OVERDOSE PREVENTION & NALOXONE ADMINISTRATION TRAINING

Iowa Harm Reduction Coalition
A little bit about me and my partners

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Iowa Harm Reduction Coalition
https://www.iowaharmreductioncoalition.org/

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https://latham.uiowa.edu/
Training Overview

1. What are opioids and how do they work?
2. What is an overdose and who is at risk?
3. Naloxone 101
4. Recognizing an overdose
5. Administering naloxone
6. I-C-A-R-E
7. The fine print: Storage, expiration, legality, etc.
WHAT ARE OPIOIDS AND HOW DO THEY WORK?
WHAT ARE OPIOIDS?

Illicit → Heroin → Fentanyl

- Hydromorphone
- Hydrocodone
- Percocet
- Dilaudid
- Vicodin
- Oxycontin

→ Prescription
FENTANYL: THE BASICS

Fentanyl is a synthetic “opioid” so it is in the same family as heroin but it’s not the same. Same with “analogs” of fentanyl like acetyl, butyr, furanyl or carfentanyl—they are different versions but they are all still opioids.

Fentanyl is about 80-100 times stronger than morphine, or about 50 times stronger than heroin. Some analogs are even stronger.

Naloxone (Narcan) will work on a fentanyl overdose. **Fentanyl is NOT “NARCAN RESISTANT.”**
HISTORY OF THE OPIOID CRISIS
HOW DID WE GET HERE?
A THREE-PHASE MODEL

Phase One: 1980s - early 2000s
Pain = “fifth vital sign”
Opioids marketed as non-addictive treatment options, increased prescription rates

Phase Two: 2010 - 2013
Marked increase in heroin overdose deaths
Previous prescription opioid users transition to cheaper, more accessible alternative

Phase Three: 2013 - present
Rise of synthetic opioids: fentanyl and fentanyl analogs
Disease of despair: comorbid with depression, alcohol abuse, polysubstance abuse, low SES and social capital
Over 50,000 people died from opioid overdoses in the U.S. in 2017.
WHAT IS AN OVERDOSE AND WHO IS AT RISK?
WHAT IS AN OVERDOSE?

- Opioids enter the brain and act on opioid receptors

- When receptors become saturated with opioids, it signals the part of the brain that regulates breathing

- When the opioid receptors are over-saturated, this can lead to respiratory depression, and a person’s breathing may decline or stop.

- This causes the body to go into oxygen debt and can harm the brain, heart, and other organs.

- People die from an opioid overdose when they go without oxygen for too long.
WHAT HAPPENS WHEN A BODY GOES WITHOUT OXYGEN FOR TOO LONG? WHAT ARE THE SIGNS OF AN OVERDOSE?

NOT RESPONDING  SLOW OR NOT BREATHING  BLUE LIPS & NAILS

COLD OR CLAMMY SKIN  MAKING SOUNDS  TINY PUPILS
WHO IS AT RISK OF AN OVERDOSE?

**Pharmacological factors**
- People who use drugs with unknown content, including heroin, meth, cocaine, MDMA, and benzodiazepine users
- Mixing drugs with opioids (e.g. benzodiazepines like xanax; alcohol)

**Physiological factors (changes in tolerance)**
- New users
- Switching route of administration (e.g. transitioning from snorting to injecting)
- Using again after a period of sobriety: released from prison, leaving treatment, or a relapse
- Changes in physical health: weight loss, malnutrition, liver damage, weakened immune system

**Social factors:**
- People who use drugs by themselves
- People who have overdosed in the previous 12 months
- People who are experiencing homelessness
WHO IS NOT AT RISK OF OVERDOSE?

• Individuals who may come into contact with fentanyl on their skin, like law enforcement
• Individuals who may enter a room where opioids were being used, like law enforcement
NALOXONE 101
PREVENTING OVERDOSE FATALITIES:
HARMFUL STRATEGIES

**Ice/Cool down**
Cooling core temperature slows down body functions further

**Salt water injection**
Can cause heart attack

**Undue painful stimulation**
Responsiveness can easily be determined with sternal rub. Other stimulation can cause further, long-term damage

**“Balancing out” with stimulants**
Makes body work harder

Over time, the effects of opioids may begin to wear off as the body metabolizes the drug. If the person is able to maintain tissue oxygenation during this time, overdose fatality may be avoided.
STOPPING OVERDOSE: NALOXONE

Naloxone is a competitive opioid receptor antagonist.

This means that when naloxone enters the brain, it kicks opioids, like heroin, out of the opioid receptors. This stops the effects of the opioid.

If heroin or another opiate has triggered a cascade of messages that instruct the body to cease breathing, then naloxone essentially interrupts this message and allows the body to resume breathing.
STOPPING OVERDOSE: NALOXONE

Naloxone is the generic name for Narcan and comes in three forms:

**Intra-muscular**
Vials of naloxone and 25 gauge hypodermic syringes

**Intra-nasal**
Narcan nasal spray

**Auto-injector:**
Evzio, robotic device for intra-muscular injection
MYTH:
Naloxone should only be used by people with medical training. People who use drugs are too irresponsible to use naloxone.
NALOXONE: MYTHS & FACTS

**MYTH:**
Naloxone should only be used by people with medical training. People who use drugs are too irresponsible to use naloxone.

**FACT:**
Naloxone is one of the safest drugs used in medicine. Physicians know that naloxone is safer than Tylenol and has few side effects. Most side effects are mild and result from opioid toxicity or withdrawal.
**MYTH:**
If you give naloxone to someone who is not experiencing an overdose, it could harm them.
NALOXONE: MYTHS & FACTS

**MYTH:**
If you give naloxone to someone who is not experiencing an overdose, it could harm them.

**FACT:**
Naloxone is harmless and has no effect on people who are not experiencing an overdose.
NALOXONE 101
RECOGNIZING AN OVERDOSE
HOW DO I KNOW IF SOMEONE IS TRULY EXPERIENCING AN OVERDOSE?

An individual who is found unconscious will not be harmed by the administration of naloxone.

HIGH
- Muscles become relaxed
- Speech is slowed/slurred
- Sleepy looking
- Will respond to stimulation like:
  - yelling, sternum rub, pinching, etc.
  - Nodding out

OVERDOSE
- Deep snoring or gurgling (death rattle) or wheezing
- Blue skin tinge- usually lips and fingertips show first
- Pale, clammy skin
- Heavy nod, will not respond to stimulation
- Breathing is very slow, irregular, or has stopped/faint pulse
WHAT ARE THE SIGNS THAT INDICATE AN INDIVIDUAL IS EXPERIENCING AN OPIOID OVERDOSE?
GENERAL PRINCIPLES

1. **Take your time:** An overdose is an emergency, but you do not need to panic.

2. **Begin with rescue breaths:** If someone is unconscious, give rescue breaths before administering naloxone.

3. **Be prepared to give multiple doses:** Expect that it will take 4 – 14 mg of naloxone to reverse an overdose.

4. **Go slow:** Giving too much naloxone too quickly can send someone into withdrawal.

5. **Is there a pulse?** Give rescue breaths. No pulse? Give chest compressions.

6. **Talk to the person,** even though they are unconscious. Be caring and calm for their benefit.
ADMINISTERNALOXONE
(IM SYRINGE)

1. Remove orange cap from naloxone vial.
2. Assemble syringe: Screw on the point to the body.
3. Holding vial upside down, insert the needle through the gray rubber plug.
4. Pull back on the syringe plunger and draw up 1 mL of naloxone.
5. Use all liquid in the vial.
6. DO NOT “PRIME” THE NEEDLE.
7. Insert the needle into a major muscle group: deltoid, quadriceps, or gluteus. Can insert the needle through clothing.
8. Insert the liquid into the muscle by pushing down on the plunger.
ADMINISTER NALOXONE  
(NARCAN™ NASAL SPRAY)

Deliver one spray into one nostril. (Do not “prime” or test the spray device before spraying it into the nostril, as this will waste the medicine.)

Repeat with the second nasal spray device in the opposite nostril if there is no response after 2-3 minutes, or if the victim relapses back into respiratory depression or unresponsiveness before emergency assistance arrives.
ADMINISTER NALOXONE (AUTO-INJECTOR)

1. Pull auto-injector from outer case.
2. Pull off red safety guard.
3. Place the black end of the auto-injector against the outer thigh, through clothing if needed, press firmly and hold in place for 5 seconds.
4. Repeat with the second auto-injector if
   - No response after 3 minutes
   - Victim relapses back into respiratory depression
   - Unresponsiveness before emergency assistance arrives.
THIS IS A LOT OF INFORMATION... HOW WILL I REMEMBER ALL OF THIS AND PUT IT INTO PRACTICE?
FOLLOW I-CARE PROCEDURE:

Identify overdose
Call 911
Administer naloxone
Rescue breathing and CPR
Ensure safety while awaiting EMS arrival
IDENTIFICATION

1. “Hey buddy, are you okay?”
2. Sternal rub
3. Slow or absent breathing, snoring or gurgling sounds
4. Blue lips and fingernails
5. Pinpoint pupils
CALL 911

If more than 1 person capable of assisting is present, 1 person can call 911 while the other moves to the next step.

It is important to call 911.
Naloxone may not work, and even if the person responds to naloxone, it may wear off in as little as 30 minutes.
ADMINISTER NALOXONE

Follow process for specific brand or formulation.

No response after 2-3 minutes? Administer additional dose.

Continue to administer additional doses until the individual begins to move again, breathe on their own, or speak.
RESCUE AIRWAY/BREATHING

1. Make sure airway is clear!
2. Place one hand on chin.
3. Tilt head back to open airway.
4. Pinch nose closed.
5. Give 2 slow rescue breaths into mouth.
6. Make sure chest rises with each breath.
ENSURE SAFETY (RESCUE POSITION)

Hand should support head.

Knee prevents body from rolling on to stomach.
WHAT SHOULD I DO ONCE THE INDIVIDUAL HAS WOKEN UP?

If it has been 30 minutes since administering the first dose of naloxone and you have chosen not to call 911 or EMS has not arrived...

Administer a second dose of naloxone!

Opioids have a longer half life than naloxone, meaning that the naloxone dose will wear off, the opioid can still be active in the body, and the person can re-experience the overdose and go back into respiratory distress.
THE FINE PRINT:
STORAGE, EXPIRATION, LEGALITY, ETC...
NALOXONE STORAGE/CARE

- Check expiration date (typically lasts 1-2 years)
- Keep out of light if not stored in a box
- Store somewhere where medication is secure but also readily available
- Store at room temperature (between 60 and 70 degrees)
- Naloxone has been found to be effective up to 20 years after expiration date.
- Naloxone is still effective when kept at 104 F for 24 hours per day for up to 4 months.
- Naloxone efficacy is not changed if naloxone has been frozen.
WHAT DOES THE LAW SAY ABOUT INDIVIDUALS WHO ADMINISTER NALOXONE?

Cannot be held liable in the case that naloxone is not effective in reviving the individual. A Good Samaritan Law passed in 2018 in Iowa provides protections to individuals who administer naloxone.

Under a physician standing order, Iowa Harm Reduction Coalition provides free vials of naloxone and syringes to individuals, organizations, and communities across Iowa.
QUIZ

What are opioids?

How do you know if someone has overdosed?

How should naloxone be stored?

Where should naloxone be injected?

What things should you NOT do in the event of an overdose?

What places a person at greater risk for overdose?

After an initial dose, how long should you wait before administering a second time?

What should you do while you wait?

What might a person experience as they wake up after a naloxone reversal?

How long do the effects of naloxone last?

How does this compare to the timeline of effects of common opioids?
ANSWERS

What are opioids?
Heroin, Percocet, Vicodin, hydromorphone, hydrocodone, codeine, morphine, fentanyl, etc.

How should naloxone be stored?
Room temperature (60 – 70 degrees) and out of light. However, there is some flexibility in this.

How do you know if someone has overdosed?
Unresponsive to verbal commands, unresponsive to physical stimuli, absent or shallow respiration, blue lips and fingers, pinpoint pupils

Where should naloxone be injected?
Deltoids, outer gluteus, outer quadriceps muscles.

What things should you NOT do in the event of an overdose?
Administer painful stimulus, milk or saline injection, place in ice water.
ANSWERS

What places a person at greater risk for overdose and overdose death? Social factors: homelessness, previous overdose within the past 12 months, using alone. Pharmacological risks: Unknown drug content or composition; mixing substances. Physiological risks: tolerance changes due to overall health status or period of sobriety.

After an initial dose, how long should you wait before administering a second time? What should you do while you wait? Wait up to 3 minutes and administer rescue breaths in the interim.

What might a person experience as they wake up after a naloxone reversal? Agitation, panic, opiate withdrawal, confusion.

How long do the effects of naloxone last? How does this compare to the timeline of effects of common opioids? The naloxone half life is 30 minutes. Opiates have half lives of many hours – this means that naloxone will wear off more quickly and may need to be administered continuously if an individual does not seek medical care.
ADDITIONAL RESOURCES

**Podcasts**

- **Narcotica (Apple Podcasts App)**
  - “A podcast about the war on drugs and the people caught in the middle”
  - Produced by science and drug policy journalists
- **Freakonomics Radio (Spotify)**
  - Episode 402. The Opioid Tragedy, Part One: “We’ve Addicted an Entire Generation”
  - Episode 403. The Opioid Tragedy, Part Two: “It’s Not a Death Sentence”

**Talks and videos**

- **VICE on HBO segments**
  - “A Generation Lost to the Opioid Crisis”
  - “Iowans are trying to legalize an underground needle exchange”
- **TED talk**
  - “Everything you think you know about addiction is wrong”
- **Documentaries**
  - “Addicted: America’s Opioid Crisis” - YouTube
  - “One Nation, Overdosed” - MSNBC
  - “Heroin(e)” - Netflix
  - “Recovery Boys” - Netflix
ADDITIONAL RESOURCES

Helpful literature


QUESTIONS?

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