Appendix A

Methamphetamine Research and Practice
Treatment Research Subcommittee Meeting
March 15, 2018, 9:30 am -12:30 pm

AGENDA AND MINUTES

9:30-9:45 – Introductions and opening remarks (Dennis Donovan)

9:45-10:00 – Jason Williams - Methamphetamine trends across Washington state

10:10-10:25 – Caleb Banta-Green – Results from the syringe exchange survey regarding patterns of meth use and interest in treatment

10:35-10:50 – Susan Kingston - Harm reduction/pre-treatment engagement strategies: Lessons learned during the initial meth wave

11:00-11:15 – Susan Stoner & Mike McDonell – Brief review of behavioral and pharmacological treatments for methamphetamine use disorders

11:00-12:00 – Discussion

- Where are methamphetamine users being seen in communities?
    - How and where do they present for treatment/healthcare?
    - What services do methamphetamine users want?
        - If they want to stop or reduce their use?
        - If they don't want to stop or reduce their use?
    - How do we engage them in treatment/healthcare?
- Do the treatments that we have to offer *work*?
    - How do we define *treatment working* in methamphetamine use disorders?
    - How are providers actually treating methamphetamine use disorders?
    - What approaches are successful for whom?
- What opportunities are there for harm reduction?
- What are the current knowledge gaps for the various stakeholders?
    - In what areas do we need more research/data/fact-finding?
    - Has what we do know been adequately disseminated?
    - What do policy makers need to know?
- Can we identify some short- and longer-term recommendations and priorities?

12:00-12:15 -- Update from DBHR regarding legislative developments and emerging treatment- and research-related issues

12:15-12:30 – Closing remarks, elicitation of suggestions for longer/larger meeting with additional stakeholders

Next Meeting: June 21, 2018, 9:30 am – 12:30 pm

Minutes

Chairs: Dennis Donovan (UW), Mike McDonell (WSU)

Present at meeting: Dennis Donovan, Mike McDonell, Susan Stoner (UW ADAI), Alison Newman (UW ADAI), Sarah Glick (UW SPH), Johnny Ohta (Youthcare Ryther), Susan Kingston (UW ADAI), Mary Hatch-Maillette (UW ADAI), Chris Dunn (UW Harborview), Shelli Young (North Sound BHO consultant), Brad Finegood (King Co BH & Recovery), Linda Crothers (North Sound BHO), David Dickinson (SAMHSA Region 10), Sarah Pine (DBHR), Amanda Lewis (DBHR), Diana Cockrell (DBHR), Jason Williams (UW ADAI), Jennifer Velotta (UW ADAI), Nancy Sutherland (UW ADAI)

Present online and/or phone: Therese Grant (UW ADAI/FADU), Kathy Robertson (Great Rivers BHO), Bryan Hartzler (UW ADAI), Laura Cooley (UW ADAI), Kalen Roy (Spokane BHO), Sam Agnew (Salish BHO) Linda Grant (Evergreen Recovery), Sarah Walker (UW PBHJP), Caleb Banta-Green (UW ADAI), Ron Jackson (UW SSW), Sterling McPherson (WSU), Lyz Speaker (DSHS RDA), Rick Ries (UW Psychiatry), Judy Hooyen (Clark County), Marc Bollinger (Great Rivers BHO), Sandy Knighton (Greater Columbia BHO), Susan Collins (UW Psychiatry)

Introductions & Opening Remarks – Dennis Donovan

- Brief history & purpose of TRSC – want to bring researchers & treatment providers together
- Reason for focus of current meeting: concern about methamphetamine abuse which has never gone away
- ADAI has been preparing research briefs for DBHR on methamphetamine trends in the state and evidence based treatments and will be preparing a white paper on the scope of our discussion today; we may propose to host a longer, larger meeting in the future with various stakeholders to continue the discussion on how best to address methamphetamine-related problems in Washington state.

Methamphetamine trends across Washington state – Jason Williams

- See http://adai.washington.edu/wadata/methamphetamine.htm
- Death data show drug poisonings involving various drugs, show striking increase in deaths associated with meth in recent years
- Note these do not include accidents attributable to meth if meth was not listed as a cause of death (poisoning) by the medical examiner
- Notable proportion of deaths had also had opioids on board as well
- County heat maps show drug deaths involving meth increasing in most counties across the state. Highest rate in Grays Harbor county.
- Crime lab cases graph shows meth-involved cases predominate cases
- Publicly funded treatment admissions where meth has been listed as primary drug have been relatively stable, lower than alcohol & heroin – discussion about how a drug is listed as primary drug for polysubstance users in the data (rely on what client says is primary drug, in some cases idiosyncrasies in data collection system)
- Data appear to show ongoing meth users cycling in and out of treatment over time which looks different than data for heroin which appear to show a lot of first treatment admissions
- Discussion about changing perceptions of stigma – meth still highly stigmatized

Results from the syringe exchange survey regarding patterns of meth use and interest in treatment – Caleb Banta-Green

- 2015 1st statewide syringe exchange survey, latest survey in 2017 – street intercept – did not ask about alcohol or marijuana
- See http://adai.uw.edu/pubs/pdf/2017syringeexchangehealthsurvey.pdf
- 18 syringe exchange locations, map shows zip code location of where they slept the night before
- Demographics: over 40% female; broad age span; vast majority White (83%), highest proportion of minorities were AI/AN (9%); high rates of homelessness (39%), recent incarceration (39%)
- Assessed drug use in the last 3 months among syringe exchange attendees. Refer to Table 3 in slides. Middle two columns show route of administration for those who had used various drugs in past 3 months. For example, 82% of respondents had used meth by itself in past 3 months but only 27% of those who did so identified it as their main drug.
- Note these figures do not represent a sizeable number of people use meth but do not inject it or any other drug to the extent that they would go to a syringe exchange.
- As shown in Table 5, of those respondents who said meth was their main drug, just under half (48%) had used another drug in the previous 3 months. Most "mainly heroin" users also used meth, but most "mainly meth" users had not used heroin.
- For meth, used the term "overamped" instead of "overdosed"; about 20% reported having done so. About 24% had had an abscess, and about 20% had had a skin/tissue infection.
- Respondents were asked if they were interested in reducing/stopping use of their main drug; 78% of "mainly heroin" users were somewhat or very interested in doing so, compared to 47% of "mainly meth" users.
- As shown in Figure 11, among "mainly meth" users who were interested in reducing/stopping their use, if help were easy to get, 11% said they didn't want/need help whereas others expressed interest in detox (19%), medication to reduce stimulant use (25%), inpatient or outpatient drug treatment (31-32%), 1:1 addiction counseling (37%), and mental health care or medications (37%).
- Comments by Johnny Ohta: Many more people smoke meth than inject it and often don't show up anywhere. Rarely they may come to treatment or call the Recovery Helpline. There is a common a binge use pattern for meth where users go hard for a while and then back off, get some sleep; if you talk to them at that time, they don't feel their use is a big problem. Homeless meth users are a different population than the majority of users in WA who are using it but not homeless. Another sizeable population is those who come to treatment for meth because they got arrested. Availability is a big issue; meth is very easy to get and very cheap.
- Discussion about how to reach those who are not injecting, not interested in stopping, how to use harm reduction. Other places meth users turn up include child protective services, EMS/ER (e.g., meth use psychosis). Would safe use sites make sense?

Harm reduction/pre-treatment engagement strategies: Lessons learned during the initial meth wave – Susan Kingston (no slides)

- Worked 1995-2008 mainly with people using meth at Stonewall Recovery Services, also Public Health Seattle/King County. Major focus on gay and bisexual men using meth and reducing sexual risk behavior. Worked at syringe exchange, led peer educators to disseminate health education messages.
- Did a lot of individual harm reduction counseling and non-abstinence-based groups that started with gay and bisexual men but then expanded to women and straight men because nothing else was available to them. They felt that the experience of using meth was so unique and meth was so stigmatized that they didn't fit anywhere else.

- How does the treatment system fail people? Often heard that the model of drug treatment doesn't fit them and their experience. Couldn't handle the boredom of treatment, long groups, listening to alcoholics. Couldn't relate or find a home in 12 step groups, admitting they were powerless when meth use made them feel powerful. Felt stigmatized even among other drug users. Drug treatment failed to acknowledge the utility that meth had in their lives; people were fearful of giving it up, not sure how they would function without it.
- Role of mental health is huge. Very difficult time getting seen by a mental health provider who doesn't insist on a period of abstinence. Most users coming off meth are depressed, whether chronically or reactively, so people really need mental health support.
- Tended to be a 3 month wall where people predictably were very susceptible to relapsing. Hard to deal with "normal life," anhedonia.
- Tremendous value in non-abstinence based drug and mental health counseling. Windows of readiness to change open and close quickly, so it's good to be there when they are closed to be accessible when they open. Should be options other than a few weeks of outpatient treatment.
- Empathy gap for meth users compared to opioid users who are seen as victims of the pharmaceutical industry and for whom there are treatment medications. Solutions are not as clear as with opioids.
- A lot of people ultimately do end up meth free.
- Discussion: Acute effects of meth are so different than heroin it makes people afraid to consider safe use sites. Higher association with meth use and violence. Very likely for users to have a history of trauma. Try to work with users' high-energy level, give them things to do (e.g., gadget rooms). Would it make sense to have a meth "sobering center"? Have to listen to practice-based evidence. HIV needs to stay on people's radar because there is a risk of an uptick. Certain population of users is very severely affected with alterations in cognition, caught in cycles of binging/recovering, repeatedly victimized. Unclear how to help such severe users, if anything works for them, seem harder to help than other drug users.

Brief review of behavioral and pharmacological treatments for methamphetamine use disorders – Susan Stoner

- Previous work for DBHR involved creating an inventory of treatment for substance use disorders in adolescents and rating them as evidence-based, research-based, or promising according to definitions set forth in RCW 71.24.025.
- A major challenge was vagueness in the definitions requiring a lot of interpretation: what outcomes are important when determining if a treatment is effective, how much improvement is enough, how long must improvements be sustained, how do we weigh differences in control/comparison conditions?
- This is a different task but the same questions are relevant when considering effectiveness of treatments for meth use.
- Pharmacological treatments – relatively few double-blind RCTs conducted
    - No single pharmacotherapy has demonstrated a broad and strong effect in clinical trials.
    - Some possible benefit observed for certain drugs under certain conditions: mirtazapine, bupropion, methylphenidate, topiramate
    - Drugs that appear to be ineffective (so far) include: amlodipine, aripiprazole, baclofen, d-amphetamine, gabapentin, ibudilast, modafinil, N-acetylcysteine (NAC), naltrexone, ondansetron, perindopril, rivastigmine, SSRIs, tricyclic antidepressants, and varenicline
    - Other drugs/mechanisms being examined include: ADHD drugs (lisdexamfetamine, atomoxetine), anti-alcohol (acamprosate), antiepileptics (vigabatrin, CPP-115), antipsychotics (risperidone, paliperidone, flupentixol), alpha-blockers (doxazosin,

prazosin), angiotensin receptor blockade (candesartan), calcium channel blockade (cinnarizine, isradipine), COMT inhibition (entacapone), various drug combinations (flumenazil+gabapentin, naltrexone+NAC, naltrexone+oxazepam, naltrexone+bupropion), and herbs/supplements (lobeline, citicoline, tyrosine, creatine)

- Behavioral treatments – relatively few RCTs focused solely on methamphetamine
    - No single behavioral therapy has demonstrated a broad, strong, and durable effect in clinical trials.
    - A 2016 Cochrane review of behavioral/psychosocial treatments for stimulant dependence concluded that any treatment examined (CBT, contingency management, MI, interpersonal therapy, psychodynamic therapy, and 12-step facilitation) was "probably" better than no treatment but cautioned that longer-term outcomes were unclear.
    - Treatments promoted as effective for meth use disorders (e.g., by SAMHSA's Addiction Technology Transfer Center network) include: the Matrix Model of CBT, other forms of CBT, contingency management, motivational interviewing, mindfulness (mindfulness-based relapse prevention, ACT), and exercise
    - Matrix Model – very intensive, only one large RCT for meth with mixed evidence for effectiveness
    - Other forms of CBT – varying treatment intensities, mixed results, web-based version did not appear to be effective
    - Motivational Interviewing (MI) – 1 to 3 session versions have shown some improvements in readiness to change and self-reported meth use
    - Mindfulness – MBRP was associated with better mental health outcomes over time compared to health education; ACT showed effects comparable to CBT except on objectively measured meth use
    - Exercise – appears to be helpful among lower severity users and when participants were adherent to dose recommendations (i.e., exercised enough)

Contingency Management (CM) – Mike McDonell

- For explanation/example of CM, see https://www.youtube.com/watch?v=gD1dMBWCR4w&t=4s
- CM has been shown effective in numerous studies for stimulant use disorders, including RCTs. Researchers at UW and WSU have been on the forefront of testing CM in this population and among those with severe mental illness (SMI).
- In CM it's possible to set the goal to any desired outcome, not just abstinence/clean urines. Often use biomarkers because it removes ambiguity/argument about whether person should be rewarded or not.
- Clients in CM programs generally really like it and find it fun.
- In secondary analysis (Roll et al., 2006) focusing on meth users from large clinical trial of CM for stimulant users (Peirce et al., 2006), those who received CM had higher mean weeks of abstinence and a higher proportion of negative urine tests over time compared to TAU.
- Similar results were found with adults with SMI in Seattle who used stimulants re: negative urines. CM participants were also found to have fewer days hospitalized compared to TAU.
- Longer-term outcomes have been demonstrated for various stimulants if not meth specifically (e.g., crack cocaine), which would presumably/arguably be comparable for meth. Longer-term studies are pending.
- Economic analysis suggests CM is a cost neutral intervention.
- VA has been on the forefront of implementing it but otherwise there have been major barriers in implementation, especially because it's not something that is "billable."

- Discussion: As care moves towards value-based models with healthcare integration, uptake of CM may be more favorable as healthcare systems seek cost savings. Question about value of TAU/IOP for meth users (some studies show CM alone is as good as CM + TAU). Counterpoint that, overall, WA-based studies have shown that abstinence-based TAU/IOP programs have a measurable cost benefit for drug and alcohol use disorders. Important to keep people in treatment and identify what works for whom, when. TAU in practice is kind of a hodge-podge of various things that have been shown to work. Reason to be cautious about criticizing TAU from an overly narrow research perspective as legislators may look to withdraw funding from programs that use TAU when such programs may actually show significant benefit in practice. Question about how to keep CM effects going after rewards are taken away? Maybe think of CM like a medication for a chronic illness – need to keep intervention going over the long term. Need to study what works for whom. What is it going to take to get CM implemented in a broad way? Some studies have used donated prizes, but probably not scalable. Suggestion to build it into the cost of doing treatment as an engagement strategy like providing food. Discussion about implementing CM. Note made that CM is highly adaptable and different settings can implement CM in different ways that fit their needs.

Comments from DBHR – Diana Cockrell

- Given the changes that are happening in the state with systems of care, now is the perfect time to figure out what treatment should be and how to individualize treatment in the context of HM/managed care
- Need to start talking about reasons people become addicted and how they recover at a cultural level
- We have had artificial walls in our system that get in the way of care – lack of integration getting in the way of holistic care. Need to meet people where they are and address the wants/needs of the whole person.

Closing remarks – Dennis Donovan

- Comment about how harm reduction has evolved and not evolved over the decades.
- See this as the beginning of a conversation about meth. We hope to have more discussions in the future.
- Comparison of evidence based practice vs. practice based evidence is a duality with notion of two-eyed seeing

Next Meeting: June 21, 2018, 9:30 am – 12:30 pm

2017 Syringe Exchange Survey

Caleb Banta-Green
Alison Newman
Susan Kingston

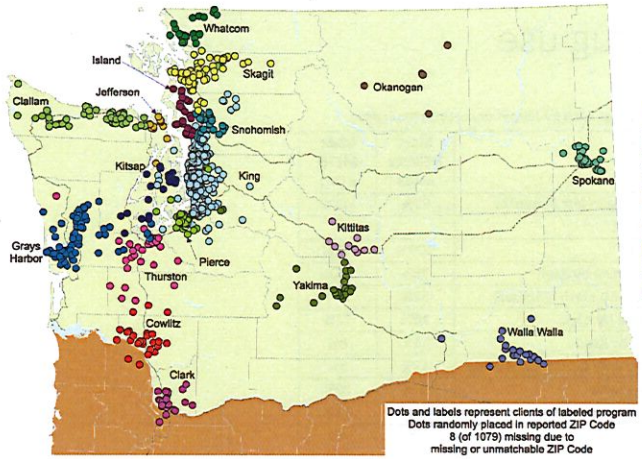


Table 1. Number of surveys by county n=1,079

Clallam	64	Okanogan	5
Clark	40	Pierce	65
Cowlitz	25	Skagit	67
Grays Harbor	77	Snohomish	71
Island	22	Spokane	48
Jefferson	17	Thurston	41
King	427	Walla Walla	22
Kitsap	20	Whatcom	26
Kittitas	10	Yakima	32

2017 Syringe Exchange Survey

Table 2. Demographic characteristics of respondents n=1,079

Gender			**Race** *(multiple responses allowed)*		
Male	638	**59%**	White	899	**83%**
Female	436	**41%**	American Indian/Alaska Native	96	**9%**
Transgender	1	**<1%**	Latino/Hispanic	56	**5%**
Other	2	**<1%**	Black	42	**4%**
Age			Asian/South Asian	27	**3%**
18-21	43	**4%**	Native Hawaiian/Pacific Islander	19	**2%**
22-25	116	**11%**	Other	27	**3%**
26-29	174	**16%**	**Housing Status**		
30-39	354	**33%**	Homeless	419	**39%**
40-49	202	**19%**	Temporary/Unstable	326	**30%**
50-59	138	**13%**	Permanent	334	**31%**
60+	51	**5%**	**In jail or prison, last 12 months**	395	**39%**
**no King County data*			**Legal monthly income***	Mean = $466	

Patterns of drug use

Table 3. Drug use[8] in the last 3 months, routes of administration[9] and "main" drug n=1,079

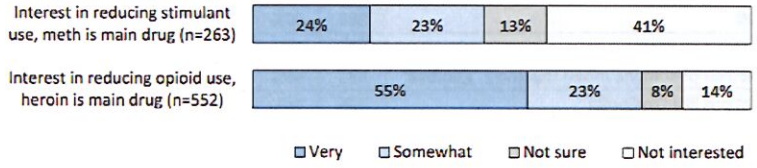
	Used in last 3 months		**Injected**	**Smoked**	**Identified as "main drug"**
Heroin by itself	860	**80%**	98%	45%	**62%**
Methamphetamine by itself	885	**82%**	81%	67%	**27%**
Heroin and methamphetamine mixed together/ "goofball"	495	**46%**	98%	20%	**6%**
Opiate medications like OxyContin	385	**36%**	21%	8%	**2%**
Benzos/downers like Valium, Xanax, Klonopin, Soma	337	**31%**	6%	n/a	**<1%**
Powder cocaine by itself	177	**17%**	n/a	18%	**<1%**
Crack cocaine by itself	153	**14%**	23%	88%	**<1%**
Cocaine and heroin mixed together/ "speedball"	128	**12%**	98%	10%	**<1%**
Fentanyl	123	**11%**	78%	24%	**0%**

Patterns of drug use

Table 5. Other drugs used by heroin or meth as main drug

	Main HEROIN *n=664*	Main METH *n=291*
Used another drug in last 3 months	**89%**	**48%**
Other drugs used		
Heroin by itself	100%	36%
Methamphetamine by itself	78%	100%
Heroin mixed with meth (goofball)	52%	24%
Powder cocaine by itself	16%	12%
Crack cocaine by itself	16%	8%
Cocaine mixed with heroin (speedball)	13%	5%
Prescription opioids	37%	20%
Benzodiazepines/downers	34%	16%
Fentanyl	13%	4%

Figure 9. Interest in reducing/stopping use of main drug, among those not in treatment



Health among primary meth users

In the last 12 months have you...	
Overamped?	20.3%
Had an opioid overdose?	6.9%
Had an abscess?	23.6%
Had a skin or tissue infection?	20.5%
Had endocarditis?	0.7%
Had a sexually transmitted disease?*	8.3%
Been pregnant? (women only)	7.9%

*Not asked of King County respondents

Healthcare access and utilization	
% respondents with insurance:	89%
In the last 12 months, in which of these places have you received health care?	
ER	47.3%
Jail	13.0%
None	21.6%
Other clinic or medical setting	30.8%
Other	1.4%

Figure 10. "What types of help would you want if they were easy to get?" among people whose main drug was heroin who were very or somewhat interested in reducing their opioid use n=431

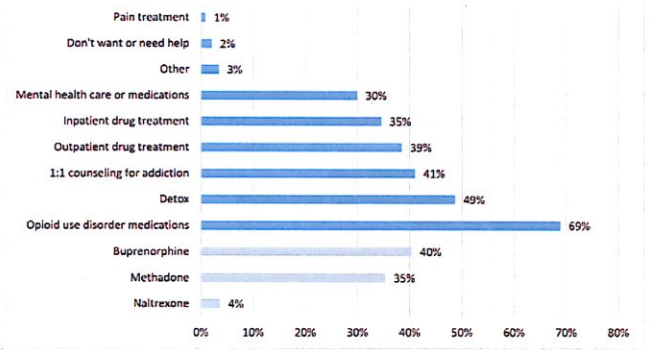
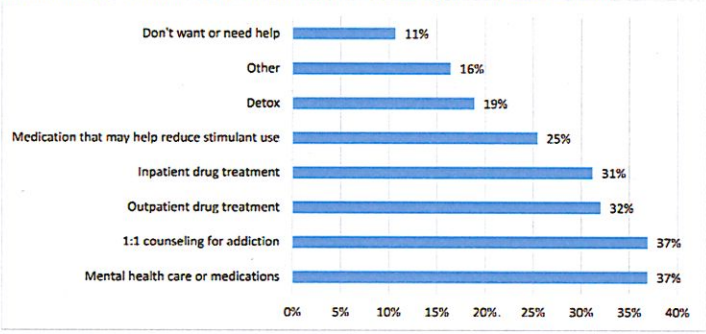


Figure 11. "What types of help would you want if they were easy to get?" among people whose main drug was methamphetamine who were very or somewhat interested in reducing their stimulant use n=122



Effective Behavioral and Pharmacological Treatments for Methamphetamine Use Disorders: A Brief Review of the Literature

Susan Stoner, Ph.D.
Research Consultant
Alcohol and Drug Abuse Institute
University of Washington

UNIVERSITY of WASHINGTON
ADAI | ALCOHOL & DRUG ABUSE INSTITUTE

Introduction

- Amid growing concern about the impact of methamphetamine (MA) in Washington, DBHR requested that ADAI conduct a research review of effective treatment approaches
  - Behavioral and pharmacological
  - Youth and adults
  - Attending to specific populations where there is research (e.g., AI/AN, MSM)

Introduction

- Past work for DBHR examined EBPs for youth substance use, defined in RCW 71.24.025:
  - tested in heterogeneous or intended populations with multiple randomized or statistically controlled evaluations, or both; or one large multiple site randomized, or statistically controlled evaluation, or both,
  - where the weight of the evidence from a systemic review demonstrates sustained improvements in at least one outcome
  - that can be implemented with a set of procedures to allow successful replication in Washington and, when possible, is determined to be cost-beneficial.

Major Challenge

Vagueness in Definition

- Much interpretation required
  - What outcomes?
  - How much improvement is enough?
  - Sustained for how long?
  - What are suitable controls or comparison conditions?
- Different task here but similar challenge: How do we define "effective"?

Initial Approach

- Searched the academic literature for reviews and original research studies using PubMed and Google Scholar
- Seeking randomized controlled trials and quasi-experimental studies of behavioral or pharmacological interventions, especially those since most recent systematic reviews were conducted
- Searched ClinicalTrials.gov for information on pending and unpublished trials

Reviews of Treatments

- 2017 review of pharmacotherapeutic agents in the treatment of MA dependence concluded:
  - Despite signals of efficacy for various agents, **no single pharmacotherapy has demonstrated a broad and strong effect in clinical trials.**
  - There have been relatively few double-blind RCTs.
    - Mirtazapine may offer some benefit in increasing rates of MA abstinence.
    - Bupropion, methylphenidate-SR, and topiramate have also shown some efficacy in post hoc analyses depending on baseline levels of MA use.

Morley KC, Cornish JL, Faingold A, Wood K, Haber PS. Pharmacotherapeutic agents in the treatment of methamphetamine dependence. Expert Opinion on Investigational Drugs. 2017 May 4;26(5):563-78.

Reviews of Treatments

- Pharmacotherapeutic agents examined in that review included:

Aripiprazole	Gabapentin	Modafinil	Rivastigmine
Baclofen	Ibudilast	N-acetylcysteine	Topiramate
Bupropion	Methylphenidate	Naltrexone	Varenicline
D-amphetamine	Mirtazapine	Perindopril	

- Did not address combination therapies

Reviews of Treatments

- 2014 review of combination pharmacotherapies in the treatment of MA dependence concluded:
  - Substantially less research examining combined medications for amphetamine dependence compared to cocaine dependence
  - Three blinded RCTs have tested combinations amphetamine use disorder
    - Naltrexone + NAC – one trial with encouraging results
    - Flumazenil + gabapentin [+ hydroxyzine] (Prometa) – two trials with encouraging results

Stoops WW, Rush CR. Combination pharmacotherapies for stimulant use disorder: a review of clinical findings and recommendations for future research. Expert Review of Clinical Pharmacology. 2014 May 1;7(3):363-74.

Reviews of Treatments

- Additional drugs that have been or are being examined for benefit in MA dependence include:

Risperidone Paliperidone	Sertraline Fluoxetine Paroxetine	Doxazosin Prazosin	Oxazepam + naltrexone
Imipramine Desipramine	Candesartan	Vigabatrin	Citicoline
Amlodipine Isradipine	Ondansetron	Acamprosate	Entacapone
Flupentixol	Lisdexamfetamine	Lobeline	Tyrosine
Cinnarizine	Atomoxetine		Creatine

Reviews of Treatments

- 2016 Cochrane review of behavioral treatments for stimulant dependence examined RCTs with:
- A psychosocial intervention vs. no treatment, TAU (e.g. supportive groups or case management), or another psychosocial intervention
  - Cognitive-behavioral therapy
  - Contingency management
  - Motivational Interviewing
  - Interpersonal therapy
  - Psychodynamic therapy
  - Twelve-step facilitation

Minozzi S, Saulle R, De Crescenzo F, Amato L. Psychosocial interventions for psychostimulant misuse. Cochrane Database of Systematic Reviews. 2016 Sep;9:CD011866.

Reviews of Treatments

- 2016 Cochrane review conclusions:
  - compared to no intervention, any psychosocial intervention probably improves treatment adherence and may increase abstinence at the end of treatment; however, people may not be able to stay clean several months after the end of treatment.
  - The most studied and most promising psychosocial approach to be given in addition to treatment as usual is probably contingency management.

Minozzi S, Saulle R, De Crescenzo F, Amato L. Psychosocial interventions for psychostimulant misuse. Cochrane Database of Systematic Reviews. 2016 Sep;9:CD011866.

Promoted as Effective for MA

- Matrix Model
- Other forms of CBT
- Contingency Management
- Motivational Interviewing
- Mindfulness (MBRP, ACT)
- Exercise

Matrix Model

- 16 weeks
  - 36 sessions group CBT
  - 12 sessions family education groups
  - 4 sessions group social support
  - 4 sessions individual counseling
- Weekly breath/urine testing
- Weekly (or more) 12-Step meetings encouraged
- Non-judgmental, non-confrontational style with emphasis on positive reinforcement for behavior change

Rawson RA, Marinelli-Casey P, Anglin MD, Dickow A, Frazier Y, Gallagher C, Galloway GP, Herrell J, Huber A, McCann MJ, Obert J. A multi-site comparison of psychosocial approaches for the treatment of methamphetamine dependence. Addiction. 2004 Jun 1;99(6):708-17.

Matrix Model, compared to TAU...

- had a higher retention level
- had a completion rate (40.9% vs. 34.2%)
- provided more clean urine samples
- MM had longer periods of consecutive abstinence in 2/8 comparisons when length of MM=length of TAU
- was not different in self-reported MA use, ASI domains, or urinalysis results at discharge or follow-up; similar decreases were seen in both conditions

Rawson RA, Marinelli-Casey P, Anglin MD, Dickow A, Frazier Y, Gallagher C, Galloway GP, Herrell J, Huber A, McCann MJ, Obert J. A multi-site comparison of psychosocial approaches for the treatment of methamphetamine dependence. Addiction. 2004 Jun 1;99(6):708-17.

Cognitive Behavioral Therapy

- Baker et al., 2001, 2005: 4 individual sessions, MI then relapse prevention skills
- Smout et al., 2010: 12 individual sessions, expanded from Baker's manual
- Reback et al., 2014: 24 group sessions over 8 weeks, tailored for gay men, initially patterned after the Matrix Model group CBT component
- Tait et al., 2014, 2015: 3-module web-based CBT intervention patterned after Baker's content

CBT Findings

- Baker et al., 2001, 2005: Modest effects based on treatment received rather than ITT
- Smout et al., 2010: CBT and ACT both modestly effective for certain outcomes
- Reback et al., 2014: less intensive group CBT tailored for gay men was comparable to more intensive MM intervention for gay men
- Tait et al., 2014, 2015: 3-module web-based CBT intervention was not effective at reducing MA use

Motivational Interviewing

- A 1-session intervention associated with a reduction in self-reported MA use and related consequences 3 months after the intervention (pre-post design).

Smout MF, Longo M, Harrison S, Minniti R, Cahill S, Wickes W, White JM. The Psychostimulant Check-Up: A pilot study of a brief intervention to reduce illicit stimulant use. Drug and Alcohol Review. 2010 Mar 1;29(2):169-76.

- A 2-session BI was associated with fewer days of MA use in Thai adolescents at 8 weeks compared to a psychoeducation control condition (PECC).

Srisurapanont M, Sombatmai S, Boripuntakul T. Brief intervention for students with methamphetamine use disorders: a randomized controlled trial. The American Journal on Addictions. 2007 Mar 4;16(2):111-6.

- A 3-session MET intervention associated with increased readiness to change MA and MDMA use among Taiwanese adolescents compared to a PECC.

Huang YS, Tang TC, Lin CH, Yen CF. Effects of motivational enhancement therapy on readiness to change MDMA and methamphetamine use behaviors in Taiwanese adolescents. Substance Use & Misuse. 2011 Feb 8;46(4):411-6.

Mindfulness

- Smout et al., 2010
  - Compared 12 sessions of ACT to 12 sessions of CBT
  - ACT and CBT showed comparable attendance and reductions in self-reported MA use, consequences, and dependence symptoms
  - Only the CBT group showed a significant improvement in objectively assessed MA use

Smout MF, Longo M, Harrison S, Minniti R, Wickes W, White JM. Psychosocial treatment for methamphetamine use disorders: a preliminary RCT of CBT and ACT. Substance Abuse. 2010 Apr 20;31(2):98-107.

- Glasner et al., 2017
  - Compared CM + 8 weeks of MBRP or Health Ed.
  - No between group differences in MA-free urine samples
  - MBRP was associated with lower depression, anxiety, and psychiatric severity over time compared to Health Ed.

Glasner S, Mooney LJ, Ang A, Garneau HC, Hartwell E, Brecht ML, Rawson RA. Mindfulness-based relapse prevention for stimulant dependent adults: a pilot randomized clinical trial. Mindfulness. 2017 Feb 1;8(1):126-35.

Exercise

- Haglund et al., 2015; Rawson et al., 2015
  - 135 with MA dependence in residential tx randomly assigned to exercise or health ed. 60 min, 3x/wk
  - Exercise associated with greater reduction in depression from baseline to 8-week treatment endpoint

Haglund M, Ang A, Mooney L, Gonzales R, Chudzynski J, Cooper CB, Dolezal BA, Gitlin M, Rawson RA. Predictors of depression outcomes among abstinent MA-dependent individuals exposed to an exercise intervention. American Journal on Addictions. 2015 Apr 1;24(3):246-51.

  - Exercise associated with a trend towards lower relapse rates at 1-, 3-, and 6-months post discharge. Results were not significant except among lower baseline severity users.

Rawson RA, Chudzynski J, Mooney L, Gonzales R, Ang A, Dickerson D, Penate J, Salem BA, Dolezal B, Cooper CB. Impact of an exercise intervention on methamphetamine use outcomes post-residential treatment care. Drug & Alcohol Dependence. 2015 Nov 1;156:21-8.

- Trivedi et al, 2017 (CTN study, N = 302, 12 weeks)
  - Exercise modestly improved outcomes only for those adherent to exercise dose

Trivedi MH, Greer TL, Rethorst CD, Carmody T, Grannemann BD, Walker R, Warden D, Shores-Wilson K, Stoutenberg M, Oden N, Silverstein M. Randomized Controlled Trial Comparing Exercise to Health Education for Stimulant Use Disorder: Results From the CTN-0037 STimulant Reduction Intervention Using Dosed Exercise (STRIDE) Study. The Journal of Clinical Psychiatry. 2017;78(8):1075-82.

Conclusions

- No FDA-approved medications with indications for MA dependence and no clear contenders.
- Psychosocial treatments are effective but only modestly so.
- Contingency management looks like it may be the best available option but duration of effect after reinforcers are withdrawn is uncertain.
- Evidence-based practice seems to fall short re: MA. What do we have in terms of practice-based evidence?

Mechanisms of Action of Medications Examined for Methamphetamine Use Disorders

	Mechanism	Current uses	Dopamine (DA)	Norepinephrine (NE)	Serotonin (S/5-HT)	Glutamate (GL/NMDA)	Epinephrine	Histamine (H)	Acetylcholine (ACH)	GABA	Calcium channels	Opioid system	Phosphodiesterase	Toll-like receptors	Angiotensin
Acamprosate	NMDA receptor antagonist, modulator of $GABA_A$	Alcohol use disorder								x					
Aripiprazole	Very complex effects on a variety of receptors, especially D and 5-HT	Antipsychotic	x		x										
Atomoxetine	Norepinephrine, dopamine reuptake inhibitor, NMDA receptor antagonist	Attention deficit disoder (ADHD)	x	x		x									
Baclofen	$GABA_B$ receptor agonist	Antispasmodic								x					
Bupropion	Reuptake inhibitor, blocks presynaptic DA transporter, targets NE transporter and nicotinic ACH receptors	Antidepressant, smoking cessation	x	x					x						
Buspirone	Decreases S, increases D/N, may affect oxytocin, does not affect GABA	Antianxiety	x	x	x										
Candesartan	Angiotensin II receptor antagonist	Hypertension													x
Cinnarizine	Antihistamine, calcium channel blocker	Motion sickness, vertigo, cerebral blood flow						x			x				
Citicoline	Possibly increases dopamine receptor densities	Memory disorders	x												
Creatine	Increases GABA	Building muscle mass								x					
Dextroamphetamine	Promotes release of DA, NE, & S	ADHD, narcolepsy	x	x	x	x	x	x			x				
Doxazosin, prazosin	Alpha blocker	Hypertension, diuretic, PTSD					x								
Entacapone	Inhibits COMT, increases catecholamines	Parkinson's disease	x	x											
Flumazenil + gabapentin	$GABA_A$ receptor agonist + ion channel effects of gabapentin	Benzodiazepine antagonist +antiepileptic								x	x				
Flumazenil + gabapentin + hydroxazine (Prometa)	$GABA_A$ receptor agonist + ion channel effects of gabapentin + histamine receptor antagonist	Benzodiazepine antagonist + antiepileptic + antihistamine						x		x	x				
Fluoxetine, sertraline, etc.	Selective serotonin reuptake inhibition	Antidepressant			x										
Flupentixol	Dopamine antagonist	Antipsychotic	x												
Gabapentin	Nonselective GABA agonist	Neuropathic pain, epilepsy, restless legs				x				x	x				

	Mechanism	Current uses	Dopamine (DA)	Norepinephrine (NE)	Serotonin (S/5-HT)	Glutamate (GL/NMDA)	Epinephrine	Histamine (H)	Acetylcholine (ACH)	GABA	Calcium channels	Opioid system	Phosphodiesterase	Toll-like receptors	Angiotensin
Ibudilast	Phosphodiesterase (PDE4) inhibitor	Asthma, stroke, MS, anti-inflammatory											x	x	
Imipramine, desipramine, etc.	Complex S/N reuptake inhibition; antagonists of 5-HT, α-adrenergic, NMDA, H, muscarinic ACH; agonists at sigma receptors; ion channel blockade; imipramine is TLR4 antagonist	Tricyclic antidepressant		x	x	x	x	x	x		x			x	
Isradipine, amlodipine	Calcium channel blockade	High blood pressure									x				
Lisdexamfetamine	Prodrug of d-amphetamine	ADHD, binge eating disorder	x	x	x	x	x	x			x				
Lobeline	Partial nicotinic ACH receptor agonist - act as MA antagonist	Smoking cessation							x						
Methylphenidate	Binds DA & NE transporters	ADHD	x	x											
Mirtazapine	Serotonin, histamine, and α_2–adrenergic antagonist	Antidepressant		x	x		x	x							
Modafinil	Complex, weak stimulant, binds DA transporter	Narcolepsy, sleep apnea, hypersomnia	x			x									
N-acetylcysteine	Complex-affects glutamate, glutathione, neurotrophins, apoptosis, mitochondria, inflammation	Acetaminophen overdose, various psych disorders, cocaine addiction				x									
Naltrexone	Opioid antagonist, TLR4 antagonist	Opioid and alcohol use disorders										x		x	
Ondansetron	5-HT_3 receptor antagonist	Antiemetic			x										
Oxazepam	Agonist of $GABA_A$	Antianxiety								x					
Perindopril	ACE inhibitor	Hypertension, CHF, CAD													x
Risperidone, paliperidone	$D_{1\text{-}5}$ and 5-$HT_{2A/2C}$ receptor antagonist	Antipsychotic	x	x	x										
Rivastigmine	Inhibits cholinesterases	Alzheimer's and Parkinson's diseases							x						
Topiramate	Unclear, possibly $GABA_A$ receptor agonist + ion channel effects	Antiepileptic								x	x				
Tyrosine	Precursor to DA and N	Phenylketonuria	x	x											
Varenicline	high-affinity partial agonist for $\alpha_4\beta_2$ nicotinic ACH receptor→DA release in nucleus accumbens	Smoking cessation	x						x						
Vigabatrin, CPP-115	GABA transaminase inhibitor	Antiepileptic								x					

WASHINGTON STATE UNIVERSITY

Contingency Management for Methamphetamine Use

Michael McDonell, PhD

Program of Excellence in Addictions Research
Elson S. Floyd School of Medicine
Washington State University

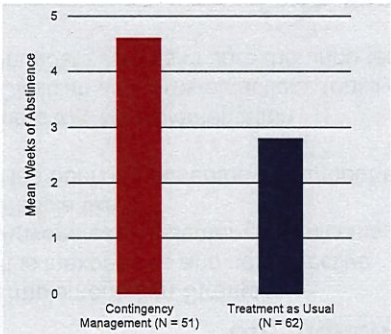
Principles of Contingency Management (CM)

1. Frequently monitor target behavior (drug abstinence)
   - Urine drug tests 2-3 times per week
2. Provide a reinforcer when the target behavior occurs
3. Remove the reinforcer when the target behavior does not occur

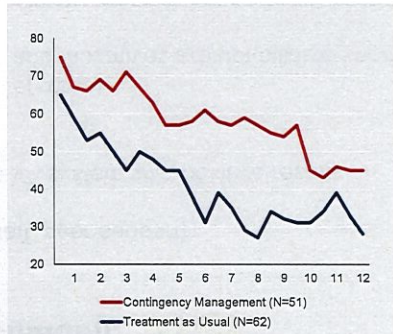
Why talk about CM?

- Laboratory models of CM suggest that drug abusers will forego opportunities to self-administer a drug in exchange for small monetary reinforcers.
- In a meta-analysis: relative to all other psychosocial treatments for drug abuse, CM is the most effective/powerful at inducing abstinence *(Dutra et al., 2008)*.
- Most effective intervention for **stimulant use disorders**.
- CM YouTube Video: https://www.youtube.com/watch?v=gD1dMBWCR4w&t=4s

CM for Methamphetamine

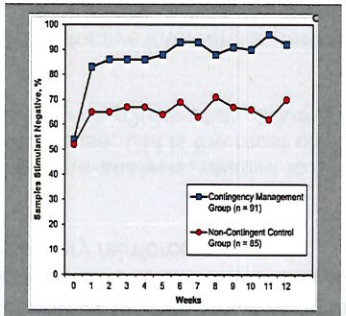


113 Individuals with Methamphetamine Use Disorders during 12 Weeks of Usual Treatment with or without Contingency Management
(Roll et al., 2006)



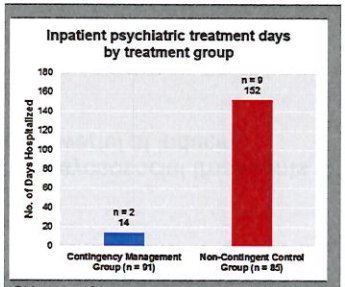
Negative Drug Samples Over 12 Weeks for Individuals with Methamphetamine Use Disorders Receiving Usual Treatment With or Without Contingency Management
(Roll et al., 2006)

CM for Stimulant Use in Adults with SMI



% of pts with stimulant-negative urine samples across the baseline (week 0) and 12-week treatment periods

CM pts were 2.4 (CI=1.9-3.0, p<0.05) more likely to submit a stimulant-negative urine test, relative to controls



CM pts had fewer days inpatient psychiatric treatment post randomization

Cost of CM (~$300/person) offset by the reduced cost of inpatient psychiatric care

(McDonell et al., 2013)

CM Implementation: 🙂😕

- CM Implementation Strengths
  - It is inexpensive and cost effective
  - Anyone can implement it (clinicians, staff, peer support)
  - People like it
  - Has been implemented throughout the VA system with positive results
- Barriers to CM Implementation
  - Clinician concerns/objections (easily overcome)
  - In most systems of care the urine tests and incentives are not billable services

We Need You!

- We need to figure out a way to make CM a billable practice.

Appendix C

Methamphetamine Research and Practice Discussion
Treatment Research Subcommittee Meeting

TRANSCRIPT

DennisD: First of all welcome to this meeting many of you who have not been here before so this is a meeting that we hold probably quarterly and it really is sort of the resurrection of a treatment research committee that has been in existence through DBHR - previously DASA, way back when - and sort of went for a period of time underground if you will, and has been resurrected over the last year. So we're glad to have this group back together because we feel as if, while the prevention research committee has been ongoing across time this one has not been, and we feel as if there are a number of issues of concern around substance use disorder treatment that really can be addressed by collaborative effort of those folks who work in the field as well as those of us who do research. The intent has always been, of this as well as the prevention meeting, to try to bring together researchers and individuals who are in the treatment or prevention field out and sort of doing the ground work together in such a way that collaborations can emerge to address the questions and the concerns that folks have.

DennisD: Obviously this is one that we've heard increasingly about; methamphetamine abuse has never gone away. It's been superseded often times by other things that are emergent, but it's always been there. Linda Grant who's on the list that had contacted me when she heard we were going to do this said the detox center that she runs up in Everett is overrun right now by folks with methamphetamine. We see and we'll hear more about the concurrence of methamphetamine and opiate misuse and the risks that are inherent in that. So I think it's a timely issue. Mike and I are actively involved with native American tribes across the northwest and methamphetamine continues to be actually in many cases a more difficult problem for them than is opiate misuse. Both are problematic no doubt, but they often begin talking about meth before they begin talking about opiates. So it's an important area of conversation.

DennisD: And I'll let Susan (Stoner) and Caleb talk about how it is this group got together. In part it's been facilitated by DBHR. We at ADAI have a contract or a series of contracts to do work around treatment and epidemiology and other kinds of things that are relevant to the mission of DBHR, and as part of that there are some scientific briefs that are expected us, and Susan has been working on a series of them having to do with what are effective treatments, if there are any, for methamphetamine abuse. So that was one of the stimuli to us to look at this, and Caleb and Susan (Kingston) and Jason have been looking at things through needle exchange surveys, through epidemiological data that really have again targeted the importance of this topic area. So I'll stop there and Susan (Stoner) do you want to say anything?

SusanS: I don't have any prepared remarks, we've kind of organized the talk today to kind of set the stage for discussion about what's going on with meth in Washington state, and what we really wanted to do was just start an initial discussion to get some information from

folks in the field and what you're all seeing and what you're all doing. And what we are wanting to do is prepare a white paper for DBHR and then hopefully convene a larger longer meeting in upcoming months where we can really devote more time and focus to the issues but really just kind of start to get a lay of the land here today. So Caleb did you want to say anything before we get started?

CalebBG: Yeah very briefly, again we've worked with DBHR for many years, a long, long time, but in this particular set of projects we're proposing a range of info briefs and about a year ago I proposed this one because I try to listen to people like John [inaudible 00:04:27] and Susan Kingston who are actually telling me what's happening in the real world, and then as you'll see these data as Jason Williams is gonna present the mortality data are stunning. We've only had them for King County, and when we ran them for the state I was sadly blown away; they're really very stunning. It just tells us how persistent this is. And the other motivation for this is I think about a lot of my work around opiate use disorder, about half the people using a stimulant, and that's a problem for their retention. And we're also doing a lot of analyses around understanding those overdose deaths that are occurring concomitant with these drugs which I won't go into today.

CalebBG: But the point is, let's say we magically get everybody in the state on Suboxone who needs it, but we're still gonna have a methamphetamine problem among some of those on Suboxone as well as among people who aren't using opiates. We still have a massive problem left that we haven't even touched upon, and again it's because we generally can only think about one thing at a time, we're not very good at multitasking, and that includes us addiction researchers. That's really the reason for this and I think the process here ... We want to give you some background in terms of epidemiological data, Susan will be reviewing the research literature, and then the other people will really have this group convened and I'm very sorry I cannot be there in person with you all.

CalebBG: It's that there's also stuff that people feel like is working out in the community and we need to recognize that and acknowledge that and learn from it. An example of that is I've also done an info brief on buprenorphine for adolescents, and there's very little research on it, but when I called George Woody and Mark Fishman they can say "Yeah I know there's been no research in the last decade, but let me tell you what's happened in my clinical practice in the last decade." And that's also what we hope to learn from you all today, so I think I'll wrap it up there, but I think that's kind of how we got here and what we're hoping what we can get from you all today, and as we continue to work on this over the next few months and we haven't really talked about this but perchance we can even have some materials and some recommendations and ideas and reviews by folks who are part of this group before we put them forward to DBHR.

CalebBG: And lastly is the fact that we also need to look at how this is going to intersect with DBHR becoming part of Health Care Authority, and the services and resources the Health Care Authority can help bring to this issue as well. That's it.

MikeM: Can I just add one quick thing Dennis? From our side of the state over in Spokane I think Sterling is on the phone and I ... When I got over there about three years ago we talked to the folks at the methadone clinic about what should we target as a grant and it was right away it was methamphetamine and that was years ago. And Sterling you can chime in

with the prevalence if you remember the numbers, but it was like 40% of people had a positive. I think it was the last month or something like that. And then last year about this time I gave a talk to the state Municipal and District Court Judges Association in Spokane so it was like 300 or 400 judges. I was terrified. I just did a "Show me hands, how many people are dealing with opiate problems in their court rooms." Of course everyone's hand went up, and I was ready to talk to the point that judges are gonna raise their hands when I ask about methamphetamine but only the judges in the rural communities are gonna, that was the point I was gonna make, and those are the folks that raised their hands probably.

MikeM: So I asked, and everybody raised their hand, in terms of how many of you are dealing with methamphetamine issues in the court, and so I was shocked by that. So I'm really glad to be here to talk about this. As Dennis is saying in Native communities, particularly in the plains we just had communications with some folks in Yakama and they just passed a tribal resolution around a no tolerance policy for methamphetamine and for heroin, so I'm glad to be here to sort of represent those communities too.

DennisD: And just one more follow-on is that Clay Mosher who is a faculty member down at WSU Vancouver had sent me an email saying he was not able to be here but he does lots of work in the criminal justice system and also said there is a real uptick in issues around methamphetamine that he's seeing in the court system and the probation system so it's really timely.

DennisD: So why don't we go ahead and get on to the agenda, and Jason is going to provide us with epidemiologic information that's been collected around this.

NOTE: **Refers to presentation of meth data online: http://adai.uw.edu/wadata/**

JasonW: So I'm just gonna talk about the website that we have here. So Caleb brought me on around three years ago largely for treatment data which I'm gonna get to later, and other... really to look at opioid trends. And as he mentioned about a little over a year ago, he wanted to get back into looking at meth. So the main measures that we use for our descriptive epidemiology are death information, treatment information and crime lab information. And so we put together this webpage with methamphetamine trends that combined those three different indicators. For those of you following at home there's information on the indicators at the bottom, there's this data notes section at the bottom that describes in a little more detail how we do that and I can answer questions as we go along, so if you're raising hands ... make your hands raised on the web, let me know. As you can see the-

SusanS: Actually please use the chat box because I don't know how to see hands raised.

JasonW: Okay. As you can see, if you're interacting with this in person or if you're interacting with [inaudible], these are JavaScript graphs that allow you to have pop ups, you can zoom in on certain date range and so on. So again we start with deaths, here we just simply compare all drug poisonings and by three main types, and these are not mutually exclusive, as we know a lot of deaths are gonna involve multiple drugs, so deaths can be seen as drug poisonings involving one of these drugs. You see your sort of typical pattern

of what looks like coke and meth displacing each other. By the way you can turn off series to play with these and rescale things to sort of see the trends a little better.

Question: Jason, you said our website? Whose website is it?

JasonW: It's http://adai.washington.edu/wadata . And there are a couple of links to it from the ADAI main page and from the StopOverdose.org web page. So as Caleb said, pretty steady striking increase and these are again our current poisonings involving methamphetamine so this is excluding things like "I took meth and jumped off a really high jump and didn't make it." Some more details on demographics and so on. I'm gonna point out here your proportion White have sort of steadily dropped and I don't know if it's significant but it looks like a pretty steady drop. And of course pretty high proportion that had opioids on board as well. And then we get into that a little more down here where we break apart all drug poisonings by sort of main. These are not overlapping categories, where we looked at those with just cocaine, with meth and cocaine, with just meth without cocaine or opiates. That's with or without any other drug but it's looking at among meth coke and opioids, did they have one, two or three of those.

JasonW: And then you can also look at just among the meth deaths and see how this band here is those with just methamphetamine without coke or opiates. And then we also sort of work in here whether they had alcohol and/or barbiturates on board. So again a growing portion of these methamphetamine poisonings with opioids involved as well.

CalebBG: One thing on that point just to be clear though is that the proportion of methamphetamine involved deaths that have opioids over time hasn't actually changed that much. So it's not the combination that is driving the increase. The proportions are fairly steady over time there, that orange and that blue. I thought that it was due to the combination of opioids, that was my hypothesis before we looked at the data and just in terms of the proportional relationship it doesn't look like it is the independent driver, it looks like it's just a lot more meth deaths.

JasonW: Yeah exactly, sorry. Yeah these are death rates but in the mouse over you can see the proportion and it's pretty steadily around 30 to 40%. We also grouped deaths by county, and then pooled things over a couple of years to account for unsteady ratios in small counties like Asotin and that sort of thing where you can look at how the rates have changed over time. These are Tableau graphs. So you've got some interaction there. You can select a county and see what the numbers are how they've changed over time. Most counties have an increase in methamphetamine death rates. Some rather large, and Benton is not that small but with small counties you still has an immediate pull though that's something to be aware of. Just the numbers, you know

Question: What is the significance of the color in the graphs?

JasonW: The darker the color, the worse it is. Yeah, that county out here is Grays Harbor which is your meter, shall we say off the table, all 16 and a half deaths per 100,000 in total.

JasonW: Alright, crime lab cases, this is again a description at the bottom but these are submissions from Washington state crime lab, and this counts as a meth case. Any

submission, any case which is a unique case number which is positive for meth in any form any amount. So it could be a lot or a little it's just any case that's positive. And as we've heard meth never really went away according to law enforcement and others, we don't hear too much about meth labs but it never quite went away. That top line is your meth. A peak in 2005, other statistics of what that might be. You actually see peaks in other drugs as well, so there was actually just a lot more police action, but again fairly steady increase in recent years.

JasonW: The next graph has it by a percent of all drug cases, again just indicating a good deal of what law enforcement agencies around the state are dealing with as far as drugs remains methamphetamine.

CalebBG: And one thing is if you look at this data and it's really important, and many of you have heard me talk about this forever, is these data represents different things. So the absolute scale of what's going on, you have twice as many heroin involved deaths as there are methamphetamine, but what's interesting and what I think these data possibly represent is what do these drugs represent in terms of the types of behaviors that result in being in this data which means the cops arrested you for something. Which means you're more likely I would argue to have externalizing violent and other types of behaviors related to methamphetamine than for heroin. So not to say this doesn't show you the general trends, but they also tell you the different consequences and behaviors and systems you're interacting with due to these drugs and to the differential effects of that, and potentially the differential enforcement as well. So it's just one of the data pieces we look at.

JasonW: Yeah I should have mentioned that each of these indicators has pluses and minuses as far as telling us what happened and what the trends are, as far as methamphetamine users

Question: Well I haven't looked at this closely myself but I did see a report that in Oregon in 2016 methamphetamine contributed to more deaths than heroin, and effectively matched the death rate from prescription opioids. So is that different from what we're seeing [in Washington]? Could that be because you're not counting the, you know, being high on meth and jumping off a building?

JasonW: Yeah you have to look at what they're defining as in death but I don't have opioids broken out here, like heroin and non-heroin, so...

CalebBG: And that's probably heroin not all opioids would be my guess, and there's also...we definitely don't want to get into this today...a lot of misclassification of heroin in deaths that look like pharmaceuticals. They could have some difference but generally the West Coast is really similar. Basically Seattle and Portland and San Francisco all look the same.

JasonW: And then our last indicator is publicly funded treatment admissions. Again, specifically publicly funded so private insurance is not included here, Department of Corrections treatment is not included here, and this is a statewide database that no longer exists so data only runs through 2015, so you can look at ... This is just simply all the admissions and methamphetamine admissions where methamphetamine is listed as the primary drug, and this has both total admissions and first time admissions. First time admissions is

basically looking back in the data in prior years and seeing did the person have any publicly funded admission for anything at all. They didn't and they're in for again any drug or methamphetamine is their primary drug then they had a first admission.

JasonW: That's one way to look at data. This breaks down a little bit more by primary drug, where meth is this blue line here. Pretty low compared to others, you have to think about who is gonna show up for this kind of treatment. The next graph looks at it as a percentage of all admissions, alcohol being the leading one pretty consistently. Heroin now in second place in the last two years of the data, meth in the third place in 2015, the last year that this data's available, at 17% of all admissions.

Question: Caleb is that adult and adolescent or is that just adult?

CalebBG: It's all. No it should be all. There aren't very many adolescent admissions. And remember this is to the publicly funded drug treatment system, one of the things we'll be talking about with our time here is drug treatment and what people actually want and need. We'll get to that topic.

MikeM: Since Caleb said he started doing this work in 1996, I have a question that you may or may not know how to answer. Do we have data…can you recall the data from back when methamphetamine was at its height during this late 90's early 2000's in terms of admissions and treatment admissions?

JasonW: Yeah there you've got issues with data comparability so we go back as far as we feel comfortable with this data. The data does get into that a little bit. I don't remember, I don't know- [crosstalk 00:21:23] Go ahead Caleb

CalebBG: Publicly funded treatment only goes back to 99 and then we do a three year wash out period for new admissions. And that's why I was hired, I was hired in 2001 by Ken Stark, thank you Ron and Dennis, because of methamphetamine. [crosstalk 00:21:42] It's just a cyclical thing.

MikeM: Yeah I'm just curious in terms of how many admissions and the treatment and where it went from back then, you know.

Question: When Caleb does finally get the new treatment admissions data from our new databases are you gonna be able to match that against historic data or I would imagine there's data comparability-

JasonW: There are gonna be data comparability issues where ... Yeah we haven't really discussed that yet but we saw that a bit with the King County stuff last week where there were some strange drops or maybe some non-comparabilities. My understanding is this idea of first admissions is not going to be possible [inaudible 00:22:37]

JasonW: Yeah, so the reason that we have again these three indicators because we get data on them fairly consistently over time. We certainly want to continue to include treatment data when new systems come out whenever we get the data we'll look at that comparability.

CalebBG: One last thing about this data, these are like primary drug, this is not getting at "Yeah I'm coming in for opioids and I use methamphetamine." If you think about it, if you're going in for opioids you're likely going to list as primary because hopefully you're getting medications and so they're gonna list it as primary. So just your simple presentation of the data.

Question: Conversely, would there be a reason to not list methamphetamine as primary?

JasonW: They don't see it as a problem?

Comment: Yeah that's what I'm thinking.

CalebBG: I mean at that point you've got criminal charges and UAs and Ron talked about ASI stuff forever but why a person wouldn't be representing which drugs they're using in the target data set I mean, it's possible, I wouldn't think that kind [inaudible 00:24:12] in the data.

JasonW: So this last one again is first time admissions which are generally down, and again you can play with this and select your county of interest, you can see how things have changed [crosstalk 00:24:31]

CalebBG: This is very different than heroin. Heroin over the last five years is all about first time admissions; that's completely driving the phenomenon. So this is much more about prevalent users cycling in and out of treatment over time. It's less about some huge bolus of new users, it looks like, best that we can tell, from data that are now dated.

Question: Do we know how good we are at capturing heart attacks and strokes that are labeling the cause of death as methamphetamine?

JasonW: The strange system we have for recording deaths in this country is reflective the idea of federalism in general. No I simply meant that it devolved to the county level with not a lot of standardization. You've got counties with elected coroners trying to decide if this death was [inaudible 00:25:38] so on and so forth. You've got different standards for how to write down what happened. Generally we like to think the instructions are that for drug deaths a medical examiner, somebody with some expertise is deciding what was the one underlying cause of death. But if it gets written down as a heart attack it's not in this data, because it's not a drug report. If it does get recorded as a heart attack due to the effects of a drug that is going to get recorded as a drug related natural death so its…

CalebW: So we've got a 300 person case series analysis of methamphetamine-involved overdose deaths in King county, and just to speak to this very, very briefly the manuscripts not quite done. We looked at cocaine, methamphetamine, heroin and the various combinations, and methamphetamine and stimulant only involved deaths or without heroin tend to be either acute or chronic cardiovascular disease. So these are heart attacks, enlarged hearts, those types of things. Heroin plus methamphetamine deaths tend to look like heroin deaths in terms of cardiopathology and in terms of demographics and so on. We definitely do get a lot of evidence of both chronic disease and I think that

is a part of the driver here is chronic effects on the heart of methamphetamine for people who have been using it 20 years, as well as acute events like aneurysms and heart attacks.

Adobe Connect Chat Box

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Sandy K: Residential ISP within the facilities serving Greater Columbia generally do not discuss this as an option in discharge planning.

Ron J: What a shame.

Rick R: Most episodic meth smokers do not want treatment

Sandy K: Agreed
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CalebBG: So are we underestimating all deaths? Possibly. I would also argue that the person who dies of a heart attack from methamphetamine is less likely to get ruled as a natural or likely to live in a nursing home and get ruled as natural, there's probably other circumstances in their life that are gonna be likely to lead them to being reviewed in an autopsy.

SusanS: Rick just commented [in chat] that choosing primary substance is variable is less than clear.

JasonW: Yeah with human data you're relying as we're discussing on what the person is reporting, that is a weakness in the previous data but it's the closest thing we have to what they were in treatment for, why were they.

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Rick R: Choosing primary substance is variable and less than clear

Rick R: maybe doing a summary sort of the first
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JasonW: I don't think the data marks secondary drug but it might mark-

CalebBG: We have primary and tertiary data, we can run basically the exact same thing for treatment as we ran for death. That is, how much of this is sort of a single primary drug? Almost never. How much is secondary drug? You have to decide whether to include marijuana or not. It can be run in the same way but we're gonna show you data out of the drug injector survey in just a moment that I think will kind of shed light into the patterns of concomitant drug use. Which I think really reflects what I've seen historically in treatment data as well, and in mortality data they all kind of align thankfully.

Comment: I think a couple of things about this. One that some people don't... There's more stigma now around saying methamphetamine when you're actually asking people the question than there is for opiates. Now the things people say what's driving the questions in the assessment. I'm here because I'm safe, I'm here because I'm in withdrawal. So that turns up. And then there's more opportunity to ask more questions or get a little bit of really just understanding in the last 30 days in the last 13 months.

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Rick R: I have run into more long term meth users who smoke it vs heroin users who only smoke it

Ron J: Don't get me started on stigma and MAT
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Comment: I've got an amphetamine question to get a clear picture because a lot of people have a lot of methamphetamine use that they don't speak to at the moment, so it is something that is a driver towards them wanting to go to treatment not having to go to treatment through the legal system. Because there's now a stigma that ... Stigmas shift in the world

JasonW: So yeah we're getting more of the experiences of users in the next section. Are there any questions on this overarching data?

SusanS: Rick did comment maybe doing a summary sort of the first three substances.

CalebBG: Yeah we can do that.

Comment: One thing we've noticed our BHO data our providers tend to submit numerically and our system will only select the primary and have eleven come before three so it's hard to say [crosstalk 00:30:07 – chatter about implications for reporting of primary drug]

DennisD: It's your turn to speak. Move along. Thanks Jason.

CalebBG: As background we have some rich data and we have some insights as to what's going on, and things have really shifted over the last 17 years, so I'm really excited to share these data with you but we also want to really make sure we have time to begin the conversation about what do you see working on? What are the important unanswered questions? So against my better wishes and it's probably gonna be impossible but we'll try to go quickly.

NOTE: **Refer to presentation "2017 Syringe Exchange Survey" in Appendix B**

CalebBG: I'll go quickly or it just might take an hour. In 2015 we did our first statewide syringe exchange survey covering about 18 programs that contribute about 80 percent of syringes in the state and basically the same thing happened in 2017. And Allison and Susan (K.) have worked phenomenally hard on everything related to this and so just acknowledge that they're really the experts on the acquisition and attainment of these data and Allison kindly ran this data for these purposes. I'll also mention that we were doing a lot of work, I have a masters student wrapping up a paper around treatment interests for heroin users and a doctoral student now working around methamphetamine data so we're presenting some sort of descriptive data, we'll be doing some more in the multivariate work coming up in just a minute. So if you go on the next slide.

CalebBG: Okay, here's 18 locations and then Jason did these graphs which I'm strange, I think they're stunning. But I think it's really important that if you look at the blue dots for instance, those are people who went to the public health Seattle/King County syringe exchanges, and then the dots are based on the zip code of where they slept the night before. So you get a sense of spread but pretty reasonably, and it's important all these like Thurston County and syringe exchange down there actually serves a five county region. So you can see where people already get a little sense of distribution and over 1000 people were surveyed. We have an initial report online I'll let you know. Not initial, we have a comprehensive report for 2017 online.

CalebBG: Also 2015 and in 2015 Susan also did a report where she surveyed syringe exchange staff. So your interest in syringe exchanges and what do they do and how do they pay for it and all those types of things and it's really rich data there if you're interested in syringe exchanges. And there's a lot of really great work going on now with the department of

health really seeing this as a really critical access point for health and other services for some of the most vulnerable people.

CalebBG: For health and other services for some of the most vulnerable people.

CalebBG: So, what you'll see here, what I think you'll see is important, the things that stand out to me is over 40% of the folks surveyed are female, I think people don't recognize that.

CalebBG: We have a big distribution here, a broad distribution, about a third of people are under thirty, about a third are in their thirties, and about a third of people are forty and older. So this is really broad age span. Certainly the majority, White, as is our state. But as a substantial proportion of Americans being Black and Native, Latino, Black, and other race/ethnicities, one of the most important things that I'll really draw your attention to is that less than a third are permanently housed. The rate of homelessness is stunning and is increasing among the population and very strikingly within King County in particular.

Question: What was it last time?

CalebBG: I don't know.

SarahG: It was a bit lower.

CalebBG: You remember for King County -- Sarah, do you remember for King, what the change has been? I know you graphed that.

SarahG: Yeah, I think the absolute percentage change was, like, it increased about 15%.

SusanK: Yeah, the trend line seems to shift between those reported temporarily or comfortably housed to homeless.

SarahG: Yeah.

SusanK: The permanently housed line is decreasing. It seems like a shift between the temporary up to homeless.

SarahG: The King County estimates are much higher than [inaudible 00:34:38]

Comment: In principle, for folks like me, who are research epidemiologists, that means about two thirds are untraceable.

CalebBG: Right.

CalebBG: But, but you should pick a strengths perspective.

CalebBG: Okay, so... Just a little check there.

CalebBG: A substantial minority of folks have been in jail or prison in the last twelve months and that's really important for a lot of different reasons. The modal income in the last year is zero. The mean is ... In the last month, I apologize, I believe. And the mean is 466. These are not wealthy folks.

CalebBG: How is the drug use? Super important here. I'll probably try to focus on this most, look at ... I should mention this is a roughly five to ten minute brief, anonymous street intercept survey for which they get a little piece of chocolate. So, we don't do a timeline follow-back survey. We're not doing an ASI. I'm looking at all my colleagues in the room. These data are complicated to get published because no psychiatric or medical journal thinks these are good quality data. I think they're some of the most important data we have.

CalebBG: So, did you use at all? Did you inject? So for heroin, for instance, 80% used it, everybody injected it, but almost half smoked... this is really important, there were very high rates of smoking heroin as well. And almost two thirds said it was their main drug. Methamphetamine. Same proportion using. A little lower proportion injecting. A lot also smoking.

CalebBG: So very importantly, recall, we're interviewing people at a syringe exchange. There's a massive amount of folks ... There's a ton of people who smoke methamphetamine that we're not even touching. And as a side note, there's a ton of folks are only smoking heroin who we're also not touching. Really important.

CalebBG: So only about ... not only, but about quarter of folks said meth is their primary drug, and about six per cent the combination, a mixed use of heroin and methamphetamine was their primary drug, and nobody can maintain a habit on pharmaceuticals anymore.

CalebBG: Any quick questions? And I'll dig into this more, but any more on the patterns of drug use?

Question: This question: So, there's about 20% of methamphetamine-only users that are not injecting, but using needle exchange services?

CalebBG: No, no, no, no. So the point is, by definition, most people are doing both.The fact that these numbers are both above 50% means most people are doing both.

CalebBG: You don't have to inject [meth]. As opposed to heroin, which is a mixed bag - ha, ha - and you're more likely, to really get a maximal effect, will want to inject it. Although there's another reason people in treatment are smoking. The point is, you don't have to inject methamphetamine to get a really good effect from it.

CalebBG: Okay. So, looking at if your main drug is heroin - this is really important - if your main drug is heroin, did you use these other drugs at all? So your main drug is heroin, three quarters said they used meth by itself, and half said they had used a goofball. Conversely, among those who said their main drug was heroin, 89% reported using another drug. So heroin users are poly drug users. Most likely methamphetamine, and we don't want to forget our good friend cocaine down here. Conversely, very differently, very important for our conversation today, only half of methamphetamine users are using other things if

their main drug is meth. And a third are using heroin and about a quarter are using a goofball.

CalebBG: So these are different patterns of polysubstance use and also different patterns where most heroin users use meth, and most main meth users are not using heroin. Just putting that out there. And just to be clear these overlap: the goofball and heroin by itself. So these are different folks. So the proportion of main meth users is smaller, and main meth users are less likely to be polysubstance users.

SusanK: And we did not ask about alcohol or marijuana. So, you don't see them on that list because we didn't ask them.

Comment: And those are main meth users who inject, because they're showing up at a needle exchange, right?

Comment: Right. They inject something.

CalebBG: Heroin injectors who smoke meth, and meth is their main drug, certainly.

Comment: They inject something.

CalebBG: But not necessarily.

CalebBG: Okay. Real quickly, we're really interested not just in substance use, but what services do you need as a human being? Yes, we're substance abuse researchers, but we actually really care about the people who are involved here. So among these primary meth users, what's happening with them? What are the consequences? Using some language from a colleague that, instead of using the word "overdose," we're using the word "over amped." This is complicated. We're talking about racing hearts, psychoses, I mean, it's not a clear definition like it is for opioid. You get, actually, a similar proportion say they've over-amped. Main meth users a much smaller proportion of opioid overdoses. About roughly 20% opioid users report an opioid overdose last year as opposed to primary meth users, but it also means primary meth users are still people you should talk to about opioid overdose.

CalebBG: Really importantly, a quarter had an abscess. One in five had a soft tissue infection. Endocarditis is actually relatively low. It's point seven (0.7) per cent, compared to opioid users, which is over three per cent. And you can see sexually transmitted diseases are also important. And we have Theresa on the phone and also Sarah, I think, is interested in the topic. Eight percent have been pregnant among women in the last year who are primary meth users. So that's really important.

MikeM: Did you ask about dental issues?

AllisonN: We didn't ask it.

CalebBG: We did not explicitly ask it. We didn't explicitly ask it, but we [crosstalk 00:40:49] identified that it caused some concern in many ... I didn't run how frequently that came up.

CalebBG: It's not a standardized question, so it's going be under reported, probably, but we do have a way to get at that to some degree. It's a good question.

CalebBG: Most had insurance - and I don't know if it's in the slides or not - Most do not indicate a lack of insurance as a barrier to care.

CalebBG: Where have you received care in the last 12 months? The ER, jail, and other clinic setting. So a substantial amount of acute care, essentially. Acute medical care.

CalebBG: Moving along. My favorite question, and I'm sure yours also, given what meeting this is. We asked the question, "Are you interested in reducing or stopping your substance use?" And we do not ask people if they want treatment, because that's a different question. We ask if they want to stop or reduce their use. We've limited these results here to those who are not currently in treatment. About 14% of people, I believe, are in treatment. Mostly methadone. Methadone or buprenorphine. So, probably not gonna shock many people on the phone that you can be on methadone or buprenorphine and continue to inject drugs.

CalebBG: So are you interested in reducing your stimulant use when meth is your main drug? So this is Very and Somewhat combined, at 47%. So 47% of people are interested in reducing their use. That's a very different pattern than opioids, which is 78% of folks identify that they want to stop or reduce their use.

CalebBG: And it's something that, we'll show you a little more data here. It's a primary thing we're very interested in. And we'll probably speak to it. We're also going do some qualitative surveying through the summer to really try to dig into this more to understand, what is it that people actually need? If it's not to stop their use is their primary interest, what services are we interested in that would be helping their life situation and health.

Comment: That's a really interesting slide, it's a really interesting question. Knowing the very little that I know, conjecture would say that opioid use is going zip.

CalebBG: Yeah. There's tons of reasons, and I think we'll get into it a little bit about ... When I was doing qualitative interviews of methamphetamine users, there are very good reasons people use heroin. But one of the main reasons is to prevent withdrawal. Right? So if you can address that, you can address one of the main reasons to use heroin. There's a lot of good reasons that people use methamphetamine, like as a stimulant and an appetite suppressant, maybe less about withdrawal, depression, or psychoses. So their benefits are different. They're getting more benefit than harm and so they want to continue using it.

MikeM: Did you ask any questions about depression or mental health?

Caleb: Thank you. Coming up next, I think, or close to it.

ShelliY: Caleb? This is Shelli. Did you ask, or do you plan to ask any questions related to stigma of MAT?

Caleb: Yes. Yep. I'm sorry, stigma about MAT?

ShelliY: Yes.

CalebBG: No, we did not. I'll show what we did ask about stigma, but we did not ask that.

ShelliY: I was able to spend a day at Whatcom County Public Health syringe exchange, and had conversations with the folks, and I was surprised at how many said that they didn't want to get on buprenorphine because they didn't want to treat a drug with a drug.

CalebBG: So next time we meet, I could show you the results of the work ...

CalebBG: We do a lot of work around treatment decision making that is to address exactly that issue. So that's an incredibly important topic; we didn't address it in this particular survey, but other work we're doing is directly addressing that. It's a major issue.

DennisD: Just a comment as well. In the Native communities in which Mike and I work, that's often the same thing we hear lots about. It's just substituting one for another.

ShelliY: Yeah, and I mean, I'd expect to hear it from the families, but not ...

DennisD: Right, same.

CalebBG: I really want to talk about that, but ...

CalebBG: Okay. This is really important and relates in part to the question you just asked. What types of help would you want if they're easy to get? So I don't know if you can see my mouse or not, but you start seeing mental health - and I apologize. This was primary heroin users. So almost a third say mental health, meds, a third say inpatient treatment, a similar proportion outpatient treatment. Counseling was 41%. Detox was 49%. Number one answer was opioid use disorder treatment medication, and within that it roughly is split between buprenorphine and methadone. Very few said naltrexone/Vivitrol. I also think a lot of people don't know what naltrexone and Vivitrol are.

CalebBG: So as a side note, a whole bunch of work we've been doing just to support the hub and spoke work that's currently getting funded by the feds through DBHR is around implementing this treatment decision making process, and that's helping people make a decision about any of these three treatment medications. And letting them also know what they actually are.

CalebBG: So just to keep moving here, a little bit, this question, now, is around those who say methamphetamine is their primary substance. This is really important. So, 11% don't want or need help. 19% said detox. I put a question in there that's essentially, interested in medications that may help reduce stimulant use. And I acknowledged ... And we'll talk about the very mixed literature on bupropion for sure and mirtazapine to some degree,

but I at least wanted to ask this question. And it's already been interesting when I shared these results with an addiction psychiatrist out on the peninsula. She's like, "Wait, I forgot. I don't even bother even to ask methamphetamine users if they're interested in these medications anymore. And you've reminded me, and I will ask the next person I see." Like, this is a job. At least have the conversation with folks.

CalebBG: About a third of people inpatient and outpatient and counseling. And then number one answer here: counseling for addiction and mental health care or medication. Alright, so it's not outpatient, inpatient treatment per se. It's counseling and/or mental health care or medication. I think that's really important.

CalebBG: So, questions, comments on this? I think I just have a slide or two more.

SusanS: Oh, there are some comments in the chat box, actually. Would you like me to ...

CalebBG: [reading question from chat box] What's the number of long term users who smoke it versus heroin users who only smoke it?

CalebBG: Right. So I think it sounds like they're saying more people are likely to maintain a habit on meth by smoking it. I agree. My sense is most heroin users who smoke are either doing it intermittently or are on the path to eventually becoming an injector. That's my opinion. I don't know if anybody has any comments on that.

CalebBG: What do you see, Johnny?

JohnnyO: Well, I have a big long list of stuff here.

JohnnyO: Most people here probably know that there's many, many more people that smoke methamphetamine than inject it. Like, by a huge, large number that are not showing up anywhere, and every now and then come in for treatment or call recovery help line. It's just the biggest, the largest amount.

JohnnyO: And the other thing about the motivation for change is the binge use pattern of methamphetamine. People go hard, and when they get some sleep and do some stuff, and turn back up, everything's fine. So if you talk to them at that point, it's not a big problem. And then when we talk about homeless people who are homeless and pretty much driven to use every day and can't sleep very much, then we have that whole other group of people that we're talking about, that's really separate, I think, from probably the majority of meth users in Washington state who are using and not homeless.

JohnnyO: So there's just a lot of stuff. I work with homeless people, so I know a lot about homeless people and methamphetamine use. And because, you know Sundown M Ranch or one of you - obviously we've talked about this before, where - you're required to go into treatment for methamphetamine use because they got arrested, they got in trouble, something happened. Those are all a large group of people that we don't get to collect, but they're larger than this group of people. It's the largest group of people.

JohnnyO: And the only other thing, and I wrote lots of stuff down, is availability. It's availability. There's so much methamphetamine, it's so easy to acquire. And it's extremely cheap and I have many young people that get it for free. We have a sub competition.

Comment: It begs another question, conversation. And I'm sorry to do this for some of you, but I'm channeling my inner Shiloh about, how do we get in contact with the people who are not injecting, who are smoking drugs? And are there harm reduction practices that would help us come in contact with those people? Because otherwise, they don't touch our touch points. Except for maybe jail.

Comment: Well, I actually was involved in starting to develop a project that was just doing that with somebody in New York who was using harm reduction intervention called Break the Cycle that really targeted injectors and asked them about their initiation practices versus non-injectors. He has been doing this project in New York and we were talking about bringing it to a more rural setting here. But I had an interesting idea of food and everything. And that intervention has been around for a long time. I'd never heard of it until I started talking to him. So there's other interventions like that.

Comment: The other system we meet folks a lot in is in the Child Protective System. That's also where we're touching, there's a lot of ... But even as a child psychologist I would see parents. But even if they're not in the Child Protective System, it became readily apparent that that would be ideal. So I like the idea of being involved further defined.

Comment: I wonder about a couple other data points, well, at least one other data point about EMS. I know that they're really working hard on that data and refining that data and releasing King County. I know that Seattle has some really nice data sets that they're churning out.

Comment: I mean, so, there's too many different things. But the high utilizer situation in Seattle-King County: so much of the response if for methamphetamine psychosis, which then nothing happens for them. And we all, from our drop-in center, the Orion Center, and other places, start with maybe sometimes twice a day where the young person is in psychosis, and then goes to the ER and is not admitted. And that's a whole 'nother conversation about meth psychosis versus real psychosis. And that is such a huge, separate thing, but from a high utilizer perspective, it's much more severe than alcohol or any other drug. We have a couple of programs now that do interventions rather than calling 911, because what you're looking at is meth induced psychosis and they're gonna go to Harborview or somewhere and get let go. I was just trying to really work on that a lot.

Comment: The other thing, channeling the Shiloh thing. Shiloh came out, got in the newspaper and handed out meth pipes. You know, and I got all of that part too, because that's just how it goes. Him and I, we would go out all the time. But he said the one thing that meth users don't get, there's nothing for meth users. And I was thinking also the rather than saying injection site, saying consumption site. And I went to Insight in Vancouver, and they hand out meth pipes, right? And, you know, this is all hard edge harm reduction stuff, but I'm trying to understand methamphetamine as the [inaudible 00:54:33] test.

DennisD: So, I'm gonna stop the discussion at this point so we can get onto the agenda, because we have a space later on for more broad based discussion. And Susan's up.

SusanK: All right. So, even though I work now in opioids, all things opioids, between the years of 1995 and 2008 it was all methamphetamine. My work was all about working with both. Using methamphetamine, I worked at what was Stonewall Recovery Services, RIP, which was an outpatient drug treatment center serving LGBTQ clients. I was a PDP back in the day when PDPs were PDPs. In the DOSA days, to toss around old terms. And then prevention, Director of Prevention and Harm Reduction at Stonewall.

SusanK: And I also worked in Public Health Seattle-King County in the HIV/AIDS program. Their primary intervention has been strategized around methamphetamine into syringe exchange and through a project that emerged in the late 90s from epidemiology that showed significantly high HIV prevalence among gay and bisexual men who were injecting methamphetamine. That's the same data that was seen in all the cities along the west coast, and we all developed programs at the same time that all looked similar because we were all on the phone with each other. There wasn't anything that existed then. We had to create it, and we all co-created it together in San Diego, and Los Angeles, and San Francisco and Seattle. So, those harm reduction and those behavioral interventions in the mid- to late 90s were primarily and almost exclusively focused on gay and bisexual men. They were focused on reducing sexual risk behavior and trying to get a cap on this HIV infection rate that was growing in this population.

SusanK: Because meth has its roots in the west and moved eastward, the programs we developed on the west coast became the foundational models for harm reduction and engagement interventions as it went east. So you will see similar programs around that came up in Salt Lake City, Denver and Chicago and Miami and New York. What we have in the literature is very little around harm reduction. We have a lot of literature about who's using and why, and a ton of literature around gay and bisexual men and HIV risk and sexual behavior. The literature that's published around more of this harm reduction, non-treatment topic tends to be almost all about gay and bisexual men, with reductions in sexual risk taking and reductions in stimulant use as kind of the main outcomes that were measured by these interventions. There is very little in the literature about anybody else who uses methamphetamine or any other types of interventions around harm reduction, or that engage people in non-abstinence based interventions.

SusanK: So during this time, my work was working in syringe exchange directly with people who use methamphetamine, leading a group of peer educators for many, many years who we trained to provide health education and harm reduction and safe sex messaging, who did secondary syringe exchange and who also acted as why we would call now peer coordinators, or peer recovery coaches. They were our access point, because as we know, it's very difficult. Folks don't come to you for these services so easily. So, our peer education team was a critical component to disseminating health education messages and syringe exchange – they just had an engagement with both.

SusanK: A lot of my time was spent doing individual level harm reduction counseling and leading harm reduction and abstinence-based groups that started out being exclusively for gay and bisexual men. At that time only (and they may still be the only) group out there for people who use methamphetamine that aren't abstinence based. What I saw very quickly was that, even though we had these groups designed for gay and bisexual men, I kept getting women showing up. I kept getting straight men showing up, because they didn't

care that it was for gay and bisexual men. They cared that it was for methamphetamine. Because what everybody said is that, "Nobody else gets us," that the experience of using methamphetamine is so different and so unique, and the stigma at that time was so severe, that at that time the most disgusting person you could be was somebody who used methamphetamine. You remember the pictures, remember the posters. We all remember that. [e.g. Meth mouth]

SusanK: So we began then, I started a group for women, and then I started a group for anybody who wanted to come. The gay and bisexual men were like, "We don't care!" Because actually, some gay and bi men preferred the mixed group because it was less triggering sexually for them. So what I found in this work (I'm not a researcher, I am not an epidemiologist. I am just somebody who spent a lot of time walking alongside ... Johnny and I were just walking alongside people in their journey with this drug.

SusanK: So there's a lot to say. There's a lot missing in the literature, and we can talk about where I think the research could be useful in terms of the non-abstinent side of the cup. I think what I can offer this group that might be interesting and relevant is trying to help understand where the treatment system fails people, or why. It's very difficult. Methamphetamine use and methamphetamine addiction is really challenging in and of itself. What I heard regularly from men and women who I sat with is that the model of drug treatment doesn't at all fit them and their experience. They couldn't handle the boredom, to be honest, of regular treatment. It is based on alcohol, and I heard regularly, "How boring!" People are so bored. And that is a consequence of methamphetamine, right? They couldn't handle ... The groups were too long. The groups were too boring. They couldn't stand listening to alcoholics. Blah, blah, blah. You know, they just could not relate. None of the discussions were relevant to methamphetamine use that talked about cravings. Nothing was at all reflective of what their experience was.

SusanK: They couldn't find a home in 12 Steps meetings because 12 Steps philosophy was all about admitting you were powerless and using methamphetamine was all about feeling powerful. So there was this inherent disconnect in philosophy and experience, and the stigma, again, people felt they just didn't have a home in 12 Steps. Meaning that traditional drug treatment failed to realize the utility that methamphetamine offered people in their lives.

SusanK: I think this is one of the main reasons why you see in our syringe exchange survey where people who made drugs with meth were less interested in stopping that use, reducing it, is because it really helps people. It really works for people to a certain degree for a certain period of time. And people are quite fearful. When they come in and we are doing our motivational counseling and scoring ambivalence, one of the big reasons people are not so sure about giving up is that they can't comprehend how they're going to function after without this support. Whatever it is, whatever functionality it provides for them, they are very fearful about what they're going to do in the end for that.

SusanK: The role of mental health is huge. It's no surprise to you that people who, when we asked them in the syringe exchange survey what help they wanted, Mental Health Support was number one. I saw that regularly with folks. They had a really difficult time getting any psychiatrist or any mental health professional to even see them unless they had at least a

couple of months abstinence from methamphetamine. And I understand, from a chicken and egg and mental health perspective, how it is difficult to tease out what is an inherent mental health issue. But I will tell you that everyone coming off methamphetamine is the worst. They are depressed, there's anxiety. Whether that's an underlying chronic mental health condition or it's a temporal one, it is there.

SusanK: But people have a really difficult time finding providers who are willing to work with them until they're done with their methamphetamine use. But a lot of people can't be done with their methamphetamine use without some kind of mental health support as well. So that's a significant barrier for people. I heard that all the time. All of the time. How much help people wanted for that. I think it's also not surprising that people - again, in this data - where you see this difference between first time opioid admissions versus cyclical chronic readmissions for methamphetamine. What is very classic with methamphetamine addiction is this three month wall where ... and when I was counseling, I actually gave out calendars to everybody. I handed it to them and said this is a calendar and how to use the calendar. But I want you to know when your three month period is gonna hit, because that's when it's gonna get hard. It's gonna hit at three months.

SusanK: And it almost always hits at three months, for people who couldn't tolerate the boredom, the anhedonia – the encompassing anhedonia. They cannot, after you get over that honeymoon phase, of "oh, my brain works again, and I've got my natural energy," and like, "shit's starting to come together for me." At three months, they just flatten out, and they go back. You'd think it would be very hard to deal with a normal pace of life -- what we would call a normal pace of life. It's very, very difficult. So again, here's where the lack of support for people is ongoing.

SusanK: So I guess my pitch here, for this group of folks, who have some influence in treatment and research, is there is tremendous value in non-abstinence-based ... harm reduction counseling, mental health counseling, psychosocial support that is not abstinence-based for people. Because people can engage in dialog about their methamphetamine use, they love it, they hate it, they're ... you know, it's up and down binge.

SusanK: The window, we all know, working with addition, that people's window of opportunity opens and closes regularly. For methamphetamines, it opens real fast, it opens real narrow, and then it shuts closed really, really quickly. And so I've always felt like the value that we had with our group is that no matter where people were, we were always there. And because we also worked, we had our harm-reduction group in a drug treatment center, when that window was open, I walked them two doors down, and we got them in. And when they, if they didn't continue with an abstinence based, all they had to do was walk two doors back. Or they could walk two doors that way, and go to our syringe exchange.

SusanK: So that model really worked for us, though we don't have any research to prove it. You know, there is no research to prove that it works. I just have my anecdotal experiences that I know the value in it for a lot of people. Having more options for people, beyond just a few weeks of outpatient treatment, is really really critical.

SusanK: And what I have been predicting for a while, is that we will have to move, we've already now moved from the opioids to the methamphetamines. We are gonna have an empathy drop. In that there was lots of empathy around opiod use disorder. Because we caused it. we, being, this is was something that started out as a prescription opiod problem, it has its roots, it was medical professionals, and we certainly have documented that transition from opioids to heroin, and prescription opioids to heroin, and there was this sense, within I think the treatment and medical community, that, oh, well these poor folks were sort of victims of pharmaceutical companies, and bad prescribers, and so now we have a moral obligation to help these folks. Plus we've got medication to make it easy to do so.

CalebBG: We have overdose-reversal medications.

SusanK: Yeah, but there's, we see what caused it, we have ... easy to implement, well, maybe ... but you know, there are some evidence based solutions, biomedical solutions, that can help with this (opioid use). None of this exists, it didn't exist for methamphetamines 20 years ago, and it still does not exist for methamphetamines. So my concern is that we will not care. The world will not care as much, or focus on users of methamphetamine as the world has cared for opioid abusers. And I'm actually surprised at how much empathy ...

JohnnyO: That's already true.

SusanK: Yeah, so I think again that's my pitch for ... and what I'm hopeful, is that we have achieved a step up in empathy for substance use and addiction with this opioid crisis. And I'm hoping that we can continue to walk that bridge, and we now move into methamphetamines. We're broadening our perspective here, so that we can make the same kind of mind-set shift around methamphetamines in similar ways that we've done around opioid use.

SusanK: We don't have, the solutions are not as simple, with methamphetamines. I'll get off my soapbox.

JohnnyO: A lot of people I used to work with are completely meth-free now.

SusanK: That's true.

JohnnyO: A lot of them. And they just took all that time.

SusanK: I will also say, that from a mortality perspective, Johnny and I were just kind of whispering about this a little while ago, that I remember 2002, I lost 12 clients in a year. Almost one a month. That was my banner year. But those deaths were liver failure, stroke, seizure, most of them however were due to violent nature. Either a self-inflicted injury during psychosis, and I had one client murder another client, in Freeway Park. Both of them high. You know? After a long long run. So methamphetamine mortality is not new. I think we're seeing it differently, we're catching it in the data differently. It's not new.

Comment: Can I say one thing too, in your story. Pointing to this, is that people when they're under the acute effects of methamphetamine, versus people when they're under the acute effects of opiates, have, I mean, obviously due to the broad interaction, an opiate user is

gonna be passed out on the street, right? I mean, you're gonna find them passed out on the bus, overdose, they're gonna be nodding, all that stuff, blah blah blah. Somebody under the acute ... we've dealt with it when we were talking about, as Johnny said, with air quotes, "supervised consumption spaces," that, how dare you supervise consumption spaces for people smoking methamphetamine, or even like, are you gonna drug test people to make sure it's only heroin they're injecting, because of that effect on the person, pharmacological effect of the drug on the person. And I think people are more afraid when people are under the acute effects of methamphetamine, you know, if you have somebody who is under the acute effects of methamphetamine, in an enclosed space like a bus, it's gonna look a lot different, and people are gonna respond very differently that people who are under the acute effects of opioids.

Comment: And there's a historical, cultural backdrop to that, you know. From the point of methamphetamine consumption, association with violence. [inaudible]

MichaelM: The thing, I know the co-occurring disorders ... the one thing, the one thing, alluding to the trauma, just being a meth user, and getting free methamphetamine, free, the life they end up living, such a high risk of experiencing trauma.

SusanK: I definitely saw that with my women. Working with women. Terrible.

Comment: And speaking of trauma, you know, and the thing about empathy is really really important because you know, we in the field watched the shift of attitude with all of a sudden, it wasn't those people anymore, it was your daughter ... it wasn't *those* people anymore. And I think that's really really important. And hopefully there has been some awareness about substance use disorder that has come along with this epidemic. But I also think that there's an opportunity in helping folks understand about substance use disorder and the tie to childhood trauma and [inaudible]. And understanding that there is such a connection there. That both really are just trying to use drugs to feel normal.

JohnnyO: Just, briefly, also, the epidemic, clearly everybody in this room knows this, white people started dying, and that's when people started to pay attention.

Comment: Right.

DennisD: We all know that. I wrote down here a little bit, I talked to my friends at work at Project LEAD and Project REACH in downtown Seattle, a lot of methamphetamine users. And also just this idea of mindfulness in treatment, versus like, productivity, they're giving people a house, and they're taking apart everything, tearing up the toilets and stuff. And her little dream model is to have these permanent housing places, where there's a gadget room, and like, little places for people to do stuff. From a harm-reduction perspective, we're housing, we're permanent housing for methamphetamine users where there's little, a bunch of stuff to tear up and mess around with, and you know. I mean, that can be messy. But the idea, you know, that we go to treatment ...

Comment: And we'll all put it back together real quick.

Comment: Well, you know ...[crosstalk 01:16:33] it's like Legos, right?

SusanK: I had a toy box in my office. I did. I had a toy box. Right next to my desk. And people would frequently just grab something out, and fidget with it.

Comment: It is something to do, right? And you know, just ideas around ... and also, a lot of meth users do go to treatment, and a lot of good things happen for them. And a lot of people actually stop using meth, for lots of different reasons. But there's that period, you know? And just walking through that period, and also talking about relapse, and just you know, shortening the relapse time, all of that kind of stuff. And there's a lot of medication stuff that's not just happening yet. And I really think that a detox facility that could take stimulant users, and I tried to talk to the Valley Cities people, but they're not feeling it for the same reason we're all here. To just help people get some sleep, and get some rest, and drink some water, and eat some food, and let's talk on day three, let's talk on day five. Like, really, it just would help.

Phone: Yeah, a sobering center [crosstalk 01:17:51]

LindaG Can you hear people on the phone?

DennisD: Yeah, we can hear you [Linda].

LindaG: Oh, okay. You know, detox, at least my detox program saved stimulant users. So I think that it's not a blanket ... I can't speak for anyone else, but we have two, and we take stimulant users, we don't necessarily give them much in terms of medications, we give them usually allergy medicine. They're usually using other drugs too, so ... I didn't want you to think that all detox programs don't take stimulant users.

Comment: I know that. I just actually really think that they could get some other medications, meth users, that can really help them sleep, for really a good cycle, get back to a cycle, a cycle of sleeping at nighttime, and doing some little stuff in the daytime. But I know that.

LindaG: Dr. Ries, they did a very good [inaudible 01:19:05].

DennisD: I was gonna say, Susan, what I appreciate about your presentation, is that while we're talking about evidence-based practices, we have to listen to the practice-based evidence – which is what you're giving us. And for those of us who did community-based research, that's really an important piece to hear from the ground up, as opposed to top-down. And I think that's really what you gave us today, so I appreciate that.

SusanK: No, I appreciate the opportunity to talk about it.

SarahG: Can I add one thing, I really appreciated the history you gave, with the link between gay and bisexual men, and meth users. And one of the findings that we found in some of our analyses of the same data that Caleb presented is that we see injection-equipment sharing between men who have sex with men, and other methamphetamine-injecting folk. And you alluded to, like, HIV, the prevalence of HIV is about 40% among MSM who inject meth. It's our highest population, by far. Yeah, and that hasn't changed. Of course, because we have treatments now, for a lot of those self-injectors who were affected back in the '90s are still with us. But it just creates this potential for the introduction of HIV to a

population that fortunately has been at very low risk for many years, because of our harm-reduction strategies. But I think the potential's there. So I know this is a treatment profession, but I think HIV has to stay on the radar, because there's definitely the potential for it to loom again.

SusanK: I've noticed we've seen outbreaks in sexually transmitted diseases, syphilis, among users in other parts of the state, but here we go again.

SarahG? Right, and Massachusetts has already seen an uptick in HIV among people who inject. We are not seeing that yet, in our surveillance data, so that's good.

ChrisD: Thanks to fact-based evidence, just some more, I was comparing notes, and sometimes I'm nodding my head, and other times, I go, "huh?" But ...

DennisD: That's not unusual, though.

ChrisD: But I do office-based outpatient one-on-one therapy. A mixture of mental health and substance abuse, individual counseling and CBT. And all my patients are men, and they all have HIV, 100%. And they all use meth. It's almost exclusively that population. And they're in one of the most famous medicine/HIV clinics in the world, that Bob Harrington started over at Capitol Hill. And these ID docs have my patients on non-detectable viral counts. And they tell me what they do. And people who function on meth are not in my caseload. I know they're there, but I'm struck by, you know, my little experience with Dexedrine in college, and it was all about cleaning the house, or working out, or reading an extra chapter. And these guys are like, their thinking is more spookily, eerily trashed, their cognition, than anything. Their eyes look more lifeless. They look like I drew a dead person with their eyes open. And they're just objects in motion.

ChrisD: And they're being victimized by the assholes that they hang out with, who steal from them, and use them for sex. And shooting up is part of the foreplay. And it is so linked, and they're caught in cycles where they're using - binging - sleeping cycles. And as soon as they recover from that, they get ambushed by someone on the street that they have no defense against, they just line them up ... they have no defense.

ChrisD: And so I have two that have been sober for a year or two, four years. They are all given Mirtazapine. The score is Mirtazapine zero, meth 400. It does nothing I can see clinically. I have two very serious alcoholics, both of whom are on Naltrexone. And I swear to god, they are sipping beers. They are sipping two beers a month and not finishing them. The testimony, again and again. And that is a little tiny case sample, but it's astounding. Listen to it. And some of them like 12 step groups. But they're basically -- this is the package. Mental health counseling, primary care medicine, world-class HIV.

ChrisD: And I haven't gotten one person to state-certified treatment. That I can see. And they almost, like, 95% just leave. They don't terminate, they don't say goodbye, they're just gone like that. I tried harm reduction with a guy who shoots [inaudible 01:24:38] and he can, it was a actually rough treatment, because he probably wanted to quit but he was so far away from that, I couldn't figure out a way that we could, you know, kept him the next few years alive. And your vascular system just couldn't hydrate after the first shot. And he

would just sit, staring at the wall for the entire 12 hours. And he couldn't even summon an effort to shoot up carefully the second time. Around needle hygiene, he was just really sloppy. We had a nurse there that'll tell him, take him in the back room, show him how to, you know ...

ChrisD: And so my sense is that this is just out of reach without locking people up. And I don't know about the three month thing, I'd like to know how long that lasts, my experience was some people would feel terrible, it was bad. Other people just, seemed like they never really feel totally alive. That's just a small sample of people from someone who's experienced people with all the other drugs, I could see them fitting into mainstream treatment. But only a tiny percentage would even be interested. So I'm gonna have a seat.

MaryH: You sound really discouraged.

ChrisD: So yeah, what I don't have is you walking around the street, Nicole, that sounded really good two doors down ...

DennisD: I want to move this along, because we're getting behind our schedule a bit. And we've heard about both behavioral as well as pharmacological interventions, Chris, and that's actually what's next on the agenda -- some brief review of what treatments are available - both behavioral as well as pharmacological. And again, the relative effectiveness of those. So Susan and Mike are gonna be talking about that.

SusanK: Okay, so here come all the answers.

DennisD: No, here come all the questions.

DennisD: That's for the longer discussion we're gonna have with DBHR; we're trying to present to them the reason why all of this is so important.

NOTE: **Refer to presentation "Effective Treatment Interventions for Meth Use Disorder" in Appendix B**

SusanS: Okay, so I'm just gonna try to sail through this. Though I do want to leave enough time for discussion, which I do think is really the most important thing here. Just giving a little bit of background, amid this growing concern DBHR requested that ADAI conduct a research review of effective treatment approaches for methamphetamine. They're interested in looking at behavioral and pharmacological approaches for youth and adults, attending to specific populations where there is research. So American Indians and Alaska Natives, men who have sex with men, whatever is out there.

SusanS: So I had done some previous work for DBHR. Where I was looking at EBPs for youth substance abuse and I was trying to define that in terms of the definitions that were set forth in RCW, where the definition of "evidence based" was defined as, "heterogeneous or intended populations with multiple randomized or statistically controlled evaluations, or both. Or one multiple randomized or fully-controlled evaluation, or both, where the weight of evidence from systemic review demonstrates sustained improvements in at least one outcome that can be implemented with the stated procedures to allow

successful replication in Washington, and when possible, is determined to be cost-beneficial." So that's the actual wording in the law. And then, "research-based" is kind of a step below that, and then promising is pretty much everything below that.

SusanS: So now, I really tried to define what was in the literature according to that definition, I realized there's really a lot of vagueness there. A lot of interpretation required. What outcomes are we talking about, here? Strictly substance use? Then there was, you know, interest in having me go back and take another look in terms of mental health outcomes. Then, how much improvement is enough improvement? Sustained, for how long? And what are suitable controls or comparison conditions? So all of these were just real challenges.

SusanS: Now this effort was a totally different task here, but I just wanted to raise this, because it's a similar challenge, and how do we define effective?

SusanS: So, looking for effective treatments for methamphetamine use disorders, my initial approach was just to search the academic literature for what's out there, in terms of randomized controlled trails, and quasi-experimental trials, quasi-experimental studies, behavioral, pharmacological interventions and reviews of such. So I searched Pubmed and Google Scholar primarily. I was interested also in looking for things that maybe were kind of in the pipeline, and maybe landed in the file-drawer as well, so I looked at clinicaltrials.gov.

SusanS: Okay, so because I didn't want to reinvent the wheel, and I don't want to get into the weeds and minutiae with you all here today, I'm just gonna jump straight into talking about the most recent reviews that I found. Starting with drug treatment.

SusanS: There was a 2017 review of pharmacotherapeutic agents, on the treatment of methamphetamine dependence that concluded some signs of efficacy, there is no single, I mean you all know this, there’s no single pharmacotherapy that has demonstrated broad and strong effect in clinical trials. And unfortunately there have been relatively few double-blind RCTs. Mirtazapine may offer some benefit in increasing rates of methamphetamine abstinence in some contexts. Also there have been some post-hoc analyses that have shown some benefits for bupropion, methylphenidate, and topiramate, depending on baseline levels of use and things like that. But really nothing that's really robust.

Speaker: Did you find any review articles on methylphenidate? That had come out in the last two years? Because there seems to be more progress in harm reduction therapy?

SusanS: They're in my stack.

SusanS: Further than that, we do include quite a range, you can see there aripiprazole, baclofen, bupropion, d-amphetamine, gabapentin, ibudilast, methylphendinate, mirtazapine, modafinil, NAC, naltrexone, perindopril, rivastigmine, topiramate and varenicline. I may have just embarrassed myself, but I think I ...

DennisM: It's called polypharmacy.

MichaelM: Did you ever see that NIDA is looking for a pharmacological approach to treating.

DennisD: Yeah, I think they are.

Comment: And they've all struck out.

Comment: Yeah, they've been relatively unsuccessful, and I know that the NIDA Clinical Trails Network has been looking at some possibilities as well, the medication development branch has been looking as well.

Comment: Has there been for abstinence-based …

Comment: It's unclear, and I think NIDA is ambivalent about outcomes.

CalebBG: The question for the docs who've worked with the meds I mean, if a lot of people who think, maybe the people who took … people who do better on buprenorphine as I understand, are on a higher dose. The challenge of things like Adderall and methylphenidate is that they're pretty low-dose over a long period of time, so are you trying to prevent withdrawal, sort of the negative reinforcement, or are you actually trying to get a person, to get them some amount of euphoria, or somehow feeling normal. So I was trying to figure out, are we dosing people high enough with these was my question.

DennisD: My impression is that the goal is to stabilize people, not to allow them to experience their high. It's not unlike some of the work with opiates. That, you know, methadone has a bit of an opiate-like response, as opposed to buprenorphine, which is much less likely to do so. And I think it's more like the latter …

Comment: It's a way to feel something.

Comment: Right.

Comment: Because a lot of opioid users say they need to feel something – they need to feel an opioid effect to feel normal. And for some people, that is a moderate amount of euphoria all the time. And I wish Rick could speak to this, unfortunately he's muted. But again, this isn't my area, but I'm just trying to think about human beings, and what they need to feel normal. And for some people it's to feel a little bit good. And there's a reason I drank coffee this morning, and it wasn't just to stay awake. This is all on a continuum for folks. And how do they get people to feeling normal, how much of our expectations about how people should feel on medication, because we're trying to control them. And we don't want the DEA to get mad, versus what's going to actually improve their functioning.

SusanK: And I think for a lot of my folks, if I ask them, "What does it feel like when you're on meth?" And they said, "I calm down." They don't get high on meth, they calm down, they focus, they function. Like, that was a no-brainer to me, that you could put people into two camps, the people who got high on speed and the people who got chilled out. And the people who chill out a little bit, seems to me like they'd be obvious candidates for something like that.

Comment: Suboxone's like a dream come true ... They found a low level of opioid could also compete, and you can package it through the sublingual blocker. And I have never heard anything about a blocker for methamphetamine that wouldn't block Adderall also ... is there any hope for that?

SusanS: I did make a chart that was for my own interest, of all of the mechanisms that have been investigated. If you look at all of these drugs that have been investigated, and the different neurotransmitter systems that they have targeted, they're basically throwing everything at the wall and seeing what sticks. And nothing, really, pretty much, has been a hit, like buprenorphine and methadone has been for opioids, unfortunately.

SusanS: I have the hand-out if you want. [crosstalk 01:39:30].

CalebBG: I want to mention one thing is that we have a low grade morphine program that public health has been running co-located at a syringe exchange for over a year, and essentially the only requirement is that people need to keep having to keep having Buprenorphine in their urine, usually. That's about the only requirement, and there's really no requirements for enrollment except of course the person has an opioid use disorder, and the very preliminary data so far show no difference in retention at six to 12 months whether people continue to use benzo and methamphetamines or not.

CalebBG: We try to retain people, a sub-group of people, a substantial sub-group of people, on Buprenorphine and usually allows them to start, they allow them to start clinically using benzo and or methamphetamines and they continue to sometimes use those substances. And I would argue, from a public health perspective, that every day a person is on Buprenorphine is a day that they're very unlikely to die of an overdose as far as once we retain them.

CalebBG: So I put that out there and would like to talk about outcomes. I think an abstinence outcome is probably unrealistic for 80% of folks. So I just want to put that out there.

DennisD: And following up on that, NIDA had a conference about methamphetamine a couple years back, from which there were two papers that were generated. I was the first author on one, it talks about the outcomes, and substance abuse disorder research. And abstinence is not the goal that we said was the most prominent; that's a goal, but again much like in a harm reduction model, that's a distal [goal]. And you may choose to work toward that, but you need to look at the steps along the way and at reduction [of use] of a substantial nature as really an effective outcome.

Comment: I think this is where like, in public education, there's a huge gap between us in the field and what is needed on the ground, versus public perception, right? Like public perception when you see, this over the past year and a half and the work that we've done, all the perception is that abstinence is the only answer, and abstinence is the only option, right? And we know that that doesn't work for people. Well it may work for some people, and that it's the goal, but we got to keep people alive, we've got to keep them healthier, and we've got to engage them in a way in which they'll receive it. Or else they'll leave it.

Comment: Right.

AlisonN: One of the things we did ask in our survey that you didn't present is "is there a time that they did not engage in healthcare last year," and the majority said yes, there was a time they didn't go to the doctor. So I think, although there has been a movement towards more awareness about substance use disorders is not really saturated in that sector.

CalebBG: And actually, this is something I mentioned an hour ago, we had mentioned a couple of the top reasons that they did not seek healthcare, when they needed it.

AlisonN: They felt judged about their drug use, they didn't want to disclose it. One of the anecdotal things was that they get treated like pin cushions. Drug use is a big barrier. Perception's about the barrier, I think.

Comment: Would you disseminate that [report] ... because the work we're doing around health integration, is this huge piece. We know that people respect themselves with this disorder, have like five times ... like, they're more likely [inaudible 01:44:30]

AlisonN: I think that's in our report, I'll double check. [crosstalk 01:44:47].

Comment: It's not just providers who need to get past the perception … where we've got roughly 60% or maybe slightly more nationally … providers who aren't even implementing evidence based medication assisted treatments in response to the opioid crisis. So, we can't even do it in our own [circles] for a clear and present danger, how do we expect to get to that place with methamphetamine, when there's sort of these additional layers of stigma.

Comment: Even more the outcomes phase.

Comment: Yeah, that's part of the issue, those 60 or 65% of treatment providers who do not use evidence based treatment, are very strictly focused on abstinence based. The UA is compliant based, right? [crosstalk 01:45:55]. I think that's actually one of the positives that integration between substance use disorder, and no matter how treatment is done, is it brought to a provider and more of an engagement model. More of a "working with someone where they're at" model. The chronic disease model, absolutely.

Comment: I just want to add that, kind of following up to the same barriers for these programs, a few years ago we connected with a survey that wanted to engage that sector. A lot of them, definitely, but a lot more. And we asked them if they could access any healthcare services at a needle exchange. I think there was more of an error on our part, we actually didn't actually [inaudible 01:46:40], we're still asking that question. Forty percent of them want healthcare, even though they weren't injecting.

Comment: Well, and this is where, I mean ... warning, warning, warning, right? 2019, we go to fully integrated managed care, where there is a strong belief that all folks with behavioral health conditions can be treated through the primary care pathway. Warning, warning, warning ... this could really alienate the people that we have a long history of treating. Now, if we can get to the point of treating people where they're at, if they're in need of behavioral health services, primary care -- any time we can encourage that.

Comment: But to think that, okay, I have to go to Shelli's agency, and Shelli recognizes that I have some high blood pressure, something like that. And she refers me to a doctor, because she recognizes that. I mean, I've never been to that doctor. I have all these freaking … [inaudible] that Sarah was talking about. I mean ...

Comment: Yeah, good point.

Comment: Really my doctor, the first day he talked to me, offered me, was [inaudible] program for buprenorphine.

Comment: Did you start?

Comment: I did not, [laughter, crosstalk 01:48:09].

SusanS: But you don't have any drug treatment that's effective for meth. All we have is psycho-social treatments, and those don't work so well for everybody. I mean, there was a 2016 treatment of behavioral treatments, for stimulant dependence and I do want to note ... like how Susan pointed out, the experience of meth users is different in a lot of important ways than just cocaine users, right? A big grain of salt here.

SusanS: But this review was looking at psychosocial intervention compared to no treatment or treatment as usual, which was typically supportive groups or case management, or compared to another psychosocial intervention, and those psychosocial interventions that were considered were CBT, contingency management, MI, and interpersonal therapy, psychodynamic therapy, and 12 step facilitation.

SusanS: The conclusions were that compared to no intervention, any psychosocial intervention probably improves treatment adherence, and may increase abstinence at the end of treatment, however people may not be able to stay clean several months after the end of treatment. Not very helpful.

Comment: They've got about three months.

Comment: Three months!

SusanS: The most studies in this promising psychosocial approach to be given in addition to treatment as usual was probably contingency management, according to that review.

Comment: Does everybody know what contingency management is?

SusanS: Mike is going to tell us all about that. So, treatment that's generally promoted as effective for methamphetamine, the Matrix model, other forms of CBT, contingency management, MI, mindfulness (such as mindfulness-based relapse prevention and ACT), and exercise.

Comment: So when you say "promoted as effective" ...

Comment: "Potentially."

SusanS: It comes back to what you call effective. There are some research studies on this. There's interpretation involved here.

Comment: Like, the Matrix models tells us it's sort of the most supported. It's really one got one-

Comment: There's really only one study, yeah.

Comment: The treatment developers, and it concludes with contingency management, so-

Comment: Right.

DennisD: Even that multi-site study that was developed by the developer showed no affect.

Comment: Really?

DennisD: Actually, Alice Huber is part of RDA (research and data analysis) was part of that group. So if people want to talk to her --

SusanS: It's hugely intensive. It's 16 weeks, 36 sessions of CBT, 12 sessions of family education groups, four sessions of group social support, four sessions of individual counseling, with weekly breath and urine testing, weekly or more 12 step meetings encouraged. [crosstalk 01:51:18]. That's Rawson [Rick], yeah. That's the 2004 study. And there really hasn't been a real rigorous evaluation of it since then. But compared to treatment as usual, it had a higher retention level, a higher completion rate: 40.9 versus 34.2, not hugely higher. There were more clean urine samples, a longer period of consecutive abstinence in two out of eight sites. And then they equalized the treatment length so they had to do a little bit of data massaging there...

SusanS: It was not different, in terms of self-reported methamphetamine use, or Addiction Severity Index domains or urinalysis results. At discharge or follow up. So, not super encouraging.

Comment: Can you remind me who, what group it was normed on?

DennisD: Matrix was originally normed in Southern California.

DennisD: But this study is a multi-state, multi-site study.

SusanC: Hello, this is Susan [Collins, on phone]. But I just wanted to point out, if we're talking about a focus being an interest in harm reduction, both medications and psychosocial treatments, it's important to point out that all of these methods that were just discussed really are abstinence-oriented methods. I mean, this actually is in some ways pointing out the treatment gap, that I think Susan Kingston pointed out before. In practice, many of us are doing harm reduction. Maybe there's not the evidence base for that, for the harm reduction, combined pharmaco- and behavioral treatment yet, but it hasn't really been tried. So I'm actually pretty encouraged by that.

SusanC: I think maybe taking ... we have, as you know pretty well, our three step CBPR [Community Based Participatory Research] approach to engage communities and find out what they're ready, willing, and able to do, and what they find would be helpful. Then co-creating with the affected communities, a treatment approach typically that's harm reduction oriented, because most people as John pointed out, are not necessarily ... the vast majority of Americans who are effected by substance use disorder, 90% really are not interested in our treatment, abstinence treatment.

SusanC: So I think this is actually really promising. I'm encouraged by this, and I'm thinking it would probably be great to submit some kind of a treatment development study to NIDA where we use a CBPR approach where we don't have to know all the answers up front, but we can go to users themselves, and see how they're affected and learn with them, what a proxy approach might be. I just wanted to put that out there.

DennisD: Good point, Susan.

SusanS: So here's just some examples of different forms of CBT that have also been examined. It's ranging from four sessions, on up to 24 sessions over eight weeks. So adaptations in each model also has been tried via web based delivery. Finding ... Baker et al found some modest effect, if they looked at treatment received, but not intensive treat approach. Smout found that CBT and ACT were modestly effective for certain outcomes. Reback just compared the sort of expanded matrix model version, to a slimmed down version, and found that the slim down version was comparable, and that web based training really wasn't effective.

SusanS: MI ... just in the interest of time, I'm not going to get into that, but it's generally helpful. I think maybe I will go to contingency management, before getting into mindfulness, I think? So, I will ... is that yours [Mike]?

NOTE: **Refer to presentation "Contingency Managemement for Methamphetamine Use" in Appendix B**.

MikeM: All right, thank you for being mindful. So jeez, you liberal hippies over here, and your harm reduction baloney. I'm going to talk to you about good old abstinence based treatment. I'm kidding. Except for the hippy part.

MikeM: So, contingency management, I'm going to talk again in the context of ... I don't know how many of you are familiar with this, but I'm going to talk about, this is a tool that we have that we know works ... despite being cited in that Cochran review. Unless Cochran

reviews, I don't know. It's pretty strict criteria for being involved, and the way they interpret the data.

MikeM: So, you know, contingency management is an intervention that has been showed over hundreds of studies to work for stimulant use disorders. In a randomized control trial, involving all different populations, and our group has sort of led the way in a couple different areas. Brian Hartzler is a leader in dissemination and implementation science for contingency management. Our group, which involves similar to Caleb, I'm only here with you because of methamphetamines, and Rick Ries and John Roll.

MikeM: John Roll, who got a grant. So John Roll is a treatment developer in the area of contingency management. He and Rick fish together. Rick, you're going to correct me on this story if I'm wrong. Rick started learning about contingency management, I think he'd even done some work on it before. And John, is the world expert on contingency management for methamphetamine use.

MikeM: So, Rick and him decided ... Rick is an expert in co-occurring disorders, so they decide, "Let's take a methamphetamine grant, and instead of targeting people just with methamphetamines, let's look at serious mental illness, people with serious mental illness, and struggle with addiction," so that was my first job in this area. So I think we have a lot of horsepower here, in terms of this intervention, and I want to present to you and show in some ways, that that really ... it's not about ... we see higher rates of abstinence, but that's like abstinence on the day that we give you the urine test. That doesn't mean you have a sustained period of abstinence, always.

MikeM: So I challenge people to think about, well, in contingency management we can set the goal to anything we want. We don't have to set it to abstinence. We don't have to set it to ... in fact, my newest study that we're doing in a community psychiatric clinic over in Spokane focused on alcohol, where actually reinforcing people for cutting down use. Again, it's obviously philosophically a little bit different than harm reduction, but we're interested in the same things.

Adobe Connect Chat Box

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Rick R: what about
McDonnel and Ries on
meth/coke in severely
mentally ill using CM?

Sterling M: This is why a
"swapping" of
reinforcement via CM in
exchange for meth use is a
(perhaps the most)
pragmatic approach for MA
use.

Sandy K: Treatment model
has not kept up with the
trends of the individuals
entering residential or
outpatient, the education
treatment model of best
practices is developed for
the agency to treat the
high numbers in need but
does little to address
individualized needs.

Sandy K: In the rush to
build a co-occurring
program they have begun
assessing mental health
with evaluation /
screening and diagnosing
individuals with a mental
health disorder within the
first 30 days in recovery.

Ron J: Right on, Susan!

Sarah W: Distraction vs.
mindfulness training is a
really relevant topic for
our juvenile justice and
youth service partners. Is
there a literature on this
re: "gadget rooms"?

Sarah W: Just for
reference: The policy
intent of the inventory is
to consider both evidence
and research-based
programs eligible for
funding/support

Ron J: Our patients are
nothing if not expert at
their own limbic system.
People take drugs for a
reason.  Medications for
the treatment of a SUD
disorder needs to work for
the patient, not just the
provider.
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MikeM: The principals of contingency management are that you monitor a target behavior. We give you a urine test. Instead of going to jail, if it's positive, if it's negative you get rewarded. So, we use tangible prizes typically. Most people like gift cards, and the longer you're abstinent, you can hit ... so there's an abstinence component. The longer you're abstinent, or the longer you engage in those target behaviors, the bigger reward you get. Just like at the longer you work at community mental health or in addiction, the more you get paid.

MikeM: There is a consequence if you do not engage in the target behavior. In our case, if you submit a urine test that is positive for methamphetamine, you don't get rewarded that time. It gets a little complex in some ways, but the idea is, the longer you meet that target behavior, and stay abstinent, measured by biomarkers so it's not a discussion in terms of whether the person used or didn't, that you get rewarded. And the longer you're rewarded, and the longer you're abstinent or you engage in a target behavior, the more you get rewarded, and you pay a price if you slip up.

MikeM: But we also have a little way of trying to get you back on track right away. The thing I love about contingency management, as a person who is actually historically a child psychologist that does schizophrenia research, is that it's so positive. People love it. It's fun. It changes, I think some of our partners at Community Psychiatric Clinic would agree, it changes the atmosphere of the clinic.

MikeM: So why talk about it? You know, it's probably for stimulants, it's the most powerful way to get someone to stop using, relative to any other psychosocial treatment. If you want to check out a video, I was going to show a quick video. You can go to the YouTube link, if you can memorize that, or you can just Google contingency management and you'll see a little video that was shot by Rick Ries, our wonderful photographer, showing a brief visit that we had in a closet therapy room, at Community Psychiatric Clinic. You'll just see how positive it is.

Comment: If you don't mind my sending our your slides-

MikeM: Yeah, if you send out the slides, that would be great. So I'm going to talk about ... I'm going to plagiarize from my two mentors. This is a study that was done by Rick Ries. I'm sorry, John Roll. Secondary data analysis is part of a large NIDA Clinical Trials Network grant. What they did, that study focused on again, across the entire country, looking at rewarding stimulant abstinence as measured by urine tests using contingency management. And this is a sub sample of just the methamphetamine users, so it's about 113 people who are involved in that study. What you can see is, this is weeks of abstinence during intervention, and you have about ... four and a half weeks of abstinence in the contingency management group. Then the treatment as usual groups, so they just got standard like IOP treatment. They had a little bit less than three weeks.

MikeM: What you can see here, is this is negative urine test results, across the 12 weeks of treatment, so this is the contingency management group, so they're much more likely to be negative. Although as you see, just like in life, relapse happens. But their relapse is less likely to happen.

Comment: Is that survival curves?

MikeM: Not survival curves, sorry, shouldn't have said that, but you caught me. On average, they're more likely to be abstinent across time, so ... people would just be treating-

Comment: And what happens at the 12 weeks?

Comment: Everyone just is cured. [laughter, crosstalk 02:01:52].

MikeM:: Exactly, so great question. So, there's a group in UCLA that John Roll was a part of when he did this work. They found that ... I'm not going to speak just about methamphetamines, because I think we shouldn't limit ourselves to just talk about methamphetamines, because crack cocaine and methamphetamine, there's differences, but often that's driven by market and availability, and who you are as a person, whether you're black or white, in some ways.

MikeM: So what we find is that some studies, it's comparable to cognitive behavioral therapy up to the year. In other studies, in our studies, with folks with serious mental illness, we see a continued effect up to three months. But because ... this is my belief, because behavioral psychologists have been behind this treatment, a lot of pilot periods have been very brief.

MikeM: My new study that we're just about to start, to focus on alcohol, we're going to have a year-long follow up, so we'll be able to look at that. I also have another grant, which gets reviewed next week, where we're trying to use a bio marker to let us continue to do contingency management for a longer period of time in a more feasible way, so I think that's the other option.

Comment: So you're reinforcing on that bio marker?

MikeM: Yeah, we're going to reinforce on a bio marker that can detect alcohol use for a month, so that way we would only have to assess people once a month. More of [inaudible 02:03:10].

MikeM: So, this is a study that Rick Ries is the PI on, and this is a study in Seattle that we conducted years ago. We replicated most of these findings in that study, focused on the same population and alcohol. These were folks who were supposed to be methamphetamine users, but guess what? In urban downtown Seattle about five years ago, six years ago, most people were using crack cocaine. So these are stimulant users, mostly crack cocaine users, who are recruited to contingency management study.

MikeM: So they were all consumers of Community Psychiatric Clinic (CPC), and they all had a diagnosis of schizophrenia, bipolar disorder, or a severe recurring major depression. So the idea of this intervention was, while CPC does have IOP, the idea is, what's a solution to treating drug addiction for people who have serious mental illness? Well, one might be, it can [inaudible] this incentive based approach. Because anybody could implement it, peer support staff. You don't need a trained therapist to use this approach.

MikeM: It's inexpensive. You have to be willing to test urine, which for community collections, is a challenge. But what we saw in this study was about at any given time, during the 12 weeks of treatment. The contingency management group, so these were supposed to get treatment as usual in downtown Seattle, half are homeless. at one point, at some point in this study. About 80% of them are just getting those prizes are abstinent during 12 weeks of treatment, versus about 60% of folks who were in the control condition. Remember, most people with mental illness use a little bit less than other people, particularly stimulants.

MikeM: That was something we expected to find. What we didn't expect to find was this. So, this is inpatient, working with King County and our colleagues there, we were able to gather utilization data in terms of in-patient psychiatric days across the six months after people were randomized. What we found in a contingency management condition was that only two people were actually hospitalized for a total of 14 days, so that was a surprise -- vs. over 152 days, this is nine people who were hospitalized for 152 days [in the control group]. With a second group in mind that, and actually with co-occurring disorders, implementing a behavioral intervention, so-

Comment: What was the total n?

MikeM: The total n for the study was 176 people were randomized. So, it's like ... a cross country study, but we thought it was pretty impressive, given that King County does not hospitalize, Washington State does not hospitalize great for mental health problems, …. New York City, right?

Comment: Were those days at a psych hospital there, or-

MikeM: Yes, these are days at a psych hospitals. Just psych, yeah. So, that ... when we did a cost analysis on this, and I think there's been seven or eight cost analyses published on contingency management, we found an economic we found that this was a cost neutral intervention. So we're really talking about a couple hundred dollars worth of prizes, then a urine test on top of that.

MikeM: So, here's the deal with contingency management. It's got a lot of implementation strengths. It's fun. I want to just put it as fun. People have a lot of fun to do this, I'm not going to joke around. It's inexpensive. It's cost effective. Anyone could do it. Even me. Then the one system that's really taken this one as an intervention is in the VA. The VA, this is now available, and there was a group who even did a little paper on psychiatric services, about implementing it.

MikeM:: But the problem is, it's not a medication. I can't write you a script for it, and it's not talk therapy. It's prizes, it's tangible incentives, and urine tests. And those things in our current system are not billable. So there's people out there who have these problems, who would benefit from this treatment, aren't able to get it because of the way that our system is set up, and we need your help to advocate to make sure that ... have this be a billable practice. This is something that actually saves money. It works for a lot of people. We are learning more in my alcohol research about who it works for and who it doesn't, and about other targets, besides just abstinence.

MikeM: But we really know that these incentives work, and these particularly seem to be one of the most effective and promising approaches for stimulants. And, our state has the expertise to be able to implement this, and we really think it's important in terms of getting it out into the real world.

Comment: Cool. I'll just say, the other side, and I don't know what it looks like, more and more and more earlier ... as people in healthcare embrace it, who's going to be more ... [inaudible]

Comment: Yeah, value based-

Comment: Value based.

Comment: Yes, exactly.

Comment: And cost sharing and cost savings, and so ... if it's a risk intensive piece, to [inaudible 02:07:50].

Comment: Yeah. That's where we need your help as researchers, to be talking to the right people.

Comment: See, the problem is, I can't promise [crosstalk 02:08:11].

Comment: It makes me wonder, if anyone has or would ever test, in our state, the frequency for IOP ... versus coming to the same agency, just to be doing this. With urine test. To see if anything happens, beyond-

Comment: That would be affordable.

MikeM: We actually did, in my alcohol study that we just finished for CPC, we actually required people to ... because we were sort of, Rick and I were like ... only half of the people in that study that I just talked about, actually went to IOP at all. Even were ... and if they did go once, they went once or twice, for the most part. I don't know the exact percentage.

MikeM: But what we did in our alcohol phase is we said, "Look, you not only have to be willing to do treatment as usual, you have to go to IOP. You have to sign up, you have to go get an assessment, and you have to show up at least once before we'll let you even be in the study." 70% of people at any given time during treatment were positive for alcohol, on the bio marker. 70% of people getting state certified, and I don't want to call it ... I don't think there was a difference necessarily anywhere, were coming up positive, versus about 40% in the contingency management.

MikeM: But so that's sort of what we saw there, is people were getting just the IOP ... folks were given a prize just for showing up, versus the IOP plus contingency management. But I get what you're saying, which is take out the IOP entirely, which I'm really interested in. We're funded to do that, because think of how many more people we can serve?

Comment: What if there is nothing [inaudible 02:10:04].

Comment: Yeah, I didn't want to say that. But I do think it's a possibility.

Comment: But it's not fair [crosstalk 02:10:12].

Comment: It's not fair to put down treatment for people by saying, "We know darn well that you're not doing anything," [inaudible 02:10:22]. But if they are getting well reimbursed by insurance, what if you can eliminate Treatment As Usual, and saw if it made a difference? Stranger things have happened in treatment outcomes, and why isn't this being tested? If they have the lion's share of the [inaudible 02:10:45].

Comment: Yeah, I think in our native communities, we actually have ... the reason that we got funded on the policy side, a lot of communities don't have that. I would say probably at least half of our people are not getting that. So we can look at that data, we can look actually and see, the people who aren't getting anything, could they do better than people who are getting treatment as usual plus that.

Comment: If they do that, because then contingency management, then TAU would enjoy a real promotion. But if they can't even hold their own with a fish bowl-

COmment: The prizes, yeah. [crosstalk 02:11:21].

Comment We gotta stop doing stuff that doesn't do anything.

LindaG: Can I interject with something? It's hard when I wanted to be there in person, and my workload is too great today, I couldn't do it. But you know, we do ... we're a major regular treatment provider, abstinence based, and I've been a member of the Clinical Trials Network since I got here in 2001, and [inaudible 02:11:49]. I'm not against looking at anything.

LindaG: One of the things that I think would prohibit that, is that reason we have insurance coverage of all our panels, is because of a Washington State study, about all the drug treatment which shows tremendous cost-savings of alcohol and drug treatment, which shows tremendous cost benefit. The majority of the programs in that study were treatment as usual; alcohol, drug abstinence-based treatment programs.

LindaG: We have a wealth of information that was developed by ORDA [inaudible 02:12:18] around the cost benefit of whatever it is that we do. So, I think we need to not lose track of that in this process.

MikeG: Yeah, I agree 100%. A lot of that is keeping people in treatment and figuring out ... I think the field needs to move towards, I know a lot of us are interested in this, is what works for who and when? And really understanding that.

MikeG: In our alcohol work we can actually use a biomarker. You've all probably heard [epigluconer 02:12:50] at ETG, and I could tell you who's gonna respond to this abstinence-based, low-cost treatment, just based on their ETG results, and based on that sample that we have. So, I think we're moving towards that, but I think that's exciting.

MikeM: But I agree. Treatment as usual is a good thing, and this prize intervention ... I do agree with what Chris is saying, which would be interesting to look at how this prize intervention, just differently. But I will say the party line on contingency management is that it needs to be added to treatment as usual, not to be treatment as usual.

LindaG: Well, a lot of us use that. I mean, we use DBT, we use contingency management we use CBT. Any tool that we ... might actually have that does work.

LindaG: What we do, as treatment as usual, is a pretty good hodgepodge of evidence-based treatment. I don't think, or I know we're not unique in that. There may be some pockets of more conservative facts we're kind of thinking of. I think this is general treatment system has moved forward a great deal, like [inaudible 2:13:30] uses Suboxone. We can skip a lot of things that I think people aren't caught up on.

LindaG: One of the things that I watched in the Legislative session this time, is there is a real willingness and interest in the part of legislators to stop funding anything that somebody criticizes. You don't want to throw the baby out with the bath 'cause you could end up shooting yourself in the foot and not have any treatment resources at all. Because they are saying things like, "Well, counselors say this." And there's a number of very powerful legislators there who are saying, "Why do we fund treatment at all?" I think you gotta have some evidence that it doesn't work before you undo the stuff that at least the budget offices in Congress found was sufficient to justify parity disparity for alcohol and drug treatment.

LindaG: That's my two bits. [crosstalk 02:14:58]

SusanK: [inaudible] ..going back to a law enforcement, criminal justice priority, [inaudible 02:15:08]. We are hearing a general climate of losing some of that clout.

LindaG: You know we have made some errors in the past with being overly zealous in one philosophy or another, but if they're moving towards mental, which I think a lot are, we don't want to go off in the other direction being overly zealous in terms of only justifying medications as a treatment that doesn't [inaudible 02:15:43]. A lot of these drugs [of abuse] don't respond to medication.

SusanC: Mike, I had a question just about the findings about implementation. I thought it was really encouraging. I know we're on two sides of the fence, but I'm encouraged by that. I do agree it's different strokes for different folks and maybe that's how it should be pitched, because different clients do really benefit from the work that we're doing in the outpatient clinic here at Harborview, and I see that as a provider, on a daily basis.

SusanC: I was curious about the implementation. If we're talking about CM as becoming a legit part of the mix that's put into heavy rotation, once you get past the research study that has the funding for this, the fishbowl prizes and what not -- how do you keep that going over the long term? I know there's a push towards group interventions, so if the fishbowl stops, how do you maintain that positive treatment effect that you're finding? In the context of research with a relatively short followup?

MikeM: I think that was a really good question and I don't think we know that. I think that's the only contingency management studies that are gonna get funded by NIDA or any other place going forward, are gonna be studies that don't look at if it's effective or not. Like my work in alcohol, we're the first official for alcohol, but I think everybody knows it's gonna work for any ... It's gonna work for a lot of people, for any target behavior.

MikeM: That makes sense to me as a child psychologist where we use rewarding kids all the time and teaching parents to do that as part of their intervention. What I do think that we know are some of the same things you all know. In interventions that we studied for all of addiction, the longer a person's abstinent during the treatment period of an abstinence-based intervention, the more likely they are to be successful in the long run.

MikeM: I've had a lot of talks with people about, in particular, folks treating contingency management like a long term intervention. That's some of our new work, is focused on that. Thinking about it more as like, let's recognize the face that this is a relapsing, chronic condition, and let's not stop. Let's not pretend like you give a medication to somebody for three months and it's gonna ... You're not gonna give Buprenorphine to somebody for three months and expect that they're gonna recover from opioids for the rest of their life.

SusanS: Right.

MikeM: I think it's the same way. Then we're also interested, whether it's maybe a personalized approach. Whether we reinforce people for going to the doctor more. I forgot to say this; contingency management comes from two camps. Both focused on stimulants, but one of them was during the crack cocaine epidemic. They had in Baltimore, people were all on Methadone. A lot of people on Methadone, some people on Methadone, but people were using crack. That's where contingency management comes from. There's a huge group of researchers there in Baltimore and they developed it for that specific purpose.

MikeM: Susan, the answer to part ... The existential question to me is, when are funders gonna get behind this and say, "We're actually gonna pay for it"? "We're gonna pay for those prizes." I think it's up to us as researchers to be able to inform them about how long you need that intervention. We've done some work and it suggests that three to four months is this sweet spot for stimulants, but I think there's arguments to be made that for different people, it's gonna be different.

SusanC: If I could just note one last small thing. Then I'll mute myself again, but I was thinking along the lines of Dennis, what you have done so well in your career along. Thinking of something ... I'm not sure the gentleman who suggested looking at treatment as usual and comparing it to these others. It might be interesting, like a Project Match type study where it is about finding what predicts the best fit, so looking at all harm reduction intervention.

SusanC: It's user driven, user created, and contingency management and then what treatment as usual, as it exists in Washington State, what does that look like? Trying to figure out not so much as a horse race, but more as like, are there certain predictors, as Caleb was talking about before? Maybe people who are super poly substance users, they gravitate better in one direction. Or CM totally gets all the people who are mainly that. We can see

what fits best for which person. That just feels like a way to bring it all together in some way.

SterlingM: I also wanted to point out something that I think has been discussed a lot, but I don't know that it's actually been done until more recently with Dennis Hand and his group that treat pregnant moms who are on Methadone up in Philadelphia. They started using donated prizes, donated incentives from employees, from moms who have experienced treatment that are now on the other side of having their baby. Employees, workers, they all donate different things to the school; prizes that incentivize attendance to Methadone.

SterlingM: He presented those data last year and they're pretty preliminary stuff. This year I belive at CPDD they are going to present updated data there.

MikeM: I agree with you, Sterling. I hear what you're saying, but to me it's like saying, "We should rely on donated Buprenorphine" for treating people. I agree with what you're saying and that's often what we tell people, but I have got some people that that's [inaudible 02:21:19].

SterlingM: I mean, from treatment ... or maybe I'm guessing. My experience in youth treatment at least, is that they provide food.

MikeM: Yeah.

SterlingM: That's a huge thing because kids like to eat, right? It's an engagement strategy built into the cost of doing treatment. One of the things to Linda's point is that treatment is currently paid for, right? So if you can build it into the cost of doing treatment in some way ... I mean, you don't want to lay people off so that other people can get egg draws, right? But if you build it into the cost of doing treatment, then it's fairly ... All in all, when you get paid X amount per group or individual session, or $5,000 a year for ... The cost of CM is fairly nominal.

ChrisD: And that chronic illness. I don't know of any other chronic illnesses that are treated with big fishbowl right up front. Bring family in, you sit around in groups. I think treatment as usual should be held accountable. I don't think legislators would turn down an offer that, "Hey, we've got something that costs 1/10th as much and has the same sobriety rates or positive UA rates."

ChrisD: That would allow us to do a more pragmatic approach to it like chronic illness, which would be to get people jump-started and get them engaged, but have a lifelong check-up [inaudible 02:23:05]. Then you'd be sprinkling this money across a person's decade or two, depending on their lifetime. Not one intensive treatment episode, though sometimes it takes still quite a bit. Or an extensive outpatient program. What if IOP, which I added up the hours and it's quite a lot of air time for their clients. An hour of motivational interviewing before it, in study after study, adds a lot. But after 20 years the state hasn't added an hour to that. It'd be an expensive hour because it's not an hour with 12 clients and one counselor. It's an hour with one counselor and one client. But you still do the math and it's like, "Why are we paying all this money for treatment as usual unless

it's ..." It is cost-effective, that's right, but it wouldn't be as cost-effective with the same sobriety rate as something that costs 1/10th as much. Legislators would listen to that.

Comment: Maybe they'd say, "Oh, good. We'll only give you 1/10th for ..." [crosstalk 02:24:08] I think Linda was really well stated there. No, the math does come out.

Comment: The field is already using, or it's recognizing that it's a crunch. We're already talking about treatment navigators and coaches to be able to provide that long term care. This will [inaudible 02:24:35].

MikeM: It's about $200 ... The average is $200-$300 per participant for three months. That's the prizes and the [inaudible 02:24:55]. But the difference with contingency management, you spend more with people are successful than on people who are less successful, which is the opposite of the way we usually do things.

MikeM: In that study for over three months, the highest number of prizes a person could get if they were abstinent the entire time, would be about $800 or $900.

Comment: Do they know that?

MikeM: Yeah, they don't know exactly dollar amounts. They don't tell 'em dollar amounts, but we tell 'em, "Here's what you could get." We have to have 'em sign out a little IRS thing so they know that we might have to disclose their earnings to the IRS.

MaryH: I have a question about contingency management. Should it be made available on an optional basis? Or where everybody has it at least once in their treatment? And I ask because in my own practice, I've talked about this as a treatment model. I get a lot of people who say [inaudible 02:26:43]. I think we can get around that [inaudible 02:26:43]. But it's trying to get people who are willing and open to it, but [inaudible 02:26:44]. Did you want it to be the law of the land, or something seen as optional?

MikeM: I think everything should be optional, in terms of what ... People should have a choice in what their treatment looks like. What we do know from the basic science behind this is if you put ... and they've done this for smoking, cocaine, methamphetamine, almost everything, every drug. If you put that drug in front of a person and you offer 'em different dollar amounts ... And I think this needs to be adjusted for inflation recently, but it's really around $3 or $4, 80% of people will pick that money over that drug.

MikeM: I know some people actually did a meth version of it, but basically drug users are rational people. There are some people who initially aren't interested and maybe those are the people that don't come to our study because most people we've met say, "I'm pretty fired up about the fact that they're gonna get prizes." Even if they don't know that they have to be abstinent, they're still pretty fired up about it.

MikeM: The way that the model's originally designed was just a flat system on top of IOP. You come in, you give a urine sample, they test it, you go to group, you have your break, and then after you get back from break they actually give out the prizes in front of everybody.

That's a model that we do. We do a one-to-one individual model, but that's the model that's been shown. That's been researched routinely.

MikeM: I think it could work in any different way. I don't think it's very tired for anybody, but you know, Bryan Hartzler has done a lot of work on this. We know how to teach people how to do it. We know how to train them. They could take a half a day at the most and we know how to individualize it as well.

MikeM: Now we've shown with our alcohol work that it's effective for every drug, which is sort of ... Prescription medication's probably the best treatment.

DennisD: Bryan, are you on [the phone]?

BryanH: I am on and I just wanted to add, I think you guys touched there at the end, but I think the main point I would underscore in all of this were that treatment, the folks representing treatment cutting on the call or in the room, is unlike many evidence-based practices where you kind of have a right way to do it, there's a singular model; motivational interviewing comes to mind as something where you do it a certain way and that's the way it's well done. I think unlike a lot of our other EBPs, contingency management is actually one there's a tremendous opportunity for contextual adaptation or specification as long as you're adhering to a few golden rules and I think that Mike has nicely outlined them.

BryanH: I think Ron Jackson is on the call, I think, today or maybe still on the call. He and I did a really nice piece of work a few years ago at Evergreen Treatment Services applying contingency management in a very contextualized way and in a way that was useful to his clinic. I think that got even taken up as that organization broadened into a greater multi-site type of situation.

BryanH: I would just underscore, for those that are hearing methodology and thinking, "Oh God, we could never do something that complex, or we wouldn't want to do that particular feature – " You want to find incentives that people would value. You want to consistently and immediately reinforce them, or find ways to do that, but there is a lot of opportunity for contextualizing these procedures and very likely getting pretty similar effects. Again, I'll open this back up to Mike, who can probably speak to this more, but my own reading of the effectiveness/efficacy literature on contingency management relative to other therapies, there's tremendous consistency and effects that reach across populations in studies. That doesn't mean it's gonna work the same for every person, but it does mean across studies and across meta-analyses, you'd see tremendous similarity in effect sizes. That means we've got something that works much more consistently than many of our other "evidence-based" practices.

DennisM: Bryan, I'd also suggest that you might mention the availability of the online or the program that you all put together, that targets the program administrators, the supervisors, and the clinicians about the use of, and the implementation of, contingency management in clinical settings.

BryanH: Now, Dennis, you're putting me in an awkward position there.

Dennis: Okay, then you don't have to say a word.

BryanH: No, I'll say a little bit and maybe it will whet peoples' appetites in the future. At the end of a grant, we had a little bit of surplus funding and put together a prototype for an online training [on contingency management].

BryanH: We have since been funded as the Northwest ATTC, and although our program of work ... I did not play that up as something we would be doing. It's certainly something I've been holding onto and thinking that would be a good use of resources for us to go beyond the prototype and really create the full training. Probably to discuss that with a sponsor if we were going to invest serious resources in it, but I think this conversation today is a reminder to me of just how useful contingency management as an approach can be. Particularly with these evidence-based and stimulants use disorders, and the lack of other really strong alternative methods for dealing with these more difficult populations.

BryanH: While I won't promise today that that's ... Beyond the prototype version of that training will be immediately available, it's back on my radar and I think the Northwest ATTC will be doing some work on this to make it available.

DennisM: In some ways, what I hear us talking about today is evidence-based practices from a scientific perspective and practice-based evidence, which is really much like the culture and the value tradition. The harm reduction approach and seeing people where they are. I think our task would be to figure out a way in which we can see out of both eyes. A meaningful way put together coherently and collaboratively. Some kind of effort that makes good sense and is sellable. [crosstalk 02:43:07] Sellable is not just from the standpoint of reimbursement, but I think the whole notion about stigma, again, becomes crucial. We see it across a variety of settings.

DennisM: I appreciate people's willingness to come and share today. I was gonna say "kicking this off", but I don't think that's a term I want to use. Getting us off to a good start. We anticipate being able to send out some minutes from this, and more importantly, the slides and so on from the presentation where slides were presented.

DennisM: And thanks to those who are still on the phone and those who are still on the Adobe Connect. We'll adjourn.

Appendix D

Methamphetamine Research and Expertise in Washington State
(See also Appendix E – Publications)

University of Washington

Nigel Bamford, MD. UW Neurology; Seattle Children's Hospital.

- "Psychostimulant-Induced Changes in Striatal Cholinergic Interneuron Physiology." ADAI Small Grant (with Grant Storey), July 2012 – June 2014

Caleb Banta-Green, PhD, MPH, MSW. UW Alcohol & Drug Abuse Institute; UW Health Services

- "Quantitative Drug Surveillance System Development." NIDA Grant 1R21DA024800-01, April 2008 – March 2010. https://projectreporter.nih.gov/project_info_details.cfm?aid=7448186&icde=40015253

Dennis Donovan, PhD. UW Psychiatry & Behavioral Sciences, UW Alcohol & Drug Abuse Institute

- **"**Methamphetamine: Where Does It Fit in the Bigger Picture of Drug Use of American Indian and Alaska Native Communities and Treatment Seekers? NIDA CTN Protocol 0033-ot-3. (with Lisa R. Thomas) http://ctndisseminationlibrary.org/protocols/ctn0033ot3.htm
- "Stimulant Abuser Groups to Engage in 12-Step (STAGE-12): "Evaluation of a Combined Individual-Group Intervention to Reduce Stimulant and Other Drug Use by Increasing 12-Step Involvement." NIDA CTN Protocol 0031, http://ctndisseminationlibrary.org/protocols/ctn0031.htm

Sara Glick, PhD, MPH. UW Allergy and Infectious Diseases; HIV/STD Program, Public Health – Seattle and King County. Epidemiologist.

- Leads the Seattle area National HIV Behavioral Surveillance system, funded by CDC.

Mathew R. Golden, MD, MPH. UW Allergy and Infectious Diseases.

- "Development of a Methamphetamine Early Intervention." NIDA Grant 1R21DA019420-01A1, June 2006 – May 2008. https://projectreporter.nih.gov/project_info_details.cfm?aid=7061922&icde=40012271

Therese M. Grant, PhD. UW Psychiatry & Behavioral Sciences, Alcohol & Drug Abuse Institute.

- Infant Intervention for Prenatal Methamphetamine Exposure. SAMHSA Grant 5H79SP014008-02, Sept 2006 – Sept 2009. https://projectreporter.nih.gov/project_info_details.cfm?aid=7267371&icde=40035275

Jagoda Pasic, PhD, UW Psychiatry & Behavioral Sciences; Harborview Psychiatry Emergency Services

- Areas of interest: Emergency psychiatry; methamphetamine intoxication; substance use and psychiatric emergency services.

Robert (Ty) Reidenbaugh, MD, UW Psychiatry & Behavioral Sciences.

- "Stimulant Use Disorder Treatment: How Do I Help My Patients with Methamphetamine Use Disorder?" Webinar UW PACC, May 2018. (clinical training webinar) http://ictp.uw.edu/sites/default/files/Stimulant_Use_Disorder_Ty_Reidenbaugh_MD_2018_05_10_stripped.pdf

Rick Ries, MD, UW Psychiatry & Behavioral Sciences.

- "Contingency Management of Psychostimulant Abuse in the Severely Mentally Ill." NIDA Grant 1R01DA022476-01A1, Sept 2007 – Aug 2011. https://projectreporter.nih.gov/project_info_details.cfm?aid=7320947&icde=40016201

Andrew Saxon, MD, UW Psychiatry & Behavioral Sciences; VA Puget Sound

- Areas of interest: Medications to treat methamphetamine dependence

Joanne Stekler, MD, MPH, UW Allergy & Infectious Disease.

- "Interventions to Improve the HIV PrEP Cascade among Methamphetamine Users." NIDA Grant IR34DA045620-01, Aug 2017 – June 2020. https://projectreporter.nih.gov/project_info_details.cfm?aid=9408154&icde=40012356
- "Increasing Knowledge and Access to HIV Pre-Exposure Prophylaxis among Methamphetamine-using Men who have Sex with Men: A Mixed-methods Approach. Grant: ADAI Small Grant, July 2016 – June 2018

Washington State University

Sterling McPherson, PhD, Psychology, Washington State University.

- "Pharmacokinetics and Psychopharmacology of Cigarettes vs. E-cigarettes Among Methamphetamine and Opioid Abusing Individuals." Dept. of Justice grant, Jan 2011 – Dec 2012

Michael M. Morgan, PhD. Psychology, WSU Vancouver.

- "Psychostimulants Induce Long-term Changes in Nociception. NIDA Grant 1RO1DA027625-01. Sept 2009-July 2014. https://projectreporter.nih.gov/project_info_details.cfm?aid=7764967&icde=40035418

John Roll, PhD, UW Elson S. Floyd College of Medicine.

- "Contingency Management: Duration Effects." NIDA Grant 1R01DA017084-01, July 2004 - June 2008. https://projectreporter.nih.gov/project_info_details.cfm?aid=6704039&icde=40035731
- "Human Methamphetamine Use: A Model." NIDA Grant 1R21DA014392-01, Sept 2001 – July 2003. https://projectreporter.nih.gov/project_info_details.cfm?aid=6360614&icde=40035731

Jonathan Wisor, PhD, WSU Elson S. Floyd College of Medicine.

- "Chronic Methamphetamine Disrupts Sleep Dependent Molecular/Energetic Homeostasis." NIDA Grant 1R21DA037708-01. Feb 2014 – Jan 2016. https://projectreporter.nih.gov/project_info_details.cfm?aid=8722290&icde=0

Other Institutions in Washington

Alice Huber, PhD (DSHS Research & Data Analysis, RDA).

- "Methamphetamine Treatment Project." [development of Matrix Model]. SAMHSA Grant. About Matrix Model: https://www.drugabuse.gov/publications/principles-drug-addiction-treatment-research-based-guide-third-edition/evidence-based-approaches-to-drug-addiction-treatment/behavioral-3

Cleve Thompson.

- "Clark County Family Treatment Court: Families Affected by Methamphetamine." SAMHSA Grant 1H79TI023353-01. Sept. 2009 – Sept. 2014. https://projectreporter.nih.gov/project_info_details.cfm?aid=8130299&icde=40035684

Appendix E

Publications on Methamphetamine by Washington State Researchers

2018

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2. Garrett SB, Doyle SR, Peavy KM, Wells EA, Owens MD, Shores-Wilson K, DiCenzo J, Donovan DM. Age differences in outcomes among patients in the "Stimulant Abuser Groups to Engage in 12-Step" (STAGE-12) intervention. J Subst Abuse Treat 2018;84:21-29. doi: 10.1016/j.jsat.2017.10.012.

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