Evidence-Based Strategies to Address Substance Use: Gaps and Future Directions

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TREATMENT AND HARM REDUCTION: Cheat Sheet

• Medications for opioid use disorder
  • Methadone
  • Buprenorphine (co-formulated with naloxone)
  • Extended release naltrexone
  • Others
    • Detoxification or medically assisted detoxification (i.e., clonidine, lofexidine)

• Harm-reduction services
  • Syringe services programs (formerly known as needle exchange)
  • Naloxone for overdose reversal

• Adjunctive services
  • 12-step programs
  • Mental health services / behavioral counseling
  • Housing services
  • Case management

• Other interventions
  • Prescription drug monitoring programs
  • Provider education

• Infectious diseases-related interventions
  • PrEP – Benefit likely highest in people who use stimulants
  • HIV treatment
  • HCV treatment
  • Vaccination – HAV, HBV, TDAP, pneumococcus
  • Screening – HIV, HBV, HCV, STIs
TREATMENT AND HARM REDUCTION: Cheat Sheet

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  • Buprenorphine (co-formulated with naloxone)
  • Extended release naltrexone
  • Others
    • Detoxification or medically assisted detoxification (i.e., clonidine, lofexidine)
    • Diacetylmorphine (heroin-based therapy)
    • Morphine sustained release or hydromorphone

• Harm-reduction services
  • Syringe services programs (formerly known as needle exchange)
  • Naloxone for overdose reversal
  • Safe injecting/consumption facilities

• Adjunctive services
  • 12-step programs
  • Mental health services / behavioral counseling
  • Housing services
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• Other interventions
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• Medications or interventions for stimulant use disorders
  • Motivational interviewing
  • Contingency management
  • CBT

• Methamphetamine
  • Mirtazapine

• Cocaine
  • Topiramate
  • Baclofen
  • Buprenorphine

Not FDA approved
Methadone and Buprenorphine

• Agonist and partial agonist therapies work
• Multiple RCTs and meta-analyses

• Benefits:
  • Improved survival(1)
  • Improved HIV(2)/HCV(3) prevention
  • Improved HIV medication adherence and viral suppression(4)


Gaps in Retention in Care: START Trial

Large retention gap

BUP group (N = 464)
MET group (N = 331)

Months since randomization date

†Treatment is defined as received MET or BUP treatment medication
Care Cascade for People with OUD

Methadone and Buprenorphine

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• Benefits:
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• Still many gaps: Interest, access, retention, stigma, side effects
Extended Release Naltrexone (XR-NTX)

• Opioid antagonist
• Given via injection once monthly
• Abstinence/”detoxification” (7-10 days) needed before induction
• Also has indication for treatment of alcohol use disorder

• No need for special license (x-wavier) or setting (OTP)
• Works really well in “America’s drug free ethos”
Similar efficacy XR-NTX (if you can start it)

Intent to treat analysis

Per protocol analysis

Real World Example: Massachusetts

Diacetylmorphine vs. Methadone: NAOMI trial

A Street Heroin

No. of Days of Use in the Previous Month

Months

Syringe Services Programs

- Community-based prevention programs
- Provide a range of services:
  - Access to and disposal of sterile syringes and injection equipment
  - Naloxone distribution
  - Fentanyl test strip distribution
  - Vaccination
  - Testing and linkage to infectious disease care and substance use treatment
- List in California available at:
  - [https://www.cdph.ca.gov/Programs/CID/DOA/Pages/OA_prev_sepdirectory.asp](https://www.cdph.ca.gov/Programs/CID/DOA/Pages/OA_prev_sepdirectory.asp)

New HIV Cases in PWID

United States

California

Centers for Disease Control and Prevention (CDC) NCHHSTP AtlasPlus.
Overdose Crisis in the United States

Drug overdose deaths in the U.S.


Change in total drug deaths from 2018

Safe Consumption Sites

- Many names: Safe injection facilities, overdose prevention sites
- Exist since 1980s
- >100 worldwide
- INSITE (Vancouver, BC) best studied:
  - Lower overdose mortality (88 fewer overdose deaths per 100,000 person-years [PYs])
  - 67% fewer ambulance calls for treating overdoses
  - Modelled decreased HIV infections.

Safe Consumption Sites: US Site - Unsanctioned

10,514 Injections – 33 Overdoses – 0 Deaths

PrEP for PWID

- Evidence of efficacy from the Bangkok trial
- 48.9% reduction in HIV incidence
- CDC recommended intervention for PWID
PrEP for PWID

- PrEP awareness in PWID 13 to 57% in PWID vs >80% in MSM
  - 40% in Los Angeles/San Francisco
- PWID taking PrEP 1-3%
  - 2% in LA/SF


MOUD > NSP > Test&Treat > PrEP

Shameless Plug for HPTN 094

Informational Webinar on Monday 10/26 @ 4 PM, ask Elena or Me for details
Pharmacologic Interventions for Methamphetamine Use

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<thead>
<tr>
<th>Failed</th>
<th>Some Promise</th>
<th>Positive Outcome</th>
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<tr>
<td>Tricyclic Antidepressants</td>
<td>Bupropion</td>
<td>Mirtazapine (treatment, in MSM)</td>
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<td>Serotonin Re-uptake Inhibitors</td>
<td>Methylphenidate</td>
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<td>Aripiprazole</td>
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<td>Extended-Release Naltrexone</td>
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<td>Ondansetron</td>
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<td>Mirtazapine (withdrawal)</td>
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<td>Rivastigmine</td>
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Courtesy of Steve Shoptaw
Mirtazapine for Methamphetamine (not FDA approved)


TAKE HOME POINTS

• The US is experiencing a public health emergency in regards to substance use, injection drug use and drug overdose

• MAT for OUD WORKS <- for some

• SSP works, but more innovative strategies are need to tackle overdose epidemic

• Sadly, no effective pharmacotherapy for stimulant use (yet?)