Medication Assisted Treatment of an Opioid Use Disorder

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Learning objectives

At the conclusion of this activity, participants will be able to:

Understand the risk factors for Developing an Opioid use disorder.

Understand the risk factors for an Opioid Overdose.

Understand the role of Medication Assisted Treatment in addressing the Opioid Overdose Epidemic

Understand the how the three medications for opioid use disorder work
The US spends more on health care than any other country, but ranks 27th in life expectancy

US life expectancy decreased due to substance misuse and associated physical and mental health problems

21 million Americans with substance use disorders > number who have all cancers combined

40% of those with a SUD have a comorbid mental health condition less than half were treated for either

Unprecedented increase in mortality among middle-aged White Americans driven by alcohol and drug misuse and suicides

“...treatment Gap is the direct result of lack of access to affordable care, shame, discrimination and the absence of screening for substance misuse and substance use disorders”. Dr. Murthy
IMS Health, Vector One: National, Years 1991 to 2011, Data Extracted 2012
IMS Health, National Prescription Audit, Years 2012 & 2013, Data Extracted 2014

CDC National Vital Statistics System,
SAMHSA Treatment Episode Data Set,
DEA’s Automation of Reports and Consolidated Orders System.)
70-80% of new heroin users first engaged in non medical prescription opioid use

Detection of illicit drugs increased slightly both for general and ‘safety-sensitive’ workforce

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......More troubling was an increase in detection of heroin. While the numbers are relatively small—less than one-tenth of 1% of all drug tests—heroin positives increased 146% in the general workforce between 2011 and 2015 and 84% in the safety-sensitive workforce.

Heroin use has increased in part because of a crackdown on abuse of prescription opiates such as hydrocodone, said Dr. Sample. Drug users turn to heroin when it is “more difficult or expensive to obtain extra prescriptions from physicians, or buy diverted pharmaceutical products” illegally, he said.

On the other side of that coin, Quest found that detection of the two most common prescription opiates—hydrocodone and hydromorphone—fell steeply in 2015.
In 2014 504 opioid related overdose deaths

2015 657

2016 832

For every overdose death, More than 30 people go to the emergency department for misuse or abuse.
Connecticut Accidental Drug Intoxication Deaths
Office of the Chief Medical Examiner

Accidental Intoxication Deaths  
Heroin in any death  
Fentanyl in any death

14  37  75  188  479
357  495  568  729  888

Acrylfentanyl / U47700 / Carfentanyl / W18 / Butylnyl fentanyl / Furanyl fentanyl

Risk Factors for Opioid Overdose

- Recent emergency medical care for opioid intoxication/overdose
- Social isolation/Using alone
- Receiving prescriptions from multiple pharmacies and prescribers and or daily opioid doses > 100 mg (morphine equivalents)
- Comorbid Medical and psychiatric illness, renal dysfunction, hepatic disease, or respiratory diagnoses (smoking/COPD/emphysema/depression/anxiety)
- History of opioid addiction or other substance use disorder
- Mixing substances/polypharmacy alcohol, cocaine, benzodiazepines and other sedative hypnotics
- Release from incarceration or discharge from a treatment facility
- Mu is for morphine
- Morpheus Greek God of Dreams
- Activation produces analgesia, but also euphoria and respiratory depression
- Associated with opioid addiction

Tolerance: need to take more and more of a substance to get the same effect

Physical Dependence: Counter adaptation-Opponent-process

- A cellular response to neutralize the drug effect
- This neuro-adaptation once the drug is discontinued contributes to the withdrawal effects
- Effects of Opioid withdrawal
  - Rhinorrhea, diarrhea, nausea, vomiting, anorexia, dilated pupils, goose bumps, chills etc
A continuum with increasing severity. 11 symptoms for each substance class (except for caffeine) **Mild**: 2 or 3 symptoms, **Moderate**: 4-5, **Severe**: 6 or more

A problematic pattern of use leading to clinically significant impairment or distress, as manifested by at least two of the following, occurring within a 12-month period:

1. **Impaired control**: (1) taking more or for longer than intended, (2) unsuccessful efforts to stop or cut down use, (3) spending a great deal of time obtaining, using, or recovering from use, (4) craving for substance.

2. **Social impairment**: (5) failure to fulfill major obligations due to use, (6) continued use despite problems caused or exacerbated by use, (7) important activities given up or reduced because of substance use.

3. **Risky use**: (8) recurrent use in hazardous situations, (9) continued use despite physical or psychological problems that are caused or exacerbated by substance use.

4. **Pharmacologic dependence**: (10) tolerance to effects of the substance, (11) withdrawal symptoms when not using or using less.*
A primary, chronic and re-occurring disease of the brain involving neuro-circuitry of reward, Motivation, Memory, Impulse control Resulting in the pathological pursuit of pleasure.
Opioid addiction:

involves a pattern of:

(1) intense intoxication
(2) the development of tolerance
(3) escalation in use
(4) withdrawal signs: profound negative emotions and physical symptoms

As use progresses, the opioid must be taken to avoid the severe negative effects that occur during withdrawal.

With repeated exposure to opioids, stimuli associated with the pleasant effects of the substances (e.g., places, persons, moods, and paraphernalia) and with the negative mental and physical effects of withdrawal can trigger intense craving or preoccupation with use.
Strategies to address overdose

• Screening and Brief Intervention and Referral

• Prescription monitoring programs

• Prescription drug take back events
  – Safe disposal

• Safe opioid prescribing education

• Expansion of opioid agonist/(antagonist) treatment
  – Clausen et al. Addiction 2009:104;1356-6

• Opioid Overdose Education and Naloxone Distribution
  – Maxwell et al. J Addict Dis 2006:25; 89-96

• Safe injection facilities

“Systematic Review on the Use of Psychosocial Interventions in Conjunction with Medications for the Treatment of Opioid Addiction”

Opposing approaches to OUD (Opiate Use Disorder)
- Abstinence-based approach focuses on brief detox followed by psychosocial treatment without support of medications
- Medication in addition to psychosocial interventions

Goals of psychosocial interventions
- 1. Modify addictive behaviors
- 2. Encourage engagement with psychopharmacology
- 3. Treat psychiatric comorbidity

FDA approved medications for OUD
- Methadone (long acting agonist)
- Buprenorphine (partial agonist)
- Naltrexone (long acting antagonist)

MAT (Medication Assisted Treatment)
- Consistently more effective than treatment without medication in reducing relapse rate, overall deaths, & public health costs
- Clinically and cost effective in reducing opiate use, withdrawal and craving
- Related to decreased morbidity and mortality, reduced risk for HIV transmission, reduced criminality, and improved patient functioning
Treatment options

Psychosocial therapy without medication
+ Detoxification

Medication-free recovery can be possible for a small number of stable patients with high motivation however without medication up to 90% of opioid addicted clients relapse.
Treatment options

Medication assisted treatment (MAT)
+ or – Detoxification

Psychosocial therapy with medication

MAT is evidence-based and the recommended first line treatment for opioid addiction.

Methadone* (Dispensed at OTP)

buprenorphine (Suboxone, Zubsolv Bunavail ect.)

Naltrexone (Vivitrol ect)
...Price touted faith-based programs and downplayed medication assisted treatment. “If we’re just substituting one opioid for another, we’re not moving the dial much,” he said. “Folks need to be cured so they can be productive members of society and realize their dreams.”

"I couldn't believe we were having to reopen this conversation. It totally flies in the face of all the evidence. These drugs are highly effective in restoring a sense of normalcy in people's lives."

Brendan Saloner, an addiction researcher and assistant professor at the Johns Hopkins Bloomberg School of Public Health

https://www.statnews.com/2017/05/15/medication-assisted-treatment-what-we-know/
Goal of treatment

- **Decrease:**
  - Withdrawal symptoms, cravings, urges to use
  - Vulnerability of overdose (protect mu receptors)
  - HIV/HepC transmission, infections, abscesses and pneumonia
  - Impulsive substance related behaviors
  - Denial, dishonesty

- **Improve:**
  - Functioning of the prefrontal cortex- Go No Go system
  - Access to alternative rewarding activities
  - Up regulation of D2 receptors
  - Strategies to manage stress, conflict and emotions
  - Health
  - Relationships, social and family functioning
  - Work and/or school performance
Full Agonists

- activates the mu receptor
- is highly reinforcing
- is the most abused opioid type includes prescription opioids, fentanyl & methadone and heroin
Partial Agonists

- activates the receptor but to lower levels
- is relatively less reinforcing
- is a less abused opioid type
- includes buprenorphine

**Opioids replaced and blocked by buprenorphine.**
Buprenorphine competes with the full agonist opioids for the receptor. Since buprenorphine has a higher affinity (stronger binding ability) it expels existing opioids and blocks others from attaching. As a partial agonist, the buprenorphine has a limited opioid effect, enough to stop withdrawal but not enough to cause intense euphoria.

**Over time (24-72 hours) buprenorphine dissipates, but still creates a limited opioid effect (enough to prevent withdrawal) and continues to block other opioids from attaching to the opioid receptors.**
Buprenorphine and Methadone

Physical dependence and withdrawal –

• Both

Risk of overdose –

• Both

• lower risk with buprenorphine (unless benzodiazepines, sleep medications, and/or alcohol is being used)

• Children and people who are opioid naïve (use a lockbox, dispose of unused medication)
Function at Receptors: Antagonists

- occupies without activating
- is not reinforcing
- blocks abused agonist opioid types
- includes naloxone and naltrexone
- Monthly injection (oral form greater risk of overdose)
Main Outcomes and Measures
Enrollment in and receiving addiction treatment 30 days after randomization was the primary outcome. Self-reported days of illicit opioid use, urine testing for illicit opioids, human immunodeficiency virus (HIV) risk, and use of addiction treatment services were the secondary outcomes.

Results
78% in the buprenorphine group (89 of 114 [95% CI, 70%-85%]) vs 37% in the referral group (38 of 102 [95% CI, 28%-47%]) and 45% in the brief intervention group (50 of 111 [95% CI, 36%-54%]) were engaged in addiction treatment on the 30th day after randomization (P < .001).

Main Outcomes and Measures
A greater number of patients in the buprenorphine group were engaged in addiction treatment at 2 months.

Results:
[68/92 (74%), 95% CI 65–83] compared with referral [42/79 (53%), 95% CI 42–64] and brief intervention [39/83 (47%)].
Rationale for Opioid Overdose Education and Naloxone Distribution

- Most opioid users do not use alone
- Known risk factors:
  - Mixing substances, abstinence, using alone, unknown source
- Opportunity window:
  - Opioid OD takes minutes to hours and is reversible with naloxone
- Bystanders can be trained to recognize signs and symptoms of OD
- Fear of police can delay or interfere with timely intervention
• 2011 Good Samaritan laws protecting individuals from prosecution for those who seek medical attention for a friend experiencing an overdose (Public Act 11-210)

• 2012 allowing prescription of naloxone to an individual who is not the direct user of the drug (Public Act 12-159)

• 2014 expansion of Good Samaritan protections for any person who administers (Public Act 14-61);

• 2015 expanded prescriber education, Review of Prescription Monitoring Program (PMP) mandatory for all prescribers of controlled substances, pharmacists allowed to directly prescribe naloxone and reconstituted the Alcohol and Drug Policy Council (ADPC) (Public Act 15-198)

• 2016 limits the prescribing of opioid drugs to seven days, requires municipalities to ensure first responders are equipped with Narcan (Public Act 16-43).
If you let her “sleep it off,” she may never wake up.

Drug overdose is the #1 cause of accidental death for adults in Rhode Island.

ALL YOU HAVE TO DO IS ASK.

What is Naloxone & why do you need it?
Naloxone (Narcan™) is an opioid antidote that can be used by ANYONE to save the life of someone overdosing on heroin or prescription opioid pain killers, giving this person a second at life and the opportunity to get into recovery.

Where can you go to learn more?
You can learn more about the life-saving facts of naloxone from your clinician, counselor, doctor, APRN/PA, psychiatrist, nursing staff or pharmacist.

Where do you get it?
Prescriptions for this life-saving antidote can be written for you by any medical provider. Just take the prescription to a pharmacy to have it filled.

For more information:
1-877-577-3233
www.rushford.org

You Can’t Help Someone Get Recovery If They’re Dead.
Naloxone Saves Lives.
Facebook.com/StopTheStigmaCT

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