NORTHWEST AIDS EDUCATION AND TRAINING CENTER

HIV and co-occurring addictive disorders

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Substance Use Disorders and HIV

- An estimated 44% of adults living with HIV/AIDS have alcohol and other drug use disorders, which is much higher than the general population(1)
  - Higher likelihood of engagement in risk behaviors that result in infection transmission (2),
  - Nonadherence with HAART treatment & faster decline (3, 4)
  - Liver complications (2,5)
- Substance abuse treatment can be effective in reducing these consequences (2, 6)

1. Bing, 2001; Orwat , 2011. 2. Palepu, 2005. 3. Conigliaro, 2004;
4. Chandler G, 2006. 5. Samet , 2007. 6. Kinkenberg & Sacks, 2004.

Prevalence of addictive disorders in HIV + individuals

- **Substance Use Disorders**: **40%** reported using an illicit drug other than marijuana over past 12 months(1)
- **Drug Dependence: 12%** screened positive during the previous 12 months [**4 to 6-fold** increase] (1).
- **Alcohol Use disorders**: The prevalence of AUDs among PLWHA is 2–4 times higher than among uninfected populations and ranges from 8% to 41% (2)

1. Bing EG et al 2001
2. Azar MM et al 2010

Screening for unhealthy alcohol use in primary care setting

- Unhealthy alcohol use is under-diagnosed in primary care.
- Single-item screening test recommended by the National Institute on Alcohol Abuse and Alcoholism (NIAAA) in primary care settings.
- **"How many times in the past year have you had X or more drinks in a day?"** where X is 5 for men and 4 for women. Response of ≥1 is positive.
- Single-question screen: 82% sensitive (95%, CI=73%–89%) & 79% specific (CI=73%–84%) for detection of unhealthy alcohol use.
- More sensitive (88%, CI=73%–95 %) but less specific (67%, CI=61%–72%) for the detection of a current alcohol use disorder. (1)

1. Smith PC and colleagues. Primary care validation of a single question alcohol screening test. *Journal General Internal Medicine* 2009;24(7):783–8

Screening tools for addiction in the primary care setting

CAGE-AID: C (cut down) G (guilty)
A (annoyed) E (eye-opener)

A Single-Question Screening Test for Drug Use in Primary Care (1)

- "How many times in the past year have you used an illegal drug or used a prescription medication for **nonmedical reasons**?"
- 100% sensitive and 73.5% specific for the detection of a drug use disorder.

1. Smith PC et al. *Arch Int Med* 2010

Methamphetamine and MSM

- Methamphetamine use is highly prevalent in MSM.
- Strong associations between methamphetamine use and HIV-related sexual transmission behaviors
- Increased incidence for HIV and syphilis compared to MSM who do not use the drug.
- Behavioral treatments produce sustained reductions in methamphetamine use & risky sexual behaviors among methamphetamine-dependent MSM. (1)
- Brief screening of methamphetamine use for MSM who seek physical, mental health and substance abuse services is recommended. Behavioral interventions that address methamphetamine use may range from brief interventions to intensive out-patient treatments

1. Shoptaw S., Reback, CJ. Methamphetamine use and infectious disease-related behaviors in men who have sex with men: implications for interventions. Addiction. 2007 Apr;102 Suppl 1:130-5.

Methamphetamine and HIV

- Among men who have sex with men (MSM) in L.A. County, methamphetamine use is associated with very high rates of HIV prevalence & sexual risk behaviors.
- HIV+ prevalence rate observed in street outreach studies (1):
  - **23%** = The lowest HIV prevalence rate observed among MSM contacted through street outreach who mentioned recent methamphetamine use
  - **42%** = MSM who used at least once a month for 6 months
  - **61%** = MSM seeking intensive outpatient treatment
  - **86%** = MSM seeking residential treatment for methamph dependence.

1. Shoptaw, S., Reback, CL. Associations between methamphetamine use and HIV among men who have sex with men: a model for guiding public policy. J Urban Health. 2006 Nov;83(6):1151-7.

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Methamphetamine psychosis

- Rate of psychosis due to meth in long-term users: 76-92% (1)
- Period of latency between initial use & onset of psychosis varies widely & is influenced by dose, freq. of consumption, route of administration, & individual vulnerability to psychosis.
- Rate of psychosis rises steeply when duration of meth use > 6 mo.
- Progressive qualitative alteration in mental symptoms from non-psychotic to pre-psychotic to severely psychotic state
- Relapse of psychosis occurs promptly after resuming meth use (Sensitization). Very long duration of vulnerability to relapse.

1. Ujike, 2004

Clinical features of psychotic symptoms in methamphetamine users

- Most common lifetime psychotic symptom was Persecutory delusions 77%
- Most common current psychotic symptom: Auditory hallucination 45%
- Current negative symptoms 21%

Physical signs of someone under the influence of methamphetamine

- Movements and actions of an individual using meth appear super-exaggerated.
- Darting eye movements.
- Body movements are quick & jerky and often exaggerated because of over-stimulation. Restless.
- Rapid speech, scattered thinking, paranoid thinking.
- Extremely labile and irritable
- *Formication*—the delusion of insects crawling under the skin. "crank bugs" or "meth mites."

Tweaking

- As the euphoric effects of methamphetamine diminish, abusers enter the ‘tweaking’ stage in which they are prone to violence, delusions, paranoia, & anxiety/dysphoria.
- User often has not slept in days, is extremely irritable, anxious, restless, & has intense craving.
- Increased hostility

Methamphetamine and aggression

- Methamphetamine dependence is associated with
  - hostility and aggression
  - high rates of interpersonal violence, ER/trauma center visits, assaults, weapons charges.
- Many meth users, dealers, and manufacturers possess and carry firearms -- increases the risk for homicide.
- 50% of automobile meth seizures also have weapons in car (WA state patrol statistics).

Methamphetamine and homicide

- Odds of committing a homicide are nearly 9-fold greater for an individual using methamphetamine.
- Association between meth use & homicide persists even after adjusting for alternative drug use (i.e., alcohol, heroin, crack, cocaine, PCP, LSD), sex, race, income, age, marital status, previous arrests, military experience, & education level. (1)
- Methamphetamine was the only drug use variable that was strongly correlated with homicide.

1. Stretesky P. *JIV* 2009:911

Stopping Addiction through Treatment

- **>50%** of surveyed addiction treatment programs report that methamphetamine treatment requires longer treatment programs (NACO, 2006).
- Methamphetamine users are more likely to succeed in inpatient addiction programs than in outpt programs (DSHS, 2005).
- Once in treatment, meth addicts are as likely as other addicts to complete treatment program. (DSHS, 2005).
- In Snohomish Co., **39%** of meth addicts successfully completed outpt tx in 2004. In comparison, **52%** of alcoholics completed tx program (Snohomish Regional Drug Task Force [SRDTF], 2005).

Treatment of methamphetamine dependence

- No FDA-approved agent. Maybe Mirtazapine? Bupropion? Modafinil? Naltrexone?
- Atypical antipsychotics/antidepressants for paranoia/depression
- 12-step support groups: SOS, CMA, NA & AA
- CBT & MET (Matrix model-CSAT/UCLA studies: >60% reported no meth use and gave urine samples that tested negative for meth (and cocaine) use. Use of other drugs, such as alcohol and marijuana were also significantly reduced.)
- Drug Court involvement (coerced treatment)
- Contingency Management (positive reinforcement): UCLA/NIDA Clinical Trials Network: Individuals assigned to CM conditions show better retention, lower rates of meth use & longer periods of sustained abstinence over the course of treatment.

Mirtazapine to Reduce Methamphetamine Use
A Randomized Controlled Trial

Sixty MSM, randomized, 85% of follow-up visits were completed, and 56 participants (93%) completed the final visit. Those in mirtazapine group had fewer meth-positive urines compared w/ placebo (relative risk, 0.57; 95% CI, 0.35-0.93, *P*=.02). Meth+ urines decreased from 67% (20 of 30) to 63% (17 of 27) in the placebo arm & from 73% (22 of 30) to 44% (12 of 27) in the mirtazapine arm. The no. needed to treat to achieve a negative weekly urine test result was 3.1. Adherence was 48.5% in event monitoring systems and 74.7% by self-report; adherence measures were not significantly different between arms (medication event monitoring systems, *P*=.82; self-report, *P*=.92).

1. Colfax, GN et al. *Arch Gen Psychiatry* 2011;68(11):1168-1175

Mirtazapine to Reduce Methamphetamine Use
A Randomized Controlled Trial

- Most sexual risk behaviors significantly decreased significantly in mirtazapine group compared to placebo (no. of male partners w/ whom methamph was used, *P*=.009; no. of male partners, *P*=.04; episodes of anal sex w/ serodiscordant partners, *P*=.003; episodes of unprotected anal sex w/ serodiscordant partners, *P*=.003; episodes of insertive anal sex w/ serodiscordant partners, *P*=.001

- **Conclusion: The addition of mirtazapine to substance use counseling decreased methamphetamine use among active users and was associated with decreases in sexual risk despite low to moderate medication adherence**.

1. Colfax, GN et al. *Arch Gen Psychiatry* 2011;68(11):1168-1175