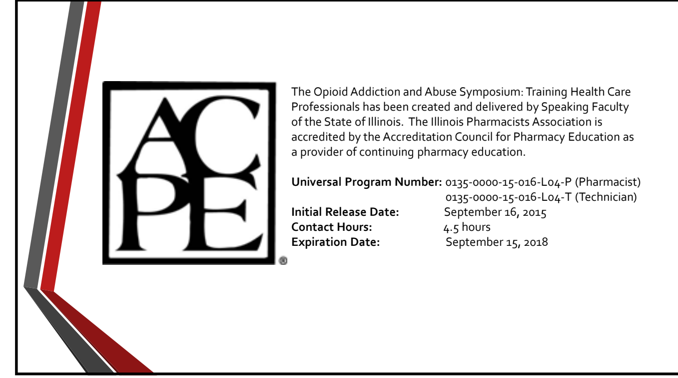
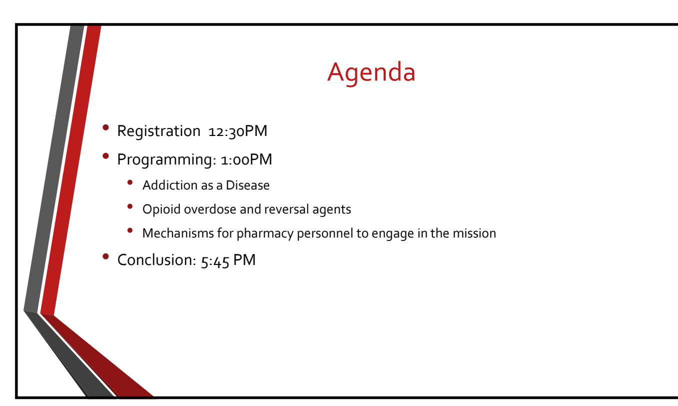
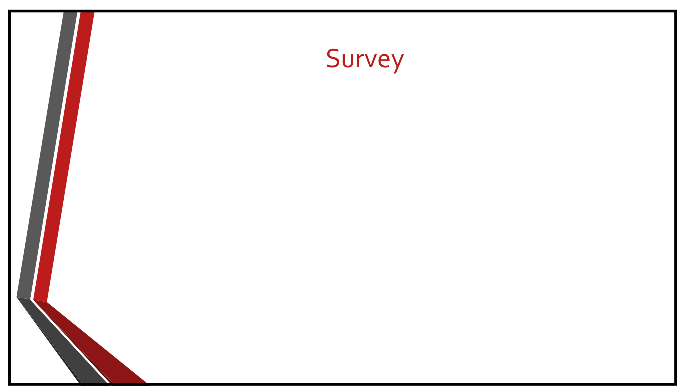
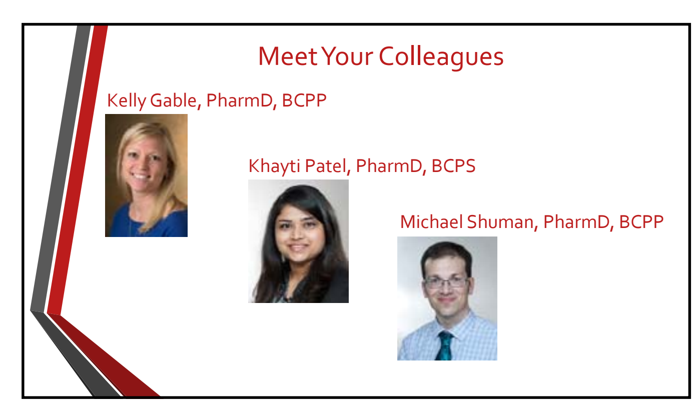


Disclosures/Conflict of Interest

- 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.







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

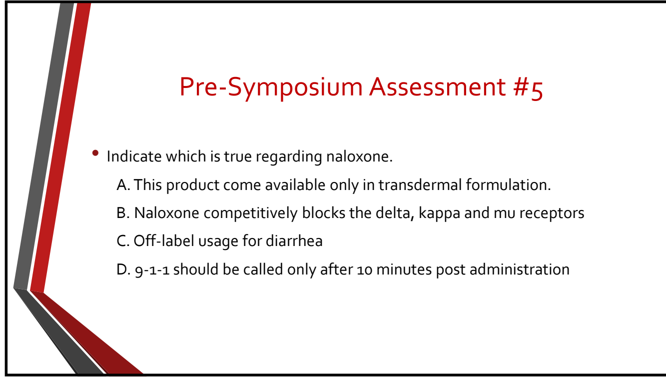
- Which of the following are true regarding types of substances use disorders?
  - A. Substance use disorders do not include caffeine.
  - B. Include only illicit drugs.
  - C. May include alcohol, caffeine, sedatives, nicotine and opioids, however are not limited to only these substances.
  - D. There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

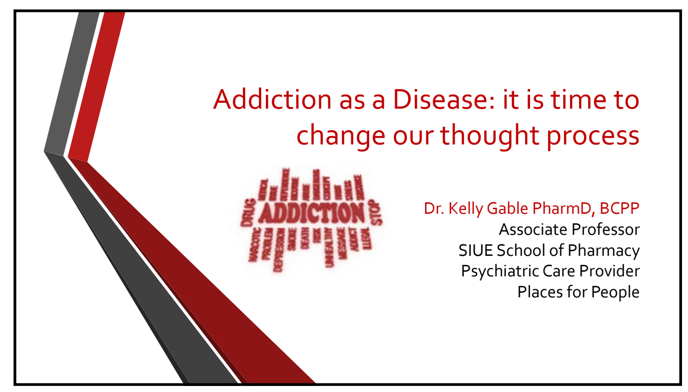
Pre-Symposium Assessment #3

- 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 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.





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 2010, 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 2013, ~1.8 million people had an opioid use disorder related to prescription pain relievers & ~517,000 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

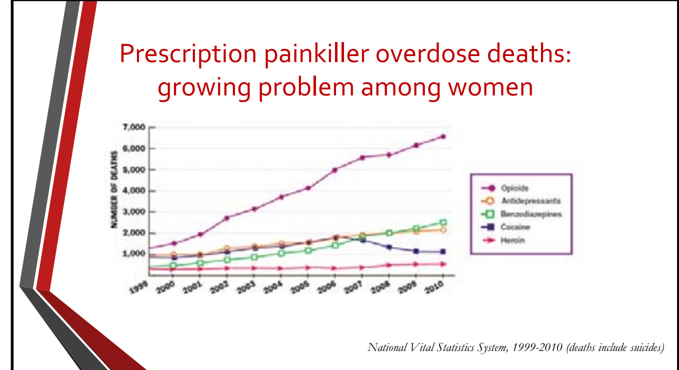
Results from the National Survey on Drug Use and Health: SAMHSA.
National Vital Statistics System. Multiple cause of death file. Atlanta: CDC.

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

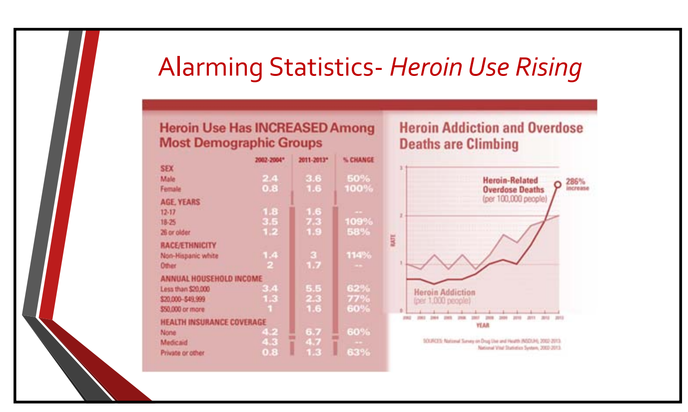
Results from the National Survey on Drug Use and Health: SAMHSA.
National Vital Statistics System. Multiple cause of death file. Atlanta: CDC.

Prescription painkiller overdose deaths: growing problem among women



National Vital Statistics System, 1999-2010 (deaths include suicides)

Alarming Statistics- *Heroin Use Rising*



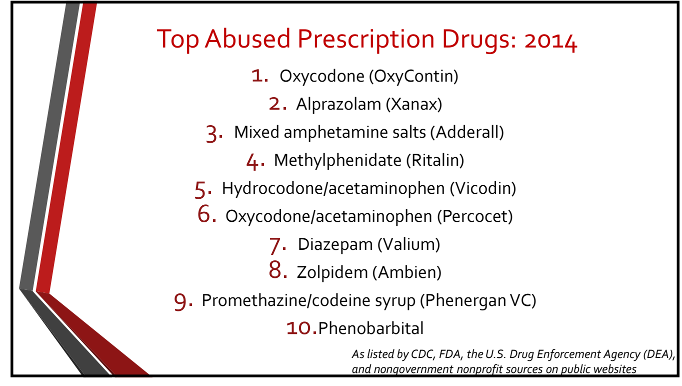
Heroin Use Has INCREASED Among Most Demographic Groups

	2002-2004*	2011-2013*	% CHANGE
SEX			
Male	2.4	3.6	50%
Female	0.8	1.6	100%
AGE, YEARS			
12-17	1.8	1.6	--
18-25	3.5	7.3	109%
26 or older	1.2	1.9	58%
RACE/ETHNICITY			
Non-Hispanic white	1.4	3	114%
Other	2	1.7	--
ANNUAL HOUSEHOLD INCOME			
Less than $20,000	3.4	5.5	62%
$20,000-$49,999	1.3	2.3	77%
$50,000 or more	1	1.6	60%
HEALTH INSURANCE COVERAGE			
None	4.2	6.7	60%
Medicaid	4.3	4.7	--
Private or other	0.8	1.3	63%

What about Illinois?

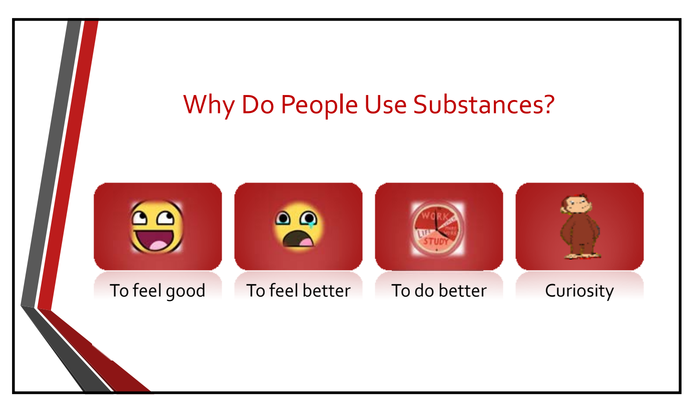
- Received 8 out of 10 possible indicators of promising strategies to help curb prescription drug abuse.
- 12th lowest drug overdose mortality rate in the US, with 10 per 100,000 drug overdose fatalities.
  - Drug overdose deaths increased by 49% since 1999.
  - Hydrocodone (compared with oxycodone) 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

Illinois Department of Human Services.
Prescription Drug Abuse: Strategies to Stop the Epidemic.



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.



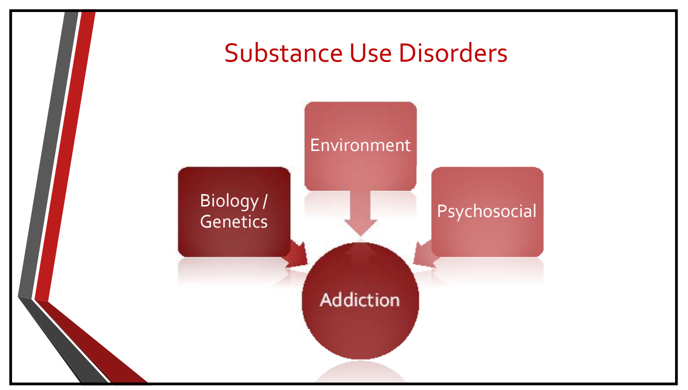
Drugs of Choice: Why?

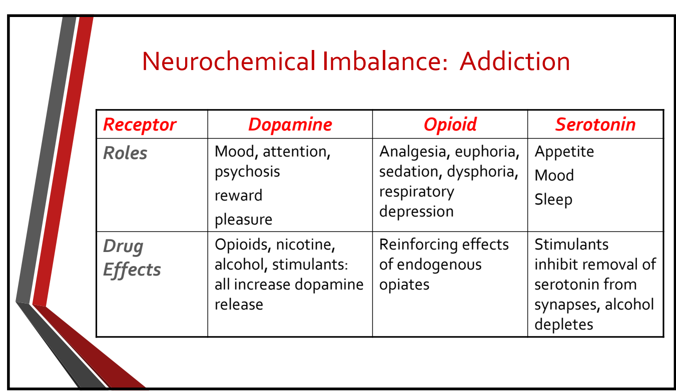
Depression? Pain? Psychosis? Inattention? Addiction?

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

Substance Use Disorders

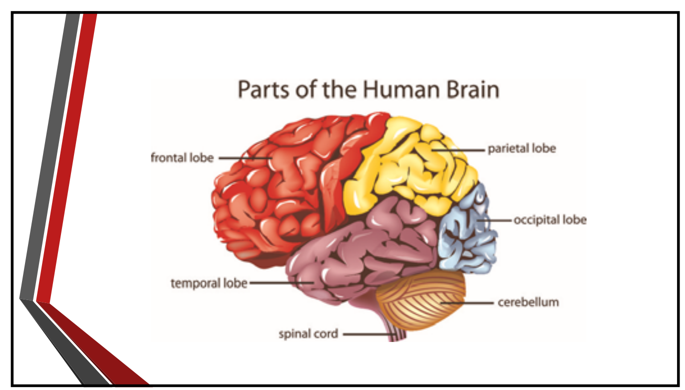
- Complex biological health conditions involving the brain
- Encompass many different drug classes:
  - Caffeine
  - Alcohol
  - Cannabis
  - Hallucinogens
  - Inhalants
  - Sedative-hypnotics/anxiolytics
  - Stimulants
  - Nicotine
  - Opioids

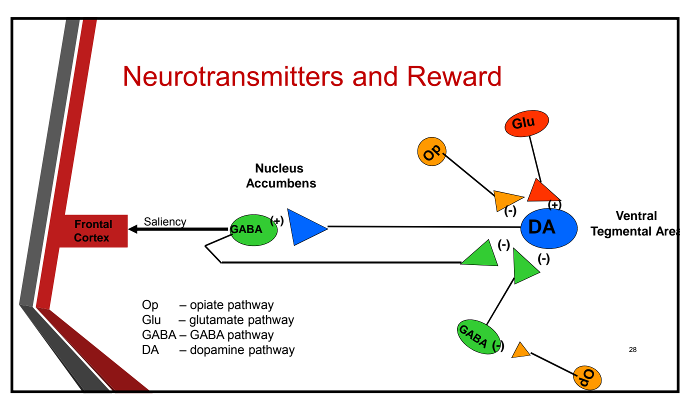


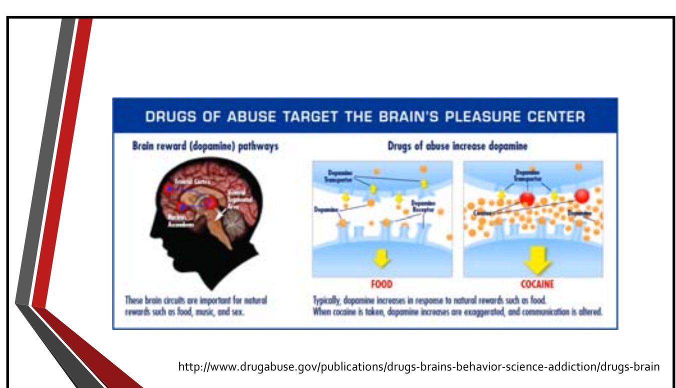


Neurochemical Imbalance: Addiction

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







Risk/Protective Factors for Addiction

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

National Institute on Drug Abuse (NIDA)

Opioid-Related Disorders

- Opioid Use Disorder
- Opioid Intoxication
- Opioid Withdrawal

Opioid Use Disorder, Withdrawal, Intoxication?

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

Opioid Use Disorder, Withdrawal, Intoxication?

- Shane is a 53 year-old male diagnosed with prostate cancer with bone metastasis.
- 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.
- Last month his wife phoned 911 because she found Shane unresponsive on the couch.

Opioid Use Disorder, Withdrawal, Intoxication?

- Stacy is a 34 year-old female presenting to the emergency department for treatment of an infected abscess on her arm.
- She experiences chronic back pain from a car accident 2 years ago.
- 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.
- 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 then 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

American Psychiatric Association: Diagnostic & Statistical Manual of Mental Disorders, 5th edition. Arlington, VA, American Psychiatric Association, 2013.

Opioid Intoxication	Opioid Withdrawal*
Euphoria	Lacrimation
Dysphoria	Rhinorrhea
Apathy	Dilated pupils
Motor retardation	Goosebumps
Sedation	Sweating, fever
Slurred speech	Diarrhea
Attention impairment	Yawning
Pinpoint pupils	Insomnia
Respiratory depression	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

Trescot AM, Datta S, Lee M, Hansen H. Opioid Pharmacology. Pain Physician 2008: Opioid Special Issue: 11:S133-S153

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

Opioid Analgesics Comparative Pharmacology[a,b][34]

Drug	Analgesic	Antitussive	Constipation	Respiratory depression	Sedation	Emesis	Physical dependence
Phenanthrenes							
Codeine	+	+++	+	+	+	+	+
Hydrocodone	++	+++	nd	nd	nd	nd	++
Hydromorphone	++	++	+	++	+	+	++
Levorphanol	++	++	nd	++	++	+	++
Morphine	++	++	++	++	++	++	++
Oxycodone	++	+++	++	++	++	++	++
Oxymorphone	++	+	+++	+++	nd	+++	+++
Phenylpiperidines							
Fentanyl	++	nd	nd	+	nd	+	nd
Meperidine	++	nd	+	++	+	nd	++
Diphenylheptanes							
Methadone	++	++	+	+	+	+	+

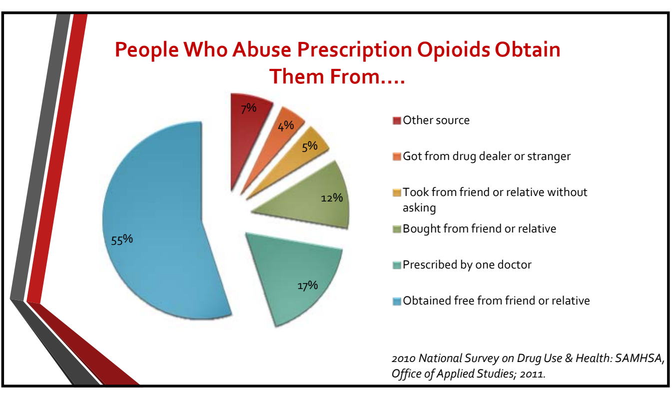
[a]+ = degree of activity from the least (+) to the greatest (+++); nd = no data available.

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....



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

Warning Signs of Abuse

- 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.

Warning Signs of Abuse

- 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

Prescription Opioid Abuse Risk Factors

- 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

Heroin Abuse Risk Factors

- 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

High Risk Situations

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

High Risk Situations

- 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

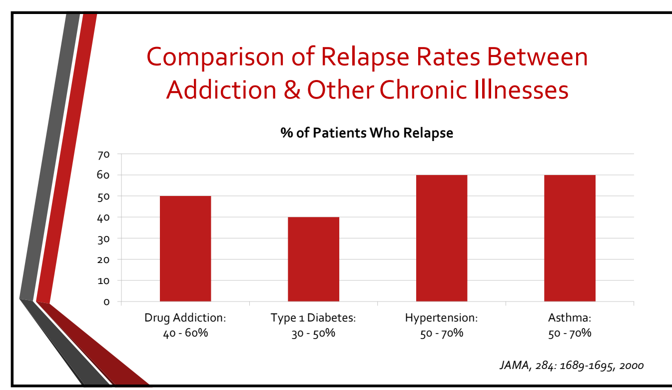
Who is at risk for overdose?

- 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



JAMA, 284: 1689-1695, 2000

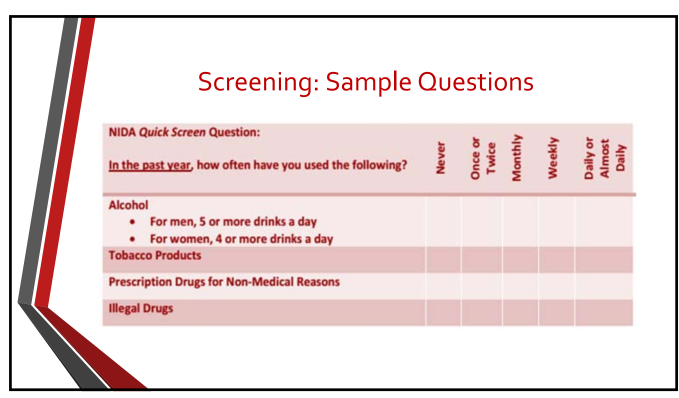
Recovery Treatment Options

- 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

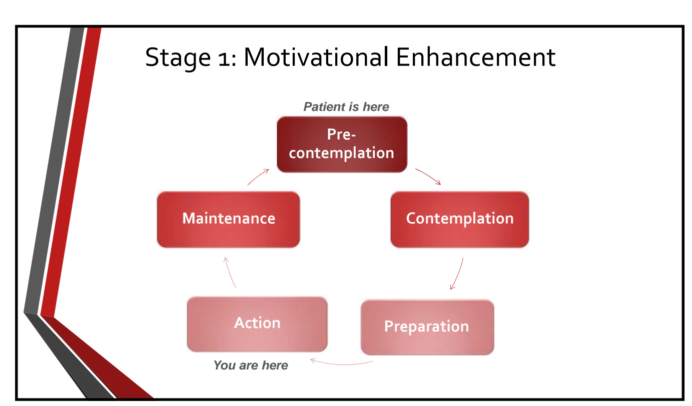


NIDA *Quick Screen* Question: In the past year, how often have you used the following?	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
Alcohol • For men, 5 or more drinks a day • For women, 4 or more drinks a day					
Tobacco Products					
Prescription Drugs for Non-Medical Reasons					
Illegal Drugs					

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



Motivational Enhancement

- John is a 36-year-old male who was recently admitted to the hospital for opioid intoxication & hepatoxicity. 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

Methadone Detoxification

- Equipotent doses:
  - Methadone- 1 mg
  - Morphine- 4 mg
  - Heroin- 2 mg
  - Meperidine- 20 mg
- E.g.- ~120 mg of heroin /day use = 60 mg/day methadone dose
- Decrease methadone dose by 20% daily then d/c
- Usually takes 10 days
- Mix with OJ to disguise dose & minimize diversion

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 ("damp" housing)
  - Consumer-choice ("wet" housing)

Reversal Agents for Opioid Overdose

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Assistant Professor, Pharmacy Practice
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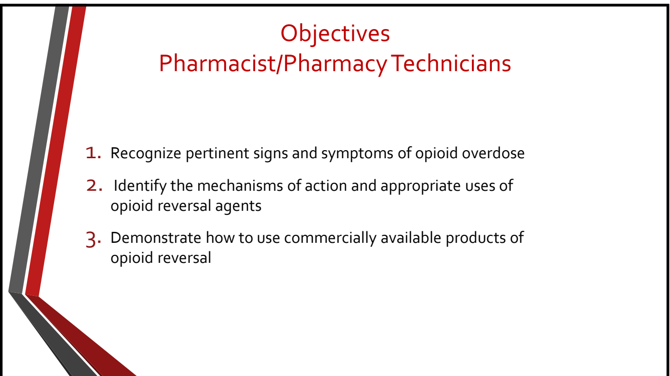
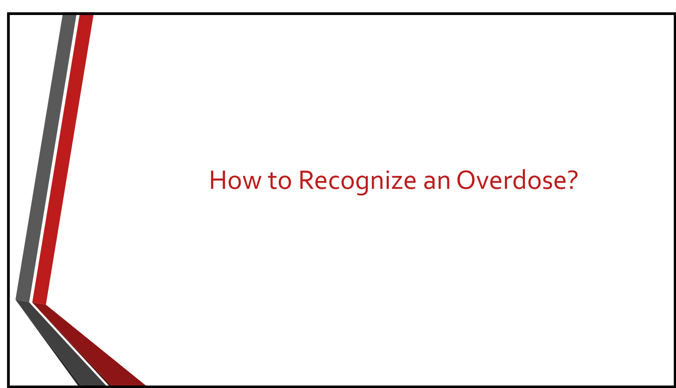




Most common presentation

- 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

Boyer EW. *N Eng J Med*. 2012; 367: 146-155.

Other signs and symptoms

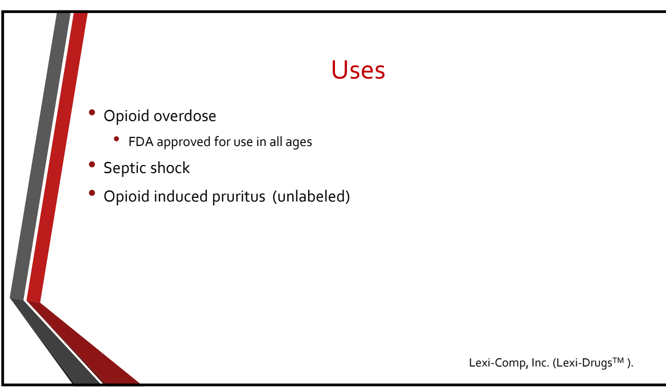
- Hypothermia
  - Decreased core body temperature
- Hypotension
  - Mild form due to histamine release
- Decreased bowel sounds
  - Constipation
- Abscesses at injection sites
- Myoglobinuria
  - Stupor associated rhabdomyolysis , renal failure, and compartment syndrome
- Liver injury
  - Increased LFTs

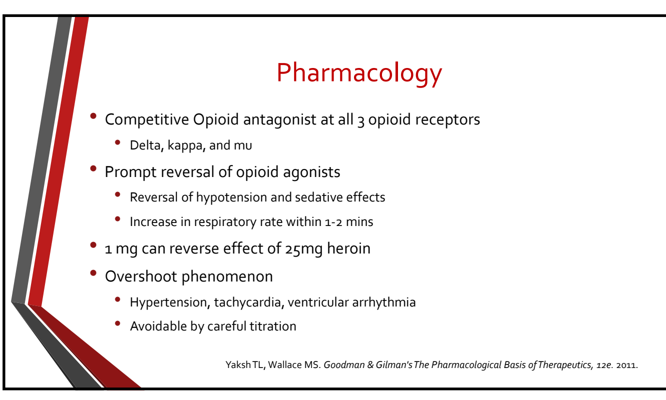
Boyer EW. *N Eng J Med*. 2012; 367: 146-155.

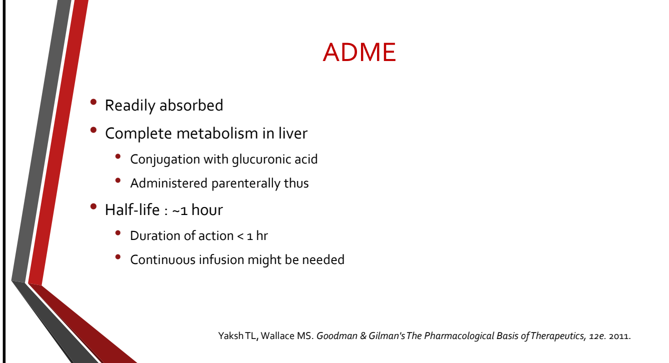
Pharmacology of Reversal Agents

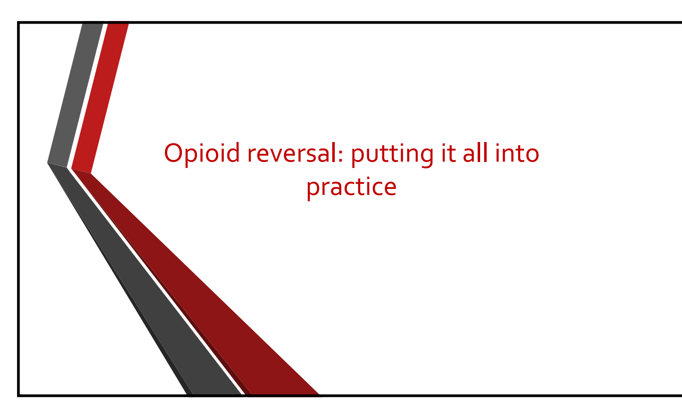
Agents for reversal

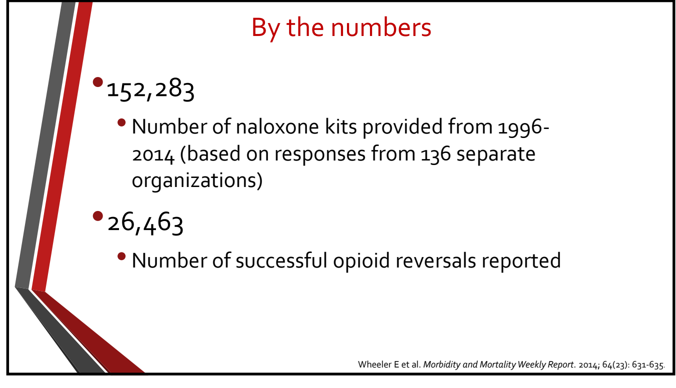
- Naloxone
  - Vial/syringe kit
  - Intranasal kit
  - Auto injector (Evzio®)

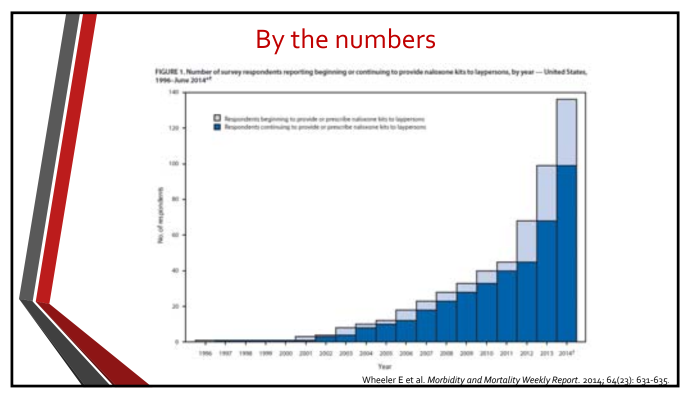

Uses
Opioid overdose
FDA approved for use in all ages
Septic shock
Opioid induced pruritus (unlabeled)
Lexi-Comp, Inc. (Lexi-Drugs™).

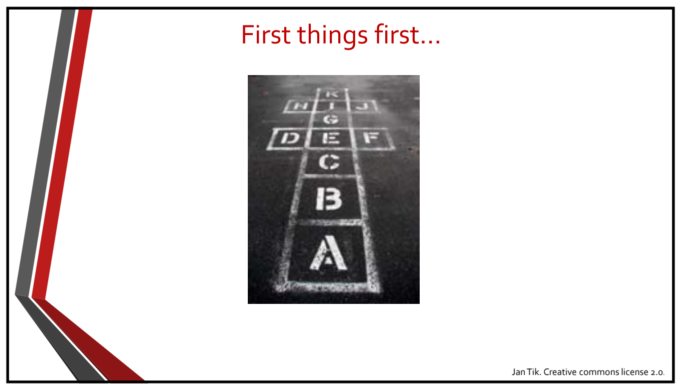

Pharmacology
Competitive Opioid antagonist at all 3 opioid receptors
Delta, kappa, and mu
Prompt reversal of opioid agonists
Reversal of hypotension and sedative effects
Increase in respiratory rate within 1-2 mins
1 mg can reverse effect of 25mg heroin
Overshoot phenomenon
Hypertension, tachycardia, ventricular arrhythmia
Avoidable by careful titration
Yaksh TL, Wallace MS. Goodman & Gilman's The Pharmacological Basis of Therapeutics, 12e. 2011.


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
Yaksh TL, Wallace MS. Goodman & Gilman's The Pharmacological Basis of Therapeutics, 12e. 2011.

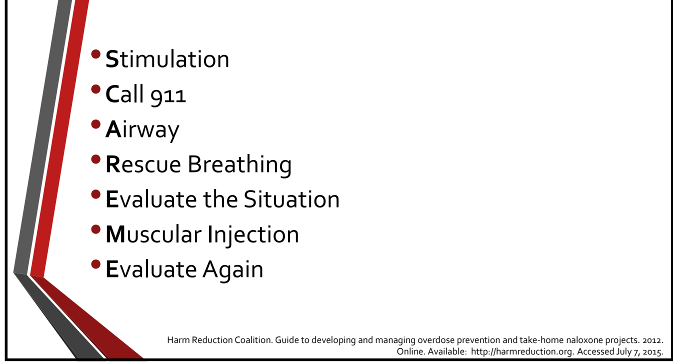

Opioid reversal: putting it all into practice

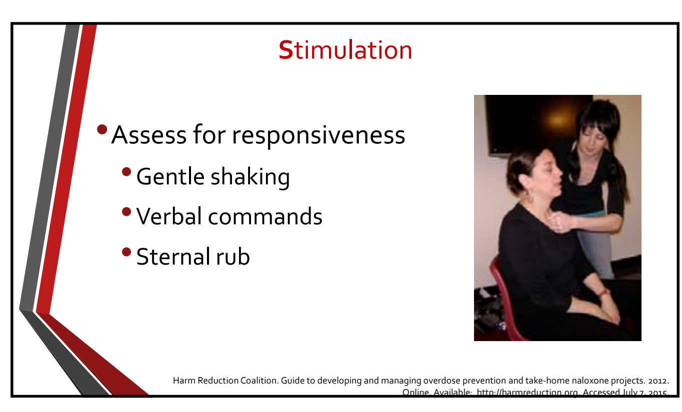

By the numbers
152,283
Number of naloxone kits provided from 1996-2014 (based on responses from 136 separate organizations)
26,463
Number of successful opioid reversals reported
Wheeler E et al. Morbidity and Mortality Weekly Report. 2014; 64(23): 631-635

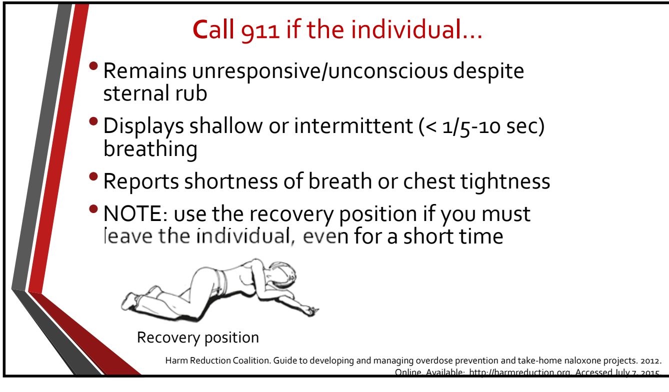

By the numbers
Year
Wheeler E et al. Morbidity and Mortality Weekly Report. 2014; 64(23): 631-635

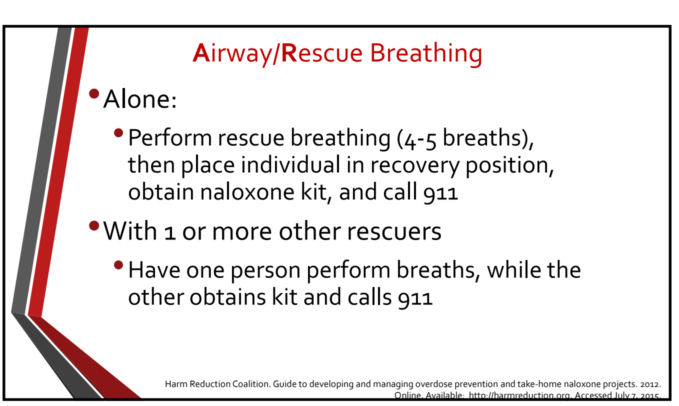

First things first…
K
H
I
J
G
D
E
F
C
B
A
Jan Tik. Creative commons license 2.0.

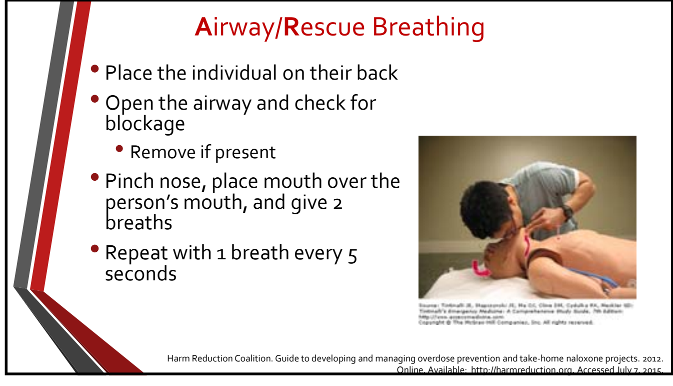
SCARE ME
The Scream. Edward Munch. 1893.

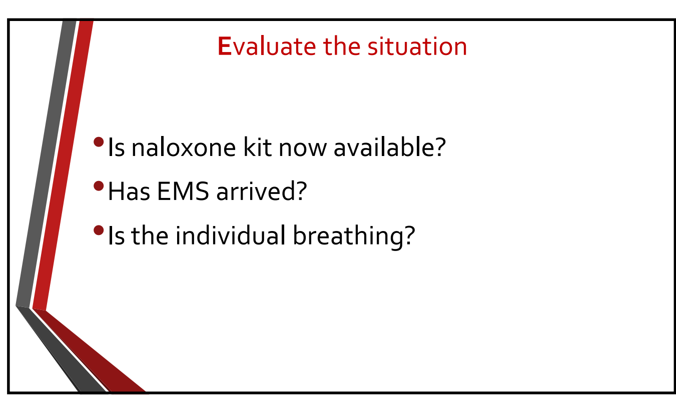

Stimulation
Call 911
Airway
Rescue Breathing
Evaluate the Situation
Muscular Injection
Evaluate Again
Harm Reduction Coalition. Guide to developing and managing overdose prevention and take-home naloxone projects. 2012. Online. Available: http://harmreduction.org. Accessed July 7, 2015.

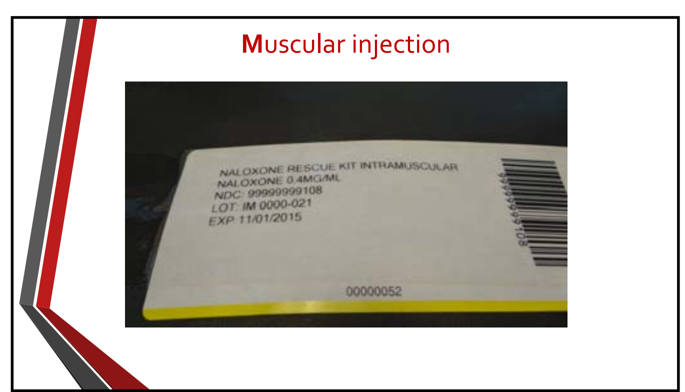

Stimulation
Assess for responsiveness
Gentle shaking
Verbal commands
Sternal rub
Harm Reduction Coalition. Guide to developing and managing overdose prevention and take-home naloxone projects. 2012.

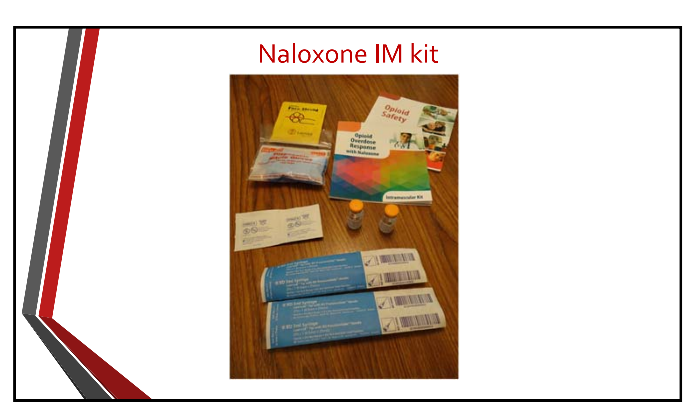

Call 911 if the individual…
Remains unresponsive/unconscious despite sternal rub
Displays shallow or intermittent (< 1/5-10 sec) breathing
Reports shortness of breath or chest tightness
NOTE: use the recovery position if you must leave the individual, even for a short time
Recovery position
Harm Reduction Coalition. Guide to developing and managing overdose prevention and take-home naloxone projects. 2012.


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
Harm Reduction Coalition. Guide to developing and managing overdose prevention and take-home naloxone projects. 2012.

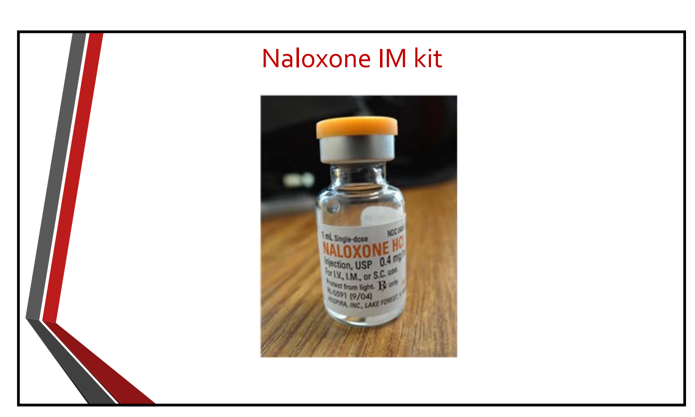

Airway/Rescue Breathing
Place the individual on their back
Open the airway and check for blockage
Remove if present
Pinch nose, place mouth over the person's mouth, and give 2 breaths
Repeat with 1 breath every 5 seconds
Harm Reduction Coalition. Guide to developing and managing overdose prevention and take-home naloxone projects. 2012. Online. Available: http://harmreduction.org. Accessed July 7, 2015.

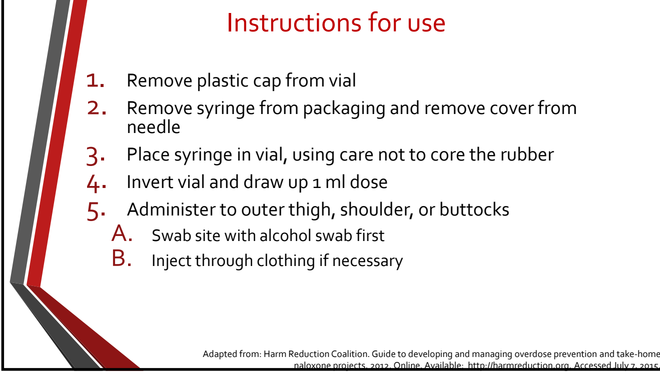

Evaluate the situation
Is naloxone kit now available?
Has EMS arrived?
Is the individual breathing?


Muscular injection
NALOXONE RESCUE KIT INTRAMUSCULAR
NALOXONE 0.4MG/ML
NDC: 99999999108
LOT: IM 0000-021
EXP 11/01/2015
00000052


Naloxone IM kit

Naloxone IM kit
BD 3ml Syringe


Naloxone IM kit
1 mL Single-dose
NALOXONE

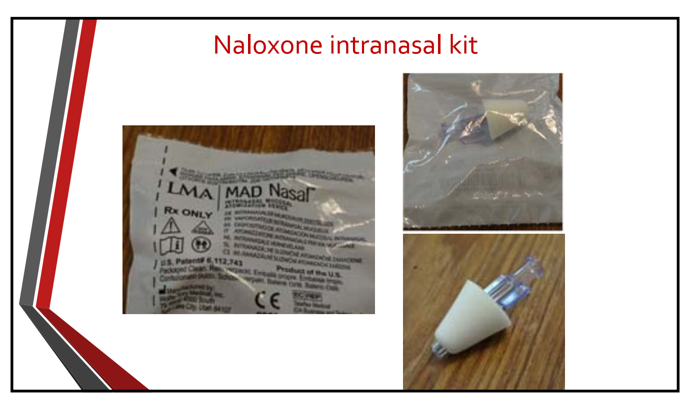

Instructions for use
1. Remove plastic cap from vial
2. Remove syringe from packaging and remove cover from needle
3. Place syringe in vial, using care not to core the rubber
4. Invert vial and draw up 1 ml dose
5. Administer to outer thigh, shoulder, or buttocks
A. Swab site with alcohol swab first
B. Inject through clothing if necessary
Adapted from: Harm Reduction Coalition. Guide to developing and managing overdose prevention and take-home naloxone projects. 2012. Online. Available: http://harmreduction.org. Accessed July 7, 2015.

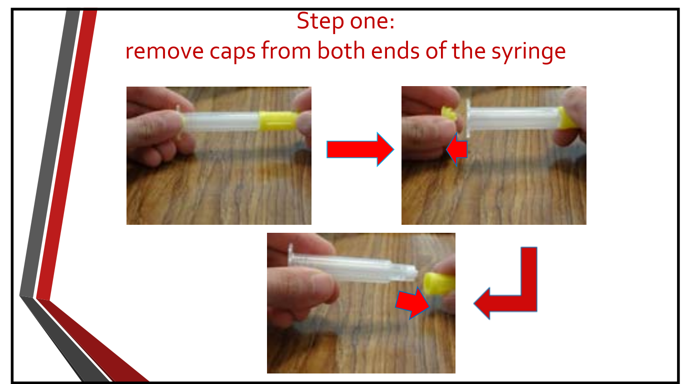
Naloxone intranasal kit

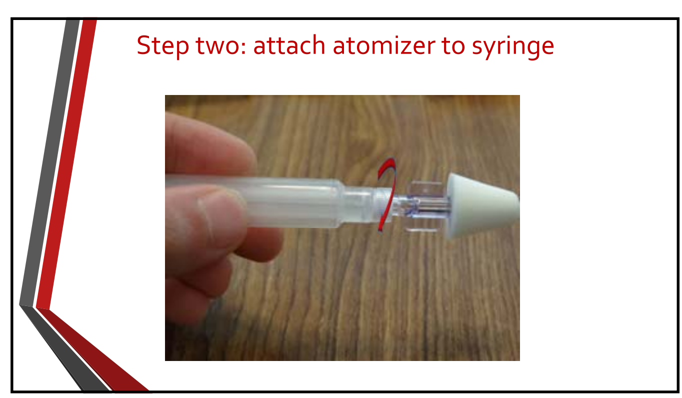
Naloxone intranasal kit
Opioid Safety
Opioid Overdose Response with Naloxone

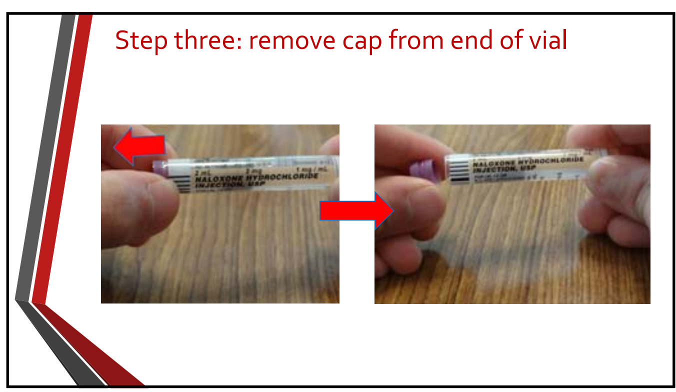
Naloxone intranasal kit
Rx Only
NDC 76329-3369-1
STOCK NO. 3369
NALOXONE HYDROCHLORIDE
INJ., USP
(1 mg/mL)
2 mg per 2 mL
LUER-JET™ LUER-LOCK PREFILLED SYRINGE

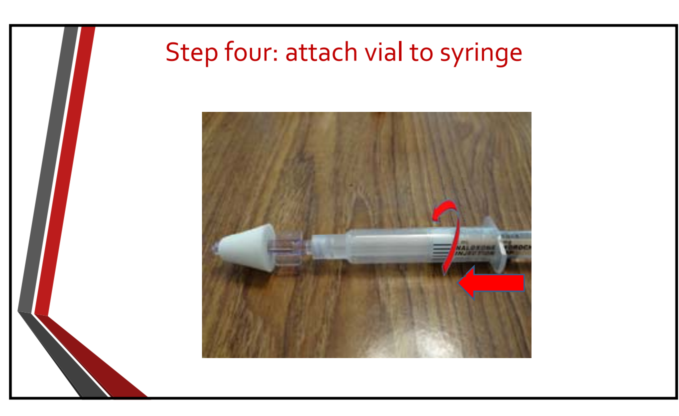
Naloxone intranasal kit
NALOXONE HYDROCHLORIDE
INJECTION, USP

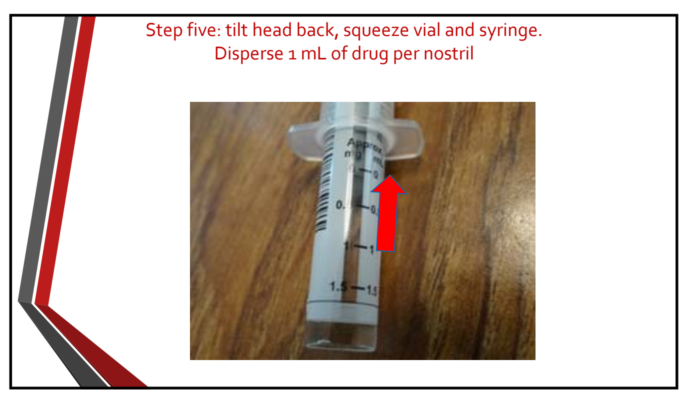

Naloxone intranasal kit
LMA
MAD Nasal™
Rx ONLY


Step one:
remove caps from both ends of the syringe

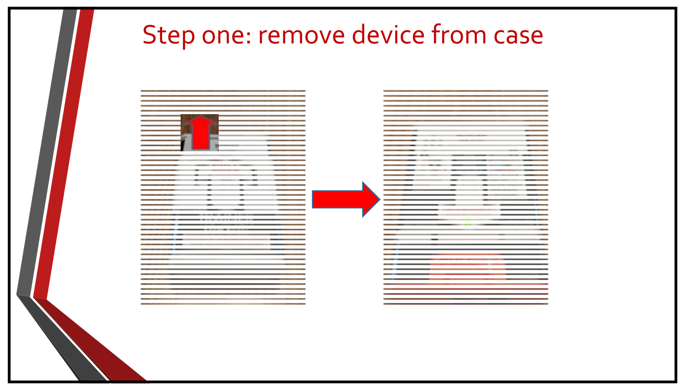

Step two: attach atomizer to syringe

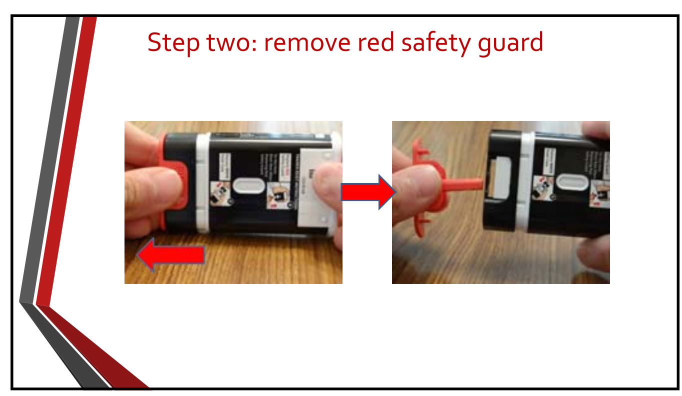

Step three: remove cap from end of vial
NALOXONE HYDROCHLORIDE
INJECTION, USP

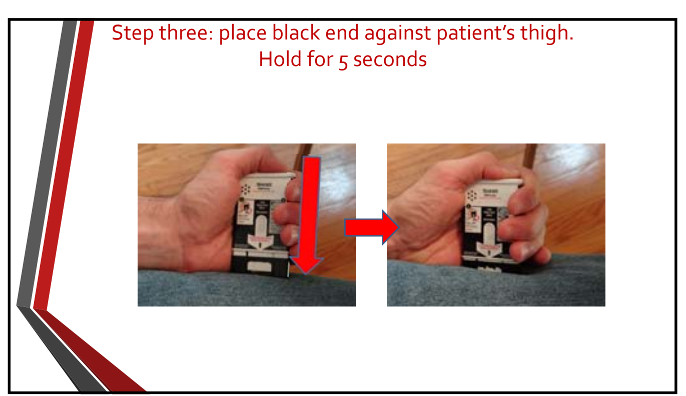

Step four: attach vial to syringe

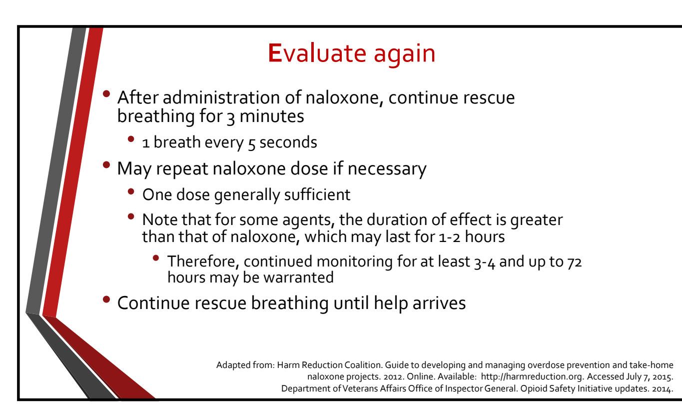

Step five: tilt head back, squeeze vial and syringe.
Disperse 1 mL of drug per nostril

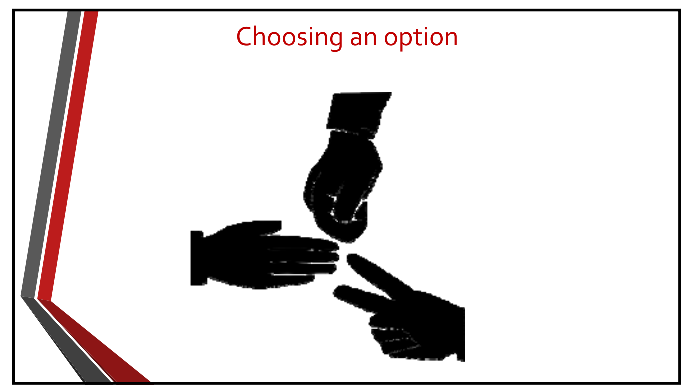
Naloxone autoinjector (Evzio)
PULL
Evzio
naloxone HCl injection, USP
Contains active drug
Training device

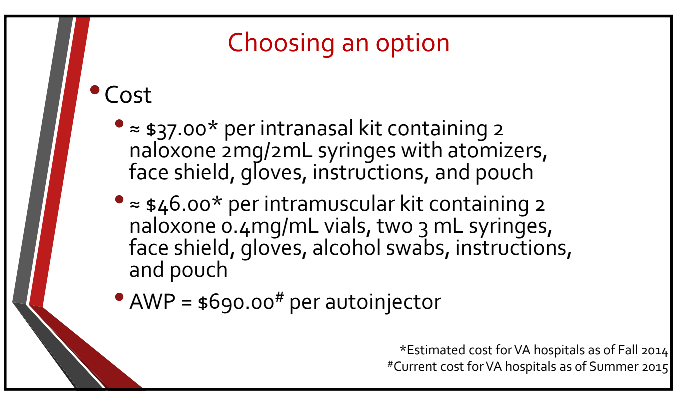

Step one: remove device from case

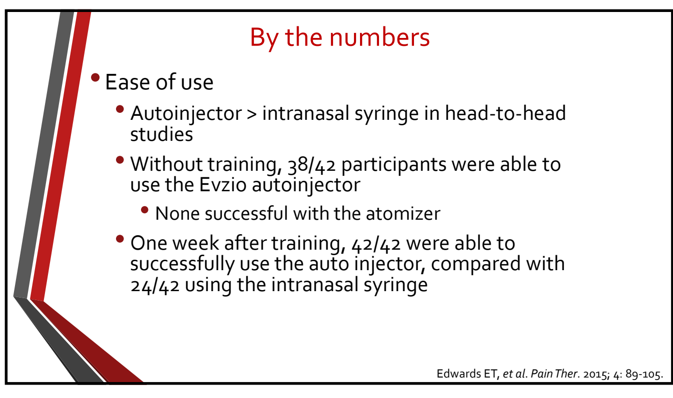

Step two: remove red safety guard

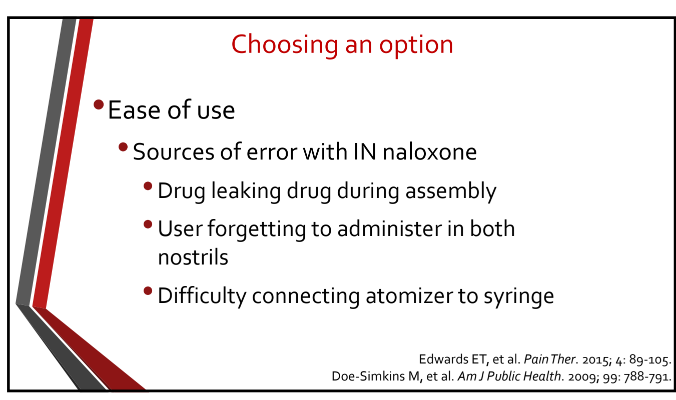

Step three: place black end against patient's thigh.
Hold for 5 seconds

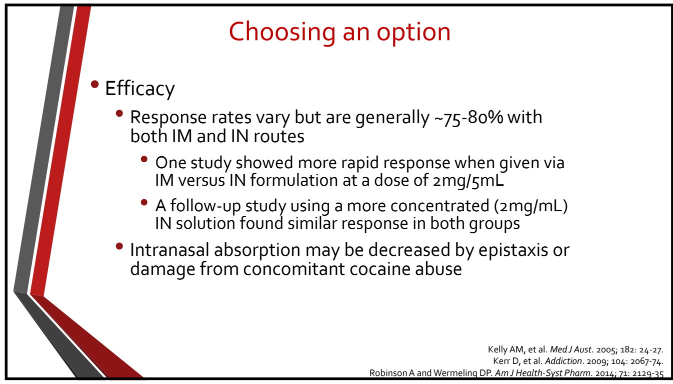

Evaluate again
After administration of naloxone, continue rescue breathing for 3 minutes
1 breath every 5 seconds
May repeat naloxone dose if necessary
One dose generally sufficient
Note that for some agents, the duration of effect is greater than that of naloxone, which may last for 1-2 hours
Therefore, continued monitoring for at least 3-4 and up to 72 hours may be warranted
Continue rescue breathing until help arrives
Adapted from: Harm Reduction Coalition. Guide to developing and managing overdose prevention and take-home naloxone projects. 2012. Online. Available: http://harmreduction.org. Accessed July 7, 2015.
Department of Veterans Affairs Office of Inspector General. Opioid Safety Initiative updates. 2014.

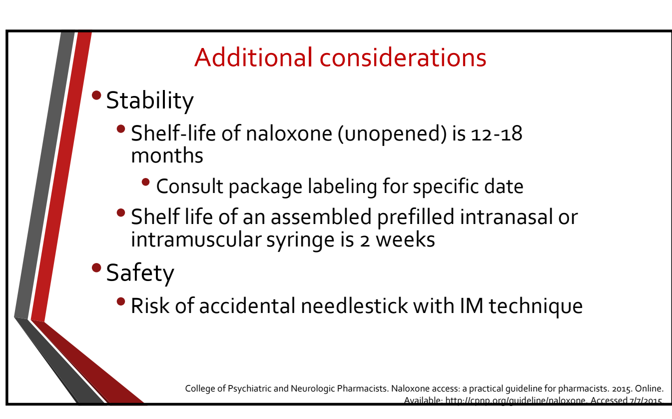

Choosing an option

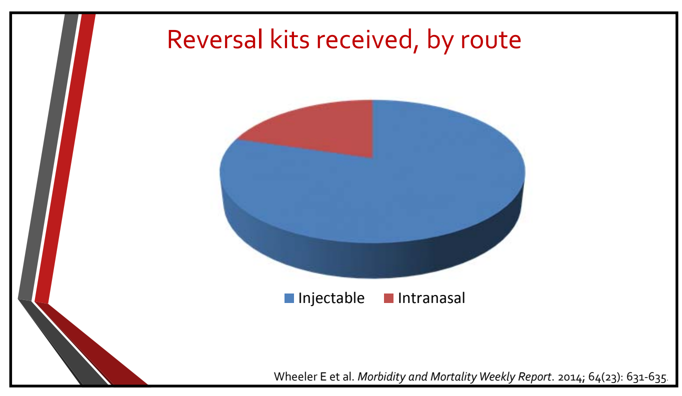

Choosing an option
Cost
≈ $37.00* per intranasal kit containing 2 naloxone 2mg/2mL syringes with atomizers, face shield, gloves, instructions, and pouch
≈ $46.00* per intramuscular kit containing 2 naloxone 0.4mg/mL vials, two 3 mL syringes, face shield, gloves, alcohol swabs, instructions, and pouch
AWP = $690.00# per autoinjector
*Estimated cost for VA hospitals as of Fall 2014
#Current cost for VA hospitals as of Summer 2015

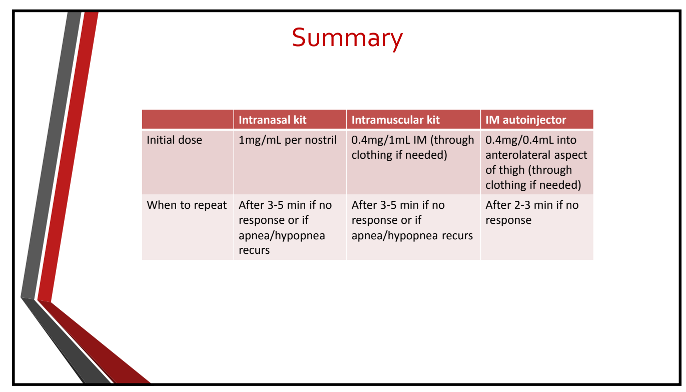




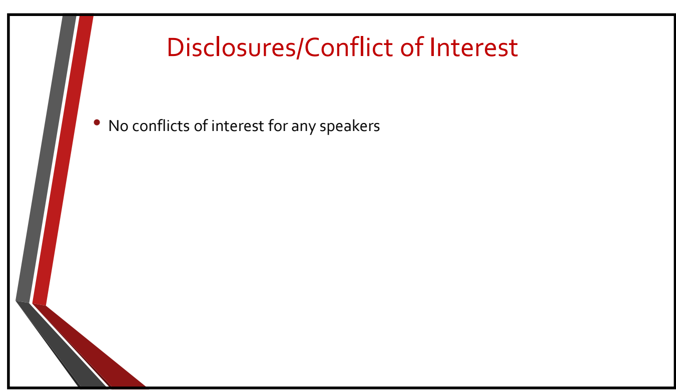








	Intranasal kit	Intramuscular kit	IM autoinjector
Initial dose	1mg/mL per nostril	0.4mg/1mL IM (through clothing if needed)	0.4mg/0.4mL into anterolateral aspect of thigh (through clothing if needed)
When to repeat	After 3-5 min if no response or if apnea/hypopnea recurs	After 3-5 min if no response or if apnea/hypopnea recurs	After 2-3 min if no response

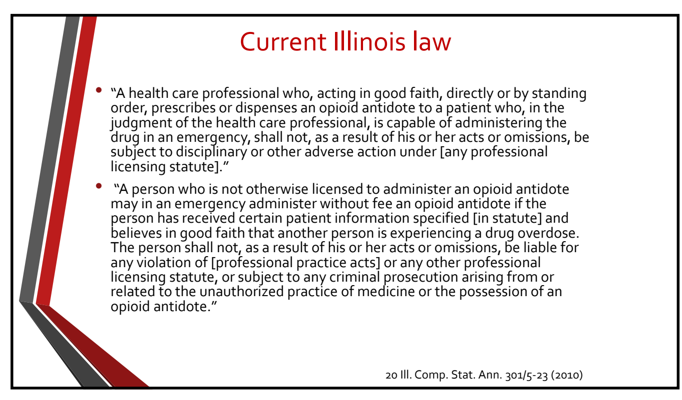


Objectives
Pharmacist/Pharmacy Technicians

- 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?

118



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, a physician assistant…, 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

20 Ill. Comp. Stat. Ann. 301/5-23 (2010)

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.

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"

http://www.ilga.gov/legislation/BillStatus.asp?DocNum=1&GAID=13&DocTypeID=HB&SessionID=88&GA=99

HB 0001

- For the purposes of this subsection…"Health care professional" means a physician licensed to practice medicine in all its branches, a physician assistant…, 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 99-0480
    - Rules portion still being written

http://www.ilga.gov/legislation/BillStatus.asp?DocNum=1&GAID=13&DocTypeID=HB&SessionID=88&GA=99

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."

http://www.ilga.gov/legislation/BillStatus.asp?DocNum=1&GAID=13&DocTypeID=HB&SessionID=88&GA=99

HB 0001

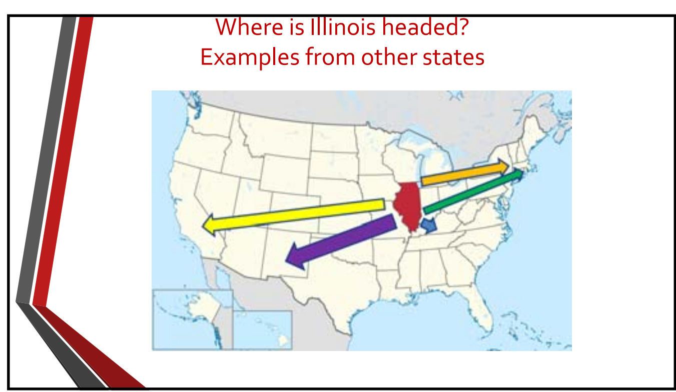
- "Before dispensing an opioid antagonist pursuant to this Section, a pharmacist shall complete a training program approved by the Department of Human Services pursuant to Section 5-23 of the Alcoholism and Other Drug Abuse and Dependency Act. The training program shall include, but not be limited to,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

http://www.ilga.gov/legislation/BillStatus.asp?DocNum=1&GAID=13&DocTypeID=HB&SessionID=88&GA=99

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

Where is Illinois headed? Examples from other states



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

Letter by David Sencabaugh, executive director of the Massachusetts Board of Registration in Pharmacy, dated 4/18/2014. Online. Available at: http://www.mass.gov/eohhs/docs/dph/quality/boards/pharmacy/letter-about-ex-naloxone-standing-order.pdf. Accessed 7/28/15.

States with additional pharmacist privileges: standing orders

- 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

Emard J. News release. California Board of Pharmacy. April 13, 2015.

States with additional pharmacist privileges: standing orders

- 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

Kentucky Revised Statue 217.186
Ross M. Pharmacy Times. May, 22, 2015. Online. Available at: http://www.pharmacytimes.com/news/pharmacists-in-kentucky-can-now-dispense-naloxone-without-prescriptions. Accessed 7/28/2015.

States with additional pharmacist privileges: Collaborative Practice Agreement (CPA)

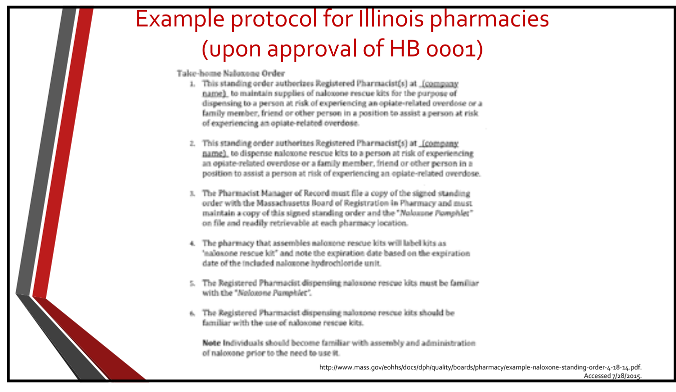
- Rhode Island
  - CPA established in 2012, allowing one physician to authorize pharmacists at multiple pharmacies within a single chain to dispense naloxone without a prescription
    - Requires each pharmacist to complete a (free) training course
- As of March 2014, the standing order allows for police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

Traynor K. AJHP News. 2014. Online. Available at: http://www.ashp.org/menu/News/PharmacyNews/NewsArticle.aspx?id=4086. Accessed 7/28/2015.

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

N.M. Admin. Code 16.19.26



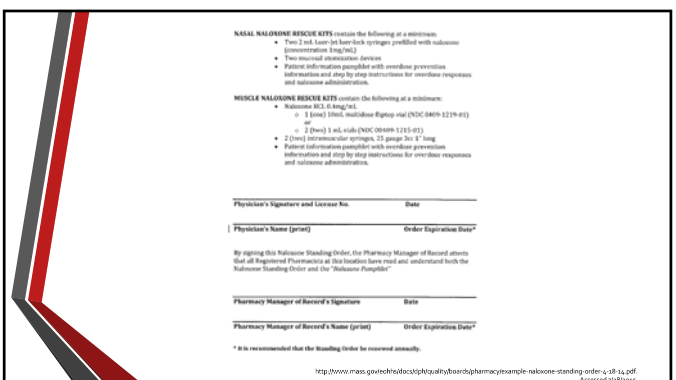
Example protocol for Illinois pharmacies (upon approval of HB 0001)

Take-home Naloxone Order

1. This standing order authorizes Registered Pharmacist(s) at (company name) to maintain supplies of naloxone rescue kits for the purpose of dispensing to a person at risk of experiencing an opiate-related overdose or a family member, friend or other person in a position to assist a person at risk of experiencing an opiate-related overdose.
2. This standing order authorizes Registered Pharmacist(s) at (company name) to dispense naloxone rescue kits to a person at risk of experiencing an opiate-related overdose or a family member, friend or other person in a position to assist a person at risk of experiencing an opiate-related overdose.
3. The Pharmacist Manager of Record must file a copy of the signed standing order with the Massachusetts Board of Registration in Pharmacy and must maintain a copy of this signed standing order and the "*Naloxone Pamphlet*" on file and readily retrievable at each pharmacy location.
4. The pharmacy that assembles naloxone rescue kits will label kits as 'naloxone rescue kit" and note the expiration date based on the expiration date of the included naloxone hydrochloride unit.
5. The Registered Pharmacist dispensing naloxone rescue kits must be familiar with the "*Naloxone Pamphlet*".
6. The Registered Pharmacist dispensing naloxone rescue kits should be familiar with the use of naloxone rescue kits.

Note Individuals should become familiar with assembly and administration of naloxone prior to the need to use it.

http://www.mass.gov/eohhs/docs/dph/quality/boards/pharmacy/example-naloxone-standing-order-4-18-14.pdf. Accessed 7/28/2015.



NASAL NALOXONE RESCUE KITS contain the following at a minimum:

- Two 2 mL Luer-Jet luer-lock syringes prefilled with naloxone (concentration 1mg/mL)
- Two mucosal atomization devices
- Patient information pamphlet with overdose prevention information and step by step instructions for overdose responses and naloxone administration.

MUSCLE NALOXONE RESCUE KITS contain the following at a minimum:

- Naloxone HCL 0.4mg/mL
  - 1 (one) 10mL multidose fliptop vial (NDC 0409-1219-01) *or*
  - 2 (two) 1 mL vials (NDC 00409-1215-01)
- 2 (two) intramuscular syringes, 25 gauge 3cc 1" long
- Patient information pamphlet with overdose prevention information and step by step instructions for overdose responses and naloxone administration.

Physician's Signature and License No. **Date**

Physician's Name (print) **Order Expiration Date***

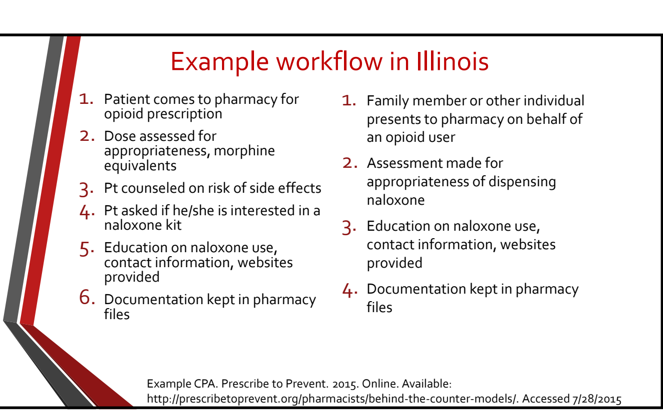
By signing this Naloxone Standing Order, the Pharmacy Manager of Record attests that all Registered Pharmacists at this location have read and understand both the Naloxone Standing Order and the "*Naloxone Pamphlet*"

Pharmacy Manager of Record's Signature **Date**

Pharmacy Manager of Record's Name (print) **Order Expiration Date***

*** It is recommended that the Standing Order be renewed annually.**

http://www.mass.gov/eohhs/docs/dph/quality/boards/pharmacy/example-naloxone-standing-order-4-18-14.pdf. Accessed 7/28/2015.

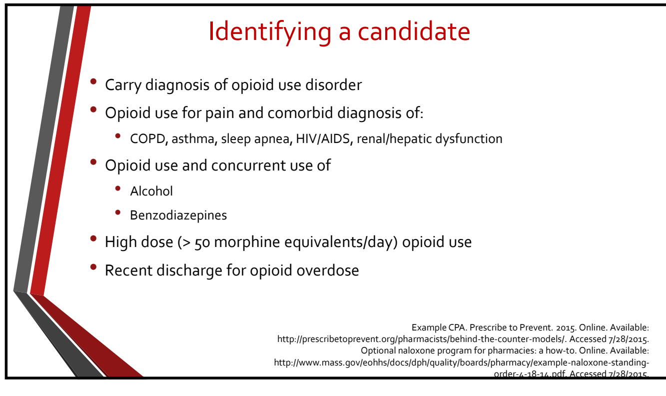


Example workflow in Illinois

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

1. Family member or other individual presents to pharmacy on behalf of an opioid user
2. Assessment made for appropriateness of dispensing naloxone
3. Education on naloxone use, contact information, websites provided
4. Documentation kept in pharmacy files

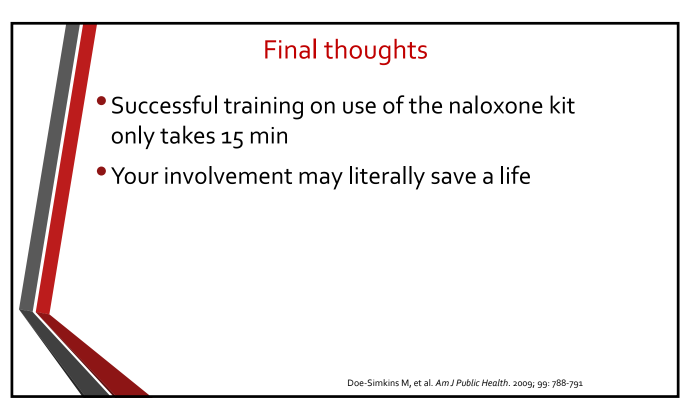
Example CPA. Prescribe to Prevent. 2015. Online. Available: http://prescribetoprevent.org/pharmacists/behind-the-counter-models/. Accessed 7/28/2015



Identifying a candidate

- Carry diagnosis of opioid use disorder
- Opioid use for pain and comorbid diagnosis of:
  - COPD, asthma, sleep apnea, HIV/AIDS, renal/hepatic dysfunction
- Opioid use and concurrent use of
  - Alcohol
  - Benzodiazepines
- High dose (> 50 morphine equivalents/day) opioid use
- Recent discharge for opioid overdose

Example CPA. Prescribe to Prevent. 2015. Online. Available: http://prescribetoprevent.org/pharmacists/behind-the-counter-models/. Accessed 7/28/2015. Optional naloxone program for pharmacies: a how-to. Online. Available: http://www.mass.gov/eohhs/docs/dph/quality/boards/pharmacy/example-naloxone-standing-order-4-18-14.pdf. Accessed 7/28/2015.



Final thoughts

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

Doe-Simkins M, et al. *Am J Public Health.* 2009; 99: 788-791

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.

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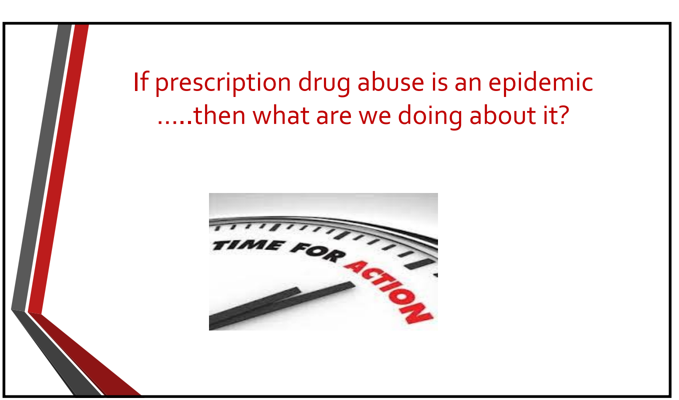


Prescription Drug Abuse: Prevention Strategies

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
- Offer recovery resources in your community
  - SAMHSA behavioral & substance abuse treatment locator: http://findtreatment.samhsa.gov
  - 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

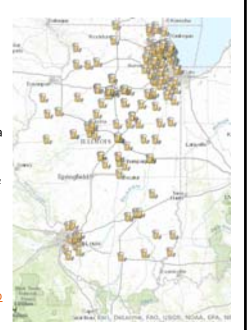
- State-run electronic databases used to track prescribing & dispensing of controlled prescription drugs
  - 49 states have operational PDMPs; Missouri last state approved
- Provide critical information regarding controlled substance prescription history, number of prescribers, high risk individuals

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'

Prescription Drug Monitoring Programs

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 programs
- 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
- http://www.deadiversion.usdoj.gov/drug_disposal/takeback/index.html

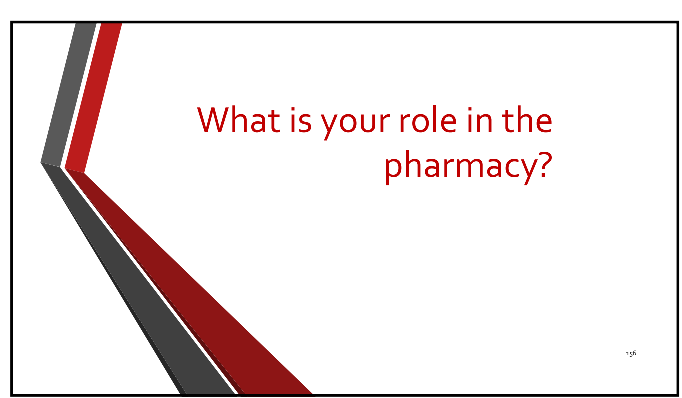
Enforcement

- 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

It's Simple. Naloxone Saves Lives.

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

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



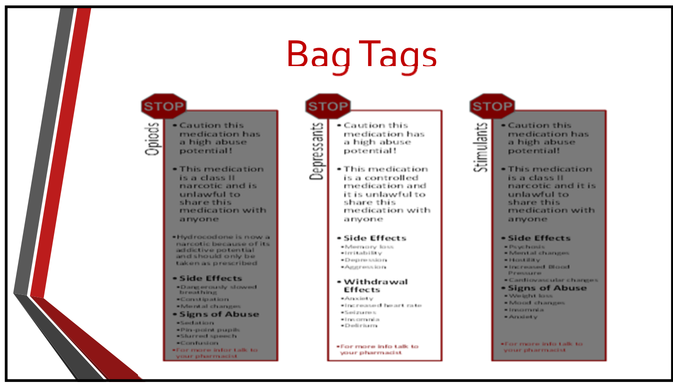
Pharmacist Role

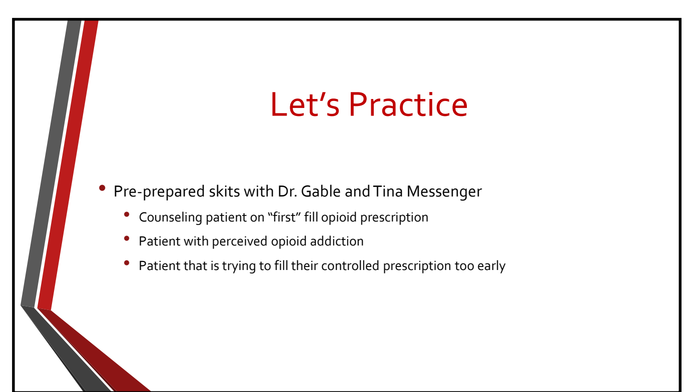
- Counsel, Counsel, Counsel!!!
  - Side effects, abuse potential, safe storage of medication
- Utilize IPPE and APPE students to perform community outreach efforts
- Consistently utilize prescription drug monitoring program
  - To identify individuals that may have a substance abuse problem so that prescriber 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

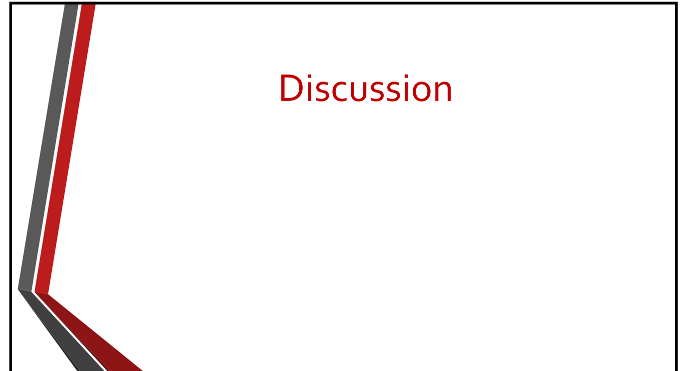
REFERENCES

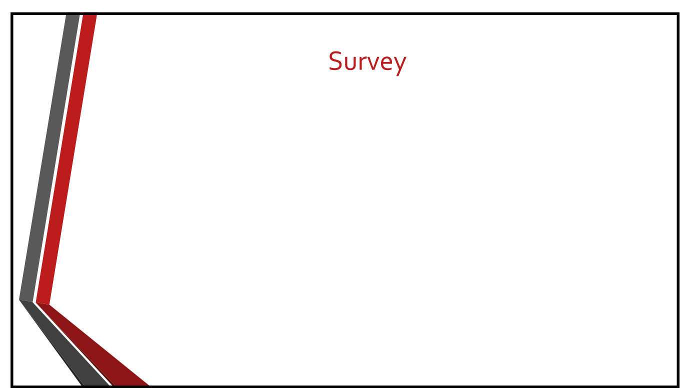
Student Role

- 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, booth at pharmacy, retirement communities, churches, and health fairs
- Get creative during Red Ribbon Week!!!
- Counsel, Counsel, Counsel!!!
  - Side effects, abuse potential, safe storage









Post-Symposium Assessment #1

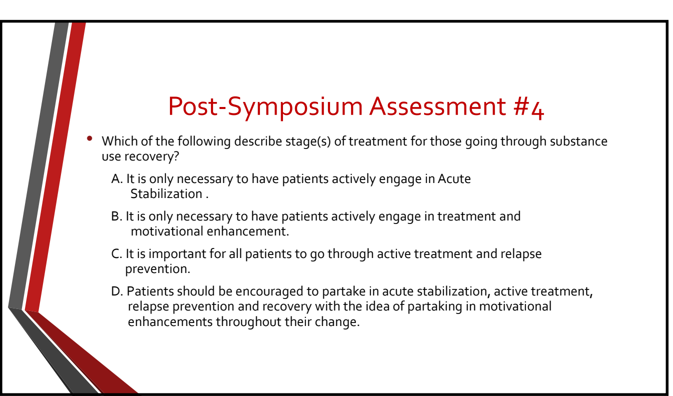
- In 2012 the Results from the National Survey on Drug Use and Health indicated that more Americans are killed by drug overdoses than motor vehicle crashes. What is the estimated percentages of death related to pharmaceuticals?
  - A. less than 5%
  - B. 15%
  - C. 25 %
  - D. over 50%

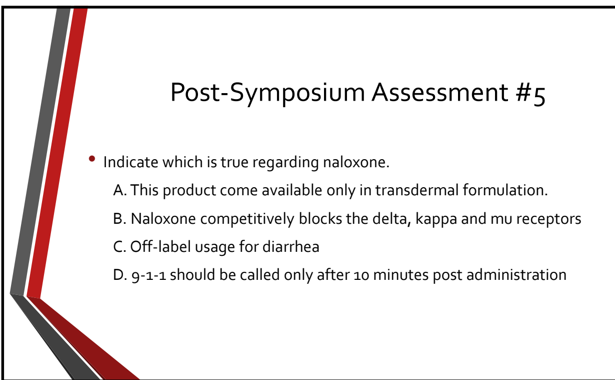
Post-Symposium Assessment #2

- 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 #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
ACPE
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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