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Addressing the Opioid Epidemic:
A Primer on Opioid Addiction, Overdose Management, and Medication Assisted Treatment

Sponsored by a grant from the NJ Department of Human Services, Division of Mental Health & Addiction Services
Learning Objectives
As a result of participating in this session, learners will:

- Understand the factors that led to the current US opioid crisis
- Know the proper uses of naloxone for overdose reversal
- Recognize the signs of opioid use disorder
- Debunk commonly held myths and beliefs about treatment for opioid use disorder
- Understand the key role of MAT (Medication Assisted Treatment)

Terminology

- **Opiates** are drugs derived from the natural opium plant.
- **Opioid** is used for the *entire family* of opiates including natural, synthetic and semi-synthetic.
- **MAT** = Medication Assisted Treatment
The Opioid Epidemic

Opioid Use Disorder as a Disease

Overdose Management

Medication Assisted Treatment

Not a New Problem

1861
Industrial Revolution
Commercialization of morphine

1900
Harrison Act
Illegal to prescribe opioids for people with addiction

1914
Civil War
“Soldier’s Disease”

1914
Temperance Movement
Shift from Medical to Moral/Criminal

1972
Vietnam War
Heroin

1990
Methadone Clinics
Legalization of maintenance clinics for opioid users

1990
Change in Prescribing
Increased opioid use for non-cancer pain
Opioid Sales, Deaths and Treatment Admissions since 1999

The US, Canada, and Australia use 96% of the world’s opioid analgesics, but make up only about 15% of the world population. Lancet 2016

At least 3,163 people from NJ died from opioid overdoses in 2018

Increased every year since 2012
Comparison: 674 NJ residents died on 9/11

2019 NJ drug ODs are about ~ 11/ day
Rate of OD Deaths Rising More Rapidly in NJ

![Graph showing age-adjusted rate of overdose deaths per 100,000 persons in New Jersey compared to the US.](image)

**CDC Wonder 2019**
How did this epidemic happen?

THE US OPIOID EPIDEMIC

“The risk of addiction is much less than 1%”
Porter & Jick, NEJM 1980

Cited more than 900 times (Google Scholar)
Oxycodone and Oxycodone CR

- **Oxycodone** (Roxycodeone)
  - Immediate release
  - Acute pain
  - 4-6 hrs duration of action
  - Tabs (30mg), liquid

- **Oxycodone CR** (Oxycontin)
  - Controlled release
  - Chronic pain; already tolerant to opioids
  - 12 hrs duration of action (BID dosing)
  - Tablets (80 or 160 mg)
  - Long acting oxycodone; Delayed absorption “abuse-resistant”

Crush, sniff, and inject

Powerful high > eight hrs
Euphoria ~ heroin
Commercial Triumph, Public Health Tragedy

$1 Billion sales within 5 years of FDA approval

Marketed aggressively to PCPs for non-cancer pain

Purdue sued by 48 states for fueling the crisis

What is the most common way(s) that individuals who abuse prescription opioids obtain them?
Majority get prescription opioids from family/friends for free

From a friend or relative for free 50.5%
From one doctor 22.1%
Bought from friend or relative without asking 4.4%
Took from friend or relative without asking 4.4%
Bought from drug dealer or other stranger 4.8%
From more than one doctor 3.1%
Other 4.1%

Overdose Death Rates Involving Opioids, by Type, United States, 2000-2017

Wave 1 Prescription
Wave 2 Heroin
Wave 3 Fentanyl
Commonly Prescribed Opioids (National & State Prescription and Median Use)
Admissions Heroin; Young, White, Male

Figure 9. Non-heroin opiate admissions, by gender, age, and race/ethnicity: 2014

SOURCE: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS). Data received through 02/01/16.
The Opioid Epidemic

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Substance Use Disorders = Chronic Medical Conditions

Genetic susceptibility
Chronic pathophysiologic/functional changes
Risk factors influenced by choices
Similar treatment goals & strategies
Similar clinical outcomes
Addiction is a brain disease

Risk Factors for Opioid Use Disorder

- 10-20% of opioid users at risk (licit/illicit)

- **Higher Risk**
  - Co-occurring psychiatric (Depression / Attention deficit disorder)
  - Family history substance use
  - Prior substance use disorder
  - Men > women
  - Native Americans
  - Trauma exposure
DSM 5 Criteria for Substance Use Disorder

- **Loss of Control**
  - Larger amounts, longer time
  - Inability to cut back
  - More time spent, getting, using, recovering
  - Activities given up to use.
  - Craving
- **Physiologic**
  - Tolerance
  - Withdrawal
- **Consequences**
  - Hazardous use
  - Social or interpersonal problems related to use
  - Neglected major roles to use
  - Continued use after significant problems.

A substance use disorder is defined as having 2 or more of these symptoms in the past year

Tolerance and withdrawal alone don’t necessarily imply a disorder.

Severity is related by the number of symptoms.

2-3 = mild
4-5 = moderate
6+ = severe

Why Do People Use / Seek Drugs?

Theoretical Framework for Understanding Addiction and Motivation for Alcohol/Drug Seeking Over the Lifetime

**Positive Reinforcement**

- Pleasurable Experience

**Negative Reinforcement**

- Drug withdrawal
- Depression
- Abuse/ Trauma
- Neglect/Poverty
- Social Deprivation

Koob 2013
The Opioid Epidemic

Opioid Use Disorder as a Disease

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Opioid Intoxication

- Euphoria (“high”)
- Constricted pupils
- Slowed breathing
- Low body temperature
- Vomiting
- Constipation
- Drowsiness
- Decreased awareness

Opioid Overdose

- Nonresponsive
- Pinpoint pupils
- **No respiration**
- Low blood pressure
- Slow heartbeat
- Coma
- Cyanotic
- Flaccid muscles
Opioid Overdose

- Cause of death = respiratory depression
- ~7 non-fatal OD for every fatal OD

- Risks
  - **Higher Dose**
  - **Combination with sedatives (alcohol/ benzodiazepine)**
  - Medical: HIV, liver disease
  - Injection User
  - Depression
  - People in household possess

OD Reversal

- Management: Opioid antagonist, naloxone (Narcan)
  - **Call 911**
  - Rescue treatment
- **Intranasal**
Naloxone Access

• Free trainings & kits in NJ

Contact Trish Dooley Budsock, MA, LPC, CTTS
732.235.3361 dooleypc@rwjms.rutgers.edu
Rutgers Robert Wood Johnson Medical School

• Individuals can obtain at pharmacies without a prescription
  o Approx. $50-150
  o May be covered by insurance
  o Availability varies by pharmacy

Opioid Withdrawal

Not life threatening

• Anxiety
• Yawning
• Sweating
• Tearing
• Runny nose
• Pupils widen (dilate)
• “Goosebumps” / muscle twitching
• Nausea / vomiting
• Diarrhea and abdominal cramps
• Muscle / bone pain
The Opioid Epidemic

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Recovery is Bio-Psycho-Social-Spiritual

- Biological
  - Withdrawal, craving, medical conditions

- Psychological
  - Depression, trauma, coping

- Social
  - Friends, environment, relationship

- Spiritual
  - Hope, purpose, altruism, forgiveness
Treatment for Opioid Use Disorder

- Detox ineffective (95% relapse rate)
- Recovery support / 12 step
- Counseling treatment (CBT, others)
- **Medication Assisted Treatment (MAT)**
  - Buprenorphine (Suboxone)
  - Methadone
  - Extended Release Naltrexone (Vivitrol)

Rationale for MAT

- Detoxification and maintenance
- Prevents or lessens withdrawal
- Reduces use (negative urine drug screen)
- More substance free days/weeks
- Reduces crime, infection, HIV
- **Greater treatment retention (fewer dropouts) and reduced rate of death**
Opioid Use Disorder - Variable Course over 42 Months

Most have alternating periods of abstinence and use

Weiss, Drug Alcohol Dep, 2015

Treatment Retention and Decreased Illicit Opioid Use on MAT

Buprenorphine promotes retention, and those who remain in treatment become more likely over time to abstain from other opioids

Kaiko et al, 2003
Soeuffing et al, 2009

From PCSS Waiver Training, 2019.
https://pcssnow.org/medication-assisted-treatment/
Benefits of MAT: Decreased Mortality

### Death rates:

- General population
- Medication-assisted treatment
- No treatment

Dupouy et al., 2017
Evans et al., 2015
Sordo et al., 2017

Standardized Mortality Ratio

From PCSS Waiver Training, 2019.
https://pcssnow.org/medication-assisted-treatment/

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Barriers to MAT Access

- **Personal**
  - Stigma, Misinformation & Beliefs
- **Provider Level**
  - Stigma, Misinformation & Beliefs
  - Lack of Education
- **Systems Level**
  - Stigma, Misinformation & Beliefs
  - Lack of / Limited Insurance Coverage
Opioid Classification (mu receptor)

**Full agonists:**
- morphine
- oxycodone

**Partial agonist:**
- buprenorphine

**Antagonists:**
- naloxone
- naltrexone
Buprenorphine

- Partial mu agonist with ceiling (↓ risk)
  - Lower street value
  - Lower abuse potential
  - No respiratory depression
- Slow dissociation, Long duration of action
- Strong mu affinity, Displaces other opioids
- Most on dose of 16mg/day
- Start first dose in mild withdrawal

- Allowed for Office Based Treatment for Opioid Use Disorder
- Waiver (X Number)

Buprenorphine

- Common side effects: constipation, nausea, headache, sweating, dry mouth
- FDA approved > 16
- Taken sublingual (under tongue)
- **Naloxone added** to buprenorphine (↓↓ diversion)
  - When taken orally no effect
  - If crushed, snorted or injected precipitates opioid withdrawal

<table>
<thead>
<tr>
<th>Suboxone (BUP:NAL)</th>
<th>Subutex (BUP)</th>
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<tbody>
<tr>
<td><img src="image" alt="Suboxone" /></td>
<td><img src="image" alt="Subutex" /></td>
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</tbody>
</table>
Methadone

- Mu receptor agonist
- 50-100mg daily
- Complicated medication interactions
- Lasts a long time in body
- Side effects: constipation, sweating, sexual dysfunction, sedation
- Decades of evidence
  - Reduces and eliminates use of opioids and cocaine
  - Reduces risk of HIV
  - Reduces needle sharing and needle use
  - Reduces crime and incarceration
- Used for opiate use disorder only in a licensed methadone treatment facility

Methadone Removes Cycle of Intoxication and Withdrawal
Extended Release Naltrexone  (ER-NTX)

- Vivitrol
- FDA approved relapse prevention
- XR-NTX  380mg shot every 4 weeks
- Cannot start until 7 days opioid free
- Works: Greater abstinence, less craving and greater treatment retention vs placebo
- Side effects: Insomnia, injection site reaction, nausea, headache
- Expensive ($1500/ shot)

Opiate Antagonists

Both = Strong affinity, displace full agonist

Overdose Reversal
Naloxone (Narcan) – shot, intranasal

Relapse Prevention / MAT
Naltrexone – oral or long acting injection
<table>
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<tr>
<th>Equally Effective</th>
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</thead>
<tbody>
<tr>
<td><strong>Buprenorphine-Naloxone (Suboxone)</strong></td>
</tr>
<tr>
<td><strong>Methadone</strong></td>
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<tr>
<td><strong>ER-Naltrexone</strong> (Vivitrol)**</td>
</tr>
<tr>
<td>Minimal overdose risk</td>
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<tr>
<td>More access (office based); rural</td>
</tr>
<tr>
<td>Better-elderly, complex medical</td>
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<tr>
<td>Less neonatal abstinence syndrome than methadone</td>
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<tr>
<td>Some pain relief</td>
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</tbody>
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**Benefit from Longer MAT Treatment**

- Stabilization 1-2 months
- Maintenance- months to years

- Discontinuation leads to relapse
- If taper (within 28 days), only 12% opiate free at 3 month follow up

88% relapse

Ling 2009
Detox vs. Maintenance Treatment

Detox alone is less efficacious than maintenance treatment

MAT is working if

- Stops using other opioids
- Experiences no craving for opioids
- Has no opiate withdrawal symptoms
- Has no side effects from medications
- Feels that life is no longer out of control
Prescription Monitoring Program

- Statewide database on controlled substances
- To halt the abuse and diversion of prescription drugs
- Includes pharmacy (out of hospital) medications
- Access to prescribers and pharmacists (law enforcement, licensing board)
- Shared data between states
- Does not infringe on prescribing
- Mandatory enrollment for doctors in NJ

Schedule II to V Controlled Substances Included in the PMP

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Description</th>
<th>Substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>High potential for abuse; No medical use</td>
<td>MDMA, Heroin, GHB, Marijuana, LSD</td>
</tr>
<tr>
<td>II</td>
<td>High potential for abuse; Medical use</td>
<td>Cocaine, morphine, PCP, methadone*, methylenedidate (ritalin), methamphetamine, hydrocodone, oxycodone</td>
</tr>
<tr>
<td>III</td>
<td>Less potential for abuse</td>
<td>Rohypnol, ketamine, codeine, dronabinol, buprenorphine</td>
</tr>
<tr>
<td>IV</td>
<td>Low potential for abuse</td>
<td>Benzodiazepines, zolpidem</td>
</tr>
<tr>
<td>V</td>
<td>Low potential for abuse</td>
<td>Codeine cough medicines</td>
</tr>
</tbody>
</table>

*Methadone from an OTP is not currently in the PMP
Conclusions

- Several factors including over-prescribing led to the US Opioid Crisis
- Substance use Disorders are chronic brain diseases that warrant recognition and treatment
- Medication Assisted Treatments are effective and underutilized

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