Objectives
- Describe the impact of naloxone in preventing opioid overdoses and deaths.
- Identify three factors that indicate a person may be at risk of an opioid overdose.
- Explain two practical considerations for appropriate dispensing or furnishing of naloxone.
- Summarize when and how naloxone should be administered.
- List two steps pharmacists can take to increase access to naloxone in their communities.

Questions We’ll Answer Today
- What is the impact of naloxone in preventing opioid overdoses and deaths?
- What factors suggest a person may be at risk of an opioid overdose?
- What are practical tips for dispensing or furnishing naloxone?
- When and how should naloxone be used?
- How can pharmacists increase access to naloxone in their communities?

Background:
The Opioid Overdose Crisis

Prescription Painkiller Sales and Deaths

Sources:
- U.S. Drug Enforcement Administration (DEA) and the Centers for Disease Control and Prevention (CDC), 2015
- U.S. Drug Enforcement Administration (DEA) and the Centers for Disease Control and Prevention (CDC), 2016
- U.S. Food and Drug Administration (FDA), 2015
- U.S. National Institute on Drug Abuse (NIDA), 2015

http://www.cdc.gov/niosh/doses/2015/orasd.html
http://www.cdc.gov/niosh/doses/2015/orasd.html
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Deaths from Opioid Overdose

- About 44 people die every day in the U.S. from Rx opioid overdoses
- About 67 deaths/day if including heroin
- From 1999 – 2010, deaths from Rx opioid overdoses:
  - Increased > 400% among women
  - Increased 237% among men
- People who die of drug overdoses often have taken a combo of opioids + benzodiazepines

Where Are Overdoses Highest?

Age-adjusted drug poisoning death rates by state (2012)

Strategies for Reducing Risk of Opioid Overdose

- Overdose education
- Treatment agreements or “pain contracts”
- Taking opioids as prescribed
- Naloxone
- ABuse-Deterrent opioids
- Prescription monitoring programs (PMPs)
- Overdose education
- Avoiding risky combos
- Safe storage
- Safe disposal
- REMS for long-acting opioids
- Prescription monitoring programs (PMPs)
- Urine drug testing
- RXMS for long-acting opioids
- Abuse-deterrent opioids

Naloxone Programs

- Community-based opioid overdose prevention programs providing naloxone (1996 – 2010)
  - 188 local programs, 15 states, District of Columbia
  - 10,171 overdose reversals with naloxone
  - 53,032 people trained and given naloxone
- Success stories
  - Rhode Island
  - Massachusetts
  - North Carolina
Introduction to Naloxone

Opioid Overdose

- Opioid receptors found in the brain, including the respiratory center
- Opioid overdose can lead to death by:
  - Decreasing body/brain’s response to ↑ CO₂ and ↓ O₂
  - Respiratory depression
  - Acute respiratory failure
- May be caused by:
  - Excess intake of opioids
  - Combination of opioid + CNS depressant
  - Expected respiratory effects of opioids in person with respiratory or metabolic conditions


Naloxone

- Morphine
- Fentanyl
- Buprenorphine
- Codeine
- Hydromorphone
- Oxycodone
- Oxymorphone
- Methadone
- Hydrocodone
- Heroin (diacetylmorphine)

Naloxone has a stronger affinity for opioid receptors than most opioids

Works at opioid receptor to displace opioid agonists

Reverses clinical and toxic effects of opioid overdose
- Reverses respiratory depression, hypotension, sedation
- Restores breathing
- Reverses analgesia
- Patients can enter withdrawal after receiving naloxone
- Little to no agonist activity
- No potential for abuse
- No pharmacological effect or harm in patients who have not taken opioids
Naloxone takes effect in about 3 minutes
Wears off in 30 to 90 minutes

Naloxone Forms
- Intramuscular
  - Vial + syringe
  - Auto-injector (Evzio)
- Intranasal
  - Prefilled syringe + mucosal atomization device

Dispensing Intramuscular (IM) Naloxone
- Naloxone IM kit (vial + syringe)
  - 0.4 mg/mL solution for injection
    - 2 – 4 x 1 mL single-dose vials
      OR
    - 1 x 10 mL multi-dose vial
    - 2 – 4 retractable syringes
      - 1 to 1¼ inch
      - 21 to 25 gauge
      - 1 to 3 mL
    - Cost ~$50 for 2 doses
- Naloxone auto-injector (Evzio)
  - 0.4 mg/mL
  - 2-pack + 1 trainer
  - Cost ~$575/pack

Dispensing Intranasal (IN) Naloxone
- Naloxone IN kit
  - 2 – 4 mg/2 mL Luer-Lock prefilled needleless syringes
- Several new intranasal kits in development
**Practice Pearls for Naloxone**

- Check expiration dates before dispensing
- Advise patients to store naloxone at room temp
  - Shelf-life approximately 12 – 18 months
- Remind patients to keep an eye on expiration dates and request refills if needed
  - Periodically check solution to make sure it’s clear

**Role of Naloxone in Reversing Opioid Overdose**

**Who is at Risk for Opioid Overdose?**

- History of alcohol or other substance abuse
- High daily doses of opioids
- Switching from one opioid to another
- Any opioid for pain + benzodiazepine or other sedative
- Any opioid for pain + antidepressant
- Any opioid for pain + respiratory problems
- Any opioid for pain + renal, liver disease or other conditions

**Patient Case: Anna**

- **Name:** Anna Weston
  - **Age:** 47
  - **Gender:** Female

- **Med List**
  - Oxycontin 40 mg 1 tab BID Qty: 60 Refills: NR
  - Sertraline 100 mg daily for depression
  - Levoxyl 100 mcg daily for hypothyroidism
  - Lorazepam 1 mg TID prn anxiety

- **Concomitant medications**
- **Medical Conditions**

**Identifying Patients Who Can Benefit from Naloxone**

- Opioid Rx
- Patient Profile
- Questions and conversations

**Recommend naloxone for anyone at risk of an opioid overdose**
Educating Patients and the Public

Key Steps for Responding to Suspected Opioid Overdose

1. Identify Overdose
2. Call 911
3. Give Rescue Breaths
4. Give Naloxone
5. Stay Until Help Arrives

Patient Case: Anna

Respiratory depression
- Slow/shallow/no breathing
- Gasping, gurgling/heavy wheezing or snoring sound

No response to stimulus
- Call out person’s name
- Rub knuckles of closed fist over sternum

Blue or grayish skin/lips/fingernails, slow heart rate, low blood pressure, etc.

If something doesn’t look right, call 911

1) Identify Overdose

- Put person in rescue position if they must be left alone at any time
  - When calling 911, getting naloxone ready, etc.
- Roll person onto side with top leg and arm crossed over body
  - Difficult for person to roll over
  - Lessens chance of choking on vomit

2) Call 911

- Explain that getting emergency help ASAP is crucial to save lives
- Emphasize calling 911 immediately
  - In general, do not wait until after administering naloxone
  - *Someone is unresponsive and not breathing or struggling to breathe* + clear address and location
- Address common misconceptions or concerns
  - Calling 911 estimated to occur only 10-56% of the time

http://lawatlas.org/query?dataset=laws-regulating-administration-of-naloxone
3) Give Rescue Breaths

- Remove anything in mouth
- Make sure airway is clear
- Place 1 hand on chin, tilt head back
- Pinch nose closed
- Give 2 slow rescue breaths into the mouth
- Give 1 breath every 5 seconds
  - Until person can breathe on their own
  - If naloxone is available, consider getting it if:
    - Person still unresponsive after 30 seconds
    - Person won’t be left alone too long

4) Give Naloxone Intramuscularly (vial/syringe)

- Draw up 1 mL of naloxone (0.4 mg)
  - If single-dose vial (1 mL), draw up entire vial
  - If multi-dose vial (10 mL), draw up 1 mL
- Inject into shoulder or thigh muscle
  - Deltoid (shoulder) muscle may be safest and easiest
- Use a needle at least 1 inch long

4) Give Naloxone Intramuscularly (auto-injector)

- Automated voice “talks” user through injection process
- Pull off red safety guard
- Place black end against outer thigh
  - Through clothing if needed
- “Click and hiss” sound will be heard
- Press firmly, hold in place for 5 seconds
- Needle retracts automatically
- Lights flash red when injection complete

4) Give Naloxone Intranasally

- Insert cone into nostril
- Give short, vigorous push to spray naloxone
- Push about 1 mL (1 mg; half of syringe) of naloxone into each nostril
  - Giving ½ in each nostril maximizes absorption

Patient Case: Anna
5) Stay Until Help Arrives

- After giving naloxone:
  - **Do not leave** the person alone
  - Continue rescue breathing if needed until medical help arrives
    - 1 breath every 5 seconds
  - Assess response
    - If person still unresponsive with slow or no breathing after ~3 minutes **repeat** naloxone dose

- Emphasize that all people who receive naloxone should get additional emergency care
  - Risk of going back into overdose when naloxone wears off
    - Duration of most opioids is longer than naloxone
  - Manage other possible overdoses
  - Manage withdrawal symptoms if needed
    - Ensure person does not take more opioids to manage withdrawal

5) Stay Until Help Arrives

- Caution that in opioid-dependent people, naloxone can trigger withdrawal symptoms
  - Similar to a severe case of influenza
  - Be aware of common symptoms:
    - ↑ heart rate/BP, tremor, anxiety, sweating, agitation, etc.
  - Explain that withdrawal symptoms are **not** life-threatening
    - Unless person has another life-threatening condition

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**Patient Case: Anna**

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**Practice Pearls**

- Reassure that if in doubt, administer naloxone
- Use the “teach back” method
  - Have a demo kit ready for education
  - Retrain at each refill
- Recommend that the person prescribed naloxone:
  - Reviews training materials and administration technique regularly
  - Teaches friends and family about role of naloxone and how to administer

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**Workflow Considerations**

- **Billing**
- **Time**
- **Role of Technicians**
PL CE LIVE Special Edition: Overdose Prevention with Naloxone — Opportunities for Pharmacists

Increasing Access to Naloxone

Utilize Prescribing Pathways

Patient Case: Anna

Models of Pharmacy-Based Naloxone

Patient

Prescriber

Pharmacist

Collaborative Pharmacy Practice Agreement

Standing Order

Furnish upon request

Pharmacist prescribes

Many RPhs/Pharmacies

1 MD

1+ Pharmacies

MD notified of provision

RPh writes script

MD notified of provision

MD notified of provision

Anyone can be patient

Rhode Island, Washington

Only MD's patients

Massachusetts, Vermont

Anyone can be patient

California

Anyone can be patient

New Mexico, Idaho

Standing Order/Collaborative Practice

Ideal Characteristics

- Initiation
- Voluntary request
- 3rd party permission
- Broad patient-prescriber relationship
- All prescriber types
- All practice types
- Pharmacist training
- Documentation as per usual practice
- Patient education
- CE requirements
- Renewal timing


Figure 1. Map of States with Laws Explicitly Authorizing Pharmacist Collaborative Practice Agreements, 2012

States: Yellow indicates laws that explicitly authorize collaborative practice agreements; green indicates laws with language allowing for pharmacist-delegated non-monetary tasks; white indicates no explicit laws.

**PL CE LIVE Special Edition: Overdose Prevention with Naloxone — Opportunities for Pharmacists**

**Health Care Advocacy Networks**

- National State Local

**Naloxone Rollout**

- **Engage Champions**
  - Prescribers
  - Pharmacists/technicians
  - Administrators
  - Policymakers
  - Parents/friends
  - Health depts
  - Harm reductionists
  - Public health advocates

- **Create Demand**
  - Co-prescribing
  - Naloxone/atomizer stocking
  - Legal changes
  - Public awareness

- **Evaluate Naloxone**
  - Rx #
  - Furnished #
  - Refill #
  - Health information technology
  - Overdose epidemiology
  - Marketing

**Pharmacists’ Views on Naloxone CPA**

- "It’s kind of like giving a diabetic a glucagon kit."
- "We generally train family members in the case that they ever would need it. Physicians kind of proactively give it to patients, even if they don’t think they’ll ever need it, kind of like giving people an EpiPen. Even if they never need it, they have it, and we train them how to use it."
- "We can definitely show people how to use and how to know when to use it."

**Integrate Naloxone Into Culture of Safe Opioid Use**

- Increase public awareness
- Implement best practices
- Maximize technology
- Make it routine, systematic, destigmatized
- Connect and refer people to treatment/recovery programs

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**Medication Disposal Guide**

Summary of the Federal Conditions for Drug Disposal

- Feds. require Guarding and Secure Disposal of Drugs
- When disposing of drugs, it is important to secure them from children and other individuals who may access them.

- Safer disposal of unused drugs can prevent risks to oneself and others and reduce the likelihood that these drugs will fall into the wrong hands.

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**SAFETY FIRST**

- Make sure to never dispose of any medications into a public trash can. This can lead to unintentional exposure to other people.
- If you are unsure about the appropriate disposal of medications, contact your local pharmacy or community health center for guidance.