Alcohol and HIV:
What Clinicians Need to Know

Trainer Guide

Pacific Southwest ATTC

CDU

PACIFIC AIDS Education and Training Center

Alcohol and HIV:

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Background Information

The purpose of the Alcohol and HIV Training Package is to provide HIV clinicians (including, but not limited to physicians, dentists, nurses, and other allied medical staff, therapists and social workers, and counselors, specialists, and case mangers) with a detailed overview of alcohol abuse, it's relationship with HIV/AIDS, and behavioral and medical approaches for treating alcohol-dependent individuals. The package was developed for the Pacific AIDS Education and Training Center, based at Charles R. Drew University of Medicine and Science. Principle authorship was by Beth Rutkowski, M.P.H., Associate Director of Training of UCLA ISAP, and Thomas Freese, Ph.D., Director of Training of UCLA ISAP and Principal Investigator/Director of the Pacific Southwest ATTC. We wish to acknowledge Phil Meyer, LCSW, Jennifer McGee, MPHc, and Tom Donohoe, MBA from the PAETC.

The introductory training includes a 130-slide PowerPoint presentation, this Trainer's Guide, and a companion 2-page fact sheet. The duration of the training is approximately 90-120 minutes, depending on whether the trainer chooses to present all of the slides, or a selection of slides. For example, slides 48-57 represent a general introduction to HIV/AIDS, and can be eliminated if your audience already has a broad knowledge base with regards to HIV/AIDS education.

"Test Your Knowledge" questions have been inserted at the beginning and end of the presentation to assess a change in the audience's level knowledge after the key content has been presented. An answer key is provided in the Trainer's notes for **slides 4-8** and **slides 120-124**.

Audience Response System can be utilized, if available, when facilitating the Test Your Knowledge question sessions.

In addition, a series of case studies (**slide 70 and slide 117**) and additional questions **(slide 39 and slides 86-89)** have been inserted throughout the presentation to encourage dialogue among the training participants, and to illustrate how the information presented can be used clinically.

What Does the Training Package Contain?

- PowerPoint Training Slides (with notes)
- Trainer's Guide with detailed instructions for how to convey the information and conduct the interactive exercises
- Two-page fact sheet entitled, "*Tips for HIV Clinicians Working with Alcohol Users*"

What Does This Trainer's Manual Contain?

- Slide-by-slide notes designed to help the trainer effectively convey the content of the slides themselves
- Supplemental information for select content to enhance the quality of instruction
- Suggestions for facilitating the "Test Your Knowledge" questions and case studies

How is This Trainer's Guide Organized?

For this manual, text that is shown in bold italics is a "***Note to the Trainer.***" Text that is shown in normal font relates to the "Trainer's Script" for the slide.

It is important to note that some slides in the PowerPoint presentation contain animation. Animations are used to call attention to particular aspects of the information or to present the information in a stepwise fashion to facilitate both the presentation of information and participant understanding. Getting acquainted with the slides, and practicing delivering the content of the presentation are essential steps for ensuring a successful, live training experience.

General Information about Conducting the Training

The training is designed to be conducted in small- to medium-sized groups (10-40 people). It is possible to use these materials with larger groups, but the trainer may have to adapt the small group exercises (case studies) to ensure that there is adequate time to cover all of the content.

Materials Needed to Conduct the Training

- Computer with PowerPoint software installed (2003 or higher version) and LCD projector to show the PowerPoint training slides.
- When making photocopies of the PowerPoint presentation to provide as a handout to training participants, it is recommended that you print the slides three slides per page with lines for notes. Select "pure black and white" as the color option. This will ensure that all text, graphs, tables, and images print clearly.
- Flip chart paper and easel/white board, and markers/pens to write down relevant information, including key case study discussion points.

Overall Trainer Notes

It is critical that, prior to conducting the actual training, the trainer practice using this guide while showing the slide presentation in Slideshow Mode in order to be prepared to use the slides in the most effective manner.

Icon Key

Note to Trainer

Activity

References

Audience Response System (ARS)-Compatible Slide

Alcohol and HIV:

What Clinicians Need to Know

Slide-By-Slide Trainer Notes

The notes below contain information that can be presented with each slide. This information is designed as a guidepost and can be adapted to meet the needs of the local training situation. Information can be added or deleted at the discretion of the trainer(s).

Slide 1: Title Slide

Welcome participants and take care of housekeeping announcements, such as location of restrooms, turning off cell phones, participating actively, etc.

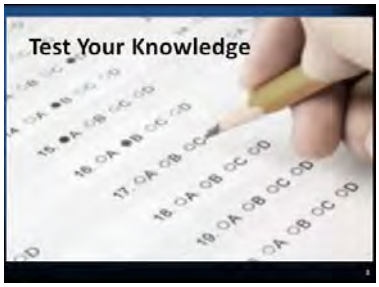
The purpose of this introductory training is to provide HIV clinicians (including, but not limited to physicians, dentists, nurses, and other allied medical staff, therapists and social workers, and counselors, specialists, and case managers) with a detailed overview of alcohol abuse and the behavioral and medical approaches for treating alcohol-addicted individuals. The duration of the training is approximately 90-120 minutes (1 ½-2 hours), depending on whether the trainer chooses to present all of the slides, or a selection of slides. For example, slides 48-57 represent a general introduction of HIV/AIDS, and can be eliminated if your audience already has a broad knowledge base with regards to HIV/AIDS education.

"Test Your Knowledge" questions have been inserted at the beginning and end of the presentation to assess a change in the audience's level knowledge after the key content has been presented. An answer key is provided in the Trainer's notes for slides 4-8 and slides 120-124. Audience Response System can be utilized, if available, when facilitating the Test Your Knowledge question sessions.

In addition, a series of case studies (slide 70 and slide 117) and additional questions (slide 39 and slides 86-89) have been inserted throughout the presentation to encourage dialogue among the training participants, and to illustrate how the information presented can be used clinically.

Slide 2: Training Collaborators

This PowerPoint presentation, Trainer Guide, and companion fact sheet were developed by Beth Rutkowski, M.P.H. (Associate Director of Training of UCLA ISAP) and Thomas Freese, Ph.D. (Director of Training of UCLA ISAP and Principal Investigator/Director of the Pacific Southwest ATTC) through supplemental funding provided by the Pacific AIDS Education and Training Center, based at Charles R. Drew University of Medicine and Science. We wish to acknowledge Phil Meyer, LCSW, Jennifer McGee, MPHc, and Tom Donohoe, MBA, from the PAETC.

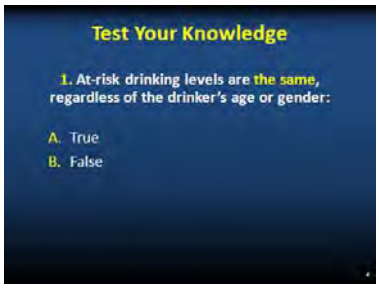


Slide 3 *[Transition Slide]*: Test Your Knowledge Questions

The purpose of the following five questions is to test the current level of alcohol and HIV knowledge amongst training participants. The five questions are formatted as either multiple choice or true/false questions.

Read each question and the possible responses aloud, and give training participants time to jot down their response before moving on to the next question.

<u>Do not</u> reveal the answers to the questions until the end of the training session (when you re-administer the questions that appear on slides 120-124).



Slide 4: Test Your Knowledge Question #1

Answer Key:

Correct response: **B (False)**

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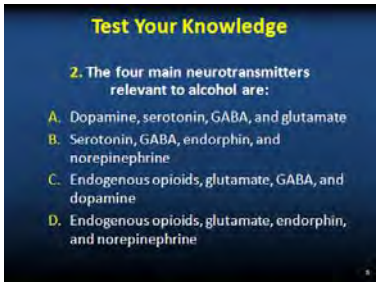

Slide 5: Test Your Knowledge Question #2

Answer Key:

Correct response: **C (Endogenous opioids, glutamate, GABA, and dopamine)**

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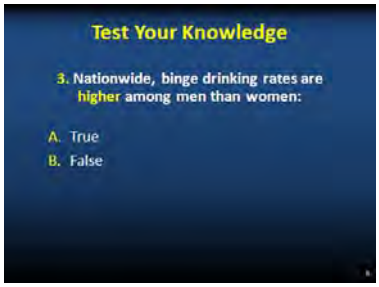

Slide 6: Test Your Knowledge Question #3

Answer Key:

Correct response: **A (True)**

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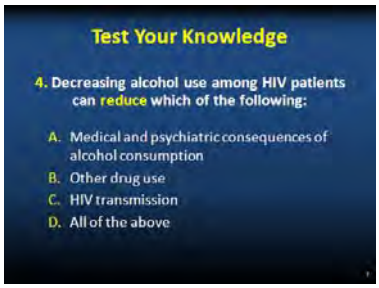

Slide 7: Test Your Knowledge Question #4

Answer Key:

Correct response: **D** (**All of the above**)

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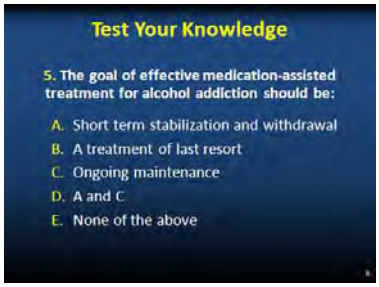

Slide 8: Test Your Knowledge Question #5

Answer Key:

Correct response: **D** (**A and C**)

**Audience Response System (ARS)-compatible slide

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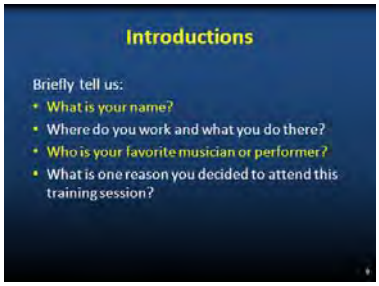
<td> 
</td>
<td>Slide 9: Introductions

In an effort to break the ice and encourage group interaction, take a few minutes to ask training participants to briefly share the answers to these four questions. You can ask for several volunteers to share their responses, if the size of your audience prevents all participants from sharing.</td>
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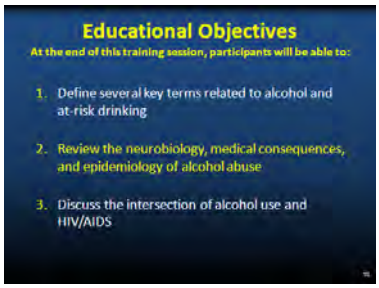
<td> 
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<td>Slide 10: Educational Objectives

 

Briefly review each of the educational objectives with the audience.</td>
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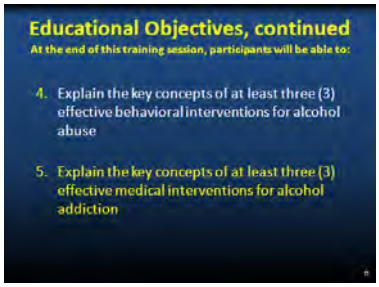
<td> 
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<td>Slide 11: Educational Objectives, continued

 

Continue by briefly reviewing the remaining two educational objectives with the audience.</td>
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Slide 12: First, let's define some key terms

Formal DSM-IV diagnoses encompass a broad range of alcohol use disorders, including alcohol abuse and alcohol dependence. Many people who drink alcohol do not meet the criteria for abuse or dependence, but may drink to levels that increase their risk of physical, mental health, and social problems. Use of alcohol, like illicit substances and some prescription drugs, can lead to dependence. Dependence is a chronic, relapsing condition that does not end when the addictive substance is removed from the body. It is a medical disorder with a complex etiology, multiple manifestations, and a varied clinical course.

Hazardous drinking is not a DSM-IV diagnosis. In these guidelines, the term "hazardous drinking" includes use that is associated with an adverse consequence but that does not meet criteria for abuse or dependence.

Slide 13: First, let's define some key terms

There is no consensus on the definition of binge drinking. In 2004, the National Institute on Alcohol Abuse and Alcoholism (NIAAA) developed the definition featured on this slide for its use in alcohol research.

Slide 14: How Do We Define Risk?

We do screening to identify risk. But how is risk defined? The U.S.-based National Institute on Alcohol and Alcoholism (NIAAA) defines risk as drinking more than the recommended limits. According to this chart, the recommended limit for men is no more than 4 drinks per occasion and no more than 14 drinks per week. For women, the limit is no more than 3 drinks per occasion and no more than 7 drinks per week. Notice that for individuals 65 and older, the limits are lower.

Slide 15: What is a "Standard Drink?"

People have different personal definitions of what exactly constitutes an alcoholic "drink." The National Institute on Alcohol Abuse and Alcoholism has developed a definition of a standard drink. A standard drink can be a 12 ounce beer, 8-9 ounces of malt liquor, 5 ounces of wine, 3-4 ounces of fortified wine, 2-3 ounces of cordial, 1.5 ounces of brandy, or 1.5 ounces of spirits such as vodka, gin, or scotch. So, a drink for one person may be a "40-ouncer" of beer, which, if you use NIAAA's definition of a standard drink, would equal 3 1/3 standard drinks. It is very important for alcohol dependent patients to understand what is meant by "a drink" when you are assessing the level of risk associated with their alcohol consumption.

Slide 16 *[Transition Slide]*: Alcohol – Mechanism of Action and Acute and Chronic Effects

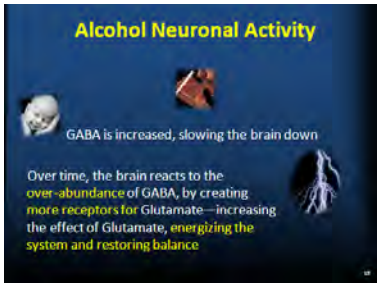
The next section of the presentation describes, in detail, the mechanism of action of alcohol, as well as the various acute and chronic effects of alcohol consumption.

Slide 17: For our purposes, there are four main neurotransmitters relevant to alcohol

Two processes occur simultaneously when alcohol is consumed. One process acts on the naturally occurring opioids in the brain (which deaden pain and cause feelings of euphoria), and dopamine (which makes things feel good). The other process operates on glutamate (the excitatory neurotransmitter that wakes you up) and GABA (the inhibitory neurotransmitter that slows you down). The next few slides detail each process separately.

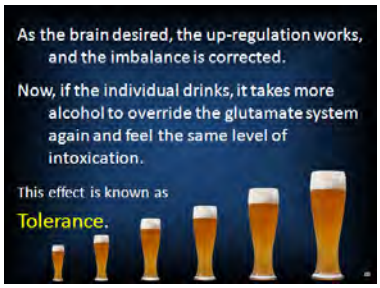
Slide 18: Alcohol Neuronal Activity

In the first process, a person drinks alcohol and this causes the release of the endogenous, or naturally occurring, opioids to be released in the pleasure centers of the brain. This in turn, causes the release of dopamine. Since dopamine makes the person feel good, drinking is reinforced and this increases the likelihood of repeated use. A subsequent section of this training will review two medications used to treat alcohol directly by addressing the pleasurable effects of alcohol.



Slide 19: Alcohol Neuronal Activity

At the same time that alcohol is making the person feel good, a second process occurs. When the person drinks, GABA (the inhibitory neurotransmitter) is released and this slows down the brain. This results in the symptoms of intoxication from alcohol, such as difficulty with coordination, drowsiness, slurring speech, etc. With repeated use, the brain attempts to correct for the overabundance of GABA by creating more receptors for glutamate. This increases the effectives of glutamate, and the system is energized and balance is restored.

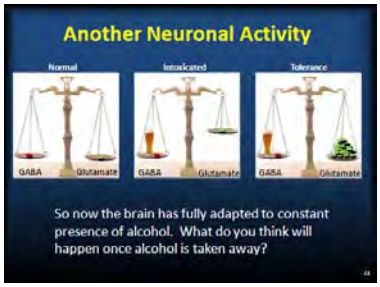


Slide 20: [No Title]

Now if the person drinks the same amount of alcohol, the intoxicating effects are not seen. It takes more alcohol in order to overcome the newly up-regulated glutamate system. As this process occurs again and again, the individual must drink more and more to get the intoxicating effect. This process is known as tolerance.

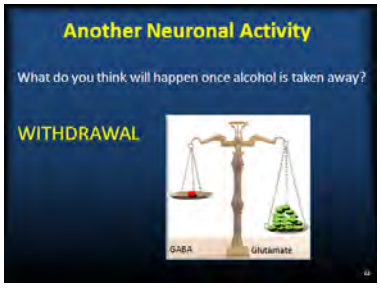
****ANIMATION INSTRUCTIONS****

Please note the animation contained within this slide. Trainers should practice delivering the material on this slide in advance of the training, so they are comfortable with the order in which the animation and text appear on the slide.



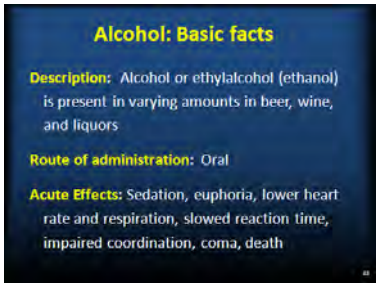
Slide 21: Another Neuronal Activity

As a review, normally, GABA and glutamate are well-balanced, as is depicted in the picture to the far left of the slide. Each takes precedence as required for normal functioning throughout the day. Repeated alcohol use overwhelms the glutamate system, as is depicted in the center picture. The brain responds by making more receptors for glutamate (shown in the picture on the far right of the slide), making it more effective. Once the brain has made this adaptation to the regular presence of alcohol, one can imagine what will happen if the person abruptly stops drinking.



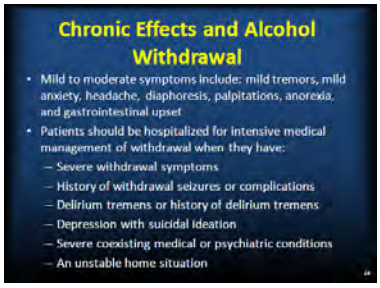
Slide 22: Another Neuronal Activity

The answer, of course, is withdrawal. Withdrawal is dangerous (potentially fatal) and the individual should get medical support using medications (often with benzodiazepines and others) to assist with this process. Once the acute crisis is over, however, the glutamate system continues to be overactive, since it takes time for the receptor levels to go back to normal. This "post-acute withdrawal" often leads to the individual to feel anxious and agitated—a frequent cause of relapse. One of the medications that we will explore later in this training session directly addresses this post-acute withdrawal issues to assist the individual in maintaining abstinence.



Slide 23: Alcohol – Basic Facts

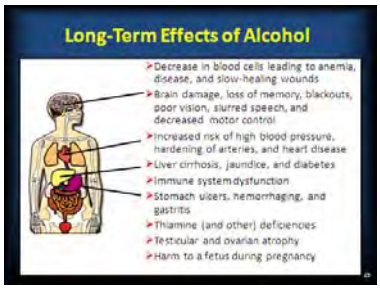
Alcohol relaxes the brain and body, which some people find pleasurable. Many people find that moderate drinking (a drink or two of alcohol a day) helps relieve stress, encourages relaxation and acts as an appetite stimulant. Its acute effects, however, can also alter mood and lead to physical, psychological and social problems. Even small amounts of alcohol can have an effect on your coordination, reactions and judgments. Binge drinking can lead to poor coordination, vomiting, exaggerated emotional reactions (including sadness, tearfulness, anger, and aggression) and can lead to unconsciousness. Women who are pregnant or planning to become so, are advised to avoid alcohol. A hangover, which may include a headache, dry mouth, feeling sick, and tired, is a common consequence of heavy drinking. These effects are caused by dehydration and toxicities. Extremely heavy drinking can lead to coma and even death.



Slide 24: Chronic Effects and Alcohol Withdrawal

Alcohol withdrawal refers to symptoms that may occur when a person who has been drinking too much alcohol suddenly stops. Alcohol withdrawal symptoms usually occur within 5 - 10 hours after the last drink, but can occur days later. Symptoms get worse in 48 - 72 hours, and may persist for weeks. People with moderate-to-severe symptoms of alcohol withdrawal may need inpatient treatment at a hospital or other facility that treats alcohol withdrawal. You will be watched closely for hallucinations and other signs of delirium tremens. Treatment may include: (1) monitoring of blood pressure, body temperature, heart rate, and blood levels of different chemicals in the body; (2) IV fluids or medications; and (3) sedation using benzodiazepines until withdrawal is complete. Those with mild-to-moderate symptoms of withdrawal may be treated in an outpatient program.

Mild to moderate withdrawal symptoms can be safely and effectively managed as outpatients using non-pharmacologic therapy or benzodiazepines to treat symptoms. Daily contact with the treating clinician and a friend or family member to administer medications is optimal for these patients. Benzodiazepines should be used on a short-term basis and should be tapered as soon as possible. Delirium tremens is a medical emergency associated with untreated alcohol withdrawal. It occurs 3-14 days after drinking is stopped. Delirium tremens include agitation, restlessness, gross tremor, disorientation, fluid and electrolyte imbalance, sweating and high fevers, visual hallucinations, and paranoia. The estimated prevalence of DTs is < 5% of alcohol dependent patients, but it is possible for DTs to lead to death.



Slide 25: Long-Term Effects of Alcohol

Long-term, chronic alcohol use affects almost every organ system of the body, potentially resulting in serious illnesses, including liver disease, impaired heart function (known as cardiomyopathy), and inflammation of the pancreas (called pancreatitis). Even one-time acute alcohol consumption, such as binge drinking, can temporarily alter the activity of many organ systems. Furthermore, heavy alcohol consumption by a pregnant woman can harm her fetus and lead to fetal abnormalities ranging from mild learning deficits to full-blown fetal alcohol syndrome (FAS).

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<td>Slide 26 [Transition Slide]: The Epidemiology of Alcohol Use and Abuse – Local and National Trends

The next portion of the presentation will provide training participants with a detailed overview of patterns and trends in alcohol abuse in the United States. No single drug abuse indicator can tell the full story of the extent or impact of prescription opioids. Therefore, data from several available indicators are presented in an attempt to paint a comprehensive picture of who abuses alcohol, and the populations in which abuse and dependence is most prevalent.</td>
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<td>Slide 27: Public Health Impact of Excessive Drinking

This slide describes the public health impact of excessive drinking. Excessive drinking is associated with nearly 80,000 deaths a year, and contributes to a reduced life span among U.S. residents who drink to excess. The vast majority of excessive drinkers report binge drinking (4 drinks per occasion for women or 5 drinks per occasion for men). It is important to note, however, that despite the high prevalence of excessive drinking and the myriad of negative consequences associated with this drinking pattern, most excessive drinkers do not meet the diagnostic criteria for alcohol dependence.</td>
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<td>Slide 28: [No Title]

This slide is included to emphasize that when we think about excessive drinking or binge drinking, we conceptualize it as being a risk factor for a wide range of health outcomes. In this way, binge drinking is really quite similar to smoking, and is also amenable to some of the same kinds of environmental interventions that are used to address tobacco use, as well.</td>
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<td>Slide 29: Binge Drinking by Race/Ethnicity and Year, U.S., 1993-2009

From 1993 to 2009, the largest increase in the prevalence of binge drinking was among non-Hispanic whites (from 14.8% to 17.5%).</td>
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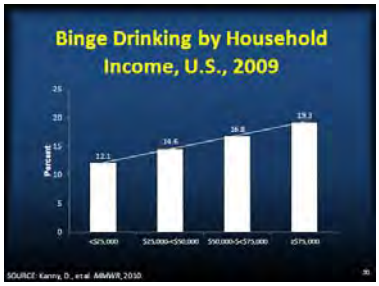
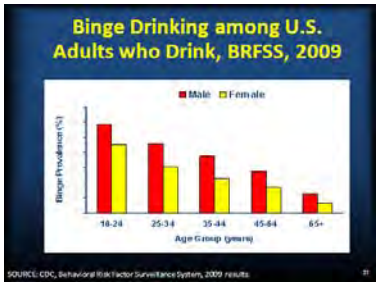


Slide 30: Binge Drinking by Household Income, U.S., 2009

The prevalence of binge drinking also increased with household income and was most commonly reported by respondents with annual household incomes of $75,000 or more (19.3%). One possible reason is that binge drinking, unlike other leading health risks (e.g., smoking and obesity), has not been widely recognized as a health risk. We tend to see that people with higher socioeconomic status, and have greater access to health information and health care services, usually are the first to adopt healthier behaviors, yet the opposite is true for excessive alcohol use. The greater prevalence of binge drinking with increasing income levels probably reflects the fact that adults with higher household incomes have more disposable income available to spend on alcohol.



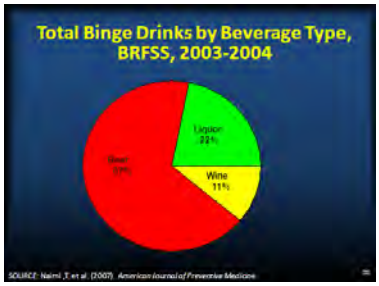
Slide 31: Binge Drinking among U.S. Adults who Drink, BRFSS, 2009

This slide depicts the rates of binge drinking among current drinkers, by age and gender. In all age categories listed, men are more likely than women to report binge drinking, according to one national survey.

Slide 32: Binge Drinking – "Not Just for Kids"

SAMHSA's National Survey on Drug Use and Health is the primary source of information on the prevalence, patterns, and consequences of alcohol, tobacco, and illegal drug use and abuse in the general U.S. civilian non-institutionalized population, age 12 and older. The annual Survey includes questions about the recency and frequency of consumption of alcoholic beverages, such as beer, wine, whiskey, brandy, and mixed drinks. Binge alcohol use is defined in the Survey as five or more drinks on the same occasion (meaning at the same time or within a couple of hours of each other) on at least 1 day in the past 30 days.

While a bit dated, it is interesting to share survey findings from 2005-06 that indicated that binge drinking is not a phenomenon limited to adolescents and young adults. More than 20% of men aged 50-64 reported binge drinking at least once in the past month. And approximately 10% of older women reported recent binge drinking. Based on the Survey findings, 19% of older men and 13% of older women could be classified as heavy drinkers by the American Geriatric Society, meaning that they had two or more drinks per day every day.



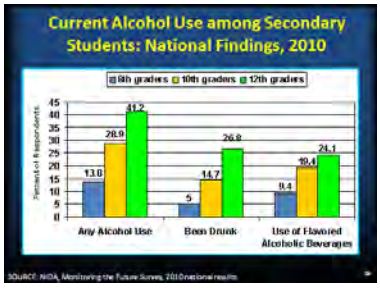
Slide 33: Total Binge Drinks by Beverage Type, BRFSS, 2003-2004

Although binge drinking (drinking five or more drinks on an occasion) is an important public health problem, little is known about which beverage types are consumed by binge drinkers. This knowledge could guide prevention efforts because beer, wine, and liquor are taxed, marketed, and distributed differently.

Naimi and colleagues analyzed data from 14,150 adult binge drinkers who responded to the Behavioral Risk Factor Surveillance System binge-drinking module in 2003 and 2004. Information pertained to the amount of alcohol consumed during a binge drinker's most recent binge episode, including beverage-specific consumption. Overall, 74.4% of binge drinkers consumed beer exclusively or predominantly, and those who consumed at least some beer accounted for 80.5% of all binge alcohol consumption. By beverage type, beer accounted for 67.1%, liquor for 21.9%, and wine accounted for 10.9% of binge drinks consumed. Beer also accounted for most of the alcohol consumed by those at highest risk of causing or incurring alcohol-related harm, including people aged 18-20 years (67.0% of drinks were beer); those with three or more binge episodes per month (70.7%); those drinking eight or more drinks per binge episode (69.9%); those binging in public places (64.4%); and those who drove during or within 2 hours of binge drinking (67.1%). Beer accounted for two thirds of all alcohol consumed by binge drinkers and accounted for most alcohol consumed by those at greatest risk of causing or incurring alcohol-related harm. Lower excise taxes and relatively permissive sales and marketing practices for beer as compared with other beverage types may account for some of these findings. These findings suggest that equalizing alcohol control policies at more stringent levels would be an effective way to prevent excessive drinking.

<u>REFERENCE</u>:

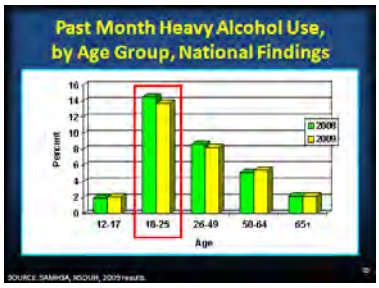
Naimi, T.S., Brewer, R.D., Miller, J.W., Okoro, C., & Mehrotra, C. (2007). What do binge drinkers drink? Implications for alcohol control policy. *American Journal of Preventive Medicine, 30*(3), 188–193.



Slide 34: Current Alcohol Use among Secondary Students – National Findings, 2010

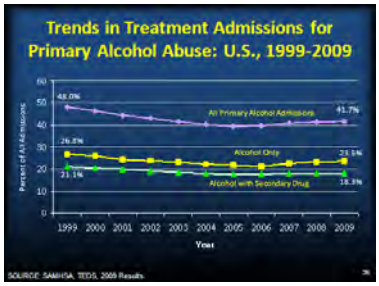
Monitoring the Future is an ongoing study of the behaviors, attitudes, and values of American secondary school students, college students, and young adults. Each year, a total of approximately 50,000 8th, 10th and 12th grade students are surveyed. In addition, annual follow-up questionnaires are mailed to a sample of each graduating class for a number of years after their initial study participation. The good news, according to the 2010 Monitoring the Future results, is that alcohol use, and, specifically, occasions of heavy drinking, continue its long-term decline among teens, reaching historically low levels.

This graph illustrates patterns in current alcohol use among secondary school students in 2010, specifically any alcohol use, drinking to intoxication, and use of flavored alcoholic beverages (also known as "alco-pops") at least once in the past 30 days. For each question, 12th graders were most likely to respond in the affirmative, followed by 10th graders, and then 8th graders. Of note is the fact that more than 1 in 4 12th graders reported drinking to intoxication at least once in the past month, and just about 1 in 4 12th graders reported past month use of alco-pops. It is also important to note, however, that significant declines were seen for any alcohol use and use of alco-pops amongst 12th graders between 2009 and 2010.



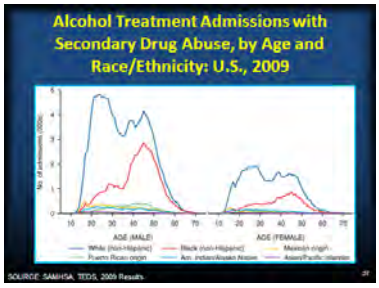
Slide 35: Past Month Heavy Alcohol Use, by Age Group, National Findings

Heavy alcohol use is defined as drinking five or more drinks on the same occasion on each of five or more days in the past 30 days; all heavy alcohol users are also considered binge drinkers. Individuals aged 18 to 25 are the most likely age group to report past month heavy alcohol use. In 2008, 14.5% of 18-25 year olds reported past month heavy alcohol use, vs. 13.7% in 2009. The next age group with the highest percentage of past-month heavy alcohol use is the 26-49 year group (8.6% in 2008 and 8.2% in 2009).



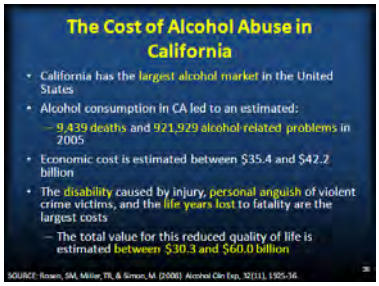
Slide 36: Trends in Treatment Admissions for Primary Alcohol Abuse – U.S., 1999-2009

Nationally between 1999 and 2009, five substance groups accounted for 96% of the 1,963,089 TEDS treatment admissions aged 12 and older: alcohol (42%), opiates (primarily heroin; 21%), marijuana (18%), cocaine (9%), and methamphetamine/amphetamines (6%). However, the proportions of admissions by primary substance changed considerably over that period. Alcohol admissions declined steadily from 48% of admissions aged 12 and older in 1999 to 39% in 2005, but then increased steadily to 42% in 2009. In 2009, 44% of primary alcohol admissions aged 12 and older reported secondary drug abuse as well.



Slide 37: Alcohol Treatment Admissions with Secondary Drug Abuse, by Age and Race/Ethnicity – U.S., 2009

Admissions for primary abuse of alcohol with secondary abuse of drugs represented 18% of TEDS admissions aged 12 and older in 2009. The average age at admission for primary alcohol with secondary drug abuse was lower, at 36 years, than for abuse of alcohol alone (40 years). Non-Hispanic Whites accounted for 60% of admissions for primary alcohol with secondary drug abuse (43% males and 17% females). Non-Hispanic Blacks made up 23% of admissions (18% males and 5% females). Almost half (47%) of admissions for primary alcohol with secondary drug abuse first became intoxicated by age 14, and 94% first became intoxicated before age 21 (the legal drinking age). Admissions for primary alcohol with secondary drug abuse were less likely to be in treatment for the first time than alcohol-only admissions (38% vs. 49%). Among admissions referred to treatment by the criminal justice system, admissions for alcohol with secondary drug abuse were more likely than alcohol-only admissions to have been referred to treatment as a condition of probation/parole (36% vs. 22%). Among admissions for alcohol with secondary drug abuse, marijuana and smoked cocaine were the most frequently reported secondary substances (25% and 9%, respectively).



Slide 38: The Cost of Alcohol Abuse in California

California is the largest alcohol market in the United States. In 2005 alone, Californians consumed almost 14 billion alcoholic drinks, which contributed to many severe and potentially fatal alcohol-related illnesses and conditions. Alcohol use also causes violent and nonviolent crimes, as well as injuries and traffic collisions. While several studies have estimated the magnitude and cost of these problems nationally and others have analyzed underage drinking costs, no overall cost estimate at the state level currently exists for California. Rosen, Miller, and Simon present the first comprehensive estimate of the cost of alcohol consumption in California.

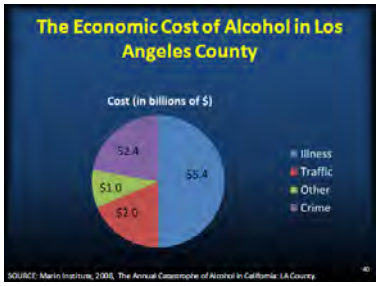
Alcohol consumption in California led to an estimated 9,439 deaths and 921,929 alcohol-related problems, such as crime and injury in 2005. The economic cost of these problems is estimated at between $35.4 billion and $42.2 billion. Our main estimate is $38.5 billion, of which $5.4 billion was for medical and mental health spending, $25.3 billion in work losses, and $7.8 billion in criminal justice spending, property damage and public program costs. In addition, alcohol is responsible for severe reductions in individuals' quality of life in California. We estimate that the disability caused by injury, the personal anguish of violent crime victims, and the life years lost to fatality are the largest costs imposed by alcohol. The total value for this reduced quality of life in California is between $30.3 billion and $60.0 billion. Our main estimate for quality-of-life costs is $48.8 billion.

Slide 39: Test Your Knowledge Question

Answer Key:

Correct response: **B ($10.8 million)**

**Audience Response System (ARS)-compatible slide

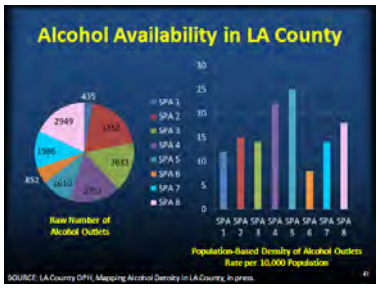


Slide 40: The Economic Cost of Alcohol in Los Angeles County

The annual economic cost of alcohol use in Los Angeles County is $10.8 billion. This translates to roughly $1,000 per resident or $3,100 per family each year. The highest costs are associated with alcohol-related illness and crime. Alcohol use causes bodily harm and is implicated in DUIs, falls, suicide, poisonings, and occupational injuries. These harms cause 700 deaths and 27,530 injuries annually in Los Angeles (data not shown).

Additional Information for the Trainer(s)

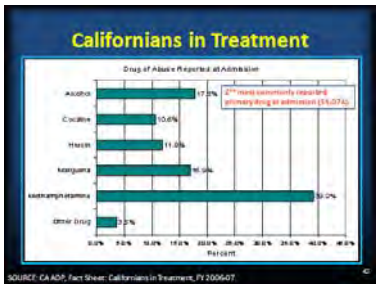
With regards to driving under the influence, in 2007, there were 203,866 DUI arrests in California, with 42,736 of those arrests occurring in LA County alone. In 2008, there were 258 alcohol-involved fatal collisions in LA County and an additional 4,832 alcohol-involved injury collisions.



Slide 41: Alcohol Availability in LA County

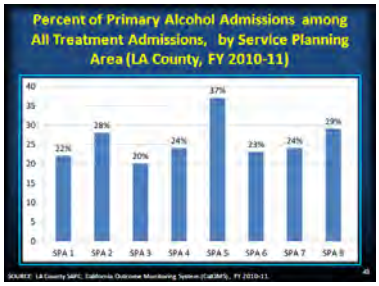
Greater alcohol outlet density is associated with increased alcohol consumption and related harms, such as excessive drinking, drinking and driving, vehicle crashes, assault, homicide, and other crimes, hospital admissions, and neighborhood disturbances. High density of alcohol outlets can cause problems not only for individuals, but for family, communities, and society at large. Los Angeles County-based alcohol outlets comprise one-fifth of all outlets in California.

The pie chart to the left shows the number of alcohol outlets in each Service Planning Area in LA County. The greatest number of alcohol outlets is located in SPA 2 (San Fernando Valley), SPA 8 (South Bay), and SPA 4 (Metro). The bar graph to the right shows the population-based alcohol outlet density (per 10,000 population). The highest population adjusted rate is seen in SPA 5 (West LA), followed by SPA 4 (Metro), and SPA 8 (South Bay).



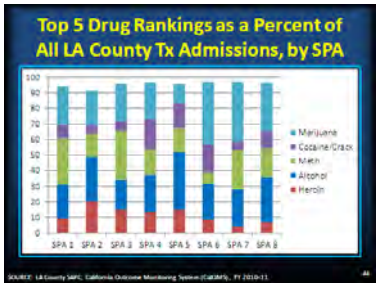
Slide 42: Californians in Treatment

In California, alcohol was the second most frequently reported primary drug at admission, accounting for 17% of all admissions. Alcohol followed methamphetamine, which accounted for 39% of all admissions in FY 2006-07.



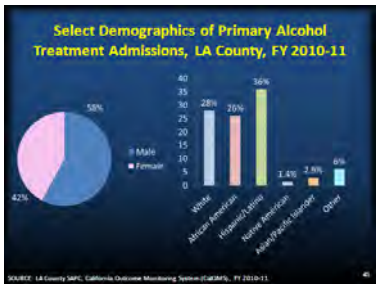
Slide 43: Percent of Primary Alcohol Admissions among All Treatment Admissions, by Service Planning Area (LA County, FY 2010-11)

Across the eight Service Planning Areas (SPAs) in Los Angeles County, primary alcohol admissions accounted for between 20 and 37% of all admissions. The prevalence of primary alcohol admissions was highest in SPA 5 (West LA), and lowest in SPA 3 (San Gabriel Valley).



Slide 44: Top 5 Drug Rankings as a Percent of All LA County Tx Admissions, by SPA

Heroin, alcohol, methamphetamine, cocaine/crack, and marijuana are the five most prevalent drugs mentioned at admission, regardless of SPA. This graph presents the top five drug rankings (for primary drug of abuse at admission) for LA County treatment admissions, by SPA. Across the eight Service Planning Areas in Los Angeles County, primary alcohol admissions accounted for between 20 and 37% of all admissions. The prevalence of primary alcohol admissions was highest in SPA 5 (West LA), and lowest in SPA 3 (San Gabriel Valley).



Slide 45: Select Demographics of Primary Alcohol Treatment Admissions, LA County, FY 2010-11

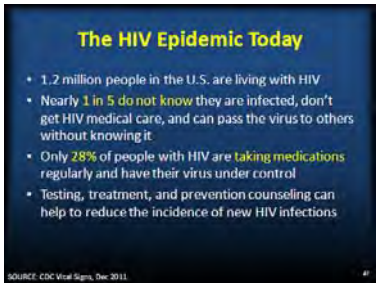
A higher proportion of males entered treatment for primary alcohol abuse than women, as is depicted by the pie chart on the left-side of the slide. With regards to the racial/ethnic breakdown of primary alcohol admissions, Whites and Hispanic/Latinos are underrepresented among primary alcohol admissions, but African Americans are overrepresented. For Whites, 50% of the LA County population is White, while Whites comprise 28% of primary alcohol admissions. For Hispanics/Latinos, 48% of the LA County population is of Hispanic/Latino origin, while they comprise 36% of primary alcohol admissions. For African Americans, 8.7% of the LA County population is African American, whereas more than one-quarter of primary alcohol admissions are African American.

Additional Information for the Trainer(s)

In terms of the age range of primary alcohol treatment admissions (data not shown), the predominant age group is 45-64 year olds (33.5%), followed by 25-44 year olds (32.6%), individuals under the age of 18 (20.2%), 18-20 year olds (5.5%), 21-24 year olds (4.4%), and individuals aged 65 and older (3.9%). In other words, nearly one in five primary alcohol admissions in LA County are among underage drinkers.

Slide 46 *[Transition Slide]*: The Intersection of Alcohol and HIV/AIDS

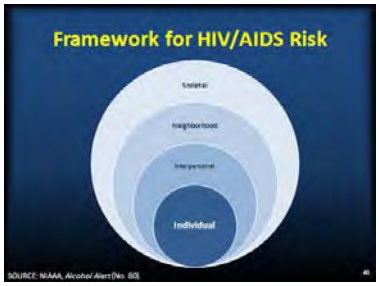
The next portion of the presentation corresponds to the relationship between alcohol use and HIV/AIDS. Each year in the United States, between 55,000 and 60,000 people become infected with HIV, for a total of more than 1.1 million now infected. The population that once was primarily made up of homosexual White men is now composed increasingly of people of color, women, and young people. Of these new HIV cases, the proportion of women rose from 7 percent in 1985 to 25 percent in 2000. In that group, African American and Hispanic women were disproportionately represented compared with White women. Also, HIV/AIDS is now a leading cause of death among women in the United States, especially those of childbearing ages (i.e., between 25 and 44 years).1 As more young women are becoming infected, there is growing concern that the virus will be transmitted to their children, either during pregnancy or after birth. Research shows that most people who are at risk for HIV infection also consume alcohol. Alcohol use and misuse play an important role in the acquisition, progression, and transmission of HIV, as well as in treatment adherence.



Slide 47: The HIV Epidemic Today

Too many people do not know they have HIV. About 1.2 million people are living with HIV in the U.S., but about 240,000 do not know they are infected. Each year, about 50,000 people get infected with HIV in the U.S. Getting an HIV test is the first step to finding out if you have HIV and getting medical care. Without medical care, HIV leads to AIDS and early death.

New hope exists today for stopping the spread of HIV in the U.S. Medicines (antiretroviral therapy or ART) can lower the level of virus in the body. ART helps people with HIV live longer, healthier lives and also lowers the chances of passing HIV on to others. However, only 28% are getting the care they need to manage the disease and keep the virus under control. To help stop HIV, get tested. If you have HIV, get medical care and work with your health care provider to control the virus and not pass it on to others.

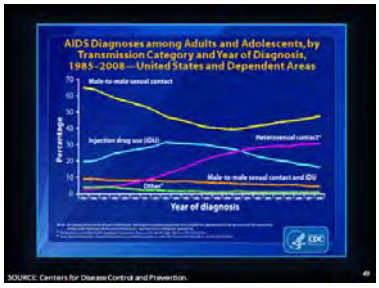


Slide 48: Framework for HIV/AIDS Risk

The socio-ecological framework for HIV/AIDS risk shows the factors that affect risk on a number of different levels. Risks range from "broken windows" (or the number of abandoned or vacant buildings in a neighborhood) to the individual's use of alcohol and his or her sexual behavior. Individual factors include: the individual's personality, drinking patterns, drug use, and sexual behavior. Interpersonal factors include: friends, peers, social networks, and places where people interact. Neighborhood factors include: the number of bars or alcohol outlets, "broken windows," and other neighborhood disadvantages. And lastly, societal factors include: racism, stigma, segregation, formal and informal policy.

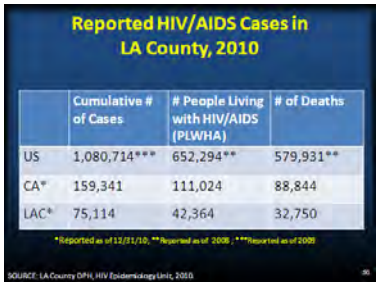
REFERENCE:

Scribner, R., Theall, K.P., Simonsen, N., & Robinson, W. (2010). HIV risk and the alcohol environment: Advancing an ecological epidemiology for HIV/AIDS. *Alcohol Research and Health 33*(3), 179–183.



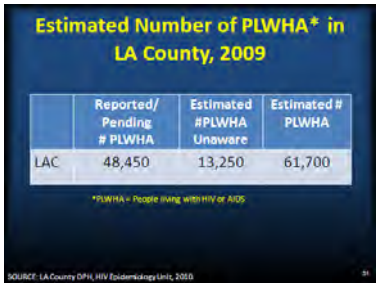
Slide 49: AIDS Diagnoses among Adult and Adolescents by Transmission Category and Year of Diagnoses, 1985-2008 – United States and Dependent Areas

The distribution of AIDS diagnoses by transmission category has shifted since the beginning of the epidemic. In 1985, male-to-male sexual contact accounted for an estimated 65% of all AIDS diagnoses; this proportion reached its lowest point in 1999 at 40% of diagnoses. Since then, the percentage of AIDS diagnoses attributed to male-to-male sexual contact has increased and in 2008 this transmission category accounted for 47% of all AIDS diagnoses. The estimated percentage of AIDS diagnoses attributed to injection drug use increased from 20% to 31% during 1985–1994 and decreased since that time accounting for 16% of diagnoses in 2008. The estimated percentage of AIDS diagnoses attributed to male-to-male sexual contact and injection drug use decreased from 9% in 1985 to 5% in 2008. The estimated percentage of AIDS diagnoses attributed to heterosexual contact increased from 3% in 1985 to 31% in 2008. The remaining AIDS diagnoses were those attributed to hemophilia or the receipt of blood or blood products and those in persons without an identified risk factor. All displayed data have been estimated. Estimated numbers resulted from statistical adjustment that accounted for reporting delays and missing risk-factor information, but not for incomplete reporting. Heterosexual contact is with a person known to have, or to be at high risk for, HIV infection.



Slide 50: Reported HIV/AIDS Cases in LA County, 2010

Nearly five and one-half percent (5.4%) of all HIV/AIDS cases are in Los Angeles County, with about 6.5% living with the disease and 5.6% who died from it in 2010.

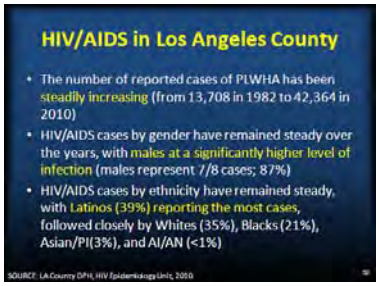


Slide 51: Estimated Number of PLWHA* in LA County, 2009

In 2009, more than 61,000 Los Angeles County residents were estimated to be living with HIV or AIDS. Of those, more than 20% were estimated to be unaware of their HIV status.

Additional Information for the Trainer(s)

Explanation of estimate and pending cases can be found at: http://www.cdc.gov/hiv/strategy/echpp/la.htm.



Slide 52: HIV/AIDS in Los Angeles County

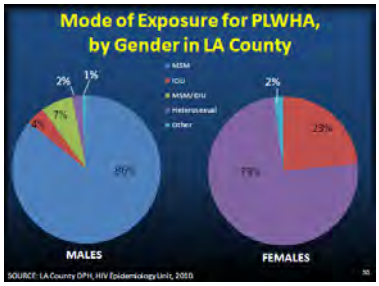
The number of people living with HIV/AIDS has steadily increased since 1982. In 1982, there were 13,708 PLWHA compared to 42,364 in 2010. Although we know a great deal more about transmission of the disease, we still have new people infected every day. In fact, the CDC estimates that there are about 50,000 people nationally infected with HIV each year. Additionally, 1 in 5 (20%) of people living with HIV are unaware of their infection. Not only are these infected individuals at high risk for transmitting HIV to others but they are also not taking advantage of effective medical treatments for HIV that can slow disease progression and reduce AIDS-related illnesses. For all we know about testing/transmission, and treatment, this is still a very high rate of new infections. It underscores the importance of assessing our clients for behaviors that put them at risk for transmission.

AIDS cases by gender have remained steady over the years, with males at a significantly higher level of infection (men:89%, women: 11%). Here we see that males have the highest rate of infection for a variety of reasons that we will discuss. However, rates of infected women cannot be ignored, especially since they are related to male infection and most importantly infection among children.

AIDS cases by ethnicity have remained steady, with Hispanics (41%) reporting the most cases, followed closely by Caucasians (34%), Blacks (20%), Asian/PI(2%), and AI/AN (<1%). However, concerning rate of new infections, in 2006 (the latest available data) the rate of new infections among Blacks was 7 times that among whites (83.7 versus 11.5 new infections per 100,000 population), and blacks accounted for the largest share of new infections (45% in 2006).

Hispanics are at risk, as well. The rate of new infections for this group is 3 times the rate among whites (29.3 versus 11.5 per 100,000), and Hispanics accounted for 17% of new infections. Historically, the number of new among Hispanics has been lower than the numbers among whites and blacks. Incidence trends among Hispanics over time have mirrored those among blacks. Whites accounted for 35% of new infections, Asian/PIs for nearly 2% of new infections and AI/AN for roughly 1%.

It's important we clearly understand who this disease is infecting (everyone), so we can adequately screen those at higher risk (CDC HIV/AIDS Facts, 2008).

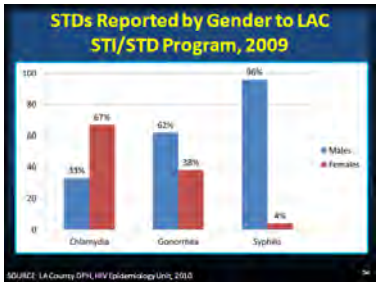


Slide 53: Mode of Exposure for PLWHA, by Gender in LA County

With regards to mode of transmission by gender, in Los Angeles County, 86% of infection among males happens via MSM contact (compared with 61% nationally). So the rate of infection among MSM is 25% higher in Los Angeles County then nationally. This means that this group of men is at extremely high risk for contracting the disease. For men in Los Angeles County, the next highest rate of infection is MSM and IV Drug use (7% in Los Angeles County; 9% nationally). The red pie slice is intravenous (IV) drug use (4% in Los Angeles County; 18% nationally), with the national average being much higher than what is seen locally in Los Angeles County. Two percent of men contract the virus via heterosexual contact, and a little over 1% through other or undetermined means.

Looking at the women (pie chart on the right side of the slide), in Los Angeles County, 73% of women contract the disease through heterosexual contact (compared to 66% nationally). Heterosexual contact is the main way in which females contract the disease, mainly because of what was discussed in the previous slide. The second most frequent mode of exposure among women locally is injection drug use (23%).

It is especially important to educate and encourage testing for female clients, as they are at great risk for infection even if they are not engaging in any known “high risk” behaviors. For women, a little over 2% contract through other means.



Slide 54: STDs Reported by Gender to LAC STI/STD Program, 2009

This slide focuses on data available for other sexually transmitted diseases (STDs). The graph portrays the rates of STDs or sexually transmitted infections (STIs) by gender for Los Angeles County. I wanted to point out that the DMH uses the term STD, but a newer term is STI for Sexually Transmitted Infections. We'll use STD throughout this training, but I wanted you to be aware of the new term in case it comes up.

The reported rates for Chlamydia, Gonorrhea and Syphilis by gender in Los Angeles County (2009) are listed on the slide. Regarding Chlamydia, 67% of women tested and 33% of men tested were infected, and this is the most prevalent STD among women.

Of those tested for STDs, 62% of men and 38% of women had Gonorrhea, and 96% of men and 4% of women had syphilis. Syphilis was by far the most prevalent STD among men.

All three of these STDs are bacterial and can be treated with antibiotics, thus early detection and treatment is very important to prevent the worsening of symptoms and subsequent effects of non-treatment, which can include spreading of the infection into other organs, development of additional STDs (i.e., pelvic inflammatory disease (PID) in women), and increased risk for other STDs and HIV.

Additional Information for the Trainer(s)

Refer to the following CDC handouts for specific information regarding STDs (Chlamydia, gonorrhea, syphilis, PID, HIV):

http://publichealth.lacounty.gov/std/chlamydia.htm

http://publichealth.lacounty.gov/std/gonorrhea.htm

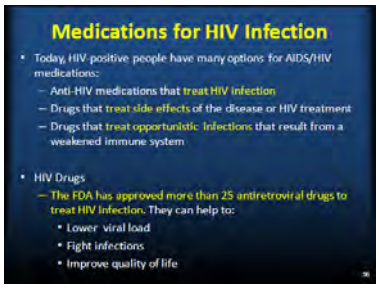
http://publichealth.lacounty.gov/std/hiv.htm

http://publichealth.lacounty.gov/std/syphilis.htm

http://publichealth.lacounty.gov/std/pid.htm

Slide 55: HIV Care in the United States

This image depicts that the state of HIV care in the United States. For every 100 people who are living with HIV, , 80% are aware of their infection, 62% are linked with some form of HIV care, 41% stay in HIV care, 36% get ART, and 28% have a very low amount of virus in their body. If someone is unaware of their HIV status, it is important to encourage them to get an HIV test. If the test is positive, encourage them to get prevention counseling and medical care, stay in medical, and comply with their medication regimen. A lower amount of virus equates to better health, longer life, fewer new infections, and helping to stop the spread of HIV.

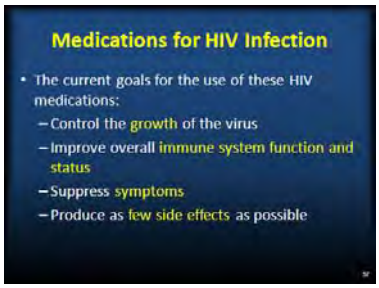


Slide 56: Medications for HIV Infection

Even when these HIV medications are effective, however, one can still transmit HIV to others. They are not a cure for HIV. Researchers are continuing to develop many new types of AIDS/HIV medications.

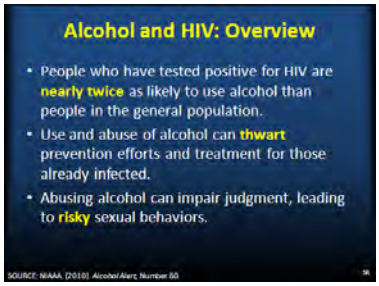
Additional Information for the Trainer(s)

Please refer to the following link for additional information:
http://www.webmd.com/hiv-aids/aids-hiv-medication



Slide 57: Medications for HIV Infection

Doctors recommend a combination of HIV drugs from at least two of the main classes. This combination is called highly active antiretroviral therapy (HAART). It helps combat new resistant strains of the virus that emerge as HIV makes copies of itself. HAART also decreases the rate of opportunistic infections.



Slide 58: Alcohol and HIV – Overview

A complex relationship exists between alcohol abuse and HIV. Alcohol use is common among people at risk for HIV and has a central modifiable effect on their health outcomes, especially now that those with HIV are living longer with the disease. Up to 50 percent of adults with HIV infection have a history of alcohol problems (1,2). Alcohol use among people with HIV can affect medication adherence and antiretroviral resistance, as well as increase risky sexual behavior.

Heterosexual sex is now a primary route for HIV transmission. Alcohol use is one of the factors that increases the risk of HIV transmission among heterosexuals. Particularly among women, a strong association has been seen between alcohol and other drug abuse, infection with HIV, and progression to AIDS (3). Although additional studies are needed to further define alcohol use patterns among infected and at-risk people, it is clear that alcohol use is closely intertwined with the spread of HIV.

A history of heavy alcohol use has been correlated with a lifetime tendency toward high-risk sexual behaviors, including multiple sex partners, unprotected intercourse, sex with high-risk partners (e.g., injection drug users, prostitutes), and the exchange of sex for money or drugs (4-7).

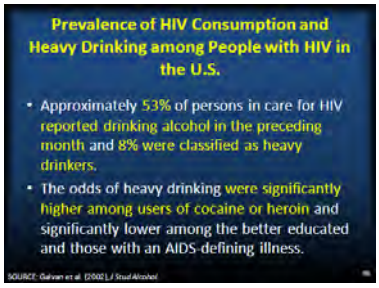
Additional Information for the Trainer(s)

People who drink alcohol tend to delay getting tested for HIV and, if they do test positive, tend to postpone seeking treatment. And when receiving HIV treatment, alcohol abusers may have difficulty following a complex medication regimen.

REFERENCES:

1. Lefevre, F., O'Leary, B., Moran, M., et al. (1995). Alcohol consumption among HIV-infected patients. *Journal of General Internal Medicine, 10*(8), 458–460.
2. Samet, J.H., Phillips, S.J., Horton, N.J., et al. (2004). Detecting alcohol problems in HIV-infected patients: Use of the CAGE questionnaire. *AIDS Research and Human Retroviruses, 20*(2), 151–155.
3. NIAID. (2004). *Women's Health in the United States: Research on Health Issues Affecting Women.* NIH Pub. No. 04–4697. Bethesda, MD: Author.

(Notes for Slide 58, continued)	**Slide 58: Alcohol and HIV – Overview**  REFERENCES, continued: 4. Windle, M. (1997). The trading of sex for money or drugs, sexually transmitted diseases (STDs), and HIV-related risk behaviors among multi-substance using alcoholic inpatients. *Drug and Alcohol Dependence, 49*(1), 33–38. 5. Avins, A.L., Woods, W.J., Lindan, C.P., et al. (1994). HIV infection and risk behaviors among heterosexuals in alcohol treatment programs. *Journal of the American Medical Association, 271*(7), 515–518. 6. Boscarino, J.A., Avins, A.L., Woods, W.J., et al. (1995). Alcohol-related risk factors associated with HIV infection among patients entering alcoholism treatment: Implications for prevention. *Journal of Studies on Alcohol, 56*(6), 642–653. 7. Malow, R.M., Dévieux, J.G., Jennings, T., et al. (2001). Substance-abusing adolescents at varying levels of HIV risk: Psychosocial characteristics, drug use, and sexual behavior. *Journal of Substance Abuse, 13,* 103–117.



Slide 59: Prevalence of HIV Consumption and Heavy Drinking among People with HIV in the U.S.

The objective of the Galvan et al. study was to establish population-based estimates of the prevalence of any alcohol consumption and heavy drinking among individuals who tested positive for human immunodeficiency virus (HIV) and to identify the factors associated with alcohol consumption and heavy drinking in this population. Data from the HIV Cost and Services Utilization Study (HCSUS), a national probability survey of HIV-infected adults receiving medical care in the U.S. in early 1996 (N = 2,864: 2,017 men, 847 women), were used to estimate the prevalence of any alcohol consumption and heavy drinking. Logistic regression was used to identify independent influences of sociodemographic, health status, and substance use variables on alcohol consumption and heavy drinking. In conclusion, alcohol consumption is common among people in care for HIV, with rates of heavy drinking almost twice those found in the general population. Heavy drinking is especially higher among individuals with lower educational levels and users of cocaine or heroin.

REFERENCE:

Galvan, F.H., Bing, E.G., Fleishman, J.A., London, A.S., Caetano, R., Burnam, M.A., Longshore, D., Morton, S.C., Orlando, M. & Shapiro, M. (2002). The prevalence of alcohol consumption and heavy drinking among people with HIV in the United States: :Results from the HIV Cost and Services Utilization Study. *Journal of Studies on Alcohol, 63*(2), 179-86.

Slide 60: The Importance of Monitoring Alcohol Use among HIV-Positive Patients

Clinicians may often miss alcohol problems in patients with clinically stable HIV infection and those without evidence of liver disease, which underscores the importance of screening all patients for alcohol use. The role of the primary care clinician in the management of the patient who abuses alcohol or is dependent on alcohol is as follows: (1) identify the problem; (2) present the diagnosis; (3) work to engage and motivate the patient; and (4) participate in the initiation of treatment and continuum of care.

Slide 61: Alcohol Use and Risky Sexual Behaviors

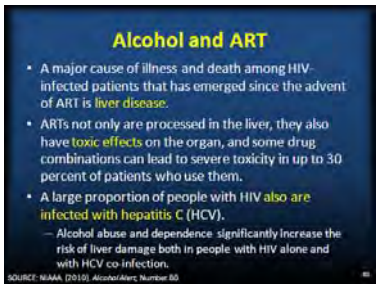
Individuals under the influence of alcohol may be more likely to engage in behaviors that place them at risk for acquiring STIs and transmitting HIV due to alcohol-induced disinhibition, diminished risk perception, and the belief that alcohol enhances sexual arousal and performance. Alcohol use at any level has been associated with increased sexual risk-taking among patients with HIV,30 and binge drinking among HIV-infected women has been correlated with increased sexual risk behavior.31 Clinicians should address safer-sex practices in the context of alcohol use, including a discussion about using barrier protection, how to speak with partners about safer sex, and the circumstances under which high-risk sexual behavior might occur.

Expectations about alcohol's effects may exert a more powerful influence on alcohol-involved sexual behavior. Studies consistently demonstrate that people who strongly believe that alcohol enhances sexual arousal and performance are more likely to practice risky sex after drinking (1-4).

Some people report deliberately using alcohol during sexual encounters to provide an excuse for socially unacceptable behavior or to reduce their conscious awareness of risk (2). According to McKirnan and colleagues, this practice may be especially common among men who have sex with men. This finding is consistent with the observation that men who drink prior to or during homosexual contact are more likely than heterosexuals to engage in high-risk sexual practices (5-8).

Finally, the association between drinking levels and high-risk sexual behavior does not imply that alcohol necessarily plays a direct role in such behavior or that it causes high-risk behavior on every occasion. For example, bars and drinking parties serve as convenient social settings for meeting potential sexual partners (7, 9). In addition, alcohol abuse occurs frequently among people whose lifestyle or personality predisposes them to high-risk behaviors in general (5, 10-11).

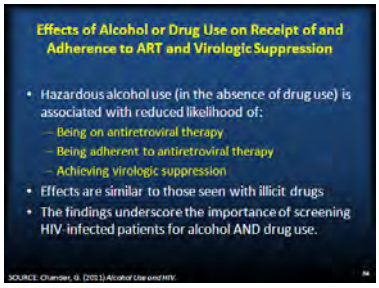
(Notes for Slide 61, continued)	**Slide 61: Alcohol Use and Risky Sexual Behaviors**  REFERENCES: 1. Cooper, M.L. (2002). Alcohol use and risky sexual behavior among college students and youth: Evaluating the evidence. Journal of Studies on Alcohol (Suppl. 14*), 1*01–117. 2. Dermen, K.H., Cooper, M.L., & Agocha, V.B. (1998). Sex-related alcohol expectancies as moderators of the relationship between alcohol use and risky sex in adolescents. *Journal of Studies on Alcohol 59*(1), 71–77. 3. George, W.H., Stoner, S.A., Norris, J., et al. (2000). Alcohol expectancies and sexuality: A self-fulfilling prophecy analysis of dyadic perceptions and behavior. *Journal of Studies on Alcohol 61*(1), 168–176. 4. Dermen, K.H. & Cooper, M.L. (2000). Inhibition conflict and alcohol expectancy as moderators of alcohol's relationship to condom use. *Experimental and Clinical Psychopharmacology 8*(2), 198–206. 5. Avins, A.L., Woods, W.J., Lindan, C.P., et al. (1994). HIV infection and risk behaviors among heterosexuals in alcohol treatment programs. *Journal of the American Medical Association, 271*(7), 515–518. 6. Stall, R., McKusick, L., Wiley, J., et al. (1986). Alcohol and drug use during sexual activity and compliance with safe sex guidelines for AIDS: The AIDS Behavioral Research Project. *Health Education Quarterly 13*(4), 359–371. 7. Purcell, D.W., Parsons, J.T., Halkitis, P.N., et al. (2001). Substance use and sexual transmission risk behavior of HIV-positive men who have sex with men. *Journal of Substance Abuse 13*(1–2), 185–200. 8. Maslow, C.B., Friedman, S.R., Perlis, T.E., et al. (2002). Changes in HIV seroprevalence and related behaviors among male injection drug users who do and do not have sex with men: New York City, 1990–1999. *American Journal of Public Health 92*(3), 382–384. 9. Perry, M.J., Solomon, L.J., Winett, R.A., et al. (2000). High risk sexual behavior and alcohol consumption among bar-going gay men. *AIDS 8*(9), 1321–1324.

(Notes for Slide 61, continued)	**Slide 61: Alcohol Use and Risky Sexual Behaviors** REFERENCES, continued: 10. Justus, A.N., Finn, P.R., & Steinmetz, J.E. (2000). The influence of traits of disinhibition on the association between alcohol use and risky sexual behavior. *Alcoholism: Clinical and Experimental Research 24*(7), 1028–1035. 11. Stall, R., Paul, J.P., Greenwood, G., et al. (2001). Alcohol use, drug use and alcohol-related problems among men who have sex with men: The Urban Men's Health Study. *Addiction 96*(11), 1589–1601.
	**Slide 62: Alcohol's Effect on HIV Virus Growth** HIV-positive people who drink heavily and who are not on anti-HIV drugs tend to have lower CD4 counts (a measure of immune system function) than moderate drinkers. While the same difference in CD4 count isn't true for heavy drinkers who are taking anti-HIV drugs, they are more likely to miss doses of their treatment than those who abstain from drinking alcohol.
	**Slide 63: Alcohol and ART** Alcohol use has been associated with decreased adherence to anti-retroviral therapy. Studies have varied in the measurement of alcohol consumption, and a dose-response relationship has not been defined; however, hazardous or risky alcohol use has been shown to negatively influence adherence by causing patients to miss doses or take medications off schedule (1-3). In one study, hazardous and binge drinkers were more likely to have detectable viral load (4), which may be attributable to diminished adherence. Alcohol intake is a modifiable risk factor for decreased adherence.

(Notes for Slide 63, continued)	**Slide 63: Alcohol and ART** Clinicians should routinely ask patients about alcohol consumption during adherence assessments. Screening for alcohol use can be accomplished with a few simple questions to identify patients who will benefit from further interventions. HIV patients who have liver disease are sometimes with the grim choice of continuing ART to prevent the progression of the virus to AIDS—thereby risking further liver damage—or stopping ART to prevent liver damage and progressing to AIDS. Research suggests that alcohol may interfere directly with ART medications used for HIV, essentially blocking their effectiveness (5). Moreover, patients who drink are nine times more likely to fail to comply with their medication regimens compared with sober patients (6-7). When HIV-infected drinkers fail to take their medications or do not take them correctly, it can lead to a higher viral load and an increasing likelihood that the virus will become resistant to the therapy. ART, alcohol consumption, and HIV infection can be harmful in other ways as well. HIV patients typically experience declines in organ function earlier in life than do uninfected people. And because people with HIV tend to drink heavily well into their middle and older years, these organs are even more at risk for injury. For example, both HIV infection and certain types of ART medications increase a person's risk for heart disease, because they change the balance of different fats—such as cholesterols—in blood, induce inflammation, and affect the blood-clotting process. Both excessive alcohol use and infection with hepatitis C virus further enhance the risk. Also, the medicines used to treat cholesterol problems can be particularly harmful when taken by patients with liver damage from alcohol abuse or hepatitis C virus. Heavy alcohol consumption (more than six drinks per day) has been linked to heart disease in HIV-infected people; thus, stopping or cutting down on their drinking may help to reduce the risk of heart disease (8). **Additional Information for the Trainer(s)** Alcohol can also damage the liver, and a healthy liver is important for the body to process some antiretroviral medicines effectively. The blood fat increases caused by some anti-HIV drugs can be made worse by heavy drinking. There are no significant interactions between any of the currently available anti-HIV drugs and alcohol but alcohol can react badly with certain medicines (e.g. rifampicin, rifabutin, metronidazole).

(Notes for Slide 63, continued)	**Slide 63: Alcohol and ART** **Additional Information for the Trainer(s)** It is important to check with your pharmacist that alcohol is safe to drink with any medicines you are prescribed. All patients with hepatitis C virus (HCV) infection who use alcohol should be educated about the effects of alcohol on the course of HCV and HIV infection. Patients with HCV and heavy alcohol intake have increased progression of hepatic fibrosis and increased risks of cirrhosis, hepatocellular carcinoma, and death.  REFERENCES: 1. Bryant, K.J., Nelson, S., Braithwaite, R.S., & Roach, D. (2010). Integrating HIV/AIDS and alcohol research. *Alcohol Research and Health, 33*(3), 167–178. 2. Braithwaite, R.S. & Bryant, K. (2010). Influence of alcohol consumption on adherence to and toxicity of antiretroviral therapy and survival. *Alcohol Research and Health, 33*(3), 280–287. 3. Braithwaite, R.S., McGinnis, K.A., Conigliaro, J., et al. (2005). A temporal and dose-response association between alcohol consumption and medication adherence among veterans in care. *Alcoholism: Clinical and Experimental Research, 29*(7), 1190–1197. 4. Barve, S., Kapoor, R., Moghe, A., Ramirez, J.A., Easton, J.W., Gobejishvili, L., Joshi-Barve, S., & McClain, C.J. Focus on the liver: Alcohol use, highly active antiretroviral therapy, and liver disease in HIV-infected patients. *Alcohol Research and Health, 33*(3), 229–236. 5. Pandrea, I., Happel, K.I., Amedee, A.M., Bagby, G.J., & Nelson, S. (2010). Alcohol's role in HIV transmission and disease progression. *Alcohol Research and Health, 33*(3), 203–218. 6. Palepu, A., Tyndall, M.W., Li, K., et al. (2003). Alcohol use and incarceration adversely affect HIV-1 RNA suppression among injection drug users starting antiretroviral therapy. *Journal of Urban Health, 80*(4), 667–675. 7. Parsons, J.T., Rosof, E., & Mustanski, B. (2008). The temporal relationship between alcohol consumption and HIV-medication adherence: A multilevel model of direct and moderating effects. *Health Psychology, 27*(5), 628–637.

(Notes for Slide 63, continued)	**Slide 63: Alcohol and ART**  REFERENCES, continued: 8. Freiburg, M.S. & Kraemer, K.L. (2010). Focus on the heart: alcohol consumption, HIV infection, and cardiovascular disease. *Alcohol Research and Health, 33*(3), 237–246.

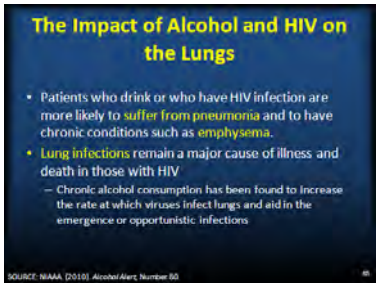


Slide 64: Effects of Alcohol or Drug Use on Receipt of and Adherence to ART and Virologic Suppression

Alcohol consumption among HIV-infected individuals has been shown to be associated with decreased antiretroviral adherence. Studies report a range of adherence (>95% adherence) between 25% and 57% among those with varying levels of alcohol use (current, moderate, at-risk, heavy), compared to 56% and 76% in nondrinkers.

Chander and colleagues (2011) looked at the effects of alcohol and drug use on receipt of and adherence to ART and virologic supporession. Hazardous alcohol use is defined as more than 7 drinks per week or more than 3 drinks per occasion for women of any age and for men older than 65 years. In men aged 65 years or younger, hazardous use is defined as more than 14 drinks per week or more than 4 per occasion. Data from a study of approximately 1,700 patients at the Johns Hopkins HIV Clinic showed that **hazardous alcohol use (in the absence of drug use) was associated with reduced likelihood of being on or being adherent to antiretroviral therapy and reduced likelihood of achieving virologic suppression**. This study has several implications. First, it demonstrates that hazardous alcohol use alone affects ART utilization, adherence, and viral suppression. The effect of hazardous drinking on these outcomes is similar to illicit drugs. This underscores the importance of screening not only for illicit drugs among HIV-infected individuals but also alcohol use. Furthermore, the independent effect of alcohol on HIV outcomes may have practical implications for HIV-infected individuals with a history of hazardous drinking only. Brief alcohol interventions have been successful in primary care settings in decreasing alcohol consumption among individuals with hazardous alcohol use. This intervention strategy may be effective in decreasing alcohol use and improving outcomes among HIV-infected persons who have a history of hazardous alcohol use. However, in those individuals who use both illicit drugs and alcohol, interventions targeting only one substance of abuse may prove to be inadequate as both independently affect HIV treatment outcomes. In summary, hazardous levels of alcohol use were associated with decreased antiretroviral utilization, adherence, and viral suppression independent of active drug use. Combined alcohol and drug use was associated with lower odds of adherence and viral suppression than either drugs or alcohol alone. Regular screening for alcohol use, brief alcohol interventions, and treatment referral may improve antiretroviral uptake, adherence, and viral suppression in this group. Future studies examining the relationship between different patterns of alcohol use and HIV outcomes may further clarify the role of alcohol in HIV disease progression.

(Notes for Slide 64, continued)	**Slide 64: Effects of Alcohol or Drug Use on Receipt of and Adherence to ART and Virologic Suppression**  REFERENCES: 1. Chander, G. (2011). Addressing alcohol use in HIV-infected persons. *Alcohol Use and HIV, 19*(4), 143–147. 2. Howard, A.A.; Arnsten J.H.; Lo, Y.; et al. (2002). A prospective study of adherence and viral load in a large multi-center cohort of HIV-infected women. *AIDS, 16*, 2175–2182. 3. Arnsten, J.H., Demas, P.A., Grant, R.W., et al. (2002). Impact of active drug use on antiretroviral therapy adherence and viral suppression in HIV-infected drug users. *Journal of General Internal Medicine, 17*, 377–381. 4. Braithwaite, R.S., McGinnis, K.A., Conigliaro, J., et al. (2005). A temporal and dose-response association between alcohol consumption and medication adherence among veterans in care. *Alcohol: Clinical and Experimental Research, 29*, 1190–1197. 5. Samet, J.H., Horton, N.J., Meli, S., et al. (2004). Alcohol consumption and antiretroviral adherence among HIV-infected persons with alcohol problems. *Alcohol: Clinical and Experimental Research, 28*, 572–577. 6. Palepu, A., Tyndall, M.W., Li, K., et al. (2003). Alcohol use and incarceration adversely affect HIV-1 RNA suppression among injection drug users starting antiretroviral therapy. *Journal of Urban Health, 80*, 667–675. 7. Cook, R.L., Sereika, S.M., Hunt, S.C., et al. (2001). Problem drinking and medication adherence among persons with HIV infection. *Journal of General Internal Medicine, 16*, 83–88. 8. Golin, C.E., Liu, H., Hays, R.D., et al. (2002). A prospective study of predictors of adherence to combination antiretroviral medication. *Journal of General Internal Medicine, 17*, 756–765. 9. Berg, K.M., Demas, P.A., Howard, A.A., et al. (2004). Gender differences in factors associated with adherence to antiretroviral therapy. *Journal of General Internal Medicine, 19*, 1111–1117.

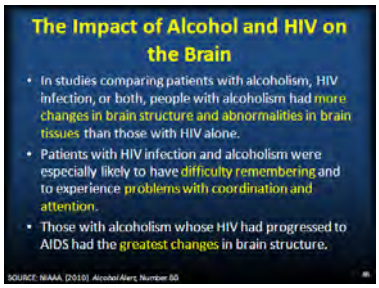


Slide 65: The Impact of Alcohol and HIV on the Lungs

Scientists do not yet know if alcohol and HIV together raise the risk for injury to the lung. However, studies using animals suggest that this combination does indeed increase the risk for problems. Lung infections remain a major cause of illness and death in those with HIV. Opportunistic infections are rare viruses that infect only people whose immune systems are weakened by a condition like HIV infection.

REFERENCES:

1. Bagby, G.J., Stoltz, D.A., Zhang, P., et al. (2003). The effect of chronic binge ethanol consumption on the primary stage of SIV infection in rhesus macaques. *Alcoholism: Clinical and Experimental Research, 27*, 495–502.
2. Quintero, D. & Guidot, D.M. (2010). Focus on the lung. *Alcohol Research and Health, 33*(3), 219–228.



Slide 66: The Impact of Alcohol and HIV on the Brain

Advances in imaging techniques have revealed another organ at risk for HIV and alcohol injury—the brain. Alcohol can act directly on the brain to reduce inhibitions and diminish risk perception. Alcohol may also increase the severity of AIDS-related brain damage, which is characterized in its severest form by profound dementia and a high death rate.

REFERENCES:

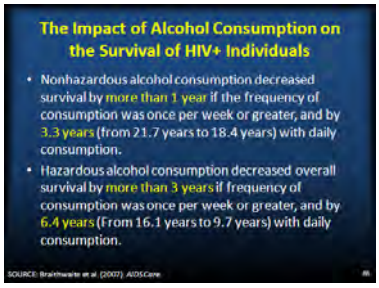
1. Fauci, A.S. & Lane, H.C. (2001). Human immunodeficiency virus (HIV) disease: AIDS and related disorders. In: Braunwald, E.; Fauci, A.S.; Kasper, D.L.; et al. (Eds.). *Harrison's Principles of Internal Medicine, 15th Edition*. New York, NY: McGraw-Hill, pp. 1852–1913.
2. Meyerhoff, D.J. (2001). Effects of alcohol and HIV infection on the central nervous system. *Alcohol Research & Health 25*(4), 288–298.

Slide 67: Indirect Effects of Alcohol on Increasing HIV Risk

This slide reviews several possible indirect effects of alcohol on increasing HIV risk, including the settings in which alcohol is often abused, the high-risk behaviors that coincide with the abuse of alcohol, and the use of alcohol in combination with other illicit substances and prescription medications.

REFERENCES:

1. MacDonald, T.K., MacDonald, G., Zanna, M.P., &Fong, G.T. (2000). Alcohol, sexual arousal, and intentions to use condoms in young men: Applying alcohol myopia theory to risky sexual behavior. *Health Psychology 19*(3), 290–298.
2. Fromme, K., D'Amico, E., & Katz, E.C. (1999). Intoxicated sexual risk taking: An expectancy or cognitive impairment explanation? *Journal of Studies on Alcohol 60*(1), 54–63.
3. Cooper, M.L. (2002). Alcohol use and risky sexual behavior among college students and youth: Evaluating the evidence. *Journal of Studies on Alcohol (Suppl. 14*), 101–117.



Slide 68: The Impact of Alcohol Consumption on the Survival of HIV+ Individuals

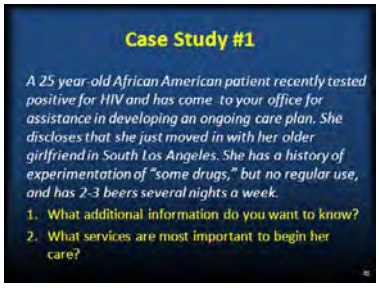
Alcohol consumption is associated with decreased antiretroviral adherence, and decreased adherence results in poorer outcomes. However the magnitude of alcohol's impact on survival is unknown. Our objective was to use a calibrated and validated simulation of HIV disease to estimate the impact of alcohol on survival. Braithwaite and colleagues incorporated clinical data describing the temporal and dose-response relationships between alcohol consumption and adherence in a large observational cohort (N2,702). Individuals were categorized as nondrinkers (no alcohol consumption), hazardous drinkers (consume 5 or more standard drinks on drinking days), and nonhazardous drinkers (consume less than 5 standard drinks on drinking days). The results suggest that alcohol is an underappreciated yet modifiable risk factor for poor survival among individuals with HIV.

REFERENCE:

Braithwaite, R.S., Conigliaro, M.S., Roberts, M.S., Shechter, S., Shaefer, A., McGinnis, K., Rodriguez, M.C., Rabeneck, L., Bryant, K., & Justice, A.C. (2007). Estimating the impact of alcohol consumption on survival for HIV individuals. *AIDS Care, 19*(4), 459–466.

Slide 69: Alcohol Treatment as HIV Prevention

Excessive drinking within the HIV-infected population is associated with numerous adverse effects; thus, interventions to prevent alcohol misuse in this population are urgently needed. Decreasing alcohol use among HIV patients not only reduces the medical and psychiatric consequences associated with alcohol consumption but also decreases other drug use and HIV transmission. Thus, alcohol and other drug abuse treatment can be considered primary HIV prevention as well.



Slide 70: Case Study #1

1. ***Read the case study aloud.***
2. ***Ask participants to break into pairs or small groups (depending on the size of the audience), and spend 5-10 minutes discussing the questions.***
3. ***De-brief as a full group for 5-10 minutes. Ask for volunteers to briefly share responses to the two questions.***

Slide 71 *[Transition Slide]*: Effective Behavioral Treatment Interventions for Alcohol Abuse

The following section pertains to effective behavioral treatment interventions for alcohol abuse. Behavioral treatments help engage people in substance use disorders treatment, modifying their attitudes and behaviors related to alcohol and other drug abuse and increasing their life skills to handle stressful circumstances and environmental cues that may trigger intense craving for alcohol and drugs and prompt another cycle of compulsive abuse. Moreover, behavioral therapies can help people remain in treatment longer. Behavioral interventions—particularly, cognitive-behavioral therapy—have been shown to be effective for decreasing alcohol and drug use and preventing relapse. Length of time in treatment is the #1 predictor of a successful treatment experience. The longer you can keep a person engaged in treatment, the more likely he/she is to be successful. Treatment must be tailored to the individual patient's needs in order to optimize outcomes—this often involves a combination of treatment, social supports, and other services. Early engagement techniques should be utilized to ensure that the client comes back for his/her group and individual sessions.

Slide 72: Four Legs of Addiction

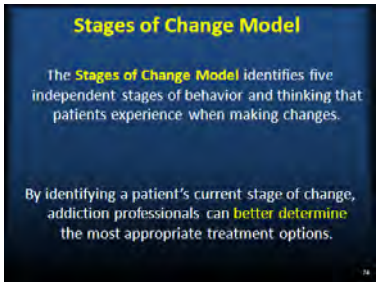
Alcohol dependence is affected by many factors, including development, physiology, genetics, social influence, personality, coping discrepancies, spiritual values, reinforcement, conditioning, abuse, self-regulated use, and dependence. All of these factors point to initial use, and can be linked to one or more other factors. A person's treatment plan should be holistic in nature and address the multiple needs of the individual, such as sexual orientation, gender differences, homelessness, family dynamics, children/prenatal care, legal issues, disabilities, employment issues, developmental needs, co-occurring disorders, and cultural, racial/ethnic, and religious norms.

****ANIMATION INSTRUCTIONS****

Please note the animation contained within this slide. Trainers should practice delivering the material on this slide in advance of the training, so they are comfortable with the order in which the animation and text appear on the slide.

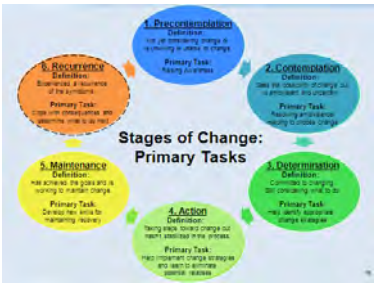
Slide 73: Treatment Planning

Treatment planning involves a series of steps or special considerations, including: (1) information gained during an initial assessment –physical history, treatment history, ability to manage medications; (2) role of the prescriber – does the patient have an existing relationship with a prescriber? Can the patient be appropriately monitored during treatment? Are there other medications that will interact?; (3) fits with the patient – effectiveness and treatment goals; (4) current level and type of substance abuse – interactions with other substances; (5) treatment compliance – previous experience with other pharmacotherapies and psychosocial therapy; and (6) ability to pay – insurance coverage, out-of-pocket, Medicare/ Medicaid, etc.



Slide 74: Stages of Change Model

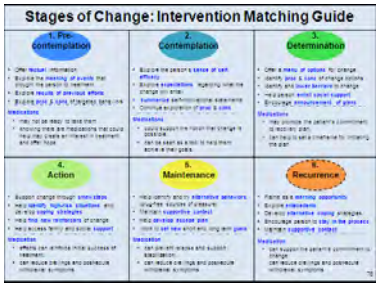
James Prochaska and colleagues developed the transtheoretical model beginning in the late 1970s. The model is based on an analysis of different theories of psychotherapy, hence the name "transtheoretical." In the transtheoretical model, change is a process involving progress through a series of stages. By identifying where the person is in terms of their readiness to change, we can tailor interventions (including the use of medicines) specifically to that person.



Slide 75: Stages of Change – Primary Tasks

This graphic depicts the five stages of change, and primary tasks associated with each stage. The stages of change represent ordered categories along a continuum of motivational readiness to change a problem behavior, such as alcohol or opioid use.

- In precontemplation, an individual is either unaware that a problem exists OR they see the problem but have no desire to make a change.
- In contemplation, an individual recognizes the problem and is thinking about changing, but is ambivalent about making the change. They see the benefits of change AND of staying the same.
- In determination (also called preparation for action), an individual recognizes the problem and intends to change the behavior. In this stage, they are exploring options for how to take action to make the change.
- In the action state, the individual is immersed in doing the work of actually making the change. This is where the word of traditional substance use disorder treatment takes place.
- In the maintenance phase, an individual learns strategies to sustain the new behavior for a longer term.
- Finally, in recurrence (also called Relapse), the individual returns to an earlier stage of change. This may include a return to use or simply beginning to contemplate returning to old behaviors.



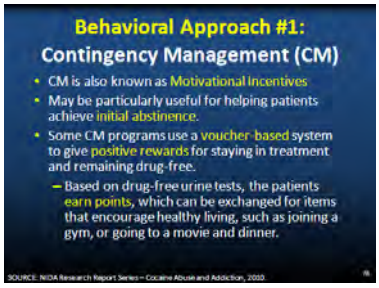
Slide 76: Stages of Change – Intervention Matching Guide

Medication assisted treatment has utility for people at each stage of change. This chart shows general treatment activities that may be helpful for people at each stage of change. Additionally information about how medications may be useful are included. For instance, someone in precontemplation may be helped by offing factual information in order to raise awareness about the nature of the problem that they are facing. While the individual may not be ready to take medications even if they are appropriate for them, providing information about they medications may spark an interest in treatment and offer additional hope that change is possible. For someone in determination, medication may help support the commitment to engaging in recovery activities and help initiate initial abstinence. For someone in maintenance, medications can help prevent relapse to illicit substance use and reduce cravings that can make continued abstinence difficult.

This chart can be a useful tool with all patients to help tailor your interventions to the individual.

Slide 77: Behavioral Interventions

It is critical to emphasize that pharmacotherapies that are FDA-approved for treatment of alcohol or opioid addiction should be used in conjunction with psycho-social-educational-spiritual therapy. Therefore, medications can be used as a part of treatment, but only one part.



Slide 78: Behavioral Approach #1 – Contingency Management (CM)

Contingency management is a tool to enhance treatment and facilitate recovery, and is used as an adjunct to other therapeutic clinical methods. CM targets specific behaviors that are part of a patient treatment plan. CM helps to celebrate the success of behavioral changes chosen by therapist and patient. CM can be used to help motivate patients through stages of change to achieve an identified goal.

<table>
<tr>
<td> 
</td>
<td>Slide 79: Behavioral Approach #2 – Cognitive Behavioral Therapy (CBT)

CBT seeks to help patients recognize, avoid, and cope with the situations in which they are most likely to abuse drugs. Thoughts cause feelings and behaviors, not external things, like people, situations, and events. You can change the way we think to feel / act better even if the situation does not change.</td>
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<td>Slide 80: Behavioral Approach #3 – Therapeutic Communities (TCs)

Peer influence is used to help individuals learn and assimilate social norms and develop more effective social skills. Treatment staff and those in recovery are key agents of change. The second fundamental TC principle is "self-help," which implies that the individuals in treatment are the main contributors to the change process.</td>
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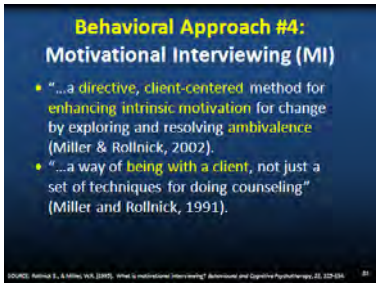


Slide 81: Behavioral Approach #4 – Motivational Interviewing (MI)

Compared with non-directive counseling, motivational interviewing is more focused and goal-directed. The examination and resolution of ambivalence is its central purpose, and the counselor is intentionally directive in pursuing this goal.

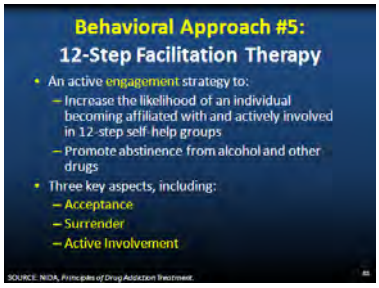
Additional Information for the Trainer(s) regarding the "MI Spirit"

The spirit of MI can be characterized in a few key points. The following information was excerpted directly from www.motivationalinterview.org:

1. *Motivation to change is elicited from the client, and not imposed from without.* Other motivational approaches have emphasized coercion, persuasion, constructive confrontation, and the use of external contingencies (e.g., the threatened loss of job or family). Such strategies may have their place in evoking change, but they are quite different in spirit from motivational interviewing which relies upon identifying and mobilizing the client's intrinsic values and goals to stimulate behavior change.
2. *It is the client's task, not the counselor's, to articulate and resolve his or her ambivalence.* Ambivalence takes the form of a conflict between two courses of action (e.g., indulgence versus restraint), each of which has perceived benefits and costs associated with it. Many clients have never had the opportunity of expressing the often confusing, contradictory and uniquely personal elements of this conflict, for example, "If I stop smoking I will feel better about myself, but I may also put on weight, which will make me feel unhappy and unattractive." The counselor's task is to facilitate expression of both sides of the ambivalence impasse, and guide the client toward an acceptable resolution that triggers change.
3. *Direct persuasion is not an effective method for resolving ambivalence.* It is tempting to try to be "helpful" by persuading the client of the urgency of the problem about the benefits of change. It is fairly clear, however, that these tactics generally increase client resistance and diminish the probability of change (Miller, Benefield and Tonigan, 1993, Miller and Rollnick, 1991).
4. *The counseling style is generally a quiet and eliciting one.* Direct persuasion, aggressive confrontation, and argumentation are the conceptual opposite of motivational interviewing and are explicitly proscribed in this approach. To a counselor accustomed to confronting and giving advice, motivational interviewing can appear to be a hopelessly slow and passive process. The proof is in the outcome. More aggressive strategies, sometimes guided by a desire to "confront client denial," easily slip into pushing clients to make changes for which they are not ready.

(Notes for Slide 81, continued)	**Slide 81: Behavioral Approach #4 – Motivational Interviewing (MI)** 5. *The counselor is directive in helping the client to examine and resolve ambivalence.* Motivational interviewing involves no training of clients in behavioral coping skills, although the two approaches not incompatible. The operational assumption in motivational interviewing is that ambivalence or lack of resolve is the principal obstacle to be overcome in triggering change. Once that has been accomplished, there may or may not be a need for further intervention such as skill training. The specific strategies of motivational interviewing are designed to elicit, clarify, and resolve ambivalence in a client-centered and respectful counseling atmosphere. 6. *Readiness to change is not a client trait, but a fluctuating product of interpersonal interaction.* The therapist is therefore highly attentive and responsive to the client's motivational signs. Resistance and "denial" are seen not as client traits, but as feedback regarding therapist behavior. Client resistance is often a signal that the counselor is assuming greater readiness to change than is the case, and it is a cue that the therapist needs to modify motivational strategies. 7. *The therapeutic relationship is more like a partnership or companionship than expert/recipient roles.* The therapist respects the client's autonomy and freedom of choice (and consequences) regarding his or her own behavior.
	**Slide 82: MI – Basic Principles and Micro-Skills** The strategic goals of MI are to: (a) resolve ambivalence; (b) avoid eliciting or strengthening resistance; (c) elicit “Change Talk” from the client; (d) enhance motivation and commitment for change; and (e) help the client move through the Stages of Change. A series of MI micro-skills (which will be described on the next slide) can be used to move a patient/client through the Stages of Change to elicit and reinforce self-motivational statements (a.k.a., Change Talk).

(Notes for Slide 82, continued)	**Slide 82: MI – Basic Principles and Micro-Skills** Empathy may be the most crucial principle. It creates an environment conducive to change, instills a sense of safety and a sense of being understood and accepted, and reduces defensiveness. Empathy sets the tone within which the entire communication occurs. Without it, other components may sound like mechanical techniques. By developing discrepancy, the clinician can help the client to become more aware of the discrepancy between their addictive behaviors and their more deeply-held values and goals. Part of this is helping client to recognize and articulate negative consequences of use. It is more effective if the *client* does this, not the clinician. With regards to rolling with resistance, in general, it is not helpful to argue with clients. Confrontation elicits defensiveness, which predicts a lack of change. It is particularly counter-therapeutic for a clinician to argue that there is a problem while the client argues that there isn't one. The client does not need to accept a diagnostic label (e.g. "addict" or "alcoholic") for change to occur. Supporting self-efficacy can be conceptualized as a specific form of optimism, that is, a "can-do" belief in one's ability to accomplish a particular task or change. This principle is crucial to help the client see and experience his/her own ability to make positive changes. Part of this is the *clinician* believing in the client's ability to change. Open-ended questions: (a) solicits information in a neutral way; (b) helps the person elaborate his/her own view of the problem and brainstorm possible solutions; (c) helps the therapist avoid prejudgments; (d) keeps communication moving forward; (e) allows the client to do most of the talking. Affirmations should be focused on achievements of the individual, and are intended to: (a) support the individual's persistence; (b) encourage continued efforts; (c) assist the individual in seeing the positive in the situation; and (d) support the individual's proven strengths. With reflective listening, one should: (a) listen to both what the person <u>says</u> and to what the person <u>means</u>; (b) check out assumptions; (c) create an environment of empathy (nonjudgmental); and (d) be aware of intonation (statement, not question). The clinician does not have to agree with the client. Summaries capture both sides of the ambivalence (You say that _____ but you also mentioned that _____.) They demonstrate the clinician has been listening carefully. Summaries also prompt clarification and further elaboration from the person. Lastly, summaries prepare clients to move forward.



Slide 83: Behavioral Approach #5 – 12-Step Facilitation Therapy

Acceptance includes the realization that drug addiction is a chronic, progressive disease over which one has no control, that life has become unmanageable because of drugs, that willpower alone is insufficient to overcome the problem, and that abstinence is the only alternative. Surrender involves giving oneself over to a higher power, accepting the fellowship and support structure of other recovering addicted individuals, and following the recovery activities laid out by the 12-step program. While the efficacy of 12-step programs (and 12-step facilitation) in treating alcohol dependence has been established, the research on other abused drugs is more preliminary but promising for helping drug abusers sustain recovery. Twelve-step meeting dates, times, and locations can be found by visiting: http://www.aa.org (Alcoholics Anonymous); www.ca.org (Cocaine Anonymous); www.na.org (Narcotics Anonymous).

REFERENCES:

1. Carroll, K.M., Nich, C., Ball, S.A., McCance, E., Frankforter, T.L., & Rounsaville, B.J. (2000). One-year follow-up of disulfiram and psychotherapy for cocaine and alcohol users: Sustained effects of treatment. *Addiction 95*(9), 1335–1349.
2. Donovan D.M. & Wells E.A. (2007). Tweaking 12-step: The potential role of 12-Step self-help group involvement in methamphetamine recovery. *Addiction, 102*(Suppl. 1), 121–129.
3. Project MATCH Research Group. (1997). Matching alcoholism treatments to client heterogeneity: Project MATCH posttreatment drinking outcomes. *Journal of Studies on Alcohol, 58*(1), 7–29.

	**Slide 84 *[Transition Slide]*: Effective Medical Treatment Interventions for Alcohol Abuse** The following section pertains to effective medical treatment interventions for alcohol addiction. Medication assisted treatment (MAT) is any alcohol addiction treatment that includes an FDA-approved medication for the detoxification or maintenance treatment of alcohol addiction. MAT may be provided in an OTP, a medication unit affiliated with an OTP, a physician's office, or another health care setting. It includes comprehensive maintenance, medical maintenance, interim maintenance, detoxification, and medically supervised withdrawal. MAT increases the likelihood for cessation of alcohol.
	**Slide 85: How can we Treat Alcohol Addiction?** Medications that are used to treat alcohol addiction can help to reduce the agitation associated with post-acute withdrawal, block the pleasurable effects of alcohol, or discourage drinking by making the making the person sick if they drink.

Slide 86: MAT – What do you think?

**Audience Response System (ARS)-compatible slide

Medication can be an effective part of treatment. The idea that medications cannot be a part of addiction treatment is held both by some treatment programs and by some individual practitioners. The reality is that medications are used in the treatment of many chronic, relapsing diseases, including addiction. Medical decisions must be made by trained and certified medical providers. It is important to remember that it is beyond the scope of practice for most substance use disorders treatment providers to make specific recommendations about medications. All medical decisions should be made by a medical provider who has received specific training for the treatment of these conditions. Lastly, decisions about the use of medications should be based on an objective assessment of the individual client's needs.

Additional Information for the Trainer(s)

The pharmacotherapies that are FDA-approved for treatment of addiction should be used in conjunction with psycho-social-educational-spiritual therapy. Therefore, medications can be used as a part of treatment, but only one part.

It is important to emphasize the fourth key point. It is beyond the scope of practice for most substance use disorders treatment providers to make specific recommendations about medications. All medical decisions should be made by a medical provider who has received specific training for the treatment of these conditions.

Slide 87: MAT – What do you think?

**Audience Response System (ARS)-compatible slide

The SUD treatment field needs to change its terminology to reflect current trends. "Drugs" are illicit psychoactive substances that are used to achieve a "high." "Medications," on the other hand, are available by prescription and are used to treat an illness, disorder, or disease. For example, millions of Americans use Zyban or nicotine patches to quit smoking, and this practice is widely encouraged by addiction professionals. The goal of SUD treatment is to assist a client in stopping his or her compulsive use of drugs or alcohol and live a normal, functional life. If appropriately administered, medication-assisted treatment for addiction will not produce euphoric effects. Clinical data suggest that clients perform better in treatment when psycho-social-educational-spiritual therapy is combined with appropriate pharmacotherapies. This myth relates to the previous myth and is one of the reasons that people believe that medications should not be a part of treatment. It is CRITICAL to emphasize that there is a difference between physical dependence on a substance and addiction. Anyone who takes certain kinds of medications (opioids, certain blood pressure meds, etc.) for an extended period of time will become physically dependent on the medication. This means that they will have withdrawal symptoms if they suddenly stop taking it. This does not mean that they are addicted. Addiction is defined as a collection of symptoms that may include physical dependence, but requires other behavioral symptoms indicating loss of control over use, exacerbation of problems because of use and continued use despite negative consequences.

Slide 88: MAT – What do you think?

**Audience Response System (ARS)-compatible slide

AA/NA literature and founding members did not speak or write against using medications. In fact, AA/NA endorses participants to use medicines as prescribed for the treatment of medical conditions. In Chapter 9 of the Big Book, it says: "But this does not mean that we disregard human health measures. God has abundantly supplied this world with fine doctors, psychologists, and practitioners of various kinds. Do not hesitate to take your health problems to such persons. Most of them give freely of themselves, that their fellows may enjoy sound minds and bodies. Try to remember that though God has wrought miracles among us, we should never belittle a good doctor or psychiatrist. Their services are often indispensable in treating a newcomer and in following his case afterward." *[Chapter 9, p. 133 (emphasis added)].*

Additional Information for the Trainer(s)

http://www.na.org/?ID=bulletins-bull29 - This is the 1996 NA bulletin about methadone. It seems to indicate that people who attend NA meetings on methadone treatment should not speak and cannot lead meetings. Some NA groups are hostile to methadone treatment.

Slide 89: MAT – What do you think?

**Audience Response System (ARS)-compatible slide

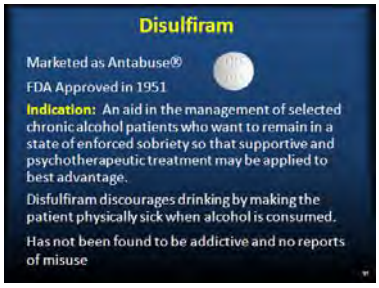
MAT is believed to be less effective than the research suggests, partly because our experience is based on the cases we've seen. The classic Clinician's Illusion results from seeing "prevalence" sample – those currently with disease. The probability that a case will appear in a prevalence sample is proportional to its duration, thus clinicians thus biased toward cases of long duration and therefore greater intractability. In correctional settings we tend to be exposed most to severe cases and relapsers who return often ("frequent flyers"). Patients who get better generally do not return to these settings. This situation produces a cognitive bias (availability bias) in which our pessimism is formed by remembering severe cases who relapse and return.

(SOURCE: http://www.nida.nih.gov/Infofacts/TreatMeth.html).

Formal clinical trials research has demonstrated the efficacy of each of the medications that have been FDA approved for addiction treatment. Some of this data will be reviewed during the remainder of this training. We tend to have a biased perception that patients who improve, leave the program and are forgotten, while those patients who do *not* improve return frequently and are remembered. This perception leads us to think that most patients do not improve…contrary to scientific data.

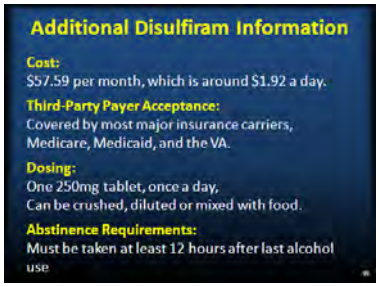
Slide 90 *[Transition Slide]*: Disulfiram

Disulfiram is marketed under the trade name of Antabuse®.



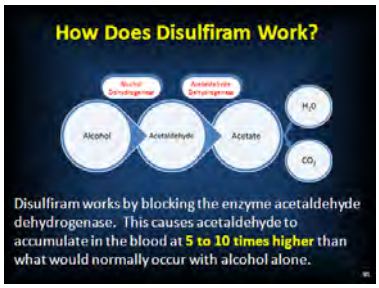
Slide 91: Disulfiram

Disulfiram was approved by the FDA in 1951. It works by maintaining a state of enforced sobriety. It does this by making the individual sick of they consume alcohol. Disulfiram has no known addictive properties and there have been no reports of misuse.



Slide 92: Additional Disulfiram Information

Disulfiram is fairly inexpensive (about $2 per day) and is covered by most insurers, Medicaid, Medicare and the VA. Dosing is failry easy as it requires only one pill once per day and it can be crushed and mixed in liquid or food for people who have difficulty swallowing pills. It is essential that the individual have been abstinent from all alcohol for at least 12 hours prior to the initial dose.



Slide 93: How Does Disulfiram Work?

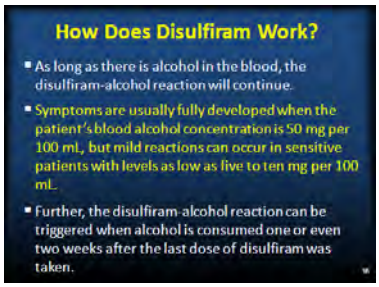
When an individual drinks alcohol, it is broken down in three stages. First, the enzyme Alcohol Dehydrogenase converts alcohol into Acetaldehyde. Acetaldehyde is actually a toxic compound and therefore must be broken down further and eliminated.

This occurs through the enzyme Acetaldehyde Dehydrogenase. It converts that acetaldehyde into acetate. Finally, Acetate is converted into water and carbon dioxide and eliminated from the body.

Disulfiram works by blocking the effect of acetaldehyde dehydrogenase. This causes a build of up the toxic acetaldehyde to levels 5-10 times greater than would normally occur of alcohol was breaking down normally.

Slide 94: [No Title]

This buildup leads to extremely unpleasant symptoms known as the disulfiram-alcohol reaction. Take a look at this list of symptoms. In severe forms, the disulfiram-alcohol reaction can be very serious leading to respiratory suppression, heart attack, convulsions and even death.



Slide 95: How Does Disulfiram Work?

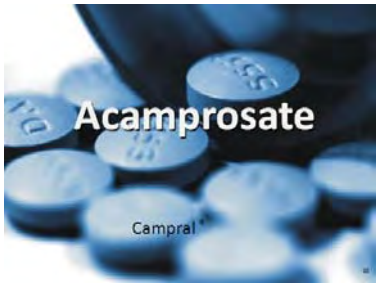
It's important to note that this reaction will continue for as long as there is alcohol remaining in the blood. The symptoms can occur in some very sensitive patients even with extremely low concentrations of alcohol. The reaction will also continue for 1-2 weeks following the last dose of disulfiram.

Slide 96: Disulfiram Contraindications

Generally, the severe reaction lasts 30-60 minutes, but it can continue for hours depending on how much alcohol is consumed. Because the disulfiram-alcohol reaction is potentially dangerous, it should never be administered to someone who has recently used alcohol. Additionally, patients should be warned against the use of other substances that contain alcohol such as cough syrup or tonics. Environmental exposure to cologne or perfume, solvents, paint or paint thinner, nail polish remover and similar substances may also case the person to become sick.

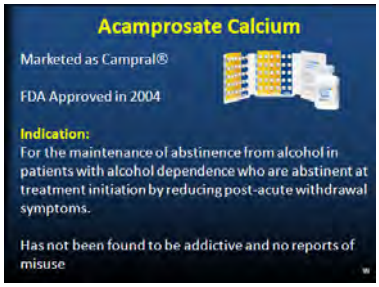
Slide 97: Research about Disulfiram

Research demonstrated that when compared to placebo, individuals receiving disulfiram were NOT more likely to maintain complete abstincence during the trial—probably because patients test themselves to see of alcohol does indeed make them sick. Results do demonstrate that those receiving disulfirm had fewer drinking days during the study, demonstrating its efficacy in helping people stay way from alcohol.



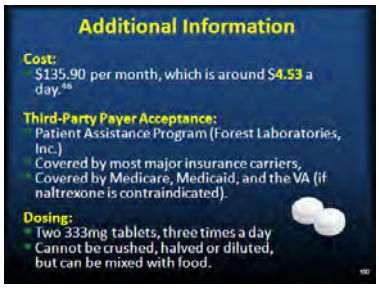
Slide 98 *[Transition Slide]*: Acamprosate

Acamprosate Calcium is marketed as Campral® by Forest Laboratories.



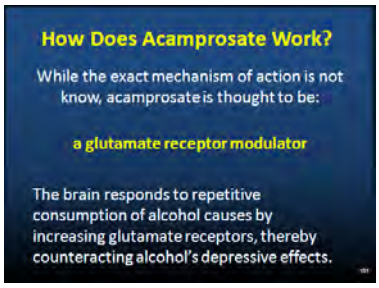
Slide 99: Acamprosate Calcium

Acamprosate was approved in 2004 for the maintenance of abstinence by reducing post-acute withdrawal symptoms. It has no known addictive properties.



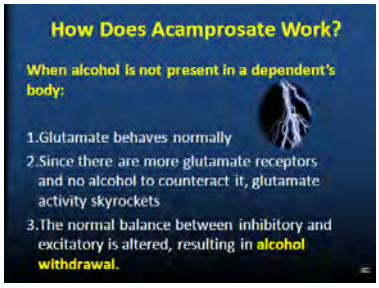
Slide 100: Additional Information

Acamprosate costs about $4.50 per day and is covered by most insurers including Medicaid and Medicare. The VA will cover the medication, but only if naltrexone is contraindicated for the patient. Forest Laboratories also offers a patient assistance program for those who cannot afford the medication. Dosing may be an issue for some patients. It requires taking two fairly large tablets three times per day. The tablets have a coating on them that allows them to pass through the stomach intact and then release the medication in the small intestines. Therefore, the tablets cannot be crushed.



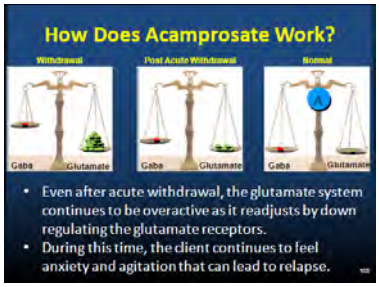
Slide 101: How Does Acamprosate Work?

It is not known exactly how acamprosate works, but it is thought be a glutamate receptor modulator. To understand what this means, let's review how alcohol works. When alcohol is repeatedly consumed the depressive effects of alcohol are counteracted by increasing the glutamate receptors. This energized the system and counteracts the alcohol present in the system.



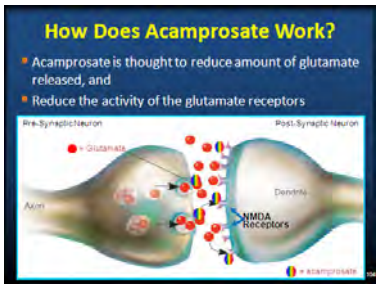
Slide 102: How Does Acamprosate Work?

When the person stops drinking, glutamate continues to behave normally. Because there is not alcohol present, this activity is way too high for normal functioning. Immediately, this results in acute alcohol withdrawal.



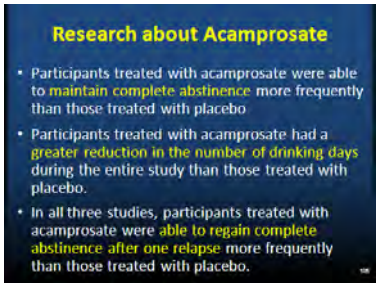
Slide 103: How Does Acamprosate Work?

After the acute withdrawal is resolved, it takes time for the glutamate to return to normal levels. During that time, the individual continues to feel anxious and agitated. This is a frequent source of relapse for individuals. Acamprosate helps to dampen the effects of glutamate and to help the individual feel more normal.



Slide 104: How Does Acamprosate Work?

Acamprosate is thought to inhibit glutamate overactivity, both by reducing the release of glutamate from the presynaptic nerve terminal, and by reducing the overactivation of glutamate receptors postsynaptically. Acamprosate "cushions" the brain against the stimuli and symptoms that often lead to relapse. In an individual who is committed to abstinence this can make the difference between success and failure in avoiding relapse.



Slide 105: Research about Acamprosate

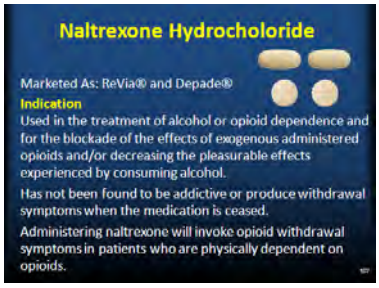
Four FDA studies were considered by the FDA in approving acamprosate for use. In summary, when compared to placebo, individuals treated with acamprosate were able to maintain complete abstinence throughout the trial more frequently. They had a greater reduction in the total number of drinking days during the trial, and among those who had a relapse, those treated with acamprosate were able to regain complete abstinence after only one relapse more frequently.

REFERENCES:

1. Pelc, I., Verbanck, P., Le Bon, O., et al. (1997). Efficacy and safety of acamprosate in the treatment of detoxified alcohol-dependent patients: A 90-day placebo-controlled dose-finding study. *British Journal of Psychiatry, 171*, 73–77.
2. Sass, H., Soyka, M., Mann, K., & Zieglgansberger, W. (1996). Relapse prevention by acamprosate: Results from a placebo-controlled study on alcohol dependence. *Archives of General Psychiatry, 53*, 673–680.
3. Paille, F.M., Guelfi, J.D., Perkins, A.C., et al. (1995). Double-blind randomized multicentre trial of acamprosate in maintaining abstinence from alcohol. *Alcohol, 30*, 239–247.
4. Mason, B.J., Goodman, A.M., Chabac, S., & Lehert, P. (2006). Effect of oral acamprosate on abstinence in patients with alcohol dependence in a double-blind, placebo-controlled trial: The role of patient motivation. *Journal of Psychiatric Research, 40*, 383−393.

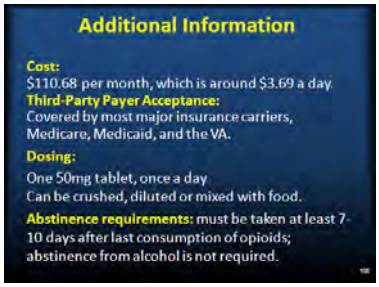
Slide 106 *[Transition Slide]*: Naltrexone

Natrexone is marketed under the trade names of Revia® and Depade®.



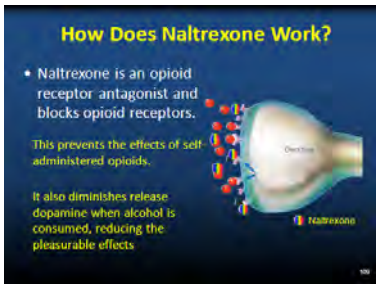
Slide 107: Naltrexone Hydrochloride

Naltrexone is approved for the treatment of alcohol or opioid dependence and works by blocking the effects of opioids and reducing the pleasurable effects of alcohol. It has no known addictive properties, but should only be administered to individuals who are abstinent from opioids.



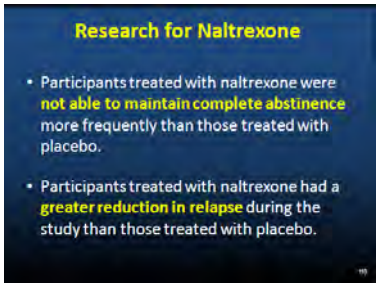
Slide 108: Additional Information

Naltrexone costs about $3.69 per day and is covered by most public and private insurers. Dosing requires taking one pill once per day and it can be crushed and/or mixed with food. Abstinence from opioids of at least 7-10 days is essential to avoid causing withdrawal symptoms. Abstinence from alcohol is not required prior to initiation.



Slide 109: How Does Naltrexone Work?

Naltrexone works as an opioid receptor antagonist. This means that it binds strongly to the opioid receptor. It does not cause an effect at the receptor site and block other opioids from stimulating the receptors. This prevents intoxicating effects from self-administered opioids. It also diminishes the pleasurable effects of alcohol.

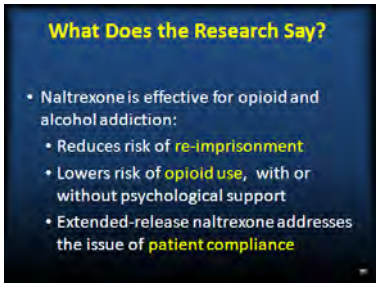


Slide 110: Research for Naltrexone

Research on using naltrexone for alcohol, demonstrated that when compared to placebo, naltrexone users were not able to maintain complete abstinence more frequently, but it did result in a great reduction in overall use during the course of the study.

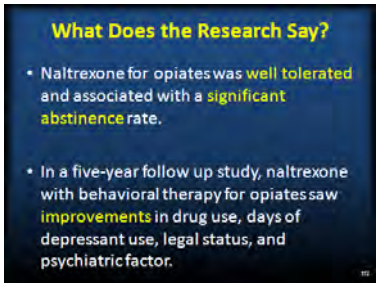
REFERENCES:

1. Volpicelli, J.R., Alterman, A.I., Hayashida, M., & O'Brien, C.P. (1992). Naltrexone in the treatment of alcohol dependence. *Archives of General Psychiatry* 49, 876–880.
2. O'Malley, S.S. (1995). Strategies to maximize the efficacy of naltrexone for alcohol dependence. In L.S. Onken, J.D. Blaine, & J.J. Boren (Eds.). *Integrating Behavioral Therapies with Medications in the Treatment of Drug Dependence, National Institute of Drug Abuse Monograph #150, NIH Publication No. 95-3899*. Bethesda, MD: National Institutes of Health, pp. 53–64.



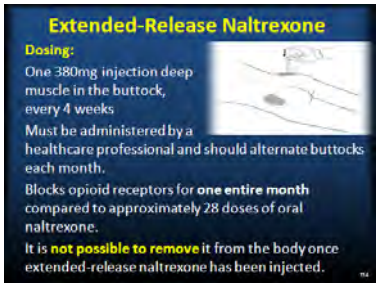
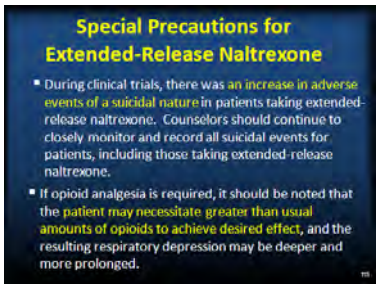
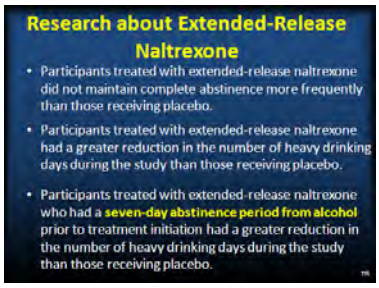
Slide 111: What Does the Research Say?

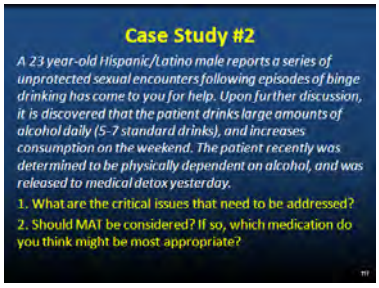
Studies of naltrexone have demonstrated that use of naltrexone reduces the risk of returning to opioid use and lowers the risk of re-imprisonment. Compliance is often an issue for patients, however. Providers should work with patients receiving the medication to develop strategies to increase medication compliance. By using the injectable form of the medication, compliance issues are reduced, due to the fact that once the injection is given, it continues to be clinically effective for a month.



Slide 112: What Does the Research Say?

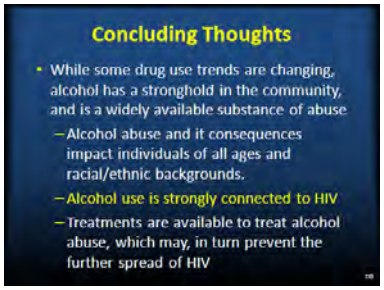
The primary side effect from the use of naltrexone is nausea (especially for the injectable form). However, tolerance usually develops quickly for this side effect. Generally, patients tolerated the medication well and people on active medication had lower rates of opioid use that those receiving placebo. Additional improvements in the treated group include lower use of CNS depressants , improved legal status, and lowered psychiatric symptoms.

	**Slide 113 *[Transition Slide]*: Naltrexone for Extended-Release Injectable Suspension** Extended-release naltrexone is marketed by Alkermes as Vivitrol®.
	**Slide 114: Extended-Release Naltrexone** Dosing with extended release naltrexone required one injection once per month. The medication the blocks the opioid receptors for 4 weeks—this would require 28 doses of oral naltrexone. Once it is in, there is no way to remove it. Therefore, the person is prevented from experiencing the effects of opioids and/or alcohol.
	**Slide 115: Special Precautions for Extended-Release Naltrexone** During the clinical trials, there was an increase in suicidal ideation (but not attempts) noted in patients receiving the extended release naltrexone. Counselors working with these patients should closely monitor for suicidal ideation. Additionally, if opioids are required for pain relief (in the case of emergency, for instance), it will require significantly more and the patient is likely to need respiratory support. Patients receive naltrexone in either oral or injectable form should be encouraged to carry an information card documenting that they are receiving the medication.
	**Slide 116: Research about Extended-Release Naltrexone** Research on the extended release formulation of naltrexone, demonstrated that when compared to placebo, patients receiving the medication. Did not maintain complete abstinence more frequently, but they did have a greater reduction in the total number of drinking days/opioid use. When used for alcohol, those with a 7-day abstinence period prior to the first injection had fewer heavy drinking days.



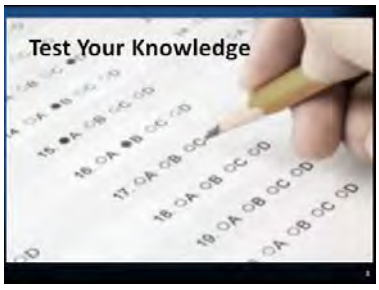
Slide 117: Case Study #2

1. ***Read the case study aloud.***
2. ***Ask participants to break into pairs or small groups (depending on the size of the audience), and spend 5-10 minutes discussing the questions.***
3. ***De-brief as a full group for 5-10 minutes. Ask for volunteers to briefly share responses to the two questions.***



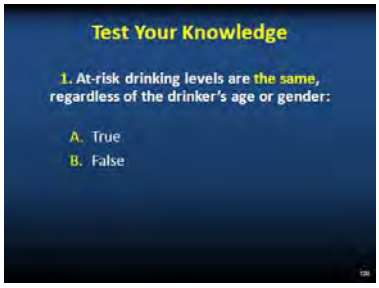
Slide 118: Concluding Thoughts

Alcohol abuse and its negative consequences impact individuals of all ages and racial/ethnic backgrounds. Behavioral and pharmacological treatments are available to treat alcohol addiction.



Slide 119: Test Your Knowledge

The purpose of the following five questions is to test the change in prescription opioid knowledge amongst training participants. The five questions are identical to the questions that appear on slides 4-8. Read each question and possible responses aloud, and give training participants time to jot down their response. Reveal the answers to each question once participants have had a chance to indicate their responses to each question.



Slide 120: Test Your Knowledge Question #1

Answer Key:

Correct response: **B (False)**

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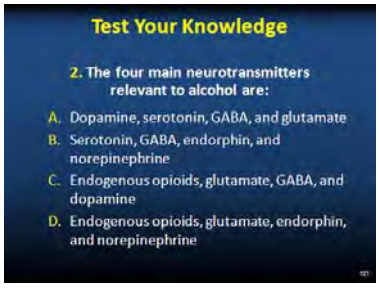
<td> 
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<td>Slide 121: Test Your Knowledge Question #2

Answer Key:

Correct response: C (Endogenous opioids, glutamate, GABA, and dopamine)

 
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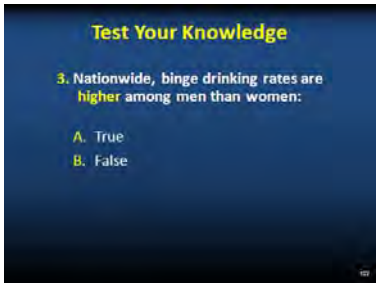
<td> 
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<td>Slide 122: Test Your Knowledge Question #3

Answer Key:

Correct response: A (True)

 
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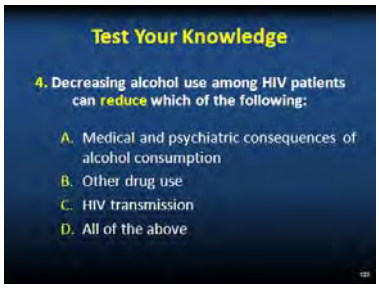
<td> 
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<td>Slide 123: Test Your Knowledge Question #4

Answer Key:

Correct response: D (All of the above)

 
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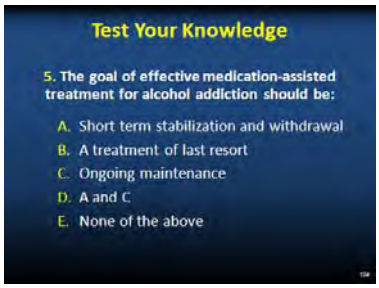
<td> 
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<td>Slide 124: Test Your Knowledge Question #5

Answer Key:

Correct response: D (A and C)

 
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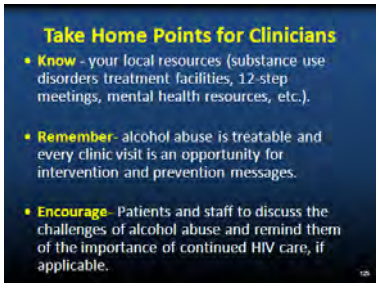
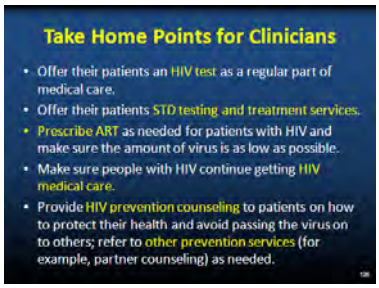


Slide 125: Take Home Points for Clinicians

It is important to be familiar with local resources, including substance use disorders treatment facilities, 12-step meetings, and mental health resources. Alcohol abuse impacts the user's brain and body, but can be treated. Continue to dialogue with patients about their alcohol use and the importance of continued HIV care.

Additional Information for the Trainer(s)

Alcohol-dependent patients should be referred to treatment programs. HIV clinicians should be familiar with local resources for substance-abuse treatment and related psychiatric care, including inpatient or residential treatment, outpatient treatment, and support groups such as Alcoholics Anonymous. In addition, clinicians should assess for potential withdrawal symptoms. Clinicians should also consider the use of pharmacotherapy in dependent individuals. Medications are available that target neurotransmitters involved in the reinforcing effects of alcohol use. Pharmacotherapy for alcohol dependence in combination with behavioral counseling can reduce relapse and help maintain abstinence. HIV clinics offer a number of advantages as a site for alcohol pharmacotherapy. These clinics are involved in long-term patient care, are generally characterized by integration of a variety of specialty services (eg, psychiatric and ob/gyn services), and have access to funding for prescription medications. Further, many HIV clinics use intensive case management models that promote outreach to and retention of patients who are often challenging to treat. However, currently there are no data on pharmacotherapy for alcohol dependence in patients with HIV infection, although a number of trials are under way. Further, pharmacotherapy for dependence has shown only modest efficacy in clinical trials.



Slide 126: Take Home Points for Clinicians

It is important to be familiar with local resources, including substance use disorders treatment facilities, 12-step meetings, and mental health resources. Alcohol abuse impacts the user's brain and body, but can be treated. Continue to dialogue with patients about their alcohol use and the importance of continued HIV care.

Slide 127: Key Resources

This slide features a few important resource documents that have been produced that focus on alcohol and HIV. The featured resources are available free of charge from state or federal sources.

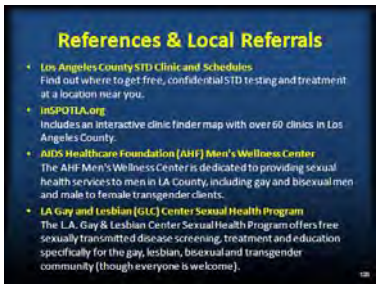
Additional Information for the Trainer(s)

Alcohol Research and Health is available at: http://pubs.niaaa.nih.gov/publications/arh333/toc33_3.htm.

Alcohol & HIV: A Mix You Can Avoid is available at: http://www.health.ny.gov/publications/9609.pdf.

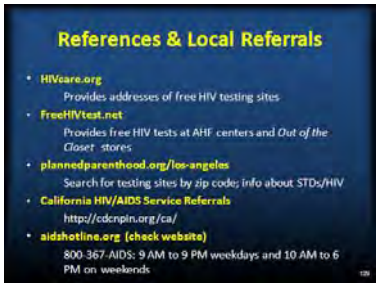
Beyond Hangovers: Understanding Alcohol's Impact on your Health is available at: http://pubs.niaaa.nih.gov/publications/Hangovers/beyondHangovers.pdf.

Rethinking Drinking: Alcohol and your Health is available at: http://rethinkingdrinking.niaaa.nih.gov.



Slide 128: References & Local Referrals

This slide features references and local referrals.



Slide 129: References & Local Referrals

This slide features references and local referrals.

Slide 130: Final Slide

This concludes the presentation. Thank the participants for their time and address any last-minute questions about the content. Encourage participants to reach out to the Pacific Southwest ATTC or Pacific AETC, should they have questions or concerns following the training session.

Acknowledgements

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At the time of writing, Thomas E. Freese, Ph.D. served as the Principal Investigator and Director of the Pacific Southwest Addiction Technology Transfer Center, based at UCLA Integrated Substance Abuse Program. Donna Doolin, LSCSW, Public Health Advisor, served the SAMHSA-CSAT Project Officer of the Addiction Technology Transfer Center Network.