Opioid Use and Substance Use Disorders

R. Douglas Bruce, MD, MA, MS
Chief of Medicine, Cornell Scott-Hill Health Center
Associate Clinical Professor of Medicine
Yale University
New Haven, Connecticut

Financial Relationships With Commercial Entities

Dr Bruce has no relevant financial affiliations to disclose. (Updated 11/21/19)

Learning Objectives

After attending this presentation, learners will be able to:

▪ Describe opioid use disorder
▪ Initiate treatment for opioid use disorders
▪ Describe the implications of opioid use disorders in people living with HIV infection
▪ Describe stimulant use disorders and treatments for these disorders

New Orleans, LA, December 4-7, 2019, Ryan White HIV/AIDS Program CLINICAL CONFERENCE
ARS Question 1

According to CDC data, from 1999 to 2017, how many people have died in the United States from drug overdose?

A. 150,000
B. 250,000
C. 450,000
D. 550,000
E. More than 700,000

ARS Question 2

Please rate your current confidence in managing addiction in people with HIV.

A. Very Confident
B. Confident
C. Neutral
D. Little Confidence
E. Not Confident at All
**Addiction**

- A state in which a person engages in compulsive behavior
  - The behavior is reinforcing (that is, pleasurable or rewarding)
  - There is a loss of control in limiting the intake of the substance

---

**Why do people take drugs?**

- **To feel good**
  - To have novel feelings, sensations, experiences, and to share them

- **To feel better**
  - To lessen anxiety, worries, fears, depression, hopelessness

---

**Why do some people become addicted?**

- Biology/genes
- Environment
- Biology/Environment Interactions
Drugs Are Usurping Brain Circuits and Motivational Priorities

Consequences: Sex and Drugs - "Chemsex"

Chemsex drugs & HIV risk

- MACS Cohort: HIV-NEG
  - Use of passive, stimulants, and amphetamine-like drugs increased rectal non-protective sex
  - AURAH study: HIV-NEG
    - 1544, 21 HIV-NEG reported Chemsex drugs – associated with greater risk behaviour.
    - Methamphetamine may increase rectal mucosal inflammation: HIV-NEG & HIV-Pos

General Principles
General Principles

- Treat all patients with dignity and respect
- People who use drugs are people
- Malingering, manipulation, etc. are all survival mechanisms people who use drugs use for survival. Don't take it personally.

Practical Initial Step: Screening

- Inquire openly with all patients regarding past personal & family substance use
  - Include use of alcohol and over the counter drugs
- Particular screening tools include: ASSIST, AUDIT, DAST, CAGE-AID, but we use a 2 question initial screen (don’t worry, on the next slide)
- Screen ALL patients for substance use to avoid profiling

1. Screen patients for substance use disorders using standardized questions:
   - How many times in the past year have you had 5 or more standard drinks in a day?
   - How many times in the past year have you used an illegal drug or a prescription medication for nonmedical reasons?
Practical Next Step: Think about systems

- Provision of low threshold, rapid access, appropriately dosed treatment (e.g., buprenorphine, methadone, or other treatments)
- Culturally appropriate counseling for addiction [can be simple (NA) to more complex (CBT)]

Practical Steps: Treat everyone

Treatment of the medical issues associated with addiction (e.g., HIV, hepatitis B/C, and Tuberculosis)
- There are NO data to support denying or waiting to start patients on ART or any other treatment.
- Prescribe naloxone and consider becoming a buprenorphine provider
- Review guidelines on the treatment of chronic pain and re-evaluate how you prescribe opioids

Case 1

- You inherit a new patient: A 45 year old male comes in for his refill of oxycodone of 30 mg tablets, two tablets every 6 hours for a total of 240 tablets for the month. You notice there hasn’t been a urine toxicology in 5 years, but notice that there have been a few recent Emergency Department visits for methamphetamine intoxication. The patient today is agitated, struggling to sit still, and wondering why the refill is taking so long....
ARS Question 3: Your next steps:

A. Curse the prior provider who left you a mess
B. Give the refill and find a way never to see the patient again
C. Call social work (or anyone) to try and diffuse the situation and get the patient into treatment
D. Talk with the patient about the ED visits and methamphetamine use to gauge interest in treatment, and refill the medication
E. D, but do not refill the medication

“But it isn’t really a problem” – change is a process

- Transtheoretical Model of Change:
  - Helping patients to move along the stages of change
  - MI – “Roll with resistance”
- Harm Reduction
  - Syringe exchanges
  - Naloxone
- When helping hurts
- Enabling vs. boundaries

Why isn’t it a problem? The Lifecycle of a Heroin User

Diagrammatic summary of functional state of typical "mainline" heroin user. Arrows show repetitive injection of heroin in uncertain dose, usually 10 to 30 mg but sometimes much more. Note that the addict is hardly ever in a state of normal function ("straight").
It's Friday at 4PM …

• 30 year old comes into clinic and, through much creative and interesting conversations, you conclude that the oxycodone you were giving for back pain is not in the urine toxicology, but morphine is……

ARS Question 4: Your next step:

A. Refuse to refill the medication and call someone else to deal with the upset patient
B. Agree with the patient that it was a one time thing and give all or some of the oxycodone
C. Discuss treatment for opioids and start buprenorphine
D. Discuss treatment for opioids and refer to methadone
E. Discuss treatment for opioids and start naltrexone
**Treatment**

- **Pharmacological Treatment**
  - Buprenorphine, Methadone, Naltrexone

- **Behavioral Treatment (Therapy)**
  - Motivation Interviewing – getting you motivated to do treatment
  - Cognitive Behavioral Therapy – getting you to think differently about drug use

**Medication: BUP and mu-opioid receptors**

![MRI Binding Potential (Bmax/Kd)](December 9, 2019)

**Medications to treat opioid use disorder**

- **Methadone**
  - Only in OTP
  - Efficacious, best retention

- **Buprenorphine**
  - Office based
  - Efficacious, retention less than methadone

- **Naltrexone**
  - Office based
  - Efficacious
  - Retention less than methadone & buprenorphine
Methamphetamine Treatments

Structural Changes: Methamphetamines

End of the Mind: Researchers have mapped brain decay caused by methamphetamine use (left). The damage affected memory, emotion, and the reward system. Notice the similarity to the brain decay caused by Alzheimer’s Disease (right).
Methamphetamines and Dopamine Effects


Motor Task
Loss of dopamine transporters in the methamphetamine abusers may result in slowing of motor reactions.

HIV Specific Methamphetamine Effects

- Neurocognitive effects and HIV may result in permanent neurobiological changes.
- Methamphetamine increases HIV replication and expression of CCR5 on macrophages and these events may contribute to the immunopathogenesis of HIV-infected methamphetamine users.
- Reduced neurocognitive performance can severely compromise HIV clinical care and is associated with HIV nonadherence and the development of HIV resistance.

Treatment

- Pharmacological Treatment
- Behavioral Treatment (Therapy)
  - Motivation Interviewing – motivated to do treatment
  - Cognitive Behavioral Therapy – getting you to think differently about drug use
Medications that do not work

<table>
<thead>
<tr>
<th>Medicine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aripiprazole</td>
</tr>
<tr>
<td>Mirtazapine</td>
</tr>
<tr>
<td>Baclofen</td>
</tr>
<tr>
<td>Modafinil</td>
</tr>
<tr>
<td>Bupropion</td>
</tr>
<tr>
<td>Ondansetron</td>
</tr>
<tr>
<td>Dextroamphetamine</td>
</tr>
<tr>
<td>Risperidone</td>
</tr>
<tr>
<td>Gabapentin</td>
</tr>
<tr>
<td>Sertraline</td>
</tr>
</tbody>
</table>

Putting it all together.

Jim is a 47 year-old male living with HIV who has a history of heroin injection, is on methadone maintenance, and is receiving opioids from his primary HIV provider for back pain. He starts complaining of more back pain. Members of his care team believe this is drug seeking behavior, deny his request, and refer Jim to you to address his complaints.

ARS Question 5: Your next step is….  

A. Pretend to be sick and avoid seeing the patient.  
B. Take a history and do a physical examination.  
C. Inform the patient that he already has someone giving him opioids, and to go see that person.  
D. Because he is on methadone, regardless of the cause of pain, no additional medications are available.
You take a history

You take a history and find out that Jim has had a lumbar back pain for years, but that in the last six weeks he has developed a new pain. You ask him to point to where it is and he points to a region in his thoracic vertebrae.

On examination, he has pinpoint tenderness in his thoracic spine which prompts you to order a MRI which shows...

Discitis/osteomyelitis

HIV, Pain and Addiction

Clinical Infectious Diseases

2017 HIVMA of IDSA Clinical Practice Guideline for the Management of Chronic Pain in Patients Living With HIV

https://academic.oup.com/cid/article/65/10/e1/4157299
Useful websites:

- American Pain Society has resources available online: http://www.americanpainsociety.org/resources/content/primary-care-practitioner.html
- Providers Clinical Support System (PCSS) for MAT at https://pcssnow.org/resources/clinical-tools/
- Buprenorphine training: https://www.samhsa.gov/medication-assisted-treatment/training-resources/buprenorphine-physician-training

Questions?

- Email: robert.bruce@yale.edu

Question-and-Answer Period