The Opioid Addiction and Abuse Symposium: Training Health Care Professionals has been created and delivered by Speaking Faculty of the State of Illinois. The Illinois Pharmacists Association is accredited by the Accreditation Council for Pharmacy Education as a provider of continuing pharmacy education.

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Contact Hours: 4.5 hours

Registration 12:30PM
Programming: 1:00PM
Addiction as a Disease
Mechanisms for pharmacy personnel to engage in the mission
Conclusion: 5:45 PM

Survey

Meet Your Colleagues
Kelly Gable, PharmD, BCPP
Khayti Patel, PharmD, BCPS
Michael Shuman, PharmD, BCPP

Opioid Addiction and Abuse Symposium
Illinois Pharmacists Association
Annual Conference
Westin Lombard Yorktown Center
Jessica L. Kerr, PharmD, CDE – Coordinator
Kelly Gable, PharmD, BCPP – Speaker
Khayti Patel, PharmD, BCPS – Speaker
Michael Shuman, PharmD – Speaker
Tina Messenger, PharmD, Candidate - Speaker

Disclosures/Conflict of Interest
- Drs. Gable, Patel, Shuman declare no conflicts of interest, real or apparent, and no financial interests in any company, product, or service mentioned in this program, including grants, employment, gifts, stock holdings, and honoraria.
- Dr. Kerr and Tina Messenger, PharmD Candidate declare obtaining grants through SIUE Kimmel Leadership Center and the SIUE Meridian Society to provide community education to 4th – 12th graders on topics related to this material.

Agenda
- Registration 12:30PM
- Programming: 1:00PM
  - Addiction as a Disease
  - Opioid overdose and reversal agents
  - Mechanisms for pharmacy personnel to engage in the mission
- Conclusion: 5:45 PM

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Pre-Symposium Assessment #1

• In 2012 the Results from the National Survey on Drug Use and Health indicated that more Americans are killed by drug overdoses than motor vehicle crashes. What is the estimated percentages of death related to pharmaceuticals?
  A. less than 5%
  B. 15%
  C. 25%
  D. over 50%

Pre-Symposium Assessment #2

• Which of the following are true regarding types of substances use disorders?
  A. Substance use disorders do not include caffeine.
  B. Include only illicit drugs.
  C. May include alcohol, caffeine, sedatives, nicotine and opioids, however are not limited to only these substances.
  D. There is no classification known as substance use disorders.

Pre-Symposium Assessment #3

• Protective Factors for Addiction may include:
  A. Aggressive behavior in childhood
  B. Academic Competence
  C. Drug experimentation
  D. Neighborhood pride

Pre-Symposium Assessment #4

• Which of the following stage(s) of treatment for those going through substance use recovery?
  A. It is only necessary to have patients actively engage in Acute Stabilization.
  B. It is only necessary to have patients actively engage in treatment and motivational enhancement.
  C. It is important for all patients to go through active treatment and relapse prevention.
  D. Patients should be encouraged to partake in acute stabilization, active treatment, relapse prevention and recovery with the idea of partaking in motivational enhancements throughout their change.

Pre-Symposium Assessment #5

• Indicate which is true regarding naloxone.
  A. This product come available only in transdermal formulation.
  B. Naloxone competitively blocks the delta, kappa and mu receptors
  C. Off-label usage for diarrhea
  D. 9-1-1 should be called only after 10 minutes post administration

Addiction as a Disease: it is time to change our thought process

Dr. Kelly Gable PharmD, BCPP
Associate Professor
SIUE School of Pharmacy
Psychiatric Care Provider
Places for People
Disclosures/Conflict of Interest

- I do not have a background in policy development.
- I do not treat pain conditions.
- I strongly believe in harm reduction within the context of addiction.
- Just because I am a pharmacist, does not mean that I always support medication therapy.
- While public health statistics are vital to the implementation of global change, my clinical focus is on each individual and their mental or physical health care needs.

Objectives
Pharmacist/Pharmacy Technicians

- Describe the epidemiology of prescription and illicit opioid use and abuse.
- Discuss the neurochemical mechanism of substance use disorders.
- Describe the neurobiological aspects of opioid dependence.
- Recognize the warning signs of a patient with possible opioid addiction and risk factors for overdose.
- Explain treatment approaches to addiction involving opioid use disorder.

Alarming Statistics - An Epidemic

- The CDC has officially declared prescription drug abuse in the US an epidemic
- 1 in 20 people report using prescription opioids for non-medical reasons
- In 2004, enough opioid pain relievers were sold to medicate every adult in the US with 5 mg of hydrocodone every 4 hours for 1 month
- In 2003, ~1.8 million people had an opioid use disorder related to prescription pain relievers & ~537,000 had an opioid use disorder related to heroin use
- Only 16% of Americans believe that the US is making progress in its efforts to reduce prescription drug abuse

Alarming Statistics - Overdose Deaths

- Drug overdoses kill more Americans than motor vehicle crashes
- In 2012, of the 41,502 drug overdose deaths in the US, 53% were related to pharmaceuticals
- Of those 22,114 deaths, 72% involved opioid analgesics & 30% involved benzodiazepines
- Women who lost their lives opioid overdoses rose 415% between 1999 & 2010

Prescription painkiller overdose deaths: growing problem among women

- Results from the National Survey on Drug Use and Health: SAMHSA.

Alarming Statistics - Heroin Use Rising

- Heroin Addiction and Overdose Deaths are Climbing
- Heroin Use Has INCREASED Among Most Demographic Groups
  - Results from the National Survey on Drug Use and Health: SAMHSA.
What about Illinois?

• Received 8 out of 10 possible indicators of promising strategies to help curb prescription drug abuse.
• 12th lowest drug overdose mortality rate in the US, with 10 per 100,000 drug overdose fatalities.
  * Drug overdose deaths increased by 49% since 1999.
  * Hydrocodone (compared with oxycodone) continued to be the most available prescription opioid to nonprescribed users for nonmedical use in 2013.
• In FY 2012, there were 15,350 primary heroin treatment admissions in Chicago.
  * Heroin purity at the street level remains between 10 & 20% - cut with quetiapine, diphenhydramine, fentanyl.

Top Abused Prescription Drugs: 2014

1. Oxycodone (OxyContin)
2. Alprazolam (Xanax)
3. Mixed amphetamine salts (Adderall)
4. Methylphenidate (Ritalin)
5. Hydrocodone/acetaminophen (Vicodin)
6. Oxycodone/acetaminophen (Percocet)
7. Diazepam (Valium)
8. Zolpidem (Ambien)
9. Promethazine/codeine syrup (Phenergan VC)
10. Phenobarbital

As listed by CDC, FDA, the U.S. Drug Enforcement Agency (DEA), and nongovernment nonprofit sources on public websites.

What Do You Believe?

1. I believe that addiction is a choice.
2. I believe that addiction is a disease.
3. I believe that addiction is both a choice & a disease.

Why Do People Use Substances?

To feel good  To feel better  To do better  Curiosity

Drugs of Choice: Why?


* Dopamine: amphetamines, cocaine, alcohol
* Serotonin: LSD, alcohol
* Endorphins: opioids, alcohol
* GABA: benzodiazepines, alcohol
* Acetylcholine: nicotine, alcohol

Substance Use Disorders

* Complex biological health conditions involving the brain
* Encompass many different drug classes:
  * Caffeine
  * Alcohol
  * Cannabis
  * Hallucinogens
  * Inhalants
  * Sedative-hypnotics/antianxiety
  * Stimulants
  * Nicotine
  * Opioids
Substance Use Disorders

Environment

Psychosocial

Addiction

Biology / Genetics

Neurochemical Imbalance: Addiction

<table>
<thead>
<tr>
<th>Receptor</th>
<th>Dopamine</th>
<th>Opioid</th>
<th>Serotonin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roles</td>
<td>Mood, attention, psychosis, reward, pleasure</td>
<td>Analgesia, euphoria, sedation, dysphoria, respiratory depression</td>
<td>Appetite, Mood, Sleep</td>
</tr>
<tr>
<td>Drug Effects</td>
<td>Opioids, nicotine, alcohol, stimulants: all increase dopamine release</td>
<td>Reinforcing effects of endogenous opiates</td>
<td>Stimulants inhibit removal of serotonin from synapses, alcohol depletes</td>
</tr>
</tbody>
</table>

Neurotransmitters and Reward

Op – opiate pathway
Glu – glutamate pathway
GABA – GABA pathway
DA – dopamine pathway

Risk/Protective Factors for Addiction

<table>
<thead>
<tr>
<th>Risk Factors</th>
<th>Protective Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggressive behavior in childhood</td>
<td>Good impulse-control</td>
</tr>
<tr>
<td>Poor parental supervision</td>
<td>Parental support</td>
</tr>
<tr>
<td>Poor social skills</td>
<td>Positive relationships</td>
</tr>
<tr>
<td>Drug experimentation</td>
<td>Academic Competence</td>
</tr>
<tr>
<td>Availability of drugs at school</td>
<td>School anti-drug policies</td>
</tr>
<tr>
<td>Community poverty</td>
<td>Neighborhood pride</td>
</tr>
</tbody>
</table>

http://www.drugabuse.gov/publications/drugs-brains-behavior-science-addiction/drugs-brain

National Institute on Drug Abuse (NIDA)
Opioid-Related Disorders

- Opioid Use Disorder
- Opioid Intoxication
- Opioid Withdrawal

Opioid Use Disorder, Withdrawal, Intoxication?

1. Tim is a 16 year-old male starting his junior year of high school.
2. He is from a middle-class family and performs academically in the upper portion of his class.
3. During a night of partying with friends, he is convinced to try heroin for the first time.
4. His girlfriend finds him unresponsive and not breathing 30 minutes after use.

Opioid Use Disorder, Withdrawal, Intoxication?

1. Shane is a 53 year-old male diagnosed with prostate cancer with bone metastasis.
2. On top of his chemotherapy treatment, he receives treatment for bone pain with OxyContin 80 mg daily and oxycodone 10 mg q 4 hours for break-through pain.
3. Last month his wife phoned 911 because she found Shane unresponsive on the couch.

Opioid Use Disorder, Withdrawal, Intoxication?

1. Stacy is a 34 year-old female presenting to the emergency department for treatment of an infected abscess on her arm.
2. She experiences chronic back pain from a car accident 2 years ago.
3. In an effort to gain better control of her pain, she started using heroin 3 months ago, on top of her routine treatment with oxycodone, cyclobenzaprine, & alprazolam.
4. After testing positive for heroin use, she was released from treatment by her PCP. She now uses heroin daily.

Opioid Use Disorder

Problematic pattern of opioid use leading to clinically significant impairment within a 1 year period, consisting of 2 of the following:

1. Taken in larger amounts over longer period than intended
2. Unsuccessful efforts to stop or decrease use
3. Excessive time spent obtaining opioid, using, or recovering from use
4. Craving to use
5. Use results in failure to fulfill work, school, home obligations
6. Use continues despite negative consequences
7. Opioid use becomes more important than social, work, or recreational activities
8. Continued use despite risky situations
9. Persistent use despite knowledge of physical or psychological problems
10. Tolerance has developed (need more opioid to achieve desired effects)
11. Withdrawal occurs when opioid is stopped

Opioid Intoxication

- Euphoria
- Dygophoria
- Apathy
- Motor retardation
- Sedation
- Slurred speech
- Attention impairment
- Pinpoint pupils
- Respiratory depression

Opioid Withdrawal*

- Lachanization
- Rhinorrea
- Dilated pupils
- Goosebumps
- Sweating, fever
- Diarrhea
- Yawning
- Insomnia
- Muscle aching

*Duration of withdrawal = 7 – 14 days.
Opioid Receptors

- **Mu**: responsible for analgesia, respiratory depression, euphoria, sedation, decreased gastrointestinal motility, & physical dependence
- **Kappa**: responsible for spinal analgesia, sedation, dyspnea, dependence, dysphoria, & respiratory depression.
- **Delta**: not well studied, may be responsible for psychomimetic & dysphoric effects


Opioids Products

- **Naturally Occurring**: morphine, codeine
- **Semi-synthetic**: heroin, hydromorphone (Dilaudid), oxycodone, hydrocodone (Vicodin, Lortab)
- **Synthetic**: meperidine (Demerol), methadone, fentanyl (Duragesic)
  - **Tramadol**: atypical opioid; analogue of codeine with partial mu agonist activity & serotonin activity

Prescription Opioids

<table>
<thead>
<tr>
<th>Prescription Opioids Comparison Pharmacology:25</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drug</td>
</tr>
<tr>
<td>Hydrocodone</td>
</tr>
<tr>
<td>Hydromorphone</td>
</tr>
<tr>
<td>Meperidine</td>
</tr>
<tr>
<td>Methadone</td>
</tr>
<tr>
<td>Mepiridine</td>
</tr>
<tr>
<td>Meptidone</td>
</tr>
<tr>
<td>Meptidol</td>
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<tr>
<td>Mepoxydol</td>
</tr>
</tbody>
</table>

Facts and Comparisons Online Database, accessed August, 2015

Diacetylmorphine (Heroin)

- Peak use in 1960s, 1990s, now
- Direct opioid (mu) receptor agonist
- Onset: IV (immediate); snorted (5 – 8 min)
- Half-life: 30 min; duration: 4 – 5 hours
- Metabolism: metabolized to morphine & 6-monoacetylmorphine (6-MAM): a metabolite specific to heroin

People Who Abuse Prescription Opioids Obtain Them From....

- Other source
- Got from drug dealer or stranger
- Took from friend or relative without asking
- Bought from friend or relative
- Prescribed by one doctor
- Obtained free from friend or relative

2010 National Survey on Drug Use & Health: SAMHSA, Office of Applied Studies, 2011

Prescription Opioid Abuse

- Almost all prescription drugs involved in overdoses come from prescriptions originally (not pharmacy theft)
- Frequently diverted to people using them without prescriptions
- Most prescriptions come from primary care physicians, internal medicine physicians, & dentists; not specialists
- Roughly 20% of prescribers prescribe 80% of all prescription opioids
Jason is a 25 year-old patient who you see routinely at the pharmacy. He is receiving treatment for an opioid use disorder & panic disorder. He is prescribed the following regimen from his psychiatrist:

- Alprazolam (Xanax) 0.5 mg BID
- Buprenorphine/naloxone sublingual 2.8 mg/0.72 mg daily
- Paroxetine (Paxil) 10 mg q day

Jason shows up 2 weeks early for his refills reporting that he lost the rest of his medication & really needs his Xanax.

- Frequently running out of medication
- Reporting lost or stolen prescriptions
- Presenting with prescriptions from multiple prescribers
- Filling prescriptions at multiple pharmacies
- Urine drug screen negative
- Reports allergies to all other drugs but ...

- Frequently demonstrating signs & symptoms of intoxication

- Those who abuse prescription opioids (vs heroin):
  - Are more likely to have complaints of pain
  - Are more likely to be in psychiatric treatment
  - Have greater social stability
  - Are less likely to use other illicit substances

- Male gender, aged 18–25 years
- Non-Hispanic white race/ethnicity
- Residence in a large urban area
- <$20,000 annual household income with no health insurance or Medicaid
- Past-year abuse or dependence on alcohol, marijuana, cocaine, or opioid pain relievers

- You receive the following prescription:
  - What is the abuse potential associated with this medication?
  - What are the risks associated with this treatment?

- The patient also takes the following other medications:
  - Clonazepam 1 mg twice daily
  - Lisinopril 10 mg daily
  - Acetaminophen 500 mg as needed
  - Naltrexone 50 mg daily
  - Quetiapine 600 mg at bedtime
  - What are your concerns?
Dangerous Combinations

- Multiple CNS Depressants:
  - Opioids
  - Benzodiazepines: alprazolam, diazepam, clonazepam, chlordiazepoxide
  - Z-hypnotics: zolpidem, zaleplon, eszopiclone
  - Muscle relaxants: cyclobenzaprine, nabumetone, carisoprodol
- Adding alcohol to the mix:
  - Benzodiazepines + alcohol: ↑ BZD absorption & ↓ metabolism & clearance of BZD
  - Stimulants mask effects of alcohol; leads to people drinking more than usual
  - Cocaine + alcohol = Cocaethylene (CE), increased risk of cardiac arrest

Overdose: Risky Medications

- Tricyclic antidepressants (TCAs)
- Mood stabilizers (carbamazepine, lithium)
- Hypoglycemic agents (glipizide / glyburide)
- Insulin
- Aspirin
- Acetaminophen
- Oxycodone products

Risky Situations

- Sarah is a 50 year-old female patient diagnosed with Lupus, Crohn's Disease, fibromyalgia, & borderline personality disorder.
  - She receives treatment from her primary care physician, rheumatologist, & psychiatrist.
  - She is prescribed:
    - Duloxetine (Cymbalta), quetiapine (Seroquel), diazepam (Valium), hydrocodone / acetaminophen (Vicoden), prednisone

Risky Situations

- Pam is a 35 year old female client with schizophrenia, generalized anxiety disorder, PTSD, diabetes, chronic back pain, & sleep apnea
  - She struggles with ongoing pain & frequently over takes her pain medication.
  - She is prescribed:
    - Olanzapine (Zyprexa), lorazepam (Ativan), amitriptyline (Elavil), oxycodone (OxyContin), trazodone, zolpidem (Ambien), tramadol

Who is at risk for overdose?

- Taking multiple controlled substance prescriptions from multiple providers “doctor shopping”
- Taking high daily dosages of prescription opioids &/or misuse multiple abuse-prone prescription drugs
- Using pills & heroin within 12 hours of each other is the single largest cause of fatal overdose
- Lower socioeconomic status & those living in rural areas
- People with co-occurring HIV, heart disease, seizure disorders, mental illnesses, history of substance use disorder
- Recent discharge from incarceration or substance use facility

Opioid Use Disorder Treatment: Is Recovery Possible?

video
Comparison of Relapse Rates Between Addiction & Other Chronic Illnesses

![Graph showing relapse rates for different conditions]

JAMA, 284:1689-1695, 2000

Recovery Treatment Options

- Traditional 12 step programs (abstinence)
- Inpatient/outpatient programs
- Motivational interviewing, harm reduction, cognitive behavior therapy
- Pharmacotherapy: treatment of withdrawal syndromes, anti-craving medication (naltrexone), buprenorphine, methadone maintenance

Screening for Substance Use/Abuse

- Screening, Brief Intervention, & Referral to Treatment (SBIRT): evidenced-based practice used to identify, reduce, & prevent problematic use, abuse, & dependence on alcohol & drugs
- Screening: brief 1-3 question screen (National Institute on Drug Abuse's quick screen). If positive, then given longer drug use evaluation (AUDIT or ASSIST)
- Brief Intervention: time-limited, patient-centered strategy focused on increasing insight & awareness regarding substance use. Lasts 5 to 20 minutes

Screening: Sample Questions

<table>
<thead>
<tr>
<th>NIDA Quick Screen Question:</th>
<th>Never</th>
<th>Once or Twice a Month</th>
<th>Monthly</th>
<th>Weekly</th>
<th>Daily or Almost Daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td></td>
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<tr>
<td>For men, 5 or more drinks a day</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>For women, 4 or more drinks a day</td>
<td></td>
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<tr>
<td>Tobacco Products</td>
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</tr>
<tr>
<td>Prescription Drugs for Non-Medical Reasons</td>
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<tr>
<td>Illegal Drugs</td>
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</tbody>
</table>

Stages of Treatment

- Motivational Enhancement: treatment engagement & progress through stages of change
- Acute Stabilization: detox & treatment of psychiatric symptoms
- Active Treatment: small step changes in substance use patterns; commitment to abstinence; acquisition of skills to maintain abstinence; treatment of psychiatric symptoms
- Relapse Prevention & Recovery: maintain abstinence; use recovery support & relapse prevention skills; develop new skills

Stage 1: Motivational Enhancement

- Pre-contemplation
- Contemplation
- Action
- Preparation
- Maintenance

You are here
**Motivational Enhancement**

- John is a 36-year-old male who was recently admitted to the hospital for opioid intoxication & hepatotoxicity. He has been consistently taking oxycodone 10 to 80 mg daily for several months. You note that he has a 20-year history of substance abuse & began drinking alcohol at the age of 16.
- He has 2 years of sobriety in 2010 when he was incarcerated. After John completes a detox program, you meet with him to discuss a treatment plan. He describes feeling incredibly anxious & uncomfortable when clean & sober. He is eager to leave treatment to begin using again.

**Stage 2: Acute Stabilization**

- Wait for observable signs of withdrawal (NOT fatal)
- Heroin withdrawal: peaks within 6 – 8 hrs
- Methadone withdrawal: peaks at 72 hrs, can last for > 2 weeks
- Treat the symptoms:
  - Elevated blood pressure: clonidine
  - Muscle aches: ibuprofen, cyclobenzaprine
  - Insomnia: trazodone
  - Diarrhea: loperamide
- Opioid substitution:
  - Methadone, buprenorphine

**Stage 3: Active Treatment**

- Methadone Maintenance Treatment
- Buprenorphine / naloxone (Suboxone) Treatment
  - Buprenorphine = partial agonist at mu-opioid receptor & antagonist at kappa-opioid receptor
  - Naloxone = full antagonist at all opioid receptors
  - When medication is placed under the tongue, very little naloxone reaches the bloodstream, if injected, it quickly triggers opioid withdrawal

**Stage 4: Relapse Prevention & Recovery**

- Individualized & group therapy
- Integrated Case Management & Assertive Community Treatment (ACT)
- Jail Diversion Programs
- Continuous Recovery Support (Clubhouse programs)
- Day Treatment Programs
- Psychiatric Housing Programs
  - Abstinence-expected ("dry" housing)
  - Abstinence-encouraged ("semidamp" housing)
  - Consumer-choice ("wet" housing)

**Reversal Agents for Opioid Overdose**

Khyati Patel, PharmD, BCPS
Assistant Professor, Pharmacy Practice
Rosalind Franklin University of Medicine and Science

Michael Shuman, PharmD, BCPP
Assistant Professor, Pharmacy Practice
Rosalind Franklin University of Medicine and Science
Objectives
Pharmacist/Pharmacy Technicians

1. Recognize pertinent signs and symptoms of opioid overdose
2. Identify the mechanisms of action and appropriate uses of opioid reversal agents
3. Demonstrate how to use commercially available products of opioid reversal

How to Recognize an Overdose?

Most common presentation
- Depressed mental status
  - Euphoria
  - Stupor
  - Coma
  - Seizures
- Respiratory Depression
  - Decreased respiratory rate and tidal volume
  - RR < 12 is the best predictor
  - Stop breathing altogether
  - Neurogenic pulmonary edema
- Miotic pupils
- Insufficient evidence to confirm opioid intoxication

Other signs and symptoms
- Hypothermia
- Decreased core body temperature
- Hypotension
- Mild from due to histamine release
- Decreased bowel sounds
- Constipation
- Abscesses at injection sites
- Myoglobinuria
- Stupor associated rhabdomyolysis, renal failure, and compartment syndrome
- Liver injury
  - Increased LFTs

Pharmacology of Reversal Agents

Agents for reversal
- Naloxone
  - Vial/syringe kit
  - Inhalational kit
  - Auto injector (Evzio®)
Uses

- Opioid overdose
- FDA approved for use in all ages
- Septic shock
- Opioid induced pruritus (unlabeled)

Pharmacology

- Competitive Opioid antagonist at all 3 opioid receptors
  - Delta, kappa, and mu
- Prompt reversal of opioid agonists
  - Reversal of hypotension and sedative effects
  - Increase in respiratory rate within 1-2 mins
- 1 mg can reverse effect of 25mg heroin
- Overshoot phenomenon
  - Hypertension, tachycardia, ventricular arrhythmia
  - Avoidable by careful titration

ADME

- Readily absorbed
- Complete metabolism in liver
  - Conjugation with glucuronic acid
  - Administered parenterally thus
- Half-life: ~1 hour
  - Duration of action < 1 hr
  - Continuous infusion might be needed

Opioid reversal: putting it all into practice

By the numbers

- 152,283
  - Number of naloxone kits provided from 1996-2014 (based on responses from 136 separate organizations)
- 26,463
  - Number of successful opioid reversals reported
First things first...

- Stimulation
- Call 911
- Airway
- Rescue Breathing
- Evaluate the Situation
- Muscular Injection
- Evaluate Again

Call 911 if the individual...

- Remains unresponsive/unconscious despite sternal rub
- Displays shallow or intermittent (< 1/5-10 sec) breathing
- Reports shortness of breath or chest tightness
- NOTE: use the recovery position if you must leave the individual, even for a short time

Airway/Rescue Breathing

- Alone:
  - Perform rescue breathing (4-5 breaths), then place individual in recovery position, obtain naloxone kit, and call 911
- With 1 or more other rescuers
  - Have one person perform breaths, while the other obtains kit and calls 911

Stimulation

- Assess for responsiveness
  - Gentle shaking
  - Verbal commands
  - Sternal rub

SCARE ME

Airway/Rescue Breathing

- Place the individual on their back
- Open the airway and check for blockage
- Remove if present
- Pinch nose, place mouth over the person's mouth, and give 2 breaths
- Repeat with 1 breath every 5 seconds

Evaluate the situation

- Is naloxone kit now available?
- Has EMS arrived?
- Is the individual breathing?

Muscular injection

Naloxone IM kit

Naloxone IM kit
Instructions for use

1. Remove plastic cap from vial
2. Remove syringe from packaging and remove cover from needle
3. Place syringe in vial, using care not to core the rubber
4. Invert vial and draw up 1 ml dose
5. Administer to outer thigh, shoulder, or buttocks
   A. Swab site with alcohol swab first
   B. Inject through clothing if necessary

Naloxone intranasal kit
Step one: remove caps from both ends of the syringe

Step two: attach atomizer to syringe

Step three: remove cap from end of vial

Step four: attach vial to syringe

Step five: tilt head back, squeeze vial and syringe. Disperse 1 mL of drug per nostril

Naloxone autoinjector (Evzio)

Contains active drug

Training device
Step one: remove device from case

Step two: remove red safety guard

Step three: place black end against patient’s thigh. Hold for 5 seconds

Evaluate again

- After administration of naloxone, continue rescue breathing for 3 minutes
- 1 breath every 5 seconds
- May repeat naloxone dose if necessary
- One dose generally sufficient
- Note that for some agents, the duration of effect is greater than that of naloxone, which may last for 2-2 hours
- Therefore, continued monitoring for at least 3-4 and up to 72 hours may be warranted
- Continue rescue breathing until help arrives

Choosing an option

Choosing an option

- Cost
  - $37.00* per intranasal kit containing 2 naloxone 2mg/2mL syringes with atomizers, face shield, gloves, instructions, and pouch
  - $46.00* per intramuscular kit containing 2 naloxone 0.4mg/mL vials, two 3 mL syringes, face shield, gloves, alcohol swabs, instructions, and pouch
  - AWP = $690.00* per autoinjector

*Estimated cost for VA hospitals as of Fall 2014
*Current cost for VA hospitals as of Summer 2015

By the numbers

- Ease of use
  - Autoinjector > intranasal syringe in head-to-head studies
  - Without training, 38/42 participants were able to use the Evzio autoinjector
  - None successful with the atomizer
  - One week after training, 42/42 were able to successfully use the auto injector, compared with 24/42 using the intranasal syringe

Choosing an option

- Ease of use
  - Sources of error with IN naloxone
    - Drug leaking drug during assembly
    - User forgetting to administer in both nostrils
    - Difficulty connecting atomizer to syringe

Choosing an option

- Efficacy
  - Response rates vary but are generally ~75-80% with both IM and IN routes
    - One study showed more rapid response when given via IM versus IN formulation at a dose of 2mg/mL.
    - A follow-up study using a more concentrated (2mg/mL) IN solution found similar response in both groups.
  - Intranasal absorption may be decreased by epistaxis or damage from concomitant cocaine abuse

Additional considerations

- Stability
  - Shelf-life of naloxone (unopened) is 12-18 months
  - Consult package labeling for specific date
  - Shelf life of an assembled prefilled intranasal or intramuscular syringe is 2 weeks
- Safety
  - Risk of accidental needlestick with IM technique

Summary

<table>
<thead>
<tr>
<th>Route</th>
<th>Intranasal Kit</th>
<th>Intramuscular Kit</th>
<th>IM Autoinjector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial dose</td>
<td>1mg/mL per nostril</td>
<td>0.8mg/mL IM (through clothing if needed)</td>
<td>0.4mg/mL IM (through clothing if needed)</td>
</tr>
<tr>
<td>When to repeat</td>
<td>After 3-5 min if no response or if apnea/hypopnea recurs</td>
<td>After 3-5 min if no response or if apnea/hypopnea recurs</td>
<td>After 2-3 min if no response</td>
</tr>
</tbody>
</table>

Reversal kits received, by route

- Injectable
- Intranasal

Mechanisms for Pharmacy Personnel to Engage in the Mission

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Disclosures/Conflict of Interest
• No conflicts of interest for any speakers

Objectives
Pharmacist/Pharmacy Technicians
• Identify the role of pharmacy personnel in opioid overdose management
• Identify ways pharmacy personnel can contribute to the reduction of prescription drug abuse, misuse and diversion
• Describe how pharmacists may utilize prescription drug monitoring programs to screen for potential safety concerns.
• Explain critical pharmacy personnel roles in collaborative and outreach efforts to reduce prescription drug misuse, abuse and diversion.

Stemming the tide of abuse: what can one pharmacist do?

The current national landscape
• States which allow standing orders for naloxone prescriptions

Current Illinois law
• “A health care professional who, acting in good faith, directly or by standing order, prescribes or dispenses an opioid antidote to a patient who, in the judgment of the health care professional, is capable of administering the drug in an emergency, shall not, as a result of his or her acts or omissions, be subject to disciplinary or other adverse action under [any professional licensing statute].”
• “A person who is not otherwise licensed to administer an opioid antidote may in an emergency administer without fee an opioid antidote if the person has received certain patient information specified in statute and believes in good faith that another person is experiencing a drug overdose. The person shall not, as a result of his or her acts or omissions, be liable for any violation of [professional practice acts] or any other professional licensing statute, or subject to any criminal prosecution arising from or related to the unauthorized practice of medicine or the possession of an opioid antidote.”

**Current Illinois law**

- "A health care professional prescribing an opioid to a patient shall ensure that the patient receives the patient information specified in paragraph (4) of this subsection."
- "Health care professional" means a physician licensed to practice medicine in all its branches, or an advanced practice registered nurse, or an advanced practice nurse who practices in a hospital or ambulatory surgical treatment center and possesses appropriate clinical privileges in accordance with the Nurse Practice Act.


**What is a “standing order” in Illinois?**

- "Standing order" means a specific order for a patient or group of patients issued by a physician licensed to practice medicine in all its branches in Illinois.

225 ILCS 85/ Pharmacy Practice Act.

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**HB 0001**

- "A health care professional prescribing an opioid antagonist to a patient shall ensure that the patient receives the patient information specified in paragraph (4) of this subsection.


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**HB 0001**

- For the purposes of this subsection, "health care professional" means a physician licensed to practice medicine in all its branches, or an advanced practice registered nurse, or an advanced practice nurse or physician assistant who practices in a hospital, hospital affiliate, or ambulatory surgical treatment center and possesses appropriate clinical privileges in accordance with the Nurse Practice Act or a pharmacist licensed to practice pharmacy under the Pharmacy Practice Act.

- Most recent action:
  - Sent to governor for review on 6/26/15
  - Amendatory veto by governor on 8/25/15
  - Veto overridden by both houses on 9/9/15
  - Enacted as Public Act 99-690
  - Rule 620/15 is still being written


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**HB 0001**

- "Notwithstanding any general or special law to the contrary, a licensed pharmacist may dispense an opioid antagonist in accordance with written, standardized procedures or protocols developed by the Department with the Department of Public Health and the Department of Human Services if the procedures or protocols are filed at the pharmacy before implementation and are available to the Department upon request."


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**HB 0001**

- "Before dispensing an opioid antagonist pursuant to this Section, a pharmacist shall complete a training program approved by the Department of Human Services pursuant to Section 5-23 of the Alcoholism and Other Drug Abuse and Dependency Act. The training program shall include, but not be limited to, proper documentation and quality assurance."

### What's the difference?
- Authorizes pharmacists to prescribe naloxone
- Allows for dispensing based on "standardized procedures or protocols"
- Expands use beyond patients of a specific provider (per Illinois' limiting definition of a standing order)
- Access and use of naloxone becomes analogous to the Epi-Pen

### States with additional pharmacist privileges:
#### Standing orders

**Massachusetts**
- As of 4/18/14, naloxone kits may be dispensed by pharmacists without a prescription, provided that the pharmacy has a standing order from a local physician
- The pharmacy must keep the standing order on premises at any site from which kits will be dispensed
- It is the responsibility of the pharmacist to counsel on proper use

**Kentucky**
- As of March 2015, pharmacists in Kentucky may dispense naloxone without a prescription based on the following criteria:
  - Application to the board of pharmacy and subsequent training
  - Completion of a physician-approved protocol delineating process for selecting eligible candidates

**California**
- As of April 10, 2015, naloxone may be dispensed by pharmacists without a prescription, based on the following requirements:
  - The pharmacist has completed 1 hour of CE on the use of naloxone
  - The patient is screened for hypersensitivity
  - The patient has been trained on opioid overdose prevention, recognition, and response
  - The patient has been trained on administration of naloxone

**Rhode Island**
- CPA established in 2012, allowing one physician to authorize pharmacists at multiple pharmacies within a single chain to dispense naloxone without a prescription
  - Requires each pharmacist to complete a (free) training course
- As of March 2014, the standing order allows for police departments and other community organizations to also obtain naloxone
States with additional pharmacist privileges: pharmacist as prescriber

- New Mexico
  - Passed the Pharmacist Prescriptive Authority Act, allowing pharmacists to act as naloxone prescribers without physician involvement
  - Must provide written or electronic prescription and notify primary care provider within 15 days of dispensing
  - Requires specific training on medication use, screening criteria, proper counseling, and follow-up
  - 0.2 CEU every 2 years

Example protocol for Illinois pharmacies (upon approval of HB 0001)

1. Patient comes to pharmacy for opioid prescription
2. Dose assessed for appropriateness, morphine equivalents
3. Pt counseled on risk of side effects
4. Pt asked if he/she is interested in a naloxone kit
5. Education on naloxone use, contact information, websites provided
6. Documentation kept in pharmacy files

Final thoughts

- Successful training on use of the naloxone kit only takes 15 min
- Your involvement may literally save a life
Power to the pharmacist!

Mechanisms for pharmacy personnel to engage in the mission

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Associate Professor
SIUE School of Pharmacy
Psychiatric Care Provider
Places for People

Tina Messenger, PharmD Candidate
SIUE School of Pharmacy

Objectives
Pharmacist/Pharmacy Technicians

- Identify the role of pharmacy personal in opioid overdose management.
- Identify ways pharmacy personnel can contribute to the reduction of prescription drug abuse, misuse and diversion.
- Describe how pharmacists may utilize prescription drug monitoring programs to screen for potential safety concerns.
- Explain critical pharmacy personnel roles in collaborative and outreach efforts to reduce prescription drug misuse, abuse, and diversion.

If prescription drug abuse is an epidemic.....then what are we doing about it?
Prescription Drug Abuse: Prevention Strategies
Collaboration among state licensing boards, public health agencies, state medical & pharmacy associations
1. Education & Advocacy
2. Prescription Drug Monitoring Programs
3. Proper Drug Disposal
4. Enforcement
5. Naloxone Rescue Therapy

Education & Advocacy
- Only 1 in 10 Americans with a substance use disorder actively receive treatment
- Break-down stigmas that prevent treatment:
  - “Treatment doesn’t work”
  - People with addictions are “bad, crazy, can’t be helped, don’t want to be helped”
  - “They have an addictive personality”
- Treatment outcomes are likely poor if the substance abuse disorder & psychiatric disorder are not both collectively addressed in treatment

Education & Advocacy
- 24 states participating in Medicaid expansion, allowing for the expansion of substance abuse services & treatment
- Encourage the funding & increased access of substance abuse treatment programs
- Advocate for integrated treatment that ALWAYS includes a clinical pharmacist:
  - Extensive medication reviews & comprehensive medication management

Education & Advocacy
- Provide in-services on opioid prescribing, prescription drug abuse, & naloxone rescue therapy
- Target audiences: pain management specialists, psychiatric care providers, family medicine specialists, emergency room physicians, physician assistants, advanced practice nurses
- SAMHSA & NIDA provide free of charge continuing medical education courses: [http://www.opioidprescribing.com](http://www.opioidprescribing.com)
- Offer recovery resources in your community
  - Call 1-800-662-HELP

Education & Advocacy
- Remind people to:
  - Use prescription opioids only as directed by a health care provider
  - Store prescriptions in secure place & dispose of them properly
  - Make sure that all their prescribers & pharmacists know of all medications they are taking
  - Don't mix opioids with other drugs or alcohol
  - Do not sell or share prescription opioids with others
  - Teach tolerance- not taking opioids for a period can lower your tolerance
  - Teach family & friends how to respond to an overdose

Prescription Drug Monitoring Programs
- State-run electronic databases used to track prescribing & dispensing of controlled prescription drugs
- 49 states have operational PDMPs; Missouri last state approved
- Provide critical information regarding controlled substance prescription history, number of prescribers, high risk individuals
Prescription Drug Monitoring Programs

- Information is stored in a central database and can be accessed by authorized users
- Physicians, dentists, nurse practitioners, other health care professionals authorized to prescribe controlled substances
- Community pharmacies who dispense controlled substances
- Most states allow regulatory & law enforcement agencies involved in drug-related investigations, enabling them to identify illegal trafficking or misuse of prescription drugs
- Programs are targeted toward reducing the incidence of 'doctor shopping'

Proper Drug Disposal

- Statewide medication take-back program to be established by June 1, 2016
- Pharmacies shall display signs the DEA develops regarding local take-back programs
- No private entity may be compelled to serve as or fund a take-back program
- All medications collected & disposed of under the program must be managed in accordance with federal & state laws
- Programs will be centered around law enforcement facilities & not pharmacies
- http://www.epa.illinois.gov/topics/waste‐management/waste‐disposal/medication‐disposal/locations/index

Enforcement

- Identify problem prescribers or unsafe prescribing practices
- Recognize & report "pill mill" providers
- Request proper identification prior to dispensing a controlled substance
- Enforce formulary restrictions that promote step therapy for pain management or limit prescription quantities
- Review insurance claim data to evaluate prescribing patterns & high risk patient scenarios


https://www.youtube.com/watch?v=oWopsRaeY6M

Prescribe to Prevent: www.prescriptoprevent.org
Website designed for prescribers, pharmacists, patients, & advocacy groups offering educational materials on naloxone rescue treatment & overdose prevention strategies
Pharmacist Role

- Counsel, Counsel, Counsel!!!
- Side effects, abuse potential, safe storage of medication
- Utilize IPPE and APPE students to perform community outreach efforts
- Consistently utilize prescription drug monitoring program
- To identify individuals that may have a substance abuse problem so that prescriber can be consulted and intervention can take place
- NOT meant for denying individuals of medications but to help patients
- Let IPPE and APPE students shadow pharmacists in using prescription drug monitoring program

Pharmacy Technician Role

- Technician to review patients profile of all opioid prescriptions brought in and “flag” any “first” fills to prompt pharmacist or student pharmacist to counsel
- Search for community outreach efforts by contacting local schools, retirement communities, churches, health fairs, etc., to set up Prescription Drug Abuse Presentations
- Set up educational table during Red Ribbon Week

Student Role

- School – GET INVOLVED with Generation Rx and help generate/implement creative ideas to educate community on Prescription Drug Abuse
- IPPE/APPE’s – Prescription Drug Abuse makes a great topic for projects, presenting at local schools, booths at pharmacy, retirement communities, churches, and health fairs
- Get creative during Red Ribbon Week!!!
- Counsel, Counsel, Counsel!!!
- Side effects, abuse potential, safe storage

Resources Available

- http://www.awarerx.org
- http://www.cdc.gov/vitalsigns/PrescriptionPainkillerOverdoses/index.html

Bag Tags

- Pre-prepared skits with Dr. Gable and Tina Messenger
- Counseling patient on “first” fill opioid prescription
- Patient with perceived opioid addiction
- Patient that is trying to fill their controlled prescription too early

Let’s Practice
Discussion

Survey

Post-Symposium Assessment #1

* In 2012 the Results from the National Survey on Drug Use and Health indicated that more Americans are killed by drug overdoses than motor vehicle crashes. What is the estimated percentages of death related to pharmaceuticals?
  A. less than 5%
  B. 15%
  C. 25%
  D. over 50%

Post-Symposium Assessment #2

* Which of the following are true regarding types of substances use disorders?
  A. Substance use disorders do not include caffeine.
  B. Include only illicit drugs.
  C. May include alcohol, caffeine, sedatives, nicotine and opioids, however are not limited to only these substances.
  D. There is no classification known as substance use disorders.

Post-Symposium Assessment #3

* Protective Factors for Addiction may include:
  A. Aggressive behavior in childhood
  B. Academic Competence
  C. Drug experimentation
  D. Neighborhood pride

Post-Symposium Assessment #4

* Which of the following describe stage(s) of treatment for those going through substance use recovery?
  A. It is only necessary to have patients actively engage in Acute Stabilization.
  B. It is only necessary to have patients actively engage in treatment and motivational enhancement.
  C. It is important for all patients to go through active treatment and relapse prevention.
  D. Patients should be encouraged to partake in acute stabilization, active treatment, relapse prevention and recovery with the idea of partaking in motivational enhancements throughout their change.
Post-Symposium Assessment #5

• Indicate which is true regarding naloxone.
  A. This product come available only in transdermal formulation.
  B. Naloxone competitively blocks the delta, kappa and mu receptors
  C. Off-label usage for diarrhea
  D. 9-1-1 should be called only after 10 minutes post administration

Opioid Addiction and Abuse Symposium: Training Health Care Professionals

The Opioid Addiction and Abuse Symposium: Training Health Care Professionals has been created and delivered by Speaking Faculty of the State of Illinois. The Illinois Pharmacists Association is accredited by the Accreditation Council for Pharmacy Education as a provider of continuing pharmacy education.

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