# Tobacco and Opioid Dependence

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Some slides adapted from talks by:
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# Objectives


- Prevalence and health consequences of tobacco use among people with opiate use disorder (OUD)
- What works to help them quit
- Harm reduction
- Future research/practice

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Excellent Reference

CNS Drugs
https://doi.org/10.1007/s40263-020-00701-z

REVIEW ARTICLE

# Achieving Smoking Cessation Among Persons with Opioid Use Disorder

Cynthia Vlad[1] · Julia H. Arnsten[1] · Shadi Nahvi[1]



## Abstract

While prevalence of tobacco use in the US general population is declining, prevalence among those with opioid use disorder (OUD) remains high and results in excessive tobacco-related disease and premature mortality. Among smokers with OUD, tobacco cessation rates are negligible without treatment. However, both low-intensity behavioral interventions and more intensive motivational interventions yield negligible cessation rates. While contingency management has potent short-term cessation effects, effects are not maintained at post-intervention follow-up. Evidence-based smoking cessation pharmacotherapies, such as nicotine replacement therapy, bupropion, and varenicline, result in very modest cessation rates among smokers with OUD. Intensification of pharmacotherapy, such as high-dose and combination nicotine replacement therapy or extended medication treatment, has failed to improve cessation outcomes compared with standard treatment regimens. Targeting the unique challenges faced by smokers with OUD, including nicotine–opioid interactions and poor medication adherence, has potential to improve cessation outcomes, but further research is needed to optimize intervention efficacy among smokers with OUD.

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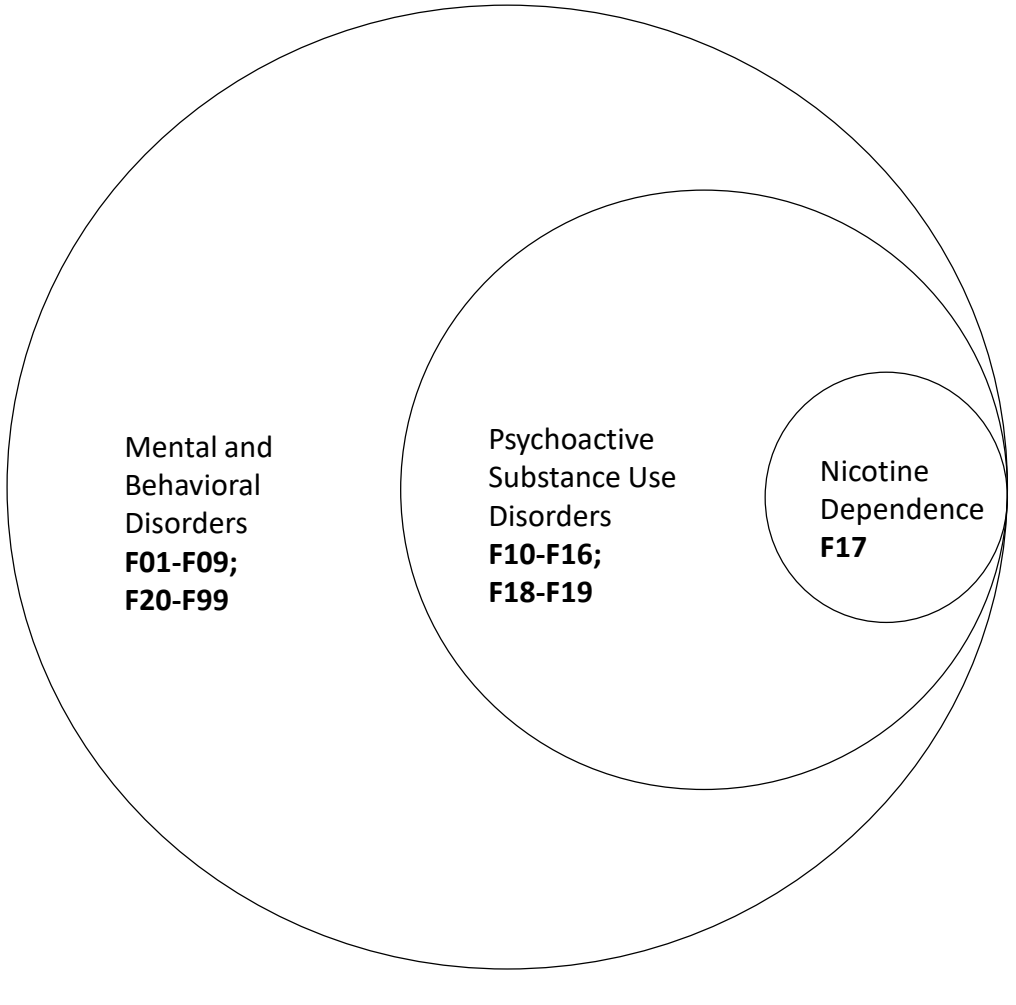
# People with MI consume over 40% of cigarettes smoked in U.S.

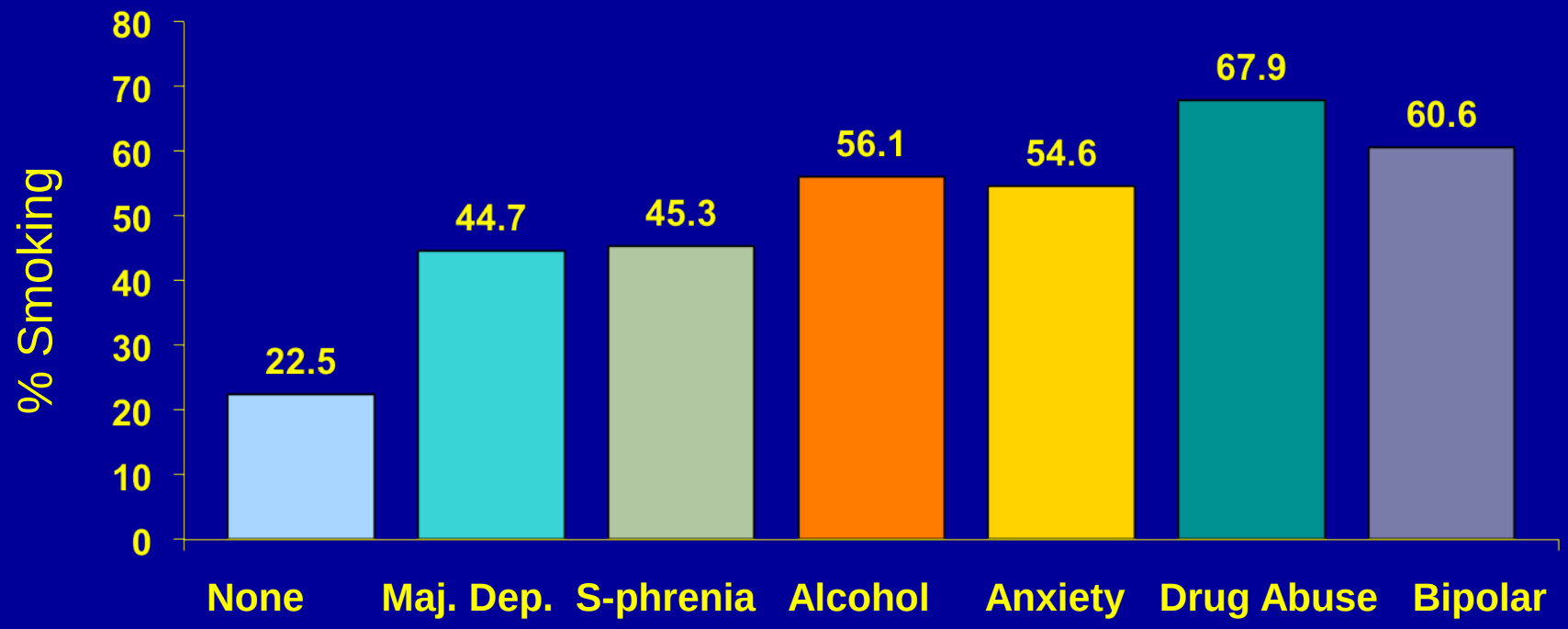
Lasser et al., 2000

# People Who Use Tobacco are People With a Diagnosed Mental Illness

ICD 10 Mental, Behavioral, and Neurodevelopmental Disorders
**F01-F99**

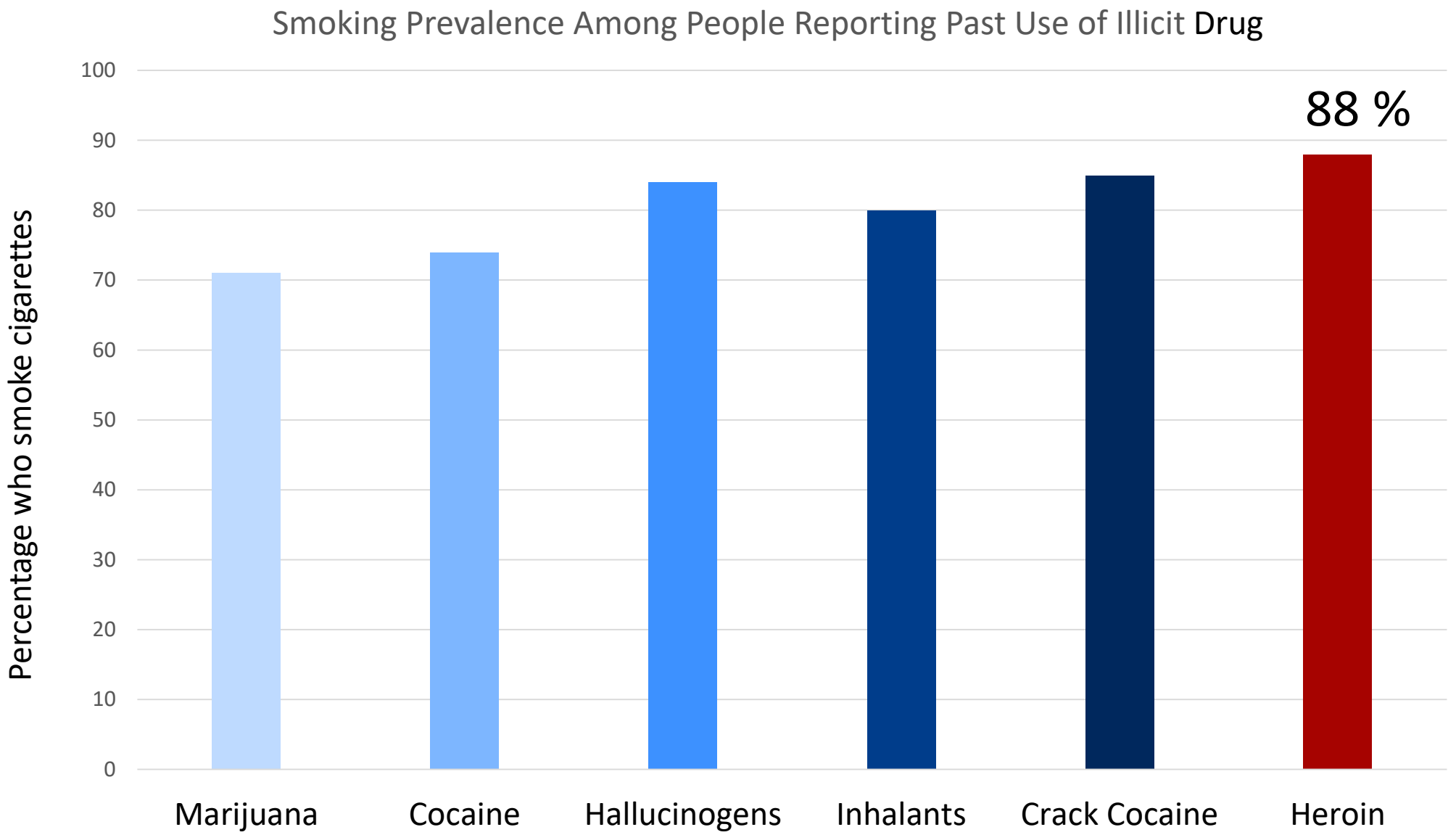


# Smoking by Diagnosis




Lasser et al., 2000

# Heroin users have highest prevalence

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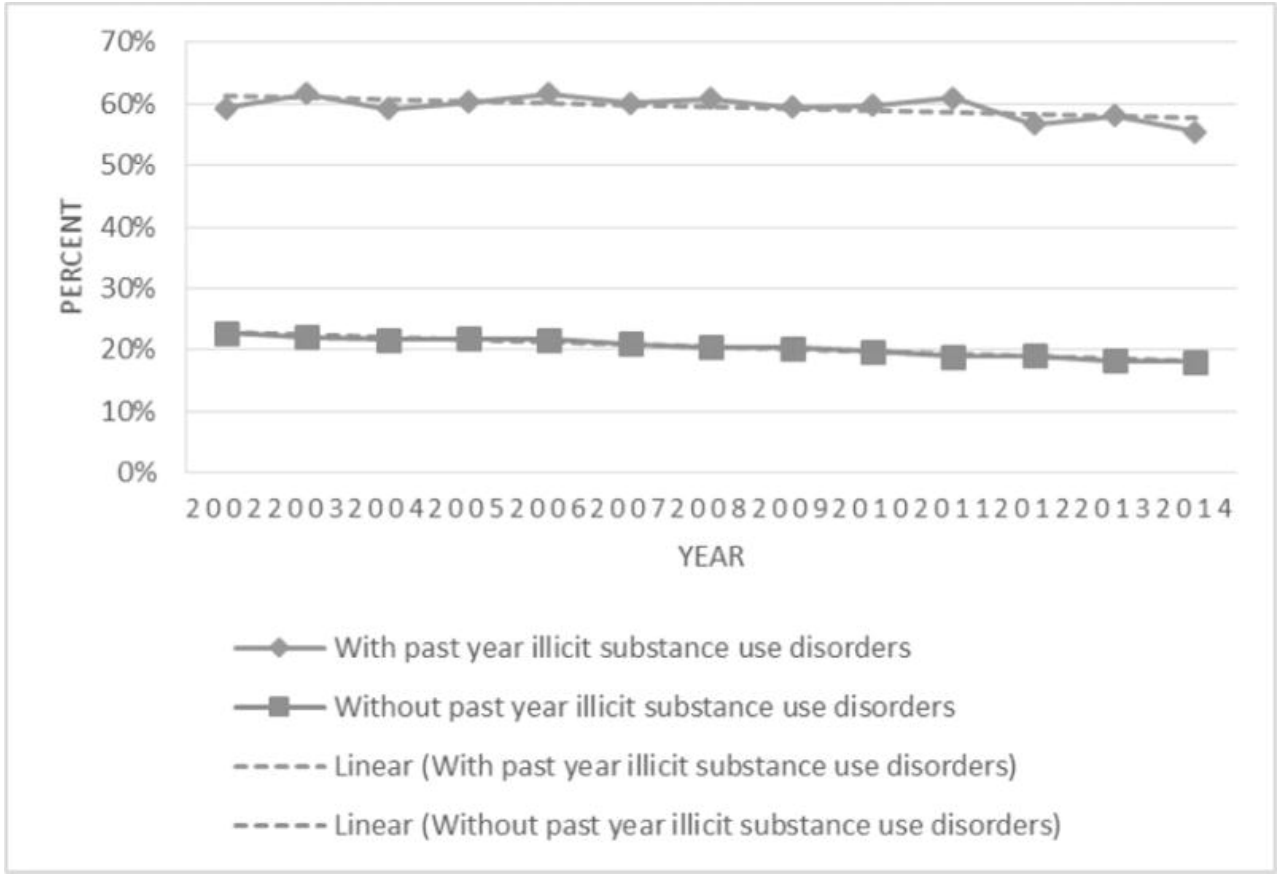
Richter et al., 2002

# Prevalence among people with SUD increasing

- From 2002-2014:
- Tobacco use 3 times higher for people with SUD than without
- Adjusting for age, race/ethnicity, income, marital status:
  - Prevalence significantly dropped among those with no SUD
  - Prevalence significantly increased among those with SUD
- Tobacco use disparity is widening for people with SUD

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Weinberger et al., 2018

# Smoking associated with prescription opioid use

## Smoking increases risk for OUD, or vice versa?

- Daily smokers 5 times more likely to report past-year nonmedical prescription opioid use than never smokers

- People with chronic pain—who are taking opioids properly as prescribed—are nearly twice as likely to smoke

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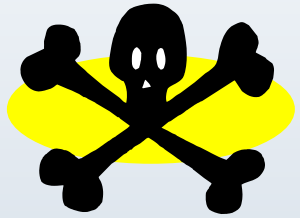
Zale et al., 2015; Cites 10-12 in Vlad et al., 2020

# Consequences of tobacco use among people with OUD



- Tobacco is a leading cause of death, with 24-year death rate 4x higher than non-smokers
- Continuing tobacco use increases risks for relapse to opioid use
- Among pregnant people in OUD treatment – tobacco use associated with
  - Low birth weight
  - Worse neonatal abstinence syndrome

Hser 1994 Weinberger et al., 2018; Vlad et al. Cites 20-22;

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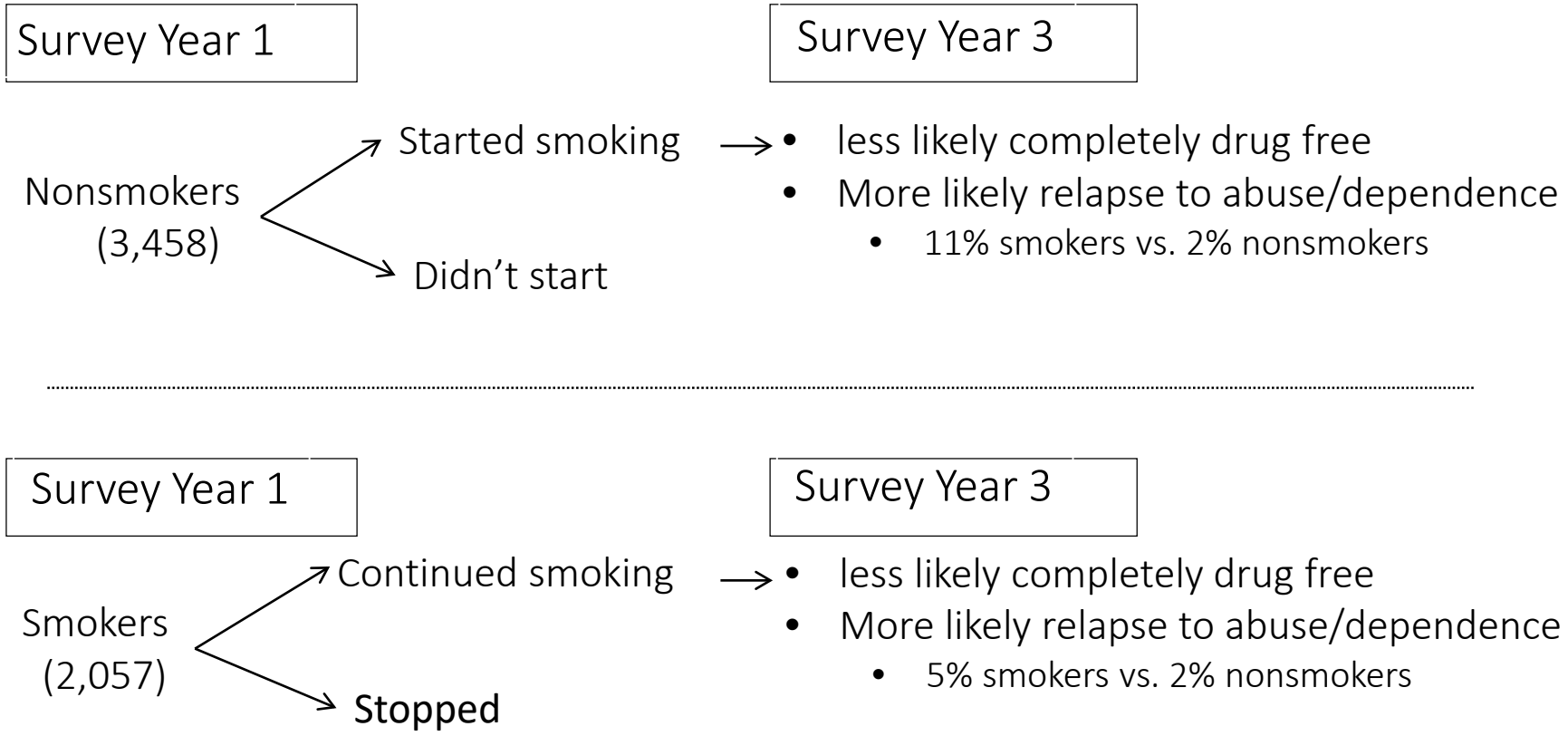
# Smoking threatens recovery, quitting promotes it

- Nat'l epi study: Tobacco use initiation or continuation increases risk of relapse to SUD
- Meta analysis of 19 RCTS: 25% increased likelihood of long term abstinence if quit smoking
- 175-person study: methadone patients in smoking cessation trial were more likely to have drug-free urines when abstinent from tobacco

Weinberger et al., 2017; Prochaska et al., 2004;  Shoptaw et al., 2002

# Quitting helps people get or stay drug-free

## Prospective community study of people with SUD:




Weinberger et al., 2017

# Most Smokers With OUD Want to Quit

- People with OUD consistently report interest and motivation to quit similar to smokers in general population

- Most have already tried to quit smoking many times

- Attempts to quit is a great predictor of future cessation

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Richter et al., 2001; Nahvi et al., 2006; Vlad et al., 2020 cites 25-29

# Why Quit?

I see my grandparents, my relatives that have all got emphysema. …They can't go to the mall. They can't go to dinner. … And I think why should I keep doing this s--t to me.

*Methadone treatment patient*

I don't want to get hurt and I don't want to hurt anyone else. … I have three babies. …I am falling asleep with cigarettes in my hand and that is the reality that I need to stop smoking.

*Methadone treatment patient*

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Richter et al., 2002

# Most programs fail to provide evidence-based care

**Multiple surveys of SUD, including OUD treatment programs:**

- 18-45% of programs say they provide cessation counseling
- 12-33% provide cessation pharmacotherapy
- Number of actual patients treated is very low

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Richter et al., 2004; Friedmann et al., 2008; Hunt et al., 2012


- Prevalence and health consequences of tobacco use among people with OUD
- What works to help them quit
- Harm reduction
- Future research/practice

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# People with OUD often excluded from trials


- Due to common exclusion criteria – many people with SUD not included in clinical trials
  - Cessation study results only generalize to 50% of tobacco users
  - People with OUD aren't represented
- Even studies including people with SUD exclude people on opioid agonist treatment
  - Methadone
  - buprenorphine

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Motschman et al., 2006 as cited in Vlad et al., 2020

# Cessation trials among people with OUD still miss many

- These trials include mainly people in OUD treatment
  - Methadone or buprenorphine
- Usually select smokers who are ”ready” to quit
- Usually select daily smokers
  - Nearly 1/3 Americans are non-daily smokers
- Exclude people not in treatment, ambivalent about quitting, and non-daily smokers

Vlad et al., 2020

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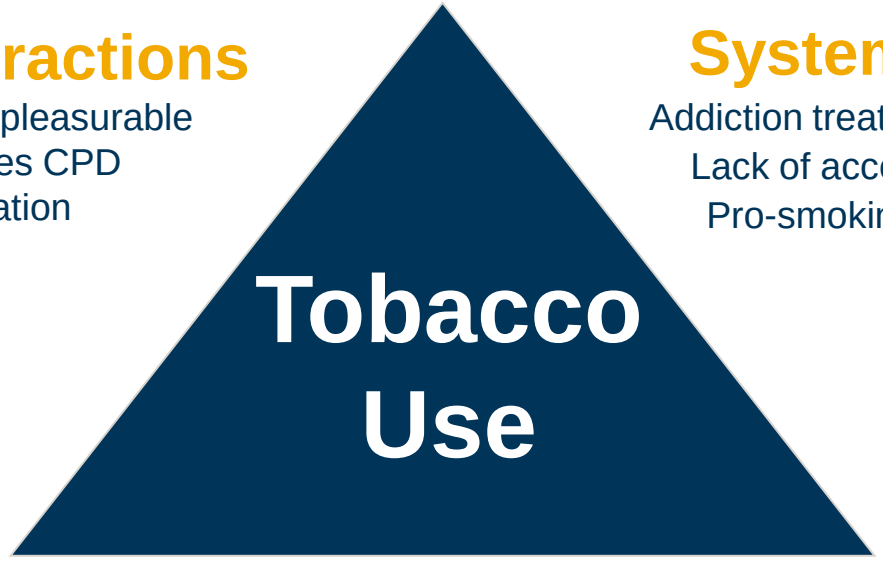
# Smokers with OUD face many barriers to cessation

## Nicotine-Opioid Interactions

Nicotine may make opioids more pleasurable
Changing opioid dose changes CPD
Nicotine may combat sedation




## Systemic & Treatment

Addiction treatment rarely addresses tobacco
Lack of access to cessation medications
Pro-smoking social norms among staff

## Individual-Level

High burden of chronic disease/chronic pain
Psychiatric co-morbidity/distress
Social network with lots of smokers

Adapted from: Vlad et al., 2020

# Patients are overwhelmed

"The high burden of chronic medical illness among individuals with OUD may limit utilization of evidence-based cessation pharmacotherapy by:

- increasing pill burden,
- increasing side effects, and
- through risk perceptions that prioritize other medical concerns over tobacco-related risks"

Vlad et al., 2020

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# Many staff/admins are not supportive

"Unless you ask them (staff) about addressing the tobacco situation then they will address it—but if you never say anything then they would never say anything about it."

*– Client in treatment for SUD*

"If some client was dying from emphysema or something it might end up on the treatment plan."

*—Staff of SUD program*

Hunt et al., 2012

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# What Works—

# Overall Findings

**From surveys**:

- A very percentage people with OUD are former smokers—meaning it's possible to quit
  - People with OUD make frequent quit attempts
  - But most don't quit

**In clinical trials:**

- None in "control" groups quit smoking—treatment is critical
- Low-intensity behavioral interventions are insufficient
- Current evidence-based interventions yield modest quit rates

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Richter et al., 2001; Nahvi et al., 2006; Vlad et al., 2020

# Low-intensity interventions don’t work

- Brief counseling, or brief counseling + quitline referral
  - 0% quit rates at follow up
  - This includes:
    - Brief interventions based on the “5 As”
    - Referral to quitline
- Motivational interviewing achieves modest (single-digit) quit rates

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Vlad et al., 2020

# Why doesn’t low-intensity work?

**Maybe…**

- Don’t address the many barriers to cessation
- Unstable telephone access
- Don’t address physical dependence
- Adherence to in-person therapy is low

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Adapted from Vlad et al., 2020

*“The experience of smoking for me, when I’m jonesing and I take in that first hit, it’s like scratching an itch. It’s like taking a drink on a really thirsty day. It’s like taking a breath of air when you’ve had your head under water and you pop back up.”*

*Methadone patient*

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Richter et al., 2002

# Contingency Management

- Financial or other incentives contingent on abstinence
  - 2 large trials
  - Significantly higher quit rates compared to control at end of 12 weeks of treatment
  - All rapidly relapsed to smoking
- Effective at establishing initial abstinence
- Need to find ways to extend abstinence

Vlad et al., 2020; Shoptaw et al., 2002; Sigmon et al., 2016;

# Medications for smokers with OUD


- In study arms without medication, cessation is negligible

- Nicotine replacement therapy achieves quit rates half those found in general population – around 10% at end of treatment
  - Participants rapidly relapse when pharmacotherapy stops

- High-dose, combination, and extended NRT achieve 75% lower quit rates than they achieve in the general population of smokers

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Vlad et al., 2020; Reid JSAT, 2008; Nahvi et al., Addiction, 2014

# Bupropion/Varenicline

- Very limited data for Bupropion
  - Small uncontrolled pilot study of bupropion + gum + MI achieved 14% quit rates at 6 months
- Varenicline mixed, with rapid return to smoking at EOT:
  - Placebo-controlled trial
    - 6 months after treatment with varenicline
      - 10.5% getting varenicline were quit
      - 0% on placebo were quit
      - No psychiatric or cardiac serious adverse events (SAEs)
  - RCT comparing varenicline with combination NRT
    - Single-digit quit rates
  - Medication adherence a problem in Varenicline trials

Richter et al, 2005; Nahvi et al. 2014; Stein et al., 2013

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# One patients' method

" I avoided the boats, I concentrated on breathing. It seems whenever I got that serious nagging want or need for a cigarette, I'd just take 2-3 breaths and it'd go away. … The only thing I ever really correlated with smoking was drinking. If I just avoided the bars and the boats, I figured I had it made. Well, AND people that smoked. …So I bought a box of Nicoderms to help that craving, and the big breath. And I'm still not saying it was a walk in the park at all."

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Richter et al., 2002

# Why such low rates (~10%) among people with OUD?

**Maybe…**

- Limited treatment provision
- Limited social support (friends/family smoke)
- Short term, 1-shot treatment
- Poor adherence
- Opioid-nicotine interactions

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Adapted from Nahvi, 2019, SCLC Webinar

# Overall, with just 1 round of treatment…

| Treatment Options | Quit at 6-12 mos |
|---|---|
| Telephone Quitline | 13% |
| Group Counseling | 14% |
| Individual Counseling | 17% |
| 2-3 Sessions + Medication | 28% |
| Bupropion + Counseling | 23% |
| Patch + Counseling | 24% |
| Varenicline + Counseling | 33% |
| Combo Pharm + Counseling | 26%-37% |

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Fiore et al. Treating Tobacco Use and Dependence: Clinical Practice Guideline. USDHHS, 2008.

# BUT – Tobacco Dependence is Chronic, Relapsing Condition

- What if we treated it like chronic health conditions or addictions?
- Like blood pressure or depression – checked on status and adjusted treatment until it worked?
- What kinds of quit rates could we achieve?

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- Prevalence and health consequences of tobacco use among people with OUD
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# Harm Reduction


- Reduce tobacco toxin exposure
  - Reduce addictiveness
  - Reduce consumption of toxins
  - Reduce harmfulness of tobacco products
- Reduce harmful consequences of tobacco use
  - ?
- Electronic Nicotine Delivery Systems (ENDS – E-Cigs)

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Vlad et al., 2020


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# Address Unique Challenges/Opportunities

## Ongoing trials

- One placebo-controlled trial will test effects of nicotine nasal spray, varenicline on tobacco use during peak methadone effect
- Directly observed varenicline versus self-administered treatment on adherence

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Vlad et al., 2020; Winhusen et al.; Nahvi et al., 2014

# Future Research

- When is the best time to introduce tobacco treatment?
- How might tobacco treatment for people with OUD differ from those in treatment for other substance use?
- Is tobacco use/ability to quit differ by type of opioid used?
- What is interaction of pain, tobacco, opioid use?

Adapted from Vlad et al., 2020

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# Future Research–Optimizing Treatment

- How to engage smokers not ready to quit?
- How to enhance efficacy of existing treatments?
  - Treating like a chronic relapsing condition?
- Will increasing adherence to tobacco treatment (counseling/meds) increase abstinence?
- How can programs implement and sustain tobacco treatment?

Adapted from Vlad et al., 2020

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# Meet People Where They Are, But Don’t Leave Them There

- Proactively bring up tobacco use among clients
- Give people accurate information about the risks of tobacco use
- Give people accurate information about the benefits of quitting
- Normalize that it’s hard to quit
- Provide evidence-based treatment
  - With Varenicline or combination NRT

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# Treatment is Ethical

- Must do no harm
- Without assistance, most will continue to smoke
- Not addressing tobacco will cause more harm than addressing it
- Offer, not mandate, tobacco treatment
  - Keep smoking cessation on problem list
  - Motivate every few months using personal risks and discussing barriers
  - Let smoker decide timing

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[Hughes 2003]

# A Wellness Philosophy


To assist people to lead meaningful lives in their communities, we must promote behaviors that lead to health

Better World Advertising:
My Greatest Enemy Campaign, 2009

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# Questions/Comments?

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