Rationale. Older adults may present with complex signs and symptoms of physical, cognitive, mental health, or social problems. It is important to determine whether any of these problems are related to or exacerbated by alcohol or by misuse of medications or illicit drugs. These are differential diagnoses that are important in determining treatment plans but are often missed because clinicians may have limited training and experience dealing with substance abuse in older adulthood.

Expected Outcomes. Increased professional knowledge about physical, emotional, and social problems associated with substance abuse in older patients. Increased recognition and detection of substance abuse problems in older adults presenting with physical and mental health problems.

Initial Management and Referral

4. All current and future health care providers should be trained to provide structured and targeted brief advice and interventions to assist older adults in cutting down or eliminating alcohol use. Advice and brief interventions can be delivered as part of early detection programs in clinical settings.

Rationale. Approximately 15% of older adults may be at-risk drinkers or drink at lower levels that can still compromise their cognitive or medical conditions. Brief alcohol interventions have been proven to be effective with older adults. They require short, concentrated training that includes motivational interviewing and structured materials to assist in the interventions. Materials are available nationally through the NIAAA and through CSAT in the TIPs series. Training can be made available to professionals who work with older adults through preclinical and clinical education programs, CE credits, and other workshop opportunities. These are needed because, in a changing health care delivery system, brief, effective methods of dealing with alcohol problems will be both clinically effective and cost-effective. Few preclinical and clinical programs include techniques of brief alcohol intervention.

Expected Outcomes. Increased training and knowledge about brief alcohol advice and intervention techniques targeting older adults. Increased use of brief advice methods by providers who work with older adults. Better prevention and early intervention programs should lead to longer-term health care cost savings.

Specialized Management

5. All current and future health care professionals providing detoxification treatments to older adults should be knowledgeable about common medical and psychiatric conditions that complicate or are complicated by alcohol withdrawal. All clinics or health care systems that provide detoxification services should make adequate provisions for serving older adults who have acute and chronic medical conditions.

Rationale. Because older adults metabolize alcohol and medications differently than younger individuals do, and because of increased vulnerabilities to the negative consequences of acute withdrawal in the elderly, health care professionals need comprehensive knowledge of guidelines for managing alcohol detoxification in older adults. The dangers of alcohol detoxification for elderly individuals are exacerbated by previous withdrawal episodes. The combination of complex chronic medical conditions and the use of multiple medications by older adults who are at risk for withdrawal requires protocols on alcohol withdrawal in the array of clinical settings commonly providing detoxification services. A number of medical centers have developed withdrawal regimens, including the appropriate use of benzodiazepines, for use with younger adults. Recently published empirical studies have resulted in practice guidelines for managing alcohol detoxification and withdrawal for older adults that should be incorporated into detoxification services.

Specific core competencies for working with withdrawal in older adults include the management of chronic medical conditions common in late life; management of patients with mild to moderate dementia; and knowledge regarding the increased potential for adverse medication effects or the potential for drug interactions when using benzodiazepines with other psychoactive medications.

Expected Outcomes. Increased training and knowledge on alcohol withdrawal in older adults. Increased appropriate use of medications for the management of withdrawal. Improved outcomes for older heavy drinkers experiencing withdrawal symptoms. Increased use of best practice guidelines for alcohol withdrawal and improved medical management of older adults in settings that provide detoxification services.

Acute Treatment and Rehabilitation

6. All current and future specialty care providers (geriatricians, addiction specialists, geriatric mental health providers) should be trained in skills required for the initial management and treatment of older adult patients with at-risk use, problem use, or substance abuse/dependence.

Rationale. The training of addiction specialists has focused primarily on issues related to younger adults. Geriatricians and geriatric mental health providers generally have received little training on substance abuse issues. Providers in both specialties need cross-training to meet the growing needs of older adults with substance abuse problems. Because of the range of older patients in need of substance abuse services, providers who have training in geriatric care or addiction specialties need to develop skills in the initial management of older adults with substance use problems. Needed knowledge and skills include motivational approaches, least-intensive treatment options, initiation of withdrawal protocols, treatment engagement techniques, and treatment objectives and approaches.

Expected Outcomes. Improved outcomes for older adults with substance use problems in specialty settings. Increased use of best practice guidelines for the initial management of substance use problems in older adults in specialty settings.

7. All current and future specialty care providers (addiction specialists and geriatric mental health providers) should be trained in the skills for psychosocial and pharmacological interventions demonstrated to be efficacious in the treatment of older adults with substance use problems.

Rationale. There is empirical evidence that psychosocial and pharmacological interventions have efficacy for a range of substance use problems in older adults. Specialty geriatric providers often receive little training in pharmacological substance use interventions. Addiction specialists may not receive training in early psychosocial intervention techniques. Both groups need training in these issues in order to work effectively with the growing number of older adults with substance use problems.

Expected Outcomes. Improved outcomes for older adults with substance use problems in specialty settings. Increased use of best practice guidelines for substance use problems in older adults treated in specialty settings.

Faculty Development

8. To ensure adequate training in the skills necessary for screening, interventions, and treatment of SUD in older adults, resources should be provided on Federal, State, and university levels to develop and train faculty mentors who will be responsible for disseminating knowledge to current and future health care professionals. A critical mass of trained faculty mentors is essential for changing norms and for providing sufficient role models in this complex area.

Rationale. There is empirical evidence that the use of faculty mentors generates opinion leaders critical to influencing current and future generations of health care providers. Current health care providers generally do not receive training in substance use problems in older adults. With the rapid expansion of the older adult population in the U.S. in the coming decades, it will be essential to develop an infrastructure in training institutions for addressing SUD.

Expected Outcomes. Increased numbers of health care providers and students to improve outcomes for older adults with substance use problems. Increased required and elective curricula in professional schools regarding substance use problems of older adults.

Accreditation

9. Accreditation standards should be designed to ensure compliance with guidelines for providing access to quality health care, including screening, interventions, and treatment of SUD in older adults.

Rationale. Although accreditation is voluntary in most health care settings, this mechanism of review for clinics, hospitals, and pharmacies provides quality management oversight for those agencies that participate in this process. Accreditation also provides reassurance to patients and families that facilities are meeting basic standards of care.

Expected Outcomes. Increased identification of older adults with at-risk drinking and alcohol problems and a higher quality of care for older adults.

Certification and Recertification

10. Certification for health professionals in all disciplines caring for older adults should include proficiencies in screening, interventions, and treatment of SUD in older adults.

Rationale. Certification examinations and recommended proficiencies are often used as guidelines for curriculum development and CE programs. These proficiencies often ensure that recommendations for education and faculty development are carried forward and are not arbitrarily implemented.

Expected Outcomes. Certification and recertification will benefit the field by increasing the number of adequately trained health professionals and increasing adherence to CE and maintenance of clinical skills.

Recommendations for Education and Training

In order to meet the need for professional development, the following recommendations are made for each of the areas covered in the core competencies section above.

Recommendations in these areas can assist in the development of educational and certification programs that would enhance prevention and treatment efforts with older adults who are at risk for or are currently experiencing substance use problems. These recommendations are focused on core competencies that individual clinicians should possess, and on faculty development, accreditation, and certification and recertification.

Recognition and Assessment

- 11. To ensure that clinicians are knowledgeable in assessing the quantity and frequency of alcohol and other drug use among older adult patients, key recommendations include (1) increasing preclinical and clinical training regarding the available alcohol screening instruments, methods of determining other medication and drug use (including OTC medications and herbal agents), techniques for conducting screening, and techniques to incorporate structured screening for alcohol, medications, and illicit drugs into standard clinical practice; and (2) increasing the use of questions on substance use screening in preclinical and clinical training evaluations and tests.**

Responsible Agents. The American Medical Association (AMA), American Society of Addiction Medicine (ASAM) American Psychiatric Association, American Psychological Association, medical schools, curriculum committees of other health professional schools (social work, pharmacy, dentistry, and public health, as well as departments of psychology).

- 12. To ensure that all current and future health care providers are knowledgeable about the recommended upper limits of moderate drinking for all age groups, the recommended action involves developing preclinical and clinical training content regarding alcohol use guidelines for all age groups, with specific reference to national consensus guidelines for alcohol use, misuse of prescription and nonprescription drugs, and alcohol–medication interactions common to people in later life.**

Responsible Agents. AMA, ASAM, American Psychiatric Association, American Psychological Association, medical schools, curriculum committees of other health professional schools (social work, pharmacy, dentistry, and public health, as well as departments of psychology).

- 13. Training should be provided to ensure that all current and future health care providers working with older adults have a comprehensive knowledge of the physical, emotional, and social problems associated with alcohol use and abuse, misuse of medications, and alcohol–medication interactions among older patients.**

Recommended Actions. Incorporate preclinical and clinical training regarding the physical, emotional, and social problems associated with substance use and abuse (including alcohol, prescription and nonprescription medications, and illicit drugs) among aging patients. Provide funding for any additional training under the control of the professional programs incorporating the training (medical schools, residencies, other health professional school programs). Develop programming that includes case studies, clinical practice opportunities, and didactic materials on best practices to ensure that clinicians are comfortable making differential diagnoses regarding the role of substance use in presenting physical and mental health problems.

Initial Management and Referral

- 14. Educational programs for current and future health care providers should include training in how to conduct structured and targeted brief advice and interventions that will assist older adults in cutting down or eliminating alcohol use. Advice and brief interventions can be delivered as part of early-detection programs in clinical settings.**

Recommended Actions. Develop alcohol intervention training materials for clinicians who work in a variety of mental and physical health care settings with older adults.

Responsible Agents. AMA, ASAM, American Psychiatric Association, American Psychological Association, medical schools, curriculum committees of other health professional schools (social work, pharmacy, dentistry, and public health, as well as departments of psychology).

Specialized Management

- 15. Training for current and future health care professionals providing detoxification treatments to older adults should provide a knowledge base about common medical and psychiatric conditions that complicate or are complicated by alcohol withdrawal. All clinics or health care systems that provide detoxification services should make available adequate provisions for serving older adults who have acute or chronic medical conditions.**

Recommended Actions. Disseminate preclinical and clinical training materials to providers on best practices for identifying older individuals who are at risk for alcohol withdrawal. Disseminate training materials on clinical management algorithms for the inpatient or outpatient medical detoxification of older heavy drinkers, including assessment of withdrawal severity, recommendations on prescribing short-acting benzodiazepines, and monitoring progress through the withdrawal phase. Establish detoxification guidelines and medical management guidelines for use with older adults in settings providing detoxification services.

Responsible Agents. AMA, ASAM, American Psychiatric Association, American Psychological Association, medical schools, curriculum committees of other health professional schools (social work, pharmacy, dentistry, and public health, as well as departments of psychology).

Acute Treatment and Rehabilitation

- 16. In order to ensure that current and future specialty care providers (geriatricians, addiction specialists, geriatric mental health providers) are trained in skills required for the initial management and treatment of older adult patients with at-risk use, problem use, or substance abuse/dependence, training will be imperative.**

Recommended Actions. Incorporate training materials for specialty providers on best practices for the initial management of substance use problems in older adults, including motivational enhancement approaches, detoxification, and treatment engagement, into the clinical postgraduate curriculum. Incorporate clinical training on stabilizing and resolving medical and psychiatric comorbidities.

Responsible Agents. AMA, ASAM, American Psychiatric Association, American Psychological Association, medical schools, curriculum committees of other health professional schools (social work, pharmacy, dentistry, and public health, as well as departments of psychology).

17. Training is needed so that all current and future addiction specialists and geriatric mental health providers will be prepared to provide psychosocial and pharmacological interventions that have been demonstrated to be efficacious in the treatment of older adults with SUD.

Recommended Actions. Incorporate clinical postgraduate training materials for specialty providers on best practices for psychosocial interventions, including brief intervention techniques, cognitive behavioral approaches, group- and individual-based approaches, medical/psychiatric and pharmacological approaches, and aftercare. Incorporate training in treatment objectives that are optimally effective for the older person with a SUD. Incorporate training in consensus best practices for treatment of substance abuse problems in older adults.

Responsible Agents. AMA, ASAM, American Psychiatric Association, American Psychological Association, medical schools, curriculum committees of other health professional schools (social work, pharmacy, dentistry, and public health, as well as departments of psychology).

The above recommendations stem from research that demonstrates the efficacy of treatment and the reduction in morbidity and mortality associated with reductions in alcohol and drug use among older adults. The focus of the recommendations is educational. Implementation of these recommendations should follow the educational structure currently in place for the variety of providers affected by these recommendations. The traditional methods of education include the formal training received in graduate and postgraduate work, the voluntary or required need for CE, and voluntary and informal educational formats such as readings, tutorials, and seminars. A parallel process of certification and accreditation exists in some of the fields of medical education that can be used to gauge the effectiveness of the recommendations and education programs.

Faculty Development

18. To ensure adequate training in the skills necessary for screening, interventions, and treatment of SUD in older adults, resources should be provided on Federal, State, and university levels to develop and train faculty mentors who will be responsible for disseminating knowledge to current and future health care professionals. A critical mass of trained faculty mentors is essential for changing norms and for providing sufficient role models in this complex area.

Recommended Actions. Increase funding for faculty development programs focused on SUD in older adults. Provide state-of-the-art curricula for faculty fellows and leaders focused on SUD in the elderly. Enhance the training for preclinical and clinical trainees through the use of targeted curricula and training in best practices with older adults who have substance abuse problems.

Responsible Agents. NIAAA, Health Resources and Services Administration, Agency for Health Care Quality, AMA, ASAM, American Psychiatric Association, American Psychological Association, medical schools, curriculum committees of other health professional schools (social work, pharmacy, dentistry, and public health, as well as departments of psychology).

Accreditation

19. The purpose of accreditation is to ensure compliance with guidelines for providing access to quality health care, including screening, interventions, and treatment of SUD in older adults.

Recommended Actions. Incorporate standards of care for managing late-life alcohol problems in the review process for accreditation. Require a standard of care for screening and identifying elderly at-risk drinkers.

Responsible Agents. Agencies such as the Joint Commission on Accreditation of Healthcare Organizations and the Accreditation Association for Ambulatory Health Care.

Certification and Recertification

20. To ensure that certification for health professionals in all disciplines caring for older adults includes proficiencies in screening, interventions, and treatment of SUD in older adults, the following actions are necessary.

Recommended Actions. Ensure that specialty and subspecialty board exams include content focused on late life addictions. Ensure that the content of licensing examinations for non-physician providers includes material focused on late-life addictions.

Responsible Agents. Accreditation Council for Graduate Medical Education, American Board of Psychiatry and Neurology, American Board of Family Practice, American Board of Internal Medicine, American Board of Nursing. State licensing boards for nursing, social work, counseling, pharmacy, and dentistry.

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Substance Use Disorders in Children and Adolescents and the Impact on Children in Families Affected by Substance Use

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Introduction

Primary care practitioners and other health professionals encounter large numbers of children and adolescents who have alcohol and other drug-related problems. Primary care practitioners and other health professionals are in an ideal position to identify substance use disorders (SUD) and related problems in the children, adolescents, and families that they care for and should be able to provide preventive guidance, education, and intervention. Primary care practitioners are in a unique position to screen for SUD not only in children and adolescents but also in their parents and other family members. They also should be able to identify children who are affected by the alcohol or drug use of a parent or other primary caretaker. While it is easiest to identify SUD and related problems in children, adolescents, and families who are most severely affected, the challenge is to identify affected individuals early in their involvement and to intervene in a timely and effective manner. Appreciating the magnitude of the problem, the nature and impact of SUD on individuals and families, and the role of the health care professional in the prevention, intervention, and treatment of SUD are vital.

The purpose of this paper is to describe the clinical implications of SUD on children and adolescents and to recommend an action plan to educate and train health professionals to screen effectively for SUD in the families they treat. If health professionals were taught the skills to screen and identify SUD in children, adolescents, and their families, there would be a significant impact on the public health of the Nation.

Issues Unique to Children and Adolescents: Scope of the Problem

A number of surveys have described alcohol, tobacco, and other drug use in the adolescent population. Although such surveys likely underestimate the true magnitude of alcohol, tobacco, and other drug use, they provide useful information about drug-use patterns and trends. Results of the recent Monitoring the Future Study¹ indicate that almost one out of every two adolescents has tried an illicit drug before finishing high school, and one out of four has used an illicit drug other than marijuana. Marijuana is the most widely used illicit drug by far, with 20.4% of 8th graders, 40% of 10th graders, and 49% of 12th graders in 2001 reporting some use in their lifetime. Respectively, 19.5%, 37.2%, and 41.4% of 8th-, 10th-, and 12th-grade students reported some use of an illicit drug in the preceding year, and 11.7%, 22.7%, and 25.7% of students at the same

respective grade levels reported some use in the preceding month. Of concern, one out of every 20 (5.8 %) 12th-grade students reported using marijuana on a daily basis. While the numbers are disturbing, the trend has indicated decreasing levels of use for the fourth year in a row.

Although there has been a decrease in the reported prevalence of use of most illicit drugs and a trend toward decreasing tobacco use among adolescents, there has been relatively little change in the reported use of alcohol, the most common drug of abuse. A substantial number of 8th-through 12th-grade students report drinking alcohol, and many report that they have gotten drunk at least once. Of even greater concern, 13.2% of 8th graders, 24.9% of 10th graders, and 29.7% of 12th-grade students report having had five or more drinks within the past 2 weeks and 1.9% of 10th grade students and 3.6% of 12th-grade students were daily drinkers.

According to the National Household Survey on Drug Abuse (NHSDA), an estimated 9.7 million young people between the ages of 12 and 20 were drinkers in 2000; of these, 6.6 million were binge drinkers and 2.1 million were heavy drinkers.² There have been no statistically significant changes in these rates of drinking over the past decade. The NHSDA data also indicate that in 2000, as in past years, the level of alcohol use was strongly associated with the use of illicit drugs. Across all ages, 29.5% of heavy drinkers, 17.8% of binge drinkers, and 5.5% of drinkers had used illicit drugs during the past 30 days.

Buried in the recent good news of decreasing use among high school students is the worrisome observation that age at first use is decreasing for many of America's youth. According to the NHSDA, the rising incidence in the 1990s seems to have been fueled primarily by the increasing rate of new use among youth age 12 to 17. The earlier an adolescent begins to drink or use other drugs, the greater the likelihood of later substance use problems.³ In addition, there is an inclination among today's youth to simultaneously use more than one drug.

Impact on Health Status

Alcohol and other drug use is a major factor in the deterioration of the health status of adolescents and young adults. According to a recent Youth Risk Behavior Surveillance System Summary, 16.9% of high school students reported driving a motor vehicle after drinking, and 36.6% reported riding in a car with a driver who had been drinking one or more times during the month prior to the survey.⁴ This is particularly significant because accidents are the leading cause of death among young people. According to a 1998 Centers for Disease Control and Prevention (CDC) report, 2,210 of 6,163 (35.6%) motor vehicle fatalities among 15- to 20-year-olds were associated with the use of alcohol.⁵ Alcohol and drug use are also implicated in other types of fatal accidents, homicides, and suicides among young people.

Alcohol and other drugs are also associated with non-lethal health risks and problems. Almost one-fourth of high school students report using alcohol or another drug at the time of last sexual intercourse, and substance use is associated with high-risk sexual behaviors such as failure to use contraception.⁶⁻⁸ This is especially troubling considering the recent epidemic of human immunodeficiency virus (HIV) and other sexually transmitted diseases in the United States.

Another major concern is the impact of substance use on the cognitive and psychosocial development of young people. Substance use, abuse, and dependence contribute significantly to mental health disorders, the leading cause of chronic disabilities in adolescents, affecting an estimated 634,000 adolescents.⁹ Moreover, adolescents who engage

in alcohol and other drug use often engage in other risk-taking behaviors. There is a correlation between alcohol and other drug use and sexual activity, including initiation for some adolescents. Responsible decision making regarding condom use, partner selection, sexual monogamy, and situational abstinence becomes diminished under the influence of alcohol and other drugs.¹⁰ For instance, most date rapes involve alcohol use by one or both partners.

Comorbid Psychiatric and SUD in Adolescents

There is a high rate of psychiatric disorders and SUD comorbidity.¹¹⁻¹³ In general, patients with comorbid psychiatric and SUD have a much more difficult recovery and do less well in treatment.^{14,15}

There are two models for this comorbidity, and individual adolescents will manifest a unique interplay between them. Some adolescents have pre-existing psychiatric disorders and are more likely to turn to substance use as "self-medication" or as a symptom of "deviance." Other adolescents may initiate substance use and develop secondary psychiatric symptoms because of the effects of the substances themselves.¹⁶ The psychiatric disorders most often linked with SUD include conduct disorder,^{17,18} attention deficit hyperactivity disorder (ADHD),^{19,20} mood disorders,^{21,22} and anxiety disorders.²³⁻²⁵ Conduct disorder (characterized by behaviors such as fighting, lying, stealing, cruelty to animals, showing no remorse) ranges from 40% to 70% in adolescents with SUD. Conduct disorder and substance abuse appear to be interactive, i.e., adolescents with both have more severe psychopathology. Conduct disorder is often a poor prognostic indicator of substance abuse recovery, and substance abuse often leads to more antisocial behavior (i.e., fighting, stealing, unstable occupational and social functioning).^{26,27}

Although ADHD (characterized by easy distractibility, impulsivity, hyperactivity, and inattention) is thought to be a risk factor for the development of SUD,²⁸⁻³¹ some argue that it is only when ADHD is comorbid with conduct disorder that this diagnosis becomes a significant risk factor.³² Whatever the risk factor, children with comorbid ADHD, conduct disorder, and SUD have a poor prognosis.^{14,15}

Both the adult and adolescent research literature indicate that mood disorders (such as major depressive disorder, bipolar disorder, and chronic dysthymic disorder) and anxiety disorders (such as generalized anxiety disorder and panic disorder) are often comorbid with SUD. Persons with these psychiatric illnesses may turn to substances to self-medicate their psychiatric distress. Once an adolescent has developed a SUD, it is often difficult to tease out the mood and anxiety symptoms as being primary (i.e., existing prior to the substance abuse) or secondary (i.e., as a result of the substance abuse and concomitant stressors). These adolescents are also at increased risk for suicide.³³

It is clear that the comorbidity of substance abuse and psychiatric disorders is a serious problem, and that recovery from both is much harder than recovery from one disorder. If substance abuse is identified and treated in its early stages, the possibility of recovery improves tremendously. Therefore, it is imperative that efforts be made to identify substance abuse among youth, and that resources be allocated for the intervention and treatment of adolescent substance abuse.

Relevance to Child and Adolescent Clinical Practice

The broad scope of alcohol, tobacco, and other drug use in the adolescent population translates into the reality that primary health care practitioners frequently see adolescents who are either contemplating or are already experimenting with use of substances. Not uncommonly, primary care practitioners see adolescents who are past the point of contemplation or experimentation and are harmfully involved. Occasionally, they see adolescents who are dependent on various substances.

Moreover, another large group may be affected not because of their own use but because of problem use in a parent, family member, or other primary caretaker. An estimated 28.6 million Americans are children of an alcoholic parent, and nearly 11 million of these young people are under the age of 18 years.³⁴ Many of these children are exposed to family environments that lack consistency, stability, or emotional support. Some of these children have been traumatized by accidental injury, verbal abuse, or physical abuse resulting from parental drinking or drug use. Poor communication, neglect, violence, permissiveness, undersocialization, and initiation of their own use and abuse of alcohol and other drugs are common in children of substance-abusing parents. The dilemma is how to address these challenging situations.

Children of Substance-Abusing Parents

What is the effect of having a substance-abusing parent? The literature is generally divided into children of alcoholics and children of parents who abuse other substances. In both groups, it is clear that these children often are raised in a chaotic family environment, do not receive the necessary attention or monitoring, and are at higher risk for school failure, psychiatric problems, and development of substance use problems themselves.^{11,35}

The familial effects of SUD are well documented, and particularly so for alcoholism. Grant³⁶ estimates that approximately one-fourth of all children in the United States under the age of 18 years are exposed to familial alcohol abuse or alcohol dependence. The Children of Alcoholics Foundation (1990) reported that children of an alcoholic parent are overrepresented in the mental health

and general medical systems. They also have higher rates of injury, poisoning, admissions for mental disorders and substance abuse, and general hospital admissions; longer lengths of stay; and higher total health care costs.³⁷ The effects of prenatal exposure to alcohol are well-known, and the term “fetal alcohol syndrome” (FAS) is generally applied to those children who have been exposed and display a certain constellation of symptoms (growth retardation, central nervous system involvement to include behavioral and/or intellectual impairment, and characteristic facies [short palpebral fissures, thin upper lip, and elongated, flattened midface and philtrum]).³⁸ For a more complete review of FAS, refer to Streissguth et al.³⁹ and a recent report by the Institute of Medicine.⁴⁰

Children of an alcoholic parent are at higher risk for learning disabilities. It is unclear whether these disabilities are due to a language disorder or to problems with abstraction, problem solving, and self-regulation—pointing to possible deficits in the prefrontal cortex.⁴¹ Some have shown that parental alcoholism is associated with increased risk for offspring ADHD, conduct disorder, or overanxious disorder.⁴² These offspring have been shown to have more diagnosable psychiatric disorders (i.e., depression, ADHD, conduct disorder) and lower reading and math achievement scores, which were also associated with psychopathology.⁴³

Children of substance-abusing parents are at risk for neglect, especially if the mother has psychological symptoms—narcissistic, paranoid, histrionic, or borderline personality disorder.⁴⁴ There have been several studies looking at children prenatally exposed to illicit substances, and it appears that these children are at risk as well. Sinclair,⁴⁵ in a study of Head Start children, concluded that prenatal drug exposure was a predictor of later special education placement in kindergarten (53% versus 29% for nonexposed children). Lester et al.⁴⁶ analyzed data from eight longitudinal studies of school-age children exposed to cocaine and found that up to 80,550 children had subtle deficits in IQ and language development. These authors project that special education will cost at least \$352 million per year nationwide. These are costs attributable only to new cases each year and do not include the accumulating costs and burdens associated with annual additions. Studies of children of substance-abusing parents (but who were not necessarily prenatally exposed to illicit drugs) have revealed that these children appear to have more behavior disorders, anxiety disorders, poorer competency scores, and higher scores on both internalizing and externalizing subscales of the Child Behavior Checklist than control groups of children.^{47,48}

Other studies question whether the increased psychiatric problems seen in these children are due to the parental substance abuse or due to the comorbid psychiatric disorders in these substance-abusing parents.⁴⁹ For example, there may be a link between both parental substance abuse and

antisocial personality disorder (a frequent comorbid psychiatric disorder) and offspring conduct disorder⁵⁰ or a link between both parental substance abuse and major depression and offspring conduct disorder.⁵¹

Finally, the children of substance-abusing parents are at extreme risk to abuse substances themselves. First, there is a genetic predisposition for the development of SUD; second, these children often receive inadequate parental supervision, which in and of itself is a risk factor for the initiation of substance abuse.^{52,53}

Thus, there is an extreme urgency to train health care professionals to recognize SUD in the families they treat—not only in the children or adolescents who are the identified patient but also in the important family members.

Role of Health Professionals in Screening, Intervention, and Referral

Health professionals who provide care to children and adolescents can play an important role in the identification and management of SUD. Their understanding of family dynamics and their close, long-standing relationship facilitate this role with the family. Information about family alcohol and other drug use should be obtained as part of routine history taking and when there are indications of family dysfunction, child behavioral or emotional problems, school difficulties, or recurring episodes of apparent accidental trauma, or in situations where there are recurrent or multiple vague somatic complaints by the child or adolescent. In many instances, family problems with alcohol or drug use are not blatant, and their identification requires a deliberate and skilled screening effort.

One study has shown that fewer than half of pediatricians ask about problems with alcohol when taking a family history.⁵⁴ More family medicine practitioners than pediatricians asked about problems with alcohol, suggesting that training and practice orientation may be important. The likelihood of asking about problems with alcohol did not appear to be influenced by the pediatrician's self-report of knowledge about alcoholism but rather by whether the pediatrician had a personal family history of problems with alcohol.⁵⁴ In a similar study focusing on recognition of family substance abuse among hospitalized children, attending physicians identified only 5% of families subsequently determined to have alcoholic parents.⁵⁵ Thirty-three percent of pediatric faculty reported feeling little or no responsibility for substance abuse referrals of their patients' family members. In contrast, Graham and colleagues⁵⁶ found that patients wanted their physicians to ask about family alcohol problems and felt that the physician could help them and the abusing family member deal with their problems. It is easy to infer from these findings that patients look to their primary care providers for help and guidance.

Existing Guidelines for Child and Adolescent Care

Several sets of guidelines have been published in recent years regarding routine screening and preventive health care for children and adolescents. The Maternal and Child Health Bureau (MCHB) Bright Futures Guidelines were published in 1994 “to respond to the current and emerging preventive and health promotion needs of infants, children, and adolescents.”⁵⁷ Each of Bright Futures' three age-based sections on adolescents (early, middle, and late) includes specific screening questions and suggestions for anticipatory guidance regarding the use of alcohol and other drugs.

The American Medical Association Guidelines for Adolescent Preventive Services (GAPS) also include guidelines for yearly tobacco, alcohol, and drug screening and anticipatory guidance for adolescent patients.⁵⁸ The GAPS handbook includes a detailed management schematic for substance abuse screening, assessment, problem identification, and treatment strategies.⁵⁹ In a recent policy statement, the American Academy of Pediatrics (AAP) Committee on Substance Abuse recommended that all pediatricians “be able to evaluate the nature and extent of tobacco, alcohol, and other drug use among their patients ... [and] to offer appropriate counseling about the risks of substance abuse and to make an assessment as to whether additional counseling and referral may be needed.”⁶⁰

Adherence to these guidelines, however, is quite low. According to the AAP's 1997 member survey, only 45% of pediatricians routinely ask their adolescent patients about alcohol or drug use, and only 5.2% screen for substance abuse by means of a written questionnaire.⁶¹ A more recent study of preventive services in a group-model health maintenance organization found that physicians reported screening only 41% of their adolescent patients for use of alcohol and drugs, and only 21% for drinking and driving.⁶²

Core Competencies for Addressing Children and Adolescents in Families Affected by SUD

National leaders from pediatrics, family medicine, nursing, social work, and adolescent health professional organizations collaborated in the development of a consensus document, Core Competencies for Involvement of Health Care Providers in the Care of Children and Adolescents in Families Affected by Substance Abuse (see Table 1).⁶³ The development of this document was a critical step in attempting to clarify the pivotal role of the primary health care professional in addressing the needs of children in families affected by SUD. It outlines a proposed model of practice and delineates the desired knowledge and skills of health professionals in this area. The document attempts to recognize and account for individual differences among health providers. Further, it recognizes that although primary health professionals may be responsible for

identifying the problem, they should not be expected to manage it by themselves. Accordingly, three distinct levels of care are articulated that allow for flexibility of individuals to choose their role and degree or level of involvement. At the same time, a baseline or minimal level (Level I) of competence is established that all health professionals should strive to achieve. For health professionals who desire competence at a higher level (Levels II and III), a different and more advanced set of knowledge and skills is required.

Critical Issues and Challenges

There are several critical issues involved in the identification of children and adolescents affected by SUD. The first issues revolve around education. Many practitioners lack current skills training, many fail to view SUD as a family issue, and many primary care providers are not linked with specialists who treat adolescents, adults, or families with SUD. In addition, some practitioners fear alienating their patients and patients' families by asking about alcohol and other drug use. Hence, there is a need for practitioners to learn to ask appropriate screening questions in a sensitive, caring, and empathic manner and to respond to the needs of patients and their families.

A second group of issues involves the practical obstacles practitioners face in their daily work. The amount of time for office visits has decreased slightly because of the financial pressure to see as many patients as quickly as possible. There is no reimbursement for practitioners to screen for substance abuse, there is a lack of a referral network for children and adolescents with substance abuse-related problems, and there are inadequate treatment options for substance-abusing adolescents. To address this group of obstacles would require a commitment to change the reimbursement structure within the medical profession both for primary care and specialty substance abuse treatment.

A third group of critical issues involves the current scientific knowledge in the field of adolescent substance abuse and children of substance-abusing parents. There is little in the literature to guide the treatment of young children of alcoholics or children of substance abusing parents.⁶⁴ In addition, there are few scientifically validated screening approaches for children, adolescents, and their families.⁶⁵⁻⁶⁷ Treatment of SUD in adolescents has only recently become a focus of rigorously scientific scrutiny. More research in these areas, as well as the translation of this research into clinical practice, should be a focus for the scientific community.

Overcoming Barriers to Addressing SUD

The underrecognition of SUD among children and adolescents and the failure to provide targeted services to the children of substance-abusing parents are deeply

Table 1. Core Competencies for Health Care Providers in the Care of Children and Adolescents in Families Affected by Substance Abuse

Level I

For all health professionals with clinical responsibility for the care of children and adolescents:

1. Be aware of the medical, psychiatric, and behavioral syndromes and symptoms with which children and adolescents in families with substance abuse present.
 2. Be aware of the potential benefit to both the child and the family of timely and early intervention.
 3. Be familiar with community resources available for children and adolescents in families with substance abuse.
 4. As part of the general health assessment of children and adolescents, include appropriate screening for family history or current use of alcohol and other drugs.
 5. Based on screening results, determine family resource needs and services currently being provided, so that an appropriate level of care and follow-up can be recommended.
 6. Be able to communicate an appropriate level of concern and offer information, support, and follow-up.
-

Level II

In addition to Level I competencies, health care providers accepting responsibility for prevention, assessment, intervention, and coordination of care of children and adolescents in families with substance abuse should:

1. Apprise the child and family of the nature of alcohol and other drug abuse and dependence and its impact on all family members and strategies for achieving optimal health and recovery.
 2. Recognize and treat, or refer, all associated health problems.
 3. Evaluate resources—physical health, economic, interpersonal, and social—to the degree necessary to formulate an initial management plan.
 4. Determine the need for involving family members and significant other persons in the initial management plan.
 5. Develop a long-term management plan in consideration of the above standards and with the child or adolescent's participation.
-

Level III

In addition to Level I and II competencies, the health care provider with additional training who accepts responsibility for long-term treatment of children and adolescents in families with substance abuse should:

1. Acquire knowledge, by training and experience, in the medical and behavioral treatment of children in families affected by substance abuse.
 2. Continually monitor the child or adolescent's health needs.
 3. Be knowledgeable about the proper use of consultations.
 4. Throughout the course of health care treatment, continually monitor and treat, or refer for care, any psychiatric or behavioral disturbances.
 5. Be available to the child or adolescent and the family, as needed, for ongoing care and support.
-

engrained in our history and attitudes.⁶⁸ A diagnosis of a SUD is still associated with shame and rejection and is therefore avoided by children, families, and health care providers. Barriers to intervention with patients and or their families include unfamiliarity with effective methods for detection, assessment, and early intervention with families; time constraints; lack of financial incentives; lack of adequate training; and lack of support from other professionals. Although health professions training in communication skills, family systems theory, behavioral interventions, and related issues is improving, many clinicians still express the concern that they lack knowledge and skills in this area. Furthermore, many health professionals still believe that asking such questions may be perceived as intrusive and will alienate families. Unless health professionals can demonstrate a nonjudgmental attitude, a genuine willingness to help, and a feeling of hopefulness, only the most advanced cases will be detected.

Health care professionals commonly note a lack of adequate skills for interviewing families and adolescents, providing effective interventions for behavioral health problems, and handling denial by family members. The most common reason cited by health care professionals for not discussing sensitive topics such as parental substance abuse is a lack of time. Having a clear sense of the goals, methods, and structure of a screening interview may relieve the sense of time constraint. Involving staff in an officewide screening program or using patient or parental written questionnaires that include substance use screening questions may also be useful. A recent guide for health professionals developed by the National Association for Children of Alcoholics and the Center for Substance Abuse Prevention attempts to do just this.⁶⁹

The attitudes and beliefs of the health care professional can also be a barrier. Some providers feel that mental health or addiction treatment professionals should handle SUD. Many health care professionals avoid looking for behavioral or substance abuse problems because they are uncertain about how to handle the problem once uncovered. They rationalize that there is no way to help the patient or family, anyway. Some health care professionals have attempted to address SUD or other family problems in the past and experienced discomfort, anger, or resentment toward them and, as a result, are reluctant to try again.

Overcoming these barriers requires continuing education in the necessary knowledge, skills, and attitudes outlined in the accompanying guidelines. Such education must begin during undergraduate health professions training and should be reinforced by role modeling among health professions faculty as well as practicing providers. A recent study found that resident physicians record more information about alcohol and drug use if their faculty preceptors have themselves received training about

addiction.⁵⁶ In many respects, a shift in the cultural paradigm of health care must occur, which enhances the value and importance of behavioral and family health within child and adolescent health care. The leaders of professional societies and government agencies who help establish best-practices guidelines also must give priority to this paradigm shift. The old concept that nothing can be done for a substance-abusing parent until he or she “hits bottom” has been replaced by successful techniques for earlier intervention. The idea that attainment of abstinence by the parent is sufficient to reverse the family’s problems, and the notion that nothing can be done to help the child as long as the parent continues to drink or use drugs, are two common misconceptions among health care providers that need to be avoided.

Summary and Vision for the Future

Primary care practitioners and other generalist health professionals encounter large numbers of children, adolescents, and families who have alcohol and other drug-related problems. In this paper, we have attempted to address some of the issues that are unique to children and adolescents. Many of the challenges facing primary health professionals to identify SUD in children, adolescents, and their families were outlined. It is apparent that more resources need to be identified and committed to this important health problem. If health professionals were taught the skills to screen and identify SUD in children, adolescents and their families, there would be a significant impact on the public health of the Nation.

It is clear that the comorbidity of substance abuse and psychiatric disorders is a serious problem and that patients with SUD and other psychiatric disorders have a much more difficult recovery and do less well in treatment. However, if substance abuse is identified and treated in its early stages, the probability of recovery improves tremendously. Therefore, it is imperative that efforts be made to identify substance abuse among youth and that resources be allocated for the intervention and treatment of adolescent substance abuse.

Substance abuse in families has a deleterious impact not only on the affected adult but also on the children in these families. Children of substance-abusing parents are at risk for a number of adverse health outcomes. These children could benefit from a variety of supportive interventions. Unfortunately, the majority of these children are not even recognized by their health professional. Health professionals who provide care to children and adolescents can play an important role in the identification and management of SUD, but many lack in the needed knowledge and skills. There is an extreme urgency to train health care professionals to recognize, intervene, and treat SUD. Primary health care professionals must be educated

about and learn the skills needed to enable them to screen for SUD in children, adolescents, and their families. In addition, they need to learn how to intervene in a sensitive, caring, supportive, and empathic manner.

In order to enhance the role of primary health professionals in the care of children and adolescents and families affected by SUD, current barriers that limit their involvement need to be removed. The lack of reimbursement and time constraints are two powerful barriers that need serious attention. Other important barriers include suboptimal early intervention and treatment resources. Unless these barriers are eliminated, children and adolescents will remain at risk.

Finally, we need to continue to narrow the gap between research and practice. While there is an emerging body of literature that is specific to children and adolescents, there needs to be a specific focus on research to develop valid and reliable screening tools that are specific to this population. There needs to be a continued focus on prevention and treatment programs and approaches that work for children and adolescents and on the development of resources for patients and families that are needed to support intervention efforts of practitioners. It is important that we define the extent to which children benefit from early intervention and determine which treatment strategies are needed to optimize their well-being.

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Recognizing and Treating Dual Diagnosis in General Health Care Settings: Core Competencies and How to Achieve Them

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Introduction

Psychiatric symptoms and psychiatric disorders are common among individuals with substance use disorders (SUD). “Dual diagnosis” is a term that refers to patients who have both a psychiatric and a SUD. Dual diagnosis can be difficult to assess because substances of abuse can cause psychiatric symptoms that are time-limited but indistinguishable from those seen in many psychiatric disorders. In fact, substance withdrawal or acute intoxication can mimic almost any psychiatric disorder. On the other hand, psychiatric disorders are commonly seen in individuals with SUD, and treating the psychiatric illness can improve the substance-related illness. In general, patients with a dual diagnosis are more difficult to treat than patients who have only one disorder because the former require an integrated approach that addresses both problems.

Both psychiatric disorders and SUD are commonly found in primary care settings. About 20% of primary care outpatients have a current psychiatric disorder, and 20% to 25% have a substance use disorder.¹ SUD are more common in individuals with psychiatric disorders than in the general population, and psychiatric disorders are common in individuals with SUD. One epidemiologic survey indicates that 45% of individuals with an alcohol use disorder and 72% of individuals with a drug use disorder meet criteria for another psychiatric disorder.²

The most common psychiatric disorders associated with SUD are mood and anxiety disorders, attention deficit disorder, and antisocial personality disorder. It is also important to note that addiction to more than one substance is common among substance users. Nearly 35% of cocaine-dependent individuals are estimated to be alcohol-dependent.³ Recognition of these comorbidities is an important issue for appropriate treatment.

Sometimes both the substance abuse and the psychiatric problems are hidden, and the patient may present with somatic complaints or sleep disturbance. In other instances, either the psychiatric illness or the SUD may be the focus of treatment. Establishing a concurrent psychiatric diagnosis among active substance abusers can be difficult, but it is of critical importance for appropriate treatment planning.

There is little formal training in dual diagnosis for health care providers of any discipline with the exception of psychiatry. Training and general competencies in substance abuse are yet to be established and accepted by most of the disciplines in the health care field. This effort to standardize and systematize the knowledge base and competencies for health care professionals in the assessment and treatment of substance use disorders provides the ideal forum to begin the process of including dual diagnosis in the consideration of SUD. The addition of this level of sophistication in training and clinical care initiatives can provide an important component to clinical care and improve patient outcomes.

This article emphasizes the need for psychiatric screening of all substance abusers and suggests general strategies for establishing a psychiatric diagnosis. Specific treatment strategies are discussed and basic competencies suggested.

Diagnostic Issues

The relationship between psychiatric symptoms and substance use is complex. Psychiatric symptoms in the context of substance use may be caused by the biologic effects of alcohol or other drugs, the psychosocial consequences of addiction, underlying personality traits, or the presence of a coexisting psychiatric disorder(s). If the symptoms of depression, anxiety, psychosis, or mania are secondary to withdrawal, intoxication, or chronic use, they tend to be transient and remit with abstinence.

In establishing the presence of a coexisting psychiatric disorder in an individual with active substance use, the clinical recommendation is to delay establishing a diagnosis until an individual has had 2 to 4 weeks of abstinence. This is often difficult to accomplish, particularly as inpatient hospitalizations are becoming less frequent and shorter. The length of abstinence necessary for diagnosis will vary between psychiatric diagnoses under consideration and differ by substance of abuse. A lengthy period of abstinence is more important in the diagnosis of some disorders than of others. In general, those disorders that have the most symptom overlap in withdrawal states (i.e., depression, dysthymia, generalized anxiety disorder) require the longest periods of abstinence for accurate diagnosis. On the other hand, disorders with key symptoms that are not mimicked by withdrawal states (obsessive-compulsive disorder, social or specific phobias) can be diagnosed with greater confidence after shorter periods of abstinence. Some psychiatric disorders can be mimicked by acute intoxication with certain substances (compulsive behaviors and cocaine use), but a provisional diagnosis can be made once the acute intoxication has passed. In many cases, individuals unwilling to go to inpatient care are unable to attain 2 to 4 weeks of abstinence as outpatients. In such cases, a provisional diagnosis can often be made after shorter than optimal periods of abstinence, as long as the clinician continues to monitor for patient safety and changes in severity and number of symptoms during increasing periods of abstinence.

The substance abused also affects the assessment of dual diagnosis. The drug-free period necessary for diagnostic purposes varies considerably, depending on the half-life of the agent involved. The length of acute and protracted abstinence associated with specific drugs is generally a direct function of the half-life of the agent. Agents with long half-lives require longer periods of abstinence before a psychiatric diagnosis can be made. In the case of stimulants, the half-life of cocaine is less than 1 hour and that of d-amphetamine is approximately 10–15 hours. For benzodiazepines, the half-life of diazepam is approximately 48–72 hours; that of alprazolam is approximately 8–12 hours. For opiates, the half-life of heroin is approximately 2–3 hours, and that of methadone is approximately 15–40 hours. Individuals on methadone maintenance present a special case for psychiatric diagnosis, because they may

remain on methadone for years. Generally, psychiatric symptoms and disorders are often evaluated, diagnosed, and treated after the individual has reached a stable dosage of methadone rather than requiring withdrawal of the agent for diagnostic purposes. This principle may also apply to individuals who require chronic treatment with other agents (e.g., benzodiazepines or other sedative-hypnotic/anxiolytics) that can produce psychiatric sequelae.

Screening and Assessing Psychiatric Disorders

The most common psychiatric disorders seen in individuals with SUD in a primary care setting are affective and anxiety disorders, attention deficit disorder, and personality disorders. Pattern recognition of these common mental health problems is important. Depression and anxiety symptoms commonly occur together and are often masked by somatic symptoms or medical illness. Clinicians should have a high index of suspicion for affective or anxiety disorders when a patient complains of unexplained vague physical symptoms or sleep disturbance, does not respond to usual treatments, admits to substance use, or has a family history of psychiatric disorders or SUD.

There are several psychiatric screening questionnaires available to help the non-psychiatrist screen for psychiatric disorders. These include the Primary Care Evaluation of Mental Disorders (PRIME-MD), the Symptom-Driven Diagnostic System for Primary Care (SDDS-PC), and the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition—Primary Care Version* (DSM-IV-PC), Table 1.^{4,6} The DSM-IV-PC is an excellent resource for information concerning psychiatric disorders for non-psychiatrists. It includes discussions of epidemiology, primary care presentation, differential diagnosis, and common associated conditions, as well as assessment algorithms with step-by-step instructions for diagnosis.

Alternatively, screening tools specifically targeting depression and anxiety can be helpful in measuring severity or frequency of symptoms. Commonly used instruments include the Beck Depression Inventory (BDI), the Hamilton Depression Scale (HAM-D), the Hamilton Anxiety Scale (HAM-A), and the Zung Self-Rating Depression Scale.⁷⁻¹⁰ The HAM-D and HAM-A are administered by clinicians, and the BDI and Zung are self-administered questionnaires.

Substance Abuse Screening

Substance use screening tools appropriate for use in primary care settings are described elsewhere in this volume and are not reviewed in detail in this chapter. It is of critical importance, however, that individuals treated for psychiatric disorders also be screened and carefully assessed for SUD. This is of particular importance because it is likely that the threshold for damaging use of substances is lower for individuals with psychiatric disorders than for other individuals. Individuals with psychiatric disorders are also at greater risk for developing abuse and dependence

Table 1: General Psychiatric Screening Questionnaires

Questionnaire	Disorders Screened	Test Characteristics
SDDS-PC	Alcohol dependence, drug dependence, major depression/suicide, anxiety disorders	A 26-item, self-administered screen with diagnostic module for confirmation
PRIME-MD	Mood disorders, anxiety disorders, somatoform, bulimia, alcohol dependence	Can be completed in 10 minutes
DSM-IV-PC	All	Excellent reference; the “gold standard”

than are individuals in the general population who may abuse substances without developing harmful and long-lasting sequelae. Aggressive assessment and treatment of substance use in individuals with psychiatric disorders can prevent the worsening of both the psychiatric disorder and the SUD.

Screening for SUD can be aided with tools such as the CAGE, the Michigan Alcoholism Screening Test (MAST), the Alcohol Use Disorders Identification Test (AUDIT), and the Drug Abuse Screening Test (DAST).¹¹⁻¹⁴ A clinical interview that includes questions about quantity and frequency of use in an empathic, nonjudgmental manner is still probably the best diagnostic tool. In the initial evaluations of psychiatric or substance abuse problems, there is much to be gained from contacting a family member, significant other, or friend. Current and lifetime history of symptoms and problems can be elaborated on, including a family history of addictions and psychiatric disorders. Family or friends can provide invaluable information in establishing a diagnosis, evaluating the patient’s environment and support system, initiating treatment, and establishing a treatment alliance.

Treatment Strategies and Principles

The treatment plan for an individual with a dual diagnosis should consider biologic, psychological, and social interventions that target both the specific psychiatric disorder and the SUD. The overall treatment plan should include a consideration of both medication and psychosocial interventions.

General Pharmacotherapy Considerations

The appropriate use of medications is becoming increasingly important as data accumulate to suggest that medication treatment of a psychiatric disorder may improve the substance-related outcomes for dually diagnosed individuals. The use of antidepressant medications in depressed alcoholic patients improved both the symptoms of depression and the alcohol-related outcomes.¹⁵⁻¹⁷ In another study, treatment with a mood-stabilizing agent, carbamazepine, was associated with decreased cocaine use in a group of patients with bipolar disorder and cocaine dependence.¹⁸

Buspirone treatment can improve retention in treatment and decrease alcohol use in anxious alcoholics.¹⁹ Finally, several studies suggest that treatment with some of the newer antipsychotic agents, such as clozapine and olanzapine, can decrease substance use in schizophrenic patients who also have a SUD.²⁰

There are several considerations in choosing specific medications. In general, medications that cause physical dependence, especially benzodiazepines, barbiturates, and stimulants, should be avoided. Exceptions to this rule include the use of sedatives during detoxification and the acute management of anxiety syndromes while other medications begin to take effect. For example, the dually diagnosed patient with panic disorder and agoraphobia may benefit from short-term benzodiazepines during the 2-week period before an antidepressant becomes effective.

Clinicians prescribing for dually diagnosed patients should also be aware of any toxic interactions between substances of abuse and specific psychotropic medications. For instance, disulfiram inhibits dopamine-beta-hydroxylase and may, therefore, exacerbate psychosis in individuals with schizophrenia. Finally, because dually diagnosed patients may be susceptible to inadvertent or intentional overdose, the safety profile of the agent should be kept in mind. The newer antidepressant and anxiolytic agents have a more favorable therapeutic window than do the tricyclic and monoamine oxidase inhibitor antidepressant agents (see Table 2).

While certain agents should be avoided in individuals with SUD, others may provide the added benefit of treating both the substance use and the psychiatric disorder. An example of this is the use of bupropion in treating a depressed individual who wants to quit cigarette use. The selective serotonin reuptake inhibitors have been shown in animal studies, as well as in some clinical studies, to decrease alcohol consumption.²¹ The safety profile of these agents, combined with the possibility that they may decrease alcohol consumption, makes them a logical choice in many dually diagnosed patients with affective or anxiety disorders.

Table 2: Psychotropic Drugs and Substances of Abuse

Therapeutic Agent		Potential Risk/Interactions in Substance Users
Antidepressants	Tricyclic antidepressants	Alcohol use may induce metabolism, decrease levels. Additive cardiotoxicity with stimulants.
	Monoamine oxidase inhibitors	Tyramine present in alcoholic beverages may produce pressor response— hypertensive crisis. Potentiation of sympathomimetic effects of stimulants— hypertension/hyperpyrexia. Toxic interaction with meperidine (hypertensive crisis).
	Selective serotonin reuptake inhibitors	Specific interactions not documented. May decrease alcohol use.
	Bupropion	Useful in nicotine dependence.
Mood Stabilizers	Lithium	Specific interactions not documented.
	Valproic acid	Liver toxicity.
	Carbamazepine	Liver toxicity.
Neuroleptic Agents		Increased risk for akathisia/dystonia. Risk for hyperpyrexia in combination with stimulants.
Benzodiazepines		Abuse potential.
Stimulants	Methylphenidate	Abuse potential.
	Amphetamine	Abuse potential.

Psychosocial Interventions

Psychosocial interventions readily implemented in the primary care setting include (1) providing education and support, (2) using motivational enhancement therapy (MET), (3) supporting relapse prevention treatment efforts, and (4) making referrals to 12-step programs and other support groups. *The Fifteen-Minute Hour: Applied Psychotherapy for the Primary Care Physician* presents an excellent approach to psychosocial interventions.²² It emphasizes the importance of communication, assessing psychosocial issues, and implementing specific straightforward strategies to help patients and improve compliance with treatment.

Patient education about dual diagnosis can reduce the likelihood of progression from a substance use or psychiatric disorder to a dual diagnosis. There are numerous opportunities for primary prevention of a secondary disorder, and these prevention strategies can be carried out in clinical settings. For example, psychiatric patients should be advised about the risks of using substances as a coping technique during periods of stress and loss. Substance abusers can be given information about better managing and expressing feelings of depression and anxiety and about more appropriate methods of handling insomnia and somatic complaints.

The patient's acceptance of a problem and willingness to engage in treatment are important predictors of clinical outcomes. Motivation is an important treatment-matching factor. Whether treated in a primary care or psychiatric setting, many patients with an active substance use disorder (including nicotine dependence) have low motivation to stop using substances. MET helps build the patient's motivation for change and commitment to change by encouraging an empathic interviewing style and strategies such as attempting to elicit self-motivational statements, weighing the pros and cons of changing, and making a change plan.²³ MET encourages goal making, including the identification of simple tasks that are attainable. The clinician serves as a supportive "coach" who assesses the patient's progress and helps the patient stay motivated and committed to treatment and recovery from both disorders. The clinician supplies support, encouragement, and interest and helps the patient feel competent and connected. MET has been used successfully with dually diagnosed patients to encourage engagement in substance abuse treatment.²⁴

Involving family members or close friends in the treatment plan is important to initiate abstinence and support relapse prevention. This process begins with the initial evaluation of the patient. Information concerning the family's connection with the patient, their awareness of the

patient's problems, and their willingness to be involved in the treatment is critical in treatment planning. An involved family can encourage the treatment efforts, mobilize social support, and monitor the patient's progress and compliance with medications and subsequent appointments.

In addition to the self-help groups such as Alcoholics Anonymous (AA) and Narcotics Anonymous (NA) for addictive disorders, a variety of other support groups are available to the individual with a dual diagnosis (see Table 3). These groups provide outstanding resources and support, and they are increasing their commitment to the dually diagnosed.

For individuals with a SUD, 12-step programs can be very helpful. There are several unique issues that need to be considered, however, for dually diagnosed individuals. Peers at 12-step meetings may have misinformation about mental illness and may minimize the need for medications. Some dually diagnosed individuals report that they do not feel accepted by their peers and have been told to stop taking their psychiatric medications. One important book, *The AA Member: Medications and Other Drugs*, can help these individuals educate misinformed peers.²⁵ This book supports the concept that medication decisions are made between the patient and a knowledgeable physician, and that medication can be appropriate and necessary for dually diagnosed individuals. Nonetheless, in practice, individuals with a psychiatric disorder are often stigmatized and feel isolated. Dual Recovery Anonymous and other types of modified 12-step groups were developed to address the needs of dually diagnosed individuals.

Barriers to Achieving Core Competencies

There are a number of barriers to achieving the core competencies addressed in the recommendations that appear at the end of this chapter. Clinicians are increasingly expected to develop expertise in areas not previously thought to be within their domain, such as bioethics, multicultural diversity, child abuse, domestic violence, and SUD. Of all these issues, SUD are probably the most prevalent and problematic. SUD also play a major role in many of the other psychosocial problems troubling the United States today (e.g., child abuse and domestic

violence). In this regard, it is surprising that assessment and treatment of SUD has not become a more prominent concept in the training of all health care professionals. Barriers to training in dual diagnosis are identical to those that interfere with the establishment of core competencies in SUD, which are well delineated in other chapters in this volume. For dual diagnosis, however, there are probably some additional impediments. They include the following:

Complexity of Diagnosis and Treatment

With the explosion of developments in the scientific and treatment areas, coupled with the expectation that health care providers develop expertise in many psychosocial issues that have profound effects on public health, the knowledge base and training expectations in health fields have become overwhelming. This places strains on already over-burdened curricula. It may be difficult to find time to add training not only in SUD but also in the more subtle and complex area of dual diagnosis. The connection between substance use and many of our most common medical and societal problems cannot be overemphasized in making the case for dedicated time for training. The close connection between psychiatric disorders and SUD is critical in making the case for training in dual diagnosis. The importance of addressing dual diagnosis in order to maximize patient outcomes must be stressed. The fact that neither substance use nor psychiatric disorders can be adequately or appropriately treated without knowledge of the interactions between the two disorders is key. Any push to overcome the barriers to fuller integration of issues related to SUD into health care professional training programs must include dual diagnosis. This coupling of curricula makes sense in terms of the most efficient and systematic method for providing training. Appropriate assessment and treatment of dual diagnosis is a part of the assessment and treatment of SUD and can be best taught and understood as such.

Health Care Financing

Another set of barriers to adequate assessment and treatment of dual diagnosis is related to the funding of treatment. In an era of shrinking health care resources, assessing for both psychiatric disorders and SUD and

Table 3: National Organizations Providing Information on Psychiatric Disorders

National Alliance for the Mentally III (NAMI)	800-950-NAMI
National Foundation for Depressive Illness	800-248-4344
National Depressive and Manic Depressive Association (NDMDA)	800-82N-DMDA
Anxiety Disorders Association of America (ADAA)	301-231-9350
National Mental Health Association (NMHA)	800-969-NMHA
Depression and Related Affective Disorders Association (DRADA)	410-955-4647

exploring the relationship between the two in an individual case take time that is not well compensated. Health care providers are likely to be reimbursed for the treatment of either a substance use disorder or a psychiatric disorder, but not both, in spite of the substantial data supporting the fact that integrated treatment provides the best treatment outcomes.²⁶ The other irony in the current health care financing system is that it has been clearly demonstrated that substance use worsens the course and prognosis for schizophrenia, bipolar disorder, personality disorder, and a host of other psychiatric disorders, making hospitalization, emergency room visits, and use of other costly health care resources far more common in comorbid populations.^{27,28} Despite this, the reimbursement system is not designed to encourage the assessment and treatment of both disorders. In general, reimbursement is based on the “primary” diagnosis, making it financially disadvantageous for the clinician to assess and treat any aggravating or contributing conditions. While most clinicians try to take the time to do what is best for patients, regardless of expected reimbursement, these practical issues have an influence on day-to-day clinical practice.

Changes in two interrelated areas are of critical importance in improving the detection and treatment of dual diagnosis and SUD. While there are other barriers to optimizing the treatment of dually diagnosed individuals, such as accessibility of treatment and availability of specific expertise in certain geographical areas, these would be likely, in large part, to resolve if training and financial barriers were overcome.

Vision for the Future

Ideally, substance abuse training, including training in dual diagnosis, should become a mandated and critical part of the training program for all health care professions. This training should be conducted in a multidisciplinary fashion in order to model the screening, assessment, and treatment of individuals with dual diagnosis in real world practice settings. Competency in basic skills would be mandatory for licensure.

Health care financing, both public and private, should adequately reimburse for appropriate screening, assessment, and treatment. If this change were made, it is likely that there would be an increase in treatment programs, as well as an increase in the number of professionals with expertise and interest in treating patients with dual diagnosis.

Even under ideal circumstances, it is likely that there will be a lack of specific expertise to diagnose and manage complex dual-diagnosis cases in underpopulated rural areas. A telecommunication network for ongoing consultation concerning diagnostic and management issues would be an excellent tool in overcoming this obstacle. This type of consultation has been used successfully in other areas of medicine. There is currently a system in place at the Medical University of South Carolina that uses videoconferencing technology to provide psychiatric services to deaf individuals throughout the State by a psychiatrist trained in sign language. On-line networks for consultation would also help to maximize the use of existing expertise in dual diagnosis.

Recommendations

Screening and Assessment

- 1. All clinicians should be knowledgeable in techniques used in the assessment of the quantity and frequency of alcohol and other drug use in individuals with substance use disorders. They should be aware of the need to routinely screen individuals with psychiatric disorders and psychiatric symptoms for any and all alcohol and other drug use and for SUD in particular.**

Rationale. Substances to be included in the screening procedure are tobacco products, alcohol, prescription medications (sedative-hypnotics and narcotics), and illicit drugs (marijuana, cocaine, opioids, and amphetamines). Selected screening instruments have been described, but simple questions concerning use, quantity, and frequency, asked in an empathic and nonjudgmental manner, may be one of the most effective means of gathering information from individuals. Since individuals with psychiatric disorders are at risk for the development of SUD, the threshold for defining substance abuse should be lowered. Additionally, many psychiatric symptoms and complaints may be a result of substance use (i.e., anxiety and alcohol withdrawal). Screening for substance use in these cases will determine the appropriate approach to addressing the symptoms.

Recommended Actions. Increase training regarding available alcohol and drug abuse screening instruments, methods of determining other medication and drug use, and techniques for incorporating screening for alcohol and drug use into routine clinical practice.

Responsible Agents. American Medical Association (AMA); American Society of Addiction Medicine (ASAM), American Psychological Association, American Psychiatric Association, medical schools, curriculum committees of other health professional schools (social work, pharmacy, dentistry, public health, and psychology).

Expected Outcomes. The training and knowledge base of current and future health care professionals concerning alcohol and medication/drug screening techniques, including techniques to determine the frequency and quantity of the use of alcohol and drugs, would be increased. There would be expanded screening of individuals with psychiatric disorders and psychiatric complaints for substance use and SUD in clinical settings

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- 2. All clinicians should be knowledgeable in the screening and assessment of psychiatric complaints and disorders in individuals who use any illicit substance, are moderate alcohol users, or have a substance use disorder.**

Rationale. Depressive disorders and mood instability, anxiety disorders, and attention deficit disorder are seen more commonly in individuals who use illicit substances, drink heavily, or have a SUD. These symptoms and disorders are likely to interfere with recovery. Psychiatric symptoms may also be caused by substance use. Knowledge concerning these symptoms and the relationship between symptoms and substance use may provide leverage and incentive to individuals to decrease use or abstain from use entirely. A self-report screening questionnaire, followed by a targeted assessment, may be the most practical and thorough approach to the assessment of such individuals.

Recommended Actions. Increase training regarding available psychiatric symptom screening instruments and techniques, and techniques for incorporating screening for psychiatric symptoms and disorders into routine clinical practice.

Responsible Agents. AMA, ASAM, American Psychological Association, American Psychiatric Association, medical schools, curriculum committees of other health professional schools (social work, pharmacy, dentistry, public health, and psychology).

Expected Outcomes. The training and knowledge base of current and future health care professionals concerning psychiatric screening using standard instruments and interview techniques would increase. There would be expanded screening of individuals with any substance use and SUD for psychiatric illness in the clinical setting.

3. All current and future health care professionals should be aware of the complex relationship between psychiatric symptoms, psychiatric disorders, and substance use and the issues complicating psychiatric diagnosis in individuals with substance use disorders.

Rationale. Making a psychiatric diagnosis can be difficult in individuals with SUD. There is the danger of both overdiagnosis and underdiagnosis. It is important that the clinician be aware of the major difficulties in diagnosis, the type of symptoms that are most likely to be overlapping, and the critical issues concerning the timing of diagnosis.

Responsible Agents. AMA, ASAM, American Psychological Association, American Psychiatric Association, medical schools, other committees of health professional schools (social work, pharmacy, dentistry, public health, and psychology).

Expected Outcomes. There would be increased training and knowledge about the relationship between psychiatric symptoms, psychiatric disorders, and substance use and abuse. Recognition of the overlap between psychiatric disorders and SUD in the clinical setting would grow.

Initial Management and Referral

4. All current and future health care providers should be trained to provide structured and targeted brief advice and intervention to assist patients with psychiatric symptoms and disorders in cutting down or eliminating alcohol and drug use. Advice and brief intervention may be part of early-detection programs in clinical settings.

Rationale. For individuals with psychiatric symptoms or disorders, any alcohol consumption or drug use may worsen their psychiatric presentation. Brief intervention may be important in helping some at-risk individuals decrease use in the early stages of illness before costly, specialized treatment interventions become necessary. Brief alcohol interventions have been proven to be effective. Training can be made available to professionals through preclinical and education programs, continuing education (CE) credits, and other workshop opportunities. In a changing health care delivery system, brief, effective methods of dealing with substance use problems will be both clinically effective and cost-effective.

Recommended Actions. Develop preclinical and clinical brief intervention training materials for clinicians working in a variety of mental and physical health care settings. Both didactic and clinical training materials should be developed. Train clinicians in conducting brief interventions. Such training should become an integral part of training programs for future professionals. For those in active practice, make CE credits available for participation in workshops.

Responsible Agents. AMA, ASAM, American Psychological Association, American Psychiatric Association, medical schools, curriculum committees of other health professional schools (social work, pharmacy, dentistry, public health, and psychology).

Expected Outcomes. There would be increased training and knowledge about brief interventions targeting alcohol and drug use, as well as greater use of brief interventions by providers for patients with psychiatric symptoms and disorders and problematic alcohol or drug use.

5. All current and future health care professionals should be knowledgeable about specific issues or problems concerning pharmacotherapy of dually diagnosed patients.

Rationale. While some clinicians may not want to undertake the treatment of dually diagnosed individuals, all clinicians should be aware of specific issues regarding the pharmacotherapy of dually diagnosed patients. Specifically, clinicians should be familiar with medications that are relatively contraindicated in individuals with SUD as well as medications that may provide some preferential benefit to dually diagnosed individuals.

Recommended Actions. Develop preclinical and clinical training materials concerning psychopharmacologic management of patients with particular attention to special considerations in the substance abuse population. Integrate training on psychopharmacologic interventions in substance abuse patients into the training programs for all professionals in the primary care and mental health fields.

Responsible Agents. AMA, ASAM, American Psychological Association, American Psychiatric Association, medical schools, curriculum committees of other health professional schools (social work, pharmacy, dentistry, public health, and psychology).

Expected Outcomes. Training and knowledge about the appropriate use of psychopharmacologic agents in individuals with SUD would increase.

6. All current and future health care professionals should be knowledgeable concerning the appropriate resources in their community for consultation, assessment, and treatment of dually diagnosed individuals.

Rationale. Health care providers should be able to consult with addiction specialists and refer patients to alcohol and drug treatment programs, dual diagnosis treatment programs, and self-help groups. The treatment of individuals with SUD, and in particular those with dual diagnosis, requires multidisciplinary collaboration and consultation. Providers should be aware of local and regional resources for consultation and referral.

Recommended Actions. Professional organizations and medical centers should develop and keep current a list of individuals and facilities with expertise in the treatment of SUD in general and dual diagnosis in particular.

Responsible Agents. AMA, ASAM, American Psychological Association, American Psychiatric Association, medical schools, curriculum committees of other health professional schools (social work, pharmacy, dentistry, public health, and psychology).

Expected Outcomes. There will be more frequent and appropriate referrals of dual-diagnosis patients for specialized assessment and treatment.

Specialized Management

7. All current and future health care professionals providing detoxification treatments should be knowledgeable about common psychiatric conditions that complicate or are complicated by alcohol withdrawal. All clinics or health care systems that provide detoxification services should make adequate provisions for assessing and serving dually diagnosed patients.

Rationale. Certain psychiatric symptoms and disorders are exacerbated during withdrawal from alcohol and other drugs. Considering the prevalence of comorbidity, knowledge concerning appropriate assessment and treatment of these symptoms is critical for any professional involved in detoxification treatment.

Recommended Actions. Develop preclinical and clinical training materials on psychiatric complications of alcohol or drug withdrawal and treatment protocols.

Responsible Agents. AMA, ASAM, American Psychological Association, American Psychiatric Association, medical schools, curriculum committees of other health professional schools (social work, pharmacy, dentistry, public health, and psychology), and regional and local medical centers.

Expected Outcomes. Training and knowledge concerning the management of psychiatric symptoms/disorders during alcohol or drug withdrawal would increase.

8. All current and future specialty care providers (addiction specialists, addiction psychiatrists, and general psychiatrists) should be trained in skills required for the initial management and treatment of patients with psychiatric disorders or psychiatric symptoms and substance abuse or dependence.

Rationale. Addiction specialists often receive too little training in psychiatric diagnosis and in the overlap between psychiatric symptoms and substance use and withdrawal. Similarly, psychiatric training often does not provide sufficient information concerning detection, diagnosis, and treatment of SUD. Both groups need cross-training in this area to be able to effectively deal with dually diagnosed patients and substance-using patients with psychiatric complaints.

Recommended Actions. Incorporate clinical postgraduate training materials for specialty providers on best practices for psychosocial interventions, including brief intervention techniques, cognitive behavioral approaches, group- and individual-based approaches, medical/psychiatric and pharmacological approaches, and aftercare.

Responsible Agents. AMA, ASAM, American Psychological Association, American Psychiatric Association, medical schools, health professional schools (social work, pharmacy, dentistry, public health, and psychology), regional and local medical centers.

Expected Outcomes. There would be increased training and knowledge for psychiatric and addiction providers in pharmacological and psychosocial approaches to SUD. Outcomes for psychiatric patients with SUD in specialty settings and for substance-using patients with psychiatric disorders in specialty settings would increase.

These recommendations are educational in nature and their implementation will require changes in the educational structure. Formal training programs at the graduate and postgraduate levels must be supplemented with substance abuse and dual diagnosis modules and information. Increased faculty training will be essential. For those who have completed their training, information on these topics must be integrated into CE programs. For fields with certification and accreditation programs, these programs can be used to emphasize the need for increased knowledge and training in these areas and to measure the effectiveness of recommendations and targeted educational programs.

Faculty Development

9. To ensure adequate training in the skills necessary for screening, intervention, and treatment of substance use disorders in patients with psychiatric disorders and the treatment of psychiatric symptoms in persons with substance use disorders, resources should be provided on Federal, State, and university levels to develop and train faculty mentors who will be responsible for disseminating knowledge to current and future health care

professionals. A critical mass of trained faculty mentors is essential for changing norms and for providing sufficient role models in this complex area.

Rationale. There is empirical evidence that the use of faculty mentors generates opinion leaders critical to influencing current and future generations of health care providers. Current health care providers generally do not receive training in the complex area of dual diagnosis. It will be essential to develop an infrastructure in training institutions capable of addressing these issues.

Recommended Actions. Increase funding for faculty development programs focusing on SUD in psychiatric patients. Provide state-of-the-art curricula for faculty, fellows, and leaders focused on SUD in psychiatric patients. Enhance the professional training for preclinical and clinical trainees through the use of targeted curricula and training in best practices for psychiatric patients who have SUD.

Responsible Agents. Health Resources and Services Administration /Bureau of Health Professions (HRSA/BHPr), Agency for Health Care Quality (AHCQ), AMA, ASAM, American Psychological Association, American Psychiatric Association, medical schools, curriculum committees of other health professional schools (social work, pharmacy, dentistry, public health, and psychology).

Expected Outcomes. Increased numbers of faculty mentors would be trained and motivated to teach and mentor other health care providers and students in the treatment of dually diagnosed individuals. There would be more required and elective curricula in professional schools addressing individuals with comorbid substance use and psychiatric disorders.

10. Certification for health professionals in all disciplines caring for individuals with psychiatric disorders or SUD should include proficiencies in screening, intervention, and treatment of individuals with comorbidity.

Rationale. Certification examinations and recommended proficiencies are often used as guidelines for curriculum development and CE programs. As such, these proficiencies can ensure that recommendation for education and faculty development are carried forward and are not arbitrarily implemented.

Recommended Actions. Ensure that specialty and subspecialty board examinations include content focused on comorbidity. Ensure that the content of licensing examinations for non-physician providers includes material focused on comorbidity.

Responsible Agents. Accreditation Council for Graduate Medical Education, American Board of Psychiatry and Neurology, American Board of Family Practice, American Board of Internal Medicine, American Nurses Association, National Council of State Boards of Nursing, State licensing boards for nursing, social work, counseling, dentistry, and psychology.

Expected Outcomes. The number of health professionals adequately trained in the assessment and treatment of comorbidity would rise. Adherence with continuing education and maintenance of clinical skills in the assessment and treatment of comorbidity would increase.

Conclusion

The comorbidity of psychiatric disorders and SUD is common and has a substantial impact on the course of illness and treatment outcome. There have been exciting discoveries and improvements in the treatment of dually diagnosed patients. It will be important to integrate information concerning the assessment and treatment of these individuals into the training curricula addressing SUD. It will also be critical to improve reimbursement for screening, assessment, and treatment of dual diagnosis in order to optimize the use of a valuable and growing body of evidence concerning optimal treatment for these individuals.

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Impairment Issues for Health Care Professionals: Review and Recommendations

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Introduction

Substance abuse problems in the workforce, particularly among health care professionals, have historically been ignored. However, substance abuse is one of the most pressing problems facing health care professionals and the patients they treat. It adversely affects public health, safety, and economic productivity. Alcohol and other drug problems often go unrecognized and thus untreated, resulting in many deaths and illnesses. The National Institute of Mental Health Epidemiologic Catchment Area program data on psychiatric and substance use epidemiology in populations estimated that the lifetime prevalence of alcohol disorders in the United States is 23.8% for men and 4.7% for women.¹ The overall lifetime prevalence of drug abuse and dependency has been estimated at 6.2%.² Schoenborn³ reports that 43% of U.S. adults have been exposed to alcoholism because of having grown up with, marrying, or having a blood relative affected by the disease.

If the rate of substance use disorders (SUD) among health professionals even approaches that among the general population, professionals are at high risk; indeed, their risk may be even greater because of the pressures under which they work and the fact that many of them are exposed to drugs, including controlled substances, as part of their practice. Therefore, they need to know how vulnerable they are to developing SUD and related problems. Buxton⁴ describes “pharmacological optimism” as the confidence health professionals have in the ability of medications to solve problems and relieve pain. That, combined with a sense of mastery in administering substances and a familiarity with drugs, may lead a professional to feel that he or she can use substances without harmful consequences.⁵ Professionals need to be prepared for this reality so that they can recognize the signs of chemical dependency in colleagues or themselves and intervene when necessary.⁶⁻⁸

Factors That Predispose Health Care Professionals to Alcohol and Drug Use

Several factors may predispose health care professionals to the use of alcohol and drugs. The unifying factor across all the health professions is easy access to drugs, which may include prescribing or dispensing controlled substances. Psychodynamic issues that predispose professionals to impairment include a family history of substance abuse, coming from a “dysfunctional” family, narcissistic personality characteristics or avoidance of intimacy with suppression of feelings, stress in any aspect of life, abuse or mistreatment during training, and unrealistic expectations of one’s career.⁹⁻¹² Lack of substance abuse education can

compound these problems by creating a false sense of immunity to impairment. Although the research is sparse in many of these areas, the most consistent predictive factor may be a family history of substance abuse—a factor that is not unique to health care professionals.^{9,13}

Certain other features of health care work may promote the likelihood of impairment or problem substance use. The “24/7” nature of many health care facilities, coupled with staffing shortages and financial pressures, has led to situations in which hours are increasing and collegial support is decreasing.^{14,15} Adverse scheduling itself has been associated with increased substance use. Trinkoff and Storr¹⁶ examined the relation of a nurse’s work schedule characteristics (i.e., shift rotation, weekends on, shift

length longer than 8 hours, and overtime) to substance use. In general, the more adverse the nurse's schedule characteristics, the greater the likelihood of substance use.

Prevalence of SUD in Health Care Professionals

Several major studies have examined the prevalence of substance abuse and dependence in the general population; however, studies of the prevalence among health care professionals are far more limited. Abuse of controlled drugs is higher for health professionals than for the general population, although use of illicit drugs and smoking may be lower. Prevalence data for physicians, nurses, dentists, and pharmacists are summarized in the following paragraphs. State-of-the-art information is more available for physicians, nurses, dentists, and pharmacists than for members of other health disciplines; therefore, only these four professions will be presented.

Physicians

The prevalence of alcohol and other drug problems in physicians has long been debated, and some have estimated that it is 30 to 100 times higher than that of the general population. Brewster¹⁷ indicated that despite difficulties in interpreting the data, the prevalence of problems among physicians may be no higher than it is in the general population. Subsequent empirical studies support this contention. Vaillant¹⁸ did a prospective study over a 20-year period that showed that 45 physicians took more tranquilizers, sedatives, and stimulants than did 90 matched controls, but no differences were found in the use of alcohol or cigarettes. McAuliffe¹⁹ reported that 59% of physicians and 78% of medical students had used psychoactive drugs in their lives. In the prior year, 25% of physicians had abused prescription drugs and 10% had used drugs recreationally, while 10% of physicians had current regular drug use and 3% had histories of dependence. Hughes and colleagues²⁰ surveyed 9,600 U.S. physicians in a study that had a 59% response rate. They found that physicians were more likely to use alcohol and to self-treat with prescription medications (minor opiates and benzodiazepines) and less likely to use tobacco and illicit substances than was the general population. Among physicians in treatment, anesthesiologists, psychiatrists, and family practitioners are overrepresented.^{12,21,22}

Hughes and colleagues²³ surveyed 3,000 resident physicians to determine the patterns of substance abuse among medical residents. A total of 1,785 residents received the survey, and the response rate was 60%. The use of psychoactive substances in this group was generally lower than it was among individuals in similar age groups in the general population, although residents did have higher rates of alcohol and benzodiazepine use than their age peers of the same gender. In addition, 31.4% of those

who had ever used benzodiazepines and 23.1% of those who had ever used an opiate (other than heroin) began using the drugs during their residencies. Self-treatment was one of the reasons for use given by 75% of the respondents who had used benzodiazepines and 51.6% of the respondents who had used opiates.

Nurses

Studies using representative samples have found overall substance use rates in nurses to be comparable to those in the general population, despite earlier anecdotal work that suggested that nurses had much higher rates.²⁴⁻²⁷ Estimates of problem use in nurses range from 6% to 8%.^{28,29} The Nurses Worklife and Health Study, an anonymous survey of substance use in 4,438 U.S. registered nurses (response rate 78%), reported overall use rates similar to those of the general population; however, nurses had elevated rates of prescription drug use compared with data from the National Household Survey on Drug Abuse.³⁰

Nurses with easier workplace access to controlled substances reported more prescription drug misuse in the past year than did nurses without such access.³¹ Three workplace access dimensions were measured (availability, frequency of administration, workplace controls). When these were summed as an index, nurses with easy access on all dimensions were more likely to have misused prescription-type drugs than were nurses without such access. Similarly, an anonymous survey of drug use among certified registered nurse anesthetists found that 10% of respondents reported misuse of controlled drugs used in their practices.³² Pharmacological optimism may also contribute to nurses' beliefs that substance use is an acceptable way to address a problem or painful circumstance. Chemically dependent nurses in Missouri reported using substances to address physical and emotional pain.³³

Other differences in substance use across nursing specialties have been noted, including higher past-year use rates in emergency and psychiatric nurses.³⁰ Plant³⁴ and Collins and colleagues³⁵ also found higher-than-average rates of smoking in psychiatric nurses, and Collins and coworkers found significantly higher cocaine use in critical care nurses than in those in other specialties. Oncology nurses were more likely to drink alcohol (more than five drinks per occasion), as were nurses whose specialty was administration.³⁰ Nurses in specialties least likely to report past-year substance use were those in pediatrics, women's health, and school and occupational health. Similar patterns have been found among physicians, with higher rates in psychiatrists and emergency medicine physicians, suggesting that there may be etiologic factors in common among substance-using health care professionals.³⁶

Dentists

In the 1980s and 1990s, 14% to 16% of dental students and practicing dentists were reported to be at risk for

developing a SUD.³⁷⁻⁴⁰ In 1989, Oberg,⁴¹ using a conservative figure of 10%, estimated that 18,000 dentists were chemically addicted. Kittleson^{42,43} is of the opinion that 5% of practicing dentists are actively abusing chemical substances and that 13% of these professionals have experienced a long-term problem with substance abuse. In a 1997 American Dental Association (ADA) survey, 4% of participating dentists admitted that they had some kind of drug problem and 20% were found to be at risk for alcoholism or other drug dependency.³⁷

Kittleson⁴³ has stated that, according to anecdotal evidence from Gropper and staff from the Talbott-Marsh Recovery Campus, certain characteristics are common in recovering dentists. For example, affected dentists were likely to be dissatisfied with their career choice. They struggled with certain aspects of professional practice and resultant low professional esteem, including isolation and fear of causing pain, coupled with ready access to substances.⁴⁴ According to Gropper,⁴⁴ dentists appear to be particularly vulnerable to substance abuse when they are compulsive and perfectionist in their behavior, have a high need to be in control while simultaneously feeling very out of control, and use an avoidant style in managing interpersonal relationships. Others have written about stresses and hazards within dentistry that may support the development of an addictive disorder, echoing the findings of those treating recovering dentists.⁴⁵⁻⁴⁷ These include the social and professional isolation of solo practice and perceived demands by patients for perfection, availability, and empathy.

Pharmacists

It is believed that pharmacists have substance use patterns similar to those of physicians, although at a slightly lower prevalence.⁴⁸ McAuliffe and colleagues⁴⁹ surveyed 510 randomly selected pharmacists and 470 pharmacy students in 1987. They found that 46% of the pharmacists and 62% of the students had used a controlled substance without a prescription, with 19% of the pharmacists and 14% of the students using within the past year.

Gallegos⁵⁰ studied 2,015 professionals assessed by the Medical Association of Georgia's Impaired Physician program between 1975 and 1987. He found that nurses and pharmacists were more likely than physicians or dentists to be addicted to more than one drug, although nurses reported being addicted to substances from more than one drug class less often than did other health care professionals. Both pharmacists and nurses were less likely to be abusing alcohol exclusively than were physicians and dentists. Pharmacists were less likely to use parenteral drugs and more likely to use stimulants than were the other health care professionals. Pharmacists also were found to use sedative and narcotic drugs frequently.

Identification of Substance Abuse Problems

The stigma of having a SUD and the limited substance abuse awareness in many health professionals can inhibit early identification of substance-abusing professionals. In addition to lack of knowledge, attitudinal and organizational barriers limit the likelihood of identifying and diagnosing problems. Faculty and students may serve as enablers of impairment, be unaware that the affected person is displaying signs of impairment, or deny the symptoms they see in a colleague.

Detection of SUD in the professional is often delayed by the ability of health professionals to protect their job performance at the expense of every other area of their lives.⁵¹ Studies suggest that job performance is the last area of a professional's life that is affected by their addiction, coming after family, community, health, and financial difficulties.^{52,53} Signs and symptoms of impairment in professionals include behaviors related to drug seeking, coming to work on days off, volunteering for overtime, making rounds at unusual times, and coming to work while on vacation. The impairment may not be detected because such behaviors may be interpreted as evidence of dedication to the job. Other disturbances in work behavior that can stem from impairment include self-medication; mood swings or other inappropriate behavior; unexplained absences; changes in dress, attitude, behavior, or professional demeanor; complaints by office staff or patients (e.g., canceling appointments without obvious conflicts, changes in handwriting, "broken beeper syndrome"); giving unusual or inappropriate orders especially over the phone at night; excessive consultations; changes in ordering and prescribing of mood-altering drugs; heavy drinking at staff functions; unexplained gaps in employment or frequent job changes; social isolation or avoidance of peers; and alcohol on the breath at work.^{54,55} Problems in other domains, such as family conflict or separation and driving-while-intoxicated charges, may accompany impairment.

Despite the signs, an impaired professional may avoid detection because of his or her knowledge; the plausible rationalizations he or she can provide if questioned; possession of nonspecific job performance expectations; tenure status, especially in academic settings; "godlike" perceptions by others of the health care professional; and strong defensive denial.^{48,54,56} Those who recognize or suspect impairment in a colleague or supervisor also may encounter difficulties. These stem from persistent denial and enabling behaviors by others and punitive attitudes, including threats of reprisal or legal difficulties, toward those who report their suspicions. Many hospital staff are reluctant to get involved in any situation involving another professional for fear that they will be perceived as "ratting out" or harming the career of colleagues. A lack of policies or resources that support taking appropriate action can discourage the individual who detects impairment from intervening.

Earlier identification and diagnosis of substance abuse symptoms are critical in order to combat professional impairment. Extensive education about the nature, causes, and prevention of substance abuse problems is required throughout the entire health care community in order to develop effective programs.⁷ This will allow colleagues and family members to more quickly recognize that, when symptoms such as those just described are exhibited, a professional may be developing a SUD.

Intervention and Treatment

Chemically dependent professionals unfortunately do not readily recognize their own impairments and often have a large amount of denial about what is happening in their lives. Denial (both the deliberate, conscious deception and the unconscious defense mechanism) is an almost universal characteristic of the disease of addiction.⁵¹ Guilt and shame over past behaviors prevent health professionals from admitting their problems, seeing the difficulties addiction has caused in their lives, and voluntarily seeking help. An intervention is often necessary when a professional is unaware of his or her addiction or unable to recognize the seriousness of addiction-related problems as a result of denial.^{51,57}

An intervention is a procedure that is used to get the professional to a comprehensive evaluation of the problem. It is best carried out by a team of individuals significant to the professional who are knowledgeable about addiction and are able to be nonpunitive, objective, and caring. The intervention leader should carefully and quickly plan the intervention process, including setting goals for the intervention and expediting the prompt referral for an assessment, treatment, or both.⁵¹

Barriers to the intervention, as well as the motivations of the participating individuals, should be explored before the intervention is begun. Policies and procedures of the institution need to be reviewed in cases where an intervention is taking place in a hospital or medical center setting. The participants in the intervention should rehearse together before they attempt the intervention. This will allow them to better anticipate the professional's reaction and plan how they will handle anger directed at them or a refusal by the professional to go for assessment, treatment, or both. A plan of action concerning where, when, and how an assessment will be done, along with travel arrangements, should be in place before the intervention begins. The intervention team should encourage the professional to go immediately for the assessment, since the anger, guilt, and shame that the professional is feeling may be overwhelming and can lead to suicide.

A comprehensive assessment will determine whether the professional has a problem, the extent of the problem, and the type of treatment that may be effective. Many hospitals, physician health programs, impaired nursing

programs, State boards, and similar groups recommend specific treatment providers or facilities for the assessment. Few studies indicate what type of treatment setting (e.g., outpatient versus inpatient or residential), or what length of treatment is most effective. Likewise, there are no data to indicate whether specialized treatment programs for professionals are more effective than programs that treat anyone.

Treatment involves several components, including detoxification if necessary; primary treatment where patients learn about the disease and how it affects them; and aftercare and monitoring. Treatment may include penetrating the denial, education about the disease, helping the patient connect with his or her feelings, identification of core issues, development of nonchemical coping skills, family participation, developing relapse prevention strategies, and involvement with self-help groups.^{7,51} Primary treatment options include outpatient treatment, intensive outpatient treatment, partial hospitalization, inpatient, and residential programs.

Treatment is very effective, particularly for professionals. Morse and colleagues⁵⁸ compared data on 185 middle-class patients and 73 physicians similarly treated for substance abuse in an inpatient program. Eighty-three percent of the physicians, compared with 62% of the nonphysicians, had favorable outcomes. These researchers concluded that close monitoring may account, in part, for the better prognosis for physicians. Shore⁵⁹ reported on 63 addicted or impaired physicians who had been put on probation with the Oregon Board of Medical Examiners. After 8 years, 59% were still on probation and 75% were rated as stable and improved. There was a significant difference in recovery rates between the monitored substance-abusing physicians and the unmonitored substance-abusing physicians (96% versus 64%, respectively). Random urine drug screening was believed to correlate with a positive outcome for the physician.

Professional and peer referral and advocacy programs have been developed by many local and State professional societies,^{12,60-64} based on the control they have over professional licensure. A variety of programs exist for physicians, dentists, psychologists, nurses, pharmacists, counselors, and social workers, as well as for students of these disciplines. These programs are often staffed by volunteers (including recovering peers) at the local level. Staffing, funding, organization, and functioning vary greatly across professions. Within a particular profession, these factors also vary greatly across States.

The professional impairment network for physicians is the most highly developed among the health professions. It uses models of therapeutic intervention and treatment to guide its activities. In 1995, the Federation of State Medical Boards (FSMB) adopted a national policy based on the Report of the Ad Hoc Committee on Physician Impairment.⁶⁵ The document sets forth optimal treatment goals

and definitions of impairment. It includes descriptions of model treatment and relapse-management programs, as well as criteria for referral, evaluation, assessment, treatment, and follow-up. Physician health programs (PHP) address impairment in all 50 States, although not all function at the same level (several exist more on paper than in actuality). Reporting requirements vary; some States require reporting of impairment or relapses, while others serve only as advocates for voluntary participants. The strictly voluntary PHPs offer referrals and resources to impaired physicians but do not report noncompliant physicians to their State boards. Some State boards require professionals suspecting impairment to report their concerns to the State or the PHP, which then investigates and intervenes with the physician if impairment is found.

PHPs typically attempt to persuade the physician to seek treatment voluntarily. If this is unsuccessful, or if a physician relapses, they may take disciplinary action by reporting the physician to the State board. After a physician has been reported, the PHP continues to act as an advocate, seeking treatment for the physician and promoting an eventual return to work. In the past 10 years, the Federation of State Physician Health Programs (FSPHP) has been developed and organized. Members include full- and part-time State PHP medical directors. FSPHP has strived to develop a close relationship with the American Medical Association (AMA) and with State medical boards and to provide a forum for exchange of information and for promotion of early intervention for impaired physicians.

In contrast to impaired physicians, for whom every State provides some type of assistance, some States (less than 10) use a punitive model of jail, employment terminations, or both for addicted nurses. The remaining States employ some type of “alternative-to-discipline” program.⁶⁶ These alternative programs may be provided through State nursing associations or boards of nursing. As punitive interventions contradict research on drug use treatment, many nurses are advocating a shift to a treatment/peer assistance model. Yocom⁶⁶ compared the outcomes in nurses who had participated in punitive versus alternative programs and found little difference in the rates of recovery. Haack and Yocom⁶⁷ examined longitudinal employment and relapse outcomes for disciplined nurses from States using a traditional punitive approach versus States using an alternative-to-discipline diversion approach. They found that the alternative-to-discipline sample had more nurses with active licenses, fewer nurses with criminal convictions, and more nurses employed in nursing 6 months after disciplinary action with no differences in relapses. Finke⁶⁸ found that 64% of impaired nurses completed a peer assistance program successfully. Given that treatment outcomes for physician alternative-to-discipline programs have been reported to be successful,⁶⁹ this should be the model for the nursing profession. State-of-the-art knowledge of successful treatment and interven-

tion for health professionals should be used to develop policy and formulate positions on nurses’ substance use treatment and intervention.

For dentists, the ADA House of Delegates adopted Resolution 89H in 1984, directing the Council on Dental Practice (CDP) to establish the Advisory Committee on Chemical Dependency Issues (ACCDI). This body, a clearinghouse on substance abuse programs for dentists, was also charged with suggesting intervention strategies and providing consultation and support to State and local dental societies in implementing impaired dentist programs.^{42,44} With this guidance, States had the resources needed to establish their own substance abuse treatment programs. Since its formation, the ACCDI (now called the Dentist Well-Being Advisory Committee) has worked effectively to educate the profession regarding dentist impairment. For example, it offers a National Conference on Chemical Dependency in the Dental Profession every other year. Since 1989, the CDP has published a comprehensive directory of chemical dependency services for dentists that lists hotlines and contact persons.⁷⁰ Most States, through the dental society or the dental licensing authority, offer impaired dentists structured opportunities to participate in primary treatment and monitoring programs.

In 1982, the American Pharmaceutical Association (APhA) officially recognized that substance abuse was a problem for pharmacists.⁴⁹ The APhA House of Delegates committed to support the establishment of programs for impaired pharmacists and pharmacy students. A support group for impaired pharmacists, International Pharmacists Anonymous (IPA), was organized in 1987.

Education on Impairment for Health Care Professionals

Because of health professionals’ vulnerability to impairment, information about the causes, risk factors, symptoms, and treatment options for substance abuse needs to be developed further and to be taught to all professionals. Professionals have an indispensable role in the prevention of substance abuse, both in themselves and in their patients, yet they often lack the education or insight to intervene.

Brown⁷¹ conducted a survey at one medical school to investigate the need for substance abuse prevention. A 72% response rate was obtained from one medical class. Of the 99 respondents, 25% had a possible current or previously treated SUYD as suggested by responses to a standard screening questionnaire and more than half believed they had family members with SUD. The students had exaggerated perceptions of their classmates’ permissiveness toward substance use. Moreover, the study revealed that many students would not seek assistance of a professional health committee for classmates impaired by SUD.

Lack of substance abuse education compromises physicians' ability to recognize and treat substance abuse in patients. Specific required substance abuse components are offered by only 8% of U.S. medical schools.⁷² In 1998, the Physician Leadership on National Drug Policy conducted a national survey on policies related to drug problems and medical students' perceptions about drug treatment.⁷³ Surveys were sent to a random sample of 15 medical schools in 14 States; 1,256 students responded. Fifty-six percent of the students reported receiving little training on substance abuse issues in medical school, and 20% reported receiving no training. As a result of this training gap, physicians may be addressing and treating health problems caused by substance abuse without recognizing and treating the underlying addiction.

Nurses also need to be taught the signs and symptoms of impairment.⁷⁴ They need to be provided with guidelines and a clear process for reporting potentially impaired colleagues in a discreet and nonthreatening way.⁷⁵ This should increase the likelihood that substance use problems are detected early and dealt with appropriately, although the problem is compounded by the existence of punitive interventions for nurses that lead them to avoid confronting impairment when it is suspected. Prompt recognition and reporting also minimize the danger to patients and coworkers that an impaired nurse can pose.⁷⁶ Data indicate that the likelihood of successful treatment outcomes is higher when intervention occurs earlier in the addiction process.⁷⁷

In 1988 the Pharmacology and Therapeutics Section of the American Association of Dental Schools (AADS) developed curriculum guidelines for instruction related to SUD.^{78,79} The guidelines recommend that the curriculum cover three categories of drugs with high abuse potential.⁷⁷ These include noncontrolled substances such as alcohol, nicotine, caffeine, nitrous oxide, inhalants, and solvents; controlled substances; and commonly used illegal drugs. Data on implementation of these guidelines have not been compiled.

Pharmacists can play an important role in substance abuse training by participating in the education of other health professionals and patients concerning pharmacology, toxicology, and drug–drug interactions, as well as substance abuse and dependence. Unfortunately, the psychosocial and treatment aspects of substance abuse are generally not strong programs in many colleges of pharmacy.⁸⁰

Baldwin⁸¹ reported that substance abuse education was lacking in all pharmacy programs. In response to this, the American Association of Colleges of Pharmacy Substance Abuse Education and Assistance Special Interest Group prepared curriculum guidelines. A study by Graham⁸² on continuing education (CE) for pharmacists on substance abuse prevention revealed a lack of agreement between faculty and practicing pharmacists regarding the prioritizing of content and educational methods.

Recommendations

General Recommendations

Recognizing that prevention, education, and intervention should begin in the academic environment where health care professionals are trained, medical centers and schools of the health professions are beginning to develop programs to address issues of substance abuse impairment and education.^{83,84} Despite these initial efforts, the development of educational programs and prevention and intervention policies has not kept pace with the need. Furthermore, the research base to support the development of such programs is minimal. Such research is vital to the development of effective programs.

Research is also needed in the following broad areas:

Extent and Correlates of Impairment Among Health Professionals. Brewster¹⁷ estimates the prevalence of alcohol and other drug problems among physicians has often been made without firm empirical support. For those who treat professionals impaired by substance abuse, a firm evidence base from which to intervene, in order to maintain the health of the workforce and to protect patients, is needed. As this evidence base develops, it needs to be incorporated into curricula and CE programs.

Studies have consistently shown that health care professionals use more prescription drugs than do members of the general population, although the overall prevalence of substance abuse in these occupational groups appears to be similar to that in the general population and the use of illicit drugs by health professionals may be lower.⁸⁵ More work is needed to examine the impact of early detection and to identify correlates of early substance use in health professionals. Interdisciplinary studies of risk factors could identify factors common to different professions and lead to more global intervention strategies. Such research will be essential, especially given the overlap of higher-use specialties from nursing to medicine and the level of access to substances among health care workers.⁸⁶ Concomitantly, profession-specific epidemiologic research should identify high-risk subgroups and specific risks for or triggers of substance use that can be used by groups that address impairment within the health professions.

Furthermore, early recognition and intervention for impaired students are needed to promote entry of healthy professionals into the workforce.^{88,89} Longitudinal correlates of substance use in professionals should be researched to identify risky and problem behaviors and to define work environments that promote or unwittingly facilitate substance use among employees. Among the areas that should be explored is the stress of professionals both in the workplace and in their personal lives. The identification of health care work cultures and environments that promote and facilitate substance use would provide insights that could lead to design of supportive work environments that incorporate health and wellness-based initiatives.^{90,91}

Limitations of substance use surveys include self-reported data that tend to underestimate prevalence⁹² and cross-sectional data collection that does not allow for conclusive temporal sequencing. Future research should incorporate longitudinal designs that would establish temporality among risk factors for substance use. This would also facilitate examination of the development of substance use into problem use and work impairment. Research studies that include multiple disciplines would make it possible to distinguish among risk factors that are common to impaired health professionals as a whole versus those that are unique to each profession. This could assist with the design of effective interventions that could be implemented at the facility level in settings where multiple disciplines are employed.

Policies Concerning Controlled Substances in Health Care Settings. Because access is a potent occupational risk factor for pharmacists as well as all other health professionals, health facilities need to examine and tighten the distribution and storage of controlled substances to minimize the risk of diversion or impairment of professionals.⁸⁷ Careful evaluation of the abuse potential of newly available controlled substances among health professionals is essential. Independent groups that have no financial interest in the substance under study should conduct such research.

Discipline-Specific Recommendations

Physicians. A literature review by Femino and Nirenberg⁶⁹ demonstrated that the majority of substance-abusing physicians can be successfully treated and returned to practice. Many studies show a treatment success rate of greater than 80% in the physician population.^{61,93,94} Studies need to be conducted to delineate what factors are important in the prevention, recognition, and treatment of substance abuse in physicians. From this, successful treatment models can be expanded to include other health professions. Factors such as family history, severity of the disorder, and the stresses of working in a health care setting have not been adequately studied in relation to substance use. The relative effectiveness of treatment modalities, such as outpatient versus inpatient, 12-step groups versus other types of aftercare, short-term versus long-term monitoring, and group versus individual counseling, needs to be evaluated. There are not enough evidence-based data to delineate how a particular treatment should be chosen for a particular professional.

Nurses. The punitive nature of treatment for impaired nurses promotes the stigma of nurses' substance use. This serves to drive the problem underground.⁹⁵ It also makes studying the problem more difficult, because it limits participation in and support for such studies. Research is needed to identify policy mechanisms that promote early identification of impaired nurses and encourage swift intervention. The effectiveness of specific components of intervention programs for nurses and other health professionals needs to be evaluated in order to refine and improve existing initiatives. New policies should incorporate the results of empirical research. Successful programs should be replicated and expanded to new venues.

More nurses are being exposed to adverse scheduling as a result of decreased staffing, increased workloads, diminished time off, and similar trends.^{96,97} The promotion and maintenance of a healthy nursing workforce will be increasingly difficult as job redesign becomes associated with increased physical and psychological demands on nurses. Nurses in high-strain jobs are more likely to use drugs than are those in low-strain jobs.⁹⁸ Further research is needed to examine the impact of health care changes on nurses' health and well-being.

Dentists. About 25% of all dental patients are tobacco users, and 10% have additional problems related to SUD. To combat these problems, all dental and dental auxiliary students should receive substance abuse education during preclinical and clinical training. Clinical competencies in substance abuse education should be developed, implemented, and evaluated as part of the standard dental curriculum. A task force of dental educators and clinicians should be convened to determine clinical substance abuse competencies for faculty, practicing dentists, and dental auxiliaries. The standards should be based on the American Dental Education Association Curricular Guidelines for Education in Substance Abuse, Alcoholism, and Other Chemical Dependencies.⁷⁸

Pharmacists. Pharmacists can participate in interdisciplinary teams that are treating persons with SUD. One-third of colleges of pharmacy state that they participate in extracurricular programs related to substance abuse. These programs include community drug abuse presentations, involvement in State pharmacist recovery networks, and participation at national meetings on substance abuse.⁸¹ Critical challenges to pharmacists include education of pharmacy faculty and students about the pathophysiology, pharmacology, and toxicology of alcohol and other drugs; incorporating substance abuse issues into an already-overloaded curriculum; increasing the number of pharmacy professionals conducting research in substance abuse; and developing and funding residencies and fellowships in alcohol and other drugs.

Conclusion

Much remains to be done to position health care professionals optimally to recognize and treat impairment in themselves and others. By focusing on education, policy initiatives, and research, we can test and promote interventions to reduce the consequences of substance abuse not only in health professionals but also in the general population.

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PART II

Discipline-Specific Recommendations for Faculty Development

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The Role of Allied Health Professionals in Substance Abuse Education

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Introduction

Alcohol and substance abuse are significant risk factors for various health and social problems and affect virtually every health care professional and health care institution. Early detection of substance use disorders (SUD) can reduce long-term health care costs.¹ Most individuals with these disorders do not come in contact with specialized substance abuse treatment professionals, because they seek care in general health care settings.² Individuals in the general population are just as likely to go to nonspecialized health and social service agencies for SUD as they are to seek services from specialized programs.³ The relative risk of being a problem drinker or user of multiple substances is greatly elevated for individuals in welfare and criminal justice populations.¹ There is a need for allied health professionals to implement screening, prevention, intervention, and referral programs for individuals with SUD who are treated in general health care settings as well as in nonspecialized settings such as social service and welfare agencies.

SUD are major factors in many medical, public health, social, and safety issues. Substance abuse contributes to diseases of the liver, pancreas, and digestive tract; depending on the drug of choice, the respiratory, nervous, and cardiovascular systems may also be affected. High rates of comorbidity with other psychiatric diagnoses, such as schizophrenia and bipolar disorders, are associated with substance abuse.^{4,5}

Allied health professionals provide health care services in various settings that individuals with SUD utilize. Often SUD are unrecognized and do not become apparent until a pattern of abuse begins to appear and interfere with completion of treatment plans for other medical conditions. Screening for SUD is important by professionals in nonspecialized substance abuse treatment settings. Since allied health professionals provide services that require multiple visits, they are in a position to observe patients over time and establish relationships with them. The allied health practitioner may notice intoxication, mood swings, behavioral outbursts, memory loss, and inconsistencies in following treatment protocols or exercises. Thus, it is important for allied health professionals to address within treatment plans the influence of substance abuse on the physical and mental rehabilitation process, recognize SUD, and intervene.

Allied health professionals must play an important role in the prevention of substance abuse. Highly specialized professionals often focus on a single aspect of their patients and run the risk of losing sight of the whole person.⁶ The health care provider treating a condition often does not recognize or address the issue of substance abuse. There is a need for a more holistic approach and a movement away from one-condition, one-treatment thinking. Health professionals need to examine predisposing factors of substance abuse as part of regular screening and assessment procedures.

Core Values and Paradigms of Allied Health Professionals

The term “allied health” was coined in the 1960s by the Federal Government to describe professions other than medicine, dentistry, optometry, veterinary medicine, podiatry, pharmacy, and osteopathy. For many years, allied health professions were the professions labeled “other than.” Rather than list all the disciplines included, people used the term as an exclusionary classification to represent everyone else. These participants in the delivery of health care were grouped according to what they were not, rather than what they were. The rubric of allied health includes all health technologists, therapists, assistants, and others who are prepared through postsecondary education programs, recognized by specialized accrediting agencies, and require some type of certification or licensure by States or national credentialing bodies to practice in their fields. The allied health professions include more than 200 disciplines and represent up to 60 percent of the health care workforce.⁷ Recently, the Association of Schools of Allied Health Professions (ASAPH) estimated a total of 2.3 million individuals in the various allied health workforce professions.⁸

While allied health represents a disparate group of workers linked only by what they are not, these workers can be classified to a general degree by whether they work directly with patients or behind the scenes with physical elements or data derived from patients undergoing diagnosis or treatment. For the purposes of this chapter, only those allied health professions working directly with patient assessment, as defined by the Bureau of Labor Statistics (BLS), will be considered. Representative professions in this category include dietitians and nutritionists, occupational therapists, physical therapists, respiratory therapists, speech–language pathologists and audiologists, and therapeutic recreation specialists. Members of each of these disciplines come into direct contact with patients for a variety of diagnostic and treatment procedures.

Most, if not all, of the allied health professions evolved from the need for physicians and other primary health providers to have “helpers” to deliver care under their supervision, referral, and guidance. Over time, many of the allied health disciplines have become independent or at least quasi-independent of direct physician supervision. For example, physical therapists in 34 States provide direct patient access to physical therapy services without the need for physician prescription or referral. In current health care delivery paradigms, allied health professionals see patients (some of these professions prefer the term “clients”) independently of the primary health care provider. This evolution has occurred because of increasing pressures on providers, such as physicians and dentists, to focus their interactions with patients on their highly specialized skills and refer more routine and less critical treatments and diagnostic procedures to specially trained allied health

Table 1. Physical Therapy Practice Settings, Listed in Order of the Most Common Occurrence²²

1. Outpatient clinic or offices
2. Health system hospital-based outpatient
3. Hospitals
4. Homes
5. Academic institutions
6. Skilled nursing, extended care, or subacute facilities
7. Schools
8. Rehabilitation facilities
9. Industrial, workplace, or other occupational environment
10. Fitness centers and sports training facilities

professionals. Thus, costs of these procedures have been decreased, or at least maintained at a lower level than would have been the case if all of these procedures were carried out by physicians and other lead health care providers.

Depending on the specific discipline, allied health education may include postsecondary certificates, associate degrees, bachelor’s degrees, master’s degrees, and doctoral degrees for entry into practice. Usually the word “professional” is reserved for graduates of baccalaureate and higher degree programs. The words “technologist,” “technician,” and “entry-level assistant” have often been used for allied health workers who have not needed to earn a baccalaureate degree in order to enter the workforce. While this remains true for some technician positions, other positions do require an entry-level baccalaureate degree. Whatever the degree level for career entry, health-related curricula are generally limited to course work related to practice in the disciplines with the addition of associated areas of content related to practice and patient management. Specialized accrediting agencies regulate curricular content closely, and colleges and universities are challenged even to include the liberal arts and science requirements mandated by regional and State higher education agencies. Education about substance abuse is not considered an essential component of professional education by most allied health accrediting bodies.

Broad Description of Work Settings of Allied Health Professionals

Work settings for allied health professionals include acute care settings (hospitals), nursing homes, private practices, clinics, ambulatory health centers, schools, patients’ homes, retirement complexes with varying levels of care from independent to assisted living, camps for individuals with disabilities and terminal conditions, hospices, urgent

Table 2: Professional Preparation in Selected Allied Health Professions

Allied Health Profession	Number of Programs	Accreditation Body	Workforce
Dietitians and nutritionists	543	Commission on Accreditation for Dietetics Education of the American Dietetic Association	54,000
Occupational therapists	173	Accreditation Council for Occupational Therapy Education of the American Occupational Therapy Association	73,000
Physical therapists	198	Commission on Accreditation in Physical Therapy Education of the American Physical Therapy Association	120,000
Respiratory therapists	461	Commission on Accreditation of Allied Health Education Programs	111,000
Speech-language pathologists and audiologists	390	Council of Academic Accreditation of the American Speech-Language-Hearing Association	105,000
Therapeutic recreation specialists	150	Council on Accreditation of the National Recreation and Park Association, American Association for Leisure and Recreation	39,000

care centers, mobile units, and anywhere patients need care (Table 1). Some settings afford the most up-to-date technology; some have only the most rudimentary conveniences. The important aspect of the setting is that it is any place where allied health professionals come into contact with patients and have the opportunity to observe, examine, question, and interpret what they find. Knowing how to function effectively in the variety of settings in which any one allied health professional might be expected to practice is a significant challenge for their educational programs.

The Bureau of Labor Statistics (BLS)⁹ reports that in the United States there are approximately 477,000 allied health professionals in six disciplines involved in the assessment and treatment of various health conditions and distributed across all components of the health care system (see Table 2). Given the diffuse distribution of allied health professionals within the health care system, it is reasonable to expect that allied health professionals routinely come into contact with patients for whom SUD are potential risk factors. The literature indicates a significant number of patients within allied health practice environments have illnesses associated with alcoholism. For example, hospitals are the most common practice settings for physical therapists. Twenty-two percent of all hospitalized patients have illnesses related to alcoholism.¹⁰ In the same practice setting, physical therapists are routinely involved on interdisciplinary teams that begin the rehabilitation process with patients who have spinal cord or traumatic brain injuries. Furthermore, it is estimated that 79 percent of these traumas are associated with alcohol or drug use¹¹ Under these circumstances, it is in the patient's best interest to have SUD identified early and, when indicated, for the patient to be offered intervention.

Brief descriptions of the allied health disciplines involved in screening and assessment of health problems are presented in the following paragraphs.

Dietitians and Nutritionists

The BLS reports that there were 54,000 dietitians and nutritionists in the workforce in 1998.⁹ Dietitians and nutritionists plan food and nutrition programs and supervise the preparation and serving of meals. They help prevent and treat illnesses by promoting healthy eating habits, assessing and evaluating clients' diets, and recommending diet modifications for individuals with diseases such as diabetes, hypertension, cardiovascular conditions, and obesity.

Dietitians work most often in two areas: clinical settings and the community. Clinical dietitians assess patients' nutritional needs, develop and implement nutrition programs, and evaluate and report the results. They often work in hospitals and nursing homes, and work collaboratively with doctors and other health care professionals to coordinate medical and nutritional needs. Community dietitians provide individual or group counseling on nutritional practices designed to prevent disease and promote good health. The work settings for community dietitians include public health clinics, home health agencies, and health maintenance organizations.

The Commission on Accreditation for Dietetics Education (CADE), is the American Dietetic Association's accrediting agency for education programs preparing students for careers as registered dietitians (RD). Accredited/approved programs include

- Bachelor's and graduate-level coordinated programs in dietetics;
- Bachelor's and graduate-level didactic programs in dietetics;

- Postbachelor's dietetic internships; and
- Postbachelor's preprofessional practice programs.

The Didactic Program in Dietetics (DPD) is a term used by CADE to describe the program accredited/approved under the Standards of Education as meeting academic requirements leading to at least a bachelor's degree. Graduates of CADE-accredited/approved programs who are verified by the program director may apply for dietetic internships or preprofessional practice programs to establish eligibility for active membership in the American Dietetic Association or to write the registration examination for dietitians.

The Accreditation Manual for Dietetics Education Programs¹² identifies specific knowledge and skills as well as core competencies for dietetics professionals. Dietitian competencies into which concepts related to treatment of individuals with SUD should be integrated include the following:

- Supervise screening of patients for nutritional risk.
- Supervise counseling, education, or other interventions in health promotion/disease prevention for patients needing medical nutrition therapy for uncomplicated instances of common conditions (e.g., hypertension, obesity, diabetes, diverticular disease).
- Assess nutritional status of patients with complex medical conditions (e.g., renal disease, multisystem disease, organ failure, trauma).
- Design and implement nutrition care plans as indicated by the patient's health status.
- Supervise design of menus as indicated by the patient's health status.
- Manage monitoring of patients' food or nutrient intake.
- Supervise documentation of nutrition assessment and interventions.
- Interpret and incorporate new scientific knowledge into practice.
- Develop and measure outcome for food and nutrition services and practice.
- Refer patients to other dietetics professionals or disciplines when a situation is beyond one's level or area of competence.

Occupational Therapists

Occupational therapists help people improve their ability to perform tasks in their daily living and working environments. They work with individuals who have conditions that are mentally, physically, developmentally, or emotionally disabling. They also help them to develop, recover, or maintain daily living and work skills. Occupational therapists not only help clients improve basic motor functions and reasoning abilities but also compensate for permanent loss of function. Their goal is to help clients

have independent, productive, and satisfying lives. Occupational therapy is based on the belief that purposeful activity (occupation), including its interpersonal and environmental components, may be used to prevent and mediate dysfunction and to elicit maximum adaptation or change in function that promotes survival and self-actualization.¹³

Occupational therapists may work exclusively with individuals in a particular age group, or with particular disabilities. For example, in schools they evaluate children's abilities, recommend and provide therapy, modify classroom equipment, and help children participate as fully as possible in school programs and activities. Occupational therapy is also beneficial to the elderly population. Therapists help senior citizens lead more productive, active, and independent lives through a variety of methods, including the use of adaptive equipment, home modifications, driver safety and transportation alternatives for elderly persons, and lifestyle redesign.

Occupational therapists in mental health settings treat individuals who are mentally ill, mentally retarded, or emotionally disturbed. To treat these problems, therapists choose activities that help people learn to cope with daily life and resume their desired roles in the community. Therapists also assist individuals in making environmental adaptations and provide family and caregiver education. Activities include time management skills, budgeting, shopping, homemaking, and use of public transportation. They may also work with individuals who have with SUD, depression, eating disorders, or stress-related disorders. Regardless of treatment setting, occupational therapists need to be sensitive to substance use and abuse in their clients and their families and should be able to explore how SUD affects individual and family functioning.¹⁴

Occupational therapists use standardized and nonstandardized screening tools to determine the need for occupational therapy intervention. These include, but are not limited to, specified screening assessments, skilled observation, checklists, histories, interviews with the client/family/significant others, and consultations with other professionals. Because occupational therapists utilize a holistic assessment approach, they are ideally suited to address within treatment plans the influence of substance abuse on the physical or mental rehabilitation process.^{15,16}

Occupational therapy programs are accredited by the Accreditation Council for Occupational Therapy (ACOTE) of the American Occupational Therapy Association (AOTA). There are 173 programs accredited, with 88 offering bachelor's degrees, 11 postbachelor's degrees, 53 entry-level master's degrees, 19 combined bachelor's and master's degrees, and 2 entry-level doctoral programs. Institutions of higher education have until January 1, 2007, to initiate post-baccalaureate degree programs in occupational therapy, according to ACOTE, which worked in conjunction with AOTA's entry-level study committee to decide on a reasonable timeline. In 1999, the AOTA

Representative Assembly passed a resolution that calls for a postbaccalaureate entry-level requirement for professional occupational therapy practice. The resolution does not affect baccalaureate-level practitioners who are already certified.

AOTA's accreditation standards into which concepts related to SUD should be integrated include the following:

- Select appropriate assessment tools based on client need, contextual factors, and psychometric properties of tests.
- Use appropriate procedures and protocols, including standardized formats, when administering assessments.
- Understand and appreciate the importance of cooperation with the occupational therapy assistant as a data gatherer and contributor to the screening and evaluation process.
- Consider factors that might bias assessment results, such as culture, disability status, and situational variables related to the individual and context.
- Identify when it is appropriate to refer clients to specialists, internal and external to the profession, for additional evaluation.
- Document occupational therapy services to ensure accountability of service provision and to meet standards for reimbursement for services. Documentation must effectively communicate the need and rationale for occupational therapy services.

Physical Therapists

There were approximately 120,000 physical therapists in the health care workforce in 1998. Physical therapists provide services that help restore function, improve mobility, relieve pain, and prevent or limit permanent physical disabilities of patients suffering from injuries or disease. They restore, maintain, and promote overall fitness and health. Their patients include accident victims and individuals with disabling conditions such as low back pain, arthritis, heart disease, fractures, head injuries, and cerebral palsy. Physical therapists work with clients over extended periods of time and can play a significant role in screening, assessment, brief intervention, and referral for SUD.

The guiding principles of the American Physical Therapy Association (APTA) Code¹⁷ seek to foster the ideal that physical therapists are trustworthy in their practice with patients. In the context of the Code, “trustworthy” means that patients are able to trust that their therapist will not harm them, will be helpful in resolving their problems and will work in their best interest. Therefore, the outcome is intended to be of benefit to the patients served by physical therapists. Also, it logically follows from the Code that, if physical therapists are expected to come into contact with patients who are at risk for SUD, the thera-

pists must have the competencies to work with such patients.

Therapists examine patients' medical histories, then test and measure their strength, range of motion, balance and coordination, posture, muscle performance, respiration, and motor function. They also determine patients' ability to be independent and reintegrate into the community or workplace after injury or illness. Next, they develop treatment plans describing a treatment strategy, the purpose, and the anticipated outcome. As treatment continues, physical therapists document progress, conduct periodic examinations, and modify treatments when necessary. Such documentation is used to track the patient's progress and to identify areas requiring more or less attention.

Physical therapists often work as part of interdisciplinary teams and collaborate with other health professionals, including physicians, psychologists, dentists, nurses, educators, social workers, occupational therapists, speech-language pathologists, and audiologists.

Respiratory Therapists

Respiratory therapists evaluate, treat, and care for patients with breathing disorders. To evaluate patients, these therapists test the capacity of the lungs and analyze oxygen and carbon dioxide concentration. Respiratory therapists treat all types of patients, ranging from premature infants whose lungs are not fully developed to elderly people whose lungs are diseased. These workers provide temporary relief to patients with chronic asthma or emphysema and emergency care for patients who have suffered heart failure or a stroke or are victims of drowning or shock.

Respiratory therapists regularly check on patients and equipment. If the patient appears to be having difficulty, they change the ventilator setting according to the doctor's order or check equipment for mechanical problems. In home care, therapists teach patients and their families to use ventilators and other life support systems. Additionally, they visit several times a month to inspect and clean equipment, ensure its proper use, and make emergency visits if equipment problems arise.

Since respiratory therapists are in constant contact with patients and their families, they play a critical role in screening and assessment for SUD. They observe progress toward treatment goals and can determine whether substance use, if any, is adversely affecting their progress.

The Commission on Accreditation of Allied Health Education Programs (CAAHEP) accredits programs in respiratory care education, upon the recommendation of the Committee on Accreditation for Respiratory Care (CoARC). The scope of practice for respiratory therapy related to screening and assessment where core competencies about SUD could be integrated into the professional preparation includes the following:

- Acquiring and evaluating clinical data;
- Assessing the cardiopulmonary status of patients;
- Utilizing data to assess the appropriateness of prescribed respiratory care;
- Establishing therapeutic goals for patients with cardiopulmonary disease;
- Participating in the development and modification of respiratory care plans;
- Case management of patients with cardiopulmonary and related diseases;
- Providing patient, family, and community education;
- Promoting cardiopulmonary wellness, disease prevention, and disease management; and
- Promoting evidence-based medicine, research, and clinical practice guidelines.¹⁸

Respiratory therapists are prepared at the two-year associate degree level and in four-year bachelor's degree programs. According to CoARC, there are 327 registered respiratory therapy and 134 certified respiratory therapy programs. Educational programs in respiratory therapy are offered in various settings, including hospitals, medical schools, colleges and universities, trade schools, vocational-technical institutes, and the armed forces. Approximately 86,000 respiratory therapists are currently employed in the United States.

The American Association for Respiratory Care (AARC) is a professional organization for respiratory care practitioners. AARC has more than 35,000 members nationwide who provide direct patient care in hospital settings and home care and educational services and training, or who are involved in management of respiratory and cardiopulmonary services. The association offers an array of continuing education programs for respiratory therapists that fulfill continuing education requirements as specified by the 44 States that regulate the profession.

The National Board for Respiratory Care, Inc. (NBRC) is a voluntary health certifying board that was created in 1960 to evaluate the professional competence of respiratory therapists. The main purpose of the NBRC is to provide voluntary credentialing examinations for practitioners of respiratory therapy and pulmonary function technology. It also establishes professional standards, issues certificates, and prepares a directory of credentialed individuals.

Speech-Language Pathology and Audiology

Speech-language pathologists serve individuals, families, groups, and the general public through their involvement in a broad range of professional activities. They work to prevent communication disorders, including speech, voice, language, fluency, communication, swallowing, and related disabilities. They screen, evaluate, and provide treatment

and intervention for communication disorders that include speech problems such as voice fluency, speech sound production or swallowing difficulties, and deficits in language and cognition. Prevention of communication disorders and enhancement of communicative functioning are also within their scope of practice. They counsel individuals with these disorders, as well as their families, caregivers, and other service providers, about the disorders and their management. Speech-language pathologists select, prescribe, and provide services supporting the effective use of augmentative and assistive devices or other technology necessary for communicative functioning.

Speech-language pathologists provide services in settings that are deemed appropriate, including, but not limited to, health care, educational, community, vocational, and home settings. As primary care providers of communication treatment and other services, speech-language pathologists are autonomous professionals, that is, their services need not be prescribed by another. In most cases, however, speech-language pathologists work collaboratively with other professionals, individuals with disabilities, and their family members. Similarly, it is recognized that related fields and professions may have some knowledge, skills, and experience that could be applied to some areas within this scope of practice.

The practice of speech-language pathology and audiology where concepts related to SUD should be integrated includes the following:

- Providing screening, identification, assessment, diagnosis, treatment, and intervention;
- Providing consultation and counseling, and making referrals when appropriate;
- Training and supporting family members and other communication partners of individuals with speech, voice, language, hearing, communication, and swallowing disabilities;
- Developing and establishing effective augmentative and alternative communication techniques and strategies, including selecting, prescribing, and dispensing aids and devices and training individuals, their families, and other communication partners in their use; and
- Measuring outcomes of treatment and conducting continuous evaluation of the effectiveness of practices and programs to improve and maintain quality of services.

Speech-language pathologists develop individualized plans of care tailored to each patient's needs. For individuals with little or no speech capability, speech-language pathologists may select augmentative or assistive communication devices or procedures, including automated devices or sign language, and teach their use. They teach these individuals how to make sounds, improve their voices, or increase their language skills to communicate more

effectively. Speech-language pathologists help patients develop, or recover, reliable communication skills so patients can fulfill their educational, vocational, and social roles. Most speech-language pathologists provide direct clinical services to individuals with communication disorders. In speech and language clinics, they may independently develop and carry out treatment programs. In medical facilities, they may work with physicians, social workers, psychologists, and other therapists to develop and execute treatment plans. Speech-language pathologists in schools develop individual or group programs, counsel parents, and may assist teachers with classroom activities.

Speech-language pathologists keep records on the initial evaluation, progress, and discharge of clients. This helps pinpoint problems, tracks client progress, and justifies the cost of treatment. They counsel individuals and their families concerning communication disorders and how to cope with the stress and misunderstanding that often accompany them. They also work with family members to recognize and change behavior patterns that impede communication and treatment and show them communication-enhancing techniques to use at home.

Audiologists work with people who have hearing, balance, and related problems. They use audiometers, computers, and other testing devices to measure the loudness at which a person begins to hear sounds, the ability to distinguish between sounds, and the nature and extent of hearing loss. Audiologists interpret these results and may coordinate them with medical, educational, and psychological information to make a diagnosis and determine a course of treatment.

Audiologists provide direct clinical services to individuals with hearing or balance disorders. In audiology (hearing) clinics, they may independently develop and carry out treatment programs. Audiologists, in a variety of settings, work as members of interdisciplinary professional teams in planning and implementing service delivery for children and adults, from birth to old age. Similar to speech-language pathologists, audiologists keep records on the initial evaluation, progress, and discharge of clients. These records help pinpoint problems, track client progress, and justify the cost of treatment when applying for reimbursement.

The BLS reports that there are 105,000 speech-language pathology and audiology professionals in the U.S. workforce.⁹ Graduate-level preparation is considered the entry point for practice in speech pathology and audiology. Of the States that regulate licensing of speech pathologists or audiologists, almost all require a master's degree or equivalent.⁹ These individuals are prepared in 390 college and university programs, of which 235 offer graduate programs in speech-language pathology and 115 offer graduate programs in audiology.

Therapeutic Recreation Specialists

According to the BLS, in 1998 there were approximately 39,000 therapeutic recreation specialists in the U.S.⁹ Employment of recreational therapists is expected to “grow faster than the average” for all occupations through the year 2008 because of anticipated expansion in long-term care, physical and psychiatric rehabilitation, and services for people with disabilities.

The American Therapeutic Recreation Association defines therapeutic recreation as “the provision of treatment services and the provision of recreation services to persons with illnesses or disabling conditions.” The primary purposes of treatment services, which are often referred to as “recreational therapy,” are to restore, remediate, or rehabilitate in order to improve functioning and independence as well as reduce or eliminate the effects of illness or disability. Therapeutic recreation is provided by professionals who are trained and certified to provide therapeutic recreation. Therapeutic recreation specialists use a variety of techniques to treat or maintain the physical, mental, and emotional well-being of clients.

Therapeutic recreation specialists assess social and personality needs, treat self-defeating behaviors, develop communication, self-control, and trusting relationships, and enhance independent functioning, support networks, and physical well-being. Assessment of clients is based on information from standardized assessments, observations, medical records, medical staff, family, and clients themselves. Treatment plans and interventions are developed that address clients' needs and interests. Therapeutic recreation specialists observe and document patients' participation, reactions, and progress toward meeting treatment goals.

The outcomes of therapeutic recreation promote an alcohol- and drug-free lifestyle, as well as relapse prevention. Recreational therapists help individuals reduce depression, stress, and anxiety. Therapeutic recreation specialists also help individuals recover basic motor functioning and reasoning abilities, build confidence, and socialize effectively to enable greater independence, as well as to reduce or eliminate the effects of illness or disability.

Therapeutic recreation specialists work in a variety of health care settings such as hospitals and rehabilitation centers. They treat and rehabilitate individuals with specific health conditions, usually in collaboration with physicians, nurses, psychologists, social workers, and physical and occupational therapists. In long-term care facilities and residential facilities, recreational therapists use leisure activities—especially structured group programs—to improve and maintain general health and well-being. They may also treat clients and provide interventions to prevent further medical problems and secondary complications related to illness and disabilities.

Therapeutic recreation specialists may also work in park and recreation departments, special education

programs for school districts, or programs for older adults and people with disabilities. Included in the latter group are programs and facilities such as assisted living, adult day service centers, and substance abuse rehabilitation centers. In these programs, therapists use interventions to develop specific skills while providing opportunities for exercise, mental stimulation, creativity, and fun.

Accreditation standards for professional preparation of therapeutic recreation specialists include, but are not limited to, the following broad areas:

- Conducting an individualized assessment to collect systematic, comprehensive, and accurate data necessary to determine a course of action and subsequent individualized treatment plan;
- Planning and developing for each client an individualized treatment plan that identifies goals, objectives and treatment intervention strategies;
- Implementing the individualized treatment plan using appropriate intervention strategies to restore, remediate, or rehabilitate in order to improve functioning and independence as well as reduce or eliminate the effects of illness or disability. Implementation of the treatment plan by the therapeutic recreation specialist is consistent with the overall patient/client treatment program;
- Systematically evaluating the client's response to the individualized treatment plan. The treatment plan is revised based upon changes in the interventions, diagnosis, and patient/client responses; and
- Developing a discharge plan in collaboration with the patient/client, family, and other treatment team members in order to continue as appropriate.

Historical Profile of Work in Substance Abuse and Educating Allied Health Professionals in Substance Use Disorders

Substance abuse education in allied health professions is not well researched. There have been several descriptive surveys in medicine, dentistry, and nursing about the curricula in SUD; however, there is little research within allied health fields. For example, a 1994 survey was conducted of 115 medical residency, nursing, occupational and physical therapy, social work, teacher-preparation, and chemical dependency counselor-training programs to assess the status of education and training of these professionals about chemical dependency, especially in regard to substance abuse during pregnancy. The survey was mailed to only eight occupational and physical therapy programs.¹⁹ Very little attention has been given to substance abuse education in allied health professional training programs.

Traditionally, substance abuse education in allied health focused on general biomedical concepts and pharmacology. There was very little emphasis on the

development of skills to provide care. Allied health professionals involved in screening, assessment, and treatment also need to understand their role in the prevention of SUD including screening and assessment, how to communicate with their patients about SUD, and the referral process. Of the allied health professions described in this chapter, only physical therapy has significant professional training in addressing SUD within the profession.

Physical Therapy

Physical therapists, like other health care workers, are at risk for SUD. A sign that the physical therapy profession is in the process of recognizing this professional problem came from the State of Kansas in 1988. Following the enactment of that State's mandatory reporting law, which requires that impaired providers be reported to the licensing board, the Kansas chapter of the APTA created its own program to assist physical therapists in need of assistance due to SUD. By 1991 the program was fully functional and began accepting referrals.²⁰ At a national level, the APTA developed a Task Force on Substance Abuse whose first focus was education. Jane Walter, Ed.D., PT, led the task force and developed an educational module on alcoholism and drug abuse.²¹

To describe curriculum development in SUD in physical therapy, a document analysis was used to identify the existing or potential role of physical therapists in intervening with patients who have these disorders. The analysis used the *Guide to Physical Therapist Practice*²² ("the Guide") as the document that most comprehensively describes the practice of physical therapists. The next step was to review key educational documents. The Normative Model of Physical Therapist Professional Education—Version 2000 and the Commission for the Accreditation of Physical Therapy Education (CAPTE) Criteria^{23,24} were selected for this purpose. The Normative Model is a voluntary standard for professional consensus regarding the purpose, scope, and content of professional education, and the CAPTE Criteria are used to assess physical therapy education programs for purposes of accreditation.

The Guide to Physical Therapist Practice

The purpose of the Guide²² is to describe generally accepted physical therapist practice, to standardize terminology, and to delineate preferred practice patterns. The Guide's scope of physical therapist practice includes five components: (1) provision of service to patients/clients; (2) interacting and practicing in collaboration with a variety of professionals; (3) providing prevention and wellness services; (4) consulting, educating, and engaging in critical inquiry and administration; and (5) directing and supervising physical therapy services. Within this broad scope of practice definition, there exist a number of opportunities to develop a physical therapy role in screening for SUD.

For example, screening for SUD could be included within item 3, a prevention and wellness service. Given the distribution of SUD within the general population, it would be reasonable to presume the presence of individuals with SUD in a population within a prevention and wellness service. A stated purpose of these prevention and wellness services includes “stimulating the public to engage in healthy behaviors.”²² In order for the physical therapist to stimulate healthy behaviors, information is needed regarding the patient’s current behaviors. For the physical therapist to meet the purpose of the prevention and wellness services, screening for SUD needs to be a component of these services. Therefore, for physical therapists who choose to practice in a prevention and wellness service, competence in screening patients for SUD should be a requirement.

Item 1 of the Guide’s scope of practice, Provision of Services to Patients/Clients, provides a more comprehensive opportunity for SUD screening than the above example does. The elements of patient/client management include five elements: (1) examination; (2) evaluation; (3) diagnosis; (4) prognosis; and (5) intervention in a manner to optimize outcomes. An examination is required for all patients and is the first step in planning a patient-specific intervention. The requirement for evaluation is found in various documents, including the Code of Ethics, many State practice acts, and Medicare regulations. The examination includes taking a history, reviewing systems, and carrying out tests and measures. A purpose for history taking is “identifying health-risk factors, health restoration and prevention needs, and coexisting health problems that may have implications for intervention.”²² SUD are clearly health-risk factors, and patients should be screened for these disorders by physical therapists.

History taking also serves the purpose of identifying factors that have implications for “interventions carried out by physical therapists.”²² It is a moral imperative for physical therapists to have a defined level of competency in screening for SUD. For example, suppose that a physical therapist is treating a patient who is a professional painter who routinely works on a ladder several stories above the ground. The patient was injured from a fall off a ladder while on the job. The physical therapist’s intervention includes the intent of helping the patient return to work, but he/she does not screen the patient for SUD. The patient returns to work and is again injured, more seriously this time. It turns out the patient has a substance use disorder. Was the therapist’s intervention in the patient’s best interest? Did the therapist miss an opportunity to help the patient with a more pervasive problem? Again, it seems clear that physical therapists have a responsibility to be competent and screen for SUD.

There is evidence of SUD awareness within the physical therapy practice arena. As an extension of the Guide, the recently published Physical Therapist Patient/

Client Management Form includes two substance use disorder-related questions as part of the patient history under social/health habits. The questions are “How many days per week do you drink beer, wine, or other alcoholic beverages, on average?” and “If one beer, one glass of wine, or one cocktail equals one drink, how many drinks do you have, on an average day?”

This document uses the same development method as the Guide, that is, expert consensus. The expert members of the panel are expected to have knowledge of the pertinent literature. The published document, however, does not include references. Therefore, assessing the validity and reliability of these questions is not feasible. In addition, the document does not offer guidance on what the practitioner should do if he or she gets a positive response to the screening questions. Most physical therapists who screen patients for SUD are generalists who do not have significant knowledge regarding the screening questions or the appropriate response to positive patient responses. It is reasonable to expect that the screening questions in the Patient/Client Management form will not result in appropriate identification of patients at risk for SUD.

The Problem Knowledge Coupler (PKC)²⁵ is a computerized screening tool that supports the screening questions on SUD with literature and provides practitioner guidance for actions based on the patient’s response to the screening questions. The PKC includes a series of screening questions on SUD drawn from the existing literature. If the patient provides positive responses to these questions, the patient and practitioner are offered management guidance and pertinent literature citations. Given that the physical therapist screeners we hope to involve in this process will usually have limited knowledge regarding SUD, the guidance provided by the PKC model will be necessary.

Educational Documents

APTA documents identify a role for physical therapists as screeners for SUD. The analysis now turns to the education system to identify how the physical therapists of the future can be trained as SUD screeners. The two key documents reviewed to assess physical therapist education were the Normative Model and the CAPTE criteria.

The purpose of the Normative Model is, in part, to “provide a consensus-based mechanism for existing, developing, and future professional education programs...” (page 3). This consensus model includes an expectation that patient screening be included in educational models, more specifically that “[t]he graduate identifies individuals who have risk factors that indicate the need for a primary prevention program, performs screening to direct further examination, knows referral sources, knows the incidence, prevalence, and natural history of conditions commonly seen by a physical therapist and uses this information in the development of community-based screening programs”

(page 67). The Normative Model clearly provides a role for the physical therapist student to screen patients with SUD.²³

CAPTE's accreditation criteria further support the role for screening patients with SUD as shown by the following three items listed under two criteria:

- **Screening: Item 3.8.3.15.** "Determine the need for further examination or consultation by a physical therapist or for referral to another health care professional" (page 31).
- **Prevention and Wellness: Item 3.8.3.33.** "Identify and assess the health needs of individuals, groups, and communities, including screening, prevention and wellness programs that are appropriate to physical therapy"; and Item 3.8.3.34. "Promote optimal health by providing information on wellness, disease, impairment, functional limitations, disability, and health risks related to age, gender, culture and lifestyles" (page 34).

Both these documents include criteria that clearly support the appropriateness of the role physical therapists can play in screening patients for SUD.

Critical Issues, Obstacles, and Challenges

There are several critical issues, obstacles, and challenges that came to the forefront in reviewing literature concerning substance abuse education and allied health professions. Each of these is described below.

Time Constraints

Allied health curricula are commonly being lengthened and educational levels for entry increased (e.g., BS to MS for entry) because there is little time to include all content deemed essential by professional accrediting bodies. Professional programs have not adequately addressed the inclusion of SUD core competencies in the curriculum. Even with their extended (higher-level) degrees, education on substance use has not been a priority.

Funding

Lack of funding and administrative support are the most critical issues in the integration of SUD core competencies for the allied health professions. Funding for faculty development of allied health professionals in substance abuse is non-existent. The Bureau of Health Professions (BHP) of the Health Resources and Services Administration (HRSA) is the central funding agency for allied health support and development. The BHP supports various disciplines including allied health, chiropractic, dentistry, geriatrics, health administration, medicine, nursing, physician assistants, and public health. In 1999 the budget for allied health project grants was \$5.3 million, which is only 1.2% of the entire \$441.4-million budget for the BHP.²⁶ Given the limited number of faculty with expertise and interest in SUD, no allied health project grants have been awarded in substance abuse education for allied

health professionals. Moreover, there is no infrastructure to support allied health faculty development in SUD and a lack of rewards/incentives for faculty participation in educating allied health professionals about SUD. Clearly, the lack of resources for SUD in allied health fields is a major barrier.

Lack of a Central Voice for the Allied Health Professions

There are a number of organizations representing the varied interests in the field of allied health. One is ASAHP; two others are the National Network of Health Career Programs in Two-Year Colleges (NN2), and the Health Professions Network (HPN). Both of these are networks created to exchange ideas and provide a voice for their member entities.

ASAHP is a national professional association for administrators, educators, and others who are concerned with critical issues affecting allied health education. Since its incorporation in 1967, ASAHP has served as a forum that links leaders in allied health education with policy makers in State and Federal Government, business, and industry in an effort to affect relevant and appropriate changes in health care policy. There are more than 100 institutional members representing schools of allied health.

NN2 represents academic professionals who teach health careers in two-year colleges. It is dedicated to promoting and encouraging innovation, collaboration, and communication among two-year colleges sponsoring health career programs; expressing and advocating the interests of health career programs in two-year colleges; and participating in the development and implementation of policies and programs to address National Network concerns.

HPN is a network of allied health professional associations, societies, and organizations. Each individual society or association is composed of individuals of a specific allied health background who are in clinical practice. There are over 40 professional organizations affiliated with HPN. In addition, each allied health discipline has its own professional organization and each its separate accreditation agencies. Given the diverse nature and variety of practice in the allied health professions, it is difficult to arrive at a consensus on educational issues and priorities.

Direct Patient Access Laws

Patient access to physical therapists' services without referral means the removal of the physician referral

mandated by State law to access physical therapists' services. Thirty-four States have granted consumers the freedom to seek physical therapy treatment without a referral. Referral is required by State law to initiate treatment by a licensed physical therapist in 16 States.

Education of Allied Health Generalists

Allied health generalists practice in any one of many diverse settings, such as rural health areas, and come in contact with patients who are at risk for SUD. Yet, most have little or no training in screening, assessment, and interventions for SUD. Patients in these settings expect allied health practitioners to assist them in meeting their needs with regard to SUD.

Most allied health professional preparation programs do not train students for the role of screening and assess patients for SUD. Given the general nature and function of allied health professions in screening and assessment, educational programs for allied health professions to screen patients for SUD need to be easy to administer and indications for referral need to be simple to determine.

Rural practice may pose particular challenges for allied health professionals. For example, in rural settings physical therapists may require a higher level of competency and may need to accept a higher level of responsibility in screening patients for SUD because of the limited number of the health care team members.

The training needs of allied health professionals in substance abuse education have not been adequately studied. Allied health professionals are in continuous contact with patients affected by SUD and these individuals can benefit from a professional with knowledge and skills in this area.

Lack of Research

Lack of research about the role of allied health professionals in SUD is among the key barriers to progress in this area. Of the six disciplines presented in this chapter and representing 477,000 professionals, there are no studies on curriculum content or educational methodologies related to SUD, impaired professionals, or the continuing education needs of professionals on SUD. There is a very limited knowledge base about the role of allied health professionals in addressing SUD.

The delivery of appropriate services to individuals with SUD becomes more difficult at a time of increasingly constrained resources. The application of health behavior change models to SUD emphasizes a patient-centered approach, which shifts the responsibility to individuals rather than the system. The choices related to health care are more logical because of the consideration of the individual's unique substance abuse risk and protective factors. A triad of theory, experience, and skills stresses the importance of patient empowerment, communication between patient and health care provider, and the develop-

ment of interdisciplinary care approaches. The application of this triad provides an effective guiding framework for curriculum development in the allied health professions.

Critical Core Competencies in Substance Abuse Education for Allied Health Professionals

There is no consensus on the core competencies to be taught on SUD in the allied health professions. Of the selected allied health professions discussed in this chapter, none has adequately addressed SUD competencies. The six allied health professions described in this chapter have commonalities related to the general practices of screening, assessment, and referral. The suggested core competencies in substance abuse education for allied health professionals include the following:

- Recognize SUD and administer and select valid assessment instruments to screen for SUD in a manner that is sensitive to age, gender, and culture.
- Interpret the substance use assessment and, when appropriate, make a referral for further work-up.
- Understand the importance of self-awareness about substance use in one's personal and professional life.
- Be aware of local resources for the treatment of patients with SUD.
- Be able to assess the patient's readiness for change and to conduct brief interventions.
- Utilize techniques for effectively communicating substance abuse information to individuals and their family members.
- Assist clients in accessing the local resources on substance abuse issues (i.e., identify the needs of the individual and the family that cannot be met and assist in using community support systems and available resources).
- Demonstrate an understanding of the influence of SUD on specific interventions employed by allied health professionals.
- Appreciate the value of interdisciplinary team clinical evaluations for individuals with SUD.
- Modify interventions based on factors related to SUD.
- Provide ethical protections in the area of patient confidentiality and autonomy.

Vision for the Future

Allied health curricula should emphasize a triad of understanding and knowledge of SUD, clinical experiences in working with patients affected by SUD, and specific skills related to screening, assessment, intervention, and referral. Clinical experiences provide students with practical

experience and provide an opportunity to apply theory to practice. Substance abuse curricula within allied health professions should focus on opportunities for students to practice assessment for SUD and effective communication with individuals and family members under the supervision of experienced professionals.

Health care accrediting bodies such as the Joint Commission on the Accreditation of Healthcare Organizations and the Commission on Accreditation of Rehabilitation Facilities encourage the utilization of health care teams to facilitate optimal client outcomes and cost-effective treatments. These accrediting bodies also require that clients and their families be actively involved in the treatment process. The Pew Health Commission on Competencies and Change Strategies for Practitioners in the Year 2005²⁷ has also recommended that allied health professions establish interdisciplinary community-based clinics staffed by interdisciplinary teams.

An analysis of the standards for allied health professionals suggests that the vision for the future should include the following:

1. All allied health practicing professionals will recognize signs of SUD and routinely and effectively screen all patients for SUD and refer them to appropriate treatment facilities.
2. All allied health professional preparation programs will educate and train their students in the critical core competencies (that is, the necessary knowledge, skills, and attitudes) to effectively recognize and screen all patients for SUD and refer them to appropriate treatment facilities.
3. All allied health professionals will have access to continuing education programs to develop and maintain critical core competencies in substance abuse education.
4. All patient interventions will be supported by computerized tools that allow interface with the current literature and a database will evolve that allows cost-effective monitoring of program effectiveness.
5. Comprehensive education and practice survey data, including information about impaired professionals, will be available to allow targeted planning to support improved service to patients with SUD.
6. Web-based educational modules will be available to allied health professionals for increasing access to educational and training opportunities about critical core competencies in substance abuse education.
7. Educational models are needed to integrate core competencies within interdisciplinary team concepts as part of professional preparation in allied health fields.

Recommendations

Allied health professional organizations and accrediting groups should form an interdisciplinary collaboration to accomplish the following tasks.

1. Identify and reach a consensus on core competencies. A set of common core competencies for substance abuse education in allied health curricula should be identified and accepted by professional organizations in dietetics and nutrition, occupational therapy, physical therapy, respiratory therapy, speech-language pathology and audiology, and therapeutic recreation.

Rationale. Because the primary role of each of these professions is not substance use education, yet each has the opportunity in practice settings to observe and assess patients/clients for substance abuse, a common set of core competencies should serve for all of these allied health disciplines.

Recommended Actions. Each of the professional organizations should assess its potential for including substance use education in entry-level curricula. Once that has been determined, a national forum composed of representatives of each of the six allied health disciplines and substance use education specialists should be convened to achieve consensus on core competencies for inclusion in entry level curricula in all six allied health disciplines.

Responsible Agents. HRSA, ASAHP, NN2, HPN, CADE, AOTA, APTA, NTRS, ATRA, CoARC, AARC, NBRC, CAAHEP, and ASHA.

Expected Outcomes. Core competencies will be agreed upon and accepted by the accrediting bodies of the six allied health disciplines. The “consensus competencies” will be published in the journals of the professions as well as in other appropriate professional publications.

2. Support and conduct longitudinal assessments to validate the core competencies and their effectiveness in preparing allied health professionals to assess and refer patients/clients with substance use problems. Funds should be made available to validate core competencies.

Rationale. After a consensus is reached on core competencies, they need to be validated in clinical settings. While consensus is a reasonable approach to identify potential competencies for substance use education in allied health curricula, evidence-based research is needed to validate that the agreed upon competencies are appropriate and effective in achieving their goals.

Recommended Actions. Studies will be funded and conducted that validate the core consensus competencies or recommend their revision.

Responsible Agents. HRSA, ASAHP, NN2, HPN.

Expected Outcomes. Uniformity in SUD core competencies.

3. Integrate uniform competencies in substance use education into allied health curricula.

Rationale. Uniform competencies have been identified and validated. This is the point of implementation.

Recommended Actions. Educational materials that conform to the core competencies should be prepared that can be adapted for use by allied health faculty in their teaching.

Responsible Agents. HRSA, ASAHP, NN2, NPN.

Expected Outcomes. A repeated-measures design should be used to monitor changes and integration of core competencies into curricula. Accrediting bodies should include substance use education in standards or guidelines for curriculum in achieving accreditation of the professional programs.

4. Provide training in the core competencies of substance abuse education and the use of effective teaching methodologies such as case studies for the delivery of instruction about substance abuse to allied health professions faculty.

Rationale. There are insufficient numbers of faculty in allied health with expertise in SUD. Teaching methodologies have been primarily didactic and information oriented. Allied health professions need to be trained in the core competencies of substance abuse education.

Recommended Actions. Increase funding for faculty development and mentoring in allied health. Promote AMERSA in allied health organizations. Establish innovative collaborations for faculty development among professional organizations such as ASAHP, NN2, HPN, American Dietetic Association (ADA), AOTA, APTA, ASHA, NTRS, and ATRA.

Responsible Agents. HRSA, AMERSA, AARC, ASAHP, NN2, HPN, NTRS, ATRA.

Expected Outcomes. Allied health faculty will be trained in the core competencies of substance abuse education and will also learn useful teaching methodologies to educate their students in the basic skills to intervene effectively with patients affected by SUD.

5. Provide continuing education programs for allied health faculty.

Rationale. Allied health professionals are required to earn continuing education credits to maintain licensure or certifications in their fields.

Recommended Actions. Develop and implement coordinated continuing education programs for allied health professions in substance abuse education, and offer such programs at national and State professional meetings through self-paced modules and distance learning.

Responsible Agents. ASAHP, NN2, HPN, ADA, AOTA, APTA, ASHA, NTRS, ATRA, AARC.

Expected Outcomes. Increased educational opportunities for allied health professionals in SUD.

6. Help ensure that allied health professionals need to understand the extent of substance use disorders within their own profession.

Rationale. The professional preparation of allied health professionals should include an awareness of the effects of substance abuse in their own professional field. Studies about impaired professionals have been completed in medicine, nursing, pharmacy, and social work. Although there are more than 200 allied health professions, very little is known about impaired allied health professionals. A study in radiological technology reported that approximately 3% to 4% of technologists are affected by SUD.²⁸ Wittman²⁹ reported a 33% prevalence of parental alcoholism of occupational and physical therapy students and a significantly higher percentage of allied health students than nonallied health students who are children of alcoholics.

Recommended Actions. Studies on the prevalence of SUD and the use of alcohol and other drugs by allied health professionals should be conducted. The results should be disseminated to schools of allied health and included within professional preparation programs.

Responsible Agents. ASAHP, NN2, NPN, AOTA, APTA, ASHA, AARC, allied health faculty and task forces in allied health professional organizations.

Expected Outcomes. Prevention and early recognition of SUD in allied health professionals.

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Dental Education in the Prevention and Treatment of Substance Use Disorders

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Introduction

The purpose of this chapter is to inform dentists about substance use disorders (SUD) that are relevant to their professional practice. The chapter explains emerging core values and paradigms of the dental team; describes current work settings and the nature of dental education and private practices, reviews the past involvement of oral health care providers in identifying, analyzing, and dealing with SUD; educates oral health care professionals at various levels concerning SUD; covers challenges that may occur when dealing with SUD; proposes a statement of core knowledge and skill competencies for dental personnel that will intersect with those of other health professionals; presents a vision for the future; and sets goals that deal with substance use awareness and education for dentists and their patients.

Core Values and Paradigms of the Dental Team

The core values of dentistry are undergoing a period of profound change and transition. The goal of the dental team is to provide optimal care of the oral cavity for all clients.¹ According to Carlisle,² the monopoly of dentistry as a profession is ending because of a higher ratio of dentists to the population, increased productivity, a declining dental disease rate, a proliferation of delivery systems, and an increasing number of governmental and private agencies that are attempting to manage and regulate dental care. Also, the recent increase in the number of women in the profession is having a humanizing effect on dental practice.

This new model of dental health care has emerged from a growing emphasis on disease prevention. As Carlisle² states:

This new model was based on the establishment of a helping relationship between the dentist and the patient. The intent of this relationship was to create a facilitative, caring and healing environment in which the patient, dentist and team members would learn, grow, change and heal. Many believe that this model will be a pace-setter for all of the health care professions in the coming years. Its focus on the patient, its respect for the patient's autonomy and its drive toward health and wholeness provide an environment and level of care that is very rewarding for the patients and for the dentists that have built their practices around this model.

In the future, dentistry will focus more intensely on prevention—teaching people how to take better care of their teeth and mouth. The emphasis will shift to improving the quality of life, both for dental health care personnel and for their patients. Dentists will increasingly offer care that is aimed to prevent tooth loss. Oral health care providers will be trained to use newer educational methods, such as problem-based learning (PBL) and to understand basic disease processes. Tomorrow's practitioners will have a greater working knowledge of molecular biology, computer and information technologies (dental informatics), data transfer, and general and oral health care maintenance. In years to come, dental professionals will have an increasing need to develop well-honed communication and business skills.

Because dentists work with people of all ages and socioeconomic groups, they need to develop effective interpersonal skills. Their work requires creativity and the ability to make quick and accurate decisions. These attributes will be increasingly sharpened in training programs for future practitioners.

In the new millennium, what implications does this paradigm shift have for dentists? Carlisle² suggests that the integration of the human dimensions in health care will help dentists move from

- Competition to cooperation among colleagues;
- An orientation on money and technology to an emphasis on service and healing;
- The mechanistic to the humanistic approach;

- Complexity in doctors' lives to simplicity;
- The reductionistic to the holistic viewpoint;
- Burnout to enjoyment;
- Being a dispassionate expert to becoming a caring collaborator;
- Hiding behind a facade to being genuine; and
- Professional dissatisfaction to enjoyment.

Current Work Environments and the Nature of Dental Education/Private Practice

Dental team members work in a range of settings, including group or specialty practice, schools, government or community clinics, and dental insurance and supply companies. Dentists perform a variety of services, including public education directed to prevent tooth decay and periodontal disease, detection of diseases (e.g., oral cancer), cosmetic improvement; and treatment of oral problems (e.g., misaligned teeth and jaws). Some dentists perform surgery to correct facial deformities caused by accidents or birth defects.¹

Dentistry offers nine specialties: endodontics (root canal therapy), oral and maxillofacial surgery, oral pathology, orthodontics, pediatric dentistry, periodontics, prosthodontics, public health dentistry, and oral and maxillofacial radiology.

Although dentists represent only about 2.3% of all health care providers, dentistry is a highly visible and respected profession in the United States. In 1998, there were an estimated 142,432 active private practice dentists,³ as compared with 663,900 private practice physicians.⁴ (An "active private practitioner" is one whose primary or secondary occupation is private practice, full- or part-time. A "new dentist" is one who graduated from dental school less than 10 years ago.) Thus, there are currently about 1,916 persons for each private practice dentist in our country. The number of dentists per 1,000 U.S. residents peaked in the early 1990s, but now is declining.³ It is projected that the number of dental practitioners per 1,000 U.S. residents will continue to decline over the next 20 years, primarily because of retirement and the fact that several dental schools have closed.

Dentists operate from an estimated 111,204 offices,⁵ and 67% are in solo practice.⁶ In 1997, 81% were general dentists and 19% were specialists. Approximately 2,549 dentists serve in the military services. Licensed dental practitioners supervise approximately 107,000 registered dental hygienists and 231,000 office assistants.⁴

The average general dentist in solo practice employs four staff members. The dental specialist employs five staff members. General dental practitioners have an individual caseload of approximately 1,000 patients and treat an estimated 75 individuals per week; dental specialists treat

approximately 92 patients per week. In 1997, there were about 17,720 practicing female dentists. Although they represent 12.8% of the total professional population, women account for 26.2% of all new graduates.⁷ Because women are often the gatekeepers for family health, their presence in the dental profession has a positive, humanizing effect on patient care, especially as related to prevention. Because the number of women in dentistry has recently increased, they are on average, younger than male dentists.⁷ In 1997, 33% of female active private practitioners were under age 35, as compared with 10% of their male counterparts. It appears that females are bringing different career patterns and work profiles to a profession that was once male dominated.

How do individuals select a dentist? Seventy-one percent of those who seek dental care rely on recommendations of friends or relatives. Another 13% primarily consider close access to a dentist's office, and 6% depend on telephone directories.

The public demand for dental treatment has remained strong. A typical dental patient makes about 3.8 visits a year. In 1996, 56.2% of these individuals were females; 21.9% were children, 14 years and under; 58.9% were between the ages of 15 and 64; and 19.3% were over age 65. Currently, 63.1% of these persons have dental insurance. About 60.8% of U.S. adults who are 25 years and older have visited a dentist during the past year. Persons who are African American, Hispanic, less educated (less than 12 years of schooling), and below the poverty level have fewer dental visits per year.

Over the next several decades, the per capita demand for restorative and surgical dental care will slowly decline. Today's oldest generation (age 65 and beyond) often wear full dentures and thus do not need restorative dental care, although they should still see the dentist for routine examinations. By 2030 and beyond, the population will need far less intensive dental treatment than is currently provided.⁸ In the past 20 years, there has been a steady decline in dental decay, for both children and adults. Americans born since 1975 have significantly better oral health than do those who preceded them.⁸ Additionally, adults between the ages of 25 and 44 have fewer dental caries and missing teeth than do their older cohorts. U.S. children whose permanent teeth were examined between 1988 and 1994 had slightly more than one-half the dental decay seen in those of equal age who were examined in a 1979–1980 national survey.⁸

The latest data show that dentists currently spend a higher percentage of their office hours treating patients than they did in the past. This has expanded their professional effectiveness and increased their net incomes.³ In 1995, private practice general dentists earned an average take-home wage of \$134,590.⁵ The average hourly wage of a dental hygienist in 1995 was \$25.20, and that of a chairside assistant was \$11.70.

Most dentists receive reimbursement from patients and/or private insurers on a fee-for-service basis. In 1997, Americans spent \$57 billion dollars for dental care.⁹ This figure has been increasing by about \$3 billion a year. Today, 96% of the dollars spent on dental care come from the private sector (i.e., out of pocket or commercial insurance).⁹

Even with the rapid growth of preferred provider organization (PPO) enrollment, managed care does not have a significant impact on the dentist's income. Dentists traditionally avoid managed care (capitation) programs such as PPOs. Although private dental insurance was rare in the early 1970s, its availability grew steadily between the mid-1970s and the early 1990s, when it leveled off. In 1996, private health coverage accounted for 48.7% of total dental expenditures.⁵ Public assistance programs such as Medicaid cover only a small percentage of dental expenditures (4.39% in 1996).

Dental informatics, an exciting and innovative field, uses information technology to improve processes and outcomes in dental practice, education, and research. By 1997, 79.5% of all dental practices had been computerized and 25% had Internet access.¹⁰ In many ways, however, the dental profession is still a very "unconnected" profession. Nearly 70% of all dentists are in solo practice, and many lack easy access to colleagues and educational resources such as libraries. However, the availability of computer software has enabled the paperless patient record to emerge in some dental offices. The American Dental Association (ADA) Standards Committee for Dental Informatics is helping the profession lay the groundwork that will determine the future use of computing technologies in dentistry.¹⁰ A cadre of experts in dental informatics is needed to direct this effort.

Roughly 4,000 new students enter U.S. dental schools each year. Since 1986, six schools of dentistry have closed, while only one has opened.³ About 3,378 faculty members work in these schools.¹¹ In 1995, 3,897 students earned degrees from 53 dental schools.⁴ Of these, 36.4% were women (compared with 22% in 1986–1987). The number of dental school graduates is projected to increase to 5,414 by 2020. The recent graduate's average indebtedness has increased from \$26,600 in 1982 to \$75,748 in 1996.^{3,12} U.S. dental school enrollment has decreased by 9.4% in the last decade, from 18,673 in the 1986–1987 academic year to 16,926 in the 1997–1998 school year.⁷

Within today's 4,926-hour curriculum, the traditional emphasis has slightly shifted. The program now consists of 20% basic and behavioral sciences, 14% preclinical technique, and 66% clinical sciences.¹²

Dental schools are facing a critical shortage of clinical faculty members. To operate effectively, dental institutions need 200 full-time faculty members.¹² To arrive at such a faculty, 5% of every dental school graduating class would have to complete a 3- to 5-year postgraduate dental

program. The shortage of faculty is further compounded by recent changes in dental education (i.e., replacing lectures with seminars and other labor-intensive, active learning strategies designed to develop critical thinking and problem-solving skills).¹²

Historical Background of Substance Use Disorders in Dentistry

Definitions

To gain insight into SUD (SUD), one must explore the overall meaning, parameters, and complexities of chemical addiction. The criteria identified in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV), published by the American Psychiatric Association, are the standard for diagnosis of substance abuse.^{13,14} DSM-IV defines addiction as "a disease process characterized by the continued use of a specific psychoactive substance despite physical, psychological or social harm."¹⁴ Leshner¹⁵ has called addiction "a brain disease for which the social contexts in which it has both developed and is expressed are critically important."

Substance abuse has also been defined as the self-administration of a drug in a manner that deviates from its accepted medical indication.¹⁶ The term includes experimental and recreational drug use (abuse) and chemical addiction. In addiction, a drug is compulsively taken without any medical indication, despite adverse physical, personal, and social consequences. For the purposes of this chapter, the acronym "SUD" is used to refer to what may elsewhere be called "substance use disorders," "substance abuse," "drug abuse," or "chemical addiction."

Health problems associated with substance abuse affect an increasing number of Americans. In this country, more than 10.5 million adolescents and adults are drug- or alcohol-dependent, and another 50 to 60 million Americans are addicted to tobacco products.^{17,18}

Early Efforts at Substance Abuse Education in Dental School and Practice

Until the late 1970s, dental faculty members presented SUD information to students for one primary purpose: to relate drug use to the process and outcome of dental care. Today's dentists have a much broader perspective. During the complex course of dental diagnosis, treatment planning, case management, and prognosis, the addition of substance abuse consequences also needs to be considered.

In earlier years, few oral health/substance abuse issues had been scientifically addressed. Outside the field of pharmacology, little was known about the interactions between substance abuse and the oral cavity. Dentally related continuing education (CE) courses dealing with substance abuse were largely unavailable.

By the late 1970s, dental patients suffering from the disease of alcoholism had become more routinely identified by the practicing dentist. In 1978, about one in five male dental patients and one in ten female patients were known to have this disease.¹⁹ Excessive drinking in men between the ages of 18 and 25 often resulted in accidents that caused injuries to the mouth, head, and neck (craniofacial trauma). Moreover, the healing professions became more aware of alcoholism's systemic effects that had dental implications: malnutrition (vitamin deficiencies); neurologic disorders; stomach, intestine, pancreas, and liver ailments; cardiovascular disease; changes in fluid and electrolyte balance; fetal alcohol syndrome; altered pulmonary function; alcohol and drug interactions; and problems in the blood-producing system.¹⁹ Also, it was discovered that persons with alcoholism experienced more difficulties directly related to the oral cavity, including alterations in salivary glands, a greater incidence of oral cancer and periodontal disease, and impaired wound healing. They also showed decreased effectiveness of local and general anesthesia in dentistry.

By the 1990s, 30% of all dental patients were suspected of having a SUD.²⁰ Guidelines for dental practitioners that identified the signs and symptoms of clinical addiction began to appear. Additionally, psychological insights were gained: denial, shame, guilt, and fear of legal consequences became recognized as strong adversaries to recovery. Often, a combination of these emotions prevented patients from admitting their drug problem to caregivers.

Common complications encountered in the patient with a substance use disorder that have a deleterious effect on the delivery of dental health care include²⁰

- Tolerance and cross-tolerance to commonly prescribed analgesics, narcotics, and sedatives;
- Synergistic and antagonistic drug interactions;
- Withdrawal, with potential major medical complications, including convulsions;
- Agitation, psychosis, and paranoia; and
- HIV infection and other diseases associated with intravenous drug use.

Impaired Dentists

As members of a respected health care community, all oral health team members need to expand their understanding of the complex substance abuse process.²¹ As they learn to identify addictive patterns and more thoroughly understand the dynamics of chemical dependency, they will become better equipped to help patients, colleagues, office staff, family members—and perhaps even themselves.²² Health care professionals are definitely vulnerable to substance abuse.

In the mid-1950s, when the medical profession began to deal with drug-dependency issues, some investigators reported that SUD were more prevalent among physicians than among the overall population.²³ In 1975, the American Medical Association held a national meeting to address this problem, and to suggest solutions.

In 1979, the House of Delegates of the ADA adopted Resolution 21H, which authorized the Council on Dental Practice (CDP) to act as a clearinghouse and national information source for substance abuse programs for dental professionals.²⁵

In the 1980s and 1990s, 14%–16% percent of both dental students and practicing dentists, as compared with 8%–12% of the general population, were reported to be at risk for SUD.^{11,23,25} In 1989, Oberg,²⁶ using a conservative figure of 10%, estimated that 18,000 (of 180,000 U.S. dentists) were chemically addicted. Kittelson²⁷ is of the opinion that 5% of practicing dentists are actively abusing chemical substances and that 13% of these professionals have experienced a long-term problem with substance abuse.

Dentists appear to be especially vulnerable to substance abuse because they work in a demanding, stressful profession, are frequently isolated from their peers, are typically compulsive and perfectionistic in their behavior, and can access drugs readily.²⁰ Robert Holman Coombs, in his book *Drug-Impaired Professionals*, refers to “pedestal professionals” to make the point that dentists and other high-accountability professionals are likely to be seen (and to see themselves) as set apart from the general population.²⁸ The reality, however, is that dentists are human beings first and dentists second. Addiction is a human disease, and some individuals who have it are dentists.¹³

The National Council on Alcoholism has estimated that the percentage of individuals with alcoholism among all health professionals is 1.5 times higher than it is among the general population.²³ It is however, generally accepted that one of ten dentists who uses alcohol has a drinking problem. In considering these findings, leaders within the profession are clearly obligated to take action.

In 1984, the ADA House of Delegates adopted Resolution 89H, which directed the CDP to establish the Advisory Committee on Chemical Dependency Issues (ACCDI).²⁷ This body, an information clearinghouse on substance abuse programs for dentists, was charged to suggest intervention strategies and provide consultation and support to State and local dental societies in implementing impaired dentists programs.^{13,26} With these parameters, the smaller groups became more prepared to establish their own substance abuse treatment programs. Since its formation, the ACCDI (now called the Dentist Well-Being Advisory Committee) has continued to effectively perform its assigned tasks. Resolution 50H, adopted in 1984, directed the CDP to conduct one-day national

workshops on SUD. The First National Conference on Chemical Dependency in the Dental Profession was held on July 24, 1985.²⁶ Subsequently, every few years, conferences dealing with wellness and substance abuse issues are held at ADA headquarters in Chicago. The ADA's 8th National Institute on Dentist Well-Being: Professional Challenge and Obligations, held in August 1999, was a 2 1/2-day event, sponsored by the CDP.²⁹ While this meeting focused on substance abuse, it also introduced other issues, including sexual addiction, depression, family issues, living with HIV, eliminating self-defeating behaviors, and smoking cessation.

In 1986, the ADA House of Delegates adopted Resolution 64H, the ADA Policy Statement on Chemical Dependency, which reads as follows:²

1. The ADA recognizes that chemical dependency is a disease entity that affects all of society.
2. The ADA is committed to assist the chemically dependent member of the dental family toward recovery from the disease by education, information, and referral. The establishment of constituent and component society chemical dependency programs is essential to this effort.
3. The ADA encourages those institutions responsible for dental education to allocate adequate curriculum on substance use, misuse, and addiction.
4. In meeting the needs of the public and the profession, the ADA also encourages liaison between constituent society chemical dependency committees and their State boards of registration.
5. The ADA recognizes the need for research in the area of chemical dependency in dentistry.

The University of Utah School on Alcoholism and Other Drug Dependencies in Salt Lake City is the second oldest U.S. summer school of its type.²⁶ More than 1,000 persons enroll in this one-week annual program. The school is divided into 16 professional entities, including the Dental Section, which was added in 1988. Since then, 30 to 40 oral health care providers and educators have attended every meeting. Some dental colleagues believe that this section can serve as a primary training resource for dental professionals who are seeking basic or advanced education in chemical dependency.

Since 1989, ADA's CDP has published a directory of chemical dependency services for dentists, listing hotlines, contact persons, addresses, and telephone numbers.³⁰ Most States, either through the dental society or the dental licensing authority, offer dentists structured opportunities to participate in primary treatment, continuing care, group support, and professional guidance via recovery-based monitoring programs.

Regularly updated, the *Directory of Dentist Well-Being Programs* provides contact information for dental schools

and a list of organizations that can help individuals deal with the physical and psychological problems related to chemical dependency. Most States have a legislated procedure that addresses the substance abuse problems of health care professionals. Dentists who abuse drugs may face suspension or license revocation. In turn, these legal actions can compound the already dire consequences of addictive disorders.^{13,31,32}

In 1992, the ADA designed a financial assistance program for dentists who are dependent on alcohol, nitrous oxide, or controlled substances. Eligibility for the program, which is administered by the Endowment and Assistance Fund, Inc., is determined on an individual basis. Those selected for assistance must agree to complete treatment (as prescribed by a physician) and to comply with aftercare instructions. Up to 10 loans can be awarded annually.

Ethical Considerations

In a 1994 Gallup poll that rated the honesty and trustworthiness of U.S. professionals, pharmacists, the clergy, and dentists received the highest scores: 61%, 54%, and 51%, respectively. A 1996 survey in *Consumer Reports* showed that 96% of the public have confidence in the technical competence of their dentists.³³ The Gallup Organization's 1999 Honesty and Ethics public opinion poll revealed that, among 45 occupations or professions, dentistry ranked ninth.³³

The dental profession holds a position of public trust.³⁴ In return, the profession declares that its members will adhere to the American Dental Association Principles of Ethics and Code of Professional Conduct (ADA Code). There is little equivocation on the matter of the dentist's personal impairment, as Code 2.D. demonstrates:³⁴

It is unethical for a dentist to practice while abusing controlled substances, alcohol or other chemical agents which impair the ability to practice. All dentists have an ethical obligation to urge chemically impaired colleagues to seek treatment. Dentists, with first-hand knowledge that a colleague is practicing dentistry when so impaired, have an ethical responsibility to report such evidence to the professional assistance committee of a dental society.

In addition, each State has declared that its licensed dentists are legally forbidden to practice if they are chemically impaired.

Help for Chemically Dependent Dentists

Dentists are especially vulnerable to chemical addiction because they can easily obtain drugs; are typically in a solo practice where their colleagues cannot judge their behavior; and generally represent the highest demographic risk group (Caucasian males).¹¹ Addiction is often a self-medicating attempt to ward off depression. Dentists, who tend to be perfectionists, can easily become depressed.

Many practitioners drive themselves relentlessly as they strive to operate an effective business, juggle professional and domestic demands, soothe patients' feelings, and perform flawless dentistry. Confronted with this impossible package of goals, they may turn to drugs for relief.³²

Specific behavior patterns that tend to occur among substance-abusing dentists include (1) social isolation and withdrawal from previously attended activities; (2) deterioration in personal hygiene and appearance; (3) disruption of appointment schedules; (4) unexplained, frequent absences from the practice; (5) signs of withdrawal such as lethargy, irritability, or tremors; and (6) excessive ordering of prescription drugs.^{11,23} The staff, family, and friends of a dentist who is suffering from a SUD may recognize that he or she is engaging in some or all of these behaviors, but may choose to ignore the obvious. Coworkers may also ignore the problem, out of loyalty or fear of losing their jobs. Family members and friends who have suspicions may ignore them for a variety of reasons. These protective responses become a major barrier to recovery. Another recovery obstruction is denial, which is often demonstrated both by the substance user and by some or all of these close associates.

Substance abuse is a treatable condition once it is recognized and acknowledged.²² In a 1997 ADA survey, 4% of participating dentists admitted that they had some kind of drug problem, and 20% were found to be at risk for alcoholism or other chemical dependencies.¹¹

Many persons with a SUD need inpatient treatment to successfully withdraw from their dependency. Throughout the U.S., some dentally oriented intervention programs, both inpatient and outpatient, have been established.^{11,32} The 12-step recovery program of Alcoholics Anonymous (AA) has also had impressive results.²² Social support systems that operate within AA, Narcotics Anonymous, Al-Anon, Adult Children of Alcoholics, and International Doctors of Alcoholics Anonymous can contribute significantly to recovery.^{22,23} Medical/dental doctoral support groups, found within the Caduceus Clubs, are available in many communities, with the goal of helping colleagues with substance abuse disorders.²² Long-term recovery is most likely when former, ineffective thought patterns are modified, healthy substitutes are adopted, and positive social supports replace old, dysfunctional ones.

Educating Dental Students About SUD

Dental students have many stressors: the highly competitive and achievement-oriented environment of academia and the resulting isolation; economic concerns; and long hours of study, lab, and clinical work.²⁵ Additionally, the dynamics and dysfunctions within their individual family systems can cause pressure. Some evidence shows that more than 35% of all dental students (compared with 10% of the general population) come from families with a

history of substance abuse.³⁵ Many dentists who develop a SUD admit that their problem began in dental school.²⁵

In 1986, the American Student Dental Association (ASDA) House of Delegates adopted a resolution that both recognized substance abuse as a disease and made a commitment to help addicted classmates seek treatment and work toward recovery. This document contains a strong educational component.²⁶

In spring 1988, the Pharmacology and Therapeutics Section of the American Association of Dental Schools (AADS) developed curricular guidelines for instruction related to SUD.^{36,37} The group worked on this project in conjunction with the Advisory Committee on Chemical Dependency, a subgroup of the CDP. A number of dental schools are using the core content outline of these principles in teaching the dynamics of SUD. They specifically state:³⁶

The dental practitioner must not only have an awareness of the disease, but must also be able to identify chemically compromised patients, provide appropriate care for these individuals, and minimize the potential for relapse of recovering patients... The goal of these curriculum guidelines is to enhance student and dental practitioner understanding of the etiology, prevention, and recovery process related to substance abuse, alcoholism, and chemical dependency so that they may help themselves, 'at risk' patients, families, and fellow colleagues.

The guidelines recommend that the dental curriculum cover three categories of drugs with high abuse potential: (1) noncontrolled substances (alcohol, nicotine [smoked and smokeless tobacco], caffeine, nitrous oxide, inhalants and solvents); (2) controlled substances (opioids, central nervous system [CNS] depressants and stimulants), and (3) commonly used illegal drugs (e.g., hallucinogens, psychedelics, heroin, cannabinoids).

Critical Issues, Obstacles, and Challenges in Dealing with SUD

For dentists, the primary contributor to SUD is easy access to drugs. Dentists work in a virtual "candy store" of substances that are potentially addicting. As Hulsman³⁸ has stated:

Within the educational construct of each health discipline, the study of pharmacology and its effects are known to the professionals who administer medications to alleviate their patients' mental and/or physical pain. They observe the drug's effectiveness, which reinforces their attitude towards the drugs as an effective means of treatment. Drugs are often prescribed to relieve symptoms, not treat causes. The initial use of self-medication is characterized by the belief that medications are an acceptable way to alter

feelings or to fix a situation, to feel better or to prevent the uneasiness of one's own feelings. "Heal thyself" has taken on a new and dangerous meaning.

A significant number of dental professionals and students continue to deny or minimize the seriousness of substance abuse within their ranks. Their reactions may range from a total failure to recognize the problem to a "conspiracy of silence," where it is known but never openly addressed.^{25,38}

These responses may be motivated by a range of emotions, including fear (i.e., the user may fear exposure and the consequent rejection, shame, notoriety, and discipline or the impaired dentist's staff may fear losing their jobs or being rejected by coworkers if they address the problem); loyalty (i.e., colleagues and staff feel protective of their fellow professionals); and confusion and uncertainty (i.e., while both substance abusers and their colleagues may want intervention to occur, they lack the insight and direction needed to initiate it).

Most dental schools do not have substance use treatment programs. Thus, a dental student with a substance use disorder who needs structured, empathic help has few means of receiving it.

Dental students carry a heavy load of course requirements, and it is difficult to add another subject to the curriculum. Additionally, most faculty members are unprepared to teach classes on SUD. These programs need to be designed both to help those students who are affected by SUD and to prepare the entire student body for professional service in this area. Students and dentists who are being counseled and treated for SUD need to be supported in the most confidential manner. Within both groups, early detection and referral for evaluation and intervention are paramount.

Development of Core Knowledge and Skill Competencies

In recent years, national dental educational certifying agencies (i.e., licensing boards) have proposed clinical competencies for the new dental practitioner.³⁹⁻⁴² This requirement for the licensure of each new dentist is met by the successful demonstration of an assigned clinical procedure. It is assumed that those who satisfactorily perform this task possess the fundamental knowledge and skills that are essential to the dental professional.⁴³ These qualifications are useful in creating a basic dental school curriculum and requirements for accreditation.

In North America, the dental profession must develop and employ similar competencies in SUD. This vital subject and related competency levels and accreditation should be added to the dental curriculum.

Clinically oriented substance use competencies and skills have been divided into three levels.^{44,45} Level I competencies are those that all primary health care

providers should possess. Level II competencies apply to health care providers who accept responsibility for prevention, assessment, intervention, and care coordination of those with SUD. Level III competencies are provided by those who have received additional training and who accept responsibility for long-term treatment of individuals with SUD.

To care for patients with SUD, Adger and colleagues⁴⁵ have suggested that all primary health professionals should

1. Be aware of the medical, psychiatric, and behavioral syndromes and their diagnostic criteria and terminology which are commonly used in describing various substance abuse disorders (pathophysiology).
2. Realize the epidemiologic magnitude of the problem (the extent of its occurrence in general or special population groups and all contributing elements).
3. Understand the risk factors associated with SUD (genetics, socioeconomic status, educational levels, and environmental influences).
4. Recognize the pharmacological and behavioral effects of commonly abused substances.
5. Make referrals to accessible treatment facilities whose strategies are established on research-based interventions.
6. Understand legal and ethical issues relating to SUD and how they may vary among different cultures.

Competencies/Skills: Level I Requirements

1. Use screening and other scientifically based procedures to detect SUD as early as possible. Ensure that health examinations include an in-depth history of substance use disorders.
2. Assess the nature and severity of the disorder.
3. Deal with the disorder in a discreet and timely manner, showing concern and empathy and offering insight, support, and follow-up.
4. Before referring patients to specific resources (e.g., prevention information, brief intervention, or referral to treatment), consider their individual needs. Customize each situation to fit individual needs.
5. Periodically monitor and evaluate each patient's progress to determine a future plan of action. (e.g., referral, re-intervention, or supportive follow-up).

Teaching Methods: Problem-Based and Competency-Based Curricular Changes

The future wave of dental education will be characterized by PBL driven by clinical competencies. In PBL⁴²

...the students cope with the elements of the problem before they learn the facts, concepts, or principles that relate to it. It is the problem that stimulates and focuses their learning. Students may bring varying

amounts of prior knowledge to the problem, depending on their backgrounds, but the teacher does not 'prepare' them for the problem through reading assignments or lectures.

Traditionally, dental education has been based on case study formats (i.e., students analyze a clinical case after they have acquired information through traditional means [lecture, demonstration, reading assignments]). Students who participate only in these traditional methods of education cannot easily perceive how their basic science courses are relevant to clinical practice and, as a result, they have difficulty integrating the two.^{39,42} The PBL format encourages students to engage in lifelong learning. It requires them to use scientific methods to develop critical thinking skills and accurate clinical judgment. PBL exercises, carried out in small groups that include a faculty tutor, deal with simulated professional/ethical problems. To address these issues and stimulate a continual desire for learning, students are taught how to effectively use the electronic media as well as traditional libraries.³⁹ This milieu creates a fertile environment where professionalism, ethics, and interpersonal skills can be practiced and developed. The PBL environment enables each participant to shift from passive learning to active involvement.⁴¹

In the 1950s, the PBL/competencies model was first introduced in the medical program at Case Western Reserve University. During the following decade, McMaster University in Canada followed suit. Since that time, it has become an integral part of many medical school programs. It is only during the last 10 years that this innovative approach has begun to penetrate dental education.

Although the PBL/competencies system is highly effective, it is still underutilized within dental education. However, many dental schools are now considering the inclusion of a PBL format in their current curriculum, and three dental institutions (Indiana University, Harvard University, and the University of Southern California) are regularly using this system of learning.

Other Issues of Importance to Dentistry

Because of the unique nature of dental education and practice, a variety of other issues relating to SUD are discussed in the following section.

National Board Dental Examination Questions

The purpose of the National Board of Dental Examiners is to help State dentistry boards determine the qualifications of dentists and dental hygienists who seek licensure to practice professionally.^{46,47}

Part I, usually taken after completing 2 years of dental school, consists of four examinations on the basic biomedical sciences: anatomic sciences, biochemistry-physiology;

microbiology-pathology; and dental anatomy and occlusion.

Part II, taken during the senior year of dental school, is a comprehensive, 1 1/2-day examination that covers the clinical dental sciences. Approximately one-fifth of this test includes items based on patient cases. Few questions address the SUD of dental patients. In the future, a greater effort should be expended to fill this void.

Until recently, national board examinations were offered on only two dates per year, and at specific sites (usually dental schools). In 1999, this situation was rectified. Part II can now be taken "on demand" at professional testing facilities throughout the nation.⁴⁷ Presently, two-thirds of all States grant the applicant a dental license after determining that he/she has met the essential requirements and previously passed a clinical licensure examination, and has 3 to 5 years of practice experience. Only barbers, cosmetologists, hearing-aid providers, optometrists, and dentists still use human subjects in licensure examinations. There is strong professional disagreement concerning the validity, reliability, and outcome inconsistencies of this exam and the ethical problems of using live patients.⁴⁷

Prescription Drug Abuse or Theft by the General Public Involving Dentists

Because dentists are legally authorized to prescribe narcotics and controlled drugs for therapeutic use, they may be approached by drug-seeking individuals who pretend to be in need of medication to ease their oral pain.⁴⁸ In their attempt to obtain these pharmaceutical drugs, which are intended for their personal use or for diversion to the black market, they typically call for dental treatment late at night or on weekends.^{27,48,49} They may also claim that they are "just passing through" and have misplaced or forgotten their prescriptions, which, they claim, were issued by their regular dentist. Typically, they ask for a prescription by name and can become aggressive or manipulative if the dentist denies their request.

Illegal drug schemes began in the early 1970s, when the supply of street heroin became nearly exhausted. This shortage forced persons with drug addictions and drug traffickers to seek an alternate source of opiates and other mood-altering drugs. Dentists became a vulnerable target for drug-seeking con artists. Since this era, the diversion of legitimate drug products to the illegal market has become a \$25-billion industry, with prescription medications (especially controlled substances) accounting for one-third of all illegal street sales.⁴⁹ It is estimated that 15% of all legitimate prescriptions will become illegally diverted. Usually, this diversion is staged through forgery, verbal misrepresentation, and multiple doctoring. Drugs commonly sought for illegal reasons include codeine, Darvon, Demerol, Dilaudid, Empracet 30, Fiorinal, Hycodan, Hycomine, Leritine, Lorcet, Lortab, methadone, Novahistex, Percocet, Percodan, Ritalin, Tussionex, Tylenol 3, Tylenol 4, Vicodin,

and Vicodin ES.^{48,49} Those who illegally obtain these drugs and sell them on the black market gain a high rate of financial return and incur a minimal risk of arrest and prosecution.

Dentists must carefully guard their prescription pads and report any losses or thefts to the pharmacy, their licensing body, and the police. Controlled drugs (including narcotics) that are kept in the office must be stored in locked cabinets, out of sight and away from patient areas. For routine treatment, prescription drugs should be dispensed in small quantities. A 2- to 3-day supply is adequate for most dental needs.²⁷

While recent graduates and new practitioners are the most susceptible to this deceit, no dentists are immune. They should *never* prescribe on demand or automatically accept the patient's self-diagnosis. Additionally, they should not prescribe medication to friends or family members who may request this favor. Proper clinical assessment and documentation are necessary components of script issuing. Dentists cannot legally prescribe a narcotic for an unauthorized, non-dental condition. Dentists should immediately notify the authorities if they are asked to engage in any questionable or illegal activities.²⁷

Oral Health of Substance Abusers

Tobacco

The use of smoked and smokeless tobacco has profound deleterious effects in and around the oral cavity.^{35,50-53} One or more of the following tobacco-related conditions, ranging from mild to life-threatening, typically develop in varying degrees of severity: halitosis, hairy tongue, dental calculus, periodontal disease, premature tooth loss, acute necrotizing ulcerative gingivitis, abrasion, discoloration of teeth and restorative materials, tissue changes, delayed wound healing, sinusitis, leukoplakia, and oral or laryngeal cancer.

Alcohol

Nearly three-fourths of all Americans regularly consume alcohol. One study has revealed that 40% of all medical/surgical patients suffer from various clinical effects of alcohol use.⁵⁴ Often, certain cause/effect maladies of persons who abuse alcohol are overlooked or misdiagnosed by the dentists who treat them. When treating their patients, dental professionals need to be on the alert for actual or potential alcohol-related conditions. When such a problem is identified in the dental office, it needs immediate attention. These health emergencies include accident-related craniofacial trauma, which requires surgery, and depressed gag and cough reflexes. During dental treatment, depressed reflex responses can increase the likelihood of aspirating dental instruments and foreign bodies and cause airways to be obstructed by blood, vomitus, broken teeth,

or damaged prostheses. With or without liver cirrhosis, these afflicted persons often exhibit chronic asymptomatic swelling of the parotid glands. This parotitis, usually bilateral but sometimes unilateral, causes a gradual increase of swelling that may involve the submandibular glands. The short- and long-term effects of tobacco use on salivary flow rates are not clear. The salivary composition is normal except for an elevated level of amylase.

Frequently, persons who are addicted to alcohol exhibit clinical signs of poor oral hygiene. These individuals may have acute dental pain, a thickly coated tongue, heavy dental plaque, materia alba, and calculus deposits. They also tend to have more missing teeth (often three times more than nonalcoholics in the same age group). Comparatively, they experience more destructive forms of periodontal disease and a greater incidence of head and neck cancer and leukoplakia (pre-cancer) than other individuals.⁵⁵ Epidemiologic and clinical studies suggest a synergistic, cocarcinogenic cause/effect relationship between alcohol and tobacco use. Poor postoperative wound healing is another common problem in patients with alcoholism. Alcohol, in a dose-related manner, interferes with the proper formation and deposition of collagen.

Other Drugs

Many serious health problems are associated with long-term drug abuse. They include viral hepatitis (particularly B, C, and D), a high risk of HIV infection, endocarditis caused by infection from intravascular infection, tuberculosis, sexually transmitted diseases, pulmonary conditions, and renal failure.^{16,56,57} Liver damage is common. Most persons who abuse drugs are malnourished and immunocompromised.

Persons addicted to drugs such as cocaine and heroin typically neglect their dental health. As a result, they frequently develop a high dental caries rate and severe periodontal disease.^{16,56-60} Recovering persons who are on a methadone treatment program can experience rampant dental decay if the methadone syrup is not sugar-free.¹⁶ In general, the prevalence of decayed and missing teeth is high among drug addicts, and they receive fewer dental restorations than do other individuals.⁶¹ Persons who abuse drugs, particularly those who use parenteral drugs, are inclined to crave refined carbohydrates, which they characteristically consume while ingesting their chosen chemical.⁶⁰ Cocaine-induced anorexia is characterized by excessive weight loss and malnutrition. These conditions are directly associated with oral manifestations, such as angular cheilitis (raw fissures located at the corner of the mouth), necrotic tongue lesions, laryngeal mucosal burns, palatal ulcers, candidiasis infection, and glossodynia (burning tongue). Necrotic tongue lesions tend to be more severe in those who smoke crack cocaine. Additionally, some persons who are addicted to cocaine practice intense bruxism (teeth grinding). This action, which produces

extreme tooth wear, results in flat cuspal inclines on both the bicuspid and molar teeth. Cocaine use combined with chronic alcohol ingestion can cause severe dental complications, including a dry mouth (xerostomia), advanced periodontal disease, bruxism effects, and a bilateral swelling of the parotid glands that results in a “chipmunk” appearance. When patients recover from their opioid drug addiction, they become much more aware of their dental pain, which was previously masked by the drug usage. Heroin addicts can sustain burn scars on their face and body when they lose control of a lighted cigarette during a drug-intoxicated state.⁵⁷ A pallorous oral cavity or icteric sclera (typically caused by active hepatitis and evidenced by needle tracks on the arms or other parts of the body) are also effects of heroin use. In addition, chronic marijuana users have tendencies to experience xerostomia, and a relatively high incidence of both dental caries and periodontal disease.⁶⁰ Because substance abusers also tend to be heavy tobacco users, they face a second risk: the tobacco-related ill-effects of tissue changes (e.g., leukoplakia).⁵⁰

Treatment Planning

Persons with SUD, who spend the greatest share of their money on drugs, may have no financial reserve for dental or medical care.^{16,62} For them, both prevention and treatment are rare.¹⁶ The dental management of patients who abuse drugs creates specific problems when they seek treatment only for pain relief, which typically requires tooth extraction.^{6,56,61} These individuals are at high risk for developing infectious disease, dental pathology, and a wide range of medical complications.¹⁷ In addition, as compared with a control group, they react less effectively to a local anesthetic. Postoperative pain control is a significant problem.

Current modes of substance abuse treatment vary according to the type of drug being abused. Some recovery centers use a basic program modeled on long-term experience with persons with alcoholism.^{16,18,32} This plan typically involves participation in a structured, 3- to 5-week hospital program, followed by long-term outpatient aftercare.⁶³ For financial reasons, however, many of these programs no longer still exist.

Those who have successfully completed an intensive substance abuse treatment program may become extremely cautious about taking any type of medication.⁶³ Fearing relapse, they may resist any treatment that includes a legitimate, prescribed drug intake. Therefore, their necessary prescriptions may go unfilled. Extreme caution must be taken in prescribing anxiolytic agents: some experts report incidences where the use of mind-altering prescription drugs has actually triggered a relapse. Dentists are advised to consult with a psychiatrist or an experienced physician before they treat addicted patients with pharmacologic adjuncts.¹⁷

Pain Control

Health professionals who treat persons with SUD often fail to provide adequate pain control treatment.⁶³ Patients with a history of substance abuse are likely to need larger doses of analgesics than are those without such a history.²⁷ Because the action of psychoactive drugs on the brain masks bodily pain signals, drug withdrawal often precipitates a severe pain reaction.⁵⁴ Virtually all pain medications except the nonsteroidal anti-inflammatory drugs (NSAIDs) are potentially addictive. When a person in recovery needs analgesia, NSAIDs are the primary choice. A dentist–physician consultation is a necessary component of the treatment plan. A number of drugs (narcotics [opioids], sedatives, minor and major tranquilizers, all antihistamines, decongestants, antidepressants, CNS stimulants, and anesthetic gases, including nitrous oxide) can compromise the sobriety of a recovering person.⁶² If a dental patient with current or remitted SUD requires any of these medications, a physician with expertise in addictions should be consulted.

Nitrous Oxide in Dentistry

Nitrous oxide is an excellent adjunct for treating pain and anxiety. It is routinely administered by 30,000 dentists to 4.5 million patients annually.⁶⁴ According to the ADA, in 1994, 56% of general dental practitioners and 46% of dental specialists used this gas.⁶⁵ Nitrous oxide also has the potential for being abused, and documented cases of nitrous oxide addiction have been linked to its recreational use by dentists and dental students. The adverse effects of nitrous oxide use include transient hypoxia, nausea, claustrophobia, certain sexual responses, and psychedelic (visual) phenomenon. Spontaneous abortion and birth defects have been reported among female dental office personnel who have retained even trace amounts of this drug in their bodies. Although nitrous oxide is not a controlled substance, it has caused serious neurologic symptoms and even death among dentists who administered it to themselves.⁶⁵ This drug has only one regulation: some individual States require that dentists become certified to administer it in an approved manner.⁶⁴ For practices in which dentists use nitrous oxide, 53% reported having a formal employee education program for nitrous oxide, and 63.7% of the practices periodically test their delivery equipment for leaks to reduce the risk of nitrous oxide exposure.⁶⁵

Tobacco-Cessation Treatment for Dental Patients

During the past 30 years, the U.S. dental profession has increasingly embraced tobacco cessation issues as a special area of interest and involvement.⁵¹ Currently, only 5%-8% of dentists smoke cigarettes.

The first Surgeon General's Report to address the systemic hazards of tobacco use was issued in 1964.⁶⁶ During the same year, the House of Delegates of the ADA⁵¹ resolved that

...members be encouraged to inform their patients of the health hazards of the use of tobacco and, especially with young people, warn against acquiring the habit of cigarette smoking.

Although the initial resolution did not suggest that tobacco-cessation strategies be used in the dental office, it did serve an important function by confronting the issue. Today, the ADA prohibits smoking during its meetings and conferences and encourages its constituents to follow suit. Approximately 50 other dental organizations that have adopted policies and resolutions concerning tobacco use have also acknowledged the need to endorse and implement smoking-cessation programs. Since the early 1970s, the ADA has produced and distributed increasing amounts of tobacco-cessation materials, including wall plaques, posters, pamphlets, no-smoking signs, package libraries, audio- and videocassettes, and slide sets.

In 1970, several articles in the *Journal of the American Dental Association (JADA)* explained how tobacco smoking adversely affects the oral cavity. Christen and colleagues^{50,51} proposed guidelines for developing dental office-based smoking-cessation activities. During the late 1970s and early 1980s, *JADA* continued to publish papers dealing with tobacco education and smoking cessation. At the time, however, dentists and other oral health care professionals did not realize that they would have a future role in the prevention and treatment of this serious health problem. Although many dentists had undoubtedly observed the oral ill effects experienced by their smoking patients, they may have hesitated either to mention the correlation or to advocate quitting. Traditionally, this had not been their responsibility, and they may have feared rejection by their patients, concluding that their interest would be perceived as being intrusive and judgmental. Recent research has shown that today's patients expect oral health professionals to inquire about their tobacco usage.⁵²

In the early 1980s, dentistry became involved in testing nicotine-containing gum as a smoking-cessation aid.⁶⁶ When patients began to inquire about obtaining nicotine-gum prescriptions, many dentists believed that it was illegal for them to prescribe this pharmaceutical agent. By the mid-1990s, however, these prescribing issues were resolved.

In the mid-1980s, two dental schools (Indiana University and the University of Kentucky), the National Cancer Institute (NCI), and other health-oriented groups began to encourage and train oral health team members to become active in tobacco education, control, and cessation. In the past 10 years, the dental community has developed an expanding interest and involvement in tobacco-cessation issues.

Between 1984 and 1991, nine studies reported that dentally oriented smoking-cessation programs that use nicotine replacement therapy (NRT) can be instrumental in helping smokers to quit.^{52,66-68} These investigations demonstrate that team programs produce significantly higher success rates than do individual efforts. Presently, dentists throughout the nation are being instructed on how to use FDA-approved smoking-cessation medications. These training sessions are sponsored by the NCI, individual dental schools, and specific dental organizations such as the Academy of General Dentistry.

In 1986, NCI mandated an intensive, coordinated, 15-year antitobacco campaign that involved public agencies and professional health organizations, including those representing dentistry.⁶⁶ The first NCI effort, the Community Intervention Trial for Smoking Cessation (COMMIT), was designed to reach 2 million Canadian and U.S. citizens in 22 communities between late 1989 and 1993. An additional 90 million people in 17 States were targeted to participate in the seven-year American Stop Smoking Intervention Study (ASSIST), which followed COMMIT.⁵² These two community-based events utilized the leadership skills of practicing physicians and dentists and their office team members, all of whom were trained as smoking-cessation change agents. This educational approach used NRT in conjunction with behavioral strategies and the NCI-designed "5As" concept for brief intervention: ASK patients about smoking or smokeless tobacco usage; ADVISE tobacco-using patients to quit; ASSESS the patient's willingness to quit; ASSIST those interested individuals in quitting; and ARRANGE for supportive follow-up.^{51,52,66,68,75,76}

The 1986, U.S. Surgeon General's Report on smokeless tobacco stimulated a great deal of concern and interest among dentists and hygienists. Since 1987, an eight-step, dental office-based tobacco-cessation plan has been regularly presented to Indiana University dental hygiene and undergraduate dental students.⁶⁶ A 51-page handbook, *A Smoking Cessation Program for the Dental Office*, now in its fourth edition, focuses on specific principles that are emphasized in the Mayo Clinic model.⁵¹ Designed for dentists and dental auxiliaries, this approach utilizes the skills of hygienists and other office employees. Because hygienists are specifically trained to provide patient education and preventive services, they generally coordinate these activities.^{51,52,63,69-70} However, dental assistants or even receptionists can be instructed to perform selected tasks. A number of hygienist and/or assistant programs now include tobacco education and cessation in their curricula.³⁵ Excellent materials are available for this purpose. The 1999 *Continuing Education Catalog of the American Dental Assistants Association* lists several correspondence courses that address SUD. They include #9805, The Importance of Pharmacology in Dental Care; #9304, Nitrous Oxide; and #9011, Understanding Nicotine Addiction.⁷¹

In April 1989, the First National Dental Symposium on Smoking Cessation: Helping Dental Patients to Quit Smoking, was held at the ADA headquarters in Chicago, Illinois. This 1-day program was cosponsored by the Indiana University School of Dentistry, the ADA, and the AADS. The 150 attendees (private practitioners and representatives from each U.S. dental school) included individuals who were currently active in this arena and those who showed interest in it. In January 1990, a *JADA* supplement summarizing the conference proceedings was mailed to each ADA member.⁷²

In mid-1989, the National Dental Tobacco-Free Steering Committee (NDTFSC) was established under the auspices of the NCI. The purpose of this group was to involve the dental profession in activities that promote a tobacco-free society. This group continues to (1) assess recent cessation-oriented intervention strategies and activities; (2) define opportunities for dental involvement in these assessed areas; and (3) promote cooperation and collaboration between dental groups and other professional and public interest groups which operate at community, State, national, and global levels. A coalition consisting of 16 major dental organizations participates in 2-day meetings held every nine months at the National Institutes of Health Conference Center in Bethesda, Maryland. Reports of these meetings are widely distributed and used as a resource for individuals and groups who promote the development of a tobacco-free society. Between 1989 and late 1999, this group met 16 times.

In 1991, the Healthy People 2000 Objective 3.16 was launched. Its objective was to “increase to at least 75 percent the proportion of primary care and oral health care providers who routinely advise cessation and provide assistance and follow-up for all of their tobacco-using patients.”⁷³ However, this goal is far from being realized. These federally mandated goals are continually updated and revised.

Several North American dental schools have established highly structured, individual, outpatient smoking-cessation treatment programs that utilize NRT. Those that use this plan include Indiana University (since 1992), the University of Minnesota (since 1997), the University of Tennessee (since 1999), the University of Mississippi (since 1999), and the University of Alberta (2000). Other dental school programs activated in the 1990s are in operation at the University of Missouri-Kansas City, the University of Michigan, Oregon Health Sciences University, and the University of Washington.⁶⁹ Approximately a dozen dental schools in North America include this subject in their curricula.

Over the last decade, the dental profession has made significant progress in treating nicotine-dependent patients.⁵² However, the task has just begun. In 1996, Tomar and colleagues⁶¹ found that less than one-fourth of smokers

who received dental treatment in the previous year said they had been advised to quit smoking by their dentist. By contrast, more than one-half of smokers who had seen a physician in the year preceding the survey reported that they had been advised to quit. Therefore, dentists appear to be considerably less willing and/or able to address and deal with this vital health issue than are physicians. Even more puzzling is that each physician generally spends 11 to 14 minutes with a patient, whereas the dentist typically has 30- to 90-minute appointments. Less than 18% of current snuff or chewing tobacco users reported that they had ever received quitting advice from a physician or dentist. Others have shown that dentists regularly offered smoking-cessation advice to their more highly educated smokers but neglected to approach those who had a high school education or less. This finding is particularly troubling because smoking is steadily increasing among people who do not pursue an education beyond high school. It is hoped that these revelations will serve as a call to action for the dental profession.⁷³

Continuing Education Efforts in Tobacco Cessation

Although few national programs are available for medical and dental practitioners, several tobacco-related, university-based, continuing education-related courses have been designed for these health care professionals.^{51,67,74} The Indiana University Workshop on State-of-the-Art Smoking-Cessation Interventions is sponsored by the Indiana University School of Medicine, Division of Continuing Education, and the Indiana University Nicotine Dependence Program. This program, team-taught by a dentist, pulmonologist, and respiratory therapist, includes lectures, case presentations, and hands-on skill building. Participants are instructed on how to assess, diagnose, and develop treatment plans and optimally deliver effective tobacco-cessation interventions. This course, accepted by the Indiana State Board of Dental Examiners, is worth 12.5 continuing education (CE) credit hours. Medical CE credit is also available.

The Mayo Clinic Nicotine Dependence Seminar: Counselor Training and Program Development is typically held in mid-May, in Rochester, Minnesota. Presented as a 3-day course, the Mayo model focuses on counseling skills, pharmacologic therapy, and relapse prevention. This is only a partial list; other training programs are available.

In 1996, the Agency for Health Care Policy and Research issued Guideline Number 18, entitled *Smoking Cessation*.⁷⁵ It includes an exhaustive review of the world literature and detailed, state-of-the-art smoking-cessation information for all health providers who intend to provide intervention and treatment. An expanded second edition was released in 2000 by the U.S. Public Health Service.⁷⁶

Current Developments in Tobacco-Cessation Treatment

While dental office intervention efforts have proved to be effective in reducing the patient's tobacco use, little emphasis has been placed on the delivery of direct tobacco-cessation counseling. This void is largely due to the dentist's lack of education and experience in this arena. Only a few dental schools strongly emphasize tobacco-control issues. Others, which may have marginally included prevention and cessation in their curriculum, tended to present these issues in a manner that is neither comprehensive nor consistent.

However, in late 1999, Barker and Williams⁶⁹ reported that 11 U.S. dental schools and 65 dental hygiene programs have included formal clinical tobacco-cessation activities in their curricula. Although 53% of dental schools do not yet have this type of program, 21% stated that they were developing such a plan.

A significant anti-tobacco opportunity has recently surfaced. In October 1999, during the annual meeting of the ADA in Honolulu, this organization passed Resolution 24H, which urges⁶

...that state tobacco settlement funds be targeted toward improving health and reducing the morbidity and mortality of tobacco-related diseases. ...that state settlement funds to be used to increase funding to dental programs in order to improve access for underserved populations.

...that a portion of state tobacco settlement funds be targeted toward tobacco control programs. ...that the Association continue to assist constituent dental societies in forming strategies that promote the use of state tobacco settlement funds accordant with Association policy.

Vision for the Future

In recent years, some strides have been made in strengthening the education and training of oral health care providers in SUD, but a great deal more needs to be accomplished. Increasingly, recent dental graduates have been receiving state-of-the-art information in this area. Most dentists in North America, however, do not realize the extent of this problem. They are unaware that effective treatment of SUD does exist, and that they can have a prominent role in helping individuals obtain such care.

To achieve this goal for all dental practitioners, dental schools must increase their training in this area, and the core knowledge and skill competencies described in this chapter must be integrated into the required curriculum for all dental personnel. Only then will dental professionals be prepared to fulfill their ethical obligation to help affected individuals and families both within and outside of the dental profession and to ensure that society provides them with the essential resources, services, and opportunities.

In the opinion of the authors, the dental profession's projected vision in its role to help those individuals affected by SUD includes the following points:

1. All oral health providers in the United States will receive formal substance use education in state-of-the-art knowledge and clinical skills. They will learn to identify, intervene, and/or refer individuals who have SUD. Dental personnel will become more knowledgeable and confident in working with patients with SUD and help reduce the negative stereotypes of this population.
2. Dental schools will educate and train a greater number of dental faculty who will work within their individual systems to educate students at all academic levels about SUD.
3. SUD core content material will be incorporated into national dental hygiene boards and regional and State licensure board examinations for dentists.
4. All dental personnel impaired by SUD will be able to obtain help without being stigmatized or losing licensure.
5. Oral health care providers, regardless of their geographic location, will have ready access to CE courses in SUD. This equal opportunity will be achieved via computer-assisted electronic technologies for those in remote locations.

Recommendations

Predocloral Dental and Allied Dental Education/Training in Substance Use Disorders

1. All graduate and undergraduate dental students and dental auxiliary students should receive substance use disorder education by means of a formal curriculum.

Rationale. About 25% of all dental patients are tobacco users, and 10% have additional problems related to SUD. The abuse of all drugs can deleteriously affect both the prognosis and outcome of dental treatment. Additionally, 10% of practicing dentists are themselves substance abusers, and preventive drug education for dental and dental auxiliary students is minimal or nonexistent. By increasing individual awareness and teaching dental students to acquire the necessary knowledge and clinical skills to effectively intervene with patients affected by SUD, dental educators will enhance the lives and careers of these future dentists.

Recommended Actions. Establish a solid base of curricular requirements in the field of SUD during preclinical and clinical training. This action should enable students to more effectively diagnose and intervene with dental patients who abuse drugs, and it will act as a preventive measure in their personal lives. Increase and refine test materials that evaluate substance abuse knowledge and intervention skills.

Responsible Agents. American Dental Education Association (ADEA), ADA's accreditation body, and individual dental school curriculum committees.

Expected Outcomes. Within 3 years, dental students will significantly increase their knowledge and clinical skills in substance abuse as measured by test scores on Part II of the national board examinations, and as evidenced by the scores they receive on the regional/State boards following graduation. Within 5 years, a required curriculum in substance abuse education will be part of all dental school programs.

2. Clinical competencies in substance abuse education will be developed, implemented, and evaluated as part of the standard dental curriculum.

Rationale. Dental schools have consistently endeavored to teach their students professional skills, historical and current knowledge, sound judgment, and ethical values. When teaching about substance abuse disorders, dental faculty must address the following considerations: What diagnostic and intervention skills should new dental graduates possess? What learning experiences will help students acquire these competencies? What background information and current scientific knowledge are needed to understand substance abuse and deliver effective treatment?

Generally, substance abuse education in dental school is isolated, fragmented, and incomplete. Although the ADEA's curriculum guidelines in substance abuse education for dental educators are valid, no consensus has been reached concerning the specific clinical competencies that should be required for substance abuse faculty and academicians. It is difficult to mandate a specific level of education and training for these educators because they will be teaching such a wide variety of students (dental assistants, hygienists, undergraduates, and graduates).

Other questions arise: Should the competencies required of a new dentist be less demanding than those required of the established dental professional? What competencies should be geared specifically to dental specialists, general practitioners, recent graduates, graduate students, and dental auxiliaries?

Because student learning capacities differ, what type of evaluation system will effectively assess each individual's level of mastery? At least 50% of U.S. dental schools have developed competency lists that help determine the content of their educational programs and their requirements for accreditation. Substance abuse education is rarely included in such documents. Most dental institutions need to include substance abuse in their curricula and establish competency levels and accreditation requirements for this subject.

Recommended Actions. A task force of dental educators and clinicians will convene to determine clinical substance abuse competencies for clinical faculty, academicians, practicing dentists, and dental auxiliaries. The standards will be based on the ADEA's Curricular Guidelines for Education in Substance Abuse, Alcoholism, and Other Chemical Dependencies and on other authoritative sources.

Responsible Agents. The ADA, in partnership with the ADEA, the Academy of General Dentistry, selected dental school faculty members, public health dentistry, the American Student Dental Association (ASDA); government agencies (e.g., the National Institute on Drug Abuse, the NDTFSC sponsored by the NCI; addictionologists, pharmacologists, and dental school faculty members involved in substance abuse education.

Expected Outcomes. A consensus document that outlines the clinical substance abuse competencies required for each type of provider will be produced. This report, to be developed within 5 years, will address various stages of expertise, learning issues, educational strategies, and evaluation methods.

3. Dental school faculties will accelerate curricular improvements in substance abuse education by incorporating the principles of problem-based learning, which are already taught in some dental schools. Both faculty and students will pursue extensive education in this arena.

Rationale. In recent years, dental educators have become increasingly committed to programs that help their students develop lifelong learning skills, e.g., critical appraisal, analytical problem-solving, clear communication, and ongoing learning. Inclusion of PBL courses in the dental school curriculum has been shown to motivate students to develop positive attitudes toward a lifelong pursuit of learning.

Although PBL and competency-based curricula are in limited use, these new educational models are expected to become the wave of the future. The use of these strategies represents a marked improvement over the more traditional learning methods of lecture and textbook memorization, objective testing, and performance of required clinical procedures.

A few dental schools already include substance abuse issues in their PBL cases. This approach however, cannot work unless dental school faculty members change both their perspectives and their modes of teaching. With few exceptions, today's faculty members have been trained in the classical didactic approach rather than in the use of the PBL strategies.

Recommended Actions. An ongoing substance use disorder special interest group consisting of dental educators will be established. Group members, who will convene at the annual meeting of the ADEA, will be committed to make PBL/competency-based curricular changes and to develop effective substance abuse strategies. These efforts will include the delivery of substance abuse topics appropriate to the dental curriculum at all levels. This special interest group will also be responsible for incorporating questions on substance abuse for regional/State licensure board examinations.

Responsible Agents. The ADEA, the ADA, American Dental Hygiene Association (ADHA), American Dental Assistants Association (ADAA), American Association of Dental Examiners, and individual faculty members who have interest and expertise in this arena.

Expected Outcomes. These agents listed above will develop and share a written collection of substance abuse situations that students are likely to encounter in practice. These scenarios will be incorporated into the individual PBL processes that have been established at their home institutions. The written segments will be completed within 2 years. During year 2, this committee will present a special interest group program relating to substance abuse at the ADEA's annual meeting. By the end of year 3, a report will be submitted for publication in the *Journal of Dental Education*, giving detailed information on the progress made.

4. Substance use disorder core content material for oral health care students will be incorporated into national dental hygiene boards and regional/State licensure board examinations.

Rationale. Unless students are presented with and tested for course content relating to substance abuse, they will not fully appreciate its value. Training in substance abuse intervention should become an integral part of the dental student's and dental hygienist's professional preparation. Students should receive basic core content material that is focused on the existing ADEA curricular guidelines for substance abuse.

Recommended Actions. In teaching students, faculty members must stress the importance of understanding and effectively treating substance abuse problems. They must also enable their students to develop a range of clinical competencies in this area. Substance abuse content must be increased on national board examinations and periodically updated. Drug abuse content presented in regional/State licensure examinations must also be expanded and regularly evaluated for revision.

Responsible Agents. The ADEA, the ADA's Council on Access, Prevention and Interprofessional Relations, the ADA's Joint Commission on National Dental Examinations, ADHA, NDTFSC, public health dentists, AADE, and selected individual dental faculty members. A special interest group of dental educators, meeting at the ADEA annual meeting, will design test questions to be included in regional/State licensure board examinations.

Expected Outcomes. Students will be given advance information on substance abuse issues and informed that this topic will be covered in their licensing examinations. Each national board licensure examination will incorporate substance abuse test items in its next revision. These items will assess the levels of substance abuse knowledge and clinical competency that each student has achieved. Within the next 3 years, all regional/State licensure examinations will include this type of substance abuse content.

5. Computer-assisted electronic technologies will be used to develop dentally oriented educational materials relating to substance use disorders. These teaching aids will be available to dental professionals via advanced communication methods.

Rationale. A significant number of oral health team members who practice in remote locations do not have the technological resources (Internet/World Wide Web) that would allow them access to the latest technical dental information. In contrast, many mainstream dental offices are computerized and thus able to participate in distance learning. Interdisciplinary substance abuse experts will soon develop educational materials designed for electronic delivery (computer-assisted instruction). Their target participants will include dentists in urban, rural, and frontier geographic areas. At a later time, more sophisticated, long-distance technology (e.g., teleconferencing, interactive video, library database access systems, interactive and multimedia programming) will be available, and materials relating to SUD could be communicated via these means. Adequate funding will be required to develop and implement these programs.

Recommended Actions. Private foundations, government agencies, and professional and educational organizations will provide funding to develop and deliver these educational packages. Academic faculty and professional health care workers will apply for these funds.

Responsible Agents. The ADA's Well-Being Program for Dentists, the ADA Standards Committee for Dental Informatics, the Health Resources and Services Administration Bureau of Health Professions (HRSA/BHPr), the Learning Center for Interactive Technology of the Education Technology Branch of the Lister Hill National Center for Biomedical Communication, United States Academy of Computerized Dentistry, university dental informatics department faculty.

Expected Outcomes. Within 3 years, private foundations, professional organizations and government agencies will sponsor three program development projects. Within 5 years, two special grant and scholarship programs, financed by Government agencies, will enable faculty members to develop interdisciplinary substance abuse educational materials.

Enhanced Faculty Training and Involvement

6. All dental schools should designate and train one or more faculty members to serve as interdisciplinary substance use disorder educators.

Rationale. Substance abuse issues and intervention skills cannot be effectively taught to dental students unless an interdisciplinary health care approach is used. By training one or more dental professionals to learn about and teach this approach, the academic institution will encourage a network of interested faculty to offer administrative support and participate in the ongoing development of interdisciplinary activities.

Action Required. Each dental school will designate one or more individuals to assume leadership in teaching interdisciplinary substance abuse education. The dental school will provide administrative support for this effort. The BHPr will provide support, as will private foundations. These groups will help to develop and offer recommendations to dental schools concerning the development of faculty leadership in interdisciplinary substance abuse education.

Responsible Agents. Deans, departmental chairs, and administrators of dental schools, the ADEA, the ADA's Well-Being Program for Dentists, HRSA/BHPr, in partnership with interested foundations (e.g., the Pew Foundation, Hartford Foundation).

Expected Outcomes. Within 2 years, a partnership between the HRSA/BHPr and various types of foundations will develop and disseminate detailed recommendations. Within 3 years, a minimum of five dental schools will choose certain faculty members to form an interdisciplinary education plan.

Intersection/Cooperation of Disciplines

7. To strengthen the cause, the tobacco education/control faction of dentistry will join with substance use disorder-oriented health care providers. This partnership will enable the two groups to discuss and develop cooperative ventures. These groups will join the health care providers responsible for teaching substance abuse education.

Rationale. Tobacco addiction should be acknowledged as a form of substance abuse. In fact, other forms of drug abuse and tobacco addictions commonly coexist, and their effects potentiate each other. Over the past 10 years, a number of dental educators have developed effective tobacco (smoked and smokeless) education and research programs. In dentistry, however,

substance abuse education has lagged behind tobacco-cessation efforts. These two action plans should be brought together under a cooperative umbrella. Each field has much to offer the dental profession, and both programs will be ultimately strengthened by joining forces.

Recommended Actions. Within dentistry, tobacco-cessation advocates and substance abuse education groups should meet regularly to exchange ideas and plan cooperative ventures.

Responsible Agents. The NCI's National Dental Tobacco-Free Steering Committee, the ADEA's Tobacco-Free Initiatives Special Interest Group, the ADA's Dentist Well-Being Program within the CDP, and dental school faculty who specialize in tobacco issues.

Expected Outcomes. A team approach will be established. Communication barriers between various addiction treatment disciplines will be greatly reduced. Health care providers who work with a specific type of drug abuser will meet with their cohorts who work with individuals specializing in other types of SUD. These professionals will share their knowledge and develop cooperative action plans.

Expanded Programs for Clinical Practitioners

8. The number of CE programs in substance abuse education for oral health care providers should be increased, and their availability should be widely publicized.

Rationale. In North America, relatively few substance abuse CE courses are available for the office-based dentist, and many general dentists receive no information about organized programs on this topic. The establishment of a CE clearinghouse will alleviate this problem. Additionally, more substance abuse CE programs for dentists and auxiliaries need to be established. A number of States require that dentists accrue a specific number of credits to maintain licensure. Earning these credits in substance abuse training would enable dentists to meet this requirement while becoming better prepared to intervene with substance-abusing patients.

Recommended Actions. Expand the number of CE programs in substance abuse education for oral health care providers. Develop a Web site that lists all CE programs on substance abuse education, including their dates and locations. If CE is mandated for maintaining State licensure, give optimal credit for the successful completion of CE courses.

Responsible Agents. The ADA, working with dental school faculty, the ADEA's Tobacco-Free Initiatives Special Interest Group, State boards of dental examiners, self-help recovery groups (such as Alcoholics Anonymous), and the National Dental Tobacco-Free Steering Committee.

Expected Outcomes. Within 5 years, CE courses on substance abuse education will be increased by 15%. Web site hits will steadily increase each year. Private practice dentists and dental auxiliaries will become significantly more involved in substance abuse intervention.

9. Dentists will become increasingly aware of their personal vulnerability to substance use disorders, and those who do become addicted will more readily seek intervention and treatment.

Rationale. Dentists are not immune to SUD. In fact, they are especially vulnerable because they work in a demanding, stressful profession; they are often isolated from their peers; and they tend to be compulsive and perfectionist in their behavior. Because dental professionals are relatively affluent and have easy access to prescription drugs, they are also at a higher risk for drug abuse.

Recommended Actions. Dentists need to be aware of their vulnerability to substance abuse and to the deleterious effects that addiction can have on their physical and emotional health, family relationships, professional lives, and community standing. When dealing with their own substance abuse, dentists must acknowledge that if they enter treatment, they will most probably recover and if they experience a temporary return to drug use (a “slip”) they are not in full-blown relapse and can view this temporary setback as a learning experience. They must develop a strong support system, both during treatment and aftercare. This network includes family, friends, employers, professional groups, and structured organizations (e.g., AA and NA, and AlAnon for family members). Additionally, the National Institute on Dentist Well-Being, which holds biannual meetings in Chicago, and the University of Utah School on Alcoholism and Other Chemical Dependencies, which meets annually in June, deal with the substance abuse problems of dentists.

Responsible Agents. The ADA’s Council on Dental Practice, ADA Web sites (<http://www.ada.org>), University of Utah School on Alcoholism and Other Chemical Dependencies, State and national dental journals and publications, dental society wellness programs, and dental educators.

Expected Outcomes. Professional awareness concerning the dentist’s vulnerability to SUD will be increased and perpetuated by information distributed through dental publications, the electronic media, and other sources. Many dentists with SUD will become more willing to openly acknowledge their problem and engage in timely and effective treatment.

10. All dental staff members must know basic information about substance use disorders because dental patients are usually team-treated. By having this knowledge, these team members will more readily recognize SUD that might occur within the dental family.

Rationale. The dental profession is team oriented. Each active dentist has four to five employees (i.e., dental hygienists, chairside assistants, receptionists, and secretaries). These staff members can be taught to recognize signs and symptoms exhibited by those who are suffering from SUD. Their new awareness will enable them to identify patients, colleagues, and health professionals with SUD.

Because a close working relationship develops among office personnel, they may share their impressions and opinions concerning a leader with SUD. Because this dentist for whom they work will usually try to hide the addiction, many difficulties within the office can result. The resulting chaos can even cause the practice to fail.

Recommended Actions. The dental staff must understand that persons with SUD within the dental practice system can cause serious professional, interpersonal, and personal problems. Staff members should receive balanced, state-of-the-art information about the prevention, recognition, and treatment of substance abuse. Current data on this topic should regularly appear in dental auxiliary publications (e.g., *RDH*, *The Dental Assistant*, *Journal of Dental Hygiene*) and textbooks. Staff members should be informed about substance abuse courses and be encouraged to take them.

Responsible Agents. ADHA, ADA, ADA, ADEA.

Expected Outcomes. An increasing number of dental professionals will acknowledge that substance abuse may occur not only in patients but also within the dental family. To address this problem, the profession will periodically distribute information through dental publications, the electronic media, and other sources. Dentists and staff members will develop ways to present a unified front as they identify and deal with substance abuse within the dental practice system.

11. A portion of State tobacco settlement funds should be targeted to integrate tobacco intervention education into dental school curricula, and to provide CE tobacco-cessation courses for practicing dentists. These CE programs should include improved access to substance abuse treatment for underserved populations, children, teens, and women.

Rationale. Oral health care providers must take immediate action to reduce the morbidity and mortality of tobacco-related diseases. Scientific evidence verifies that oral health care providers can be effective in reducing tobacco use among their patients. Tobacco counseling, however, is grossly underutilized within dental practice. To provide effective tobacco-cessation services, dentists need to become well prepared to facilitate tobacco-cessation programs. Office-based dental education in this arena is inadequate or nonexistent in most dental schools and among private practitioners. Funds received from individual State settlements with tobacco companies could finance health profession education in both tobacco cessation and prevention. For example, Mississippi has already allocated tobacco settlement funds that are now being used by dental educators in that State for tobacco-cessation programs in that location.

Recommended Actions. Constituent State dental societies of the ADA and dental school educators should formulate strategies that promote the use of State tobacco settlement funds for tobacco education and control. Dental tobacco-control programs should be designed to help targeted groups, e.g., underserved populations, children, adolescents, and women. Planning committees should confer with dental researchers/ clinicians in Mississippi who have successfully obtained and used funds for these purposes.

Responsible Agents. ADA, ADEA, Partnership for a Healthy Mississippi, dental school faculty involved in tobacco issues, attorney generals and State legislators, American Society for Addiction Medicine, and the Society for Research on Nicotine and Tobacco.

Expected Outcomes. Within 5 years, 10% of dental societies and educators will formulate strategies to tap into State tobacco settlement funds. They will use this money for tobacco education and control among underserved population groups. Tobacco control education for dental students and members of constituent dental societies will increase by 25%.

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The Physician's Role in Caring for Patients with Substance Use Disorders: Implications for Medical Education and Training

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Introduction

Alcohol and other drug abuse is a major preventable public health problem. Drug abuse is responsible for more than 25,000 deaths annually and \$100 billion in total annual economic costs in the United States.¹ Alcohol use in the United States is estimated to be responsible for 100,000 deaths annually and a health care cost of \$185 billion. Patients with alcohol problems consume more than 15% of the national health care budget, with 39% of these costs representing morbidity costs from secondary health and social effects. Recent surveys indicate that roughly 40 million Americans drink in excess of recommended amounts, and approximately 70% of adults visit a physician once every 2 years. Therefore, physicians are well positioned to play a critical role in the recognition and treatment of patients with substance use disorders (SUD). This paper outlines the rationale for greater physician involvement in recognizing and treating patients with SUD, describes current barriers to education in this field, and describes the successes of prior faculty development programs. In addition, it proposes a mechanism for developing core clinical competencies for all physicians that are appropriate to the level of clinical contact and training in caring for patients with these disorders.

Core Values and Paradigms of Physicians

Physicians' core values include the restoration of health, patient comfort, and quality of life whenever possible. These values are congruent with the diagnosis and treatment of patients with SUD. Although many physicians are well equipped to treat the medical and psychiatric complications of substance abuse, most are not prepared to treat substance abuse as a primary disorder. Despite the high prevalence of SUD in the general population² and its increased prevalence in medical settings,³ most physicians receive limited training in the science of addiction. This lack of training frequently results in missed opportunities for care.

The biomedical model, a central paradigm for physicians, states that disease is the result of perturbations in anatomy or physiology and stems from a combination of genetic, behavioral, and biologic phenomena. The recognition that SUD fit the criteria for the disease model,^{4,5} given validity by the American Medical Association⁶ (AMA) in

1966, came during a time of discoveries regarding the genetic, physiologic, and behavioral factors involved in the etiology, natural history, and treatment of these disorders.⁷ This biomedical "legitimacy," running counter to the popular misconception that these disorders stem from weakness of the will,^{8,9} provided support for the expansion of physicians' efforts on behalf of patients with SUD. The disease model, particularly the recognition that, for many patients, SUD are chronic diseases with periods of remission and relapse,¹⁰ has provided a basis for physicians to modify the natural history of these disorders and to intervene at stages ranging from at-risk use to abuse and dependence using standard medical approaches such as prevention, pharmacotherapy, and counseling. There has been recent attention paid to incorporating evidence-based medicine into treatment for patients with SUD.¹¹⁻¹⁵ This will help ensure that patients continue to benefit from care by well-trained physicians. One potential limitation of the traditional medical paradigm and approach to disease is its emphasis on organ-based pathology and the cure of acute

diseases.⁴ This paradigm may not adequately guide physicians in the management and care of patients with chronic diseases such as SUD. Treatment of SUD will more likely benefit from longitudinal patient and physician relationships and a mix of medical and psychosocial interventions.⁴

Broad Description of Physician Work Settings

Practicing physicians in the United States must have obtained either an M.D. (doctor of medicine or allopathic physician) or a D.O. (doctor of osteopathy) degree. Physicians with an M.D. degree represent approximately 93.5% of the current physician workforce, with osteopathic physicians representing just over 6.5% of the Nation's physicians. Physicians can be broadly classified as generalists or specialists. Generalist physicians provide primary and longitudinal care to patients in the fields of pediatrics, internal medicine, obstetrics/gynecology, and family medicine; in the case of emergency medicine, primary care is provided in the emergent setting. In contrast, specialist physicians typically provide care focused either by organ system (e.g., gastroenterology, cardiology) or technical expertise (e.g., interventional radiology, plastic surgery). Both generalist and specialist physicians have frequent contact with patients who have SUD.¹⁶⁻¹⁸

Generalist and specialty medical care is delivered in a variety of clinical settings. The majority of patient care is rendered in outpatient settings such as private offices, clinics, community health centers, urgent care centers, surgical centers, and emergency departments. A much smaller percentage of patient care is delivered in hospital settings; however, because of the intensity of services provided in the hospital, care provided in that setting consumes a disproportionate share of health care dollars. Individuals with SUD are disproportionately high consumers of hospital-based services, which makes hospitals a particularly important setting for offering substance abuse screening, intervention, and referral services.

An increasing number of physicians are acquiring specialty training in addiction medicine. Both allopathic and osteopathic physicians can obtain advanced training in addiction medicine through psychiatry fellowship programs sponsored by the American Board of Psychiatry and Neurology.¹⁹ Physicians may also pursue advanced certification in the diagnosis and management of SUD through the American Society of Addiction Medicine. In addition, the American Osteopathic Association (AOA) offers certificates of added qualifications in addiction medicine through the American College of Osteopathic Family Practice, the American College of Osteopathic Internists, and the American College of Osteopathic Neurology and Psychiatrists. Physicians with advanced training and certification in addiction medicine may provide a variety of clinical services ranging from consultations in outpatient

and hospital-based settings to the comprehensive medical care of patients in substance abuse treatment centers.

Resources available for the diagnosis and treatment of patients with SUD vary across medical settings and depend on the clinical expertise and experience of the practicing physician. However, given the prevalence of SUD and their adverse impact on comorbid medical conditions, all physicians should strive to screen patients at risk, apply diagnostic criteria to patients who screen positive, and provide brief interventions where indicated. Patients with more complicated problems should be referred specialty treatment resources.

Finally, physicians in nonclinical settings such as academics, administration, public health, government, business, and community service can also play a significant role in improving the care provided to patients with SUD.

Historical Profile of Work in Substance Abuse and Educating Health Professionals in SUD by Physicians

Early physician involvement in the care of patients with SUD focused primarily on the adverse medical complications of alcohol and other substances and tended to have limited effectiveness because it was not based on a recognition of the disease process. More recent involvement by physicians in the treatment of patients with these disorders has paralleled societal tolerances to the problems of addiction.⁹ Physicians in the late 19th and early 20th centuries used medicinal compounds that often included high concentrations of alcohol, opium, codeine, heroin, and cocaine. Heroin was used for the treatment for cough, and cocaine was used for allergy symptoms.⁹ At the turn of the 20th century, physicians providing maintenance treatment for patients with opioid dependence were halted by the Harrison Act of 1914 and a Federal legislative policy against maintenance that accompanied Prohibition in 1919.⁹

Later 20th-century physician efforts in the treatment of SUD include, among others, research on the natural history and mechanism of the alcohol withdrawal syndrome,²⁰ the demonstration of the effectiveness of methadone maintenance for opioid dependence,²² and the recognition of the adverse effects of alcohol on fetal development.²³ Physicians have also been involved in developing and implementing effective psychosocial treatments for SUD, including motivational techniques, cognitive behavioral therapy, contingency management, and self-help group facilitation.²⁴ Key elements of these psychosocial interventions have been identified and used successfully by physicians during brief interventions with patients who have SUD.^{15,25} Recent advances in understanding the neurochemical basis of SUD have allowed physicians to use pharmacologic interventions such as disulfiram, naltrexone,

and acamprostate for alcohol dependence.^{7,26-31} Pharmacotherapies that have been successfully used by physicians for detoxification and relapse prevention of opioid dependence include methadone, buprenorphine, levo alpha acetyl methadol (LAAM), naltrexone, clonidine, and lofexidine.^{22,32-37}

Enhanced efforts to train physicians in the care of patients with SUD resulted from the increase in substance abuse during the 1960s and continued progress in understanding the biomedical basis of these disorders. One of the earliest meetings on the deficiencies in the traditional medical school curriculum and the need for better professional training was sponsored by the National Council on Alcoholism in 1970.¹ Early efforts by the AMA and the Medical Society on Alcoholism were directed toward increasing physician education about SUD.⁴ Later, Federal funding for the Career Teacher Program in the Addictions provided faculty support to 59 medical schools and represented a successful effort to increase the number of academic physicians who could teach other physicians about SUD.³⁸ One result of this program was the creation in the National Institute on Alcohol Abuse and Alcoholism (NIAAA) and the National Institute on Drug Abuse (NIDA) of offices to administer efforts to improve alcohol and drug abuse education for health professionals.¹ In addition, two prominent research societies, the Research Society on Alcoholism and the Committee on Problems of Drug Dependence, have provided a national and international forum for sharing current research findings.

A landmark conference held at the Ninth Annual Meeting of the Association for Medical Education and Research in Substance Abuse (AMERSA) in 1985 addressed the issues of the minimal alcohol and drug abuse knowledge and skills for physicians. The conferees concluded that information on SUD should be routinely integrated with preclinical course work and repeated during subsequent years.¹

Concurrent with these early programs were efforts to provide resources and faculty development, including Project CORK⁴ and Project ADEPT³⁹ and efforts by members of the Society of General Internal Medicine and the Society of Teachers of Family Medicine, the Ambulatory Pediatric Association, the American Psychiatric Association, the American College of Emergency Physicians, and the American College of Obstetricians and Gynecologists.⁴⁰ Seven-year follow-up of one of these programs demonstrated ongoing success in promoting publications, presentations at national meetings, and clinical teaching by the fellowship participants.⁴⁰

More recently, Federal support for faculty development in substance abuse education and training has come through the Federal Medicine Grants Program and the Faculty Development Program (FDP), established in 1989 by the Center for Substance Abuse Prevention (CSAP), NIAAA, and NIDA. Between 1989 and 1995, the FDP

provided grants to 14 medical schools supporting 69 faculty fellows in pediatrics (26%), internal medicine (22%), psychiatry (19%), family medicine (14%), and obstetrics/gynecology (9%). A recent evaluation of this program found that it produced significant increases over the 6-year period in faculty activity in SUD as measured by faculty time, publications, grants, and course work.⁴¹ For instance, faculty fellows with substance abuse-related grants increased from 8% at Year 1 to 26% at Year 5. Similarly, the percentage of FDP project directors who were awarded new substance abuse-related grants increased from 15% during Year 1 to 55% at Year 5.⁴¹

Another recent model of successful faculty development is represented by Project SAEFP (Substance Abuse Education for Family Physicians) in which 165 faculty participated in a 5-day course using learner-centered teaching techniques. An evaluation of this program revealed a two- to three-fold increase in substance abuse teaching activities by faculty with residents and medical students 12 months after the completion of the course.³⁸

In summary, FDPs designed to bring about substantive increases in the number of faculty who are trained to provide clinical teaching in the area of SUD have repeatedly demonstrated success in achieving these goals. Faculty participants have increased their teaching; maintained continued scholarly work, including manuscripts and presentations at national meetings; and secured grant funding to continue research and education in the field of SUD.

Critical Issues, Obstacles, and Challenges

There is evidence that physicians are not adequately trained in the recognition and treatment of SUD. In a survey of 1,082 physicians on their screening practices regarding illicit drug use, 68% reported that they regularly ask new outpatients about drug use. For diagnosed illicit drug abuse, 55% reported that they routinely offer formal treatment referral, but 15% reported that they do not intervene.² In a similar survey about alcohol problems, 88% of 853 respondent physicians indicated that they usually or always ask new outpatients about alcohol use. When evaluating patients who drink, 82% routinely offered intervention to problem drinkers,³ but only 13% used formal alcohol screening tools. A recent survey of emergency medicine residency directors revealed that only 25% provide education on specific screening questionnaires and only 36% teach the NIAAA quantity and frequency guidelines for at-risk drinking.⁴

Undergraduate Medical Education

United States medical schools receive accreditation through the Liaison Committee for Medical Education (LCME) (M.D. degree) or the Council on Predoctoral Education of the AOA (D.O. degree). These entities set curricular standards for the education that leads to eligibility for

physician licensure. Most of the first 2 years of medical education takes place in classrooms and laboratories, as students learn basic medical sciences, in general and then by organ system. Students also learn basic communication skills and how to take a patient history and perform a physical examination in the first 2 years. Most schools require some clinical experience in the first 2 years, most of which is observational. Most of the latter 2 years of medical education takes place in clinical settings. Here students learn to apply basic science knowledge and clinical skills in caring for patients under the direct supervision of faculty and residents.

Medical students may be exposed to substance abuse education in a variety of settings. During the first 2 years of medical school, substance abuse topics may be integrated into standard course work or taught as separate courses in addiction medicine. During the final 2 years of medical school, students on required and elective clinical clerkship rotations may experience specific substance abuse services. More commonly, however, educators formally or informally integrate substance abuse goals and objectives into clinical rotations such as internal medicine, family medicine, neurology, and psychiatry.

Dedicated training in SUD is rarely offered in medical schools. In 1981, a national survey of allopathic medical schools found that while 40% offered elective courses in substance abuse, fewer than 1% provided required courses.^{4,42} A survey of 98 medical schools in 1986 with an 85% overall response rate revealed that the proportion of departments that offered a curriculum unit in substance abuse was 41/89 (46%) for internal medicine, 52/78 (67%) for family medicine, and 82/84 (98%) for psychiatry,⁴³ with just more than half (53%) of these offering clinical experiences. A 1998-1999 LCME survey found that of the 125 accredited U.S. medical schools, training in substance abuse was provided as part of a larger required course in 119 (95%), Only 10 (8%) had a separate required course, and 45 (36%) offered an elective course on this topic.⁴⁴ The American Association of Colleges of Osteopathic Medicine (AACOM) surveyed colleges of osteopathic medicine to evaluate curricular offerings during the 1998-1999 academic year. All colleges reported offering substance abuse content in their curricula. On average, 4% of the curriculum time was reported as dedicated to substance abuse (Douglas Wood, personal communication). In 1998, the American Osteopathic Academy of Addiction Medicine surveyed 17 osteopathic schools to determine the curricular offerings in substance abuse. Only 3 of 11 schools that responded reported offering separate courses in addiction medicine during the first 2 years of medical school (Anthony Dekker, personal communication). None of the schools required a clinical clerkship rotation in substance abuse during Years 3 and 4; however, most offered elective rotations for interested students. Data are not available on the percentage of osteopathic students electing substance abuse rotations.

While separate courses and clerkships on SUD can be considered, a disseminated teaching model for training on SUD may also be appropriate. In this model, the basic science of addiction might be taught with other neurophysiology courses; the pharmacology of addictive substances would be taught in pharmacology; history-taking skills around SUD could be taught with other history-taking skills; intervention would be taught in a primary care rotation; and specialty-based addiction treatment would be covered in psychiatry. While different models for integrating training in SUD can be envisioned, it is not clear which is the most effective.

Graduate Medical Education

The American College of Graduate Medical Education (ACGME) oversees the training of 98,220 postgraduate (resident) physicians and the accreditation of 7,731 residency training programs in 99 specialty and subspecialty areas. Although several professional organizations have called for a greater integration of substance abuse education into allopathic and osteopathic residency training programs, the impact of these recommendations has been variable. For example, although the ACGME was represented in the development of the Policy Report of the Physician Consortium on Substance Abuse Education, substantive changes in Residency Review Committee (RRC) standards, requiring expanded integration of substance abuse curriculum into residency programs, never occurred (John Gienapp, personal communication). A similar lack of impact was seen in osteopathic residency training standards (Eugene Oliveri, personal communication). Recent data indicate that there are RRC program requirements regarding substance abuse education in only 5 of the 99 specialty training programs (anesthesiology, family practice, internal medicine, obstetrics/gynecology, and psychiatry).⁴⁵

A survey conducted in 1988 with a 74% response rate revealed that the proportion of departments that offered a curriculum unit in substance abuse was 93/232 (40%) for internal medicine, 195/288 (68%) for family medicine, 38/139 (27%) for pediatrics, and 153/169 (91%) for psychiatry.⁴³ A recent national survey was conducted to determine the extent of substance abuse training in residency programs. This survey of 1,831 allopathic and osteopathic residency program directors in emergency medicine, family medicine, internal medicine, pediatrics, psychiatry, and obstetrics/gynecology found that the percentage of programs requiring substance abuse training ranged from 32% (pediatrics) to 95% (psychiatry), yielding a combined average of 65%. The median number of curricular hours ranged from 3 to 12. The traditional grand rounds lecture was the most common curricular format used to teach substance abuse topics; only family medicine (55%) and psychiatry (75%) reported that a majority of their programs required clinical rotations in substance

abuse. While physician training should be geared toward a broad range of skills, including screening, intervention, referral, and follow-up care, it would be desirable that some proportion of substance abuse training be performed in specialized settings in order to expose trainees to this type of care. A separate survey has revealed that fewer than 10% of the faculty who teach substance abuse topics perform clinical work in alcohol and drug treatment programs, and that teaching is infrequently performed in these settings.⁴⁶

In summary, there is wide variation in the provision of training on SUD in residency training, with most programs providing minimal training. In addition, there is a heavy reliance on lectures and little clinical contact with treatment professionals in treatment programs. The implication of these findings is that this training is less likely to have a significant impact on resident's development of the necessary clinical knowledge, skills, and attitudes. Finally, recent surveys report that the most commonly cited factors limiting further integration of substance abuse training into residency programs include a perceived lack of time, faculty expertise, identified training sites, and institutional support.^{46,47}

Core Competencies for Physicians

The critical core competencies for physicians, obtained during medical school and residency training, include a firm understanding of the basic biomedical sciences (e.g., molecular biology, genetics, anatomy, physiology, pharmacology, pathology) and the clinical sciences (e.g., patient interviewing, physical diagnosis, diagnostic reasoning, clinical epidemiology, and psychosocial counseling techniques). All of these competencies have direct application to the care of patients with SUD.

Efforts have been made at all levels of medical education to teach competencies needed to care for patients with substance abuse problems presenting in a variety of clinical settings. These efforts have been effective in demonstrating the medical basis of SUD and creating a clinical paradigm similar to that for other chronic diseases. The depth of these curricular initiatives, however, varies by clinical discipline and academic institution. Support is needed for efforts to more fully integrate effective curricula on SUD into the mainstream of undergraduate, graduate, and continuing medical education (CME) across the disciplines.

The competencies listed in this chapter are intended to apply to a variety of disciplines in medicine and will need to be tailored to specific practice situations and patient populations. For instance, for pediatric and family physicians emphasis should be placed on competencies pertaining to substance use in adolescents and on the need for competence in screening, intervention, and referral. In addition, these physicians will need to consider the

difficulties encountered by children and adolescents who have parents with SUD and acquire competencies in screening and intervention for these situations. In a like fashion, specialists in obstetrics/gynecology and family medicine should be able to address substance-related issues in pregnancy and should acquire competencies in identification, intervening, and referral for these patients. Finally, physicians serve a wide variety of patients with diversity in gender, socioeconomic status, and aspects of culture, and these physicians must be culturally competent in communication with these patients, families, and communities.

Vision for the Future

Significant efforts must be made to increase the level of physician education in substance abuse to make it proportionate to the clinical and economic impact of SUD. The framework for these efforts is outlined in the following section.

Funding Priorities

Despite the success of prior FDPs in producing faculty who are capable of generating significant grants, publications, and course work,⁴¹ the large gaps in undergraduate, graduate, and postgraduate medical education⁴⁵ demonstrate that increased efforts are needed. Future efforts to improve physician education in SUD will need significant programmatic and financial support to build on successful programs and extend these efforts to a greater number of providers and patients.

Faculty Development

Broadening the infrastructure of faculty who are trained in the sciences of diagnosis, treatment, and teaching about SUD should be a major priority for future efforts in this field. Federally supported FDPs for physicians in all disciplines of medicine that use unique funding mechanisms such as student loan repayment and salary support could ensure that physician trainers are available to educate medical students, residents, and practicing physicians in the importance of developing the core competencies for recognition and treatment of SUD.

Research Grant Support

Increased grant support for research designed to foster physicians' competencies in SUD will not only stimulate research in the field but also provide needed support to faculty with critical research agendas. Examples of potential research agendas for these faculty include determining the appropriate health care profession to perform a brief intervention, determining the critical components of brief interventions, exploring the need to adapt screening and brief intervention strategies to special populations, and determining the most effective teaching strategies for training clinicians in screening and brief interventions. The opportunities to compete for research grants in these areas

will help stimulate faculty interest, promote career development for faculty interested in this field, create new and useful knowledge, and add legitimacy to the field. Successful grantees will also serve as role models or mentors for junior faculty members.

Institutional Support

Institutional support for faculty working in the field of SUD can be developed via funding mechanisms that are designed to foster development of curriculum or research efforts. Funds that are targeted toward programs that cut across disciplines (e.g., medicine, social work, nursing) will foster development of collaborative research and training efforts and help engender institutional support.

Centers of Excellence

National Centers of Excellence are needed to serve as model programs that are focused on developing, disseminating, and implementing methods of research, clinical care, and education in SUD. These centers can participate in a network to develop and implement a standard curriculum for undergraduate, graduate, and postgraduate medical education. Current federally supported initiatives with national infrastructures, such as the Area Health Education Centers supported by the Health Resources and Services Administration, the Addiction Technology Transfer Centers supported by the Center for Substance Abuse Treatment, and the Clinical Trials Network supported by NIDA, can provide a framework upon which to build these proposed centers.

Recommendations

Core Competencies in Substance Abuse Education for Physicians

The following competencies are presented as three levels of involvement in the care of patients with SUD. All physicians with clinical contact should strive to provide Level I competence. Level II competence should be sought by all physicians coordinating care for patients with SUD (e.g., primary care and generalist physicians). Level III competence should be sought by all physicians providing specialty services to patients with SUD. Table 1 lists the competencies for each level.

Table 1. Critical Core Competencies in Substance Abuse Education for Physicians

Level I: All physicians with clinical contact should:

1. Be able to perform age, gender, and culturally appropriate substance abuse screening.
2. Be able to provide brief interventions to patients with SUD.
3. Be able to use effective methods of counseling patients to help prevent SUD
4. Be able to refer patients with SUD to treatment settings that provide pharmacotherapy for relapse prevention.
5. Recognize and treat or refer comorbid medical and psychiatric conditions in patients with SUD.
6. Be able to refer patients with SUD to appropriate treatment and supportive services.
7. Be aware of the ethical and legal issues around physician impairment from SUD and of resources for referring potential impaired colleagues, including employee assistance programs, hospital-based committees, State physician health programs, and licensure boards.
8. Identify the legal and ethical issues involved in the care of patients with SUD.

Level II: All physicians coordinating care for patients with SUD in addition should:

1. Use effective methods to assess patients with SUD.
2. Provide pharmacologic withdrawal to patients with SUD.

Level III: All physicians providing specialty services to patients with SUD in addition should:

1. Provide pharmacotherapy for relapse prevention in patients with SUD.
 2. Provide, or refer for psychosocial counseling for relapse prevention in patients with SUD.
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Recommendations for Level I Competencies

All physicians with clinical contact should have Level 1 competencies.

Level I, Competency 1

Physicians should be able to perform age, gender, and culturally appropriate substance abuse screening.

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- 1. Physicians' training curricula and licensing examinations at all levels should be modified to include content on the use of effective methods of screening patients for SUD. A curriculum in screening for SUD should be required and integrated into the standard curricula of all medical schools and residency training programs. As a requirement for graduation, medical students should demonstrate competency in screening, intervention, and referral for SUD (consistent with Competencies I-2 and I-4 below). Licensing examinations should include content and questions relevant to appropriate screening strategies for patients with SUD. Increased curricular**

content on screening for SUD should be available through CME programs. The development, dissemination, and maintenance of these curricula should be coordinated by a lead Federal agency with input from all appropriate Federal agencies and professional societies.

Rationale. Screening involves identifying patients with unrecognized SUD.¹² Screening for diseases is warranted if the following conditions are met: the disease has a significant prevalence and consequences; effective and acceptable treatments are available; early identification and treatment are preferable; and there are effective screening instruments available that are easy to administer. There is strong research evidence to support the fact that SUD meet all of these criteria; therefore, screening for SUD is indicated although not often implemented.

Recommended Actions. Training in screening for SUD should include attention to the rationale, utility, operating characteristics, and use of various methods including the importance of raising the topic and the appropriate role of formal screening instruments (e.g., CAGE, AUDIT), quantity-frequency questions, and biological markers (e.g., MCV, AST, ALT, carbohydrate-deficient transferrin).^{12, 48-54}

Responsible Agents. LCME, RRC of the ACGME, AMA, AOA, United States Medical Licensure Examination (USMLE), and American Board of Medical Specialties (ABMS).

Level I, Competency 2

Physicians should be able to provide brief interventions to patients with SUD.

2. A required curriculum in brief treatment interventions for individuals with SUD should be integrated into the standard curricula of all medical schools and residency training programs. This curriculum should outline the components of brief interventions that have demonstrated effectiveness. As a requirement for graduation, medical students should demonstrate competency in brief intervention for patients with SUD. Licensing examinations should include content and questions relevant to appropriate treatment strategies for individuals with SUD. Increased curricular content should be available through CME programs. The development, dissemination, and maintenance of these curricula should be coordinated by a lead Federal agency with input from all appropriate Federal agencies and professional societies.

Rationale. There is evidence that brief interventions can reduce alcohol consumption to below hazardous levels for patients with hazardous and harmful drinking.^{31,55} The incorporation of substance abuse services into settings will allow for a direct expansion of the capacity of the health care system and will help increase access to care for a wide range of patients.^{56,57}

Recommended Actions. Training in SUD should devote attention to the effectiveness of office-based interventions for SUD, including the role of brief interventions in patients with alcohol problems.

Responsible Agents. LCME, RRC of the ACGME, AMA, AOA, USMLE, and ABMS.

Level I, Competency 3

Physicians should use effective methods of counseling patients to help prevent SUD.

3. A required curriculum in counseling to help prevent the development and progression of SUD should be integrated into the standard curricula of all medical schools and residency training programs. This should include information on community prevention of SUD. Licensing examinations

should include content and questions relevant to appropriate prevention of SUD. Increased curricular content should be available through CME. The development, dissemination, and maintenance of this curriculum should be coordinated by a lead Federal agency with input from all appropriate Federal agencies and professional societies.

Rationale. Prevention of harm from the use of psychoactive substances can help decrease the impact of SUD on the individual and society.^{58,59} For instance, decreasing alcohol consumption among pregnant women can have a significant impact on the incidence of the fetal alcohol syndrome.²³ In addition, recent efforts at early recognition and treatment from hazardous and harmful drinking are aimed at decreasing progression to more severe alcohol problems that are traditionally less amenable to treatment.⁵⁵ While the risk factors for SUD, including specific genetic markers, are still being elucidated, and the determinants of progression from substance use to abuse and subsequent dependence are under evaluation, early recognition and intervention by physicians can be effective in decreasing progression from less severe to more severe SUD.

Recommended Actions. Training in SUD should devote specific attention to the effectiveness of counseling patients to help prevent the development or progression of SUD using formal counseling and brief interventions.

Responsible Agents. LCME, RRC of the ACGME, AMA, AOA, USMLE, and ABMS.

Level I, Competency 4

Physicians should be able to refer patients with SUD to treatment settings that provide pharmacotherapy for relapse prevention.

4. A required curriculum in the available pharmacotherapy for SUD should be integrated into the standard curricula of all medical schools and residency training programs. Licensing examinations should include content and questions relevant to appropriate prevention of SUD. Increased curricular content should be available through CME. The development, dissemination, and maintenance of this curriculum should be coordinated by a lead Federal agency with input from all appropriate Federal agencies and professional societies.

Rationale. Recent research has highlighted the role of neurochemistry in the etiology and maintenance of SUD. For instance, there is evidence for involvement of the dopamine, GABA, serotonin, and opioid systems in alcohol use disorders, and chronic exposure to narcotics is known to create fundamental changes in receptors and intracellular messaging in patients with opioid dependence.^{7,60-62} These insights have created new pharmacologic therapies such as naltrexone, acamprosate, and buprenorphine that are aimed at preventing relapse.^{26,28,31,63}

Recommended Actions. Training in SUD should devote attention to the effectiveness of pharmacotherapy to help prevent relapse in abstinent patients with SUD.

Responsible Agents. LCME, RRC of the ACGME, AMA, AOA, USMLE, and ABMS.

Level I, Competency 5

Physicians should recognize and treat or refer comorbid medical and psychiatric conditions in patients with SUD.

5. A required curriculum in the medical and psychiatric comorbidities of SUD should be integrated into the standard curricula of all medical schools and residency training programs. Increased curricular content should be available through CME. The development, dissemination, and maintenance of

this curriculum should be coordinated by a lead Federal agency with input from all appropriate Federal agencies and professional societies.

Rationale. Population surveys have revealed high rates of comorbid medical and psychiatric disorders in patients with SUD. For instance, the Epidemiological Catchment Area and the National Comorbidity Study surveys have found a 29% to 37% prevalence of comorbid psychiatric disorder in patients with alcohol problems.^{2,64} In addition, abused substances and the route used to administer (e.g., injection) these substances are associated with significant comorbid medical conditions such as hepatitis B and C, endocarditis, human immunodeficiency virus infection and AIDS, tuberculosis, and cirrhosis.^{65,66}

Recommended Actions. Training in SUD should devote attention to the recognition, treatment, or referral of comorbid medical and psychiatric conditions in patients with SUD.

Responsible Agents. LCME, RRC of the ACGME, AMA, AOA, USMLE, and ABMS.

Level I, Competency 6

Physicians should be able to refer patients with SUD to appropriate treatment and supportive services.

6. A required curriculum in the process of evaluation and referral of patients with SUD should be integrated into the standard curricula of all medical schools and residency training programs. As a requirement for graduation, medical students should demonstrate competency in referral for patients with SUD. Licensing examinations should include content and questions relevant to the appropriate referral of patients with SUD. Increased curricular content should be available through CME. The development, dissemination, and maintenance of this curriculum should be coordinated by a lead Federal agency with input from all appropriate Federal agencies and professional societies.

Rationale. Multicenter randomized clinical trials such as Project MATCH and data from the Drug Abuse Treatment Outcome Study have demonstrated the efficacy of a variety of treatment services for patients with SUD.⁶⁷⁻⁶⁹ In addition, successful referrals to treatment require an accurate assessment of a patient's diagnosis and an understanding of the treatment process.

Recommended Actions. Training in SUD should devote attention to the effectiveness of appropriate referral of patients to substance use services, including formal treatment programs.

Responsible Agents. LCME, RRC of the ACGME, AMA, AOA, USMLE, and ABMS.

Level I, Competency 7

Physicians should be aware of the ethical and legal issues around physician impairment from SUD and of resources for referring potential impaired colleagues, including employee assistance programs, hospital-based committees, State physician health programs, and licensure boards.

7. Physicians' training curricula and licensing examinations at all levels should be modified to include content on the recognition and referral for treatment of physicians and health professionals impaired by SUD. A required curriculum in the recognition and referral of physicians and other health professionals impaired by SUD should be integrated in the standard curricula of all medical schools and residency training programs. Licensing examinations should include content and questions relevant to the recognition and referral of physicians and other health professionals with SUD. Increased curricular content should be available through CME programs.

The development, dissemination, and maintenance of this curriculum should be coordinated by a lead Federal agency with input from all appropriate Federal agencies and professional societies.

Rationale. Unrecognized and untreated physicians and other health professionals impaired by substance use can constitute a major threat to patient safety and the integrity of the medical profession.⁷⁰ Successful programs have been developed to assist physicians and other health professionals who have been recognized and referred to treatment.^{38,71} The RRC has recognized the importance of these practices and specified institutional requirements for policies that cover physician impairment, and in one instance (i.e., internal medicine), there is a specialty requirement.⁴⁵

Recommended Actions. Training in SUD should devote attention to the effectiveness of recognition and referral of impaired physicians and other health professionals with SUD.

Responsible Agents. LCME, RRC of the ACGME, AMA, AOA, USMLE, and ABMS.

Level I, Competency 8

Physicians should identify the legal and ethical issues involved in the care of patients with SUD.

8. A required curriculum in the ethical and legal complications of SUD should be integrated into the standard curricula of all medical schools and residency training programs. Licensing examinations should include content and questions relevant to the ethical and legal complications of SUD. Increased curricular content should be available through CME programs. The development, dissemination, and maintenance of this curriculum should be coordinated by a lead Federal agency with input from all appropriate Federal agencies and professional societies.

Rationale. SUD are frequently associated with legal complications stemming from use (e.g., driving under the influence) or impaired judgment. Ethical considerations, such as patient confidentiality, are important aspects of caring for patients with SUD.

Recommended Actions. Training in SUD should devote attention to the legal and ethical issues in caring for patients with SUD.

Responsible Agents. LCME, RRC of the ACGME, AMA, AOA, USMLE, and ABMS.

Recommendations for Level II Competencies

All physicians coordinating care for patients with SUD (e.g., primary care and generalist physicians) should have Level I and Level II competencies.

Level II, Competency 1

Physicians should use effective methods to assess patients with SUD.

1. A curriculum in the assessment of patients with SUD should be integrated into the curricula of all medical schools and appropriate residency training programs. Licensing examinations in the appropriate disciplines should include content and questions relevant to methods to assess patients with SUD. Increased curricular content should be available through CME programs. The development, dissemination, and maintenance of this curriculum should be coordinated by a lead Federal agency with input from all appropriate Federal agencies and professional societies.

Rationale. Assessment involves identifying the realms of a patient's life affected by SUD. Criteria exist for the diagnosis of substance dependence syndromes⁷² and instruments are available to assess the severity of SUD, such as the Addiction Severity Index,⁷³ which evaluates the spectrum of areas affected by SUD (e.g., medical, psychosocial, legal, and family domains). Assessment of these domains is necessary to understand the full impact of SUD on the individual.

Recommended Actions. Training in SUD should include attention to the medical, psychological, family, legal, and employment complications attributed to SUD.

Responsible Agents. LCME, RRC of the ACGME, AMA, AOA, USMLE, and ABMS.

Level II, Competency 2

Physicians should provide pharmacologic withdrawal to patients with SUD.

2. A curriculum in the pharmacologic withdrawal of patients with SUD should be integrated into the curricula of all medical schools and appropriate residency training programs. Licensing examinations in appropriate disciplines should include content and questions relevant to methods to provide withdrawal to patients with SUD. Increased curricular content should be available through CME programs. The development, dissemination, and maintenance of this curriculum should be coordinated by a lead Federal agency with input from all appropriate Federal agencies and professional societies.

Rationale. Recent clinical trials have provided empirical evidence for efficient and effective care of patients requiring detoxification services in office-based settings.^{13,74} In addition, the use of symptom-triggered, instead of fixed, doses of benzodiazepines has been shown to reduce length of stay and cost for patients treated for alcohol withdrawal.^{13,75} In opioid-dependent patients, updated regimens and new medications have extended the utility of these services in inpatient and outpatient settings.^{32,63,76,77}

Recommended Actions. Training in SUD should include attention to the role and logistics of detoxification for patients with SUD.

Responsible Agents. LCME, RRC of the ACGME, AMA, AOA, USMLE, and ABMS.

Recommendations for Level III Competencies

Level III competence should be sought by all physicians providing specialty services to patients with SUD.

Level III, Competency 1

Physicians should provide pharmacotherapy for relapse prevention in patients with SUD.

1. A curriculum in pharmacotherapy to help prevent relapse in abstinent patients with SUD should be integrated into the curricula of all medical schools and appropriate residency training programs. Licensing examinations in appropriate disciplines should include content and questions relevant to pharmacotherapy for relapse prevention in abstinent patients with SUD. Increased curricular content should be available through CME programs. The development, dissemination, and maintenance of this curriculum should be coordinated by a lead Federal agency with input from all appropriate Federal agencies and professional societies.

Rationale. Effective new therapies are available for patients with alcohol problems.^{26,28,31,63} Methadone maintenance has demonstrated efficacy in decreasing illicit drug use, HIV transmission, and criminal activity.⁶³ In addition, office-based pharmacologic treatments have been shown to be effective for opioid-dependent patients previously stabilized at narcotic treatment programs⁷⁸⁻⁸⁰ and for those actively using drugs.^{33,76,77}

Recommended Actions. Training in SUD should include information on the effectiveness of pharmacotherapies to help prevent relapse in abstinent patients with SUD.

Responsible Agents. LCME, RRC of the ACGME, AMA, AOA, USMLE, and ABMS.

Level III, Competency 2

Physicians should provide, or refer for, psychosocial counseling for relapse prevention in patients with SUD.

2. A curriculum in psychosocial therapies to help prevent relapse in abstinent patients with SUD should be integrated into the curricula of all medical schools and appropriate residency training programs. Licensing examinations in appropriate disciplines should include content and questions relevant to psychosocial therapy for relapse prevention in abstinent patients with SUD. Increased curricular content should be available through CME programs. The development, dissemination, and maintenance of this curriculum should be coordinated by a lead Federal agency with input from all appropriate Federal agencies and professional societies.

Rationale. Effective new psychosocial therapies are available for patients with SUD.^{24,31,55,68,69}

Recommended Actions. Training in SUD should include information on the effectiveness of psychosocial therapies to help prevent relapse in abstinent patients with SUD.

Responsible Agents. LCME, RRC of the ACGME, AMA, AOA, USMLE, ABMS, and appropriate Federal agencies.

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The Role of Midwives in Caring for Women with Substance Use Disorders: Implications for Training

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Introduction

Midwives have a long history of providing care for women during childbirth. Currently, 95% of the world's babies are delivered by midwives.¹ In the United States, midwives have evolved from the original lay midwife, who emigrated with her ethnic community and attended home births, to the certified nurse-midwives and certified midwives (hereafter referred to as “midwives”) of today, who provide a full scope of services to women in all sectors of society in a variety of settings. According to the American College of Nurse-Midwives (ACNM), the professional organization for midwives in the United States, the standard for the practice of midwifery is “the independent management of women’s health care, focusing particularly on pregnancy, childbirth, the postpartum period, care of the newborn, and the family planning and gynecological needs of women.”² Midwives practice within a health care system that provides consultation, collaborative management, or referral as indicated by the health status of the client. Midwives practice in accord with the Standards of Nurse-Midwifery, as defined by the ACNM.²

The first nurse-midwifery service in the U.S. provided care for the women of Appalachia. Myra Breckenridge, founder of the service, demonstrated the effectiveness of midwifery to vulnerable populations by documenting a rapid decline in infant and maternal mortality. Midwives of today serve vulnerable populations in disproportionate amounts, which increases the likelihood that they will encounter substance use disorders (SUD) among the women in their care.

The past two decades have seen a significant increase in SUD among childbearing women, with various adverse effects on the pregnant woman and her newborn. Midwives are in an advantageous position to recognize and intervene with women who have SUD along the life span, but primarily during the particularly vulnerable time of pregnancy. Because of this unique opportunity, midwives should be knowledgeable about SUD and possess the necessary skills to intervene effectively with women affected by these disorders. This chapter describes the need to define basic substance abuse education for midwives, as well as the policy efforts required by the ACNM and others to mandate clinical guidelines for such training.

Core Values and Paradigms of Midwifery Care

Eight standards of care established by the ACNM define who can provide care and how it should be delivered. These standards describe the core values of midwifery. Standard I states that midwifery care is provided by qualified practitioners, who are certified by an ACNM-approved certifying agency; demonstrate evidence of continuing competency; and comply with the legal

requirements of the jurisdiction in which the practice occurs. Standard II describes midwifery care as that which supports individual rights and self-determination, within boundaries of safety, through practice in accordance with the philosophy and code of ethics defined by the ACNM. It provides complete information on the scope of services provided by midwives and promotes the involvement of support staff in practice settings. The remaining six standards describe more specifically how care should be provided,

such as in a safe environment, within a system that provides collaboration and referral, with proper documentation, and within established programs for quality assessment.

The mission, philosophy, and code of ethics, defined for the profession by the ACNM Board of Directors and approved by its membership, further define the core values of midwives. Providing full disclosure, supporting individual rights and self-determination, promoting involvement of support persons, and the belief in pregnancy and childbirth as normal processes are the hallmarks of midwifery care. While individual midwives may provide care differently, depending on both the midwife and the setting, the belief that pregnancy and childbirth are normal processes is fundamental. From this perspective, midwives generally approach care from a stance of overseeing rather than directing. Midwives generally offer a great deal of education to their patients, assist them in making decisions rather than tell them what to do, and support those choices as long as they are safe for both mother and baby. The belief in the normalcy of pregnancy and birth has allowed midwives to offer this type of interactive care to women of varying socioeconomic status and educational levels, both in and out of the hospital.

Midwifery care has evolved over time. Early midwives provided care in the home or hospital-based public clinics, focusing almost exclusively on childbirth. Today's midwives practice in and out of the hospital, in private and public practice. They provide care to women throughout the life span, with an increased emphasis on gynecology and family planning. Throughout the history of midwifery, midwives have provided care to the essentially healthy woman. There has been, as well, a continuation of care to vulnerable populations, many of whom are at increased risk for adverse outcomes, such as low birthweight and preterm babies. Just as Breckenridge demonstrated that midwifery care can positively affect infant and maternal mortality rates, subsequent studies have demonstrated continued efficacy in providing care to vulnerable populations.³

Practice Settings

Scupholme et al.³ found that 99% of surveyed midwives cared for women from vulnerable groups. Women were defined as being vulnerable if they were “poor, adolescent, part of a minority ethnic group, of immigrant status, or living in medically under-served areas.” They found that midwives serving women in inner-city and rural areas frequently provided care to women with more than one of these characteristics. Over 50% of the women served by midwives reside in designated underserved areas in both rural and urban settings.³ While drug abuse occurs among all women, providing care to vulnerable populations most likely increases midwives’ exposure to SUD and the effects of these disorders on pregnancy and the neonate.

Table 1: Practice Settings of Midwives by Primary Employer⁴

Current Employer	1993 (n = 3,306)	1994 (n = 3,670)
Hospital	28.8%	30%
Physician	20.6%	21.7%
Educational institution	9.6%	9.6%
Health maintenance organization	8.7%	8.4%
Private midwifery practice	7.4%	7.3%
Government/military	4.9%	4.6%
Health department	3.4%	3.1%
Freestanding birth center	2.9%	2.9%
Outside of the midwifery		
Profession	1.8%	2.2%
Missionary/volunteer	1.4%	1.4%
Birth center	1.1%	1.3%
Other	8.4%	9.1%

The practice settings of midwives have evolved over time. The earliest midwives often worked in the public health sector, in health department or hospital-based clinics. In the late 1970s, private practice midwifery emerged, which served a more educated and higher socioeconomic class of women. During this same period, there was a movement away from women giving birth at home to women having their children in hospitals and out-of-hospital “birthing” centers.

More than 8,000 midwives have received certification through the ACNM, of whom 7,000 are current members and 1,000 are students. The ACNM estimates that 7,000 midwives are currently practicing. The ACNM annual membership survey asks its registered members about their practice settings and primary job duties.⁴ Midwives work in a variety of practice settings throughout the U.S. Practice settings by primary employer include hospitals, health maintenance organizations (HMOs), educational institutions, government/military hospitals and clinics, physician practices, hospital birth centers, freestanding birth centers, health departments, missionary volunteer sites, and private midwifery practices. According to the latest published data from the ACNM annual membership survey (1993–1994), approximately one-third of midwives were employed by hospitals and 21% by physicians. Less than 8% of respondents reported primary employment in a private midwifery

practice. Table 1 lists the practice settings of midwives by primary employer.⁴

In addition to the various midwifery practice settings, patient population profiles and midwives' scopes of practice vary. A midwife sees approximately 140 clients per month, offering care that focuses on pregnancy, well-woman gynecology, nutrition counseling, mental wellness, and primary care. A majority of clients seen by midwives are in their childbearing years; however, midwifery practices include women through the entire life span from adolescence to postmenopause.⁵

According to the ACNM 1993–1994 membership survey, 71% of practicing midwives list clinical midwifery with births as their primary job.⁴ More than 90% of practicing midwives who responded to the ACNM survey reported that most of the births they attended were in hospitals. In 1994, there was an increase in respondents reporting that they attended births in birth centers (21%), while the percentage attending home births decreased from 6.9% in 1991 to 4.9% in 1994.⁴ Although the practice settings of midwifery care have evolved to a more mainstream model, the core values that determine how care is provided have remained constant.

History of Midwifery Education in SUD

There are currently 45 ACNM-accredited midwifery education programs. Forty are graduate-level programs that offer a master's degree in nursing or public health, and five are postsecondary programs. Regardless of the level of education available in the programs, the clinical content is standardized by midwifery's core competencies.

These core competencies, established by the ACNM, address substance use as part of the knowledge base needed to provide care for childbearing women. Specifically, the competencies state that the midwife must “understand the health risks for the childbearing woman as they relate to substance, alcohol, and tobacco use.” Although there is no specific mention of substance use as it relates to the neonate, midwives are expected to know the effects of maternal risk factors on the newborn. Presumably, use of alcohol, illicit substances, and tobacco would be among these risk factors. As is the nature of the ACNM core competencies, the statement is general and merely defines the minimal standard.

The 42 ACNM-accredited midwifery education programs in existence in 1999 were surveyed regarding content on SUD. Of those 42 programs, 21 (50%) responded. All of the respondents were graduate-level programs; together, they represented 57% of all graduate programs. The results demonstrated broad variance in how SUD are addressed across the educational programs. Three (14%) of the programs address SUD only once, as they relate to pregnancy and childbirth. Twelve (57%) programs address SUD in two or three curricular areas. All these

programs address the issue as it relates to pregnancy and the newborn. Several other programs include SUD in a beginning unit on basic assessment or well-woman care. One program further enhances thinking on this topic through participation in an annual campus-wide event related to SUD, and another includes a discussion on the importance of keeping providers healthy. The remaining six (29%) programs integrate information regarding SUD into more than three courses. The majority of these six programs include content in general assessment, well-woman, antepartum, intrapartum, and postpartum units. One program addresses the issue in every teaching module, including teratogens and drug use in the pharmacology unit, the relationship between substance use and sexually transmitted infections in the family planning unit, a section on the woman with an addictive disorder, and a section on psychiatric, psychological, and societal issues.

Midwives are obligated to obtain continuing education units (CEUs) to maintain their certification. For those midwives who are dually licensed as nurses, there is generally a CEU requirement for nursing licensure as well. The ACNM currently provides two venues for CEUs for its membership, a peer-reviewed professional journal and an annual meeting. *The Journal of Midwifery and Women's Health (JMWH)*, formerly known as the *Journal of Nurse-Midwifery*, is available to all ACNM members. *JMWH* periodically offers CEUs through a home study module. These modules are dedicated to a single issue such as domestic violence or primary care. Since 1990, there have been four articles on the topic of prenatal substance use in *JMWH*. There has not been, however, a home study journal on this topic (personal communication with Mary Ann Shah, editor, *JMWH*, April 2000).

The annual ACNM meeting is primarily focused on business and education and is open to all ACNM members for a fee. Presentations offering CEUs at the annual meeting vary in format and length. The May 2000 meeting included a session entitled “Substance Abuse During Pregnancy: An Update.” Additionally, midwives may receive CEUs through other nursing-based workshops, if preapproved by the ACNM, and at any event offering continuing medical education units.

Currently, no formal subspecialty education or training in SUD is available to midwives. Such training would require additional support for educational programs, which are typically minimally staffed. Lack of support for faculty development in the area of SUD has inhibited progress in this area of midwifery education.

Critical Issues, Obstacles, and Challenges

Inconsistent Knowledge Base and Practice

There are many competing demands for the education of midwives today. Most recently, primary care has been seen as one of the most crucial areas for change in midwifery

curriculum and practice, competing with demands for a broadened focus on psychosocial and behavioral issues such as SUD or intimate partner violence. It could be argued that primary care includes assessment for substance abuse and partner violence, but the reality is that attention to these issues is generally brief in both the educational and clinical settings.

From 1994 to 1998, the ACNM participated in a national Domestic Violence Education Project (DVEP), funded by the Maternal and Child Health Bureau of the Department of Health and Human Services (MCHB/DHHS). The DVEP included the resources to educate educators on the issue of partner violence, to provide continued support and materials, and to influence policy and the core competencies. The same support was offered to practicing midwives. The need for similar support for training in SUD is critical.

Without a similar level of attention and support, along with the policy changes needed to ensure application, midwifery education programs will remain inconsistent in the level of knowledge and practice concerning SUD. The current core competency on SUD is vague and refers only to the needs of the pregnant woman, thus not reflecting the true nature of addiction and abuse, which affect women at all stages of life. Thus, a critical issue is the lack of support needed to change the standard of education and practice for midwives on the issue of SUD. The inconsistency in education and practice in this area leads to other critical issues related to screening and documentation.

Issues Related to Screening and Documentation

During the last 10 years, more than 200 pregnant or postpartum women in the U.S. have been arrested and charged with a crime for using a substance thought to be harmful to their child. Charges have included the delivery of drugs to minors, child abuse and neglect, assault, and homicide.⁶ According to the American Civil Liberties Union, women who have been pursued by Federal and State prosecutors for using illicit drugs are mainly low-income women served by public hospitals; many are women of color. Knowing the legal ramifications of substance use during pregnancy is paramount to the development of policy regarding screening and documentation for SUD.

Which pregnant women to screen for SUD when to screen them are topics of ongoing debate. Because substance use during pregnancy affects both the mother and her unborn baby, and may occur among all women, there are proponents of universal screening. Such a policy has potential legal ramifications. However, without a policy of universal screening and because of common perceptions, poor women and women of color are screened disproportionately, leaving them at greater risk for social and legal ramifications.⁶ If universal screening is to be promoted, the importance of documenting in a manner that advocates for

the woman in both the legal and medical communities must be underscored. This is a complicated issue. Considerable discussion and a well-thought-out plan are essential before a policy of universal screening can be implemented in any clinical setting.

The increase in substance use by pregnant women, and particularly the rise in cocaine use, have brought increased attention and debate to the issue of drug use during pregnancy. The debate centers largely on two issues: (1) medicalization versus criminalization of substance use, and (2) the rights of the fetus versus those of the mother.⁶ As the debate rages on, more and more legislation is being introduced, and in some cases adopted, regarding substance use during pregnancy. State legislation ranges from mandated reporting of maternal drug use to involuntary commitment for pregnant substance users to increased access for treatment.⁶

Effects of Drug Use During Pregnancy

Maternal substance use is a multifaceted problem often resulting in physiological, psychological, and social consequences for the substance-using woman and her children. The substance-using woman may demonstrate an impaired ability to take care of herself before, during, and after delivery. Drug use during pregnancy may not only result in adverse effects on the woman's health but may also contribute to the birth of an infant with a variety of drug-related health problems, including developmental delay, low birthweight, or premature delivery.⁷ The effects of alcohol use during pregnancy have long been known and may result in fetal alcohol syndrome, a constellation of physical and mental impairments.^{8,9} Additionally, because of the harmful environments in which these women may live, their children may be at risk for neglect.¹⁰

Current national reports estimate that 5.5% of all pregnant women use an illicit drug during pregnancy.¹¹ The National Health and Pregnancy Survey, the largest and most nationally representative survey to date, estimates that 18.8% of pregnant women used alcohol at some time during their pregnancy and 20.4% smoked cigarettes.¹¹ Obtaining an accurate estimate of the prevalence of prenatal substance use is difficult for a variety of reasons, including a lack of consistency among studies as to what substances are included in rates of substance abuse. Some studies include only illicit substances, while others include tobacco and alcohol. Although it is difficult to estimate the prevalence of prenatal substance use, rates do appear to be of concern. Research has not elicited a reliable set of risk factors for SUD. Multiple surveys have demonstrated use among all populations of women, particularly when alcohol and tobacco are included.

Research has demonstrated that even without intervention, the use of cigarettes, alcohol, and illicit substances slightly decreases during the prenatal period. This decrease may not be statistically significant, but it is notable that

even without intervention pregnant women will make some attempt to limit these destructive behaviors.^{12,13} The 1992 National Pregnancy and Health Survey found that the rate of use for all substances starts declining 3 months prior to pregnancy and continues to decline throughout the pregnancy.¹¹ Studies have shown that intervening with pregnant substance-abusing women decreases or eliminates drug use during pregnancy.¹⁴

Core Competencies in Substance Abuse Education for Midwives

Midwives care for women during pregnancy, a time when they are both vulnerable to drug use and receptive to decreasing it. For this reason, it is imperative that all midwives receive thorough, consistent, and accurate information regarding SUD.

The ACNM core competencies address SUD in a general statement with the mandate to “apply midwifery knowledge during the antepartum period for the assessment of the health risk including the use of substances during pregnancy.” There is no specific information regarding content, and the ACNM has no established policy on the provision of care to women with SUD at other times during the life cycle. At this time, the ACNM has neither a position statement nor clinical guidelines regarding SUD. Although there are no specifics regarding the clinical care of women with SUD, the core competencies mandated by the ACNM can serve as a general guide to establish more specific practice guidelines related to this topic.

The following critical competencies more specifically define the minimal knowledge and skills that are needed by all health care providers who intervene with women who have SUD and that are recommended for consideration by the ACNM.

Knowledge Competencies

All midwives should have general knowledge about substance use, including common definitions and diagnostic criteria of SUD, the epidemiology of substance use, and the relationship of SUD to the functioning of the family. Midwives should be aware of prevention strategies, including risk, protective, and sociocultural factors and their implications at the individual, family, and community levels.

Midwives need a basic knowledge of the acute and chronic effects of alcohol and other drugs, especially as they relate to the pregnancy and neonate. A basic understanding of the pharmacology and behavioral effects of commonly used drugs would assist the midwife in making appropriate assessments of women with SUD. Although the management of women with SUD may not be within midwives’ purview, midwives must understand treatment approaches, including outcomes, effectiveness, and costs, as well as behavioral change and motivational enhancement therapies.

To ensure that midwives enhance the treatment/recovery process, they need to understand the relationship between SUD and other medical and psychiatric disorders. Finally, midwives should understand the cultural context of substance use as well as the impact of gender, culture, class, and ethnicity on intervention and treatment.

There is debate regarding the criminalization versus medicalization of women with SUD. Because of the potentially punitive repercussions from documentation of drug use during pregnancy, it is imperative that midwives know the legal statutes in their States. Additionally, midwives should be aware of the ethical issues of informed consent, confidentiality, and patient rights and of the rules and regulations governing controlled substances.

Finally, because substance use affects all of us, it is important that midwives understand the implications of health professional impairment, including the identification, management, reporting, recovery, and resources available for impaired health professionals.

Skills Competencies

To be most effective, a knowledge base must correlate to a specific skill set. All midwives should be able to recognize the signs and symptoms of SUD, screen effectively for substances use disorders in the client and family, and intervene in a culturally sensitive manner to provide prevention and motivational enhancement to help the client move toward a healthier lifestyle or to refer her for further evaluation and treatment.

Consistency in education and the provision of care will be enhanced when the ACNM either adapts the current core competencies to reflect this content or develops clinical guidelines with specific recommendations regarding skills and knowledge. The ACNM would then address some of the issues previously highlighted, such as inconsistent screening for SUD.

Vision for the Future

Midwives offer care in a manner that advocates for the woman and her family. They often engage in a holistic approach to health, acknowledging the role of psychosocial and behavioral issues on health and well-being. Because of their continued exposure to vulnerable populations and because they believe in a woman’s right to help determine her care, midwives are in a unique position to provide a comprehensive approach to substance use at any time throughout the life span, and most significantly during pregnancy. With the proper training, midwives could identify more women at risk for SUD, offer an appropriate response based on sound clinical evidence, and offer primary prevention for all women receiving their care. Because midwives provide care to women across the life span, primary prevention to adolescents would be an essential component of care.

Midwives could also be an important part of a larger clinical team that responds to drug use during pregnancy. Through proper assessment and thoughtful documentation, midwives could be the first responders for many women who are dealing with substance use during pregnancy. Midwives could offer appropriate, immediate, and nonjudgmental counseling and referral for women with SUD while continuing to provide prenatal care. This model would allow the woman to acknowledge her substance use disorder and seek appropriate care for the disorder while maintaining a relationship with her provider that could enhance her response to treatment.

The ideal vision for the midwife's role in SUD includes the development of a pool of midwife-educators as experts in SUD who would

- Train their students as well as offer support for other educational programs;

- Help ensure a level of knowledge and clinical competence that allows all practicing midwives to practice either individually or as part of a team;
- Offer comprehensive, consistent, and nonjudgmental care for women;
- Guarantee the existence of a comprehensive set of core competencies and clinical guidelines that establishes a standard of care for all women coming to midwives; and
- Create a pool of midwife-researchers who would contribute to the unique aspect of midwives in SUD.

This vision requires support for an endeavor similar in goals and objectives to that conceived for the DVEP. Such a project would greatly improve the standard of basic education, continued training, and policy that determines clinical care provided to all women as it relates to SUD. This effort could ultimately lead to more women being assessed for SUD as well as an increase in primary prevention.

Recommendations

The following recommendations are put forth for consideration by the ACNM, potential funding agencies, midwife-educators, and practicing midwives. If adopted, these recommendations would move the profession of midwifery toward a more comprehensive and consistent approach to caring for women with SUD. The advantage of such an approach to the issue is that all women presenting to midwives for care will be offered the same level of support to learn about SUD, disclose their own issues with SUD, and receive proper treatment. This would be done in a manner that advocates for the woman and her family in both the medical and legal communities and avoids discriminatory care and repercussions.

Substance Abuse Education for Midwives

1. A more thorough assessment of substance abuse education for midwives is needed.

Rationale. The current status of education and practice among midwives is not fully known. A national assessment of midwife-educators and clinicians could help further determine the state of midwifery education and care for women with SUD. A national assessment would illustrate the needs of educators and clinicians to approach SUD in a more comprehensive, consistent, and clinically sound manner. The results of the survey would then determine how to address the gaps in substance abuse education for midwives.

Recommended Actions. The recommended assessment should include extensive conversations with educators regarding basic educational needs, a determination of evidence-based best practices, and a critical review of the current social and legal ramifications.

Responsible Agents. The ACNM could identify the resources to conduct and analyze such a survey but would require external support to do so. Federal agencies such as the MCHB or the Health Resources and Services Administration (HRSA) could support such an activity.

Expected Outcomes. The assessment survey would identify the gaps in substance abuse education. An ACNM committee would then be appointed to address the curriculum changes needed to integrate knowledge and skill competencies in substance abuse in the standard midwifery educational curriculum.

2. Midwife-educators need more extensive training in SUD in order to integrate appropriate knowledge and skills competencies consistently throughout their curriculum

Rationale. To effectively train student midwives, the educators themselves must be adequately prepared.

Recommended Actions. Training could be offered through a training-of-trainers model with ongoing technical support. This model provides the educators with topic content and suggestions for training their students. Continued technical assistance would enable the educators to integrate the material into both the didactic and clinical settings.

Responsible Agents. ACNM, with support from agencies such as MCHB and HRSA.

Expected Outcomes. If all educators had the same educational experience, the likelihood of consistency in education across programs and of producing midwives who are prepared to adhere to a standard of care would increase.

3. Continuing education programs on SUD should be readily available for practicing clinicians.

Rationale. Midwives in clinical practice should be offered continuing education based on the core knowledge and skills necessary to intervene effectively with women who have SUD.

Recommended Actions. This training should be readily available and comprehensive, such as a home-study journal. The home-study journal is free to all of the ACNM members; a small fee is charged for obtaining CEUs.

Responsible Agents. The *JMWH* and ACNM contributing authors.

Expected Outcomes. The home-study journal would afford all ACNM members the opportunity to learn current and comprehensive information on SUD, thus allowing midwives to strengthen their knowledge and skills in this area as well as obtain CEUs.

4. The ACNM's annual meeting should offer one CE program on the topic of SUD.

Rationale. The annual meeting is an important opportunity for the ACNM to endorse, organize, and offer CEUs on SUD. By sponsoring an annual program on SUD, the ACNM would underscore the importance of this topic and assist its members in obtaining the necessary training in this area.

Recommended Actions. The Program Committee and Research Committee of the ACNM should work together to ensure that pertinent and current information regarding SUD is offered routinely at ACNM annual meetings.

Responsible Agents. ACNM Program Committee and ACNM members.

Expected Outcomes. ACNM members would have an opportunity to receive state-of-the-art substance abuse education.

Policy on SUD

5. The core competencies should be amended to reflect the reality of SUD across the life span.

Rationale. The current core competencies reflect the need for knowledge regarding substance use only during pregnancy. While the prenatal period is recognized as an opportunity to offer assessment and treatment for the issue, SUD occur across the life span. Substance use during pregnancy could possibly be avoided if it were identified earlier. Additionally, assessing for SUD provides the opportunity for primary prevention. Finally, midwives are providers of women's health care across the life span, not just during the prenatal period. The current core competencies do not reflect the comprehensive nature of midwifery care.

Recommended Actions. The ACNM should work with the ACNM Certification Council (ACC) to amend the core competencies as suggested.

Responsible Agents. ACNM, ACC, and ACNM members.

Expected Outcomes. With an expanded set of core competencies, the standard of care would be more comprehensive and consistent, thus enhancing care to women.

6. The ACNM should adopt policy in the form of a position statement and a set of clinical guidelines regarding the role of midwives and their treatment of women with SUD that would further establish a standard of care for all women presenting with these disorders.

Rationale. Position statements and clinical guidelines are two mechanisms used by the ACNM to promote a standard of care among its constituents. Such documents can further elucidate, beyond the core competencies, the approach to care for women with SUD. Recommendations regarding content of care and attention to research can be a part of these policy statements, thus promoting the issue in a comprehensive manner.

Recommended Actions. The ACNM should establish an ad hoc committee of its constituents and board members to create a position statement and clinical guidelines on SUD for approval by the ACNM membership.

Responsible Agents. ACNM Board of Directors, with the aid of an ad hoc committee of select ACNM members.

Expected Outcomes. A position statement and a set of clinical guidelines on the role of midwives and their treatment of women with SUD would further articulate ACNM's educational and clinical requirements for the profession. This would promote the establishment of a standard of care among midwives.

Committee on Psychosocial and Behavioral Health Issues

7. A formal committee on psychosocial and behavioral health issues in women's care should be appointed by the ACNM Board of Directors to address key topics such as SUD and violence against women.

Rationale. ACNM's Board of Directors utilizes a committee structure to call attention to specific topics. Permanent committees, such as education, accreditation, and standards and practices, reflect the ongoing nature of those activities within the ACNM. Ad hoc committees tend to be topic specific and address a particular set of goals and activities. The Ad Hoc Committee on Violence against Women, for example, was developed to effect policy change for the DVEP and has continued to address additional forms of violence against women, including female genital circumcision, as well as to remain a support for providers and to represent the ACNM in related activities.

Recommended Actions. In recognition of the ongoing psychosocial and behavioral health needs of women presenting for care, a permanent committee that would address SUD, violence against women, and other mental health issues should be established by the ACNM's Board of Directors.

Responsible Agents. ACNM Board of Directors and ACNM members.

Expected Outcomes. This committee would be composed of experts in the various topics who could advise both the Board of Directors and the ACNM membership on the issues and offer ACNM representation at appropriate venues.

Interdisciplinary Collaboration

8. Midwives should become part of multidisciplinary teams in their clinical and academic settings.

Rationale. If midwife-educators and clinicians become part of multidisciplinary teams in addressing the issue of substance abuse, particularly during pregnancy, they are more likely to adequately assess women and respond appropriately to their needs. When any professional attempts to address such an expansive issue alone, he or she may feel inadequate to the task. This may manifest itself as a barrier to adequate assessment or as professional “burnout.”

Recommended Actions. Midwives should work with other professionals in their clinical settings toward the establishment of interdisciplinary teams focused on SUD

Responsible Agents. ACNM educators and clinicians, as well as other members of the clinical team.

Expected Outcomes. Multidisciplinary teams would offer comprehensive and consistent care for women with SUD.

Legislation and Universal Screening

9. The ACNM should follow legislation closely and advise its constituents about local legislative initiatives, recommend universal screening where it is legally acceptable, and thus end discriminatory screening

Rationale. Because of the potential for discriminatory practices in screening, documentation, and repercussions for substance use during pregnancy, practicing midwives should be fully cognizant of current legislation in their geographic areas. The ACNM and its members should advocate for women in this arena to ensure that safe and responsible practices, both medical and legal, are in place for pregnant women and their unborn babies.

Recommended Actions. The ACNM must continue to support the work of the legislative liaison in the area of SUD and provide ongoing information to its constituents. The Committee on Psychosocial and Behavioral Health Issues could offer assistance with informing constituents regarding local policies.

Responsible Agents. ACNM legislative liaison and ACNM members.

Expected Outcomes. Women would be appropriately screened, treated, and referred for treatment of SUD without fear of recrimination.

Research

10. The ACNM should promote the development of a pool of midwife-researchers on the topic of SUD.

Rationale. Research in SUD from a midwifery perspective would contribute to the body of knowledge for all providers as well as assist midwives specifically in the care of women with SUD.

Recommended Actions. The ACNM Research Committee could establish SUD as a priority area for research among its members. The ACNM could work with funders to establish support for midwife-researchers interested in pursuing this topic.

Responsible Agents. ACNM Research Committee, ACNM, MCHB, HRSA, ACNM members, and other funding agencies.

Expected Outcomes. The establishment of a pool of researchers among midwives would enhance midwives’ interests in SUD and potentially improve the care of women and their families.

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Substance Abuse Education for Nurse Practitioners in Primary Care

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Introduction

The term “advanced-practice nurse” includes nurse practitioners (NPs), certified nurse-midwives, nurse anesthetists, and clinical nurse specialists. NPs are registered nurses with advanced education (i.e., a master’s degree in advanced nursing practice) and the clinical competency necessary for providing health and medical care. They are primary care providers in a variety of specialty areas, such as acute care, adult, emergency, family, gerontology, mental health, occupational health, pediatric, school health, and women’s health. NPs practice in acute, ambulatory, and long-term care settings. The role of NPs within the family court continues to develop and take shape.

NPs practice autonomously and in collaboration with other health care professionals to diagnose, treat, and manage patients. NPs order, conduct, and interpret diagnostic testing; prescribe pharmacologic and nonpharmacologic therapies; and teach and counsel individuals, families, and groups about health promotion and disease prevention. In addition to providing direct patient services, NPs serve as educators, health researchers, interdisciplinary consultants, and patient advocates. NPs also serve as leaders in legislative and professional activities to promote professional advancement and health-related social policies.

NPs concentrate on the “whole person.” In providing care, they include the psychosocial aspects of the patient. They are adept at and successful in helping patients better care for themselves and to recognize the effects of poor health as well as the links between health, diet, exercise and stress. Additionally, they assess and recognize patients’ knowledge levels before encouraging self-care or independent learning.¹

Characteristics that distinguish NPs from nurses who are not prepared at the advanced-practice level include the ability to manage patients with a greater depth and breadth of knowledge, skills and competency; engage in critical thinking/reasoning and decision making related to complex patient problems; practice with greater autonomy; and exercise a higher degree of independent judgment. NPs practice in a variety of settings, providing direct care to individuals, families, and communities by working independently or in interdisciplinary collaborative practice groups.² Therefore, NPs are in an optimal position to screen, recognize, diagnose, and treat substance use disorders (SUD).

NPs are primary care providers who practice in ambulatory, acute, and long-term care settings. They provide health care services according to their practice specialty. NPs practice autonomously and in collaboration with health care professionals and other individuals to diagnose, treat, and manage the patient’s health problems. They order, conduct, and interpret diagnostic and laboratory tests and prescribe pharmacologic agents and nonpharmacologic therapies. They also serve as health care researchers, interdisciplinary consultants, and patient advocates. In addition to diagnosing and managing acute and chronic illnesses, NPs emphasize health promotion and disease prevention. Teaching and counseling individuals, families, and groups are a major part of NP practice.^{2,3}

Historical Profile of Graduate Education for Nurse Practitioners

The first formal program for NP education was established in 1965. It was designed and implemented by Loretta Ford and Henry Silver at the University of Colorado Medical Center. The goal of that program was to prepare pediatric nurses to assess and provide comprehensive health care for children, including emergency care and referral where appropriate.⁴ In subsequent years, more programs were developed to prepare NPs in other disciplines, fueled by the 1977 Medicare amendment that allowed NPs to provide primary care independently in underserved rural areas. There are 323 institutions with NP programs, having a total of 792 specialty tracks.⁵

Entry-level preparation for NP practice is a master's degree. NP education provides theoretical knowledge in addition to clinical, technical, and ethical learning experiences for the delivery of care and role development in advanced nursing practice. The development of professional and clinical expertise to provide comprehensive primary care is the foundation of master's programs preparing NPs.⁵

Following their formal education, NPs maintain a life-long commitment to learning and professional development in the form of continuing education programs and skill-building seminars. This assures society that NPs acquire and maintain the theoretical knowledge and clinical skills appropriate for their scope of practice.

Core Values and Paradigms Specific to Nurse Practitioners

The health care system today is complex and continuously advancing its technology. The NP brings the distinctiveness of nursing skill to the primary care setting. Knowledge in providing and coordinating patient care and identifying referral needs set the NP apart from other primary care providers. The NP is the central provider in communicating information, providing care, and advocating for the patient and the family. The NP is the single provider able to merge the disciplines of medicine and nursing and demonstrates that combination in a manner that is beneficial to patients and families.

The current focus in health care is how to contain costs while maintaining quality and access. For the multitudes of people without insurance, cost containment is more a matter of affordability. Research conducted by the Office of Technology Assessment (OTA) in 1986 documented NPs' effectiveness in delivering high-quality, cost-effective primary care.⁶ Multiple studies conducted in subsequent years further supported the findings of the OTA.^{7,8} The long-term nursing implications of NP practice on patient adherence to therapy, total cost of care, and reduced hospitalizations have been well documented.^{8,9}

Consumers demand health care services that are personalized and incorporate health promotion education and curative care. These are areas in which NPs excel. Many NPs provide care to the disenfranchised, to the under- and uninsured. Were it not for those NPs who continue to provide high-quality care to these most vulnerable populations, many of this country's citizens would be without even the most basic care. The more than 65,000 nurse practitioners can provide these services within the cost constraints the health care system faces.

Historical Profile of Nurse Practitioners in Substance Abuse Education

The nursing profession's receptivity is increasing for culturally competent, gender- and age-sensitive, and cost-effective prevention and intervention/treatment programs for individuals affected by SUD. There is minimal formal training for NPs caring for clients with SUD. Traditional nursing programs do not always incorporate material on SUD in their standard curricula. Therefore, nursing faculty must take the lead to identify and teach core competencies in substance abuse education to all NP students.

In 1983, a national survey was designed and implemented to determine the extent to which nursing schools were meeting the needs of the nursing profession for information on alcohol and other drug abuse.¹⁰ This survey focused on undergraduate education. The survey had the following objectives:

- To identify the clinical areas used for instruction on alcohol and other drug abuse;
- To determine the total number of required hours of instruction devoted to alcohol and other drug abuse;
- To identify specific areas of information and skills included in required curricula on alcohol and other drug abuse; and
- To identify the opportunities offered for elective courses on alcohol and other drug abuse.

The response rate to the survey was low (32% of 1,053 schools of nursing). Therefore, the authors cautioned about generalizing the findings to all nursing schools. All of the responding schools reported requiring at least some instruction in alcoholism or other drug abuse. To permit comparisons across nursing schools with similar curriculum objectives, the respondents were grouped into three categories based on whether the primary focus of the instruction was alcohol abuse or other drug abuse or both. The majority of the responding institutions (57%) reported offering material on both alcohol and other drug abuse. Twenty-eight percent provided material specific to alcoholism, and 20% provided material specific to other drugs.

A more recent study¹¹ found that undergraduate curricula typically offered 1 to 5 hours of required instruction over 3 to 4 years of study. The content taught was

primarily definition/description of the phenomena surrounding substance abuse disorders and the health consequences of substance abuse. Students enrolling in graduate programs (nurse practitioner education) had minimal knowledge of and clinical experience in SUD. These two studies clearly documented an urgent need to develop a course or courses in SUD that could be incorporated at the graduate level. Moreover, nursing faculty continue to acknowledge and report that NPs, if adequately trained, can make important contributions to the assessment and referral of individuals with SUD at the primary care level.

It was in the early 1990s that the urgency of substance abuse education in schools of nursing was recognized and addressed. Clients with SUD continued to be a major health and social problem in America. It was well-known that nurses were the largest segment of health care providers, yet nurses reported that their educational experiences offered little to prepare them to care for clients with SUD. According to Murphy,¹¹ nurses commonly encountered clients with actual or potential SUD, but they reported that they were not prepared to assess and intervene effectively. Moreover, during this period, no texts or compilations of readings offered a comprehensive graduate-level nursing foundation in addictive behaviors.^{11,12}

Given the unmet need for substance abuse education in schools of nursing, the National Nurses Society on Addictions (NNSA) and the American Nurses Association (ANA) defined the practice of addictions nursing as a “specialized area of practice that used theories of biological, behavioral, and social sciences, as well as theories and principles of nursing practice in the diagnosis and treatment of clients with SUD.”¹³ The nurse specialist studied and completed a supervised practice at the graduate (master’s or doctoral) level in a defined area of knowledge and practice in a selected clinical area of nursing.^{13,14} This defined area included SUD.

Nursing education in SUD was developed to educate the graduate nurse specialist or nurse practitioner. (In the early 1990s, “nurse specialist” was the term most often used; today, the terms “nurse practitioner” and “nurse specialist” are used interchangeably to include all advanced-practice nurses.) The graduate curriculum in addictions nursing included the following knowledge and skill domains: (1) treatment modalities useful in the care of clients with addiction; (2) patterns of addiction and responses to addiction in family; (3) research perspectives on addictions problems and issues; (4) role of the nurse specialist on the interdisciplinary treatment team; (5) management issues in dealing with impaired professional practice; (6) advanced pathology of addictive disorders; (7) management of addicted clients with dual disorders (for those nurses who were also seeking to be specialists in mental health nursing); (8) strategies for primary preven-

tion within the community, particularly with high-risk, underserved populations; and (9) methods for supporting rehabilitation. NNSA¹³ did not provide a recommendation for content in SUD for NP specialties. During this time, the role of the NP in primary care was beginning to emerge. The basic NP education concentrates on primary health care. It provides little or no emphasis on evaluating and treating clients with SUD.

In 1997, the National Institute on Drug Abuse (NIDA) and the National Institute on Alcohol Abuse and Alcoholism (NIAAA)^{15,16} supported the development of a model curriculum in substance abuse education for nursing. The New York University Division of Nursing prepared an extensive and well-developed set of materials appropriate for use in nursing and other health care professional programs. This project was under the leadership of Madeline A. Naegle, Ph.D. A comprehensive substance abuse education curriculum for both baccalaureate- and master’s-level nursing education was developed. The master’s-level modules cover nursing intervention in client populations, advanced practice in addictions nursing, alcohol and drug research, and management of impaired practice.

Substance Abuse Education in Nursing, Volume III, is particularly suited to the master’s-degree level.^{17,18} It covers the following topics:

- Group modalities in the care of clients with drug and alcohol problems
- Patterns of addiction in the family
- Nursing strategies with alcohol and drug problems in the family
- Research perspectives on alcohol and drug problems
- The role of the nurse on the interdisciplinary treatment team
- Impaired professional practice
- Management issues
- Perspective on drug and alcohol problems
- Nursing strategies with the client with alcohol and drug problems

This volume presents the module description, instructor’s guide, learner objectives, recommended teaching strategies, and sample assignments and recommended readings.¹⁸ It is an excellent model for integrating content on SUD in graduate nursing curricula.

Naegle¹⁸ recommends that all master’s degree or certified advanced-practice nurses possess the following competencies:

- Apply selected research-based interventions with individuals, families, and groups for the prevention and detection of addictive behaviors;
- Analyze pathophysiological and psychosocial processes and consider the etiology of addiction;

- Develop, apply, and evaluate research-based nursing interventions that are appropriate for individuals and their families affected by alcohol or other drug abuse or addiction;
- Identify appropriate strategies to assess and measure human responses to the abuse of, and addiction to, alcohol and other drugs;
- Engage in interdisciplinary assessment, treatment, and evaluation of persons with acute and chronic addictive conditions; and
- Influence the development and implementation of health care policy as it relates to alcohol and other drug use.

This list of competencies was recommended in the 1990s. It is difficult to ascertain the extent of implementation of this model curriculum in substance abuse education for nursing and the recommended competencies for master's prepared nurses.¹⁹⁻²¹ A new and updated curriculum guide is needed to address the issues that encompass SUD and the role of the NP in primary care.

In 1992, Sheehan²² described how nurses could respond to the pandemic of substance abuse. This author asserted that because of their close contact with the community, nurses were vital in caring for individuals with SUD and in preventing addiction. Nurses should not assume that only "specialist" nurses can deal with the effects of this problem. Nurses of all specialties come in contact with patients and family members dealing with SUD. Sheehan²² recommended the following required components for nurses (both specialist and generalist) who deliver effective care, prevention, and education in the area of substance abuse:

- Provider of Care: To care for those affected by substance abuse (role of the nonspecialist is limited to assessment, referral, and follow-up).
- Counselor/Therapist: To focus on the needs of individuals and their families and colleagues.
- Educator/Resource Person: To teach and provide information on substance abuse to community groups, schools, families, and individuals, as well as to nurses and other professional/nonprofessional groups.
- Advocate: To lobby for change and improved care.
- Promoter of Health: To campaign for policy and legislation to reduce the demand for abused drugs.
- Researcher: To determine the most effective methods of helping, caring, and preventing drug dependency.
- Supervisor/Leader: To guide nursing staff, nonprofessionals, and students working with clients affected by SUD.
- Consultant: To be available to nurses and other professionals in this specialty area.

Sheehan concluded that nurses should support the development of a wide range of services related to SUD at the local and national levels. By virtue of their important place within the community, nurses should be involved in social change and should lobby for improved conditions within their communities. Nurses must take the lead and play a key role as skilled professionals and responsible practitioners in mobilizing the community against substance abuse. More important, plans should be developed and implemented in all academic settings to educate all nurses in the area of substance abuse.

Sheehan made no specific recommendations for NPs. The NP role has become an integral part of primary care in America. To this end, the NP role and its development in the past century demands a redesign of the NP curriculum in order to educate NPs as primary health care providers. We need to develop, implement, and evaluate substance abuse curricula specifically designed for NPs who need to strengthen their knowledge and clinical skills in caring for clients with these disorders. In the future, new roles will emerge with a focus on substance use disorders and will be recognized by all health care providers. One such role, currently being developed, is that of the NP working in family-centered interventions in a family drug court.

During the past decade, nursing educators continued to express their difficulties in keeping current with the latest health care issues and treatment of individuals with SUD. This is a significant need for educating the next generation of NPs. Critical issues were identified and substance abuse education for the nursing profession was disseminated in various nursing journals.^{12,22-25} Nursing leaders and educators discussed the need for substance abuse education in health studies curriculum, with a focus on a core curriculum for graduate addictions nursing.^{12,13,26}

In 1992, the American Association of Colleges of Nursing developed a position statement for addressing nursing education's agenda for the 21st century. The position statement was based on the Federal report *Healthy People 2000*, which recommended that faculty in schools of nursing re-examine the mission of education, research, and services for their particular institutions. Nursing leaders in the education and practice arenas must work together to differentiate the roles and responsibilities of nurses in practice. Graduate preparation (the M.S.N. degree) is the entry level of advanced nursing practice. It may focus on primary health care, case management, specialization, education, or administration across health care settings.²⁶

Addressing the need to revisit nursing curricula as related to SUD, Marcus and colleagues²⁷ presented an educational model focusing on nursing competence with substance-abusing clients. Their driving force in developing this model was the critical need for nurses and nursing faculty to be competent and to recognize and care for clients with SUD. They proposed that developing faculty expertise and enhancing nursing curricula would help

develop important strategies for improving future practice. This, in return, would enhance nursing's overall contribution in the area of substance abuse. Moreover, carefully planned collaborative links between education and practice settings were critical to create a learning environment that fostered confident, responsible nursing practice.

The preparation of the entry-level advanced professional nurse now requires a greater orientation to community-based primary health care and more emphasis on health promotion, maintenance, and cost-effective, coordinated care that responds to the needs of increasing ethnic, minority, and underserved populations in all settings. In terms of curricula, the processes and outcomes should be emphasized, coupled with the curricular content in preparing nurses for meaningful roles in future health care systems. One example of this content would be in health promotion and the prevention of SUD. Including substance abuse issues in the nursing curriculum would promote the development of healthy lifestyles and the future health of the American people.

Another example in advanced-practice nursing education is an NP program with a combined focus on psychiatric/mental health issues and addictions. This program is funded by Health Resources and Services Administration/Division of Nursing and the Texas Commission on Alcohol and Drug Abuse (conversation with Principal Investigator M. T. Marcus, Ph.D., July 1999). The purpose of this program is to identify and assemble a faculty team with broad-based expertise in the area of substance abuse and to design and implement a comprehensive curriculum to prepare nurses for advanced practice in psychiatric/mental health nursing with a focus on addictions. The advanced-practice role in addictions nursing is a developing concept growing out of identified client needs, particularly within the public sector, the courts, and the criminal justice system.

The Treatment Improvement Protocols (TIPs) were developed as "best practice" guidelines for the treatment of individuals with SUD. These protocols are provided as a service of the Substance Abuse and Mental Health Service Administration's Center for Substance Abuse Treatment (SAMHSA/CSAT). CSAT's Office of Evaluation, Scientific Analysis and Synthesis drew on the experience and knowledge of clinical research and administrative experts to produce the TIPs, which have been distributed to institutions and individuals across the country. These guidelines were developed by consensus panels of clinicians, researchers, and educators who work in substance abuse prevention and treatment. The protocols are based partly on research evidence and partly on panel members' clinical experience. TIPs offer an algorithm that follows a patient with SUD who presents in a primary care setting. The algorithm serves as a guide or road map through screening, brief assessment, brief intervention, assessment, referral, specialized treatment, and follow-up care.²⁸

NP clinical competencies in substance abuse education have been identified.²⁹ These suggested competencies help NPs assess and screen clients for SUD. Assessment and screening include the health history, use of substance abuse screening instruments, physical examination, and laboratory data. Identification of the signs and symptoms, including behavioral characteristics of patients with SUD, can lead to early detection, referral, treatment, and management of comorbidities that complicate many health problems.^{30,31}

NPs use this information to develop their clinical knowledge and expertise specific to SUD, when providing primary care. As NPs become more knowledgeable and skilled in recognizing clients with SUD, they can encourage patients to address their addictive behaviors and avoid the consequences of substance abuse. NPs are in an optimal position to identify and assess individuals with SUD.³¹⁻³³ NPs can be advocates for ongoing comprehensive care for individuals with SUD. Moreover, NPs can play a major role in the efforts to eliminate disparities in health outcomes for the American people.

In summary, NPs in primary care can expect a significant number of their patients to have SUD. Visits to primary care clinicians provide unparalleled opportunities to intervene with substance abuse problems at a relatively early stage. Office or clinic visits also give clinicians an opportunity to discuss substance abuse prevention with patients and, in many cases, prevent problems from developing.³³ Therefore, all NPs must have appropriate knowledge and skills to effectively intervene with clients affected by SUD.³²⁻³⁵

NPs provide primary health care in a variety of settings. The NP has an opportunity to address substance abuse issues with his or her clients. State-of-the-art programs, such as the one cited are supported by HRSA and the Texas Commission on Alcohol and Drug Abuse, are needed to train NPs in substance abuse education so that they may effectively intervene with clients who have these disorders.

Faculty Development in Substance Abuse Education

NIAAA and NIDA have a long history of funding schools of nursing, medicine, and social work to enhance the development of faculty and health care curricula in substance abuse education. These projects were part of a national initiative to ensure that health care professionals have basic knowledge and skills in screening, assessment, and intervention, and appropriate use of referral systems for clients with SUD.³⁷ For example, a school of nursing receiving these funds could create a faculty development project to (1) develop a cadre of nursing faculty, representative of diverse clinical specialties, with the expertise necessary to deliver comprehensive services to prevent

substance use/abuse and to impart those skills to students and other health care professionals; (2) establish collaborative links with community-based professionals to develop, implement, and evaluate culturally competent, age- and gender-sensitive prevention programs; and (3) disseminate empirically based instructional and prevention materials that could be used by others.³⁶ Since NIAAA and NIDA were moved from the Alcohol, Drug and Mental Health Administration (ADAMHA) to the National Institutes of Health (NIH), however, funding for health professionals training comes not from these organizations but from SAMHSA and the Health Resources and Services Administration Bureau of Health Professions (HRSA/BHPr).

Marcus³⁷ describes a successful interdisciplinary team model for developing faculty to deliver substance abuse prevention programs in community-based organizations. The model was developed and implemented with a 3-year grant from SAMHSA's Center for Substance Abuse Prevention (SAMHSA/CSAP). It combines faculty development, student involvement, community participation, and implementation of preventive interventions. One of its major goals is to improve nursing competence in substance abuse. This was accomplished by selecting five faculty fellows who would establish collaborative links to the community and focus on the need for culturally sensitive alcohol, tobacco, and other drug abuse and abuse prevention.

As a result of this effort, the development of undergraduate and graduate curricula specific to prevention information was enhanced, and there was an increase in the number of substance abuse educational materials, as fellows generated manuals, workbooks, and other publications. Schools of nursing were seen as major resources in designing prevention/intervention strategies in the local communities. Marcus concluded that the success of the model hinges on true collaboration. The individuals identified in the community must participate as full partners in all activities (i.e., attending educational sessions and coauthoring presentations). Community associates are valued for their contributions to the academic enterprise and for teaching students. Faculty, in turn, gain an in-depth understanding of community needs. Students benefit from such collaborations and, ultimately, the health professions are better prepared to implement prevention strategies.

Critical Issues, Obstacles, and Challenges

Health care providers continue to have negative attitudes toward individuals with SUD. This is further complicated by the inadequate training of NPs in substance abuse education. Other issues that challenge NP practice are third-party reimbursement for NP services rendered, including the screening, identification, and treatment of individuals with SUD; regulation of practice; and prescriptive authority. Therefore, resources are needed to help support the NP role within the health care system when dealing with individuals with SUD.

In terms of educational issues, accreditation and certification examinations should contain questions on SUD and develop a criterion for national accreditation of nurse practitioners programs. Other concerns include (1) lack of faculty development grants and other learning opportunities specific to training in SUD; (2) limits on faculty time and required content in NP programs (in order to meet the criteria to sit for national certification); (3) lack of collaboration among the health care professions; and, most important, (4) lack of interdisciplinary team training and building (clinical/research).

Core Competencies in Substance Abuse Education

NPs lack formal education and clinical experience in caring for clients with SUD. NPs must take the lead in primary and community health care with emphasis on SUD prevention and intervention. Both didactic and clinical experiences should be developed to provide state-of-the-art instruction of substance abuse education. This education should be provided to all NP specialties (e.g., neonatology, pediatrics, women's health, obstetrics/gynecology, family/adult, and gerontology). Moreover, awareness of cultural factors associated with SUD is critical to understanding comprehensive prevention and treatment.

It is critical to establish core competencies in substance abuse education. These competencies will help set the standard of care for clients with SUD. Visits to primary care clinicians provide unparalleled opportunities to intervene with clients who have these disorders. Office or clinic visits also give clinicians an opportunity to discuss substance abuse prevention with patients and in many cases, prevent problems from developing.³⁵ NP education should include knowledge, attitudes, and skills necessary to intervene effectively with clients affected by SUD.

Several experts in the field of substance abuse have recommended the following core competencies for all health care providers:^{28,30,31} At minimum, every primary care provider should screen all patients using the CAGE questions or other screens that are more appropriate for particular populations. This should be part of the history-taking, physical examination, and laboratory data information-gathering process. NPs are educated that they will be life-long learners and that keeping up with the literature will provide them the information needed to screen patients for SUD.^{33,34}

Minimal training needed by NPs to effectively intervene with clients who have SUD include the following knowledge and skill domains:

Knowledge Competencies

General Concepts

- Common or standard definitions and diagnostic criteria for SUD

- Epidemiology of SUD
- Relationship of SUD to the functioning of the family and community
- Risk and protective factors (for individuals and families)

Prevention

- Universal, selected, and indicated prevention strategies and their application at the individual, family, and community levels
- Risk and protective factors, including familial and sociocultural influences

Alcohol and Other Drug Effects

- Acute and chronic effects and health impact of substance use
- Pharmacology and behavioral effects of commonly abused substances

Evaluation and Management

- Treatment approaches, including outcomes, effectiveness, and costs
- Behavioral change, motivational enhancement, and relapse-prevention strategies
- Relationship and interaction of SUD and other medical and psychiatric disorders (dual diagnosis)
- Cultural context of substance use and impact of gender, culture, and ethnicity on intervention and treatment

Legal and Ethical Aspects

- Informed consent, confidentiality, and protecting clients' rights
- Rules and regulations governing controlled substances

Health Professional Impairment

- Identification, management, reporting, and recovery for NPs
- Resources available for impaired NPs

Skill Competencies

All NPs should be able to

- Recognize early signs and symptoms of SUD;
- Screen effectively for SUD in the client or family; and
- Intervene in a culturally sensitive and competent manner to provide prevention, motivational enhancement to assist the patient in moving toward a healthier lifestyle, or referral for further evaluation or treatment.

Vision for the Future

Nursing faculty must continue to develop expertise in the area of SUD, which is essential for the education of future NPs. Major curricular changes will be necessary to give strength to the profession and prepare NPs to meet the challenges of current practice.² Nursing leaders and faculty will continue to support and promote the development of substance use disorder curricula in NP education. This will give NPs the knowledge and skills necessary to identify and screen individuals with SUD. Another example for NP education is the development of continuing education programs at the local, State, and national levels that will be critical to support and enhance training in the area of SUD. Moreover, this would help further define and develop the role of the NP in prevention, intervention, and treatment of individuals with these disorders.

We strive to achieve new goals and excellence in practice. Change is inevitable. Pursuit of excellence, especially in times of budget constraints, requires courage, motivation, passion, fortitude, creativity, commitment, energy, visionary thinking, and leadership. NPs must exercise their growing power to deliberately choose and create their collective futures.^{2,38} One example of creativity is the NP's (psychiatric/mental health and pediatric) involvement in the court system. Court-involved families are at high risk for health problems and fragmented health care. The NP's participation in family court will help eliminate disparities in health for court-involved families. Resources are needed to support and enhance this role as NPs direct their attention to the primary health care issues affecting these families.

Laws and regulations for licensure and certification are needed to ensure that NPs provide quality health care, including the identification of SUD.² Content on SUD should be routinely included in proficiency examination/certification for all NPs.

NPs must take the lead to seek Federal support to train NPs in substance abuse education. NPs must continue to develop policies that increase resources for health care providers and clients when addressing substance use disorder. Federal, State, and local initiatives should be coordinated to support nursing research in the area of SUD.

Recommendations

Education

- 1. Convene a conference to establish recommended training pertaining to substance use disorders for primary care nurse practitioners. NPs of all specialties should be taught core competencies in substance abuse education to intervene effectively with clients affected by substance use disorders. The nursing profession should take the lead in convening such a meeting, which may be similar to the conference held in 1994 by the Macy Foundation and chaired by David Lewis for the purpose of recommending training about alcohol and substance abuse for primary care physicians.**

Rationale. NPs are educated to provide comprehensive primary care. This education usually does not include the knowledge needed to identify and treat individuals with SUD. Core competencies are the foundation for all NPs to screen all individuals for SUD. Basic NP education should include core competencies to screen for SUD.

Recommended Actions. Establish and incorporate core competencies in substance abuse education for graduate nursing programs. Develop interdisciplinary educational experiences for NPs and other health care providers. Establish collaborative links between academia and community to focus on the critical need for sensitivity to cultural diversity when addressing substance abuse prevention/intervention with all clients and their families.

Responsible Agents. Schools or colleges of nursing in collaboration with State boards of nursing, nursing faculty and clinical preceptors, International Nurses Society on Addictions, American Nurses Association, National League for Nursing, State boards of nursing, nursing leaders in SUD, American Academy of Nursing-Expert Panel, American Academy of Nurse Practitioners, Association for Medical Education and Research in Substance Abuse (AMERSA).

Expected Outcomes. NP programs will have integrated content on SUD into their teaching curriculum. NPs will have the basic knowledge and skills to screen clients for SUD. NPs representative of diverse cultures and clinical specialties will have the necessary skills to deliver comprehensive services to prevent substance abuse and to provide intervention for populations at risk for this disorder.

Faculty Development

- 2. Develop a cadre of nursing faculty with the expertise necessary to teach and practice comprehensive health care to individuals with substance use disorders.**

Rationale. Nursing faculty have not been adequately trained to care for and prepare future providers to care for clients with SUD. Nursing faculty should be given the opportunity to gain the competence needed to address SUD by participating in development programs designed to strengthen their knowledge and clinical skills in substance abuse education. Nursing faculty must take the lead to develop adequate educational curriculum and credentials to prepare NPs in this area.

Recommended Actions. Increase funding for nursing and interdisciplinary faculty development programs in substance abuse education. This will improve the expertise and teaching skills in nursing and clinical practice as it relates to SUD. Identify mentors to support and encourage novice teams to obtain funding to establish faculty development programs at their respective teaching institutions.

Responsible Agents. Schools or colleges of nursing, nursing faculty and community agencies that provide services to individuals with SUD, substance use disorder leaders (multidisciplinary), community agencies, International Nurses Society on Addictions, SAMHSA/CSAP, nursing leaders in SUD, American Academy of Nursing-Expert Panel, AMERSA.

Expected Outcomes. NP faculty throughout the nation will develop expertise in substance abuse education. Curriculum development in substance abuse education will be integrated into all NP programs (clinical and didactic).

Professional Development

3. Require all NPs in private practice to obtain the knowledge and skills needed to identify, treat, and refer individuals with substance use disorders in the primary care setting.

Rationale. There is a great need to develop, implement, and evaluate professional education programs to increase NPs' knowledge, skills, and attitudes about SUD.

Recommended Actions. Provide educational programs for NPs to support their continued lifelong learning specific to SUD. Offer continuing education programs for NPs in the core competencies of substance abuse education. Establish mandatory requirements for all NPs to obtain a minimum number of continuing education units (CEUs) in substance abuse education every year. Offer CEUs at local, State, and national NP conferences specific to SUD.

Responsible Agents. Schools or colleges of nursing, nursing faculty and community agencies that provide services to individuals with SUD, substance use disorder leaders (multidisciplinary); American Nurses Association; specific nurse practitioner organizations such as the American Academy of Nurse Practitioners, American College of Nurse Practitioners, National Certification Board for Pediatric Nurse Practitioners and Nurses, National Organization of Nurse Practitioner Faculties; the Association of Women's Health, Obstetric and Neonatal Nurses, National Association of Neonatal Nurses, AMERSA.

Expected Outcomes. Core competencies in substance abuse education will be established for all NPs. Multiple opportunities will be available for NPs to obtain education in the core competencies or continuing education programs offered nationwide. All NPs will be competent to care for clients with SUD.

Specialty Training

4. Develop resources to further develop and expand training for advanced practice nurses to care for court-involved children and parents with substance use disorders.

Rationale. One million cases of child abuse and neglect are filed each year in the United States. Of these, 60% to 90% are attributed to a parent with a substance use disorder. Most children from these families are placed in foster care. They represent one of the most at-risk populations in America. Because of the 1997 Adoption and Safe Families Act, the fate of these families will be decided within 12 to 13 months. In order to reunify, the parents must become abstinent. This goal necessitates access to substance abuse, mental health, and primary care treatment services. Advanced-practice nurses are uniquely qualified to provide and facilitate access to these critical services.

Recommended Actions. Schools of nursing will create comprehensive master's-degree programs that teach the required knowledge and skill base to deliver primary care, as well as motivational interviewing, relapse prevention, and family strengthening for court-involved parents. Schools of nursing will expand the development of master's programs in addictions/

mental health nursing that prepare practitioners to address the complex needs of adults with a dual diagnosis or a history of sexual abuse and family violence. Schools of nursing will develop master's programs that prepare advanced-practice pediatric nurse practitioners of identify and treat developmental delays associated with prenatal drug exposure and child neglect.

Responsible Agents. HRSA/BHPr Division of Nursing, SAMHSA/CSAT, Office of National Drug Control Policy, American Academy of Nurse Practitioners.

Expected Outcomes. The number of NPs trained to care for court-involved children and their parents will be increased. Leaders/experts in the area of addictions/mental health nursing will be developed. The role of NP within the criminal justice system, specifically the family court, will be expanded.

Accreditation

5. Develop standards that NP programs must observe in order to obtain national accreditation.

Rationale. Implementation of this recommendation will ensure that NP programs teach the minimal core competencies to identify and treat individuals with SUD.

Actions Required. Agents granting accreditation to school of nursing programs should make content in substance abuse education a requirement in NP graduate curricula/education.

Responsible Agents. State boards of nursing, National League for Nursing, American Nurses Association, national organizations of NPs.

Expected Outcomes. Graduate programs will include content in substance abuse education for their didactic and clinical experiences. NP students will become competent to care for clients with SUD.

Certification

6. The national certification examination for NPs should contain items covering the knowledge and skills (core competencies) needed to identify individuals with substance use disorders.

Rationale. Implementation of this recommendation will help create a standard of care for NPs providing health care to individuals with SUD and criteria to evaluate NP programs preparing NPs in all specialties to sit for certification.

Actions Required. Complete the current revisions of the national certification examination and ensure that the revised examination includes SUD. Make SUD curricula required in all NP programs. Develop a curriculum that will prepare NP faculty and students as substance use disorder generalists in clinical practice. Recruit faculty with substance use disorder expertise from diverse cultural groups to demonstrate NP faculty commitment to foster cultural competence in teaching, practice, and research in the area of substance abuse.

Responsible Agents. Schools and colleges of nursing in collaboration with State boards of nursing, American Academy of Nurse Practitioners, American College of Nurse Practitioners, HRSA/BHPr, American Association of Nurses, National Organization of Nurse Practitioner Faculties, American Nurses Credentialing Center, American Association of Colleges of Nursing.

Expected Outcomes. Standards of care and requirements for certification will support and ensure that all nursing graduate programs address and teach SUD in their didactic and clinical experiences and curricula.

Research

7. NPs must participate in collaborative practices with other health care professionals and contribute to the development of research in the area of substance use disorder prevention and intervention.

Rationale. The NP brings the distinctiveness of nursing knowledge and skill to the primary care setting. Many NPs provide primary care to the disenfranchised and to under- or noninsured patients. These opportunities make the NP a valuable player in the discovery of best practices in primary care.

Recommended Actions. Seek and obtain Federal funding for substance use disorder research (e.g., relapse prevention, brief treatment intervention, screening in primary care clinics). Identify substance use disorder leaders and mentors for collaborative interdisciplinary research. Make substance use disorder research a priority in health care funding.

Responsible Agents. Schools and colleges of nursing and substance use disorder nursing leaders, American Academy of Nurse Practitioners, American College of Nurse Practitioners, National Institutes of Health, AMERSA, SAMHSA/CSAT, National Organization of Nurse Practitioner Faculties.

Expected Outcomes. The number of nurse researchers in the area of SUD will increase. There will be increased interdisciplinary substance use disorder research as well as more research that documents the importance of screening, intervention, and follow-up services in the primary care area. The cost of care for individuals with SUD will be documented.

Reimbursement

8. The reimbursement for services provided to individuals with substance use disorders should include properly prepared NPs. The expansion of NP reimbursement should include substance use disorder screening, treatment, and referral.

Rationale. Reimbursement for services has become increasingly important to employers of NPs.³⁸ Therefore, NPs must be reimbursed for all services provided, including the screening, identification, and treatment of SUD.

Recommended Actions. NP clinical best practices must include the screening, treatment, and referral of SUD.

Responsible Agents. Health maintenance organizations, insurance companies, Federal and State government, Center for Medicare and Medicaid Services, consumers.

Expected Outcomes. Individuals with SUD will receive high-quality, cost-effective care. NPs will obtain third-party reimbursement for services rendered to individuals with SUD. Substance use disorder screening will be a standard of care that is driven by the need to provide comprehensive health care, not reimbursement issues. All organizations providing health insurance, both public and private, will provide coverage for SUD.

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Nursing Education in the Prevention and Treatment of SUD

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Introduction

While the abuse of alcohol was noted early on in Nightingale's writing on nursing care during the Crimean War, it was not until the 1950s that nursing textbooks included content about alcoholism and recommended nursing care of the late-stage sequelae of alcohol addiction. A 1977 book by Estes and Heinemann was a primer for early nursing education on alcoholism. In the last 50 years, education on abuse and addiction to alcohol and other drugs for practicing nurses and nursing students has increased as a function of Federal support, actions by the American Nurses Association (ANA), and the work of specialty nursing organizations and nurse educators and clinicians who have contributed to the research and education literature. This chapter describes efforts directed toward increasing the knowledge and skills of nurses at associate, baccalaureate, and graduate-degree levels of practice and identifying values and core competencies that have emerged as central to the delivery of high-quality nursing care to individuals affected by substance use disorders (SUD) and their families.

Core Values and Paradigms

Similar to other professions, nursing can be said to be owned by society in the sense that "a profession acquires recognition, relevance, and even meaning in terms of its relationship to that society."¹ People seek nursing services in matters of health and illness. They seek information and use nursing care to resolve health problems and manage health-promoting behaviors. Nurses help people identify both short- and long-term health goals and advocate for people dealing with obstacles to health care access.² Nursing is defined as the "diagnosis and treatment of human responses to actual or potential health problems."³ This requires that nurses attend to a full range of human experiences without restriction to a problem-focused orientation; integrate objective data with knowledge gained from the patient's subjective experience; apply scientific knowledge to the processes of diagnosis and treatment; and provide a caring relationship that facilitates health and healing.⁴ Such basic premises (including the premise that humans have the inherent capacity for change and actualization toward health) make the profession well suited to promote health in relation to SUD. Patterns of SUD result in biopsychosocial and spiritual changes that may evolve into dysfunctional or disease states.

The ANA and its collaborating associations recognize the nursing profession's responsibility for maintaining, strengthening, and articulating the professional contract between nursing and society, and the association develops

practice standards within that framework. One aspect of maintaining this contract is the development and oversight of education in three domains:

1. Undergraduate nursing education for generalist practice;
2. Continuing education programs in nursing for practicing professionals; and
3. Graduate nursing education in the specialty of addiction and related specialties (e.g., psychiatric-mental health, rehabilitation nursing).

Updating knowledge and skills through continuing education, as well as through formal educational programs, is essential to the competent practice of nurses at all levels. During the last decade, advances in the study of SUD have generated both scientific and clinical knowledge from which to develop a nursing knowledge base. In addressing the need for nurses to develop expertise in relation to the prevention and treatment of SUD, the American Nurses Association in 1983 recommended that addictions nursing be considered a specialty.⁵ In 1987, a coalition of the ANA, the Drug and Alcohol Nurses Association (DANA), and the National Nurses Society on Addictions (NNSA) identified central philosophical beliefs and described nursing strategies and nursing roles in *The Care of Clients with Addictions: Dimensions of Nursing Practice*.⁵ This document defined a structure for nursing interventions and laid the groundwork for the development of standards for care provision, including expectations for continuing education

on health problems related to SUD. To promote and support competent, high-quality nursing practice and provide for the evaluation of nursing performance by patient outcome, these three organizations developed standards of addictions nursing practice in 1988.⁶

Descriptions of Work Settings

The large numbers of nurses employed in a wide range of settings underscore the potential for change in trends of delivering health education and treatment to individuals with SUD. As the largest group of health professionals, nurses have the greatest sustained contact with the public. When appropriately educated, nurses have enormous potential to increase public access to services for SUD. As of 1996, there were 2,115,815 million registered professional nurses in the United States. They were largely employed in hospitals (60%). The remainder were employed in nursing homes and extended care facilities (8%), community/public health (13%), student health services (3%), occupational health (1%), ambulatory care (8%), or other settings (3%). Ninety percent of nurses were practicing at generalist levels, having attained diplomas or associate or baccalaureate degrees.⁷ Data from surveys of nurses practicing in general medical settings⁸ and in the specialty of psychiatric-mental health nursing indicate an imbalance in education and clinical knowledge levels in the detection and treatment of SUD when compared with educational content in other areas.⁹ With changes in health care delivery, advanced-practice nurses are assuming greater responsibility as primary providers of health care. They function as primary care providers, case managers, nurse psychotherapists, and nurse educators.

As of 1999, there were 62,500 nurses certified as advanced-practice nurses in the United States. Of those for whom employment settings are known, approximately 7,800 (12%) are also prepared as nurse practitioners (NPs). Among NPs, 11,520 (15%) work in general and specialty hospitals where a high prevalence of individuals with undiagnosed SUD are treated; 9,500 (15%) are employed in home health; 1,046 (0.6%) work in nursing homes; 12,577 (19.5%) are educators; and 26.6% are nurses employed in the specialty of psychiatric-mental health nursing at the advanced-practice level.¹⁰ Psychiatric-mental health nursing has traditionally incorporated education on SUD, although the specialty of addictions nursing includes nurses from all levels of preparation and who are members of various organizations. In regard to education on SUD, psychiatric nurses who are members of the American Psychiatric Nurses Association (APNA) self-reported that only 2% to 3% of them were members of addictions specialty organizations or possessed expert knowledge in this area of nursing practice.¹¹ This observation suggests that little has changed since 1986, when 1,576 surveyed psychiatric nurses reported that they had received negligible academic and clinical preparation for practice with clients who have SUD.¹²

Nurses practicing as generalists, that is, those prepared with diplomas or associate or baccalaureate degrees, and nurses prepared at the graduate level as clinical specialists and nurse practitioners have the potential for significant roles in the prevention, detection, and treatment of patients with SUD and their families. It is well known that the majority of individuals with significant SUD never receive treatment. Nurses, however, care for these patients in a variety of medical, surgical, emergency, occupational health, and home care settings. If the prevalence of such disorders is to decrease, it is essential that nurse generalists be able to identify patients and families with SUD, perform screening and early intervention, and refer them to appropriate providers. The specialty of addictions nursing is practiced independently by psychiatric-mental health and addictions certified nurses. They practice in acute care settings treating a range of SUD, in rehabilitation programs for mentally ill persons with SUD, or in long-term treatment facilities for SUD. A small number practice in therapeutic communities. The continuum of substance use, from use to dependence, and the range of settings in which nurses encounter persons in need of prevention and treatment parallel a continuum of educational needs for nursing generalists and specialists.

Historical Profile of Work in Substance Abuse Education

Nursing education initiatives that focused on the care of patients with substance use disorders began in 1975 with the organization of a nursing subgroup within the National Council on Alcoholism. Participation in continuing medical education programs prompted the group to identify the need for nurses to be better educated about treatment of these disorders. Other specialty nursing organizations with the primary goal of education have emerged since then, including the National Consortium of Chemical Dependency Nurses (NCCDN) and the California Association of Nurses in Substance Abuse (CANSA). DANA, founded in 1979, merged with the NNSA early in the 1990s; CANSA has since merged with them as well. These combined groups are now known as the International Nurses Society on Addictions (IntNSA).

The Federal Government published two of the first educational resources for nurses. A reference book for community health nurses on alcoholism prevalence and detection, published in 1978,¹³ and an *Alcohol Abuse Curriculum Guide for Nurse Practitioner Faculty* was published in 1984.¹⁴

These activities actually preceded research by nurse educators on the existence of and need for curricular content on SUD in schools of nursing. A 1987 survey of 1,035 diploma, associate, and baccalaureate programs of nursing (36% response rate) by Hoffman and Heinemann¹⁵ revealed that undergraduate curricula offered an average of

1 to 5 hours of instruction on SUD, usually combined with other content over the course of the 2- to 4-year curriculum. Course content was primarily descriptive and included definitions and terms, with little emphasis on assessment and intervention. Content and clinical experiences were concentrated in the psychiatric nursing courses and were not appropriately linked to nursing care along the life span in courses such as maternal-infant nursing and medical-surgical nursing.¹⁵ A second survey of psychiatric-mental health nursing programs conducted in 1987 by Murphy and Hoeffler¹⁶ found that little content on SUD was incorporated in the curriculum and that few programs offered or considered developing a subspecialty in SUD. The amount of content on SUD was often insufficient and inconsistently taught, considering the scope of the problem in both the mental health and general health care sectors. These findings underscored the need for changes in nursing education about SUD.

Another indicator of the need to incorporate additional knowledge and skills into the curriculum was the lack of knowledge among student nurses about substance use/abuse and its implications for their own substance use as well as for the provision of care to others. The work of Haack et al.,¹⁷ Engs,¹⁸ and others indicated that nursing students learn little about drugs of abuse, assessment, and treatment of SUD, and underscored the need for health professionals to be cognizant of their own vulnerabilities.

Educational Needs for Content on Substance Use Disorders

Nursing education on SUD was catalyzed in the early 1980s by the growing visibility of nurses with problems related to substance use who were practicing while cognitively and emotionally impaired. The national importance of this problem prompted specialty nursing organizations and the ANA to address the inadequate level of nursing knowledge about SUD. The ANA convened representatives of specialty nursing organizations and State nurses' associations to begin to document the "impaired practice" issue and to develop policies to both protect the public and promote rehabilitative opportunities for nurses.¹⁹ An ANA position statement (1982), supported by specialty nursing organizations, defined the professional norm that practitioners safeguard the public from practice by professionals impaired by substance use as well as supported the need for treatment, rehabilitation, and return to work for the nurse with these disorders.²⁰ Subsequently, attention to the problem of impaired practice highlighted the lack of formal organizational positions on the roles of nurses in addressing SUD in the general public and emphasized the need to develop standards of nursing practice for problems related to the care of patients with SUD. Several policy statements related to the care of patients with SUD were issued by the ANA during this period; they included

Polypharmacy and the Older Adult (1990),²¹ Opposition to Prosecution of Pregnant Women for Drug Abuse (1991),²² and Abuse of Prescription Drugs (1991).²³

Continuing Education

Continuing education in nursing is considered a requisite to professional role performance and is so stated in the ANA Code for Nurses (Code of Ethics). Continuing education is currently mandated by State law for identified topics, such as child abuse, infectious disease, and acquired immune deficiency syndrome (AIDS). During the 1980s and early 1990s, continuing education occurred with regularity on the effects of SUD on health and job performance and impaired nursing practice. These events were often supported by faculty development programs (FDPs), employers, and nursing organizations. Several federally funded FDPs developed community-based education for practicing nurses and the public, as well as programs within their institutions.²⁴⁻²⁶ These initiatives raised the level of education of practicing nurses on substance use issues and established links with community-based organizations, which are rich resources for student placement and the development of academic/community linkages. Outcomes included greater facility among nurses for counseling clients, making referrals, and integrating new approaches to SUD in practice.

Restructuring of the health care delivery system has had serious negative effects on resources for continuing education. Budget cutbacks have eliminated monies and release time to attend conferences, and nursing departments have closed staff development programs. Specialty nursing organizations and State nurses' associations are the major sources of continuing education credits. Current trends suggest new directions in continuing education for nurses on substance use issues, including greater emphasis on competency-based learning, increased research and greater acceptance of nicotine as a drug of dependence, expansion of primary care roles to include care of addictions and mental health problems, and greater options for technologically assisted learning in the forms of distance learning, interactive computer programs, and online courses.

Faculty Development

FDPs were established in 1989 by the Office of Substance Abuse Prevention (now the Center for Substance Abuse Prevention, or CSAP), the National Institute on Alcohol Abuse and Alcoholism (NIAAA), and the National Institute on Drug Abuse (NIDA). Eleven of these projects were ultimately supported by the Substance Abuse and Mental Health Services Administration (SAMHSA). The programs focused on the development of research, teaching, and clinical practice skills of academically based faculty derived from an expanded substance use disorder knowledge base

and including early prevention, screening and assessment, case management, and referral of patients with such disorders.²⁷ Grant funding supported the participation of nursing faculty in teaching and training activities designed to deepen the faculty member's knowledge base and expand his/her skill repertoire. The outcomes of these projects were the development of training materials, independently initiated faculty research, and numerous publications. FDPs continued until 1995, when an additional focus on building institution/community linkages for the prevention of SUD was added. Examples of these projects include Project SAEL,²⁸ A Training Manual for Nurses Using Brief Intervention for Alcohol Problems,²⁹ and Tools for Teaching Professional Impairment.³⁰

Marcus²⁸ identified the following eight critical elements for a successful FDP in substance abuse education: (1) a nucleus of faculty committed to change; (2) adoption of an organizing framework; (3) selection of group and individual experiences to facilitate faculty development; (4) exposure to educational opportunities for ancillary faculty; (5) involvement of professionals in the community to support and facilitate change; (6) dedicated space to house new curriculum and provide project visibility; (7) design and implementation of an evaluation plan; and (8) creation of links to local, State, and national organizations working toward desired change. The model curriculum projects required the development of a plan for ongoing faculty development within the funded institution. Project Nursing Education in Alcohol and Drug Abuse (NEADA) at the University of Connecticut proposed a model of faculty development based on attitudinal change, skills training, and consensus building achieved through the processes of establishing a working group of interested faculty; surveying students and faculty to assess existing attitudes, knowledge, and skills; and organizing faculty workshops on concepts and trends.³¹ The program content was organized into modules, including goals, objectives, and outcomes. The Ohio State model curriculum identified three educational levels for faculty and staff development: (1) training of trainers; (2) special skills education (training to conduct general awareness sessions and proficiencies in selected areas); and (3) general awareness education (develop knowledge, attitudes, and skills about self and significant others and professional nursing roles related to SUD in the health professions).³² These initiatives were recommended to be implemented as short-term learning activities throughout the academic year and evaluated using methodologies such as pre- and post-tests, surveys, and planning and needs assessment questionnaires.

Nursing Involvement in Interdisciplinary Substance Abuse Education

Individual nurses and nursing organizations have worked with other health disciplines in the development of

educational programs and guidelines, policy, and research in the area of SUD since the early 1970s. The ANA long maintained a liaison to the NIAAA and worked closely in the early 1980s with the American Medical Association on education on SUD, as well as on issues related to impaired professional practice. In addition, nurses have consistently contributed to the Center for Substance Abuse Prevention's (CSAP) Treatment Improvement Protocols (TIPs) and Technical Assistance Publications (TAPs).

The two most recent and most successful interdisciplinary projects in which nurses have participated are the federally funded Addiction Training Centers, now known as Addiction Technology Transfer Centers (ATTCs), and the CSAP-sponsored FDPs. The Addiction Training Center initiative began in 1993 with CSAT funding to 11 regional centers. Single State Agencies (SSAs) or institutions were funded to collaborate with colleges, universities, publicly funded treatment providers, and government agencies in the State to produce, increase, and improve curricula used to train professionals to better meet the needs of individuals with SUD. Criteria for funding stipulated that physicians, nurses, social workers, and counselors participate in curriculum development, training, and evaluation of educational efforts. All funded training centers had nursing participants and provided an excellent forum for learning and interdisciplinary collaboration. Subsequent rounds of funding have mandated different configurations with a shift to ATTCs, which focus on the dissemination of research to practice modalities and regional training and curricula dissemination. The most recent organizational model for these interdisciplinary projects is the tristate ATTC, which coordinates educational efforts within State regions. It is described as an innovative program that links programs in SUD treatment with "best practice" and "best research." A national network of ATTCs provides communication links between the research community and treatment providers and has created counselor competencies that can be used as a curriculum design document for core knowledge, skills, and attitudes key to education on substance abuse. In the changing course of these initiatives, monies have been available as stipends for students to attend courses in substance abuse, as well as for support of continuing education, faculty development awards, and assessment of learning needs by discipline.

The CSAP-funded FDPs have furthered interdisciplinary collaboration in substance abuse education through the promotion of cross-program consultation, assistance with program development and implementation, and the use of the Association for Medical Education and Research in Substance Abuse (AMERSA) as a forum for dissemination of faculty research, faculty-student special projects, and innovative approaches to curriculum development. The size and membership of AMERSA, as well as its commitment to interdisciplinary work, have facilitated cross-disciplinary sharing of information, educational experiences, and research findings.

Because many factors contribute to substance use and the development of SUD, interventions along the entire health continuum are necessary. No one discipline is competent to perform in all settings and in the care of all manifestations of SUD. Consequently, the interdisciplinary team is the most effective structure within which to plan, implement, and evaluate comprehensive approaches to care. At the same time, health care reform, more stringent requirements for productivity, and the achievement of favorable patient outcomes in shorter time periods interact to restrain the use of interdisciplinary teams and limit the education of health professional students and practitioners in the skills necessary for successful team function. A key step in delineating health professional roles within the team is education about overlapping knowledge and skills shared by most disciplines and knowledge and skills that are discipline-specific to teaching, patient care, and research in the field of substance abuse. Participation in both the ATTCs and FDPs can provide significant learning across disciplines and about the philosophies, education, and expertise of members of other disciplines. An excellent model for a team approach to substance abuse education for health professionals is the Geriatric Education Center. These federally funded training centers provide support for collaborative networks among and between educational institutions, care delivery centers, and community-based organizations. Such collaboration functions to increase knowledge, skills, and discipline-appropriate competencies as well as skills for interdisciplinary teamwork in geriatric nursing, geriatric medicine, social work, and psychology.

Critical Issues, Challenges, and Obstacles

Critical Issues

Six critical issues emerge in relation to substance abuse education and achievement of minimum competencies by professional nurses for optimal care of individuals with SUD. These issues are derived from overriding concerns about nursing and nursing education generally. They include the following:

1. The changes in nursing education required to build knowledge and skills related to this area are deterred by the lack of knowledge and negative attitudes about substance use among health professionals.⁹ While progress has been made in changing attitudes, negative expectations for recovery from SUD persist among the lay public and health professionals.
2. There are insufficient numbers of practicing nurses, nurse researchers, and nurse educators with sound knowledge and skills to teach current students and practitioners core knowledge and skill competencies in substance use/abuse education. Nurse educators are not equally knowledgeable about all specialty areas and are employed to teach in courses that are traditionally

focused on populations, i.e., child-adolescent, adult health, or psychiatric-mental health nursing. The two specialty resources that could provide clinical or academic faculty with this training are the IntNSA and psychiatric-mental health nurses. The IntNSA has 800 to 900 members, and only about 26.6% of advanced-practice nurses are psychiatric-mental health nurses.¹⁰ Of those who are members of APNA, 2% to 3% indicate adequate knowledge in the management of SUD.¹¹ This limited pool of “experts” suggests that education about substance use and SUD in various populations and illness states cannot be achieved by specialists alone. Therefore, substance abuse education must be integrated into undergraduate and graduate curricula as well as into continuing education programs. Self-directed learning programs should be encouraged as the optimal teaching modality to support emerging advanced-practice roles and evidence-based practice derived from reviews of research.

3. A related problem is the limited pool of professional nurses generally. While the current estimate of 2.5 million nurses in the U.S. seems adequate, nursing shortages are projected to occur over the next decade. Decreased numbers of registered nurses are entering practice as a result of lower enrollments in undergraduate and graduate nursing education.³³ The current population of nurses is aging, and difficult working conditions are contributing to high attrition. Lack of financial support for specialty and advanced-practice areas contributes to the low number of nurses seeking advanced degrees.³³ These data suggest that the pool of nurses to be educated about SUD will not grow significantly but will continue among many competing demands in all areas of practice. A critical issue facing nursing regarding education in these areas will be how to increase competencies among practicing nurses and raise standards of patient care in relation to SUD.
4. The lack of consensus on the priorities most central to the advancement of the profession remains a critical issue when considering areas for continuing education and the development of nursing curricula. While substance abuse and its health implications relate to more than half of the top-10 U.S. 2010 health indicators,³⁴ acknowledgment of the centrality of these issues by the profession is not widespread. As in other health professional schools, fierce competition exists in schools of nursing for specialty education, as well as for education on new models of practice, which results in an overloaded and sometimes uneven curriculum. Negative attitudes about individuals with SUD also deter receptivity to learning about these disorders.
5. Limited training funds and limited access to educational monies for nurses who might pursue psychiatric-mental health nursing or an addictions subspecialty concentration at the master's degree level continue to negatively

impact enrollment in appropriate areas. The negative aspects of health care reform in the form of decreased capitation and the downsizing of institutions, and subsequently, their resources, have decreased job benefits for nurses. These changes are evident in the absence or decrease in tuition reimbursement, decreased numbers of on-site continuing education programs, and limited stipends and release time to attend continuing education and formal courses related to certification and other credentialing. These conditions pose critical issues for the profession generally and have negative ramifications for substance abuse education.

6. The need for a broad base of knowledge on prevention and treatment of substance use and related health problems among all nurses is the most desirable goal for the profession. Identifying competencies for basic practice, promoting competency-based approaches to achieve them, and evaluating knowledge and skills in basic credentialing would advance this effort exponentially. Since the majority of SUD occur in other than mental health populations, nurses practicing in all specialties must effectively screen for SUD, offer early intervention, and make referrals to facilitate care.

Challenges

The challenges of accomplishing minimal competencies in substance abuse education for nurses include the following:

1. There is a need to create a favorable environment and supportive responses to interdisciplinary models of substance abuse education, research, and approaches to care delivery. Interdisciplinary training is rare in educational institutions due to competition for resources and other reasons. Mechanisms need to be established wherein cost responsibilities, allocation of personnel, and institutional overhead can be equitably distributed.
2. The creation of an intradisciplinary coalition in support of basic abuse education for all practicing nurses is essential. Within nursing, different organizational entities establish standards for education and practice. Coalitions of these groups are essential for moving educational agendas.
3. The competition for preparation to provide reimbursable services is a driving force behind advanced-practice education and credentialing. Increasingly, nurses are becoming aware of professional and financial autonomy as essential to professionalism and recognition as professionals. Federal and State legislative changes that support reimbursement for nursing services will increase nurses' interest in the substance abuse specialty.
4. Student interest in this subspecialty is presently limited by the few financial incentives for concentration in this area. Many agencies do not recognize nursing creden-

tials in relation to substance abuse and will not hire nurses in other than generalist positions. This places limits on the career of advanced-practice nurses, particularly substance abuse specialists, in many States.

Obstacles

The primary obstacles to substance abuse education for nurses are as follows:

1. Stigma and negative attitudes toward individuals with substance abuse disorders. Nurses and other health professionals continue to hold negative stereotypical views of persons with SUD, and these attitudes are communicated to students and patients and their families.
2. An insufficient number of nurses and nurse educators knowledgeable about SUD is available to teach practitioners and educators about substance use problems.

Early Efforts Toward a Consensus on Competencies

The trend toward developing competencies for substance abuse education was strengthened in 1989, when 21 nursing organizations were convened in the first of three consortia meetings sponsored by the Federal government on substance abuse education that focused on the entire health continuum, from prevention to treatment and rehabilitation. The outcome of these meetings was the National Action Plan for the Education of Registered Nurses and Nursing Students about Alcohol and Other Drug Abuse.³⁵ Within this plan, substance abuse-related issues and necessary actions were identified for nursing education and nursing practice in the prevention and treatment of SUD, including the need for the development of strategies for care delivery that recognize ethnic/racial characteristics and treatment needs particular to populations served.

Issues in these three domains were specifically addressed by the 1989 and 1990 Consortia of Nursing Organizations, convened by the Department of Health and Human Services (DHHS) Division of Nursing. These consortia were convened in an effort to implement the U.S. Public Health Service Plan to Reduce the Demand for Illicit Drugs (May 1989). Their recommendations included the following:

1. Development of a minimum knowledge and skill set from which nurses can treat alcohol, tobacco, and other drug problems of abuse and dependence;
2. Development of curricular models with teaching outcomes that are minimum knowledge and skill sets for nursing students at all levels of preparation;
3. Development of curricular content on the vulnerability of nurses and other health professionals to problems of abuse and addiction;

4. Inclusion of curricular content and information on professional and other resources for appropriate referral of clients/families and colleagues in need of intervention and treatment for an alcohol/drug related problem;
5. Development of continuing education opportunities that provide relevant information on the attitudes/values, knowledge, and skills essential to the delivery of nursing care at standards established for professional nursing and related professions and regulatory outcomes;
6. Initiatives to increase the alcohol and other drug knowledge base, clinical skills, and teaching strategies of nursing faculty members teaching core courses in basic curricula as well as specialty courses in addictions and mental health;
7. Integration of all available knowledge on cultural sensitivity into curricula, including related research; and
8. Evaluation of learning through State board examinations, development of continuing education, and reevaluation of certification examinations.

Educators, clinicians, and nursing organizations have increasingly recognized the need to strengthen curricular offerings in the area of SUD. In May 1995, the School of Nursing of the University of Maryland convened nurse educators and expert clinicians in addictions to consider the specialty of addictions nursing, core competencies, role functions, and directions for the future. A summary of knowledge and skill requirements identified by this group for the specialist addictions nurse included the following points:

1. Nursing and other theories related to the biopsychosocial nature of alcohol, tobacco, and other drug abuse and addiction.
2. Theories underlying prevention, intervention, and treatment approaches to individuals, families, and groups at risk for, or manifesting, substance-related problems.
3. Theoretical frameworks addressing cultural variability in populations, “special population” status, and interdisciplinary team organizational structure and function.
4. Basic science knowledge related to the social, psychological, and biophysical aspects of abuse and addiction.
5. Theories underlying program development and community/provider partnerships.

They further identified the need for competencies in clinical skills that included

1. Use of a range of treatment modalities, including family therapy, counseling, cognitive-behavioral therapies, relapse prevention, psychoeducation, and psychopharmacologic treatment;
2. Assessment for all phases of substance use, using standardized instruments;

3. Nursing diagnosis and, for NPs, medical diagnosis of SUD and techniques;
4. Prevention, early intervention, and motivational approaches;
5. Nursing care of acute- and long- term conditions co-occurring or subsequent to substance intoxication, withdrawal, abuse, and/or dependence;
6. Case management, program planning, and implementation;
7. Team leadership, collaboration, and administration; and
8. Administration and monitoring of medications and, for NPs, prescription medications.

These efforts established greater professional consensus and provided a framework for the critical core competencies, which later evolved from model curricula and standard development for the specialty of addictions nursing.

Development of Core Competencies in Substance Abuse Education

Steps toward standardized educational approaches emerged when, subsequent to the three consortia meetings, NIAAA, NIDA, and Office for Substance Abuse Prevention (OSAP) funded the development of three model curricula for undergraduate and graduate education related to substance use and related health problems. These programs, the curricula of two of which were published, incorporated didactic and experiential curricular outcomes that most closely approach the optimal competencies for undergraduate and graduate nursing education in this area. The three funded curricular projects were University of Connecticut (Project NEADA),^{31,32} the Ohio State University School of Nursing (An Addictions Curriculum for Nurses and Other Helping Professionals), and the Division of Nursing, New York University (Project SAEN).³⁶ These three schools were funded for the development, dissemination, and evaluation of model curricula. Within all three curricula, education for development of competencies for undergraduates of basic associate or baccalaureate programs and for graduate students in all specialties were addressed in learning modules. The undergraduate modules addressed the theoretical and practical dimensions for interventions by nurse generalists with clients who have SUD. Graduate modules addressed particular role functions appropriate to nurses in leadership positions, providers of direct care in a range of settings, and theory and intervention related to identification, prevention, intervention, treatment, and recovery.

Core Competencies for Generalist Nurse Graduates

A synthesis of the following competencies could be considered minimum for substance use/abuse knowledge and skills for undergraduate students:

1. Education of all clients about the drugs of abuse and implications of use for health;
2. Awareness of personal attitudes and values about alcohol and other drug use;
3. Assessment of signs and symptoms of abuse and dependence, as well as the disease concept;
4. Screening for SUD and evaluation of their severity;
5. Nursing care of acute illness states precipitated by alcohol, tobacco, or other drug use;
6. Knowledge of treatment modalities;
7. Health promotion and health maintenance strategies for the prevention of drug use;
8. Participation in drug-related research through problem identification and data collection;
9. Formulation of nursing diagnoses of states of health and illness related to substance use and dependence;
10. Derivation of nursing strategies from nursing diagnoses;
11. Demonstrated understanding of ethical and legal issues, including impaired nursing practice; and
12. Awareness of one's personal use of alcohol and drugs, as well as patterns of use by clients, peers, and coworkers.

Core Competencies for Graduate Students in All Specialties

All master's degree-prepared or certified advanced-practice nurses should be able to

1. Apply selected research-based interventions with individuals, families, and groups for the prevention and detection of addictive behaviors;
2. Analyze pathophysiological and psychosocial processes and consider the etiology of addictions;
3. Identify appropriate strategies to assess and measure an individual's responses to the abuse of, and addiction to, alcohol and other drugs;
4. Develop appropriate research-based interventions for the management of clinical responses in individuals and families to the abuse of and addiction to alcohol and other drugs;
5. Apply selected research-based nursing interventions appropriate to the management of clinical problems of abuse and addiction to alcohol and other drugs;
6. Evaluate the effectiveness of research-based nursing interventions with individuals and families appropriate to the management of abuse and addiction to alcohol and other drugs;
7. Engage in interdisciplinary assessment, treatment, and evaluation of persons with acute and chronic addictive conditions; and

8. Influence the development and implementation of health care policy as it relates to alcohol and other drug use.³⁶

The domain of graduate education includes the opportunity for study within the specialty of addictions as an independent specialty or a subspecialty of psychiatric-mental health nursing. In 1989, standards for the specialty of addictions nursing were developed and published in an ANA-NNSA book, *Standards of Addictions Nursing Practice with Selected Diagnoses and Criteria*. Core competencies for addictions nursing practice are detailed in this volume

Certification and Recertification

Certification of nurses' knowledge on prevention, assessment, and treatment, including nursing care, is indicated by the successful completion of one of three national examinations. The American Nurses Credentialing Center's (ANCC) examination for the baccalaureate-prepared nurse specializing in psychiatric mental health and IntSA Society certification as a Certified Addictions Registered Nurse (CARN) are for nurses prepared at basic education levels; ANCC for the baccalaureate level, and IntSA for diploma, associate and baccalaureate levels. The ANCC examination stipulates 1600 supervised clinical hours for 24 of the last 48 months as a requirement for the examination; questions related to the care of SUD are included with questions on psychiatric nursing. The CARN examination requires 4000 hours of nursing experience within the 5 years prior to sitting for the examination. In the fall of 2000, both ANCC and IntSA introduced new examinations for nurses prepared at the master's degree level. In addition to the previously offered ANCC Psychiatric-Mental Health Clinical Nurse Specialist examination, ANCC offers an examination for nurses prepared as psychiatric nurse practitioners. Both require completion of a master's or post-master's degree program at an accredited school or university and 500 supervised clinical hours while in the program or following its completion.³⁷ Required components of this preparation are education in medical as well as nursing diagnosis and management, medication prescribing and management, and direct care provision. The IntSA advanced-practice certification title, Certified Addictions Registered Nurse-Advanced Practice, is achieved on successful completion of an examination for which a master's degree and 500 supervised direct client contact hours in advanced practice addictions/psychiatric mental health nursing are required.³⁸ Recertification is available from both organizations through continuing education after 4 years for CARN certification and after 5 years for ANCC certification.

Vision for the Future

Optimal outcomes for nursing education on any SUD would be achievement of minimal competencies for all generalist practitioners of nursing and all nurse educators. This would be greatly facilitated by incorporation of curriculum components on assessment and treatment of SUD in all accredited undergraduate and graduate curricula, an outcome long sought by specialists in this area. Standard approaches to measurement of knowledge and skill competencies would provide outcomes by which to evaluate the extent of saturation of such education into the nursing community. The desired evaluative mechanism would be clinical examinations as well as the standardized

National Council Licensure Examination-RN (N-CLEX) administered to graduates of nursing programs seeking registered nurse licensure. Another mechanism would be the inclusion of standardized questions in certification exams for all primary care nurse practitioners and nurse midwives as well as for psychiatric nurse clinical specialists and nurse practitioners and nurses specializing in addictions nursing. These efforts would be greatly enhanced by interdisciplinary initiatives to educate faculty and nursing colleagues. The interdisciplinary model of learning is the best replication of the realistic pooling of the resources of several disciplines that results in maximum patient care outcomes.

Recommendations

Core Competencies

1. Obtain a consensus on competencies desired for all nurses at the generalist and specialist levels in relation to substance use issues and disorders.

Rationale. Competency-based learning is now being incorporated into undergraduate, practitioner, and clinical nurse specialist educational programs. Standard expectations for competencies will articulate better with approaches to learning used across disciplines and can be more readily linked to desired evidence-based outcomes.

Recommended Actions. Refine and publicize competencies, including those for evidence-based intervention strategies.

Responsible Agents. Strategic Planning Advisory Committee (SPAC) nursing members, the AACN, the National Academy of Nurse Practitioners, and the National Academy of Certified Nurse Midwives (NACNM).

Expected Outcomes. Nursing competencies in the care of SUD occurring in individuals, families, and communities will be comparable to nursing competencies in the care of other illnesses and diseases. Competencies should include evidence-based strategies, be measurable, and be leveled according to educational preparation. Nurse educators will obtain knowledge sufficient to demonstrate and evaluate student competencies in this area.

2. Standardize evidence-based core competencies for the care of clients/patients, families, groups, and communities for generalist baccalaureate and master's-prepared nurses in all specialties.

Rationale. Competencies have been identified, as have nursing diagnoses and nursing outcomes, to include SUD related to nursing interventions.

Recommended Actions. Core competencies have been identified but have not been universally accepted by several nursing organizations and educators. Sufficient knowledge and skill outcomes have been identified but need to be consolidated and refined. All need to be reviewed for research supporting their effectiveness.

Responsible Agents. American Association of Colleges of Nursing, American Academy of Nurse Practitioners, American College of Nurse Midwives, and nurse educators.

Expected Outcomes. Expanded inclusion of content on SUD in nursing curricula. Core competencies for addictions nursing specialties should be standardized and disseminated to all nursing programs and schools, as well as specialty nursing organizations.

3. Disseminate core competencies and appropriate roles to colleges of nursing and relevant nursing organizations. Disseminate standards of addictions nursing to nursing programs and agencies that employ generalist and specialist nurses in the care of individuals with SUD.

Rationale. Role functions and core competencies have been described by major nursing organizations. Until these are widely disseminated and implemented, role expectations and job performance will be inconsistent, resulting in varying levels of quality of patient care. If a consensus can be achieved on specialty role knowledge and skill bases, the specialty can be

solidified and patient care outcomes will be more consistent. Educational preparation can then be more standardized, increasing the effectiveness of nursing interventions. Research on interventions will be facilitated by these changes.

Recommended Actions. Contact representatives of the NNSA, the ANA, the APNA, and the NCCDN to explore dissemination of materials and potential action to achieve a consensus.

Responsible Agents. Nursing organizations and addictions specialty nursing organizations.

Expected Outcomes. Greater uniformity in addictions nursing specialty education and practice.

4. Identify or develop nursing models of prevention and care of patients with SUD.

Rationale. Current resources for the care of patients with SUD are framed in the medical model and require modification for nursing approaches. Framing knowledge and skills in nursing models will facilitate learner and educator readiness to integrate this material into nursing curricula.³⁹ A curricular model for teaching about nursing and substance use responses was proposed in 1996 by Marcus and colleagues. It describes a humanistic-behaviorist model that advocates close links between content and theory provision and “contextual reality,” that is, the use of realistic settings for practice and learning. Collaborative links to clinical settings provide opportunities for the learner to experience clinical problems in a variety of settings.²⁵

Recommended Actions. Solicit peer-reviewed journal articles demonstrating how current substance use/abuse knowledge articulates with nursing theories, as well as basic and other social sciences. Develop and disseminate specific nursing approaches to patient care.

Resources. Nursing journals that focus on the use and development of nursing theory, as well as applied research.

Responsible Agents. Nurse educators and specialists in addictions nursing.

Expected Outcomes. Integration of substance use knowledge and skills into all nursing science courses.

Faculty Development

5. Reexamine and modify faculty development initiatives and seek Federal institute support to produce a greater impact on professional education.

Rationale. FDPs had some positive outcomes but a limited scope of influence in developing faculty expertise across the 110 nursing schools throughout America. While fellows were visible and active in substance abuse education during their fellowships, few have remained visible as contributors to the nursing literature or have secured major research funding.

Recommended Actions. Reevaluate the faculty development process with the goals of creating stronger incentives for scope of activity (academic and financial), developing stronger links between experts practicing in nursing and the faculty fellows through a mentoring process, and including specialty nursing organizations in AMERSA in an effort to consolidate a critical mass of practitioners and educators.

Responsible Agents. AMERSA/Health Resources and Services Administration/Bureau of Health Professions (HRSA/BHPr) project participants, AMERSA, NNSA, and NCCDN; Federal agencies such as NIDA, NIAAA, HRSA/BHPr.

Expected Outcomes. Greater visibility of educational opportunities within the specialty.

Certification and Recertification

6. Revise certification of the clinical specialist with addictions expertise through the American Nurses Credentialing Center to conform to the new modular approach to certification currently being developed by ANCC. The modular approach allows a nurse with a basic specialty certification to demonstrate knowledge on another body of specialty information, i.e., a nurse certified in adult health would add the addictions certification by successfully completing that modular examination.

Rationale. A modular approach would permit more accurate and comprehensive evaluation of knowledge concentrated in the substance use/abuse field while also allowing nurses with specialty education other than psychiatric-mental health to become certified in the area of addictions treatment. An examination to test graduate-level education in the specialty of addictions nursing has been developed by the NNSA and was implemented for the first time in 2000. Credentialing at the graduate level would create a cadre of experts with designated competencies and standard didactic and experiential educational experiences. It defines the individual nurse's accomplishments and adds prestige as well as national recognition. Credentialing is now a differentiating factor in the marketplace for other specialties. Supporting its broader use helps determine the nurse's eligibility for selected addictions nursing positions, salary differentials, and definable standards of performance.

Recommended Actions. Representative members of the APNA and the IntSA should work with the ANCC to disseminate information on credentials available and requirements for achieving them. These organizations should continue to work with the ANA Governmental Affairs division to obtain recognition through reimbursement for advanced-practice nurses providing care to individuals with SUD.

Responsible Agents. Representatives of professional organizations.

Expected Outcomes. Wider recognition by other health professionals, consumers, and third-party payers of nurses' knowledge and skills in caring for individuals, families, and groups with SUD. Delineation of nursing knowledge and skills in relation to SUD at basic and specialist levels.

Continuing Education

7. Direct continuing education on substance use, abuse, and dependence to the learning needs of generalist nurses as well as nurses in all specialties.

Rationale. Approximately 80% of persons with SUD are never treated for them yet seek treatment for co-occurring illnesses or those secondary to SUD.³¹ The learning experiences on identification, screening, and early intervention, including motivational interviewing, and referral have been demonstrated to improve clinical nursing skills.^{24,26}

Recommended Actions. Make current learning resources available to all specialty nursing organizations and State nurses' associations.

Responsible Agents. SPAC members; governing boards of State nurses' associations and of specialty nursing organizations.

Expected Outcomes. Dissemination of information about available resources communicates both the expectation and the feasibility of achieving levels of minimum competence among practicing nurses in the prevention and treatment of SUD. The availability of organized resources facilitates the planning of continuing education offerings.

8. Develop institution-based, online, and distance learning courses on SUD content appropriate to undergraduate nursing science course concentrations.

Rationale. Nursing knowledge on the prevention and treatment of SUD will continue to be concentrated among a small number of nurse educators and clinical experts. Use of online courses and distance learning allows nurses around the country to access educational experiences, communicate with mentors, and be evaluated for competencies and knowledge.

Recommended Actions. Identify institutions with the personnel and necessary resources to achieve this goal, supply resources, and disseminate publicity.

Responsible Agents. SPAC; faculty fellows and mentors.

Expected Outcomes. Increased use of learning resources by primary care providers and nurses employed in generalist settings as well as drug and alcohol treatment facilities.

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Recommendations for Implementing Effective Substance Abuse Education in Pharmacy Practice

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Introduction

The public has long held the pharmaceutical profession in high esteem, and pharmacists are among the most accessible health care providers.¹ The profession of pharmacy has a covenant with society regarding safe and appropriate medication use. The pharmacist's knowledge base encompasses the pharmacology, pharmacokinetics, pharmacodynamics, toxicology, mechanism of action, adverse effects, and interaction potential of pharmaceutical agents. Pharmacists integrate that information to improve patient care. Pharmacy has evolved from a profession based on medication dispensing to one that encompasses direct patient care. This move was facilitated by a new mission of pharmacy known as "pharmaceutical care."^{2,3} Pharmaceutical care has been defined as "the direct, responsible provision of medication-related care for the purpose of achieving definite outcomes that improve a patient's quality of life. The principal elements of pharmaceutical care are that care is directly provided to the patient, it is provided to produce definite outcomes, these outcomes are intended to improve the patient's quality of life, and the provider (pharmacist) accepts personal responsibility for the outcomes."⁴

Broad Description of Pharmacists and Their Work Settings

As of June 30, 1999, there were 331,212 licensed pharmacists in the United States.⁵ Of these, 60% worked in a community pharmacy, 23% in a hospital pharmacy, 3% in manufacturing or wholesale, 2% in teaching or government capacities, and 12% in other settings.⁶ In addition, many pharmacists collaborate with physicians to provide disease management in settings such as anticoagulation, asthma, or lipid clinics, as well as other disease management clinics.⁷ Consultant pharmacists provide patient services in long-term care facilities.

Pharmacists possess a unique knowledge base that provides them with specialized tools to render patient care and prevent medication errors. Medication errors in the United States cost the health care system more than \$76 billion annually.⁸ Pharmacists are essential in providing a safe medication delivery system.⁹ For every dollar invested in clinical pharmacy practice there has been an associated reduction in drug costs.¹⁰

With respect to substance use disorders (SUD), pharmacists are often the health care providers with the best knowledge of and insight into the regulatory aspects of substance abuse treatment, especially in regard to the use

of methadone and other agents in the treatment of patients with opioid dependence. Pharmacists are in a unique position to assess and manage the pharmacotherapy of persons with SUD and comorbid conditions; for example, they can assist in devising plans for pain management in persons with drug abuse disorders. They are well qualified to consider the implications of medication interactions. This includes interactions between drugs of abuse, agents used in substance abuse treatment, and other prescription as well as over-the-counter medications. They are trained to obtain detailed medication histories from patients and to help them adhere to their treatment regimens. As more therapies are developed to treat SUD, pharmacists are well positioned to bring these new approaches to the front line safely and effectively.

Pharmacists create and deliver educational programs for health professionals and patients about pharmacology, pharmacodynamics, and pharmacokinetics, as well as about drug toxicity and adverse drug reactions (ADRs) and drug interactions. As part of an interdisciplinary team that is treating individuals with substance abuse disorders, pharmacists have a unique perspective. They also can utilize their specialized knowledge base to improve the pharmaceutical care of hospice, palliative care, or chronic pain patients.

Historical Profile of Work in SUD

The Drug Enforcement Administration (DEA) has determined that pharmacists play a “pivotal role [in the prevention and education of SUD] because it is the pharmacist who dispenses the prescription medication to the patient. Consequently, patient health and proper drug usage depend upon concerned and interested professionals [such as pharmacists].” The DEA notes that pharmacists have a responsibility for proper medication use.¹¹

Despite this agency’s recognition of pharmacy’s important role in education about and prevention of SUD, the pharmacist’s ready accessibility as a health care provider, and the growing recognition of the pharmacist as an essential member of the health care team, pharmacy has yet to fully participate in any Federal initiative for faculty or curricular development in substance abuse education.^{9,11} Faculty and curricular development in this area have proved beneficial in other professions, such as medicine and nursing; pharmacy should follow their lead in bridging the gap in substance abuse education for practicing pharmacists. There is no Federal mandate regarding the education of the pharmacist in SUD. In addition, no systematic, professionwide approach has been undertaken in pharmacy, as has been done in other health care professions, to determine the core competencies in substance abuse education needed by pharmacists. There is no systematic substance abuse education in pharmacy school curricula on the national level; thus, no formal training in substance abuse education is universally required for pharmacists.

The absence of educational opportunities applies both at the undergraduate and graduate levels of pharmacy education. There are 82 colleges and schools of pharmacy in the United States. In 1998, they awarded 4,768 bachelor of science in pharmacy degrees, 2,632 doctor of pharmacy (Pharm.D.) degrees, 421 master of science in pharmacy degrees, and 411 doctor of philosophy in pharmacy degrees.¹² In 1991, the American Association of Colleges of Pharmacy (AACP) published curricular guidelines for pharmacy in substance abuse education.¹³ Three years later, a survey of implementation of these recommendations revealed that only 50% of the curricular guidelines suggested by AACP had been adopted by 82% of the responding colleges, and that in 94% of the responding colleges, only half of those colleges’ substance abuse content in their curricula corresponded to the content outlined in the AACP guidelines.¹⁴

Pharmacy students themselves feel a need for training in substance abuse. In a recently published study, more than 60% of students reported that they believed they would need a working knowledge of SUD in their professional practice.¹⁵ Despite the knowledge that some

pharmacy students themselves are abusing substances and the perception that a majority of them believe that they need a working knowledge of SUD, only 50% of the AACP guidelines on substance abuse education have been implemented in the majority of colleges and schools of pharmacy in the United States.^{14,15}

Some pharmacy programs are doing a good job in substance abuse curricular development; however, on a nationwide basis, training is not uniform. Some schools require a comprehensive program; others have an elective substance abuse education program. Still others have none at all. Some programs require minimum competencies in the area of substance abuse; others do not. There have been few Federal programs to help establish programs for the pharmacy profession in substance abuse education.

Postgraduate training opportunities in substance abuse for pharmacists are virtually nonexistent. As of June 30, 1999, there were 460 American Society of Health-System Pharmacists (ASHP)-accredited residencies; these include both general pharmacy practice and specialty residencies.. The number of residency graduates for that year was 852 (602 in pharmacy practice residencies and 250 in specialty residencies).¹⁶ As of 2000, the number of ASHP-accredited residency training programs was expected to top 480, and the number of graduates was anticipated to exceed 900. Nine of the 460 ASHP-accredited residencies in 1999 were devoted to psychiatry, but not a single residency was devoted fully to advanced training in the area of substance abuse.¹⁶ The American College of Clinical Pharmacy (ACCP) 2000 Directory of Residencies and Fellowships lists 433 pharmacy postgraduate programs, of which 320 are residencies, 105 are fellowships, and 8 are combined residency and fellowship programs.¹⁷ In the ACCP list of residencies and fellowships, there is one residency in pain management, eight residencies in psychiatry, and five fellowships and two residency/fellowships in psychiatry. There are no federally funded programs to support advanced training of pharmacists in this area.

Critical Issues, Obstacles, and Challenges

The major challenges facing the pharmacy profession with respect to expansion of training opportunities in substance abuse education are as follows:

Complex pathophysiology of substance abuse. The pathophysiology of substance abuse is complex and incompletely understood. The concept of substance abuse as a disease is not unanimously accepted by the pharmacy profession. In order to understand the proper place of a medication in a disease state, however, the pathophysiology of that disease must be known.

Lack of education of pharmacy faculty and students about pharmacology, pharmacodynamics, pharmacokinetics, toxicology, ADRs, and drug-drug interactions in persons with SUD. The medications used to treat the disease of substance abuse are complex. The recommended curriculum needed to teach these subjects to pharmacy students has been incompletely implemented. No funding mechanisms in the public or private sector have been developed to address this gap in substance abuse education for pharmacy faculty and their students.

An already-overloaded pharmacy curriculum. As schools and colleges of pharmacy move toward the now-mandated entry-level Pharm.D. degree, they face the dilemma of teaching more complex material in a more integrated, multidisciplinary fashion and in a shorter amount of time. Because of this, teaching about many therapeutic areas has been condensed. Any proposals to include more material on substance abuse in an already-overloaded curriculum may be met with resistance by pharmacy faculty.

Bias against individuals with SUD. Few diseases carry the stigma, prejudice, and misinformation that SUD do. Education is the key to overcoming such bias. Implementation of substance abuse education in the pharmacy curriculum has had limited success.

Lack of pharmacy faculty research in SUD. Research is vital to advancing substance abuse education at colleges and schools of pharmacy. Few members of the pharmacy profession are currently engaged in such research.

Need for postgraduate training opportunities. An infrastructure to support the initial training and further development of pharmacy practitioners and researchers in SUD needs to be created. There are no residency programs designed to achieve these objectives, and there is only one federally funded fellowship for pharmacists in SUD

Patient expectations. Pharmacists have long been perceived as professionals who dispense medication. Although pharmacists are required to counsel patients before dispensing any medication, few patients expect their pharmacists to educate them on SUD.

Pharmacists' level of confidence in discussing SUD with patients. Many pharmacists do not feel confident discussing SUD with their patients; in many cases, this is because they lack not only the knowledge but also the communication tools to do so. There are no national programs available to train pharmacists in the communication techniques needed to discuss SUD issues with their patients.

Lack of reimbursement. Pharmacies derive most of their income from dispensing medications. Pharmacists have only recently been recognized in some States as

primary providers who are authorized to bill for the provision of counseling or cognitive services. Relatively little income is earned from counseling patients; moreover, such activity may be time-consuming and reduce the amount of time the pharmacist can spend dispensing medication.

Needs assessment of substance abuse education in colleges and schools of pharmacy. Too little is known about the pharmacy profession's training in SUD and pharmacists' attitudes toward SUD and their skill in providing services to patients with SUD. A framework needs to be developed to begin to identify and teach core competencies in substance abuse education for the profession.

Absence of an infrastructure for substance abuse education for pharmacy faculty and students.

Within the AACP there exists a Special Interest Group (SIG) on Substance Abuse Education and Assistance. Members of this group are primarily in academic settings; they are not community pharmacists. Given adequate resources, the SIG could implement a national program of residency training and curriculum change. The support needed would have to be sufficient to attract the attention of deans and curriculum committees across the country.

In addition, resources would have to be allocated to develop an infrastructure to support the curricular and research goals in SUD throughout the profession, not just within the academic environment. When colleges and schools of pharmacy take seriously their mission to educate and train their students about the social and clinical issues of SUD, courses will be offered, core content will be required, and graduates will acquire and be able to exercise their knowledge and skill in this area.

Lack of means for information dissemination to pharmacy practitioners. An infrastructure for dissemination of information for academicians exists in the AACP's Substance Abuse Education and Assistance SIG; however, this system needs to be strengthened. No professionwide infrastructure exists to disseminate information on SUD to pharmacists in various settings nationwide.

Core Competencies

Given the scope of the substance abuse problem in our society and the lack of substance abuse education reported by pharmacy faculty and students, a national mandate is needed to define the core competencies in substance abuse education for the profession of pharmacy. Federally funded initiatives are needed to develop core competencies for the profession and to integrate these competencies into the standard teaching curricula of all colleges and schools of pharmacy throughout the United States. The following core competencies are proposed for the profession of pharmacy:

Knowledge

Pharmacists should have a knowledge of

- Pharmacology, pharmacokinetics, pharmacodynamics, toxicology, mechanism of drug action, drug–drug interactions, and the adverse reactions between alcohol, tobacco, and common drugs of abuse and agents used in the pharmacotherapy of SUD; and
- The pathophysiology of chemical dependence and the theories of addiction, including the biological basis of addiction and the social, environmental, and genetic risk factors that contribute to its expression.

Clinical Skills

In the area of assessment, intervention, and referral, pharmacists should have the ability to

- Assist in the early identification of individuals with SUD by using standard screening instruments;
- Develop and deploy culturally sensitive assessments for individuals with SUD;
- Intervene effectively with these patients by using Brief Motivational Interviewing (BMI) and other intervention strategies;
- Create a list of substance abuse treatment resources in their communities, including the responsible contact person for each program or provider;
- Refer individuals affected by SUD for appropriate evaluation and work-up; and
- Participate in multidisciplinary efforts to intervene and care for clients and colleagues recovering from SUD.

In the area of treatment, pharmacists should be able to

- Provide recommendations for the appropriate use of mood-altering substances in individuals recovering from SUD to health care providers and the public;
- Instruct drug abuse counselors and other health professionals working in drug treatment programs on the pharmacology, pharmacodynamics, pharmacokinetics, toxicology, adverse drug reactions, drug–drug interactions, and mechanisms of action of abused substances and of medications used for to treat SUD;
- Provide information about support group meetings (e.g., Alcoholics Anonymous, Narcotics Anonymous) appropriate to the needs of individuals whose lives are affected by SUD;
- Provide pharmaceutical care to patients treated for SUD;

- Assist in the development of pharmacotherapy options for drug detoxification protocols used by health care providers; and
- Be aware of the different types of treatment modalities, their expected outcomes, and their cost-effectiveness.

Public Health Awareness

Pharmacists should be able to

- Participate effectively in public discourse on the implications of policies related to illicit drugs, substance abuse prevention, and the treatment of chemical dependence; and
- Describe the potential ramifications of changes in the illicit drug market on the clinical manifestations and nature of substance abuse and chemical dependence in the community.

Attitudes

Pharmacists should be able to

- Approach and treat substance abuse and addiction as any other chronic disease; and
- Approach and treat substance abuse and addiction without personal bias and judgment of the patient.

Vision for the Future

Pharmacists should be actively involved in reducing substance abuse. They have a unique perspective from which to counsel patients and other health care providers about alcohol and illicit drugs as well as medications. Given this position, pharmacists should develop the skills needed to assume a greater role in substance abuse prevention, education, and treatment in organized health care settings and in the community. The profession needs to conduct a critical analysis of the knowledge base of pharmacists in substance abuse education. A comprehensive, systematic approach should be undertaken to define the core competencies needed by pharmacists in substance abuse education. Once defined, these core competencies need to be incorporated into the professional education of pharmacy students.

An infrastructure needs to be developed to disseminate the core competencies to pharmacists in all practice environments. Increased resources also should be dedicated to building an infrastructure that will foster the development of specialized pharmacy faculty and pharmacy curricular content in substance use disorder-related topics. Pharmacists should be made aware of and take advantage of BMI training programs. Pharmacists should assume a greater leadership role in conducting research in the field of SUD.

Recommendations

Needs Assessment for Curricular Reform

1. Resources are required to assess substance abuse education in the nation's schools and colleges of pharmacy in order to determine the need for curriculum reform in this area.

Rationale. The only survey on substance abuse education content in colleges and schools of pharmacy was published in 1994. Since that time, new concepts of the disease process of substance use have emerged, as have new therapies. A new survey needs to be done to determine what progress schools and colleges have made implementing curricula in substance abuse education and what level of training exists in each school.

Recommended Actions. The American Association of Colleges of Pharmacy (AACP), the American Council on Pharmaceutical Education (ACPE), and Federal government should fund a national survey of substance abuse education in schools and colleges of pharmacy in the United States. Funding should be sufficient to conduct the needs assessment, analyze the results, and disseminate the findings to all 82 schools and colleges of pharmacy. The survey could be modeled after that conducted by Baldwin and colleagues.¹⁴

Responsible Agents. AACP, ACPE, Health Resources and Services Administration/Bureau of Health Professions (HRSA/BHPr).

Expected Outcomes. The profession will possess current data on the breadth and depth of substance abuse education in colleges and schools of pharmacy in the United States. These data would be the basis on which to introduce curriculum reform in substance abuse education for pharmacy professionals.

Core Competencies in Substance Abuse Education

2. Resources are needed to create a process for developing a consensus on the core competencies in substance abuse education for the pharmacy profession.

Rationale. Information on the psychosocial and treatment aspects of substance abuse is not part of academic programs at many colleges and schools of pharmacy. The addition of these subjects will enrich the education of pharmacy faculty and students. The colleges can accomplish this through their own curriculum committees. With guidance from recommendations set forth by the AACP, as well as the core competencies suggested in this chapter, substance abuse education should become a routine component of the education and training of pharmacists.

Recommended Actions. Colleges and schools of pharmacy and the profession of pharmacy should devote resources to develop a consensus on core competencies in substance abuse education and decide how best to integrate these competencies into the curriculum of each college and school of pharmacy in the United States. To accomplish this task, a joint venture should be launched by pharmacy's professional organizations, i.e., ASHP, the American Pharmaceutical Association (APhA), ACCP, AACP, ACPE, and the National Association of Boards of Pharmacy (NABP), to survey their members on the core competencies in substance abuse education for the entire profession.

Responsible Agents. ASHP, APhA, ACCP, AACP, ACPE, NABP, colleges and schools of pharmacy, and Federal agencies that support substance abuse education for health professionals.

Expected Outcomes. Within 3 years, schools and colleges of pharmacy will have a list of core competencies in substance abuse education, as well as a plan for integrating these competencies into their curricula.

Faculty Development in Substance Abuse Education

3. Resources are needed to train at least two faculty members at every school or college of pharmacy in substance abuse education. These designated faculty will be responsible for integrating the core competencies in substance abuse education into the standard curriculum at each school.

Rationale. Curricular guidelines in substance abuse education by the AACP have not been implemented on a national basis in colleges and schools of pharmacy, at least in part because of the lack of faculty members trained in substance abuse education

Recommended Actions. Federal and private funding should be allocated to train pharmacy faculty members interested in substance abuse education. Identified faculty members should also be encouraged to participate in national organizations, such as the Association for Medical Education and Research in Substance Abuse (AMERSA), that promote substance abuse education for health professionals.

Responsible Agents. AACP, ACPE, NABP, AMERSA, the pharmaceutical industry.

Expected Outcomes. Two pharmacy faculty members at each of the Nation's schools and colleges of pharmacy will be trained in substance abuse education, and will be responsible for integrating the core competencies in the standard pharmacy curriculum

Infrastructure for Faculty Development in Substance Abuse Education

4. Allocate resources to develop and maintain an infrastructure that will ensure continued faculty development in substance abuse education.

Rationale. Colleges and schools of pharmacy experience faculty turnover. A mechanism needs to be designed and implemented to ensure continued faculty development in substance abuse education. The pharmacy profession should make the education of pharmacy faculty in substance abuse education a top priority and work to provide educational opportunities for faculty in this area.

Recommended Actions. Colleges and schools of pharmacy should recruit faculty who can teach core competencies in substance abuse education and encourage research programs in the treatment and prevention of SUD.

Responsible Agents. Colleges and schools of pharmacy, AACP (both the Council of Deans and Faculties and the Substance Abuse Education and Assistance Special Interest Group), Federal agencies interested in substance abuse education.

Expected Outcomes. Within 5 years, 10%–20% of the pharmacy faculty will have attained the identified core competencies in substance abuse education.

Continuing Education in Substance Use Disorders for Practicing Pharmacists

5. Develop continuing education (CE) programs in substance use disorders for practicing pharmacists.

Rationale. Few disease states carry as much stigma and misunderstanding as SUD. The majority of pharmacists lack adequate education in SUD. CE programs can provide substance abuse education to practicing pharmacists. Increasing the number of CE programs in substance abuse education would provide pharmacists the opportunity to increase their knowledge and skills and make them better able to intervene with patients affected by these disorders.¹⁸ As more pharmacists become educated on the subject of SUD, the stigma, prejudice, and misunderstanding that surround substance abuse disorders will decrease.

Recommended Actions. National pharmacy organizations should make CE programs in substance abuse education a top priority. For-profit CE organizations should increase the number of CE programs in substance abuse education for practicing pharmacists. Pharmaceutical companies should recruit more speakers who are able to give industry-sponsored programs that focus on SUD. State boards of pharmacy should mandate that a certain number of CE units be obtained in substance abuse education.

Responsible Agents. ASHP, APhA, AACP, ACCP, NABP, pharmaceutical companies, and for-profit CE organizations.

Expected Outcomes. Within 5 years, 15% of CE content offered to practicing pharmacists should be devoted to substance abuse education.

Accreditation and Certification

6. An infrastructure is needed to inform accrediting, certifying, and licensing bodies for the profession of pharmacy of the need for curricular changes in substance abuse education.

Rationale. Accrediting bodies can drive curricular change by mandating that schools and colleges of pharmacy include a required amount of substance abuse education material in their curriculum. Licensing and certifying bodies can drive curricular change by assigning a certain portion of board examination questions to SUD.

Recommended Actions. Resources should be dedicated to developing an infrastructure for disseminating information on substance abuse education to the accrediting bodies, ACPE, AACP, and individual State boards of pharmacy. The infrastructure should include the Substance Abuse Education and Prevention SIG of AACP, APhA, ASHP, ACCP, NABP, and other professional pharmacy organizations. The profession's academic and professional organizations should use their existing infrastructures to disseminate information on substance abuse education via print and electronic media. This information should include data from the curricular needs assessment and a professionwide needs assessment on substance abuse education issues. The national licensing examination for pharmacists should contain questions on SUD.

Responsible Agents. AACP, ACPE, ASHP, APhA, ACCP, NABP.

Expected Outcomes. Schools and colleges of pharmacy will be motivated to implement curricular change in SUD and students will acquire the needed knowledge and skills in this area.

Pharmacists Impaired by Substance Abuse

7. Efforts must be made to assist pharmacists and pharmacy students who are impaired by substance abuse.

Rationale. It has been estimated that one out of eight pharmacists or pharmacy students will have a substance use disorder at some time in his or her life.^{19,20} It has been reported that 62% of pharmacy students use controlled substances for nonmedical reasons, 41% of pharmacy students use controlled substances on a regular basis, 23% of pharmacy students have more than five drinks per an occasion, and 38% of pharmacy students report a family history of substance abuse.²⁰ Pharmacy students' attitudes towards drug abuse may grow more conservative and repressive as the students move through the curriculum.²¹ Substance abuse is considered to be an occupational hazard for health professionals, and accessibility to and knowledge about drugs appear to be risk factors for substance abuse in health professionals.²² ASHP and APhA have issued position statements regarding pharmacy's role and responsibility in educating and providing assistance to those with SUD and in preventing the development of these disorders.^{23,24} AACP has recently published revised guidelines for policies and procedures for students and faculty of colleges and schools of pharmacy with SUD.²⁵

Recommended Actions. A mechanism should be in place to assist in the early identification of individuals in the pharmacy profession with SUD. Additionally, a mechanism needs to be in place to refer the individuals affected by SUD for appropriate evaluation and treatment. Pharmacy should participate in multidisciplinary efforts to intervene with and care for individuals recovering from SUD and support and encourage the recovery of all health professionals affected by SUD. This may include (1) retaining employees with SUD or being willing to hire them; (2) participating in monitoring and reporting programs of recovery or disciplinary contracts; (3) maintaining an environment of supportive recovery; (4) establishing behavioral standards and norms that discourage the abuse of mood-altering substances, including alcohol, among all employees; and (5) participating in peer assistance programs.

Responsible Agents. ASHP, APhA, ACCP, AACP, other professional organizations.

Expected Outcomes. By supporting those pharmacists affected by SUD, pharmacy will aid in their recovery and preserve their contributions to the profession. In addition, those in recovery could act as models for those in the profession who are still actively abusing substances or who continue to suffer with untreated chemical dependence.

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Improving Physician Assistant Education and Practice in SUD and Policy Recommendations on Substance Abuse Education for Physician Assistants

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Introduction

Physician assistants (PAs) are health care providers licensed to practice medicine with physician supervision. The scope of a PA's practice corresponds to that of the supervising physician and varies according to his or her training, experience, and State law. PAs provide services ranging from primary care to specialized surgical care. With the supervision of a physician, PAs record medical histories, perform physical examinations, diagnose and treat illnesses, order and interpret tests, and initiate referrals. Physician assistants are trained to provide patient education, counseling, and preventive interventions on a range of health issues, including acute and chronic diseases, normal growth and development, and common psychosocial problems. Depending on their practice setting, PAs may perform clinical tasks such as applying splints and casts, suturing, and assisting in surgery. In 46 States and the District of Columbia, PAs can write prescriptions, but laws vary regarding the classes of medications PAs can prescribe. Although the clinical practice of physician assistants focuses on patient care, many PAs also assume educational, research, and administrative responsibilities.¹

Numerous studies have demonstrated that PAs, practicing as part of a supervising physician's team, provide high quality health care. The Office of Technology Assessment of the U.S. Congress studied health care services provided by PAs and determined that, "Within their scope of practice, PAs provide health care that is indistinguishable in quality from care provided by physicians."²

Practice Settings

The PA concept emerged in the mid-1960s in response to a physician shortage and a nationwide need for primary care providers. Soon after the first PA program started at Duke University in 1965, PAs began to close the service-demand gap by making health care more available, affordable, and accessible, especially in rural and underserved areas. From 1970 to 1980, with the support of federally funded training grants, the number of PA programs increased fivefold, from 12 to 56, and by 1992, that number doubled. As of October 2000, there were 126 accredited programs. Through 1998, more than 40,000 PAs had been trained, and the PA workforce is expected to exceed 87,000 by 2010.³ Although the profession has expanded to include specialty practices, PA educational programs continue to emphasize primary care and strive to increase primary care services in areas that are medically underserved.⁴

Results of the 1999 American Academy of Physician Assistants (AAPA) PA Census Report estimated 41,421 PAs were eligible to practice in the U.S. as of March 1999. PA practice encompassed at least 60 specialty fields. More than half of PAs (52%) reported their primary specialty in one of the primary care fields: family/general practice medicine (38%), general internal medicine (9%), general pediatrics (3%), and obstetrics/gynecology (2%). Other areas for PA practice include general surgery/surgical subspecialties (20%), emergency medicine (10%), and the subspecialties of internal medicine (7%). One hundred nineteen (0.8%) of the PAs who responded specialized in psychiatry, and 69 (0.4%) practiced in substance abuse and addiction medicine.⁵

Almost half (48%) of PAs work predominantly in solo or group practices, and the work setting for another 38% is a hospital. Most PAs (90%) see outpatients in their primary practice setting, but many (28%) see inpatients as well.

Approximately 12% of the respondents to the AAPA survey work in some type of federally qualified health center or community health facility.⁵

Core Values and Paradigms

The Physician–PA Relationship

PAs practice medicine with supervision by licensed physicians. The first statutes and regulations governing PA practice and supervision by physicians were enacted nearly 30 years ago. State regulations and laws have been modified as the structure and definition of PA and supervising physician roles have evolved. Initially, State laws frequently limited the number of PAs a physician could supervise. Some States required a 1:1 ratio; in most, ratio was 2:1. Connecticut permits one physician to supervise up to six PAs. Licensing boards may grant exceptions to the ratio restrictions in some States. Six States do not specify or limit the number of PAs supervised by one physician. In 1998, the American Medical Association (AMA) adopted the recommendations of its Council on Medical Service, which state that “the appropriate ratio of physicians to physician extenders should be determined by physicians at the practice level, consistent with good medical practice, and State law where relevant.”⁶ The AAPA recommends that State laws contain no reference to specific ratios of PAs to supervising physicians. This decision is best left to the discretion of the supervising physician, depending on the nature of the particular practice and patient population served, the experience of the PA, and the supervisory style of the respective physician or physicians.⁵

PAs and Controlled Medications

Supervising physicians are permitted by State law to delegate prescriptive authority to PAs in 46 States, the District of Columbia, and Guam. The four States where PAs are not allowed to prescribe medication are Indiana, Ohio, Louisiana, and Mississippi. Of the 46 States permitting prescriptive authority, 38 allow PAs to prescribe controlled substances. Alabama, Florida, Kentucky, Michigan, Missouri, New Jersey, Texas, and Virginia do not allow PAs to prescribe controlled substances. When supervising physicians can delegate the ability to prescribe controlled medications to PAs, physicians are able to use their time more efficiently with increased cost-effectiveness.⁷ A registration category specifically for PAs and nurse practitioners (NPs) to prescribe controlled medications has been designated by the Drug Enforcement Administration (DEA) in accordance with State laws and regulations.⁸

PAs’ Preparation for Prescribing

PA training programs are required to include instruction in pharmacology. In most PA training programs, pharmacologists or clinical pharmacists teach pharmacology. Instruction includes pharmacokinetics, drug interactions, adverse

effects, contraindications, indications, and dosage. Basic science instruction in pharmacology is reinforced and augmented in clinical training, where the emphasis is on pharmacology principles and treatment issues. Students receive, on average, 78 hours of formal classroom instruction in pharmacology. Additional pharmacology instruction occurs in clinical medicine, cardiology, pediatrics, obstetrics/gynecology, and orthopedics, with the total estimated at 308 hours.⁸

For PAs, professional course work in pharmacology is presented at a level comparable to that offered to medical students. A review of the PA national certifying and recertification examinations by the National Commission on Certification of Physician Assistants (NCCPA) indicates that it is unlikely anyone could pass the exam and become certified without proficiency in pharmacology, considering the high percentage of test items dealing with pharmacotherapeutics.⁸

PA Education

The content of PA training is adopted in large part from the model of medical education for physicians. Educators of PAs include physicians, PAs, and basic scientists. The PA curriculum is intense yet practical. PA education is highly structured and focused, and many in medical education regard it as innovative and effective. The typical PA educational program lasts approximately 111 weeks, compared with 155 weeks for medical school. The first-year curriculum consists of course work in the basic sciences, including anatomy, physiology, biochemistry, pharmacology, physical diagnosis, pathophysiology, microbiology, clinical laboratory sciences, behavioral sciences, and medical ethics. In the second year, students receive clinical training through a series of clerkships in inpatient and outpatient settings. Rotations include family medicine, internal medicine, obstetrics/gynecology, pediatrics, general surgery, emergency medicine, and psychiatry. PA students complete, on average, more than 2,000 hours of supervised clinical practice.⁹

All accredited PA programs meet the same educational standards, but the sponsoring college or university determines what credential will be awarded to graduates. Most programs award a bachelor’s degree on completion; others offer a certificate of completion or an associate or a master’s degree.⁵

Program Accreditation

All accredited PA programs must adhere to a uniform set of standards. The first standards for PA programs were developed in 1971 by a subcommittee of the AMA. The most recent standards were developed by the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA) under the umbrella of the Commission

on Accreditation of Allied Health Education Programs (CAAHEP). Established as a nonprofit agency in 1994, CAAHEP accredits programs representing 18 allied health professions.

In March 2000, the ARC-PA voted to leave CAAHEP to become a freestanding accrediting agency for the PA profession. The new agency, the ARC-PA, was incorporated, effective January 1, 2001. The ARC-PA sponsoring organizations are the Association of Physician Assistant Programs (APAP), the American Academy of Physician Assistants (AAPA), the American Academy of Family Physicians (AAFP), the American College of Surgeons (ACS), the American Academy of Pediatrics (AAP), the American College of Physicians-American Society of Internal Medicine (ACP-ASIM), and the AMA.

The ARC-PA conducts on-site reviews to determine whether PA programs are in compliance with the standards for accreditation. The accreditation standards are the minimum expectations of quality and content used in accredited programs. Revisions and changes to the accreditation standards are made by the ARC-PA, a process that requires a consensus from the ARC-PA sponsor organizations. In the past 6 years, the number of accredited PA programs has more than doubled, from 55 to 123. Between 1996 and 2000, 56 new PA programs were accredited.⁹

Certification

The NCCPA certifies PAs. The NCCPA, an independent not-for-profit organization established in 1975, consists of 15 sponsoring organizations, including representatives from eight national physician organizations, the American Hospital Association, the Federation of State Medical Boards, the Association of American Medical Colleges, the U.S. Departments of Defense and Veterans Affairs, the AAPA, and the APAP. The NCCPA and its constituents are dedicated to determining that certified PAs meet established standards of knowledge and clinical skills upon entry into practice and throughout their careers. NCCPA certification is the criterion for licensure or registration of PAs in 50 States, the District of Columbia, and the U.S. territories.¹⁰

To obtain the NCCPA certification, a PA must complete a PA training program accredited by CAAHEP as well as pass the Physician Assistant National Certifying Examination (PANRE) developed jointly by the National Board of Medical Examiners and the NCCPA. Certification is a prerequisite for licensure in every State except Washington. Only those passing the examination can use the title "Physician Assistant-Certified" (PA-C).

To maintain NCCPA certification, PAs must complete an ongoing 6-year process that involves logging 100 hours of approved continuing medical education (CME) every 2 years. Fifty of these CME hours must be Category I, which

indicates that they are preapproved and sponsored by organizations recognized by the Accreditation Council for Continuing Medical Education (ACCME). PAs are required to pass the Physician Assistant National Recertification Examination (PANRE) every 6 years. The PANRE is designed to evaluate the general knowledge, skills, and abilities of PAs, regardless of their employment setting or practice specialty.¹¹

Continuing Medical Education

PAs, similar to other health care providers, may obtain CME from multiple sources. Although discipline-specific sources such as PA conferences and journals are widely used, PAs participate extensively in interdisciplinary CME programs. PAs may access interdisciplinary substance use disorder (SUD) CME programs offered locally, regionally, or nationally by specialty organizations, although there are no data available regarding the extent to which they do. The National Clearinghouse for Alcohol and Drug Information, a service of the Federal Substance Abuse and Mental Health Services Administration (SAMHSA), maintains a comprehensive list of substance abuse educational programs and conferences.¹²

Discipline-specific sources of CME include professional meetings, Internet programs, and PA journals. Over 50% of PAs are members of the AAPA, which is a major source of CME for PAs. The AAPA sponsors an annual CME conference that 11% of practicing PAs attended in 2000.¹³ The AAPA provides a list of CME opportunities stratified by State and also offers CME on-line through its Web site (<http://www.aapa.org>). In addition, the AAPA has formed a Clinical and Scientific Affairs Council (CSAC) to enhance the clinical knowledge base of the profession. The CSAC continually reviews and critiques clinical practice information and clinical guidelines that are subsequently disseminated to the profession.¹⁴ The CSAC Web page offers a forum for dissemination of information, such as the National Institute on Drug Abuse (NIDA) Consensus Statement on Treatment of Substance Abuse Disorders. Most of the AAPA's 57 constituent chapters, which include chapters in each State, the District of Columbia, Guam, Veterans Affairs, and the uniformed services, provide annual or semiannual CME conferences. PA journals, such as the *Journal of the American Academy of Physician Assistants*, *Physician Assistant*, *ADVANCE for Physician Assistants*, and *Clinician Reviews*, also offer CME.

Professional Organizations

The AAPA, founded in 1968, is a national professional society representing PAs in every area of practice and promoting the profession to the public. The mission of the AAPA is to promote quality, cost-effective, accessible health care and to promote professional and personal development of PAs. The AAPA accomplishes these goals through

government relations, public education programs, research and data collection, and continuing education activities.⁴ The AAPA includes constituent chapters in each State, the District of Columbia, Guam, and Veterans Affairs, and from each of the uniformed services. In addition to constituent chapters, specialty organizations have been formed under the umbrella of the AAPA, which include the Society of Physician Assistants in Addiction Medicine and the Society of Physician Assistants in Psychiatry.

The APAP is the only national organization representing accredited PA education programs. APAP's mission is to assist PA educational programs in the instruction of highly educated PAs in numbers adequate to meet the needs of society.¹⁵ APAP has identified five specific goals: (1) foster faculty development; (2) promote excellence within PA programs; (3) facilitate research and scholarly activities; (4) advocate for PA education; and (5) maintain and sustain the organization.¹⁵

Services provided by the APAP include two meetings annually, publications and newsletters of interest to educators, consultation services, faculty development programs, collection and dissemination of data regarding PA education, support for educational research projects, and development of quality improvement tools for education. In addition, the APAP represents the concerns of PA educators to regulatory and governmental organizations that influence PA education, program funding and accreditation, PA certification, and related issues. Historically, most PA programs have maintained membership in the APAP. As of January 2000, all of the 120 accredited programs were members of the APAP.

Historical Profile: PA Practice and Education in SUD

More than two-thirds of individuals with SUD (SUD) are seen in primary care or urgent care settings every 6 months.¹⁶ As mentioned above, more than half (52%) of PAs practice in one of the primary care fields, and another 10% work in emergency medicine or urgent care settings. Consequently, PAs are in a position to identify and assist patients in need of treatment for SUD.³

To provide services for patients with SUD, PAs must possess the requisite knowledge and skills in assessment, diagnosis, and treatment. No specific requirements have been defined for PAs on minimum knowledge and skills in substance abuse education. Although CAAHEP includes a requirement described as "Applied Behavioral Sciences" in the accreditation standards, the accompanying accreditation guidelines, which suggest specific content areas that may satisfy the standard, do not specify SUD as a content area.¹⁷

According to the current standards pertaining to Applied Behavioral Sciences, students "should be given instruction in the basic counseling skills necessary to help

patients cope with illness and injury, follow prescribed treatment regimens, and modify their attitudes and behaviors to more healthful patterns." Examples of what meets these standards are described in the accreditation guidelines and suggest that PAs "should have a functional understanding of personality development, child development, normative responses to stress, psychosomatic manifestations of illness and injury, sexuality, responses to death and dying, and behavioral patterns related to the maintenance and restoration of health."¹⁷

The curriculum for the education and training of PA students, which places an emphasis on common disorders and primary care, closely parallels that of medical students. Since patients with SUD are frequently encountered in primary care settings, it is reasonable to conclude that PAs require training similar to primary care physicians. In 1985 at the 9th Annual Conference of the Association for Medical Education and Research in Substance Abuse (AMERSA), "Alcohol, Drugs, and Primary Care Physician Education," a consensus was reached on minimum knowledge and skills in substance abuse education for primary care physicians, family physicians, general internists, pediatricians, and psychiatrists. Emphasis was placed on early detection and treatment, establishing a therapeutic alliance, routinely obtaining a substance use history, and referring patients and their families to appropriate intervention and treatment programs.¹⁸ This meeting was cosponsored by the National Institute on Alcohol Abuse and Alcoholism (NIAAA), NIDA, and the Betty Ford Annenberg Center. In 1990, the AAFP and the Society for Teachers of Family Medicine published educational guidelines and recommendations, identifying the attitudes, knowledge, and skills family physicians should possess to competently treat patients with SUD. The guidelines were developed in response to the realization that although family physicians have the opportunity to identify and treat patients with SUD, they reported their preparation to do so as inadequate.¹⁹

The role of PAs in substance abuse treatment has been previously described. In 1979, NIDA and NIAAA published three documents addressing the roles of PAs and NPs. The first document was a curriculum guide, "Substance Abuse Resource and Curriculum Guide for Physician Assistants and Nurse Practitioners."²⁰ In addition to the curriculum guide, NIDA and NIAAA published "Nurse Practitioners and Physician Assistants in Substance Abuse Programs," which describes the education, role, utilization, State regulation, State prescribing statutes, third-party reimbursement, and cost-effectiveness of PAs and NPs. With respect to these two health professions, the publication states "it is their expertise in primary care that makes their roles appropriate for use by substance abuse programs." It concludes that, "where additional substance abuse training is needed to supplement the primary care expertise of NPs and PAs, it can be acquired with six to eight weeks of on the job training."²¹ The third publication, "Substance Abuse

Services in Primary Care: Nurse Practitioners and Physician Assistants,"²² makes the following statement:

The knowledge and skills which the NP and PA bring to primary care make them particularly appropriate to recognize and manage substance abuse problems, their etiologic factors and sequelae. For example, they assess health status... perform physical examinations. ...They are competent to manage acute and chronic conditions, order and interpret laboratory procedures, suture wounds, and prescribe medication within the scope of protocols and regulations. They also provide counseling and health education services. The functions which NPs and PAs regularly perform in primary care settings are precisely those needed to recognize and manage substance abuse. Since the majority of NPs and PAs practice in primary care settings, they serve a wide range of clients and are thus in a unique position to recognize and treat clients who have a problem with substance abuse. In addition, since NPs and PAs are often able to spend more time with their clients than are other health professionals, they are probably in a better position to encourage those patients with substance abuse problems to seek treatment.

A comprehensive evaluation of the didactic and clinical training in 59 established PA programs was conducted in 1993. It found that although all of the programs included content on the diagnosis and treatment of SUD, the depth and detail of this content varied considerably. In many instances, basic skills such as screening and referral were neglected while advanced medical skills were emphasized. A content concern emerged on whether or not what PA students were learning about the diagnosis and treatment of SUD was adequate.²³ For example, although screening is an essential skill, only 54% of the programs taught students how to use assessment tools such as the Michigan Alcoholism Screening Test (MAST)²⁴ or the CAGE.²⁵ On the other hand, although the importance of family dynamics in treatment and recovery is recognized in the field of addiction medicine, only half of the programs included material on family systems. Less than half (40%) of the programs reported providing instruction regarding 12-step treatment programs such as Alcoholics Anonymous (AA) and family support groups such as Al-Anon and Alateen, even though these programs are recognized as providing the foundation for successful long-term treatment. While it is unlikely a PA in a primary care setting would be required to treat acute withdrawal and manage detoxification without the oversight of a physician, this content was included in the curriculum of 80% of the programs.

A more recent survey was undertaken in 2000, when a survey of 116 PA programs was distributed electronically. In addition to questions regarding curriculum content, methods of instruction, and clinical training regarding SUD, faculty were asked about the need for additional faculty

development regarding curriculum development and SUD. Responses were received from 107 programs (92.2%) that reported they provided instruction regarding SUD although the number of hours allocated to SUD varied. In the aggregate, 65% provide 10 hours or less; 25%, 11–15 hours; and 10%, 16 or more hours. These results were similar to the 1993 survey, reflecting no significant increase in the number of instructional hours.

In the majority of programs, curriculum content in the didactic phase of training continues to emphasize diagnosis (82%), acute management (85%), medical complications (72%), and prevention (72%). The percentage of programs including instruction regarding assessment tools (i.e., MAST and CAGE) increased from 54% in 1993 to 92% in 2000. The number of programs, including instruction regarding aftercare programs (e.g., AA, Narcotics Anonymous), increased from 40% to 50%. Less than half of the programs provide instruction regarding SUD in the elderly or during pregnancy.

In regard to methods of instruction, all of the programs except one reported using the traditional lecture style format. Of the programs responding, 78% used assigned readings, 45% used small-group discussion, and 35% used films and videotapes. In the 2000 survey only 20% of the programs used role play, attendance at AA and treatment groups, or presentations by patients in recovery, compared with 40% in 1993. Although the percentage of programs using attendance at AA and treatment group meetings has decreased, respondents indicated that this type of experience would strengthen their curriculum if it could be added. Additionally, respondents indicated an interest in using simulated patients, patients in recovery, and health care providers in recovery to educate students. Although only seven programs used computer-assisted instruction or CD-ROM, respondents' comments indicated an interest in this type of instructional technology and information regarding Web sites containing related information.

Clinical training related to SUD occurs primarily in psychiatry rotations for 81% of the respondents. Clinical experience in SUD was also reported during clinical rotations in emergency medicine (70.8%), family medicine (64.5%), general medicine (52%), obstetrics-gynecology (24%), geriatrics (20%), pediatrics (19%), and general surgery (5%). The lack of integration across disciplines and exposure to SUD may account, in part, for the fact that so few PAs (0.4%) practice in substance abuse and addiction medicine.⁵ Thirty-five (35%) programs reported having an elective in SUD available for interested students but only 15 programs reported any students taking it. Those programs report only one or two students per year selecting it.

Finally, the majority (84%) of respondents expressed an interest in and a desire for APAP-sponsored faculty development workshops addressing topics related to curriculum development and methods of instruction regarding SUD.²⁶

The results of the 2000 survey indicate opportunities exist to improve PA education and training in the area of substance abuse. Instruction regarding SUD needs to be integrated into didactic and clinical curriculum across disciplines. Content should be included in didactic and clinical instruction in subspecialty areas such as pediatrics, ob-gyn, and geriatrics. Opportunities for exposure to community-based treatment programs and self-help groups need to be increased in the majority of programs. Faculty development programs need to be developed and expanded to enable faculty to improve, integrate, and expand curriculum related to substance abuse.

Critical Issues and Obstacles in PA Education and Practice

Collaboration

Issues pertaining to substance use and related disorders are complex and frequently not well addressed by a single discipline's perspective. Lack of collaboration among health care providers is a major obstacle to integrating interdisciplinary substance abuse curricula into training programs.

Education and Training

PA education, adopted from the medical education model for physicians, does not provide physicians or PAs with the knowledge and skills needed to effectively treat patients with SUD. Education on SUD is not consistently integrated into the PA curriculum, and there is considerable variation among programs regarding content and instructional methodology.²⁶ Training and educational experiences subsequently influence PA practice, utilization, and service delivery.

The time constraints within existing didactic curricula present a major challenge because most programs face the difficulty of responding to increasing demands on limited time. In most cases, teaching about SUD is included in the psychiatry/mental health courses, with a limited focus on detoxification and treatment of overdose. Integrating content on SUD requires a substantial commitment of training program time and faculty resources, as well as selection of appropriate clinical sites and faculty development.

Although the traditional lecture format is less effective than other teaching strategies are, it is still the most frequently used teaching method.²⁶ It has long been recognized that learner-centered approaches, where students are required to actively participate in the learning process, are more effective. Research on the effectiveness of substance abuse education demonstrates the lecture style method has little effect on changing the learner's negative attitudes and behaviors and is limited in its ability to develop critical-thinking and clinical skills.^{27, 28} Interactive and experiential methods such as role playing, use of simulated patients, and participation in patient self-help

treatment or recovery programs are used less frequently. Teacher-centered learning may be appropriate for low-level cognitive functions such as learning factual information, but higher-level cognition (requiring synthesis, analysis, and judgment) and positive attitudes are developed best in interactive and experiential settings. Learner-centered teaching strategies would therefore be more effective than traditional lectures in preparing students to address SUD.

Availability of appropriate clinical clerkship sites presents challenges in substance abuse education. Many PA programs rely on clinical training sites located in tertiary care centers. Students may not be receiving a sufficiently broad-based experience of the spectrum of SUD in these settings. Furthermore, students may develop a skewed perception of patients with SUD that reinforces negative attitudes toward substance-abusing patients. Most important, students may not develop the skills and attitudes required for effective prevention, recognition, and treatment of SUD encountered in primary care settings. To gain experience with the spectrum of SUD, students should obtain substance abuse training both in primary care settings and in referral centers.

Faculty Development

With the rapid increase of the number of PA programs, there has been a corresponding need for PAs who have primary responsibilities in program development, teaching, and clinical supervision.⁹ The number of PAs with teaching experience who serve as academic and clinical role models is woefully inadequate.³ A shortage of faculty and clinical preceptors with experience in addiction medicine is an obstacle to expanding teaching about SUD. Training of additional faculty and clinical preceptors is needed to provide appropriate preclinical instruction and clinical supervision in SUD. Faculty need training on the effective use of experiential instructional methodologies such as simulated patients, role play, interactive videos, review of videotaped student-patient interviews, discussion, student participation in self-help treatment groups, case studies, and clinical demonstrations involving patients. These learning experiences will provide an opportunity for students to develop the skills, competencies, and attitudes needed for working with patients and families affected by SUD. Faculty development in substance abuse education can enhance clinical skills and increase confidence in teaching about substance abuse.²⁹

Although substance abuse training has increased in medical schools³⁰ and PA programs,²⁶ many practicing physicians and PAs still require additional training.³¹ Both physicians and PAs serve as preceptors to PA students. The 1999 AAPA census³ indicated that 38% of practicing PAs precept PA students and 28% precept students from other health-related professions. With increasing numbers of PAs actively engaged in teaching, continuing education programs aimed at improving substance abuse practice skills among practicing PAs are needed. These programs

will be a step to improving the clinical training of current and future students. Clinical preceptors with expertise in SUD are needed in family medicine, community medicine, emergency medicine, internal medicine, obstetrics/gynecology, and pediatrics. In summary, extensive faculty development activities are required to adequately prepare preclinical and clinical instructors to teach PA students about SUD.

Postgraduate and Fellowship Training

There are no fellowship or postgraduate programs for PAs in addiction medicine. PAs have not been a specifically targeted profession for programs such as the Society of General Internal Medicine's (SGIM) Substance Abuse in Medical Education training program. However, the educational objectives developed for the SGIM program are applicable to the needs of PAs. The objectives are to help participants (1) improve their knowledge and clinical skills in treating patients with SUD; (2) develop approaches to teaching about substance abuse in different clinical settings; and (3) provide participants with opportunities to develop continued learning and support in substance abuse.²⁸ The SGIM program emphasizes improving the clinical and teaching skills of individual faculty by employing primarily interactive and experiential activities such as role play, case discussions, and use of simulated patients. Participants identified the lack of adequately trained teachers as the most important impediment to teaching about SUD. Following completion of the course, participants demonstrated more positive attitudes toward patients with these disorders and reported increased confidence in managing patients and teaching about substance abuse.²⁸ Participation by PA faculty, preceptors, and practicing PAs in similar faculty development programs would facilitate implementation of an integrated interdisciplinary model curriculum for PA students. Advanced training programs in addiction medicine are not as widely available to PAs as they are to physicians, nor is the level of funding available to support participation by PA faculty who would benefit from such training as high as is that for physicians.

Most PAs increase and expand their knowledge and clinical skills through CME programs and experiences in clinical practice. Specialized professional development programs in SUD would enhance the teaching and clinical skills of PAs. Of the 17 postgraduate training programs for PAs, only 2 are in mental health. Development of an advanced credential, recognizing advanced training or postgraduate fellowship training (similar to the movement within nursing and physical therapy) would formalize the education of PAs with expertise in addiction medicine.

Accreditation

Linked closely with the inadequate numbers of PAs with experience in addiction medicine is the lack of curricular emphasis on SUD, which is conspicuously absent from the accreditation standards.¹⁷ The lack of a consensus as to

whether substance abuse education should be required in the PA curriculum is even more problematic. Although the accreditation standards require training programs to prepare students to help patients "modify their attitudes and behaviors to more healthful patterns," this is open to interpretation by training program directors. The absence of a requirement for curricular modules on SUD presents an obstacle to implementing an integrated, multidisciplinary, SUD curriculum.

Certification

The content of the national certifying exam also influences how instructional time is utilized and prioritized.¹¹ Currently, 18 (6%) of the 300 questions on the PANCE are allocated to questions related to "Psychiatric/Behavioral System." This area includes content on psychoses, anxiety disorders, mood disorders, personality disorders, eating disorders, SUD, and other behavior/emotional disorders. Considering the number of disorders included under this topic, examined by 18 questions, the number specifically related to SUD is limited.¹¹ Questions testing knowledge of SUD should be included on the PANCE.

Research

Data regarding outcomes of substance use disorder education are insufficient to guide future curriculum development. Outcome measures are needed to assess students' acquisition of requisite knowledge, skills, and attitudes related to substance abuse, minimum competencies regarding substance abuse, and the extent to which competencies are later incorporated into clinical practice. PA programs need guidelines by which to evaluate current curricula, identify areas for improvement, and assess student performance.

PAs are underutilized in addiction medicine and substance use treatment programs. No utilization studies have analyzed workload, cost, or PA productivity. Utilization research is needed to project workforce needs and to clearly document the cost-effectiveness of PAs practicing addiction medicine.

Most PAs have little intention, or for that matter incentive, to work in addiction medicine. The AAPA 1999 census documents that few PAs specialize in mental health or substance abuse practice.³ Further research is needed to explore the basis for low utilization and obstacles to PA practice in addiction medicine.

Funding

Funding priorities identified by Federal training grant programs can provide incentives for PA programs to shift curricular emphasis toward areas such as substance abuse. The most recent announcement from the Bureau of Health Professions PA Training Grant Program gave preference to projects addressing the needs of special populations, including patients with SUD. Financial incentives such as

these could encourage PA faculty to make space in the standard curriculum for SUD. Since these training grants are awarded to only a few PA programs, their overall impact is small. Many programs are not able to secure additional funds for development, implementation, and evaluation of substance abuse curricula.

PA Core Competencies in SUD

Since substance abuse is ubiquitous in all areas of PA practice, PAs should be prepared to demonstrate minimum competencies related to substance use prevention, detection, and management. All currently practicing and future PAs should possess the following core competencies in SUD:

Knowledge Competencies

General Concepts

- Definitions and diagnostic criteria for SUD
- Epidemiology of substance abuse and dependence
- Relationship of SUD to family functioning
- Risk and protective factors related to nicotine, alcohol, and other drug use
- Acute and chronic health effects of drug abuse and dependence

Prevention

- Universal, selected, and indicated prevention strategies and their application to the individual, family, and community

Evaluation and Management

- Medical evaluation of adverse health effects related to nicotine, alcohol, and other drug abuse/dependence
- Treatment approaches to SUD, including outcome, efficacy, and cost
- Behavior change and motivational enhancement strategies
- Relationship of SUD to other psychiatric disorders
- Cultural context of drug use and the impact of gender, culture, and ethnicity on intervention and treatment
- Referral sources and community resources

Legal and Ethical Aspects

- Confidentiality and patient rights
- Regulations governing controlled substances

Impaired Health Professionals

- Identification, reporting, recovery
- Resources available for impaired health professionals

Skill Competencies

All PAs should be able to

- Employ prevention strategies at the individual, family, and community levels
- Recognize the signs and symptoms of SUD
- Screen effectively for SUD
- Diagnose SUD
- Assess patients for adverse health effects of tobacco, alcohol, and other drug abuse and dependence
- Intervene by providing preventive services, motivational enhancement, treatment and referral for patients with SUD
- Provide supportive and pharmacologic treatment for nicotine dependence
- Demonstrate cultural competency in their approach to patients of all ages and socioeconomic and cultural backgrounds.

Vision for the Future

As front-line providers of primary and specialty health care, PAs should play an important role in providing cost-effective health care in prevention, patient education, detection, and treatment of patients with SUD and in attaining the goals of *Healthy People 2010*.³² In order for PAs to exert their strongest possible impact on substance abuse, resources must be developed and utilized to improve PA education, faculty development, postgraduate education, CME programs, and research.

In the future, all PA graduates and practicing PAs should demonstrate the minimum core competencies in substance abuse listed below. PAs will thus be able to provide effective preventive and therapeutic substance abuse services to diverse individuals, families, and communities. To ensure the substance abuse competency of future graduates, PA substance abuse education should (1) emphasize interdisciplinary collaboration; (2) employ innovative teaching strategies; (3) be integrated throughout PA training programs; (4) emphasize skills in prevention and early detection; (5) incorporate training experiences in a variety of clinical and community settings; and (6) rely on a broad base of highly skilled clinician role models and preceptors. Students motivated to engage in more comprehensive training experiences should have the opportunity to take elective preceptorships in addiction medicine.

PAs currently in practice should develop core substance abuse competencies through extensive faculty development programs, professional development courses, and CME programs. In addition, specialized postgraduate training fellowships can provide PAs who are interested in addiction medicine with the opportunity to develop expertise in substance abuse practice. These PAs will then have the potential to become leaders in substance abuse education, practice, research, and interdisciplinary collaboration.

Recommendations

Education and Training

1. PA programs should modify curricula to ensure that students acquire core competencies required for treating patients with SUD.

Rationale. Traditional PA education has focused on treating the medical and psychiatric complications related to SUD. If PAs are to attain national prevention goals, curricula addressing SUD should be modified to emphasize prevention, community health, the early detection of substance abuse, and appropriate treatment or referral of identified patients.

Recommended Actions. Disseminate recommended core competencies to PA educators. Present and debate core competencies in substance abuse education at PA educational forums. Modify PA curricula to address core competencies. Increase emphasis on SUD on the PA certification and recertification exams.

Responsible Agents. Health Resources and Services Administration (HRSA) Bureau of Health Professions (BHPr), APAP, PA Faculty Development Institute, and PA program directors, faculty, and preceptors.

Expected Outcomes. All PA programs will have clearly defined curricula that address core competencies regarding SUD. PA program surveys will demonstrate increased curricular emphasis on identified core competencies. PA knowledge regarding core competencies will be enhanced, as measured by graduate surveys and performance on national certifying examination items related to SUD.

2. Educational strategies related to SUD should address attitudinal, behavioral, and cognitive change by utilizing learner-centered educational approaches.

Rationale. Educational activities that actively engage learners are most appropriate for the development of the advanced skills required for effective practice regarding SUD. Learner-centered didactic and clinical experiences should be utilized to increase students' awareness of their own attitudes and beliefs about patients with SUD and to promote skills in patient interviewing, prevention, and promoting behavioral change.

Recommended Actions. PA programs must employ a variety of active teaching and learning strategies regarding SUD. Funding must be made available to support curricular change.

Responsible Agents. HRSA/BHPr, APAP, PA Faculty Development Institute, and PA program directors, faculty, and preceptors.

Expected Outcomes. Formative and summative evaluation of student attitudes and performance will demonstrate a change from baseline. The success of the curricula will be measured by impact on student attitudes, performance, and choice of specialty and practice related to SUD.

3. PA programs should integrate instruction regarding SUD into didactic and clinical curricula to prepare PA graduates to effectively identify, intervene, and treat patients affected by SUD in a variety of clinical and community settings. Content regarding SUD should be included in preclinical courses, such as pediatrics, obstetrics/gynecology, family medicine, emergency medicine, and clinical medicine. Substance use prevention and treatment strategies should be included in clinical training in internal medicine, obstetrics-gynecology, pediatrics, family medicine, community medicine, and emergency medicine.

Rationale. Through repeated exposure to SUD in a variety of didactic, clinical, and community settings, PA students will learn to integrate strategies regarding identification, intervention, treatment, and prevention into clinical practice. Educational experiences in a variety of community settings will help students develop an understanding of cultural, family, and community influences on substance abuse. Education regarding SUD has often been limited to psychiatry and mental health preceptorships. Integration throughout the curriculum will prepare students to address SUD in internal medicine, family practice, surgery, emergency medicine, surgery, pediatric, obstetrics-gynecology, and other specialty settings.

Recommended Actions. PA programs must integrate substance abuse education throughout didactic and clinical training. Cultural competency must be addressed in PA training programs.

PA training programs must include community activities within their training programs. Clinical preceptors must model appropriate practice regarding treatment of patients with SUD, regardless of medical specialty. PA faculty forums must address development of preceptorships in SUD. Funding must be made available to support curricular change, faculty development, and preceptor development.

Responsible Agents. HRSA/BHP, APAP, PA Faculty Development Institute, and PA program directors, faculty, and preceptors.

Expected Outcomes. PA program surveys will reflect an increase in educational components that address SUD. PA programs will undertake preceptor development activities related to SUD.

4. PA programs should increase the number and variety of training experiences regarding treatment of SUD occurring in interdisciplinary settings.

Rationale. Interdisciplinary collaboration can broaden the scope and improve the cost-effectiveness and efficacy of clinical practice and treatment of patients with SUD. Interdisciplinary education will expand the perspective of PA students regarding approaches to substance abuse practice and prepare them to collaborate with professionals from other disciplines in clinical practice.

Recommended Actions. PA programs must increase interdisciplinary education. PA program faculty must demonstrate a model based on collaborative practice for students, as it relates to treatment of patients with SUD

Responsible Agents. HRSA/BHP, APAP, PA Faculty Development Institute, and PA program directors, faculty, and preceptors.

Expected Outcomes. PA program surveys will show an increase in interdisciplinary education regarding SUD.

Faculty Development

5. PAs should be included in faculty development programs similar to those provided for physicians. Medical education training programs should be funded and adopted for PA faculty development.

Rationale. Effective faculty development (e.g., Sigma's Medical Education in Substance Abuse) in substance abuse education is needed to ensure that faculty, clinical instructors and clinical preceptors possess the requisite skills, knowledge, and attitudes to teach PA students about SUD. Clinical preceptors with knowledge and skills regarding SUD are needed to teach students during clinical clerkships in internal medicine, family medicine, emergency medicine, pediatrics, geriatrics, obstetrics-gynecology, and community medicine rotations

Recommended Actions. Faculty development programs related to substance abuse education must be offered in interdisciplinary and discipline-specific settings. PA educator forums must address related topics such as preceptor development, cultural competence, and interdisciplinary collaboration in SUD. PA programs should collaborate with other medical educators (physicians, pharmacists, psychologists, social workers, and nurses) to implement interdisciplinary preceptor development activities designed to improve the ability of preceptors to model appropriate attitudes and behaviors related to the treatment of patients with SUD.

Responsible Agents. AMERSA, APAP, APAP Faculty Development Institute, and PA program directors.

Expected Outcomes. Faculty development activities in SUD will be conducted at the semiannual APAP meetings. An ongoing faculty development program focusing on interdisciplinary, experiential and learner-centered curriculum on SUD will ensure at least one faculty member from each PA program will have the opportunity to participate in a faculty development program on substance abuse education. APAP or the Faculty Development Institute will offer faculty development programs regarding preceptor and preceptor site development. APAP or the Faculty Development Institute will offer faculty development activities regarding cultural competency as it relates to substance abuse education. The AAPA Clinical and Scientific Affairs Council Web page will include reviews of publications and treatment guidelines regarding treatment of SUD. The AAPA and APAP Web sites will identify hyperlinks to teaching resources regarding SUD in addition to interdisciplinary conferences available to PA faculty.

Professional Development

6. The number of CME programs and CME hours designed to strengthen provider knowledge and skills regarding SUD and comorbidities should be increased. Distance learning technology and online educational should be used to maximize accessibility.

Rationale. Because of advances in treatment in addiction medicine and past inadequacies in PA training in SUD, practicing PAs require ongoing CME. PAs should have access both to PA-specific and to interdisciplinary continuing education opportunities through local and national conferences, publications, telemedicine and distance learning technologies, and the Internet. Since more than a third of practicing PAs serve as clinical preceptors for PAs and other health professional students, CME and professional development activities will enhance faculty expertise regarding SUD.

Recommended Actions. CME topics on SUD should be included at the annual AAPA conference. AAPA constituent chapters should include sessions on SUD at State and constituent chapter CME conferences. AMERSA should publish a list of experts by discipline to provide lectures at PA and interdisciplinary educational forums. Announcements of interdisciplinary continuing education conferences should be widely circulated to PAs and published in PA

publications listing CME opportunities. Educational material utilizing innovative multimedia, telemedicine, and distance learning instructional technology should be developed for CME and serve as a resource for PAs practicing in underserved areas. These programs should provide Category 1 CME credit and should be referenced through hyperlinks and the Web sites of AAPA, SAMHSA, and AMERSA.

Responsible Agents. AMERSA, SAMHSA, AAPA, AAPA constituent chapters, *Journal of the Association of Physician Assistants*, *ADVANCE for Physician Assistants*, *Physician Assistant*, and *Clinician Reviews*.

Expected Outcomes. CME presentations on SUD at the annual AAPA meeting will increase. The AMERSA speakers' bureau will include PAs and will be distributed to the AAPA and its constituent chapters. An online CME program in SUD will be available through the AAPA Web site. SAMHSA will offer CME Category 1 programs through its Web site. PA publications will include more articles on SUD.

7. Interdisciplinary programs should be provided for postgraduate professional education in SUD.

Rationale. PAs who specialize in SUD or whose practices include patients with SUD desire and require additional training. Flexible interdisciplinary programs should be developed to meet these educational needs.

Recommended Actions. Implement and evaluate interdisciplinary educational programs regarding SUD that are delivered through distance technologies. Expand training grant opportunities and modify training grant funding criteria where needed for allocation of funds to develop advanced professional training in SUD for practicing PAs.

Responsible Agents. SAMHSA, AMERSA, and AAPA.

Expected Outcomes. Professional development programs regarding SUD will be offered in residential and distance learning formats. PAs will participate in professional development programs regarding SUD. The number of PAs participating in professional development programs regarding SUD will increase, as well the number of faculty teaching students as mentors or preceptors.

Collaboration

8. PA educators should collaborate with educators from other disciplines to provide students with substance abuse training and preparation for their role as members of interdisciplinary health care teams.

Rationale. High-quality and cost-effective substance abuse practice requires interdisciplinary collaboration among health care providers. With faculty and preceptors serving as models, students will develop collaborative skills and gain appreciation of the roles of different disciplines in addressing substance abuse prevention and treatment. Training as a member of an interdisciplinary health care team will prepare students to work effectively in interdisciplinary practice settings.

Recommended Actions. PA programs must collaborate with other disciplines to provide opportunities for students to learn from a variety of health care providers and with students from other health-related professions. Continuing and professional educational programs on substance abuse must incorporate an interdisciplinary treatment team approach. Funding must be offered to support substance abuse curricular modifications that provide interdisciplinary experiences.

Responsible Agents. HRSA/BHPr, APAP, PA Faculty Development Institute, and PA program directors, faculty, and preceptors and other health professionals educators.

Expected Outcomes. Graduates will demonstrate effective skills in interdisciplinary collaboration. PA programs will increase interdisciplinary substance abuse education. Practicing PAs will participate in interdisciplinary professional development activities.

Funding

9. Funding to support faculty development, curricular change, interdisciplinary collaboration, and research on SUD should be increased.

Rationale. Improvements in education and training regarding SUD for PAs will require funding for faculty development, preceptor development, curricular development, and research to measure the effectiveness of educational initiatives. Federal, State, and private agencies should provide funding, since few PA programs have budgets sufficient to meet the need for future development.

Recommended Actions. Faculty development programs must be funded to improve substance abuse knowledge and teaching skills among PA faculty. Funds should be allocated to support faculty involved in curricular development. Funds should be allocated to support development of interdisciplinary programs. Research funds are required to assess the effectiveness of educational initiatives and to identify best practices in substance abuse education.

Responsible Agents. HRSA/BHPr, private funding agencies, APAP, PA Faculty Development Institute, and PA programs.

Expected Outcomes. Improved substance abuse education, practice, and research.

Research

10. The outcomes of educational activities for PAs and other disciplines addressing SUD should be assessed.

Rationale. The effectiveness of educational efforts regarding SUD should be analyzed to guide future planning. Outcome measures must assess not only whether students learn minimum educational content regarding SUD but also the extent to which minimal competencies regarding SUD are incorporated into clinical practice.

Recommended Actions. Allocate funds to support research on substance abuse education for health professionals. Develop outcome measures that address both knowledge acquisition and subsequent practice patterns. Evaluate the effectiveness of education regarding SUD. Disseminate research results to educators in the health professions.

Responsible Agents. HRSA/BHPr, AMERSA, AAPA, APAP, and other discipline-specific educational organizations.

Expected Outcomes. Development of appropriate outcome measures for substance abuse education. Increased effectiveness of education regarding substance use disorders. Development of interdisciplinary research teams that may conduct future collaborative research.

11. PA workforce requirements and the cost-effectiveness of PAs employed in specialized treatment programs for SUD should be assessed.

Rationale. Health care workforce requirements for PAs in substance abuse treatment programs should be identified to guide future planning for appropriate training experiences at the PA

program, CME, and specialty professional development levels. It has been demonstrated that PAs provide high-quality care at relatively low cost. If this can be demonstrated regarding substance abuse treatment, intervention, prevention, and practice, PAs may be able to expand their roles in this area. Data that detail the quality and cost-effectiveness of PAs in substance abuse practice may enable PAs to gain more favorable reimbursement by third-party payers, improved practice legislation, and employment opportunities in the area of SUD.

Recommended Actions. Funds must be allocated to support research on PA practice with patients affected by SUD. Research studies should detail the quality, cost-effectiveness, and workforce requirements for PAs in substance abuse in both general and specialty settings. Research findings must be disseminated to Federal agencies, third-party payers, and corporations managing health care.

Responsible Agents. HRSA/BHP, AAPA, and APAP.

Expected Outcomes. Employment opportunities for PAs will expand in the area of SUD. Government and third-party payers will provide adequate reimbursement for treatment of patients with SUD by PAs. States will adopt favorable practice regulations to support PA substance use disorder practice, including expanded prescribing privileges. The appropriate amounts and types of training experiences in SUD will be offered to PAs. Workforce needs for PAs in the area of SUD will be met.

Summary

Barriers to improved substance abuse education for PAs include limited time in curricula, a shortage of appropriate clinical training sites, insufficient faculty experience and interest regarding SUD, lack of advanced training opportunities for practicing PAs, and inadequate funding for innovative program and faculty development.

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Educating Psychologists about Substance Abuse

WILLIAM R. MILLER, PHD

Introduction

Psychologists represent a major and highly trained resource in addressing the nation's health problems, including substance use disorders (SUD). All States control the practice of psychology by licensure. The membership of the American Psychological Association (APA) exceeds 155,000. The terminal degree in psychology is a Ph.D. or Psy.D., which is required for licensure to practice independently as a psychologist. There are 801 graduate training programs accredited by the APA.

Nevertheless, routine training in the recognition, diagnosis, assessment, and treatment of SUD has been surprisingly slow to emerge within the discipline of psychology. Few training programs have required courses on SUD, and there has been an informal tradition of psychologists referring patients with these disorders to specialist treatment programs. The APA in 1996 began offering a Certificate of Proficiency in the Treatment of Alcohol and Other Psychoactive Substance Use Disorders, and more than 1,000 psychologists hold this certificate. Division 50 (Addictions) of APA, although one of the most recent of the organization's 55 special interest divisions, is a quite active one. It currently has around 1,200 members. The older Division 28 (Psychopharmacology) has more than 800 members.

Psychologists bring special expertise to the addiction field because they have been trained both as scientists and (in the case of clinical and counseling psychologists) as practitioners. This dual scientist–practitioner training is unique among the health professions, most of which provide training in a professional school apprenticeship model that does not prepare degree candidates to generate new knowledge as scientists. The value of a scientist–practitioner perspective is evident in the substantial impact already made within the addiction field by a small minority of psychologists who have focused their attention on SUD.¹

The primary focus of this paper is the unique contributions of psychologists to the addiction field and the training needs of psychologists in this content area. The advocacy for psychology contained in this document is in no way meant to diminish the important contributions of other disciplines to the field of SUD. Psychologists are accustomed to working in multidisciplinary teams, benefiting from and complementing the expertise of colleagues.

Core Values and Paradigms of Psychology

Psychology is the science of behavior. Clinical and counseling psychologists are trained in the practical application of scientific principles of human behavior. The core values of the discipline of psychology include a commitment to the use of evidence-based methods in addressing human and social problems.

Psychologists focus on substance use as a complex behavior that is shaped and can be influenced by the same psychological processes (e.g., learning, conditioning, cognition, social influence) that affect other behaviors.^{2,3}

Psychological intervention is applied behavioral science, much as medicine is applied chemistry, biology, and physics.

The dominant paradigm for the training of the clinical psychologist, known as the “Boulder model,” involves simultaneous and integrated training as both scientist and practitioner. Psychologists not only apply but also generate scientific knowledge. This is clearly true in the addiction field, where psychologists generate a majority of funded research proposals and publications on the nature, treatment, and prevention of SUD. This scientist–practitioner training is unique to the discipline of psychology. Other major clinical disciplines, including medicine, psychiatry,

social work, nursing, and counseling, do not routinely train practitioners as scientists, but operate within a professional school apprenticeship model. It must be noted, however, that within psychology a similar professional school model of training has evolved over the past 30 years, in parallel with the historical scientist–practitioner model. At first, professional schools offered a Psy.D. rather than Ph.D. degree, distinguishing the two models of training. More recently, however, professional schools have also begun to award the Ph.D., creating some confusion regarding the type of training that psychologists receive.

Clinical psychology is only one specialization within the much larger discipline of psychology. “Experimental” psychologists (those not clinically trained) also have made major contributions to the understanding of SUD, within specialties including cognitive, developmental, learning and memory, personality, and social psychology, psychopharmacology, and neuroscience. Psychological research has made important advances in areas such as memory,⁴ drug tolerance,⁵ drug effects and dependence,^{3,6} and fetal alcohol syndrome.⁷

Historical Contributions of Psychology to the Understanding, Treatment, and Prevention of SUD

Psychology has played a leading role in understanding, treating, and preventing SUD. This is reflected in the fact that at the time of this writing, the presidents of all three major scientific societies of the addiction field—the College on Problems of Drug Dependence, the Research Society on Alcoholism, and the Society for Research on Nicotine and Tobacco—are psychologists. Psychologists have always been prominently represented on the editorial boards of major scientific journals of the addiction field and among grantees of the two major Federal funding agencies for scientific research on SUD: the National Institute on Alcohol Abuse and Alcoholism (NIAAA) and the National Institute on Drug Abuse (NIDA).

Psychologists have contributed strongly to current evidence-based treatment and prevention strategies. Psychosocial approaches are prominent among treatment methods with demonstrated efficacy. A recent review of the alcohol treatment outcome literature,⁸ for example, found the 10 most strongly supported treatment methods to include two medications (acamprosate and naltrexone) and eight psychosocial approaches (behavior contracting, behavioral marital therapy, behavioral self-control training, brief interventions, community reinforcement approach, motivational enhancement therapy, self-change strategies, and social skills training).

Brief Interventions

An important finding in the alcohol treatment literature is that relatively brief interventions (one or two sessions) can

significantly reduce heavy drinking and related consequences. A majority of the clinical trials demonstrating this effect and clarifying the critical components of effective brief intervention have been directed by psychologists. This literature has important implications for intervention through health and social systems⁹ and with high-risk populations.¹⁰

Community Reinforcement Approach

The community reinforcement approach (CRA) to treatment of SUD was developed by Nathan Azrin in the late 1960s. It is fundamentally an application of operant (reinforcement) psychology, focusing on the relationships between the individual and his or her social environment. CRA has become one of the most strongly supported treatment methods for alcohol¹¹ and cocaine dependence,¹² and has yielded excellent results with difficult-to-treat populations, including the homeless.¹³ More recently, CRA has been adapted to intervene through concerned family members when an individual who uses alcohol or other drugs refuses to seek treatment, resulting in subsequent treatment engagement in two-thirds of cases—substantially higher than engagement rates with two traditional approaches.^{11,14} Therapist resources for the delivery of CRA have been published by NIDA¹⁵ and others.¹⁶ All of the principal developers and evaluators of CRA have been psychologists.

Behavioral Self-Control Training

Another psychological strategy for treating and preventing SUD is to teach behavioral self-management strategies (BSCT). A large literature supports the efficacy of this approach,¹⁷ which appears to be particularly useful at earlier stages in the development of alcohol problems and dependence. Highly cost-effective self-change strategies have been developed by psychologists for delivering BSCT, including self-help guidebooks^{18,19} and computer-based interventions²⁰ that require minimal professional consultation.

Social Skills Training

Another well-supported treatment and prevention strategy involves the teaching of effective drug-free coping skills, particularly social skills. The clinical and outcome literature on this treatment approach has again been produced almost entirely by psychologists.^{21,22} A more general widely used coping skills approach, known as “relapse prevention,” was also developed and evaluated by psychologists.²³⁻²⁶

Motivational Enhancement

In a fundamental sense, addiction is a motivational problem.² The short-term motivation to continue substance use overrides self-regulatory processes that normally protect against long-term harm. Psychological approaches have been developed and tested that focus directly on motivation for change. Some of these involve the use of overt incentives for behavior change.²⁷ Others, such as motivational interviewing,²⁸ enhance intrinsic motivation for

change. Clinical trials have provided strong support for the efficacy of motivation-focused approaches.

Behavioral Marital Therapy

Many strategies have been suggested for working with couples when one or both have a SUD. Of these, the only approach strongly supported by empirical evidence is behavioral marital/couples therapy (BMT), developed and evaluated primarily by psychologists, including Richard Longabaugh, Barbara McCrady, and Timothy O'Farrell. The inclusion of a spouse or significant other in such treatment significantly improves outcomes.²⁹ BMT focuses on improving the quality of communication, decreasing aversive interactions, and increasing shared positive reinforcement by the couple.

Pharmacotherapy

Psychologists also have contributed substantially to research on psychopharmacology and have been actively involved in clinical trials of medications in the treatment of SUD.³⁰⁻³² The two most promising pharmacotherapies for alcohol dependence, acamprosate and naltrexone, are being tested in an 11-site clinical trial funded by NIAAA. A majority of these trials are headed by a psychologist. A principal challenge in effective pharmacotherapy, and in substance abuse treatment more generally, is patient adherence, another area where behavioral strategies have been effectively applied.³³ In 2002, New Mexico became the first State to approve prescribing privileges for psychologists, a trend that is likely to spread rapidly to other States and to further enlarge the role of psychologists in pharmacotherapy.

Psychologists also continue to develop and evaluate promising and innovative treatment methods for SUD, such as cue exposure³⁴ and cognitive therapy.³⁵ The development and evaluation of new psychosocial treatment approaches is a core competence of psychologists, who are prominently represented among funded investigators in NIDA's Behavioral Therapy Development Program. Psychologists also have been influential in the development of less scientific traditional treatment approaches in the addiction field. Dominant among these has been the 12-step treatment philosophy, which based on principles of Alcoholics Anonymous (AA) and related programs. The development of AA itself was influenced by psychologists, including William James and Carl Jung, and the translation of this approach into psychosocial treatment programs has been strongly guided by psychologists.^{36,37}

Similarly, psychological approaches are prominent in the catalog of scientifically validated treatment methods for drug dependence. The National Institute on Drug Abuse³⁸ recently issued a set of practice guidelines entitled *Principles of Drug Addiction Treatment: A Research-Based Guide*. All the methods listed as "scientifically based approaches to drug addiction treatment" are psychological treatments.

Psychologists have also taken a lead role in research and interventions for smoking.³⁹ Psychological approaches such as the transtheoretical model⁴⁰ have strongly shaped research and practice, and psychologists constitute a majority of NIDA's grantees studying the prevention and treatment of nicotine dependence.

Psychology has contributed substantially to formal theoretical and conceptual foundations of the addiction field.⁴¹⁻⁴⁴ Influential psychological models include transtheoretical,⁴⁵ self-regulation,⁴⁶⁻⁴⁷ family,^{48,49} motivational,⁵⁰⁻⁵¹ cue reactivity,³⁴ biopsychosocial,⁴³ vulnerability,⁵² self-handicapping,⁵³ and relapse theories.²⁵

Psychologists have also expanded the understanding of special aspects of SUD among women,^{54,55} youth,⁵⁶⁻⁶⁰ and minorities.^{61,62} Psychologists have been prominently involved in cutting-edge issues of the field, such as the emergent debate on harm-reduction approaches,⁶³ and have contributed substantially to research on the delivery of health services to persons with SUD.⁶⁴

Finally, assessment and psychometric development are core competencies of the discipline of psychology. Psychologists have developed and provided psychometric validation for many of the major assessment instruments and methods used in the addiction field.^{65,66} Well-validated examples include the Alcohol Use Inventory,⁶⁷ the Addiction Severity Index,⁶⁸ and the timeline follow-back method.⁶⁹⁻⁷¹

Psychologist Work Settings and SUD

Beyond the scientific contributions of psychologists to the addiction field, clinical and counseling psychologists also work in settings where a high percentage of patients present with SUD as part of the clinical picture. Psychologists are often employed in the following settings:

Mental health systems, where the prevalence of dual disorders (SUD plus a major mental disorder) is widely recognized. SUD occur at a high rate in combination with virtually every major class of problems presenting to mental health clinics: affective disorders, anxiety disorders, posttraumatic stress disorder, psychoses, and personality disorders. Roughly half of patients seen at mental health centers have a concomitant SUD.⁷²

Health care systems, where documented high rates of undiagnosed SUD contribute to, exacerbate, and compromise the treatment of medical problems. Rates of concomitant SUD vary across specialty clinics and settings, from 20% to more than 50% of patients.⁹ Psychologists are active in all Veterans Administration health care systems, where high rates of SUD are found and dual disorders present challenges in treatment.

Correctional systems, where a majority of offenders committed crimes related to or under the influence of alcohol or other drugs. The prevalence of SUD is extremely high in prison populations (approximately 80%).

School systems, where there is clear and warranted public concern about high rates of underage drinking and illicit drug use.

Universities, where binge drinking occurs at a high rate and contributes substantially to injuries, conduct problems, and academic failure.

SUD treatment settings also employ psychologists, whose training and ability to address not only SUD but general psychological problems is highly useful.

Psychologists often hold influential administrative and supervisory positions within such systems and are positioned to influence practice well beyond their own individual work with patients. Psychologists are also well prepared to evaluate prevention and treatment programs, by virtue of their integrated scientist–practitioner training. With rapid changes in health care economics, the demand has accelerated for competent program evaluation to demonstrate the outcomes of services.

Miller and Brown⁷³ offer this summary of the situation with regard to SUD and the discipline of psychology:

Psychologists should not and realistically cannot avoid treating substance use disorders. They affect a substantial proportion of the general population, and are particularly common among people seen for health and psychological care. Effective treatment of alcohol/drug problems is not a mysterious art. In fact, scientific evidence is abundant and points to the efficacy of therapeutic styles and common treatment approaches that are well within the repertoire of many psychologists. The specialist mystique that has surrounded substance abuse treatment in the United States has needlessly dissuaded psychologists from offering assessment and effective treatment, and is perhaps partly responsible for the limited routine coverage of this area in the training of psychologists. Psychological models, assessment, and treatments have much to offer in the care of people with these common problems which are the source of so much suffering and mortality. Psychologists need at least basic competence to recognize, evaluate, and address addictive behaviors. This is likely to happen only if such preparation becomes a routine part of the training of clinical psychologists.

Psychology Training Initiatives Regarding SUD

Psychologists have special expertise in the assessment, treatment, and prevention of SUD.⁷³ The use of alcohol and other drugs is first and foremost *behavior* that obeys ordinary principles and processes that are the domain of psychology. SUD rarely occur in isolation, but in most cases involve significant psychological and social problems, for which broad training in psychology is an excellent preparation. The treatment approaches most strongly supported as

efficacious are fundamentally psychological in nature or are pharmacotherapies in which behavioral management (e.g., adherence) is a significant challenge. Motivational issues are central in the etiology and resolutions of SUD. Clinical skills (e.g., accurate empathy) commonly included in the training of psychologists have been shown to be important predictors of favorable treatment outcomes with SUD.

Given all of this and the ubiquitous nature of SUD in health and mental health care settings, one might expect that psychologists would be trained routinely to screen for, assess, diagnose, treat, and prevent SUD. In fact, most psychologists receive very little specific knowledge of or preparation for dealing with SUD during their training. One survey indicated that 91% of psychologists encounter SUD in their daily work, but 75% had received no formal coursework on the subject, and half had received no training in SUD even during their internships.⁷⁴ Instead, psychologists, like other health professionals, have been left to refer patients with SUD (if recognized) to specialist treatment programs.

Unfortunately, specialist treatment services for SUD in the United States are often run and delivered by professionals or paraprofessionals without scientific training and, in some cases, with an antiscientific bias. Consequently, there is little or no overlap between the treatment methods used in standard practice and the approaches shown in clinical trials to be efficacious in treating SUD.⁸ If psychologists have learned little about alcohol and illicit drug problems during their routine training, they have been taught still less about how to treat nicotine dependence, the SUD with the highest rates of mortality and morbidity. One-fourth of the U.S. population continues to smoke, and rates of nicotine dependence are considerably higher than average among patients of substance abuse, mental health, and medical facilities.

Fortunately, this situation is in the process of being addressed within psychology. Thirty years ago, the addiction field was regarded largely as a scientific and professional Siberia into which few psychologists ventured. Today, psychologists play a prominent role in addiction theory, research, and practice. It is still, however, a small minority of psychologists who receive adequate training to deal with what is likely to be second only to depression as the most common disorder that they will encounter throughout their professional lives.

Several training efforts for psychologists have been attempted over the years, some of which failed by historical accident. NIAAA published a set of curriculum guides for use by faculty in the major health care disciplines. A curriculum guide for psychology faculty was completed by Sobell and Sobell⁷⁵ but never released by NIAAA because of a political controversy that had erupted around the authors at the time.⁷⁶ A Faculty Development Program (FDP) was initiated to attract and prepare faculty in health professions (medicine, nursing, and social work) to work in the

addiction field and was expanded to the discipline of psychology in 1991. Only one grant was awarded in psychology, however, before the sponsoring institutes were moved into the National Institutes of Health (NIH). Direction of the FDP was assumed by the Substance Abuse and Mental Health Services Administration (SAMHSA), which was created to assume most of the training and programmatic functions previously administered by NIAAA and NIDA. No further psychology applications were accepted.

The APA admitted, in 1993, its 50th official division, focusing on addictions, and extending beyond the focus of its prior Division 28 on Psychopharmacology. Division 50 replaced a prior longstanding Society of Psychologists in Addictive Behavior. Addiction treatment was chosen by APA as the first (and thus far only) area in which to issue a specialist Certificate of Proficiency through its College of Professional Psychology. The first study materials and certificates were issued in 1996. This relatively new recognition of the importance of SUD is further reflected in the recent publication by APA of major books in this area.^{27,77-79}

An excellent foundation for the training of psychologists in SUD already exists. Three scientific societies promote research in alcohol, nicotine, and other drug problems, and psychologists are prominently involved in all three. The APA has in place a specialty certification program. Major associations of the discipline of psychology have divisions or special interest groups focused on addictions. Predoctoral and postdoctoral training programs in psychology have been funded by NIAAA and NIDA. Progress has been slow, however, in integrating substance abuse competencies into the routine training of psychologists.

Once in practice, psychologists quickly recognize their need for training in SUD. Although few had received such training prior to receipt of their Ph.D., 86% of psychologists had sought subsequent informal training through workshops, supervision, and other sources.⁷⁴ In a practice survey conducted by APA and the Center for Substance Abuse Treatment (CSAT), 62% of psychologists said that they had screened clients for SUD, 46% had diagnosed or conducted a formal assessment of substance abuse, 35% had treated clients with a primary diagnosis of SUD, 76% had treated clients diagnosed with SUD as a secondary disorder, and (tellingly) 80% had referred patients out to specialist treatment for SUD within the past 12 months.⁸⁰

Core Competencies

The discipline of psychology has developed a detailed outline of core competencies with regard to substance abuse as part of the standards for the Certificate of Proficiency in the Treatment of Alcohol and Other Psychoactive Substance Use Disorders. An expert panel was convened by APA to specify the core knowledge areas to be included in the proficiency examinations. The core knowledge is

organized into 12 Knowledge Categories (A through L), each of which has a list of associated Knowledge Elements. All 12 categories are represented on each form of the national examination according to the percentages indicated after the title for each category. These percentages were established as a result of practice analysis and reflect the relative importance of each category for practice in the treatment area as well as the amount of knowledge each category contains. The following summaries were provided by the APA College of Professional Psychology:

A. Clinical Pharmacology and Clinical Epidemiology of Psychoactive Substances (11%)

Includes knowledge of classes, preparations, and routes of administration of psychoactive substances; major pharmacologic actions; psychological/behavioral effects; medical and psychosocial consequences of acute and chronic use; trends in availability and use in the general population and in defined specific populations such as ethnic minorities, adolescents, elderly, pregnant women, and persons with coexisting Axis I or Axis II disorders; pharmacological factors that underlie behavioral and psychological effects of psychoactive substances; role of user expectation in subjective and behavioral effects of use; adverse psychological, behavioral, physiological, interpersonal, and social effects of psychoactive substance use disorders (PSUD).

Knowledge Elements

1. Knowledge of classes of psychoactive substances and specific substances within those classes, including central nervous system (CNS) stimulants (e.g., cocaine, caffeine, amphetamine, and methamphetamine), CNS depressants (e.g., alcohol, benzodiazepines/anxiolytics, barbiturates), cannabinoids (e.g., marijuana and hashish), opioids (e.g., heroin, methadone, and prescription narcotics), hallucinogens (e.g., lysergic acid diethylamide [LSD], psilocybin, mescaline, and peyote), inhalants (e.g., amyl nitrate, butyl nitrate, and nitrous oxides; glues, solvents, and other volatile substances), nicotine, steroids, etc.
2. For the most commonly used psychoactive substances within each class specified in Element 1 (namely, alcohol, marijuana, cocaine, heroin, benzodiazepines, LSD, inhalants, and nicotine): Knowledge of preparations, routes of administration, major pharmacologic actions; psychological/behavioral effects, (including craving, drug-seeking behavior, and motivation for use); reinforcing effects in animals and humans; medical and psychosocial consequences of acute and chronic use; and most clinically significant drug combinations (e.g., cocaine and alcohol; heroin and cocaine; alcohol and sedative-hypnotics).

3. For each of the psychoactive substances listed in Element 2: Knowledge of trends in availability and use in the general population and in defined specific populations such as ethnic and other minorities, adolescents, the elderly, pregnant women, and persons with coexisting Axis I or Axis II disorders.
4. For each of the psychoactive substances listed in Element 2: Knowledge of pharmacological factors that underlie behavioral and psychological effects of psychoactive substances, including tolerance and cross-tolerance; mechanisms underlying psychoactive effects, including drug-induced alterations in brain receptor and neurotransmitter systems; time course of effects and aftereffects; development of physical dependency, including acute and protracted withdrawal; half-life, metabolism, and excretion; detectability in body fluids (urine and blood), including legal definitions of intoxication; and the most common drug–drug interactions as they affect each of the preceding.
5. Knowledge of user expectation as it influences subjective and behavioral effects of psychoactive substances (e.g., placebo effects and context effects; balanced placebo research).
6. Knowledge of adverse psychological and behavioral consequences of excessive/pathological use (both acute and chronic, e.g., induced distortions in personality, affect, perception, cognition, coping style and defenses, judgment, and other behavioral/cognitive processes).
7. Knowledge of adverse physiological consequences of excessive/pathological use (e.g., overdose, contribution to human immunodeficiency virus [HIV] and other sexually transmitted diseases [STDs], tuberculosis, hepatitis and other liver disease, gastrointestinal [GI] disorders, sexual functioning and fertility, fetal alcohol effects and transient neonatal impairments, brain dysfunction).
8. Knowledge of adverse interpersonal effects of PSUD (e.g., impact on marriage and family, workplace colleagues, immediate social contacts; impact on interpersonal violence and abuse behavior).
9. Knowledge of adverse social effects of PSUD (e.g., vocational, legal, and financial impact).

B. Etiology of Psychoactive Substance Use Disorders (6%)

Includes knowledge of genetic and other biological risk/vulnerability to PSUD; psychological and sociocultural predisposing experiences; psychological, sociocultural, and biological concepts of etiology; and integrative models.

Knowledge Elements

1. Knowledge of key findings pertaining to genetic and other biological risk/vulnerability to PSUD (e.g., family transmission, brain neurochemical and other biological susceptibility).
2. Knowledge of psychosocial risk factors associated with etiology (e.g., family substance use and physical, sexual and psychological abuse; early conduct disorder and temperament traits (e.g., impulsivity); environmental, cultural/social factors including availability and peer influence; individual psychopathology; attention and learning deficits; impaired affect regulation (e.g., self-medication hypothesis); impaired behavioral self-regulation.
3. Knowledge of major psychological perspectives regarding the etiology of PSUD (e.g., operant and classical conditioning models, social learning, psychoanalytic, family systems, cognitive behavioral, opponent process).
4. Knowledge of integrative models of etiology of PSUD (e.g., biopsychosocial, community healing models).

C. Initiation, Progression, and Maintenance of PSUD (5%)

Includes knowledge of factors that contribute to the initiation/use of psychoactive substance use; psychological, biological, and social factors associated with the maintenance and progression of PSUD.

Knowledge Elements

1. Knowledge of factors that contribute to initiation of psychoactive substance use (e.g., availability, exposure, peer influence, expectancy, and reinforcing drug effects).
2. Knowledge of psychological factors associated with the maintenance and progression of PSUD (e.g., conditioning and reinforcement, cognitive factors, affective factors, personality, and temperament).
3. Knowledge of biological factors associated with the maintenance and progression of PSUD (e.g., tolerance, physical dependence, metabolic factors, and factors at the neurotransmitter level).
4. Knowledge of social factors associated with the maintenance and progression of PSUD (e.g., familial factors, social/cultural environments that support substance use, intergenerational PTSDs, and societal attitudes and expectations towards certain specific populations).

D. Course/Natural History of PSUD (5%)

Includes knowledge of long-term course of PSUD in treated and untreated populations; heterogeneity in course and the role of problem severity; alternatives to

formal treatment and circumstances under which they are sought and accepted by users; help-seeking and alternatives to formal treatment and circumstances under which they are sought and accepted by users; “natural recovery” rates and factors associated with natural recovery.

Knowledge Elements

1. Knowledge of long-term course of PSUD in treated and untreated populations.
2. Knowledge of heterogeneity in course of PSUD, including the role of problem severity.
3. Knowledge of alternatives to formal treatment that promote behavior change, and circumstances under which substance users will seek out or be receptive to such alternatives.
4. Knowledge of help-seeking for substance-related problems, and the factors that promote or deter help-seeking and motivation for change.
5. Knowledge of “natural recovery” factors associated with untreated recovery from PSUD.

E. Prevention, Early Intervention, and Harm Reduction (6%)

Includes knowledge of primary (universal) and secondary (targeted) methods of prevention; harm-reduction methods; techniques of prevention, identification, and early intervention and their effectiveness.

Knowledge Elements

1. Knowledge of methods of prevention of PSUD (including educational, skills-based, public health, community, regulatory and supply-side methods; as well as sociocultural, age-related, gender-based, and other variants of these approaches).
2. Knowledge of principles for identification and early intervention in health care settings, schools, workplaces, the community, and family.
3. Knowledge of techniques for prevention and early intervention, and their effectiveness.
4. Knowledge of harm-reduction approaches aimed at preventing or reducing high-risk behaviors and their negative consequences in the community, in clinical populations, and in users’ significant others (e.g., needle exchange programs, condom distribution programs, and community education programs).

F. Screening and Assessment of Psychoactive Substance Use (11%)

Includes screening for persons at risk for or experiencing PSUD; approaches to assessment of substance use and substance dependence, including need for detoxification evaluation; principles for assessment of use history and current use patterns; effective interviewing

strategies; timing issues involved with assessment and intervention techniques and their implications; collateral sources of assessment information; physical and sexual abuse and other trauma; assessment of the family system and its relationship to the PSUD of the client; use of assessment data to select initial level of care, develop an initial treatment plan, engage the client in treatment, and modify the plan during treatment.

Knowledge Elements

1. Knowledge of screening instruments for individuals at risk for or experiencing PSUD, regardless of presenting problem or complaint.
2. Knowledge of types of biological approaches to the assessment of substance use, including measures such as blood alcohol content (BAC), urine drug screens, liver assays, hair analysis, and their proper use and strengths and weaknesses.
3. Knowledge of psychological approaches to the assessment of current and past psychoactive substance use, including interviewing techniques, standardized interviews; standardized psychological measures, and their proper use and strengths and weaknesses.
4. Knowledge of approaches to the assessment of current and past adverse psychosocial consequences (“abuse”).
5. Knowledge of common cognitive deficits associated with psychoactive substance use and familiarity with common neuropsychological approaches to their assessment. (Note: “Familiarity with” implies basic knowledge.)
6. Knowledge of incidence, screening, and assessment issues related to physical and sexual abuse and other traumatic experiences in relation to substance use.
7. Knowledge of principles for assessment of degree of physical dependence and need for medically monitored withdrawal treatment.
8. Knowledge of interviewing strategies to reduce defensiveness and enhance cooperation and motivation.
9. Knowledge of appropriate timing of assessment and intervention techniques (e.g., the limited reliability and validity of tests given to persons in withdrawal and early stages of abstinence) and their implications for assessment.
10. Knowledge of types and uses of collateral sources of information in the assessment process (e.g., spouse, employer, teacher).
11. Knowledge of physical signs and symptoms of use, intoxication, and withdrawal (e.g., needle marks, pupillary dilation or constriction).

12. Knowledge of principles for assessment of the family system and its relationship to the PSUD of the identified family member.
13. Knowledge of principles for utilization of assessment data to select an initial level of care for a client.
14. Knowledge of principles for the utilization of assessment data to develop an initial treatment plan for a client.
15. Knowledge of principles for the utilization of assessment data to engage the client in treatment.
16. Knowledge of principles for the utilization of ongoing assessment data to modify the treatment plan during treatment.
17. Knowledge of alternative levels and approaches used by medical professionals for detoxification and withdrawal management.

G. Diagnosis and Comorbidity (9%)

Includes DSM-IV criteria for diagnosis of substance-related and -induced disorders; differentiating substance-related disorders from other disorders; comorbidity of substance-related with psychological and behavioral problems; familiarity with medical conditions that are complicated or exacerbated by psychoactive substance use.

Knowledge Elements

1. Knowledge of DSM-IV criteria for diagnoses of substance-related and substance-induced disorders, as well as the criteria for the several DSM-IV disorders frequently comorbid with the substance-related and substance-induced disorders.
2. Knowledge of principles for differentiating substance-related disorders from other Axis I and Axis II disorders, and the ability of psychoactive substance use to mimic and/or exacerbate these disorders.
3. Knowledge of comorbidity (including incidence) of PSUD with psychological and behavioral problems, including Axis I and Axis II disorders.
4. Familiarity with common medical conditions (e.g., diabetes, hypertension) that are complicated or exacerbated by psychoactive substance use, and indications for referral for appropriate assessment and/or treatment. (Note: "Familiarity with" implies basic knowledge.)

H. Treatment I: Models and Approaches (14%)

Includes knowledge of alternative treatment modalities, settings, contexts, and levels of care; major models of treatment; principles for selection and use of psychological therapies and 12-step facilitation; methods for delivering psychological interventions to

substance abusers; evidence for the effectiveness of treatment methods; substance-specific treatments and their effectiveness; adjunctive pharmacotherapies; indications and contraindications for other pharmacological agents; familiarity with acupuncture and other alternative treatment approaches.

Knowledge Elements

1. Knowledge of clinical delivery systems, including treatment settings (e.g. inpatient, nonmedical residential, outpatient), treatment services (individual, group, family therapy) and levels and modalities of care (e.g., brief interventions, intensive outpatient, partial hospitalization, therapeutic communities, and methadone maintenance) as related to client placement.
2. Knowledge of major theoretical models of treatment, including their basic assumptions about etiology and how people change, strengths and limitations, and empirical evidence (e.g., psychodynamic, behavioral, cognitive, family systems, traditional disease, spiritual, 12-step, biomedical, and integrated models such as biopsychosocial, public health, and therapeutic communities).
3. Knowledge of methods for delivering psychological interventions to substance abusers.
4. Knowledge of principles for selection and use of the various psychological therapies (including social skills training, contingency management, motivational enhancement therapy, aversion therapies, cognitive therapy, community reinforcement approach, relapse prevention, stress management, behavioral self-control training, cue exposure, client-centered therapy, supportive/expressive therapy, psychodynamically oriented therapy, cognitive-behavioral and structural-systems family therapy) and 12-step facilitation.
5. Knowledge of substance-specific (versus generic) treatments (including treatments for nicotine dependence) and their effectiveness.
6. Knowledge of the appropriate role of pharmacotherapies in the overall treatment of addiction and evidence regarding their effectiveness; including opioid substitution (methadone, levo-alpha-acetyl-methadol [LAAM]), opioid antagonists (naltrexone, including its use with alcohol dependence), alcohol-sensitizing medications (disulfiram), and nicotine replacement (e.g., patch, gum).
7. Familiarity with pharmacologic agents that are contraindicated for individuals with substance use problems (e.g., long-term use of minor tranquilizers in the treatment of alcohol use), as well as those appropriate in the treatment of concomitant psychopathology. (Note: "Familiarity with" implies basic knowledge.)

8. Knowledge of evidence for the effectiveness of treatment methods (including combined behavioral-pharmacological treatments).

I. Treatment II: Planning, Implementing, and Managing Treatment and the Course of Recovery (16%)

Includes knowledge of the phases, courses, or stages of recovery and the treatments appropriate to each; issues pertaining to motivation and readiness to change; relevant research, theory, and practice pertaining to relapse; issues pertaining to treatment goals; the course of withdrawal and resources for detoxification; therapist behaviors facilitating treatment success; approaches for client-treatment matching; dealing with concomitant diagnosis of substance use and other psychological problems; dealing with severely mentally ill substance users; adjunctive use of self-help groups; treatment for family members; treatment interfaces with work site and other aspects of the community; treatment of criminal offenders.

Knowledge Elements

1. Knowledge of phases/courses/stages of recovery and change, and the treatment goals, modalities, and techniques appropriate to each.
2. Knowledge of relevant issues and research related to motivation/readiness to change.
3. Knowledge of relevant research, theory, and practice on relapse (e.g., rates, temporal patterns, varieties, conditions associated with relapse, and prevention strategies).
4. Knowledge of appropriate and realistic treatment goals for individuals with PSUD.
5. Knowledge of appropriate resources for detoxification and the usual course of withdrawal.
6. Knowledge of therapist behaviors that facilitate or hinder client engagement and retention in treatment (e.g., empathic style, telephone follow-up).
7. Knowledge of different approaches for client-treatment matching (e.g., preference, clinician assignment, cultural competence, placement protocols and decision rules).
8. Knowledge of methods for the treatment of persons with concomitant diagnoses of a PSUD and other psychological problems.
9. Knowledge of issues in the treatment of severely mentally ill individuals who are substance abusers (includes sequencing of treatments, integration of treatment approaches, issues of continuity of care, attention to social and environmental needs of severely mentally ill individuals).
10. Knowledge of effective treatment models for family members (whether or not the substance

abuser is seeking treatment).

11. Knowledge of principles for managing the interfaces between addiction treatment and the community (e.g., social service system, legal system, ethnic/culture-specific institutions such as mutual assistance societies, child protective services, correctional facilities, vocational rehabilitation, SSI, health care providers, health insurance companies, employers).
12. Knowledge of appropriate methods for treating criminal offenders (including driving while intoxicated and driving under the influence offenders).
13. Knowledge of the community self-help groups and groups available for significant others of substance abusers (e.g., Alcoholics Anonymous, Al-Anon, Narcotics Anonymous, Women for Sobriety, Rational Recovery, nicotine-dependence support groups), including the basic philosophy and structure of each program, clinical procedures to facilitate involvement of clients and significant others, and empirical evidence for effectiveness.

J. Issues in Specific Populations (6%)

Includes knowledge of substance use patterns, risk factors, course, concomitant psychological and social functioning, access barriers, and treatments for children and adolescents, ethnic and cultural minority groups, women and men, gays and lesbians, older persons, persons with HIV, health care professionals, and the homeless.

Knowledge Elements

1. Knowledge of substance use patterns, risk factors, course, concomitant psychological and social functioning, access barriers, and treatments for children and adolescents.
2. Knowledge of substance use patterns, risk factors, course, concomitant psychological and social functioning, access barriers, and treatments appropriate for specific ethnic and cultural minority groups.
3. Knowledge of gender-specific substance use patterns, risk factors, course, concomitant psychological and social functioning, access barriers, and effective treatments (including issues related to perinatal substance use for women).
4. Knowledge of substance use patterns, risk factors, course, concomitant psychological and social functioning, access barriers, and treatments for gays and lesbians.
5. Knowledge of substance use patterns, risk factors, course, concomitant psychological and social functioning, access barriers, and treatments for older persons.

6. Knowledge of special issues related to substance abuse and treatment of persons with HIV.

K. Research Knowledge (6%)

Includes knowledge of research principles appropriate for evaluating substance abuse treatments; key findings in the current literature relevant to the effectiveness of common forms of substance abuse treatment and prevention; knowledge of databases, journals, and central information sources for keeping abreast of new developments in the substance use field.

Knowledge Elements

1. Knowledge of research principles appropriate for evaluating substance abuse treatments (including appropriate follow-up intervals, outcome domains, comparison groups, outcome-oriented clinical record keeping).
2. Knowledge of key findings in current literature pertaining to the effectiveness of common forms of substance abuse prevention and treatment (including overall patterns in reduction in substance use; improvement in personal and social function; reduction in public health and public safety concerns; and success for gender, age, and ethnic minority populations).
3. Knowledge of databases, journals, and central information sources useful for keeping abreast of new developments in the substance use field (e.g., National Clearinghouse on Alcohol and Drug Information, ETOH (the NIAAA Alcohol and Alcohol Problems Science Database), DAWN (the Drug Abuse Warning Network), *Journal of Substance Abuse Treatment*, *Journal of Consulting and Clinical Psychology*).

L. Legal and Ethical Issues (5%)

Includes knowledge of laws relevant to substance abuse treatment (e.g., confidentiality, Americans with Disabilities Act [ADA]); application of ethical principles for psychologists to specific dilemmas of the substance use field.

Knowledge Elements

1. Knowledge of Federal laws regulating confidentiality and disclosure of information for PSUD, and conditions under which the general laws do not apply.
2. Knowledge of relevant issues and regulations related to the ADA includes specialized treatment programs and practices such as methadone maintenance programs.
3. Knowledge of principles for dealing with dilemmas of contradictory legal and ethical demands that relate to confidentiality, authorization, treatment implementation, and other treatment management issues (e.g., adolescents' confidentiality, pregnant addicts, reporting of crimes, coerced treatment).

Vision for the Future

All psychologists will be routinely trained to recognize, assess, diagnose, treat, and prevent SUD. Psychologists will regard the treatment of SUD as a natural part of their practice, and a larger number of psychologists will choose to specialize in research, prevention, and treatment of SUD. Psychologists will use state-of-the-art, evidence-based methods in their practice to assess, treat, and prevent SUD.

Recommendations

1. Commission a national survey of psychology training programs, through an appropriate Federal agency, to study the nature and extent of preparation of psychologists to address SUD.

Rationale. No reliable information is available on what psychology training programs are already doing to prepare future psychologists to address SUD. Such a survey would serve as a baseline measure and would point to the most pressing needs and promising directions. The survey would be repeated to assess the extent to which desired changes in training have occurred.

Recommended Actions. Issue a competitive Request for Applications (RFA) to perform the research, to be reviewed through normal scientific peer review processes within an appropriate agency of the NIH.

Responsible Agent. NIH.

Expected Outcomes. Within 2 years from the time of award, survey data will be available to clarify what is already being done within training programs to prepare psychologists to address SUD.

2. Work with the American Psychological Association to ensure that appropriate substance abuse content is integrated into the mainstream coursework of all APA-accredited training programs, that elective coursework in addictions is offered, and that clinical and internship training include experience in treating SUD.

Rationale. Coursework requirements in clinical psychology training programs are already high, and an attempt to add required specific coursework on SUD is likely to meet with resistance. Indeed, there could be just as compelling an argument to require specific coursework on other common forms of psychopathology (e.g., affective disorders, anxiety disorders). A more promising approach is to ensure and enable the inclusion of SUD in the already-required mainstream coursework through which psychologists acquire competence in the recognition, diagnosis, assessment, treatment, and prevention of other disorders. There are also ample opportunities to gain clinical experience in the treatment of SUD, and these should be incorporated into clinical training programs and internships.

Recommended Actions. Develop specific SUD modules to be used in common core courses of psychology curricula, providing up-to-date knowledge in teacher-friendly formats. Find ways to make these available free of charge to psychology faculty, both in hard copy and electronically. Target courses would include core coverage of psychopathology, assessment, psychopharmacology, and psychotherapies. Encourage psychology training programs and internships to include substance abuse treatment agencies among the supervised practicum placements used in training. Incorporate SUD competency training among the criteria used by APA during accreditation site visits of prospective and ongoing training programs. Encourage psychology training programs and internships to include health and social service systems among their training settings, with a specific objective of addressing SUD in those settings.

Responsible Agent. APA.

Expected Outcomes. Within 5 years, the APA will have developed standards for the inclusion of SUD content in the standard training of psychologists, and will have published a set of specific SUD modules as resources for core courses in the graduate training of psychologists.

3. Work with the National Institutes of Health to resume a scientifically focused Faculty Development Program in Psychology, to attract and prepare psychology faculty to work in the addiction field.

Rationale. Accomplishing Recommendation 2 will require an expansion of the number of psychology faculty with expertise in SUD. The FDP has been quite successful in other disciplines as one approach for increasing the supply of faculty with specific interest and expertise in SUD.

Recommended Actions. Reopen or develop a new FDP in psychology, to prepare faculty in the scientific and clinical expertise needed to train future psychologists in SUD

Responsible Agents. NIAAA, NIDA.

Expected Outcomes. Within 5 years, one or more RFAs will have been issued inviting psychology training programs to apply for FDP grants.

4. Work with the National Institutes of Health to provide predoctoral training grants for psychology programs to attract and train future psychologists to conduct research on SUD.

Rationale. The predoctoral years are formative in determining the career focus of psychologists. Current National Research Service Award (NRSA) training in substance abuse is heavily focused on postdoctoral training, and ample postdoctoral opportunities are thereby available to psychologists who want to expand their expertise in this area. NIAAA currently funds only three predoctoral NRSA training programs with a clinical focus, and NIDA has had none. The NIH priority on patient-oriented research warrants the expansion of predoctoral clinical training programs in this area.

Recommended Actions. Place high priority on predoctoral-level training to prepare psychologists for patient-oriented research on SUD.

Responsible Agents. NIDA, NIAAA.

Expected Outcomes. Within 5 years, NIDA and NIAAA will each have solicited and funded at least three new predoctoral NRSA training programs focused on clinical research in SUD.

5. Work with the American Psychological Association and State licensing agencies to ensure that psychologists have basic competence in the recognition, assessment, prevention, and treatment of SUD.

Rationale. All psychologists are required to pass a written examination, and most States use a common national exam. This exam should include knowledge content pertinent to SUD. Given the frequency of SUD, State licensing boards should also be encouraged to include competency content from this area in their oral examinations.

Recommended Actions. Dedicate an appropriate proportion of the national psychology licensure examination to SUD content, and issue appropriate study materials.

Responsible Agent. APA.

Expected Outcomes. Within 5 years, the national examination for psychology licensure will include an appropriate, specified proportion of items on SUD. Study materials for the licensure examination will include corresponding SUD content.

6. Explore ways for psychologists to be more involved in routine health care and social service systems to address SUD and psychological problems that commonly arise and are not addressed in these settings.

Rationale. Most people with SUD never seek professional help from a specialist treatment program. Most of them do, however, make use of health care and social service systems. Comorbid SUD can contribute to, exacerbate, and complicate the delivery of effective services for the problems that bring people to the attention of these systems. Nevertheless, little or nothing is typically done in health care and social service systems to recognize and address SUD. The professionals who work in these settings are reluctant to deal with SUD directly. Psychologists are well prepared to be resources in such settings, but few models exist for such integrated care.

Recommended Actions. Identify health care and social service agencies in which SUD are effectively addressed on site, to determine models of integrated service that work. Solicit and fund, through SAMHSA's Center for Substance Abuse Prevention (CSAP) and CSAT, specific initiatives to involve psychologists and other appropriately trained professionals directly in health care and social service systems to address SUD, and evaluate the feasibility and effectiveness of various approaches. Solicit and fund, through NIAAA and NIDA, health services research projects to evaluate models for addressing SUD through health and social service systems.

Responsible Agents. CSAT, CSAP, NIAAA, and NIDA.

Expected Outcomes. Within 2 years, SAMHSA will have identified and publicly profiled at least six model programs where SUD are addressed effectively on site through health or social service systems

Within 5 years, SAMHSA will have solicited and funded at least six specific projects to involve psychologists and other appropriately trained professionals directly in health care and social service systems to address SUD and evaluate the feasibility and effectiveness of these approaches. Within 5 years, NIH will have funded at least six health services research projects to evaluate models for addressing SUD through health and social service systems.

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Incorporating Substance Abuse Prevention into Public Health Curricula

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Introduction

This chapter presents a definition and an overview of the field of public health, which is perhaps unique among the health professions in its primary focus on prevention rather than on early intervention or treatment. A second unique feature of public health is an emphasis on population-based strategies to improve the Nation's overall health status. The history of public health-related activities concerning substance abuse goes back at least 3,500 years, when regulations pertaining to the supply and distribution of distilled spirits, particularly to intoxicated individuals, appeared in countries of the Middle East. Following the Renaissance, European societies saw the need to begin to regulate the manufacture and supply of potentially harmful drugs and toxic substances, especially as new substances such as tobacco and coffee were introduced from the New World. Concern about the mood-altering and addictive properties of alcohol led to a variety of reform movements that restricted and taxed the substance. As a profession, public health emerged in the 18th and 19th centuries, as a means both to improve the living conditions of workers and their families in rapidly urbanizing environments and harness new scientific knowledge to control such diseases as cholera.

In the early years, many public health practitioners were given authority to control the spread of disease; for example, “sanitary police” and “health commissioners” could quarantine infected individuals and otherwise take actions to prevent or curtail epidemics. These professionals evolved into the uniformed Public Health Service officers of today. Allied health disciplines (e.g., pharmacists and nutritionists) were then recruited in public health to fill a burgeoning need for specialists in these areas. In the second half of the 20th century, the reach of public health into disciplines has extended to lawyers, social workers, psychologists, and sociologists, many of whom have become involved in some facet of substance use and misuse. For example, health educators, public health nurses, and maternal and child health practitioners are often involved in substance use prevention; toxicologists and biochemists may investigate the chemical composition of both legal (e.g., tobacco) and illegal substances; and health policy analysts may assess the consequences of laws restricting access to, or use of, legal substances.

In addition to defining public health as a field, this chapter describes how to develop public health practitioners' competencies in the prevention of substance use disorders (SUD). Public health practitioners, especially those in the fields of health education, maternal and child health, and community health nursing, are increasingly called on to develop, implement, and evaluate strategies to prevent SUD at the individual, community, and societal levels. Unfortunately, relatively few schools of public health have instituted curricula that address SUD prevention, and many practitioners enter this field with a professional public health degree but little understanding of the core theory, knowledge, and skills essential to effective practice.

The heterogeneity of disciplines to be found within graduate schools of public health presents a challenge for curricular reform and for efforts to infuse the public health curriculum with a standard set of core concepts, principles, and methods. Each health-related disease or condition has its own constituency, and each clamors for a place in an increasingly crowded curriculum. While schools of public health have adapted to this heterogeneity in many ways, most require a core curriculum for graduate students that includes (1) a practice-oriented review of public health techniques (e.g., mass immunization, waste disposal); (2) an understanding of the public health approach to prevention and early intervention; and (3) a grounding in

the quantitative sciences of public health (e.g., biostatistics and epidemiology). By tradition, the subject matter used to illustrate concepts, principles, and methods of hygiene and public health has largely been drawn from the domain of infectious diseases; cancer, heart disease, and tobacco use are more recent entrants into the curriculum. This subject matter has been presented not only in the form of lectures but also in “laboratory” exercises or problem sets through which students practice specific techniques and methods.

With respect to training in the prevention of SUD, there is a considerable challenge associated not only with the heterogeneity of the public health field but also with the diversity of trainees within public health. It is unlikely that the curriculum will be enlarged to include a new course on these problems, and even if it were, it is probable that no one set of competencies could meet the diverse needs of the disciplines represented. More likely is the potential for subject matter related to substance abuse and its prevention to be introduced by attractively developed laboratory exercises and problem sets that are integrated into current courses. Substance abuse is our country’s primary public health problem, and to the extent that its schools of public health are ignoring the prevention of SUD, they are failing to address their mission.

Core Values and Paradigms of Public Health

There have been many efforts to develop a mission statement for the field of public health. In the celebrated Shattuck Report of 1850, public health was described as seeking to promote “the conditions of perfect health, either public or personal,”¹ a definition that is supported today by the World Health Organization.² Other observers have mentioned the role of public health in protecting the public from the risks engendered by living together in community³ and in promoting social justice.⁴ The field’s mission and purpose are specified by the Institute of Medicine (IOM)⁵ as “fulfilling society’s interest in assuring conditions in which people can be healthy.” Elsewhere in the IOM report, public health professionals are charged to serve “as stewards of the basic health needs of entire populations,” responsible for “reducing human suffering and enhancing the quality of life.”⁵ Collectively, public health may be described as a field dedicated to identifying and enhancing, through population-based strategies, personal and social conditions in which people can achieve and maintain health as they live together in community.

Several other core values deserve mention. Public health rests on a strong scientific foundation and, more particularly, on an orientation toward evidence concerning “what befalls the people,” which is the root meaning of epidemiology. This tradition is reflected both in the careful collection and analysis of population-based data sets pertaining to threats to public health and in the field’s support of community-based trials of such prevention strategies as the polio vaccine. Another core value of public health is balancing individual well-being and rights against community good, as in the case of quarantines imposed on individuals with infectious diseases, the control of addictive substances, and regulations concerning toxic automobile emissions. A final core value of public health is the emphasis on population-based strategies that seek to improve the health of groups.

As discussed by Rosen,⁶ public health has a long and rich history that dates back to ancient civilizations such as those of India and Egypt, where one may find evidence of concern for clean water and the sanitary disposal of sewage, as well as of efforts to understand the causes of disease. A growing awareness of public health issues can also be found in Hippocrates’s efforts to understand the relationship of health to environmental factors, including climate, water, and nutrition. The Romans contributed an emphasis on personal hygiene, the sanitary disposal of sewage, a clean water supply, and the availability of medical care through public hospitals. Indeed, it was the Romans who gave the field of public health its most lasting epigram, “*Salus publica suprema lex.*”

Public health has traditionally been concerned with such issues as clean water, effective sewage disposal, sanitary food and housing, maternal and child health, the understanding and control of communicable diseases and the spread of epidemics, and the availability of health care. Within the last two centuries there have been many additions to this list. These include concerns for assessment and amelioration of environmental hazards such as air pollutants and toxic substances, injury control, adolescent pregnancy, and cancer and cardiovascular diseases, as well as the study of genetic disorders.

Another emerging area of focus is behavioral health, which includes mental health and alcohol, tobacco, and other drug problems. This is distinct from health behaviors that affect health status and includes exercise, sexual practices, sleep habits, and preventive care. Because of the diversity of health issues that are addressed, schools of public health generally have multiple divisions, including, for example, epidemiology, biostatistics, chronic disease, and maternal and child health. Within these divisions there is further specialization of faculty. For example, someone in a division of epidemiology may focus on cancer epidemiology, or someone in a maternal and child health division may explore issues related to children’s mental health.

Table 1. Examples of the Prevention of SUD Using the Public Health Matrix

	Agent	Host	Environment
Universal	Limits on alcohol content of beverages sold in convenience stores	School-based drug prevention curricula	Taxes on alcohol and tobacco products
Selective	Abolition of beer kegs as a mechanism for distributing alcohol in college towns	Drug prevention programs for runaway youth	Responsible-server training
Indicated	Promotion of alcohol- and tobacco-free homes of youth who have initiated substance use	Tobacco-cessation programs for pregnant teens	Revocation of alcohol licenses of bars selling to minors

In order to have an impact on health and to provide preventive services at all levels, it is necessary to influence policy development and implementation as well as program and institutional administration. For this reason, schools of public health have developed programs that address these areas by providing students with core public health knowledge and skills supplemented by course work in management strategies, finance, health economics, and health policy.

Public health practice has two principal paradigms. The first and older paradigm is the trifurcation of the determinants of public health problems into host, agent (or vector), and environmental factors. *Host factors* are those that characterize individuals who have, or who are susceptible to, a health problem or disease; *agent factors* are those that describe the principal cause of the disease; and *environmental factors* are those that increase or mitigate risk for disease. In the field of SUD, the host comprises the biogenetic and psychological characteristics of individuals who are susceptible to abuse or addiction; alcohol, tobacco, or other drugs constitute the agents of addiction; and the environment includes SUD-related risk and protective factors in the family, peer, community, cultural, and sociopolitical domains.⁷ The agent–host–environment model arose to help explain why individuals with a similar level of exposure to a disease or other adverse condition differ in their response to it, that is, why some get sick while others do not. Thus, the model may be seen as a paradigm of multifactorial disease causation that reflects the understanding that a knowledge of disease agents, by itself, does not lead to effective public health practice.

The second paradigm pertains to the concepts of primary, secondary, and tertiary prevention. Activities relevant to *primary prevention* are designed to inhibit the initial occurrence or incidence of disease: for example, activities designed to inhibit adolescents' initial use of alcohol or tobacco. *Secondary prevention* refers to activities that address treatment of a disease shortly after its detection and early in its course. Strategies designed to ensure that occasional substance use does not progress to

problem use fall within this domain. *Tertiary prevention* activities target rehabilitation or chronic care and include such activities as relapse prevention.

The concept of primary, secondary, and tertiary prevention is being supplanted by a new classification system developed by the IOM.⁸ Under this schema, activities that target entire populations, such as media campaigns and school-based drug prevention curricula, are *universal* in nature. Strategies that address populations that are at risk for a disease or condition, by virtue of some set of characteristics of a group with which they are associated, are termed *selective*. Examples of such populations include pregnant adolescents and runaway or homeless youth. Strategies designed for individuals at high risk for (but not yet manifesting clinical signs of) disease, such as youth who are diagnosed with conduct disorders or who affiliate with drug-abusing peer groups, are *indicated* in nature.

As seen in Table 1, one potentially useful way to conceptualize the public health approach to the prevention of SUD is to develop a nine-celled matrix comprising agent–host–environment in one dimension and universal–selective–indicated in the other. This matrix also includes an example of strategies that are pertinent to each cell.

Work Settings

There are now an estimated 50,000 public health professionals who are members of the American Public Health Association (APHA) and who work in a broad range or practice settings. Many of these professionals have received training from one of the nation's 29 accredited professional schools of public health.

The greatest concentration of activities related to public health occurs within the context of State and local public health departments. Fields of public health practice in these settings are numerous and varied. They include maternal and child health, access to care, home health and long-term care, injury prevention, dental health, health promotion and planning, family planning, immunization, disposal of hazardous materials, control of adolescent

pregnancy and venereal disease, collection of vital statistics, laboratory investigations, regulation of the environment, occupational health and safety, inspection and licensing, policy development, epidemiological assessment and surveillance, prevention of SUD, and mental health promotion.^{9,10} As the IOM⁵ suggests, there are many other settings for public health practice in both the public and voluntary sectors. Indeed, many professionals in the fields of medicine and allied health practice public health, whether they are cognizant of it or not. These include State and local government staff who attend to policy related to public health, as well as environmental health, social services, and mental health staff, and hospital, nursing, and other medical personnel who practice preventive and community medicine.¹¹ Critical public health work is also conducted by staff associated with community-based nonprofit organizations.

The evidence base for public health practice comes from a broad range of research strategies and environments. Faculty and students at schools of public health may use the community as their research laboratory. In such a setting, research may consist of the testing of a new intervention, such as needle-exchange program, or of the evaluation of a clinical preventive service that is offered by a neighborhood health clinic. In the laboratory, agents of infectious disease and their mechanisms of action may be identified. Through the use of large, population-based data sets, risk factors for disease occurrence are studied and interventions evaluated. Policy analyses explore the impact or potential impact of laws and regulations that affect health- or disease-related morbidity and mortality. Health services research focuses on systems of delivering prevention or intervention services.

Historical Profile of Work in the Prevention of SUD

Until quite recently, the prevention of SUD was quite ancillary to the field of public health. The standard history of the field⁶ makes no mention of tobacco or drugs and discusses efforts to prevent alcohol abuse only in passing—in reference to a campaign in England in the mid-18th century. This campaign is nonetheless instructive in that it represents one of the most successful efforts of early social reformers to stem an epidemic of alcoholism caused by the ready availability of cheap gin. Coordinated social action on the part of the nascent public health community, in the form of newspaper articles and editorials and the support of local magistrates and physicians, led to a large number of petitions that were presented to Parliament. As a consequence, Parliament passed the Gin Act of 1751, which established the licensing of spirits and thus established controls over their distribution. This experience set a precedent for social reformers in the field of public health in developing and organizing a campaign that influenced

public policy. In addition, the strategic use of newspapers, coupled with a series of memorable engravings published by the artist Hogarth and aptly titled “Gin Lane,” set the stage for subsequent antidrug media campaigns.

It is difficult to separate the role of public health from that of social forces in the other policy- and practice-related initiatives that have occurred over the past 250 years. For example, neither the temperance movement of the 19th century nor the Prohibition Era of the early 20th received much support from the public health community. One reason may be that both movements were based on a model that viewed alcoholism as a consequence of individual immorality or pathology.⁷ Only recently has a perspective emerged that is congruent with a public health model, which views alcohol as interacting with and exacerbating a range of psychological and social problems and that sees alcohol dependence as widespread and multicausal.

In the area of tobacco control, little was accomplished by the field until the publication in the mid-1960s of the first U.S. Surgeon General’s report on smoking. This report, which detailed the adverse consequences of smoking, led to a proliferation of tobacco-cessation programs and to privately sponsored anti-tobacco media campaigns.¹² Subsequent action by the Federal Government led to the Health Cigarette Smoking Act of 1969, which banned tobacco advertisements on television. During the latter part of the 1970s and well into the 1980s, public health efforts to control tobacco were largely ineffective, although the actions of a variety of private advocacy groups resulted in the banning of tobacco use on domestic airline flights in 1987. The following decade saw a series of State-level policies designed to regulate smoking in public buildings and workplaces and to eliminate tobacco vending machines. Current public health measures to prevent smoking focus on decreasing sales by retail outlets to underage youth, as mandated by the provisions of the Synar amendment. Raising the sales taxes on tobacco products is another strategy. Other public health efforts are funded by the States’ allotment of funds from settlements by the tobacco industry; however, not all States have chosen to use these funds to improve public health.

In regard to preventive education, beginning in the 1970s a number of voluntary agencies, including the American Cancer Society, the American Heart Association, and the American Lung Association, played major roles in educating the public concerning the dangers of tobacco use. The 1970s also saw the beginning of a national effort to prevent youths’ first use of tobacco and other substances through classroom-based curricula. Many of these programs taught adolescents to recognize and discount media and peer inducements to use substances and attempted to teach appropriate refusal skills within the social context of their peers.^{13,14} As the public health community has shown through a succession of evaluations and meta-analyses,

approaches that involve adolescents in interaction with their peers show considerable promise, while traditional didactic approaches (e.g., Drug Abuse Resistance Education [DARE]) have generally failed to demonstrate positive results.¹⁵

Programming related to the prevention of SUD is now flourishing in other areas. Examples include community- and worksite-based efforts, programs that target families, and programs (for example, the current anti-drug media campaign) that target certain States or the nation as a whole. Other advocacy groups, such as Mothers Against Drunk Driving (MADD), are grassroots efforts that flourished during the 1980s. These initiatives are too new to have accumulated a convincing body of evaluative evidence concerning their effectiveness. There are also significant public health efforts that address very high-risk populations, including persons who use addictive drugs that are illicit for adults and who are also at risk for HIV/AIDS. Some of these efforts, including needle-exchange programs, focus more on HIV prevention than on substance abuse prevention.

Just as the field of prevention of SUD is fairly new in public health settings, it is taught only sparsely and inconsistently in the nation's schools of public health. A questionnaire administered in 1996 to all the accredited schools of public health in the United States and Puerto Rico¹⁶ revealed that only 14 schools offered courses in the prevention of SUD and that 10 of these offered at least two such courses during the 1995–1996 academic year. Johns Hopkins University and the University of Minnesota both offered five courses, and the University of California and Loma Linda University offered four. Survey results also indicated that 6 of the 27 schools offered a discrete track concerning the prevention of SUD as an area of concentration, a certificate program, or a postdoctoral program. While these data describe clearly identifiable courses or programs, there is little information about the inclusion of content concerning SUD prevention in other courses, such as injury epidemiology or prevention courses. Moreover, there is no information available concerning the extent of students' exposure to these courses.

Critical Issues, Obstacles, and Challenges

Much work clearly remains to be done to develop a set of core competencies in the prevention of SUD that schools of public health could integrate into their curricula. Half of the nation's schools of public health offer no courses in the prevention of SUD. Given the extraordinary breadth of the missions of schools of public health—to train practitioners in content areas as disparate as biostatistics, epidemiology, health education, parasitology, and environmental sciences—it is hardly surprising that the SUD field has received short shrift. Moreover, it is not helpful that the field has experienced considerable difficulties in demon-

strating its effectiveness relative to its costs, and that relatively few practitioners have found ways to draw on support within the reimbursement context of managed care. Further, the standards of the main accrediting body for schools of public health, the Council on Education for Public Health (CEPH), make no mention of SUD-related coursework or practice.

As the field matures and as its knowledge base grows, demand for SUD preventive practice is likely to increase. The need for effective prevention practices in school and workplace settings is particularly critical. Today, most schools of public health seem to have little sense of the nature and extent of that demand. If mechanisms can be found and implemented to determine the number of public health professionals currently practicing in the SUD field and the need for such specialists in the future, schools of public health will be induced to develop courses pertinent to the field's core competencies. Before this can happen, however, the field must come to some consensus as to the nature of those competencies, although it is likely that such competencies vary across the field's many disciplines.

Core Competencies in the Prevention of SUD

Competencies related to the prevention of SUD in the field of public health practice may be divided into two general areas required for entry-level practice, namely, *core knowledge* and *core skills*.

Core Knowledge

- Definitions, spectrums of, and measures of SUD
- Prevalence and costs of SUD in the population as a whole and in key at-risk subpopulations
- Comorbidity of SUD with other diseases
- Risk (mediating) and protective or resiliency (moderating) factors in the etiology of SUD, in the individual, family, peer, school, community, and social domains
- Psychosocial consequences of SUD
- Relative effectiveness of prevention strategies targeting universal and indicated populations in the key domains specified above
- Biogenetic determinants of SUD and their interaction with psychosocial determinants
- Key theories of individual behavior change, including social cognitive theory, the health belief model, the theory of reasoned action, and stages of change
- Community-based change theory and the dynamics of social change
- Effective social policies to limit the availability and accessibility of substances, and the prevention of SUD within a broad sociopolitical context

- Effective early intervention strategies in school and workplaces, including student and employee assistance programs
- Confidentiality and informed consent issues in public health practice
- Strategies for incorporating SUD prevention into general public health practice.

Core Skills

- Conducting population- and community-based SUD needs assessments and identifying resources available to meet those needs
- Preventing SUD in group contexts: peer groups, the family, schools, and the community
- Effecting prevention with special populations as defined by ethnic or racial background, gender, sexual preference, or other cultural characteristics, to ensure the sensitivity of programs targeted to these populations and their evaluations
- Conducting SUD screening of selective and indicated populations
- Engaging in transdisciplinary collaboration in the SUD field, including encouraging medical providers to conduct brief SUD-related screening and to make referrals to treatment providers of individuals whose screenings indicate cause for concern.

Vision for the Future

If efforts to integrate the prevention and treatment of SUD into the curricula of schools of public health are to bear any fruit, they should consider one of three general approaches. The first, and most direct, approach would be to induce the CEPH to include minimum standards concerning education in the prevention of SUD in their curricula. This education could be in the form of discrete courses, or it could be integrated into general curricular offerings (e.g., epidemiology, maternal and child health, and health education). Accompanying such an effort would be the dissemination of model curricula already in place in the schools of public health. The second approach is to generate a demand for SUD curricular content among students seeking professional education in public health. The third approach is to increase the number and quality of faculty who are interested in research and teaching in the SUD prevention area. The following paragraphs discuss each of these alternatives.

In the United States, one professional organization, the CEPH, accredits schools of public health.¹⁷ CEPH also accredits a number of graduate-level public health programs that exist outside of such schools. A current list of accredited schools and programs may be found at CEPH's Web site (<http://www.ceph.org>). CEPH also assists schools

and programs in assessing the content and quality of their instructional programs. As specified in the CEPH regulations, these programs must include five areas of knowledge that constitute the public health field, namely, biostatistics, epidemiology, environmental health sciences, health services administration, and social and behavioral sciences. Unfortunately, accreditation standards pertaining to instructional curricula are quite general, and CEPH may be reluctant to specify, as a core requirement, courses related to the prevention of SUD. That is not to say that CEPH is uninterested in this area; indeed, it sponsored the survey of schools of public health alluded to earlier.

Clearly, schools of public health that offer curricula related to the prevention of SUD, especially those with multiple courses, should be supported and recognized, and their curricula should be made widely available, as should the history of how those curricula were developed and realized. While such an initiative would undoubtedly be helpful, it is also likely to be insufficient, given that interest in SUD in these schools is likely to have been generated by only a few dedicated faculty. It is more reasonable to expect that schools of public health will adopt such curricula only when they perceive it is in their best interests to do so. If they are not persuaded to do so by national accrediting bodies, they may be so induced either by their funders in the public sector or by their students.

A solution to this issue lies in developing strategies to create a demand for instruction in substance abuse prevention on the part of applicants, or potential applicants, to the schools of public health. Such instruction has already been suggested in the mental health field by Duchnowski and Kutash (*Developing Comprehensive Systems for Troubled Youth: Issues in Mental Health*, unpublished paper, 1995) and others. If such a demand were created, it is likely that schools of public health would respond positively, if only to position themselves to compete for talented students. One strategy by which to generate such a demand would be to develop, at the State level, licensing requirements for public health practitioners who seek to practice prevention within publicly funded contexts or to reward those who possess such licenses with a variety of incentives, including higher salaries and greater opportunities for advancement. Unfortunately, the political will to implement such requirements appears at present to be lacking. Licensing requirements for public health prevention professionals are all but nonexistent in most States, and the APHA has only just begun to explore the notion of credentialing the public health workforce.¹⁸ However, this notion constitutes an idea whose time may be approaching, as the field matures, becomes more sophisticated, and demands the implementation of prevention strategies that have an evidence-based record of effectiveness. Certainly this is the case with the newly promulgated "Principles of Effectiveness" of the Safe and Drug-Free Schools Program that are specified on the U.S. Department of Education's

Web site (www.ed.gov/offices/OESE/SDFS/prinfin). These principles require not only that schools receiving program support adopt strategies based on the criterion specified above but also that they use mechanisms developed to conduct assessments of substance abuse prevention needs and that they use the results of those assessments to plan and improve their programs. To a lesser extent, analogous expectations are growing in the burgeoning numbers of prevention programs targeting adult populations, both in work environments in the private sector and through managed care organizations serving publicly supported programs such as Medicaid.¹⁹ A number of organizations, such as the American College of Mental Health Administrators (ACMHA), are considering the issue of licensure—and its attendant training needs—for all professional practitioners in the behavioral health field. In time, ACMHA may also see the need for licensing the administrators who manage SUD prevention practitioners.

If and when the public health work force becomes credentialed, or if employers come to recognize the importance of ensuring a foundation of SUD prevention knowledge among public health practitioners in this field, vehicles will need to be found to provide appropriate distance learning. One vehicle for distance learning is the Association of Schools of Public Health (ASPH), the national organization that represents the deans, faculty, and students of the accredited schools of public health. Its mission, as specified in its Web site (www.asph.org/about), is to provide “a focus and a platform for the enhancement of existing and emerging academic public health pro-

grams.” ASPH operates a distance learning center and sponsors a number of distance learning modules.

The third approach to integrating SUD prevention and treatment curricula into schools of public health is to increase the supply of faculty with an interest in and commitment to research and teaching in this discipline. Excellent SUD-related programs have taken root at the University of Minnesota and elsewhere, and are now producing a number of highly talented researchers. With sufficient support, encouragement, and mentoring for doctoral students and junior faculty, a cadre of professionals with the appropriate credentials for academic careers will emerge. However, it seems unlikely that this strategy alone will be sufficient to induce the administrators of schools of public health to view SUD prevention curricula as central to their mission and to create and support pertinent faculty positions.

Given the multi- or transdisciplinary nature of so much work in the field of SUD prevention, it is appropriate to develop opportunities for education and training that transcend the discipline of public health. This is particularly important to the extent that public health practitioners work in settings that encompass early intervention, treatment, and relapse prevention, as well as primary prevention. To that end, and also to enhance the efficiency of both graduate school education and training offered to practitioners in the field, it is essential that curricula and learning modules be developed by representatives of multiple disciplines.

Recommendations

1. The field of public health needs a greater understanding of the role of public health practitioners in the field of SUD prevention.

Rationale. Our understanding of the number of trained public health professionals who are working in the SUD field is inadequate, as is our understanding of the pertinent competencies required of them.

Recommended Actions. A survey of appropriate APHA members, i.e., those who indicate that they are primary or secondary members of the Alcohol, Tobacco, and Other Drug (ATOD) Section, should be undertaken to determine:

- The number of practitioners who currently engage in practice, policy, or research relevant to the prevention of SUD;
- The proportion of their total responsibilities that include activities pertinent to the prevention of SUD;
- The core competencies that they perceive are related to the prevention of SUD;
- Which among those competencies they acquired as part of their training in schools of public health, and those for which they believe their training to be inadequate; and
- Those competencies that they take advantage of continuing education opportunities to attain.

Responsible Agents. APHA; private foundations such as the Robert Wood Johnson Foundation (RWJF).

Expected Outcomes. The result of a survey of this nature should be a beginning understanding of the gap between what schools of public health currently provide in the area of curricula pertaining to the prevention of SUD and what they should be offering.

2. The public health field should develop stronger links to Federal agencies that include SUD prevention in their missions.

Rationale. There is little communication between the field of public health and Federal agencies that support the nation's SUD prevention goals and initiatives.

Recommended Actions. APHA, as well as ASPH, which represents the nation's graduate schools of public health, should develop ties with key Federal agencies concerned with the prevention of SUD. These organizations include the National Cancer Institute (NCI), the National Institute on Alcohol Abuse and Alcoholism (NIAAA), the National Institute on Drug Abuse (NIDA), and the Substance Abuse and Mental Health Services Administration's Center for Substance Abuse Prevention (SAMHSA/CSAP). The purpose of these linkages would be to

- Determine the role that professionals trained in public health disciplines currently fill, and could fill, in fields of practice dominated by professionals in the prevention of SUD;
- Further elaborate and articulate the core competencies that should be required of public health professionals who practice in these fields;
- Document areas in which the lack of coordination between the public health and SUD prevention fields inhibits the capacity of public health professionals to practice in this field; and
- Foster the specification and development of curricula addressing the prevention of SUD within CEPH's constituency of schools of public health.

Responsible Agents. APHA, ASPH, National Institute of Mental Health, Indian Health Service, Centers for Disease Control and Prevention, NIDA, Food and Drug Administration.

Expected Outcomes. The results of such discussions would focus the attention of the field of public health on the extent, agenda, and needs of the substantial Federal commitment to SUD prevention.

3. Schools of public health should develop an inventory of current curricular content taught in the SUD prevention area, as well as mechanisms by which such schools have infused SUD-related material into general course offerings.

Rationale. A number of schools of public health have developed sophisticated SUD prevention curricula. An understanding of the nature of those curricula and how they were developed would be helpful to other schools that may be considering the creation of such curricula. Also of importance are what schools of public health consider to be core SUD prevention-related knowledge and skills and the context in which core material is taught. While only a limited number of schools will be able to develop specializations in SUD studies, all should be able to benefit from an understanding of core curricular content and of how to teach strategies that integrate SUD prevention into other practice arenas.

Recommended Actions. CEPH should conduct a second survey of its constituent graduate schools to determine

- Substance-abuse related curricula and courses currently taught in each school, as well as mechanisms by which SUD content is integrated into general public health courses;
- Faculty expertise in this area;
- The level of cooperation, if any, between the schools of public health and other disciplines in developing and coordinating core or specialized curricula relating to the prevention of SUD; and
- Plans to establish such curricula, either within the school or in cooperation with other graduate programs.

Responsible Agent. CEPH.

Expected Outcomes. The results of this survey will help develop benchmarks for schools of public health that may now pay only minimal attention to the prevention of SUD and will give them examples of curricula implemented elsewhere.

4. The field of public health should learn what licensure requirements the States impose, or intend to impose, on SUD prevention practice.

Rationale. Some States appear to be moving towards requiring licensure for SUD prevention, early intervention, and treatment practice; others are contemplating such action. Without an understanding of those requirements, schools of public health cannot adequately prepare their graduates for practice in this area.

Recommended Actions. APHA should survey State departments of public health to determine which States, if any, currently have licensing laws pertaining to practice pertinent to the prevention of SUD. Also specified should be the skills and competencies required, fields of practice requiring licensing, availability of licensed practitioners, and present and projected need for such practitioners.

Responsible Agents. APHA, in collaboration with ASPH.

Expected Outcomes. Schools of public health will find the results of this survey useful in planning for and justifying requests for increases in resources in SUD prevention.

5. Schools of public health should develop a consensus of core competencies pertinent to the field of SUD prevention.

Rationale. The core competencies specified in this chapter must be understood and accepted by the nation's schools of public health if curricula are to be implemented.

Recommended Actions. An annual or a biennial conference should be organized and convened by CEPH for faculty of schools of public health. Up to four faculty from each school should be invited. Eligible faculty would include those who are experienced in teaching, research, and practice pertinent to SUD prevention, or who are interested in learning more about the field. The purpose of the conference would be to

- Present a synthesis of the information gathered through the implementation of Recommendations 1–3 above;
- Seek a consensus as to the core competencies required of public health practitioners in the SUD prevention field;
Develop an understanding as to how those competencies may differ across the fields of practice that constitute public health;
- Discuss and share specialized and core curricula already developed;
- Discuss issues pertinent to faculty development; and
- Develop a plan for creating or enhancing SUD prevention curricula.

Responsible Agents. CEPH or ASPH.

Expected Outcomes. A greater understanding across schools of public health of the importance of developing and implementing curricula in the area of SUD prevention.

6. Schools of public health should establish links with agencies that practice SUD prevention in their local communities and States.

Rationale. Graduate school education benefits considerably from supervised student field placements that provide opportunities for practice and research. Linkages with practice agencies also provide opportunities for faculty research and practice, as well as for recruiting returning students into schools of public health. Faculty and student competencies in SUD prevention would thus both be strengthened. To the extent that students are exposed to professionals in other health-related professions, they will develop an understanding of collaboration in a multidisciplinary environment.

Recommended Actions. Schools of public health should identify community-based SUD prevention resources in the communities they serve, targeting those that employ public health professionals. These professionals should then be offered the opportunity to serve as field supervisors. Area Health Education Centers (AHECs) may be able to assist in this regard, especially in providing for support for student placement in field practica.

Responsible Agents. Schools of public health, AHECs.

Expected Outcomes. Linkages between schools of public health and community-based organizations that include SUD prevention in their mission will strengthen both faculty and student competencies in this area and will also serve as a mechanism to recruit SUD practitioners into these schools.

7. Resources are required to develop SUD competencies among faculty members in schools of public health that currently lack such competencies.

Rationale. Continued support for faculty development is needed within schools of public health that currently lack SUD competencies. The SUD prevention field must compete with other fields of public health practice for faculty. Support of this nature will be helpful in persuading new faculty to explore a field about which they may know relatively little, and to remain in it once they have begun to develop competence in the area.

Recommended Actions. Such support could come in the following forms: stipends to support faculty research and practice; short courses for faculty in the fundamentals of SUD practice; the development and dissemination to faculty of model SUD prevention curricula; and linking new faculty with those with more experience in a supported, supervised mentoring relationship.

Responsible Agents. NIDA, NIAAA, NCI, SAMHSA/CSAP, RWJF, Association for Medical Education and Research in Substance Abuse (AMERSA).

Expected Outcomes. More faculty in schools of public health who are practicing and conducting research in SUD prevention.

8. Schools of public health should develop collaborative ties with other entities in their universities that offer curricula or coursework related to SUD prevention.

Rationale. Some schools of public health may be ill-equipped to develop discrete SUD prevention curricula of their own in the near future because of lack of faculty interest or competence in this area. However, the academic institutions of which they are a part may have other schools, departments, or centers that can offer students relevant course work, as well as an opportunity to develop an understanding of the SUD prevention field from an interdisciplinary perspective. Because services targeting the prevention of SUD are often delivered in settings that require close collaboration among professionals with a wide variety of educational backgrounds, and because the theory and practice of effective prevention cuts across the boundaries of specific disciplines, it is highly desirable that public health practitioners be trained in an interdisciplinary context.

Recommended Actions. Schools of public health should erode boundaries to effective collaboration across departments, to capitalize on existing resources within their universities' departments of biological and social sciences to develop interdisciplinary curricula in the SUD field and promote these curricula as areas of concentration; and assist departments in which such curricula are housed in expanding their curricula to include relevant course work in public health.

Responsible Agents. Schools of public health.

Expected Outcomes. Schools of public health with limited curricula in SUD prevention can capitalize on additional resources across the universities of which they are a part. Public health practitioners will have a greater understanding of practitioners operating under a range of paradigms, which will facilitate interdisciplinary practice.

9. Schools of public health should develop a plan to offer continuing education in SUD prevention to public health practitioners who are working, or wish to work, in this field.

Rationale. Implementation of the measures specified above should improve the infrastructure supportive of education concerning the prevention of SUD in the nation's schools of public

health. Those measures are likely to do little to expand or enhance the skills of public health practitioners who have already received their degrees and are working in settings in which they are called on to develop and implement SUD prevention strategies.

Recommended Actions. APHA should sponsor the development of SUD prevention continuing education (CE) modules, to be delivered through its recently developed mechanisms for CE. APHA currently offers CE credits for attendance at sessions at its annual meeting and sponsors short courses, typically 4 to 8 hours in length, prior to the meeting.

Responsible Agents. APHA, particularly the ATOD Section.

Expected Outcomes. CE credits given for sessions related to SUD prevention at APHA's annual meeting; short courses offered prior to the start of the meeting; freestanding modules offered through videoconferences; regional 2- to 3-day seminars; and Web site applications.

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Educating Social Workers to Work with Individuals Affected by Substance Use Disorders

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Introduction

Social workers have worked with individuals with substance use disorders (SUD) and their families in a multitude of settings since the beginning of the social work profession in the United States. The theoretical constructs of social work practice, based on systems theory and a biopsychosocial perspective, make it an ideal discipline for working with individuals affected by SUD. Yet, despite the theoretical fit and social work's front-line position in working with addicted clients, most social workers receive limited or no training in effective assessment and intervention techniques with these clients. The majority of the estimated 400,000 social workers in the United States are thus dealing with the numerous consequences of substance abuse without fully understanding the nature of addiction or having the skills needed to directly address SUD.

It is imperative that all social workers develop core knowledge and skill competencies in the treatment and prevention of SUD. In addition, a body of social workers specializing in the field of SUD needs to be trained by schools of social work and recognized as substance use disorder experts by the profession through a certification process. Furthermore, since the treatment of SUD involves the collaboration of many different professional disciplines, it is recommended that social work training provide greater emphasis on interdisciplinary collaboration.

Core Social Work Paradigms

Contemporary theoretical constructs of social work practice are highly relevant to the diagnosis and treatment of individuals affected by SUD. The core social work paradigms evolved over the past 100 years, and the profession has increasingly defined its principal focus as the interface between the person and his or her environment. Mary Richmond,¹ the mother of American social casework, defined it in 1922 as “those processes which develop personality through adjustments consciously effected, individual by individual, between men and their social environment.” Hamilton² coined the well-known social work concept, “the person-in-his situation,” in 1951 to represent “the threefold configuration consisting of the person, situation, and the interaction between them.” In 1969, Gordon³ provided a summation of the historical focus of social work that is still relevant today:

The central focus of social work traditionally seems to have been on the person-in-life- situation complex—a simultaneous dual focus on persons and environments. The focus has been concentrated at some times on the side of the organism as interpreted by psychological

theory and at other times on the side of the environment as interpreted by sociological and economic theory. ...We conclude, therefore, that the central target of technical social work practice is matching something in person and situation—that is, intervening by whatever methods and means necessary to help people be in a situation where the capabilities are sufficiently matched with the demands of the situation to make a go of it.

Although different social work theorists give varying emphasis to the individual's intrapsychic functioning and relationship to the social environment, these parameters, encompassed in concepts such as “psychosocial casework” and “biopsychosocial assessment,” are constant in social work education and clinical practice. These perspectives are reflected in the Code of Ethics of the National Association of Social Workers (NASW), which is taught to all social work students: “The primary mission of the social work profession is to enhance human well-being and help meet the basic human needs of all people, with particular attention to the needs and empowerment of people who are vulnerable, oppressed, and living in poverty. A historic

and defining feature of social work is the profession's focus on individual well-being in a social context and the well-being of society. Fundamental to social work is attention to the environmental forces that create, contribute to, and address problems in living."⁴

Contemporary social work education and clinical practice include the following theoretical constructs that are salient to the diagnosis and treatment of individuals with SUD:

Ecological Systems Theory. Influenced by biologically based general systems theory and the social ecological perspective, this paradigm "posits that individuals are engaged in constant transactions with other human beings and with other systems in the environment and that these various persons and systems reciprocally influence each other."⁵ As Compton and Galaway⁶ have asserted, "the person is observed as a part of his/her total life situation; person and situation are a whole in which each part is interrelated to all other parts in a complex way through a complex process in which each element is both cause and effect." Thus, substance abuse is viewed not only as an individual's disorder but also in relation to the person's family and social environment. Consequently, treatment is seen as necessarily including the various intrapsychic, interpersonal, and environmental aspects or subsystems of the individual affected by a substance use disorder.

Problem-Solving Model. Perlman,⁷ in the 1950s, developed a model of social work intervention based on the notion that an individual is constantly problem solving throughout life. Disruptions to this problem-solving capacity, due to internal or environmental factors, create difficulties in life. "Through a real relationship that began as soon as worker and client met, and embodying an assessment process specifically focused on the problematic situation and on the client's motivation, internal capacity, and external resources, the goals of casework were (1) to release, energize, and give direction to the client's motivation; (2) to release and then repeatedly exercise the client's mental, emotional, and action capacities for coping with his or her problems; (3) to find and make accessible to the client the opportunities and resources necessary to the solution or mitigation of the problem; and (4) to help individuals and families cope with whatever they are currently finding insurmountable in a way that will make maximum use of the conscious efforts, choices, and competencies." With its emphasis on using the client's strengths to enhance motivation, as well as using environmental resources, this is one approach that is obviously well suited for substance abuse treatment. Consistent with this approach are elements of contemporary addiction counseling concepts such as Prochaska and colleagues' model of change,⁸ Miller and Rollnick's motivational interviewing,⁹ and Gorski's relapse prevention model.¹⁰ The problem-solving model also emphasizes working with environmental and social issues, as in the ecological systems model.

Family Systems Theory. Social work has always placed great emphasis on the family. One of the major precursors to modern social workers were the volunteer "friendly visitors" of the nineteenth century's Charity Organization Societies, who visited and assessed families in need of financial assistance. Historically, social workers have been viewed as the "family experts" in many different settings, such as mental health programs, child guidance clinics, family agencies, and hospitals. While the individual "identified patient" was often treated by a psychiatrist or psychologist, his or her family members were routinely seen by a social worker.¹¹

The development of family systems theory by numerous family therapists in the 1950s and 1960s provided social workers with a dynamic conceptual framework for their work with families. As with the ecological systems theory described above, family systems theory emerged from general systems theory, but it focused on understanding the current family dynamics, the family of origin extending through several generations, and the family in its environment.¹² Central to family systems theory is the concept that "in family groups, all members influence and are influenced by every other member, creating a system that has properties of its own and that is governed by a set of implicit rules specifying roles, power structure, forms of communication and problem solving. Because each family is a unique system, practitioners must develop a systems framework or a perceptual set that will enable them to analyze and to understand the behavior of individuals in relation to the ongoing operations of the family group."⁵

Family systems theory is very useful in the assessment and treatment of SUD because it recognizes how the family, as an individual's most significant social group, exerts a great deal of influence over one's substance use, and is, in turn, very much influenced by it.¹³ Well-known concepts in the field of substance abuse, such as enabling, codependency, and being the child of an alcoholic, all relate to family system dynamics. Furthermore, many clinicians working with recovering substance-abusing clients, including relapse-prevention theorists such as Gorski, emphasize the importance of addressing childhood and family-of-origin issues during the later stages of the recovery process.¹⁰

Ego Psychology. Evolving out of classical psychoanalytic theory, ego psychology focuses on the various functions of the ego—the part of the human psyche that is viewed as both mediating internal psychic conflicts and dealing with the demands of the outside world. Ego psychology thus views human motivation and behavior as determined not only by an individual's unconscious drives but also by his or her attempts to cope with the external environment.

Ego psychology has played an important role in modern clinical social work practice and actually fits into the more contemporary ecological systems model, giving the latter more depth. Many of the central tenets of current

social work practice, such as working with clients' strengths, and enhancing or empowering their coping capacities, are derived from ego psychology. As pointed out by Goldstein,⁷ "ego psychology helps to identify individual needs and the kind of environmental conditions and resources essential to meeting human needs and fostering growth." Thus, ego psychology provides a sophisticated framework for assessment of, and intervention with, individuals affected by SUD by focusing on such dynamics as defense mechanisms, coping capacities, ego strengths, interpersonal relations, and the availability of environmental resources to meet the developmental needs of a child. Indeed, the use of basic concepts in the field of substance abuse treatment such as psychological defenses and coping mechanisms including "denial," "projection," "minimization," and "rationalization" are derived from ego psychology.

Crisis Intervention Theory. A crisis is a sudden discontinuity in an existing homeostatic state of functioning. The resulting state of disequilibrium overwhelms the habitual problem-solving capacities of an individual, making him or her more open to outside intervention.¹⁴ This paradigm is often used in social work and is seen as applying to individuals, families, groups, communities, and even nations.¹⁵

According to crisis theory, a crisis is both a danger and an opportunity for growth. Thus, during crisis intervention the social worker has two objectives: (1) to quickly reduce the impact of the stressful event; and (2) to utilize the crisis to help those affected to not only solve present problems but also to become emotionally stronger through the use of more effective coping mechanisms.¹⁶

Crisis theory and crisis intervention techniques offer two different approaches for helping individuals affected by SUD. First, through prompt, direct clinical interventions or appropriate referrals, social workers try to promote recovery by helping those who are in a state of crisis due to the negative consequences of SUD. Second, social workers may purposefully evoke a state of crisis through the utilization of confrontation techniques, such as Johnson's Family Intervention model,¹⁷ or through its adaptation to work- and school-based programs, such as employee assistance programs (EAPs) and student assistance programs (SAPs). It is hoped that the use of such approaches with individuals affected by SUD will lead to a state of disequilibrium and that the resulting crisis experienced by the individual will offer an opportunity for change and emotional growth that may not be available otherwise.

Social Group Work. Even prior to the development of group therapy as a formal therapeutic method, social workers were helping individuals in group settings. One of the major antecedents of the social work profession was the Settlement House Movement of the early 20th century. Settlement house workers, usually women from the upper and middle classes, set up community houses in poor

neighborhoods where they attempted to improve health, housing, employment, and overall living conditions through cooperative community effort.¹⁸ Social group work evolved out of this movement, which used groups to focus on recreational, educational, and social needs of people, as well as to mobilize them toward political action.

Theories of group therapy proliferated during the 1940s and 1950s, and social workers enhanced their social group work tradition with a more sophisticated theoretical and clinical base, focusing on the stages of group development, the roles enacted by group members, and the utilization of group process to achieve therapeutic aims. Social workers have used group methods in virtually every setting, and group work training is a fundamental part of social work education and practice today.

Currently, group counseling and group activities, as well as psychoeducational groups, are the treatment of choice for individuals with SUD. Group therapy provides peer interaction and peer support, as well as peer confrontation regarding the adverse consequences of substance abuse. It also helps address the social isolation and rigid adaptive defenses of many individuals with SUD.¹⁹ Moreover, the historical importance of self-help 12-step programs, beginning with Alcoholics Anonymous in 1939,²⁰ and the use of encounter group techniques in the therapeutic community movement that began with Synanon in 1958,²¹ have had a profound impact on the primacy of group work in substance abuse treatment. Social work's emphasis on group modalities contributes to contemporary treatment approaches of SUD.

Community Organization. Another important contribution of the Settlement House Movement to the social work profession has been the development of community organizing methodology.⁵ Knowledge of community organization is a required component of social work education, and social workers skilled in community organization have played an important role in the formation of community-based substance abuse prevention coalitions.

Contributions of Social Work to the Treatment of SUD: A Historical Perspective

The major forerunner of clinical social work in the United States was the Charity Organization Society movement of the late 19th and early 20th centuries. Charity Organization Societies served as clearinghouses for the different charities in the community that dispensed relief to the needy during that period. The purpose of these societies was to maintain detailed records of people receiving financial aid and to determine who were the "worthy" poor, that is, those who really needed help and would benefit from it. "Friendly visitors" from the Charity Organization Societies, wealthy volunteers, visited indi-

viduals and families “in need” to assess in a “scientific” way the causes of their destitution, and, through encouragement and support, tried to relieve the situation.

These volunteers routinely encountered alcoholism during their visits. At that time, the moral model of alcoholism predominated with its characteristic portrayal of inebriety as “sinful.” Rather than being given alms, the poor persons with alcohol addiction were viewed as needing “supervision to help them combat or overcome intemperance, indolence, and improvidence.”²² Although Richmond, one of the major contributors to the professionalization of social work, started out as a member of the Charity Organization Movement, her work with persons with alcohol addiction made her question the prevailing moral view. In her ground-breaking book, *Social Diagnosis*, published in 1917, Richmond²³ stated that “inebriety is a disease” and portrayed it in a way that is entirely consistent with the disease model of alcoholism as described by Jellinek²⁴ almost half a century later. Based on her clinical observations, Richmond stated that (1) the disease of inebriety differs from “excessive” drinking; (2) the diagnosis of this disease should be based on both physical and mental examinations; (3) this diagnosis applies to individuals who “are habitually overcome by alcohol and unable to take it at all without taking it to excess,” i.e., those who cannot drink without losing control; (4) this disease is not curable since those who have it will relapse if they drink again; (5) better success is achieved if “the malady is dealt with when its manifestations first appear,” i.e. chances of recovery are better during the early stages; and (6) the inebriate is a “patient” and not a “culprit,” and cannot be blamed for his disease. Nonetheless, success in treatment does “depend upon the patient’s co-operation.”²³

Richmond also created a diagnostic questionnaire for inebriety that assessed current drinking patterns and duration of problems; family history of drinking, drug problems, and “mental or nervous trouble” going back three generations; medical and psychiatric histories; current social, employment, and family situation; and “causal factors” that included patient’s “own analysis of the cause or causes of his drinking.” This diagnostic instrument, formulated almost a century ago, is similar to those used today.²⁴ Moreover, Richmond viewed social workers as having an “important role to play in gathering the pertinent social data,” offering the assistance necessary to supplement the medical treatment, and “providing the long period of after-care which is usually necessary.”²³

Social workers continued to play an important role in the treatment of alcoholics and their family members in the years following the repeal of Prohibition in 1933 and during World War II and its aftermath. Social workers were an integral part of an interdisciplinary team at the Yale Plan Clinics in New Haven and Hartford, Connecticut, that started in 1944. These clinics developed a model of inpatient treatment that was a precursor to contemporary

alcoholism treatment programs.²⁴ Gladys Price, a social worker at the Washingtonian Center for Addictions in Boston during the 1940s, created the first alcoholism field placement for social work students and did pioneering work with wives of alcoholic men.²⁴ At approximately the same time, Margaret Cork, a social worker at the Addiction Research Foundation in Toronto, Canada, established a treatment program for children of alcoholics. Her book, *The Forgotten Children*, published in 1969,²⁵ remains a classic in the field.

In 1955, the Yale (now Rutgers) Summer School of Alcohol Studies began its first formal training seminar for social workers. The faculty included Gladys Price, Margaret Cork, and Margaret Bailey, a social worker and the author of *Alcoholism and Family Casework*, a highly regarded monograph on working with persons with alcohol addiction and their families.²⁶ Between 1964 and 1968, Bailey, who worked for the National Council on Alcoholism in New York City, directed a highly successful alcoholism training project that involved three family casework agencies under the sponsorship of the Community Council of Greater New York. She also established the Alcoholism Committee under the auspices of the New York City Chapter of NASW. Initiated in 1969 and continuing today, the NASW New York City Chapter Alcoholism Committee has sponsored an annual alcoholism institute that has become one of the major national providers of training for social workers on alcoholism and, more recently, on other drugs of abuse. This Committee (recently renamed the Addictions Committee) has published a number of special journals and books on the treatment of alcohol and other drugs; written a draft of the Alcohol, Tobacco and Other Drug Policy Statement that has been adopted by the NASW as its official policy; and developed a guide on how to confront a colleague with a substance abuse problem. It also provides a hotline for social workers concerned about their own, familial, or a colleague’s use of substances.²⁴

The Hughes Act, passed by the U.S. Congress in 1970, led to the establishment of the National Institute on Alcohol Abuse and Alcoholism (NIAAA) and the National Institute on Drug Abuse (NIDA). The act also provided funding for public and private not-for-profit treatment facilities, especially for alcoholics. Numerous social workers were hired and trained as alcoholism counselors and brought with them their characteristic knowledge base of group and family dynamics, and treatment issues pertinent to adolescents.²⁴

The history of drug abuse treatment in the U.S. differs from that of alcoholism treatment. Since the passage of the Harrison Narcotics Act in 1914, the U.S. government has held the view that users of illicit drugs are criminals deserving incarceration. Approximately 44 narcotics maintenance clinics existed across the U.S. from 1919 to 1923.²⁷ From 1935 until 1971, the Federal government operated large treatment facilities, often referred to as

“Federal farms,” in Lexington, Kentucky, and Fort Worth, Texas, which resembled modified prisons.²⁷ In the late 1950s and early 1960s, the therapeutic community movement for drug treatment began to develop.

Social workers did not appear to play a significant role in these drug treatment efforts. During the 1980s, however, with the escalation of cocaine and polysubstance abuse and an increase in the number of substance use disorder treatment programs, the philosophies and staffing patterns of both alcohol and drug treatment programs began to converge, with social workers assuming increased treatment, programmatic and administrative responsibilities.²⁸ Currently, social workers play a pivotal role in therapeutic communities and as staff members in methadone maintenance programs. Furthermore, social workers are involved in the proliferation of treatment programs for clients with coexisting psychiatric disorders and SUD, commonly known as programs for the mentally ill chemical abusers (MICA), which are usually located within the psychiatric treatment system.

Concern regarding the spread of human immunodeficiency virus (HIV) and acquired immune deficiency syndrome (AIDS) among their clients has led many social workers to become active in the growing harm-reduction movement, which aims to minimize the negative individual and social consequences of substance use through various activities, including needle exchange and the distribution of condoms. Social workers also are involved in school- and community-based primary prevention programs and play an important role in EAPs providing assessment, referral, and brief treatment to individuals affected by SUD.

Currently, social workers, with their focus on intrapsychic, biological, social, family, environmental, and ethnocultural influences on human behavior, are a significant presence in substance use disorder treatment programs. It must be emphasized, however, that this history of social work's role in substance abuse treatment does not include social workers' more pervasive contact with clients affected by SUD in the many non-addiction settings where the vast majority of social workers have been employed throughout the twentieth century.

The Scope of SUD in Social Work Settings

Over the past 20 years, as substance abuse treatment programs became increasingly professionalized, social workers have become a small but influential part of these treatment programs. A 1991 survey found that social workers constituted only 8.5% of the direct care staff in substance abuse treatment agencies.²⁹ Although there are no current data on the percentage of social workers in substance abuse settings, the majority of social workers encounter individuals with SUD as a routine part of their work in other fields of service.

According to the NASW census data of almost 80,000 NASW members surveyed as of April 30, 2000, the following percentages of social workers are employed in the different practice settings: mental health, 40%; child / family welfare, 25%; health, 12%; school, 5%; aging, 4%; criminal justice, 1%; occupational social work/EAP, less than 1%; other settings (including substance abuse), 12%.³⁰ Straussner and Fewell²⁴ have written that because of the sheer numbers of social workers throughout the various service systems, social workers are likely to come into contact with more individuals with alcohol and other drug problems and their family members than are members of any other of the helping professions. Social workers are likely to encounter clients affected by SUD in the following settings:

Mental Health System. Approximately one-half of individuals with severe mental illnesses have coexisting SUD.^{31,32} Psychiatric disorders occur at a rate of 44% among individuals with alcohol problems and 64% among individuals with drug-use disorders.³³

Child Welfare System. Children of substance-abusing parents are five times more likely to be physically abused and nine times more likely to be neglected than other children.³⁴ Forty to eighty percent of parents with children in the child welfare system have alcohol or other drug problems that interfere with caretaking.³⁵

Family Service Agencies. One of six families in the U.S. is affected by alcohol abuse,³⁶ and many others are also affected by the abuse of illicit and licit drugs. Families with SUD are seen in family agencies with a variety of presenting problems.

Health Care System. A quarter of all deaths each year in the U.S. are attributed to SUD, and comprehensive rehabilitation programs report that alcohol-related injuries account for up to 79% of rehabilitation patients.³⁷ One-fifth of all the patients in health care settings have an alcohol problem.³⁸

School System. In a 1995 national survey of high school seniors, 30% of the students reported having consumed approximately five or more drinks at least once in the prior 2 weeks, and 48% admitted to the use of an illicit drug at least once.³⁹

Criminal Justice System. Forty-nine percent of individuals incarcerated in State penal facilities were convicted of committing crimes that were performed under the influence of alcohol or other drugs. Approximately 80% of individuals in prison have a history of using licit or illicit substances.⁴⁰

Geriatric Services. It is estimated that 10% to 17% of adults over the age of 60 misuse prescription drugs or alcohol.^{41,42} Researchers estimate that between 12% and

14% of older people hospitalized for any reason have a significant problem with alcohol.⁴³ The rates of hospital admissions for the elderly for alcohol-related problems, including falls and hypertension, are similar to those for heart attacks and may even be greater.⁴⁴

EAPs. It is estimated that 10% to 23% of all workers use illicit drugs on the job, and that 68% of those who reported using drugs were employed. The cost of alcohol abuse in the workplace has been estimated to be \$86 billion annually, with \$71 billion due to lost employment and reduced productivity and \$15 billion due to health costs and treatment.^{45, 46}

Services for the Homeless. Between 30% and 40% of homeless Americans abuse alcohol, and 10%–15% abuse other drugs.^{47, 48}

Domestic Violence. Alcohol was abused by either the victim or the perpetrator in over half of all domestic violence incidents.⁴⁶

Services for the Disabled. Between 15% and 30% of the 33 to 45 million people with disabilities in the United States have SUD.⁴⁹

Social Work Training Initiatives Regarding SUD

The profession of social work is not working as effectively as it could with clients who have SUD. This is attributed to the failure of most schools of social work to provide all students with a basic knowledge of alcohol and other drug abuse issues. Although some graduate schools of social work offer a concentration in the treatment of alcohol and other drug-abusing individuals and many others offer valuable elective courses in this area, most students do not take these courses.⁵⁰ Only a few schools of social work have postgraduate training programs in SUD; consequently, social workers who wish to specialize in SUD usually take courses in this area in non-social-work educational settings.

A significant factor accounting for the paucity of substance abuse education in social work schools is that the Council on Social Work Education (CSWE), the national social work educational policy-making body, does not mandate substance abuse content in the social work curriculum. A lack of faculty interest and expertise in SUD also has been noted as contributing to this deficiency in social work education.⁵¹ A recent study demonstrates that when faculty members received specialized training in SUD, they incorporated information in their non-addiction courses, and consequently, their students learned more about SUD than they otherwise would have.⁵² Clearly, one of the significant ways to increase knowledge and skill competencies in SUD among social work students is to educate more social work faculty about addiction issues.

In the past 30 years, there have been three major initiatives involving Federal grants to strengthen the education of social work students in SUD. First, during the 1970s, funding from the NIAAA provided training and tuition fellowships to social work students interested in the field of alcoholism. These grants influenced individual careers and program creation in certain schools, but they did not lead to any consistent curriculum development or an overall incorporation of substance abuse issues into the social work field.⁵³

In 1990, the Faculty Development Program (FDP), established by NIAAA, NIDA, and the Office for Substance Abuse Prevention (OSAP), expanded its previous support for schools of medicine and nursing to include funding for schools of social work. The purpose of the FDP was to improve clinical teaching programs in SUD in health professional schools. The Federal government awarded competitive grants to seven schools of social work between 1990 and 1999 to develop faculty experts in SUD; these experts were then expected to teach other faculty members and social work students. The schools of social work that received these grants felt that the faculty members who were trained were positively influenced by them.⁵³

Another significant Federal initiative of the 1990s was the social work BSW/MSW Curriculum Enhancement Project, sponsored by the NASW in cooperation with the CSWE and funded by the Center for Substance Abuse Prevention (CSAP, previously OSAP). The purpose of this project was to develop curriculum modules on alcohol and other drug problems that could be incorporated into the required social work foundation courses by all schools of social work.^{52,53} The modules were completed, but their distribution was uneven. Moreover, they quickly became dated and their implementation has been very limited.⁵¹

Social Work Values and Treatment of SUD

Given the pervasive aspect of SUD in the various settings in which social workers practice, it is imperative that all social workers receive basic training in the assessment, motivational enhancement, and referral of clients with SUD. Hepworth and Larsen⁵ list four “cardinal values of social work” that intrinsically relate to working with individuals affected by SUD, and demonstrate social work’s unique perspective in working with these clients. These values state that (1) all human beings deserve access to the resources they need to deal with life’s problems and to develop their potentialities; (2) all human beings have intrinsic worth and dignity; (3) the uniqueness and individuality of each person are invaluable; and (4) given appropriate resources, human beings are capable of growth and change and should be supported in increasing their choices in solving their problems and directing their lives.⁵ This section describes these values and their implications for treating clients with SUD.

1. All human beings deserve access to the resources they need to deal with life's problems and to develop their potentialities.

Social workers are ethically committed to ensure that all people have access to the resources, services, and opportunities they require to fulfill their full potential in life. Thus, it is a fundamental value of social work that all clients, including those affected by SUD, be referred for appropriate treatment.

It has been estimated that only 10% to 30% of individuals with SUD seek treatment for these disorders.^{54,55} It is also estimated that 70% to 90% of individuals referred for substance abuse treatment do not follow up on that referral.³⁷ Frequently, clients with SUD who do not keep their appointments for treatment are labeled as being “resistant” or “not ready for recovery.” They are subsequently dropped from treatment services. Other individuals with SUD do not even receive a referral for treatment. Social workers, who staff agencies in many different fields of practice where substance abusing clients are seen, are in a primary position to identify an individual's substance use disorder, refer him or her to appropriate treatment, and follow up on the referral. It is the social worker's responsibility to be well educated and trained in this area, and all social workers should be required to learn basic assessment and intervention skills for working specifically with clients affected by SUD.

Social workers are also ethically responsible for helping people access resources. Therefore, they need to advocate for substance-abusing clients at both the agency and governmental levels to ensure that these individuals obtain needed services. For example, whereas most treatment settings utilize the disease model in working with clients, society often uses the moral model in its legal code. Therefore, individuals with SUD are viewed as criminals and are often incarcerated for their addiction, receiving no treatment whatsoever. It is a responsibility of the social work profession to support treatment alternatives to incarceration for nonviolent substance abusers and to offer access to treatment for all individuals with SUD in the criminal justice system.

Moreover, as a result of managed care, the availability of inpatient care has been severely restricted, shifting treatment to outpatient care and non-medical residential facilities. As access to inpatient treatment has become more restricted, the use of outpatient substance abuse treatment services has increased.⁵⁶ Consequently, social workers must have a thorough knowledge of the substance abuse treatment resources in their area and how to obtain the necessary treatment and services for their clients. They also need to know how to advocate for specific services to ensure that systems become more responsive to clients' needs.

2. All human beings have intrinsic worth and dignity.

Social workers are trained to maintain a stance of “unconditional positive regard, nonpossessive warmth, acceptance, nonjudgmental attitude, and respect.”⁵⁵ This is particularly important in working with individuals affected by SUD, who are frequently stigmatized for their disorder and associated behaviors. Many of the issues associated with the abuse of substances, such as child abuse and neglect, domestic violence, criminality, prostitution, poor self-care, volatility, manipulation, and lying, arouse strong negative reactions in many treatment professionals, including social workers. Amodeo⁵⁷ has noted that powerful and negative countertransference is often generated in social workers who are interacting with individuals with SUD. This is, she says, partly the result of living in a society that has long viewed these persons as morally weak, lacking in self-discipline, unwilling to change, and untreatable. The social workers' attitudes also result, Amodeo proposes, from their own experience or from a family member's experience with problems with alcohol and other drugs. More emphasis needs to be given to maintaining a nonjudgmental stance with individuals who have SUD, a view that is in keeping with the major social work value that all human beings have intrinsic worth and dignity.

This value is further compromised in the many substance abuse treatment programs that advocate confrontational techniques that can be disrespectful of clients. The rationale for this method of treatment is that individuals with SUD are in denial, are manipulative, and need to be confronted to break their defenses. Several studies, however, indicate that confrontation with these clients results in poorer treatment outcomes.⁵⁷ It is a social worker's responsibility to ensure that the client's dignity is not violated and to question treatment approaches that do not treat the individual with basic respect. One approach found to be effective when working with individuals who have SUD is Miller's Motivational Enhancement Therapy,⁹ and it should be included in the training of social workers.

3. The uniqueness and individuality of each person are invaluable.

A core value of social work practice is its affirmation of diversity. Oppression, alienation, and stigma due to differences among people are important dynamics that are often intertwined with SUD. In working with clients, social workers are consistently trained to be aware of and sensitive to the client's ethnicity, race, religion, gender, age, socioeconomic status, sexual orientation, and disability. In his discussion of social learning theory, Doweiko points out how each culture views substance use in its own way. Each culture has guidelines about which substances are appropriate for

use, what frequency is appropriate, and what sanctions are to be applied if the rules are violated.⁵⁸ There are different cultural norms regarding treatment, with some ethnocultural groups preferring certain treatment modalities over others.⁵⁹ Some ethnic groups, notably those of Asian background, may have different physiological reactions to the use of substances.⁵⁹ Franklin⁶⁰ found that African Americans have a 10 times higher rate of medical complications due to alcoholism than do Americans of European descent. Research studies also have identified significant differences between male and female alcohol and other drug abusers in the epidemiology, etiology, choice of substances, nature of coexisting conditions, biophysiological sequelae, psychosocial profile, course of recovery, and referrals for treatment. Social workers thus need to be sensitive to gender differences as well as to the greater stigma experienced by women with SUD.⁶¹

Social workers also must be sensitive to societal homophobia when working with gay men and women. They must have an understanding of the impact of “coming out,” the role of the gay bar in socialization, issues of body image in gay life, the frequency of sexual compulsivity among gay individuals with SUD, and knowledge of the impact of HIV.⁶² When working with lesbian women, social workers must be sensitive to homophobia, as well as to issues of multiple stigma resulting from being an addicted female who is homosexual. Often lesbian women feel out of place and stigmatized in women’s treatment programs (where there may be no lesbian women) and in treatment programs designed for gay people (where most of the clients are men).⁶³

Individuals who are HIV-positive frequently need social work interventions. It has been estimated that 40% to 50% of injection drug users in many of the world’s largest cities were HIV-positive by the early 1990s.⁵⁶ African-American and Hispanic communities have been particularly affected. According to Day,⁶⁴ in 1997, AIDS was the leading cause of death among African Americans between the ages of 25 and 44, and more than 60% of those deaths were injection related. For Latinos in the same age group, Day continues, AIDS was the leading cause of death, with over half of the deaths related to drug injection, compared with less than a quarter for whites. Social workers working with clients with SUD need to acquire the knowledge and necessary skills to deal with the biopsychosocial issues of HIV-positive clients. They must understand harm-reduction concepts and techniques. They also need to help the partners of these individuals use safe sex practices and help family members of those who have died from AIDS address issues of grief and loss.

Doweiko⁵⁸ notes the high prevalence of SUD among the elderly. He points out that SUD in this age

group are often not detected; that cognitive difficulties resulting from substance abuse are frequently misdiagnosed as senile dementia; that medical consequences of substance abuse are also confused with health problems of the elderly; that the emotional consequences of SUD among the elderly are often attributed to depression; and that the elderly tend to drink alone and are more likely to be steady drinkers and are therefore less likely than are younger persons to be identified as having problems. Moreover, physically disabled individuals with SUD are frequently not detected or treated, despite the fact that individuals with physical disabilities are more likely to have SUD than the general population.⁵⁸ Social workers need to be trained to assess and address the unique needs of elderly and disabled individuals with SUD.

Last, it is important to note that social workers are often the primary providers of services to children and adolescents, many of whom are children of substance-abusing parents. Whether employed in child welfare, school settings, or family agencies, social workers need to be familiar with the impact of SUD on the family¹³ and learn the skills to help young people deal with these issues. They also need to learn how to use appropriate community-based approaches to prevent and intervene with young people experimenting with drugs and alcohol.

4. Given appropriate resources, human beings are capable of growth and change and should be supported in increasing their choices in solving their problems and directing their lives.

Self-determination is one of the hallmarks of social work. It can be defined as “the practical recognition of the right and need of clients to freedom in making their own choices and decisions.”⁶⁵ Abramson⁶⁶ notes certain situations in which a paternalistic non-self-determination stance may be justifiable. One of them is “when the client is considered mentally incompetent or lacking in rationality to the extent of being unable to comprehend the results of decision making.”⁶⁶ Some people argue that individuals with SUD may be considered incompetent to make their own decisions. Furthermore, a large percentage of individuals with SUD are legally mandated into treatment, negating their capacity for self-determination. Social workers, by the nature of their orientation toward self-determination, can be quite effective in working with involuntary clients in a way that respects the choices they make.⁶⁷ Caldwell⁶⁸ cites several studies to support the fact that the practice skills that social workers are taught (e.g., the focus on collaboration, self-determination, strengths and empowerment) are effective in engaging clients with problems with substance abuse. It is important that in addition to a stance of self-determination, social workers understand the stages of change as delineated by Prochaska and colleagues⁸ and learn motivational enhancement

techniques.⁹ With the emphasis on self-determination and client choice, social workers should carefully match clients with SUD to programs that meet their needs, thus increasing the likelihood of a successful referral.

For clients who are not ready for abstinence, social workers need to be familiar with the concept of harm reduction, where the effects of the ongoing addiction can be minimized. This is a particularly vital approach for clinicians who work outside specialized substance abuse settings. Social workers, for example, who work in child welfare settings or with homeless individuals may need to continue working with clients who are still abusing substances. They need to become more familiar with motivational enhancement techniques while engaging clients in harm reduction. Social workers also need to endorse methadone treatment and acknowledge that it is one of the many approaches whose effectiveness has been documented.⁶⁹ Friedman⁷⁰ points out that social workers play an increasingly important role in methadone maintenance programs and that social workers' biopsychosocial perspective and nonjudgmental stance make the social work profession unique in its ability to help clients in such settings.

Core Knowledge and Skill Competencies in Substance Abuse Education

In discussing the core knowledge and skill competencies needed by social workers to effectively intervene with clients affected by SUD, it is necessary to differentiate the critical core competencies required by two different groups of social workers. The first group includes the vast majority of social workers employed in the numerous nonaddiction settings described previously. This group, who will be referred to as "social work generalists," needs to be trained in the basic knowledge and clinical skills for effective assessment and intervention with individuals who have SUD and their family members. The second group of social workers includes those who either work in substance abuse treatment programs or are regarded as substance abuse specialists at their non-addiction agencies. An example of the latter would include a substance abuse specialist in a psychiatric program or in an EAP, or a social worker in the court system whose primary responsibilities involve substance abuse treatment as an alternative to incarceration. This second group of social workers will be referred to as "social work specialists in SUD." Clearly, the substance abuse knowledge and skills of this group need to be more extensive and comprehensive.

Knowledge and Skills for Social Work Generalists

As indicated previously, social workers receive limited training in SUD in social work school at both the undergraduate and graduate levels of education. Much of the existing SUD training is confined to elective courses.^{50, 51}

Amodeo and coauthors,⁷¹ citing the work of such authors as A.K. Cartright, D.M. Gorman, and L. Harrison, states that studies reveal that many social workers have a negative bias toward people with SUD and are pessimistic about their recovery.^{50,70-72} Moreover, many do not intervene with clients who have SUD since they feel inadequate in their ability to respond to their needs.^{50,70-72} However, research shows that when social work generalists receive basic training to work with such clients, their feelings of efficacy, competence, optimism, and legitimacy increase. As a result, they are more likely to assess SUD and felt more effective in their treatment of such clients.⁵⁰

It is therefore imperative that all social workers be taught basic competencies in dealing with substance abuse issues so that they can work with and motivate clients with SUD to obtain the help they need. This view is supported by the NASW and reflected in a 1997 policy statement that strongly supports the expansion of substance use content in social work education. Specifically, it states that "each graduate and undergraduate program should include content in that area [substance abuse] as part of the [required] core curriculum."⁶⁸

The basic knowledge and skill competencies for all social workers include the following:

1. Understanding the disease concept of addiction.
2. Ability to understand the biopsychosocial ramifications of SUD.
3. Ability to identify SUD, particularly in the early stages, by recognizing certain signs and symptoms common to these disorders.
4. Ability to make a basic assessment of the severity of SUD by incorporating questions on substance use in all psychosocial assessments and intake forms, and becoming familiar with formal assessment instruments such as the CAGE.²⁸
5. Ability to engage clients to consider seeking help and stopping their use of substances and the ability to acquire a basic knowledge of motivational interviewing.
6. Basic understanding of the defense and coping mechanisms of individuals with SUD such as denial, minimization, projection, and rationalization.
7. Ability to confront clients about their substance abuse in a respectful, nonjudgmental way.
8. Knowledge of different types of SUD treatment programs and the ability to match and refer clients to those programs.
9. Ability to advocate for clients within substance use disorder treatment and service systems, as well as to negotiate with insurance companies and managed care organizations.
10. Knowledge of 12-step programs, and ability to encourage clients to use them.

11. Basic understanding of the effects of SUD on the family system, particularly on significant others and children.
12. Some knowledge of substance use prevention strategies, particularly for adolescents and pregnant women.
13. Ability to explore and deal with the social worker's own feelings, biases, and prejudices toward working with clients with SUD.
14. Understanding the chronicity of chemical addiction and the frequency of relapse.
15. Understanding the concept of harm reduction for clients not ready for abstinence.
16. Ability to work with members of other professional disciplines when helping clients with SUD.
17. Ability to be attuned to issues of racism, sexism, poverty, homophobia, ageism, and the impact of disabilities when helping clients with SUD.

Knowledge and Skills for Social Work Specialists

Social workers on the staff of substance use disorder treatment programs and those who are substance use disorder specialists in non-addiction agencies require a greater level of expertise than that needed by social work generalists. NASW has recently developed a Specialty Certification in Alcohol, Tobacco, and Other Drugs (ATOD) with specific educational and supervised clinical experience requirements. Before this time, there has never been a certification designed specifically for social workers in this field. In fact, many social workers who specialize in substance use disorder treatment have obtained State certification as substance abuse counselors in order to demonstrate expertise in the field. These social workers have thus obtained certification in a discipline with a different history, culture, and orientation. In a recent study involving many substance use disorder treatment programs in New England, it was shown that social workers employed in these programs had significantly higher levels of clinical knowledge and skills than did other addiction treatment providers in these facilities.⁵⁰ However, these social workers felt that they were undertrained and undersupervised in substance use disorder treatment issues, and that they lacked access to appropriate training. The majority of respondents (76.9%) reported that additional training would moderately or greatly increase their effectiveness, and 19.3% moderately or completely disagreed that they were competent to deliver substance abuse treatment services. This study pointed out that although social workers seemed to demonstrate competence in many areas, they needed improvement in substance use disorder assessment skills and in "advanced clinical techniques" such as specific screening instruments, brief treatment techniques, motivational interviewing techniques, and manual-guided treatment.⁵⁰ Therefore, social work certification as a substance use disorder

specialist should be required of all social workers in substance use disorder treatment settings. Schools of social work need to develop additional educational programs designed to educate and train such addiction specialists.

The NASW Task Force on Substance Abuse Specialty Certification (SASC) recommended in 1999 that the following 11 knowledge domains and 10 skill domains be required of social workers to obtain the NASW Specialty Certificate in ATOD:⁷³

Knowledge Domains

- 1. Epidemiology.** Social workers are expected to be familiar with the scope and seriousness of SUD in the United States, using a variety of sources of epidemiological information and data, including alcohol consumption and sales data, prevalence, and surveillance surveys. For each psychoactive substance, social workers need to have knowledge of the availability and consumption patterns among the general population as well as among specific subpopulations including ethnic groups, adolescents, the elderly, pregnant women, and individuals with coexisting disorders and other disabilities.
- 2. Policies and history of SUD in the United States.** Social workers need to have knowledge of major historical events and policies that have had an impact on attitudes toward SUD and of how to develop policies and programs to control these disorders.
- 3. Etiology.** Social workers need to have knowledge of the etiological factors associated with the risk of substance use, abuse, and dependence, as well as of the effects of these factors on the course and natural history of addiction.
- 4. Course and natural history of SUD.** Social workers need to have knowledge of the initiation, progression, and results of addictive behaviors to effectively plan intervention strategies and appropriate resources.
- 5. Screening and assessment.** Social workers should have knowledge of various assessment instruments and protocols for the purpose of evaluating the severity of the primary problem, identifying areas of concern requisite to the amelioration of the primary problem, and identifying additional problem areas.
- 6. Physiology and pharmacology of alcohol, tobacco, and other drugs.** Social workers need to have knowledge of how alcohol, tobacco, and other drugs affect the major organ systems of the human body (both acute and chronic effects).
- 7. Treatment.** Social workers must have knowledge of appropriate treatment interventions for clients with SUD, and have the ability to apply that knowledge to achieve a beneficial outcome with clients.
- 8. Special populations and health issues.** Social workers need knowledge of how to work effectively with various special populations (e.g., children,

adolescents, the elderly, women, gays and lesbians, persons with HIV/AIDS, the homeless), with specific emphasis on people of color and recent immigrants.

9. Role of the social worker and effective management of client treatment. This includes knowledge of managed care concepts as well as local and federal rules and regulations applicable to individuals with SUD, knowledge of development and utilization of resources, the ability to help clients negotiate treatment and reimbursement systems, and knowledge of case management, consultation, and referral sources.

10. Legal/ethical issues. Social workers need to have knowledge of substance-related legal and ethical procedures for upholding the NASW's Code of Ethics in order to ensure client confidentiality and to maintain compliance with Federal laws on substance use.

11. Education/prevention. Although the ATOD certification is focused on clinical skills, and not on prevention, the social work substance use disorder specialist should be aware of research findings regarding successful prevention strategies. These findings should guide these specialists when providing information to clients and the larger community.

Skill Domains

1. Screening, intake, and orientation to treatment
2. Assessment
3. Crisis intervention
4. Documentation, report, and record keeping
5. Case management
6. Treatment planning
7. Counseling
8. Client education/advocacy
9. Referral
10. Consultation with other professionals regarding client treatment and services

To obtain the NASW's Specialty Certification in ATOD, a social worker must complete 180 hours of substance use disorder education and training across three of the above skill clusters. Candidates are also required to have 2 years (or 3000 hours) of post-master's, supervised, paid work employment in a substance use disorder treatment setting, and submit two letters of references, one from a supervisor and one from a colleague familiar with their work in SUD.⁷¹

The currently required knowledge and skill domains neither include any training and education in working within an interdisciplinary team nor sufficiently emphasize knowledge on the impact of substance abuse on the family. Furthermore, the eligibility criteria for ATOD Specialty Certification do not include an examination to demonstrate

competence in the knowledge and skill domains cited above—only the documentation of such competencies by a supervisor. It is important that knowledge regarding interdisciplinary work and family intervention be required as part of this certification process. Moreover, for the ATOD Specialty Certificate to be widely respected, it may be necessary for social workers to demonstrate their knowledge and skill competencies through a written examination. State certification for drug and alcohol counselors, almost without exception, requires a written examination and often has an oral component as well.

Interdisciplinary Collaboration in the Field of SUD

Effective services for clients with SUD usually require that several professions work together. Most social workers routinely collaborate with other professionals in diverse social service settings, and this is especially true in the field of SUD. Nonetheless, as the field has become increasingly professionalized, there has been a melding of diverse treatment traditions and paradigms, leading, at times, to conflicts focusing on professional role delineation and treatment perspectives.

Little attention has been paid to interdisciplinary education in schools of social work, despite the fact that the CSWE has recently recognized the need for such training. The CSWE recommends that interprofessional education be integrated early into the "socialization and educational experience of diverse professionals." It also recommends that it be "infused throughout the curriculum, instead of becoming a new, marginal discipline with its own restrictive boundaries and, eventually professional barriers."⁷⁴ It is the responsibility of both the schools and professional social work organizations to encourage interdisciplinary collaboration, particularly in regard to training in SUD.

Helping Impaired Social Workers

There is limited research about the number of social workers who are impaired by SUD, their needs, and their impact on their clients. Social work, like other professions, includes individuals who are affected by the use and abuse of substances. Moreover, social work education has provided an important career ladder for many recovering substance use disorder counselors who seek wider opportunities for professional advancement. Some of these individuals may relapse under pressure, while others are impaired because of SUD in family members or significant others. Studies of SUD among social workers indicate that 6%-7% abuse alcohol.^{75,76} Strozier and Evans⁷⁶ also found that 8% of a national sample of social workers admitted to abusing minor tranquilizers; 6% used marijuana; 3% sedative/barbiturates; 2% opiates/narcotics; 2% stimulants/

amphetamines; 2% hallucinogenics; and 2% cocaine. Other studies have reported that 36% to 39% of social workers admitted to having family members with SUD,^{75,77} and 26% to 44% indicated that they knew of a social work colleague with an alcohol or drug problem.^{75,76,78} An unpublished survey of 44 members of Social Workers Helping Social Workers (a self-help group for recovering social workers established in 1980) indicated that prior to their recovery, half of them had worked with clients while under the influence of a substance.⁷⁶ Moreover, a random sample survey of members of the New York City Chapter of the NASW found that 19% were adult children of alcoholics and that they perceived that this factor affected their job performance, in that it made them feel more depressed, anxious or angry, and even reluctant to become involved with clients who have SUD.⁷⁵

According to the most recent NASW Policy Statement on the Impaired Professional, “The National Association of Social Workers (NASW) has not given high priority to impairment within the profession and assistance to impaired colleagues at the national level. When national efforts were not forthcoming, individual chapters began to establish programs to address the impaired professional.”⁷⁹ A 1994 survey of the NASW chapters found that 12 (29%) had a colleague assistance program, and 9 other chapters planned to start one.⁸⁰ In 1995, the national office of the NASW developed “A Chapter Guide on Colleague Assistance for Impaired Social Workers,” a comprehensive manual that was distributed to all NASW chapters.⁸⁰ In addition, a pamphlet entitled “Helping Social Workers with Alcohol and Other Drug Problems: Options for Interventions with Colleagues,” written by members of the New York City Chapter Addictions Committee, has been widely distributed as a model and is currently available on the NASW ATOD Section’s Web site (www.naswdc.org/sections/ATOD/helpswers.htm). The Social Work Code of Ethics also has a section focusing on “Impairment of Colleagues,” indicating that such impairment needs to be addressed directly with the colleague, and if this is not feasible or does not lead to appropriate action, that action “should be taken through appropriate channels established by employers, agencies, NASW, licensing and regulatory bodies, and other professional organizations.”⁴

Vision for the Future

Although some strides have been made in strengthening the education and training of social workers in SUD, much remains to be done. The social work profession needs to realize that effective treatment for SUD does exist, and that social workers could be pivotal in helping millions of individuals obtain such treatment. Social work schools must increase their training in this area, and the core knowledge and skill competencies described in this chapter must be integrated into the required curriculum for *all* social workers. Only then will the profession be able to

fulfill its ethical mission of helping individuals and families achieve their full potential in life and of ensuring that society provides them with the essential resources, services, and opportunities.

The following summarizes the vision for the social work profession in its attempt to help individuals affected by SUD:

1. All required courses at the undergraduate and graduate levels will include content on SUD, and all social workers in the United States will be educated regarding the basic knowledge and clinical skills for effective, empirically validated screening interventions with, and referral of, individuals with SUD. Social workers will become more knowledgeable and confident in working with clients with SUD in many different settings, and the existing negative stereotypes concerning this population will diminish.
2. Schools of social work will educate and train a greater number of substance use disorder specialists through the provision of specialized tracks at the master’s level, continuing education courses, and postgraduate certificate programs.
3. Schools of social work will receive greater government funding to train their faculty in SUD and to provide scholarships for students specializing in alcohol and other drug studies.
4. All social workers will receive education and training regarding the impact of SUD on family members and will be committed to providing family members access to necessary treatment and other resources.
5. All social workers will receive education and training regarding basic substance use disorder prevention strategies, focusing particularly on children of substance-abusing parents on how to develop community-wide prevention efforts.
6. All social workers helping clients with SUD will respect their clients’ rights of self-determination and they will, whenever possible, match such clients to their preferred treatment modality, including harm-reduction programs.
7. All social workers and social work students impaired by their own substance use disorder, or affected by the substance use disorder of a loved one, will be able to obtain appropriate help without being professionally stigmatized.
8. NASW will successfully launch the ATOD Specialty Certification program and advocate for its acceptance within and outside the social work profession, minimizing the need for multiple State-based certifications in this field.
9. Schools of social work will include interdisciplinary training as part of the basic curriculum, and social workers will develop greater awareness and skills in interdisciplinary collaboration when helping individuals with SUD.

10. Social workers, in collaboration with members of other disciplines, will advocate that U.S. government policies regarding individuals with SUD reflect the complexity of this issue, resulting in the increased use of treatment as an alternative to incarceration, and in the greater availability of funded treatment for all individuals with SUD and their families.
11. Other professions and government agencies will understand the social work profession's unique access to individuals with SUD, and view social work as an invaluable, front-line, resource in working with this population and their families. Consequently, social work leaders will be included in all policy-making bodies affecting the substance use disorder field.

Recommendations

1. A national survey, funded by the Federal government, will be undertaken to determine the nature and scope of education regarding substance use disorders provided by social work at the undergraduate, master's and doctoral levels of training, as well as the post-master's and continuing education levels.

Rationale. It is important to have accurate data to advocate effectively for a better education in SUD. There are no national data regarding the number of schools of social work offering courses on SUD, whether these courses are required or elective, and the number of students who enroll in such courses. There is also a lack of data regarding the degree to which substance abuse knowledge is integrated within the core social work curricula at both the undergraduate and graduate levels. Moreover, since current doctoral students will become future educators, it is important to examine how much training in this area is provided to them. In addition, it is important to identify post-master's and other continuing education courses in this area and the number of social workers attending them.

Recommended Actions. A national task force will survey each school of social work to determine

- How much substance use disorder information is included in their required core courses;
- How many schools offer a concentration in SUD;
- How many elective courses on SUD are offered at the undergraduate, master's, and doctoral levels of training;
- Whether postmaster's or other continuing education courses are offered in SUD; and
- How many students are enrolled in each of the above courses.

The task force will also collect data on the extent and nature of continuing education courses focused on SUD offered by the NASW and other social work professional organizations, such as the Federation of Clinical Social Workers. These data will be updated every five years.

Responsible Agents. The Health Resources and Services Administration/Bureau of Health Professions (HRSA/BHPr) and other government funding sources; the CSWE; deans, directors, and chairs of different areas in schools of social work; the NASW and other professional organizations.

Expected Outcomes. Within 2 years, comprehensive data on the extent and nature of education in substance abuse at all levels of social work education will be available. These data will be updated regularly, and indicators for future training recommendations will be based on them.

2. Substance abuse content will be integrated into all required courses in schools of social work.

Rationale. Social workers encounter individuals affected by SUD in every professional setting in which they work, including child welfare, mental health, health care, criminal justice, domestic violence, family services, schools, geriatric programs, employment services, and homeless services. CSWE does not require that substance abuse content be included in the required courses in schools of social work. The result is that many social workers have little education and training to prepare them to work with clients with SUD, and many have negative attitudes, including feelings of helplessness and hopelessness toward such individuals. Studies show that when social workers are educated in SUD, they work with greater confidence and

effectiveness. Therefore, social workers must be trained in the critical core, evidence-based knowledge and skill competencies in substance abuse to intervene effectively with clients affected by SUD.

Recommended Actions. The CSWE will revise its guidelines and mandate the inclusion of substance abuse content in the core curriculum. The directors and chairs of different departments in schools of social work will integrate substance abuse content into appropriate required courses at the undergraduate, master's, and doctoral levels of training. Reading lists for each required course will include literature on SUD. Each school of social work will designate at least one faculty member to be a substance use disorder specialist and will consult with that person regarding the integration of substance abuse content in the required courses. Schools of social work will ensure that students have appropriate supervision regarding work with individuals with SUD in their field placements at social work agencies. Schools of social work will create more elective courses pertaining to SUD and encourage students to enroll in them. Special substance use disorder training seminars for faculty and field instructors will be developed and offered at each school of social work.

Responsible Agents. The CSWE; deans, directors, and chairs of different departments in schools of social work; directors of social work doctoral programs; and social work faculty members designated as substance use disorder specialists.

Expected Outcomes. Within 4 years, all required courses in social work schools will have some content on SUD. There will be a substantial increase in the number of elective courses on SUD in schools of social work, or, alternatively, a substantial increase in the amount of substance abuse content integrated into core courses. Each school of social work will have a designated faculty member as a substance use disorder specialist. All social work faculty members and field instructors will be offered training seminars on SUD.

3. More certificate programs and more continuing education courses on substance use disorders will be offered under social work auspices.

Rationale. Given the limited number of schools of social work that offer certificate programs in SUD at the master's and post-master's levels, most social workers currently employed by substance use disorder treatment programs receive their training outside the social work profession. They are not exposed to social work theories and values as they relate to clients with SUD. Thus, it is important that more certificate programs in SUD be established under social work professional auspices. Moreover, continuing education courses are needed for social workers certified in SUD who want to further enhance their skills and remain current with the latest evidence-based knowledge in the field. Schools of social work also need to offer continuing education courses in SUD at the graduate level of training for social workers who need to strengthen their basic knowledge of SUD.

Recommended Actions. Schools of social work, in collaboration with social work professional organizations, will establish a social work certificate program in SUD accessible to social workers in each community and will offer continuing education courses on SUD to meet both the basic and advanced substance use disorder knowledge needs of all social work professionals.

Responsible Agents. Deans and directors of social work schools, the NASW and its local chapters, and other professional associations.

Expected Outcomes. Within 5 years, social work certificate programs in SUD will be available in every community; and all schools of social work and social work professional organizations will offer continuing education courses in SUD.

4. Schools of social work will train their faculty in the critical core knowledge and clinical skill competencies in substance use disorders and in methods for teaching these skills.

Rationale. Schools of social work do not educate their students in SUD because they lack faculty members trained in this area. While this finding is not unique to the social work profession, there is a critical need to increase the number of social work faculty competent to teach substance use disorder content who can guide the schools in incorporating such content into their curricula.

Recommended Actions. Each school of social work will have one or more full-time faculty members with knowledge and clinical skills in SUD. Each school of social work will designate a faculty member to be a substance use disorder specialist responsible for the development of substance abuse curricula. Each school of social work will have regularly scheduled training seminars for faculty members and field instructors that will be organized by the faculty substance use disorder specialist with special funding allocated for this purpose. Federal agencies will once again sponsor Faculty Development Programs in substance abuse education and offer scholarship grants to master's- and doctoral-level social work students interested in SUD. Federal and State agencies will allocate funding for continuing substance use disorder education of social work faculty and field instructors.

Responsible Agents. Deans, directors, and chairs of different departments in schools of social work; designated substance use disorder specialists in schools of social work; Substance Abuse and Mental Health Services Administration; National Institutes of Health; Single State Agencies and other drug agencies; HRSA/BHP.

Expected Outcomes. Within 2 years, the Federal government will sponsor social work faculty development programs in the field of SUD and will offer scholarship grants to master's- and doctoral-level social work students interested in SUD. The Federal government and Single State Agencies will offer funding to schools to provide ongoing training in SUD to their faculties and field instructors. Within 5 years, schools of social work will hire more full-time faculty members with knowledge and direct practice skills in SUD; and all social work faculty members will have enhanced their knowledge and direct practical skills in SUD.

5. The NASW will successfully implement the specialty certification in alcohol, tobacco, and other drug (ATOD) abuse and advocate for its acceptance within and outside the social work profession.

Rationale. Although many professional fields have established certification programs in SUD during the past two decades, social work has had no such credentialing system. Until recently, there has been no professionally recognized standard of competency for social workers in the field of SUD and many social workers have obtained State certifications as alcoholism/drug abuse counselors—a discipline with a different set of underlying principles and traditions.

The social work profession has an ethical responsibility to monitor its own practitioners working with individuals with SUD and to make sure they have the necessary knowledge and skill competencies to work with this population. The Specialty Certification in ATOD, recently established by the NASW, needs to be recognized, accepted, and utilized by the social work profession. It also needs to be recognized by national treatment licensing or regulatory bodies, insurance and managed care companies, and other health care professionals. Moreover, the NASW should advocate for the recognition of this specialty certification by each State as an adjunct to a social worker's license or certification and should accept it in lieu of requirements for social workers to obtain a State alcoholism/drug abuse counseling certification.

Recommended Actions. NASW will actively advocate for the recognition, acceptance, and utilization of its Specialty Certification in ATOD among social workers, State boards of registra-

tion in social work, insurance and managed care companies, national treatment licensing or regulatory bodies, and other health care professionals. NASW will actively advocate with each State government to recognize its Specialty Certification in ATOD as evidence of social workers' competence with individuals affected by SUD and to accept this certification in lieu of State certifications as an alcoholism/drug abuse counselor. The NASW Credentialing Center will obtain the needed funding to effectively advocate for the above acceptance of the Specialty Certification in ATOD. The NASW Credentialing Center and the Task Force on Substance Abuse Specialty Certification will require knowledge of the impact of SUD on the family and interdisciplinary training as part of the criteria for obtaining the Specialty Certification in ATOD and for its recertification. The NASW Credentialing Center and the Task Force on Substance Abuse Specialty Certification will incorporate a written exam as part of the criteria for obtaining the Specialty Certification in ATOD.

Responsible Agents. The NASW Credentialing Center and the Task Force on Substance Abuse Specialty Certification; NASW and its local chapters; directors and supervisors of substance use disorder treatment programs; the American Society of Addiction Medicine and other professional substance use disorder organizations; State boards of registration in social work and the National Association of State Boards of Registration; insurance and managed care companies; national treatment licensing and regulatory bodies; and State agencies responsible for certifying individuals as alcoholism/drug abuse professionals.

Expected Outcomes. Within 1 year, the NASW Credentialing Center will begin certifying social work specialists in SUD. Within 4 years, one-half of all social workers working with individuals who have SUD will be certified by the NASW. In addition, the requirements of the specialty certification in ATOD will be revised so that all social workers will need to pass a written examination to qualify for this designation. Within 5 years, insurance, regulatory bodies and substance use disorder treatment programs will accept this certification as valid for use in the field; and State governments will recognize the NASW's Specialty Certification in ATOD as a valid demonstration of competence in the field of SUD and as sufficient to meet State requirements.

6. All State licensing or certifying agencies for social work professionals must ensure that social workers have basic competence in the recognition, assessment, intervention, and referral of clients with substance use disorders.

Rationale. State licensing or certifying agencies have a responsibility to ensure that professionals of all disciplines have a basic level of competence to practice in their fields. Because social workers need basic competence in the ability to recognize, assess, intervene, and refer clients with SUD, these government credentialing bodies have a duty to ensure that social workers have these basic skills. Therefore, all social work licensing and certification examinations must include questions on SUD, and States should require continuing education in this area for recertification.

Once social work faculty and students become aware that such knowledge is essential in order to obtain the professional credential, the social work curriculum will improve its preparation of students for practice with SUD.

Recommended Actions. Federal agencies and social work professional organizations will recommend to all State credentialing bodies that credentialing requirements include knowledge and clinical skills in SUD. In order for social workers to be recertified or relicensed, substance use disorder knowledge and clinical skills must be updated through mandatory continuing education. All licensing or certification examinations for social workers will include questions on SUD.

Responsible Agents. NASW; HRSA/BHPr and other government agencies; licensing or certification bodies of each State; and testing services used to administer licensing examinations.

Expected Outcomes. Within 2 years, HRSA/BHPr, in conjunction with NASW and other social work and government agencies, will make recommendations to all State credentialing agencies that licensing and certification examinations for social workers must include questions on SUD, and that all social workers must have 5 hours of continuing education on this topic each year for recertification. Within 4 years, all licensing or credentialing examinations for social workers will have 10% of their content focused on SUD, reflecting the proportion of clients with these problems.

7. Social workers and social work students impaired by their own substance use disorders, or affected by the substance use disorder of a loved one, will be able to obtain appropriate help without being professionally stigmatized.

Rationale. Social workers and social work students, like other individuals in our society, are affected by SUD. While some surveys focusing on SUD among social workers, their family members, and colleagues have been undertaken, there are no national data on social workers who are identified as having SUD. Given the social stigma attached to individuals with SUD and the findings that many social workers have negative attitudes toward them, it can be presumed that many impaired social workers do not receive the help they need, and that even those in recovery may hide their history of substance use disorder. It is important that this topic be addressed openly both in schools of social work and in professional social work organizations. Moreover, since parental SUD have been found to affect social workers' job performance, help needs to be offered to social workers who are the children of parents with SUD.

Recommended Actions. A national survey should be undertaken of a representative sample of social workers to identify current or past impairment due to SUD and assess its impact on their professional lives. The survey's findings should be widely distributed in schools of social work and by social work professional organizations. All NASW chapters will establish, or have easy access to, a confidential committee to address impaired social workers. Schools of social work will include discussions of impaired professionals in their practice and ethics courses. All academic institutions will have Faculty and Student Assistance Programs that will allow them to obtain help for their own or their family's substance use disorder. Social work staff in social service agencies will have access to EAPs that will allow them to obtain help for their own or their family's substance use disorder.

Responsible Agents. The national office of NASW and local NASW chapters; deans and directors of social work schools; chairs of practice areas; the Society of Clinical Social Workers and other professional social work organizations; administrators of colleges and universities and of social agencies; and Federal agencies providing funding for the development of student assistance and EAPs.

Expected Outcomes. Within 3 years, data from the national survey will be made available and used to trigger discussion on impaired social workers. Within 4 years, all chapters of the NASW will have a functioning committee that addresses impaired social workers; and all colleges and universities will have a SAP that will be readily accessible to their students. Within 5 years, all colleges and universities will have an EAP that will be readily accessible to their faculty; and all social service agencies will have an EAP readily accessible to their staff.

8. Social work schools will include interdisciplinary content in all required clinical courses, and will establish contacts with other professional schools in order to create interdisciplinary courses in SUD.

Rationale. Effective substance use disorder treatment entails the use of a comprehensive biopsychosocial approach that involves cooperation among professionals from a variety of disciplines. There is, however, currently no emphasis on the teaching of interprofessional

teamwork in classroom courses in schools of social work. Many students are exposed to other professional disciplines in their fieldwork experiences, but this interdisciplinary experience does not receive significant supervisory focus. In order to prepare social workers to work effectively with individuals affected by SUD, schools of social work must create an emphasis on interdisciplinary teamwork in the classroom, in field placements, and at the university level among different professional schools.

Recommended Actions. Content related to interdisciplinary cooperation will be included in all appropriate social work courses. There will be no need to create specific courses in this area. Material in current courses will be enhanced to include interdisciplinary studies. Field instructors will be encouraged to focus on interdisciplinary cooperation when supervising social work students at their agencies. Process recordings routinely submitted to field instructors by their students will include analysis of interdisciplinary issues. Schools of social work will require students to participate in multidisciplinary meetings in their field agencies. Schools of social work will advocate within the university system for the creation of interdisciplinary task forces and centers for the study and practice of SUD. Social work programs in smaller colleges will reach out to other colleges and universities in their area to create task forces for interdisciplinary education in SUD. Universities and colleges will have regularly scheduled interdisciplinary workshops and seminars for students from many professions. Schools of social work will seek dedicated funding for interdisciplinary education in SUD.

Responsible Agents. CSWE; deans, directors, and chairs of different practice areas in schools of social work; field work coordinators in schools of social work; directors of agencies where social work students are placed; presidents and deans of universities and colleges; governing bodies in universities and colleges; and deans and department heads of other professional schools.

Expected Outcomes. Within 4 years, all appropriate courses in schools of social work will include content on interdisciplinary collaboration; and the fieldwork experience of social work students will include supervision in interdisciplinary teamwork as well as increased exposure to interdisciplinary meetings. Within 4 years, all universities and colleges with schools of social work will have regularly scheduled interdisciplinary workshops and seminars on SUD; and half of all universities and colleges with schools of social work will have task forces or centers for the study of interdisciplinary education and practice in SUD.

9. Social workers, in collaboration with professionals in other disciplines, will advocate for access to effective treatment and services for all individuals with substance use disorders and their families, and for greater development of effective community-based prevention programs.

Rationale. Social work practice, with its emphasis on the person in his or her social environment, its mission of connecting people to necessary resources, its deep respect for all individuals, its fundamental sensitivity toward issues of diversity, and its belief in client self-determination, can make a significant contribution to work with individuals who have SUD. With the enhanced training and education advocated in this chapter, schools of social work and their students and alumni will be able to take the lead in ensuring that the agencies and organizations where they work respond to the needs of individuals affected by SUD, that intake procedures are constructed to identify such individuals, and that the agency staff has the ability to assess, motivate and refer these clients to appropriate treatment programs. Social workers should advocate that all agencies employ some staff members knowledgeable about SUD. Moreover, social workers, in collaboration with professionals in other disciplines, need to advocate that all clients wishing to obtain treatment for SUD have ready and affordable access to such facilities.

In addition, it is imperative that social workers advocate for effective substance use disorder treatment for chemical abusers in the criminal justice system. Tens of thousands of substance-abusing individuals are incarcerated, but do not receive appropriate treatment and rehabilitation. Successful alternatives to incarceration, such as mandated long-term residential treatment

and the utilization of special “drug courts,” need to be greatly expanded. More effective substance use disorder treatment within the prison system itself needs to be established. Since incarceration is far more costly than is substance use disorder treatment, and these alternatives to incarceration reduce recidivism, such programs would be cost-effective. Moreover, with the massive closings of long-term psychiatric hospitals over the last four decades, prisons have become increasingly filled with inmates with psychiatric illness, many of whom have SUD. Services for such individuals within the prison system are currently negligible and need to be expanded. Finally, there is a great need for the development of effective school- and community-based substance abuse prevention programs.

Recommended Actions. Schools of social work will ensure that all agencies in which their students become interns offer appropriate professional services to people affected by SUD, including those involved with the criminal justice system. Schools of social work, through faculty specialists in SUD, will encourage students and alumni to advocate for access to effective treatment and services for all individuals affected by SUD. University substance use disorder interdisciplinary task forces and centers will be mobilized to advocate for access to effective treatment and services for all individuals affected by SUD.

NASW, through its ATOD Specialty Section, local NASW chapters, and their addictions committees, will collaborate with other professional disciplines to petition State agencies and other accrediting bodies to provide accreditation only to those agencies that meet minimum criteria in serving individuals affected by SUD. NASW, in collaboration with schools of social work and with other disciplines, will use mass media to publicize the cost-effectiveness of alternatives to incarceration for individuals with SUD.

NASW, in collaboration with schools of social work and with other disciplines, will advocate for the establishment of a greater number of effective school- and community-based prevention programs.

Responsible Agents. Deans, directors, and substance use disorder specialist faculty members at schools of social work; university substance use disorder interdisciplinary task forces and centers; the NASW ATOD Section, and local addictions committees; directors and supervisors at agencies where social work students are placed; alumni of schools of social work; State agencies that accredit social service agencies and institutions; the criminal justice system; government officials; community organizations; and the media.

Expected Outcomes. Within 5 years, social workers will be more effective in advocating for individuals with SUD; all individuals with SUD in the criminal justice system will have access to appropriate treatment, including, where appropriate, program alternatives to incarceration; all mentally impaired chemical-abusing inmates will have access to appropriate treatment programs; and there will be a greater number of effective school- and community-based prevention programs. Within 7 years, government and private accrediting bodies of social service agencies and institutions will require minimum standards of competence in the recognition, assessment, intervention, and referral of individuals with SUD; social service agencies and institutions will be far more sensitive and responsive toward clients with SUD; and affordable and accessible substance use disorder treatment facilities with better trained staff will be available for all those who need them.

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Appendix A: Acronyms

A

- AA** Alcoholics Anonymous
- AACOM** American Association of Colleges of Osteopathic Medicine
- AACP** American Association of Colleges of Pharmacy
- AADE** American Association of Dental Examiners
- AADS** American Association of Dental Schools
- AAFP** American Academy of Family Physicians
- AAP** American Academy of Pediatrics
- AAPA** American Academy of Physician Assistants
- AAPT** Adolescent Alcohol Prevention Trial
- AARC** American Association for Respiratory Care
- ABMS** American Board of Medical Specialties
- ACCDI** Advisory Committee on Chemical Dependency Issues [of ADA]; now called the Dentist Well-Being Advisory Committee
- ACCME** Accreditation Council for Continuing Medical Education
- ACCP** American College of Clinical Pharmacy
- ACD** Academy of Computerized Dentistry
- ACGME** American College of Graduate Medical Education
- ACMHA** American College of Mental Health Administrators
- ACNM** American College of Nurse Midwives
- ACOTE** Accreditation Council for Occupational Therapy
- ACP-ASIM** American College of Physicians-American Society of Internal Medicine
- ACPE** American Council on Pharmaceutical Education
- ACS** American College of Surgeons
- ADA** American Dental Association
- ADAA** American Dental Assistants Association
- ADAMHA** Alcohol, Drug and Mental Health Administration
- ADEA** American Dental Educational Association
- ADH** aldehyde dehydrogenase
- ADHD** attention deficit hyperactivity disorder
- ADHA** American Dental Hygiene Association
- ADLs** activities of daily living
- ADR** adverse drug reaction
- AGD** Academy of General Dentistry
- AGS** American Geriatrics Society
- AHCQ** Agency for Health Care Quality
- AHEC** Area Health Education Center
- AIDS** acquired immunodeficiency syndrome
- AMA** American Medical Association
- AMERSA** Association for Medical Education and Research in Substance Abuse
- ANA** American Nurses Association
- ANCC** American Nurses Credentialing Center
- OTA** American Occupational Therapy Association
- AOA** American Osteopathic Association
- APA** American Psychological Association
- APAP** Association of Physician Assistant Programs
- APhA** American Pharmaceutical Association
- APHA** American Public Health Association
- APNA** American Psychiatric Nurses Association
- APTA** American Physical Therapy Association
- ARC-PA** Accreditation Review Commission on Education for the Physician Assistant
- ASAHP** Association of Schools of Allied Health Professions
- ASAM** American Society of Addiction Medicine
- ASDA** American Student Dental Association
- ASHP** American Society of Health-System Pharmacists
- ASI** Addiction Severity Index
- ASPH** Association of Schools of Public Health
- ASSIST** American Stop Smoking Intervention Study
- ATOD** alcohol, tobacco, and other drugs
- ATTC** Addiction Technology Transfer Center
- AUDIT** Alcohol Use Disorders Inventory Test

B

- BAC** blood alcohol content
- BAL** blood alcohol level
- BDI** Beck Depression Inventory
- BHP** Bureau of Health Professions
- BLS** Bureau of Labor Statistics
- BMI** brief motivational interviewing
- BMT** behavioral marital/couples therapy
- BSCT** behavioral self-control training

C

- CA** Cocaine Anonymous
- CAAHEP** Commission on Accreditation of Allied Health Education Programs
- CAC** Certified Addictions Counselor

CADCA Community Anti-Drug Coalitions of America
CADE Commission on Accreditation for Dietetics Education
CAPTE Commission for the Accreditation of Physical Therapy Education
CARF Committee on Addiction Rehabilitation
CARN Certified Addictions Registered Nurse
CASA Center for Addiction and Substance Abuse
CAST-6 Children of Alcoholics Screening Test
CBT cognitive behavioral therapy
CDP Council on Dental Practice
CDT carbohydrate-deficient transferrin
CE continuing education
CEPH Council on Education for Public Health
CEU continuing education unit
CIWA Clinical Institute's Withdrawal from Alcohol
CME continuing medical education
CMS Centers for Medicare and Medicaid Services
CNS central nervous system
COAs or **CODAs** children of alcohol- and drug-abusing parents
CoARC Committee on Accreditation for Respiratory Care
COMMIT Community Intervention Trial for Smoking Cessation
CRA community reinforcement approach
CSAC Clinical and Scientific Affairs Council [of AAPA]
CSAP Center for Substance Abuse Prevention]
CSAT Center for Substance Abuse Treatment
CSWE Council on Social Work Education
CTC Communities That Care
CTP Community Trials Project

D

DANA Drug and Alcohol Nurses Association
DARE Drug Abuse Resistance Education
DAST Drug Abuse Screening Test
DEA Drug Enforcement Administration
DIS Diagnostic Interview Schedule
DHHS Department of Health and Human Services
DPD Didactic Program in Dietetics
DSM-IV *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*
DVEP Domestic Violence Education Project
DWI driving while intoxicated

E

EAP employee assistance program
ECA epidemiological catchment area
ES effect size

F

FAS fetal alcohol syndrome
FAST Families and Schools Together
FBESTs Family-Based, Empirically Supported Treatments
FDA Food and Drug Administration
FDP Faculty Development Program
FET Family Effectiveness Training
FSMB Federation of State Medical Boards
FSPHP Federation of State Physician Health Programs

G

GABA gamma-aminobutyric acid
GAPS Guidelines for Adolescent Preventive Services
GEC Geriatric Education Center
GGT gamma-glutamyl transferase
GI gastrointestinal
GOAL Guiding Older Adult Lifestyles

H

HAM-A Hamilton Anxiety Scale
HAM-D Hamilton Depression Scale
HCFA Health Care Financing Administration [now CMS]
HIV human immunodeficiency virus
HMO health maintenance organization
HPN Health Professions Network
HRSA Health Resources and Services Administration
HSS Health Screening Survey

I

ICD International Classification of Diseases
IMD institution for mental disorders
IntNSA International Nurses Society on Addictions
IOM Institute of Medicine
IPA International Pharmacists Anonymous

J

JADA *Journal of the American Dental Association*
JMWH *Journal of Midwifery and Women's Health*

L

LAAM levo alpha acetyl methadol
LCME Liaison Committee for Medical Education
LSD lysergic acid diethylamide

M

MADD Mothers Against Drunk Driving
 [Project] **MAINSTREAM** Multi-Agency Initiative on Substance Abuse Training and Education for America
MAST Michigan Alcoholism Screening Test
MAST-G Michigan Alcoholism Screening Test-Geriatric Version
MCHB/DHHS Maternal and Child Health Bureau of the Department of Health and Human Services
MCV mean corpuscular volume
MDA minimum drinking age
MET motivational enhancement therapy
MHSA mental health and substance abuse
MICA mentally ill chemical abusers

N

NA Narcotics Anonymous
NABP National Association of Boards of Pharmacy
NACNM National Academy of Certified Nurse Midwives
NASW National Association of Social Workers
NBRC National Board for Respiratory Care, Inc.
NCCDN National Consortium of Chemical Dependency Nurses
NCCPA National Commission on Certification of Physician Assistants
NCI National Cancer Institute
NDTFSC National Dental Tobacco-Free Steering Committee
NEADA [Project] Nursing Education in Alcohol and Drug Abuse
NHDSA National Household Survey on Substance Abuse
NIAAA National Institute on Alcohol Abuse and Alcoholism
NIDA National Institute on Drug Abuse
NIH National Institutes of Health
NIMH National Institute of Mental Health
NN2 National Network of Health Career Programs in Two-Year Colleges
NNSA National Nurses Society on Addictions
NP Nurse Practitioner

NRSA National Research Service Award
NRT nicotine replacement therapy
NSAID nonsteroidal anti-inflammatory drug

O

OJJDP Office of Juvenile Justice and Delinquency Prevention
ONDCP [White House] Office of National Drug Control Policy
OSAP Office for Substance Abuse Prevention [now CSAP]
OTA Office of Technology Assessment
OTC over-the-counter

P

PA Physician Assistant
PANCE Physician Assistant National Certifying Examination
PANRE Physician Assistant National Recertification Examination
PATHE (also HI PATHE or HIPATHE)
PBL problem-based learning
PEP Prevention Enhancement Protocol
PET positron emission tomography
PHP physician health program
PHS Public Health Service
PKC problem knowledge coupler
PRIME-MD Primary Care Evaluation of Mental Disorders
PSUD psychoactive substance use disorders

Q

QI quality improvement

R

RAPS4 Rapid Alcohol Problems Screen
RD Registered Dietitian
RN Registered Nurse
RRC Resident Review Committee
RWJF Robert Wood Johnson Foundation

S

SAAST Self-Administered Alcohol Screening Test
SAEFP Substance Abuse Education for Family Physicians
SAP student assistance program
SASC Substance Abuse Specialty Certification [task force of NASW]
SCID Structured Clinical Interview for DSM-III-R

SDDS-PC Symptom-Driven Diagnostic System for Primary Care

SFP Strengthening Families Program

SGIM Society of General Internal Medicine

SIG special interest group

SMAST-G Short Michigan Alcoholism Screening Test-Geriatric Version

SPAC Strategic Planning Advisory Committee

SRNT Society for Research on Nicotine and Tobacco

SSA single State agency

STD sexually transmitted disease

STEP School Transitional Environment Project

SUD substance use disorder

T

TAP Technical Assistance Publication

THC tetrahydrocannabinol

TIP Treatment Improvement Protocol

[Project] **TrEAT** Trial for Early Alcohol Treatment

U

USMLE United States Medical Licensure Examination

W

WHO World Health Organization

Appendix B: Glossary

Alcohol abuse: A maladaptive pattern of alcohol use that leads to clinically significant impairment or distress, as manifested by one or more of the following occurring within a 12-month period: recurrent alcohol use resulting in a failure to fulfill major role obligations at work, school, or home; recurrent alcohol use in physically hazardous situations; recurrent alcohol-related legal problems; continued alcohol use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of alcohol. In the literature on economic costs, alcohol abuse means any cost-generating aspect of alcohol consumption; this definition differs from the clinical use of the term, which involves specific diagnostic outcomes.

Alcohol dependence: A maladaptive pattern of alcohol use that leads to clinically significant impairment or distress, as manifested by three or more of the following occurring at any time in the same 12-month period: tolerance; withdrawal; often taking alcohol in larger amounts or over a longer period than was intended; persistent desire or unsuccessful efforts to cut down or control alcohol use; spending a great deal of time in activities necessary to obtain alcohol or recover from its effects; giving up or reducing important social, occupational, or recreational activities because of alcohol use; continued alcohol use despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by alcohol.

Co-occurring disorders: The simultaneous presence of two or more disorders, such as the coexistence of a mental health disorder and substance abuse problem.

Drug dependence: A pattern of drug use leading to clinically significant impairment or distress, as manifested by three or more of the following occurring at any time in the same 12-month period: tolerance; withdrawal; use in larger amounts or over a longer period of time than intended; persistent desire or unsuccessful efforts to cut down; spending a great deal of time in activities necessary to obtain drug(s); giving up or reducing important social, occupational, or recreational activities; continued use despite knowledge of having a persistent or recurrent physical or psychological problem.

Indicated preventive interventions: Interventions targeted to reach high-risk individuals who are identified as having minimal but detectable signs or symptoms foreshadowing substance abuse or biological or familial markers indicating predisposition for substance abuse, even though they do not meet DSM-III-R diagnostic levels at the current time.

Selective preventive interventions: Interventions targeted to individuals or a subgroup of the population whose risk of developing substance abuse is significantly higher than average. The risk may be imminent, or it may be a lifetime risk. The basis may be biological, psychological, or environmental.

Substance abuse: The problematic consumption or illicit use of alcoholic beverages, tobacco products, and drugs, including misuse of prescription drugs.

Substance use disorder: The spectrum of disorders encompassed in alcohol and/or drug abuse and dependence that is attributed to problematic consumption or illicit use of alcoholic beverages, tobacco products, and drugs, including misuse of prescription drugs.

Universal preventive interventions: Interventions targeted to the public or a whole population group that has not been identified on the basis of individual risk. The intervention is desirable for everyone in that group. Universal interventions have advantages in terms of cost and overall effectiveness for large populations.

Modified from US Department of Health and Human Services, National Center for Health Statistics. *Healthy People 2010*. Hyattsville, Md.: NCHS; 2000.