Clinical and Public Health Interventions to Address the Overdose Crisis

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Associate Professor of Medicine
Boston University School of Medicine
Director, Grayken Addiction Medicine Fellowship Program,
Boston Medical Center

January 12th, 2021
12:00 – 1:00 PM ET
Webinar Housekeeping

Minimize or maximize the webinar panel by selecting the orange arrow.

To be recognized, type your question in the “Question” box and select send.
Meet Our Speaker

Alexander Walley, MD, MSc is an Associate Professor of Medicine at Boston University School of Medicine. He is the Director of the Grayken Addiction Medicine Fellowship program at Boston Medical Center. His research focus is on the medical complications of substance use, specifically, HIV and overdose, and is an active investigator on clinical trials and cohort studies. He provides primary care and office-based addiction treatment for patients with HIV at Boston Medical Center. He is the Medical Director for the Massachusetts Department of Public Health’s Opioid Overdose Prevention Program.
Dr. Alexander Walley has no financial relationships with an ACCME defined commercial interest to disclose.
Learning Objectives

1. Approaches to reducing overdose include OEND, MOUD, and prescription opioid safety
2. OEND and MOUD are effective, but insufficient to address the opioid crisis
3. 4 key challenges - opportunities
   1. Racial and ethnic equity
   2. Engaging high-risk individuals
   3. Low barrier – retention paradox
   4. Increasingly toxic supply
Together we can heal our communities
A community engaged intervention to develop a comprehensive, data-driven community response plan to deploy evidence-based practices across multiple sectors to reduce opioid overdose deaths within highly affected communities by 40%
What should we do about the opioid crisis?

Communities select from the following evidence-based practices:

1) Increase opioid overdose prevention education and naloxone distribution (OEND)

2) Enhance delivery of medication for opioid use disorder (MOUD) maintenance treatment, including agonist/partial agonist medication

3) Improve prescription opioid safety
Increase opioid overdose prevention education and naloxone distribution (OEND)
Most people who use opioids do not use alone

Known risk factors:
- Mixing substances, abstinence, using alone, unknown source

Opportunity window:
- Opioid overdoses take minutes to hours and is reversible with naloxone
  - For fentanyl, the window is seconds to minutes

Bystanders are trained to recognize and respond to overdoses

Fear of public safety

Patient education videos and materials at prescribetoprevent.org
OEND implementation by town

Opioid Overdose Related Deaths: Massachusetts 2004 - 2006

Number of Deaths
- No Deaths
- 1 - 5
- 6 - 15
- 16 - 30
- 30+

OEND programs
- 2006-07
- 2007-08
- 2009

Towns without OEND implementation by town

Walley et al. 2013
Fatal opioid OD rates by OEND implementation

Naloxone coverage per 100K

Opioid overdose death rate

- No coverage
- 1 – 100 people
- < 100 people

27% reduction
46% reduction

Walley et al. 2013
Research shows naloxone works

Feasibility

- Piper et al. Subst Use Misuse 2008: 43; 858-70.
- Walley et al. JSAT 2013; 44:241-7. (Methadone and detox programs)

Increased knowledge and skills


No increase in use, increase in drug treatment


Reduction in overdose in communities


Cost-effective

- $438 (best)
- $14,000 (worst) per quality-adjusted life year gained

“The **AMA** has been a longtime supporter of increasing the availability of Naloxone for patients, first responders and bystanders who can help save lives and has provided resources to bolster legislative efforts to increase access to this medication in several states.”


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**Surgeon General’s Advisory on Naloxone and Opioid Overdose**

April 5, 2018

I, Surgeon General of the United States Public Health Service, VADM Jerome Adams, am emphasizing the importance of the overdose-reversing drug naloxone. For patients currently taking high doses of opioids as prescribed for pain, individuals misusing prescription opioids, individuals using illicit opioids such as heroin or fentanyl, health care practitioners, family and friends of people who have an opioid use disorder, and community members who come into contact with people at risk for opioid overdose, **knowing how to use naloxone and keeping it within reach can save a life.**

**BE PREPARED. GET NALOXONE. SAVE A LIFE.**
Naloxone is highly effective and has saved lives from opioid overdoses, but can only do so if it is in the right hands, at the right time. Healthcare providers have a critical role in assuring this occurs across all populations at risk. In order to reduce the risk of overdose deaths, clinicians should strongly consider prescribing or co-prescribing naloxone, and providing education about its use for the following patients who are at risk of opioid overdose.

Patients prescribed opioids who:
• Prescribed opioids at 50 MME per day or more
• Respiratory conditions such as chronic obstructive pulmonary disease or obstructive sleep apnea
• Prescribed benzodiazepines
• Have a non-opioid SUD, report excessive alcohol use, or have a mental health disorder

Patients at high risk for experiencing or responding:
• Using heroin, illicit fentanyl or misusing Rx opioids
• Using methamphetamine and cocaine, potentially contaminated with fentanyl
• Receiving treatment for opioid use disorder, including methadone, buprenorphine, or naltrexone
• History of opioid misuse and recent controlled settings where tolerance to opioids has been lost
Enhance delivery of medication for opioid use disorder, including agonists/partial agonists (MOUD)
OVERVIEW OF CONCLUSIONS

To read the full text of the committee’s conclusions, visit nationalacademies.org/OUDtreatment.

1. Opioid use disorder is a treatable chronic brain disease.
2. FDA-approved medications to treat opioid use disorder are effective and save lives.
3. Long-term retention on medications to treat opioid use disorder is associated with improved outcomes.
4. A lack of availability of behavioral interventions is not a sufficient justification to withhold medications to treat opioid use disorder.
5. Most people who could benefit from medication-based treatment for opioid use disorder do not receive it, and access is inequitable across subgroups of the population.
6. Medication-based treatment is effective across all treatment settings studied to date. Withholding or failing to have available all classes of FDA-approved medication for the treatment of opioid use disorder in any care or criminal justice setting is denying appropriate medical treatment.
7. Confronting the major barriers to the use of medications to treat opioid use disorder is critical to addressing the opioid crisis.
Individually-linked statewide datasets are part of the Chapter 55 initiative to characterize opioid-related harms in Massachusetts.
After overdose, few survivors receive medications for OUD
Cohort of 17,755 overdose survivors in MA, 2012-2014

Larochelle MR et al. 2018
After overdose, few survivors receive medications for OUD

Cohort of 17,755 overdose survivors in MA, 2012-2014

% receiving medication

-12 -9 -6 -3 0 3 6 9 12

Months from index overdose

- Any MOUD
- Buprenorphine
- Methadone
- Naltrexone

Larochelle MR et al. 2018
Overdose survivors who receive medications have better survival
Cohort of 17,755 overdose survivors in MA, 2012-2014 – On Treatment

Cumulative incidence of all-cause death

- None
- Methadone
- Buprenorphine
- Naltrexone

Larochelle MR et al. 2018
Overdose survivors who receive medications have better survival
Cohort of 17,755 overdose survivors in MA, 2012-2014 – With Discontinuation

Cumulative incidence of all-cause death

Months From Overdose

Larochelle MR et al. 2018

- None
- Naltrexone
- Buprenorphine
- Methadone
After detox, most do not receive medications for OUD, residential or both
Cohort of 61,819 detox encounters in MA, 2012-2014

% receiving medication

-12 -11 -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10 11 12

Months from index opioid detoxification episode

<table>
<thead>
<tr>
<th>Medication</th>
<th>%</th>
<th>Months Received (median [IQR])</th>
</tr>
</thead>
<tbody>
<tr>
<td>Both MOUD + residential*</td>
<td>13%</td>
<td>5 [3, 9]</td>
</tr>
<tr>
<td>Any MOUD</td>
<td>41%</td>
<td>3 [1, 8]</td>
</tr>
<tr>
<td>Methadone</td>
<td>18%</td>
<td>5 [2, 10]</td>
</tr>
<tr>
<td>Buprenorphine</td>
<td>21%</td>
<td>3 [1, 6]</td>
</tr>
<tr>
<td>Naltrexone</td>
<td>7.2%</td>
<td>1 [1, 2]</td>
</tr>
<tr>
<td>Any further residential</td>
<td>35%</td>
<td>2 [1, 4]</td>
</tr>
</tbody>
</table>

* MOUD and inpatient at some point 12 months after inpatient detox, not necessarily at the same time.

Walley AY et al. 2020
Detox patients who receive further treatment have better survival
Cohort of 61,819 detox encounters in MA, 2012-2014 – With Discontinuation

Cumulative incidence all-cause mortality

- Further inpatient treatment
- MOUD
- Both MOUD and inpatient treatment
- No treatment

Month from Detox
Improve prescription opioid safety
As prescription monitoring searches go up, opioid prescriptions go down

Figure 1. Schedule II Opioid Prescriptions and MassPAT¹ Search Activity² Trends
MA: Q1-2015 - Q4 2019

1 MassPAT is the Massachusetts Prescription Awareness Tool (Online PMP)
2 Search activity includes prescribers, delegates, and pharmacists registered in MassPAT and licensed users of EHR Integration
3 Pharmacies required to report daily
4 STEP bill signed into law (7-day supply requirements go into effect)
5 MA prescribers required to look up patient when prescribing a Schedule II or III opioid medication

Opioid prescribing factors associated with increased fatal overdose in Massachusetts, 2011-2015 (n = 3,078,034)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Adjusted Hazard Ratio for Fatal Opioid Overdose (95% Confidence Interval)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzo overlap 3+ months</td>
<td>4.23 (3.85–4.65)</td>
</tr>
<tr>
<td>No pain diagnosis</td>
<td>2.74 (2.40–3.13)</td>
</tr>
<tr>
<td>≥ 100 MMEs 3+ months</td>
<td>2.22 (1.99–2.48)</td>
</tr>
<tr>
<td>4+ prescribers</td>
<td>1.32 (1.18–1.48)</td>
</tr>
<tr>
<td>4+ pharmacies</td>
<td>1.34 (1.17–1.53)</td>
</tr>
</tbody>
</table>
Opioid overdose fatalities in Massachusetts from 2000 - 2019

Figure 2. Opioid-Related Overdose Deaths, All Intents
Massachusetts Residents: 2000 - 2019

Number of Deaths

**Drug-related deaths have risen in 2020 in states across the country.**
Increase in drug-related deaths from 2019 through the first portion of 2020.

<table>
<thead>
<tr>
<th>State</th>
<th>Increase (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delaware</td>
<td>+60%</td>
</tr>
<tr>
<td>Washington</td>
<td>+35%</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>+32%</td>
</tr>
<tr>
<td>Colorado</td>
<td>+30%</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>+27%</td>
</tr>
<tr>
<td>Iowa</td>
<td>+26%</td>
</tr>
<tr>
<td>Vermont</td>
<td>+24%</td>
</tr>
<tr>
<td>Louisiana</td>
<td>+24%</td>
</tr>
<tr>
<td>California</td>
<td>+23%</td>
</tr>
<tr>
<td>Minnesota</td>
<td>+22%</td>
</tr>
<tr>
<td>Texas</td>
<td>+18%</td>
</tr>
<tr>
<td>New Jersey</td>
<td>+17%</td>
</tr>
<tr>
<td>Illinois</td>
<td>+13%</td>
</tr>
<tr>
<td>Florida</td>
<td>+10%</td>
</tr>
</tbody>
</table>

All data is provisional. Definitions of what counts as a drug-related death vary by state. Data for Arizona, California, Florida, Minnesota, Tennessee, Texas, Washington and Wisconsin includes only a subset of counties within each state.

Source: State and local health departments, coroners and medical examiners
1. Racial and ethnic equity
2. Treatment and harm reduction where people are, on their terms
3. Address the low barrier-retention paradox
4. Better supply-side solutions
Figure 2. Magnitude of increase in drug overdose deaths involving synthetic opioids other than methadone per 100,000 population, by ethnicity, 2013-2017

- Non-Hispanic Blacks: 0.5 to 9.0 - 18-fold
- Hispanics: 0.3 to 3.7 - 12.3-fold
- Non-Hispanic Whites: 1.3 to 11.9 - 9.2-fold

4.6% of MA Residents Have Opioid Use Disorder

Capture-recapture study of 7-linked statewide datasets, MA Public Health Data Warehouse

- **4.6% (275,070)** of MA adults with opioid use disorder in 2015
  - 44% (120K) known → **56% are unknown!!!!**
    - via medical claims, addiction treatment or medication, fatal and non-fatal overdose
  - 15% (40K) treated with buprenorphine or methadone in 2015

- **6.9%** of 26-44 year olds

**Data Gap – Race and ethnicity data not reliable enough to analyze**

- **0.6%** (2.1 million) of Americans with opioid use disorder per NSDUH in 2016
- **3.5%** (11.5 million) of Americans with opioid misuse per NSDUH in 2016

Barocas et al. 2018
Looking back….Half of OD decedents touch our systems < 12 months

Population attributable fractions for pre-OD touchpoints
(Massachusetts, 2014, n=1,315 opioid-related deaths)

Source: Table 1. Larochelle et al. Drug and Alcohol Dependence 2019
**Touchpoint:**
A health care, public health, or criminal justice encounter were we can:
- identify individuals at high-risk for opioid overdose death
- deliver overdose risk reduction services, and/or
- link and engage in treatment
Examples: **Post-overdose, incarceration, when hospitalized, residential treatment, civilly commitment, drug court**

- **We are missing opportunities to engage people**
- **When people are treated with MOUD, their mortality is cut in half or more**
- **When people discontinue treatment, they die**
  -> We need to make the treatment work for the patient
  …..not make the patient work for the treatment
Post overdose public health-public safety outreach programs

2016 – 21% (23/110) of responding Massachusetts municipalities had implemented collaborative post-overdose outreach programs to connect survivors with treatment and prevention services

Qualitative interviews of 22 police and fire departments defined four program types:

1. **Multi-Disciplinary Team Visit** *(n=8)* – Public safety and public health go to the home of the overdose survivor or site of the overdose

2. **Police Visit with Referrals** *(n=4)* – Police goes to the home and offers referral to community treatment or prevention agency

3. **Clinician Outreach** *(n=6)* – Clinician embedded in police department or with community partner does phone or in-person outreach to survivor

4. **Location-based Outreach** *(n=2)* – police stations or drop-in centers offer access to treatment without threat of arrest for people voluntarily presenting
The low barrier-retention MOUD paradox

- Overdose risk is a function of MOUD initiation and retention
- As we reduce barriers to treatment, the people coming into care may be less motivated for treatment, which result in lower retention
  - Many of the highest risk individuals we want to engage are the highest risk for discontinuation

-> Potential paradox solutions
  - Integrating addiction care across inpatient and outpatient with primary, prenatal, mental health, housing
Addressing the low barrier-retention MOUD paradox

- Address stigma
- Opt out, instead of opt in
  - Convert “detox” into induction sites
  - Hospital/ED patients, especially post-OD
  - MOUD in jails/prisons
  - MOUD through pharmacies
- Bring the treatment to the patient
  - Mobile MOUD
  - MOUD at syringe service programs
  - Long-acting formulations
Figure 4. Percent of Opioid-Related Overdose Deaths with Specific Drugs Present
Massachusetts Residents: 2014 - Q4 2019

Methodology Change*

- Fentanyl¹
- Likely Heroin
- Prescription Opioid²
- Benzodiazepine
- Cocaine
- Amphetamine³

Year and Quarter

1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4
A comprehensive public health response to address overdoses related to IMF

1. Fentanyl should be included on standard toxicology screens
2. Adapt existing harm reduction strategies, such as direct observation of anyone using illicit opioids, and ensuring bystanders are equipped with naloxone
3. Enhanced access and linkage to medication for opioid use disorders

“So, now what they [people selling illicit drugs] are doing is they’re cutting the heroin with the fentanyl to make it stronger. And the dope [heroin] is so strong with the fentanyl in it, that you get the whole dose of the fentanyl at once rather than being time-released [like the patch]. And that’s why people are dying—plain and simple. You know, they [people using illicit drugs] are doing the whole bag [of heroin mixed with fentanyl] and they don’t realize that they can’t handle it; their body can’t handle it.”

- Overdose bystander

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Characteristics of Fentanyl Overdose — Massachusetts, 2014–2016

Nicholas J. Somerville, MD1,2; Julie O’Donnell, PhD1,3; R. Matthew Gladden, PhD4; Jon E. Zibbell, PhD4; Traci C. Green, PhD3; Morgan Yunkin, MD5; Sarah Ruiz, MSW2; Hemil Babakhanloo-Chase, MPH2; Miranda Chan, MPH2; Barry P. Callis, MSW2; Janet Kuramoto-Crawford, PhD1; Henry M. Nields, MD, PhD7; Alexander Y. Walley, MD2,5
Supply-side specific challenges

Challenges

• Interdiction is insufficient and law enforcement efforts stigmatize which undermine evidence-based prevention and treatment
  ▪ “We can’t arrest our way out of the problem.”

• Prescription opioid supply has been replaced by deadlier illicit opioids
Supply-side specific solutions

Solutions

- Drug checking
- Prescription injectable opioid agonists for opioid use disorder (diacetylmorphine, hydromorphone)
  - Multiple RCTs show benefit among people for whom methadone has not been sufficient
Especially important for people using fentanyl…
…now more complicated with COVID-19 pandemic

• **Start low and go slow**
  ▪ Use a small amount and give slowly to gauge potency

• **Before COVID pandemic:**
  ▪ *Use with other people present*
  ▪ *Take turns* to prevent simultaneous overdose
  ▪ *Have naloxone ready* and an immediate way to call for help

• **During COVID pandemic**
  ▪ When using alone, *connect with someone by phone or video* to monitor while and immediately after using
  - Neverusealone.com
  - Canary – Prevent Overdose App
  - Brave.coop
## Can what works for HIV also work for opioids?

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<td>Naloxone rescue kit distribution</td>
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Realistic Expectations!

Addiction is a chronic relapsing condition

Over time treatment works
People get better

Thank you!
awalley@bu.edu
References

- TIP 63 Medications for Opioid Use Disorder [available for free download @ https://store.samhsa.gov/product/TIP-63-Medications-for-Opioid-Use-Disorder]
PCSS Mentoring Program

- PCSS Mentor Program is designed to offer general information to clinicians about evidence-based clinical practices in prescribing medications for opioid use disorder.

- PCSS Mentors are a national network of providers with expertise in addictions, pain, evidence-based treatment including medications for addiction treatment.

  - 3-tiered approach allows every mentor/mentee relationship to be unique and catered to the specific needs of the mentee.

  - No cost.

For more information visit: https://pcssNOW.org/mentoring/
PCSS Discussion Forum

Have a clinical question?

Ask a Colleague
A simple and direct way to receive an answer related to medication-assisted treatment. Designed to provide a prompt response to simple practice-related questions.

Ask Now

http://pcss.invisionzone.com/register
Upcoming Webinars

Racial Inequities in Addiction Treatment

Dr. Michelle Durham, M.D.,
Boston Medical Center

Tuesday, February 9th, 2021
12:00 – 1:00 PM ET
**PCSS** is a collaborative effort led by the American Academy of Addiction Psychiatry (AAAP) in partnership with:

<table>
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<tr>
<th>Addiction Technology Transfer Center</th>
<th>American Society of Addiction Medicine</th>
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<td>The National Judicial College</td>
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