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Recognition, Response and Administration of Naloxone (Narcan)  
**Opioid Overdose 101**

# Collaborators

- Oklahoma State Department of Health
  - Emergency Systems
  - Injury Prevention Service
  - Office of Scientific and Research Integrity
- Oklahoma Department of Mental Health & Substance Abuse Services

# Learning Objectives

- Obtain baseline understanding of the prescription drug overdose problem
- Understand how opioids work
- Identify an opioid overdose
- Learn how to respond to an opioid overdose
- Learn how to administer Narcan (naloxone), an opioid antidote
- Become familiar with OK statute §63-1-2506

TOPIC

01

# Importance Of Overdose Prevention

Recognition, Response and Administration of Naloxone (Narcan)  
**Opioid Overdose 101**



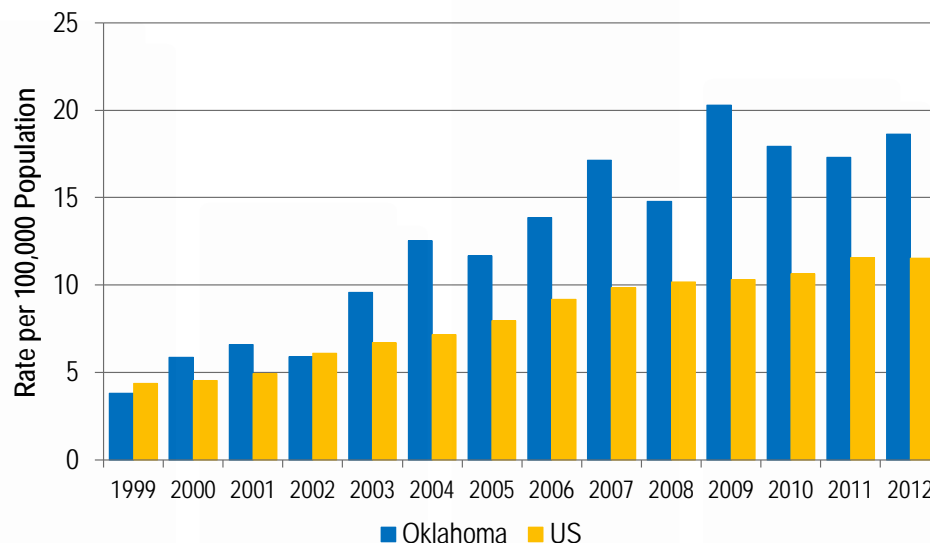
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# Scope of the Problem

## Unintentional Poisoning Death Rates, Oklahoma and the United States, 1999-2012



Source: WISQARS, Centers for Disease Control and Prevention



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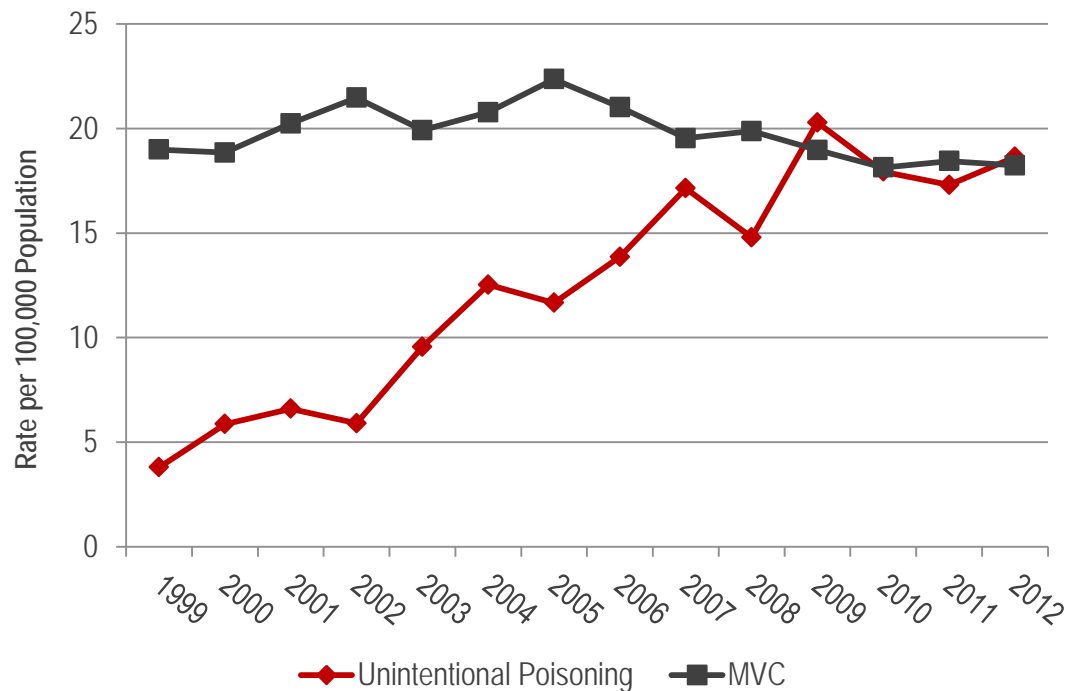
Importance  
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Prevention

## Scope of the Problem



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Age-adjusted Unintentional Poisoning and Motor Vehicle Crash Death Rates, Oklahoma, 1999-2012



# TOPIC 01

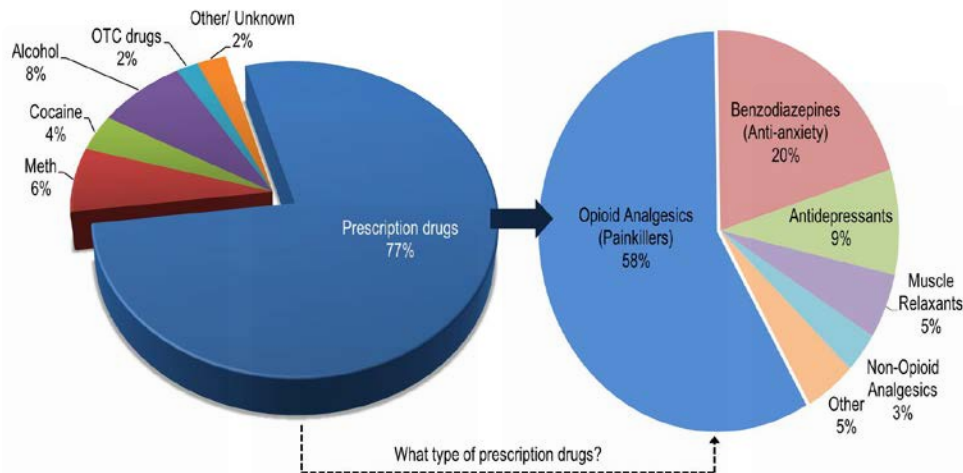
## Importance of Overdose Prevention



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# Scope of the Problem

## Substances Involved in Unintentional Poisoning Deaths, Oklahoma, 2007-2012



Source: OSDH, Injury Prevention Service, Unintentional Poisonings Database (Abstracted from Medical Examiner reports)

# Scope of the Problem

## Unintentional Poisoning Deaths Involving Medication, Oklahoma, 2007-2012

- Most common medications (number of deaths):
  - Oxycodone (791)
  - Hydrocodone (787)
  - Alprazolam (733)
  - Methadone (628)
  - Morphine (463)

Medication Type	Number	Rate
Prescription medication	3075	13.7
Narcotic analgesic	2677	12.0
Anti-anxiety	1007	4.5
Muscle relaxant	305	1.4
Antidepressant	252	1.1
Tri-cyclic antidepressant	186	0.8
Non-narcotic analgesic	186	0.8
Antipsychotic	47	0.2
Respiratory	52	0.2
Hypnotic/sedative	39	0.2
Antiemetic	31	0.1
CNS stimulant	25	0.1
Other**	60	0.3
Over the counter	143	0.6

Source: OSDH, Injury Prevention Service, Unintentional Poisonings Database (Abstracted from Medical Examiner reports)



# TOPIC 01

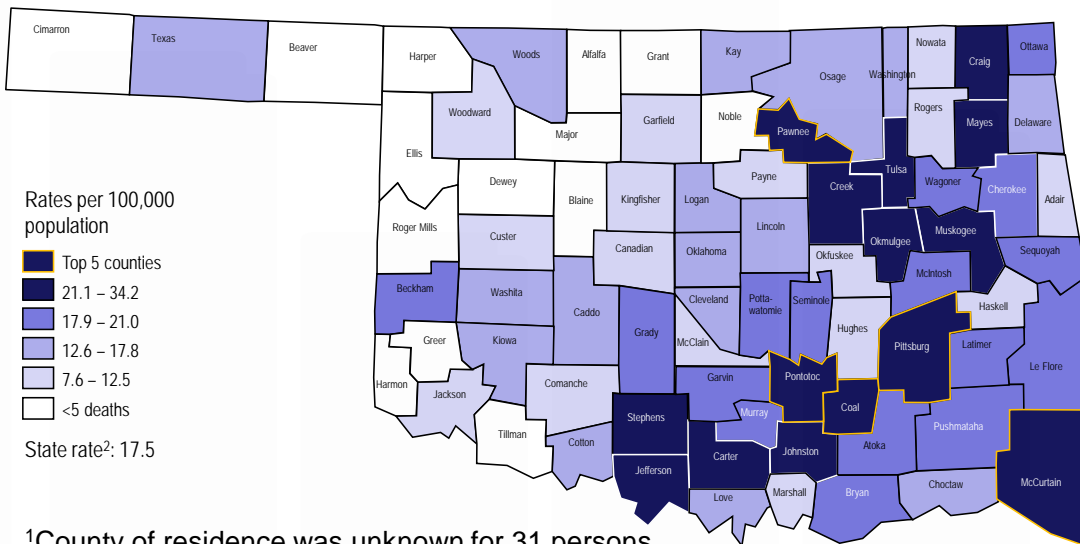
## Importance of Overdose Prevention



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# Scope of the Problem

## Unintentional Poisoning Death Rates by County of Residence<sup>1</sup>, Oklahoma, 2007-2012



<sup>1</sup>County of residence was unknown for 31 persons.

Source: OSDH, Injury Prevention Service,  
Unintentional Poisonings Database (Abstracted from  
Medical Examiner reports)



# TOPIC 01

## Importance of Overdose Prevention



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# The Solution

- A multi-faceted approach to overdose prevention is required.
- A comprehensive array of efforts are underway in Oklahoma, including:



**PREVENTION & EDUCATION**



**MONITORING & DIVERSION CONTROL**



**INTERVENTION & TREATMENT**

# The Solution

Effective November 2013, Oklahoma Statute  
§63-1-2506.1

Administration of opiate antagonists allows:

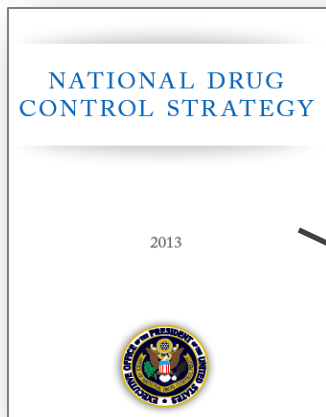
First responders shall have the authority to administer, without prescription, opiate antagonists when encountering an individual exhibiting signs of an opiate overdose.



# The Solution

- Most users attempt to achieve abstinence from drugs, but on average this process takes 9 years and 4 episodes of care.
- Naloxone is a drug used to reverse the effects of opioids.
- Naloxone is safe and effective.
- Naloxone has no effect on non-opioid overdoses.

# The Solution



## Widespread support for naloxone programs:

- The White House, Office of National Drug Control
- Centers for Disease Control and Prevention
- Federal Drug Administration
- Substance Abuse and Mental Health Services Administration

### ***Recommendation D:***

***Equip Health Care Providers and First Responders  
to Recognize and Manage Overdoses***



# The Solution

In the United States<sup>6</sup>:

- Over 180 community-based naloxone programs
- Over 50,000 people trained
- Over 10,000 overdose reversals (lives saved)

TOPIC

02

# Opioid Basics

Recognition, Response and Administration of Naloxone (Narcan)  
**Opioid Overdose 101**



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# The Solution

## Number of Individuals Who Received Naloxone During More Than One (1) Event (01/01/2011-06/03/2014\*)

No. of Events	No. of Individuals with Multiple Events	No. Who Died From Opioid Toxicity
10 Times	3	0
7 Times	2	0
6 Times	2	0
5 Times	14	0
4 Times	33	8
3 Times	138	9
2 Times	777	54
	<b>969</b>	<b>71</b>

*Note:*

- 1) Only those events that had valid identifiers (a valid date of birth and a first and last name) were considered.
- 2) There were 12,067 (92.36%) events that had valid identifiers.



TOPIC  
01

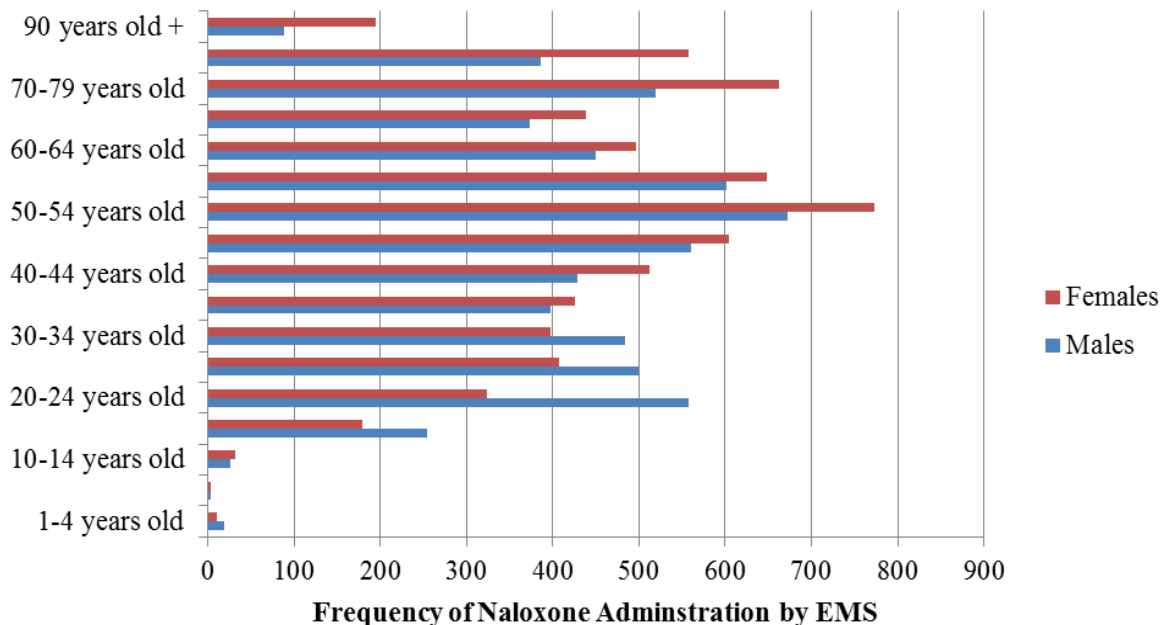
Importance  
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# The Solution

**Figure 4. Naloxone Administration by EMS by Gender & Age Group (01/01/2011-06/03/2014\*)**



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01

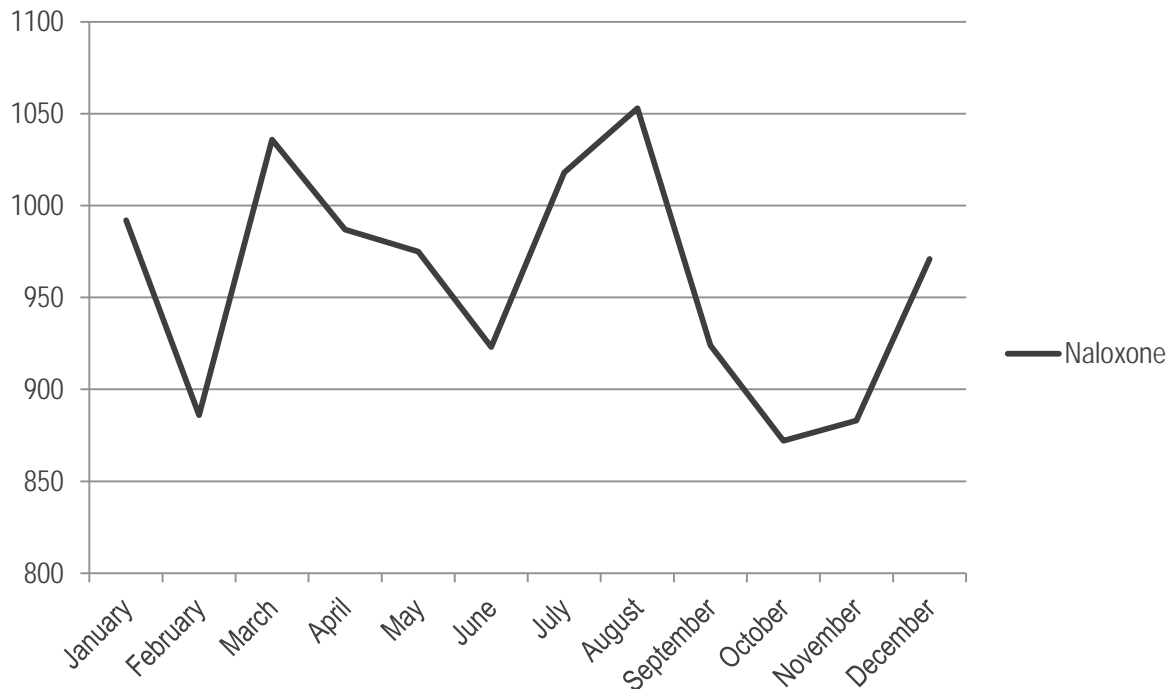
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# The Solution

Narcan Administration by Month  
(01/01/2011-12/31/2013)



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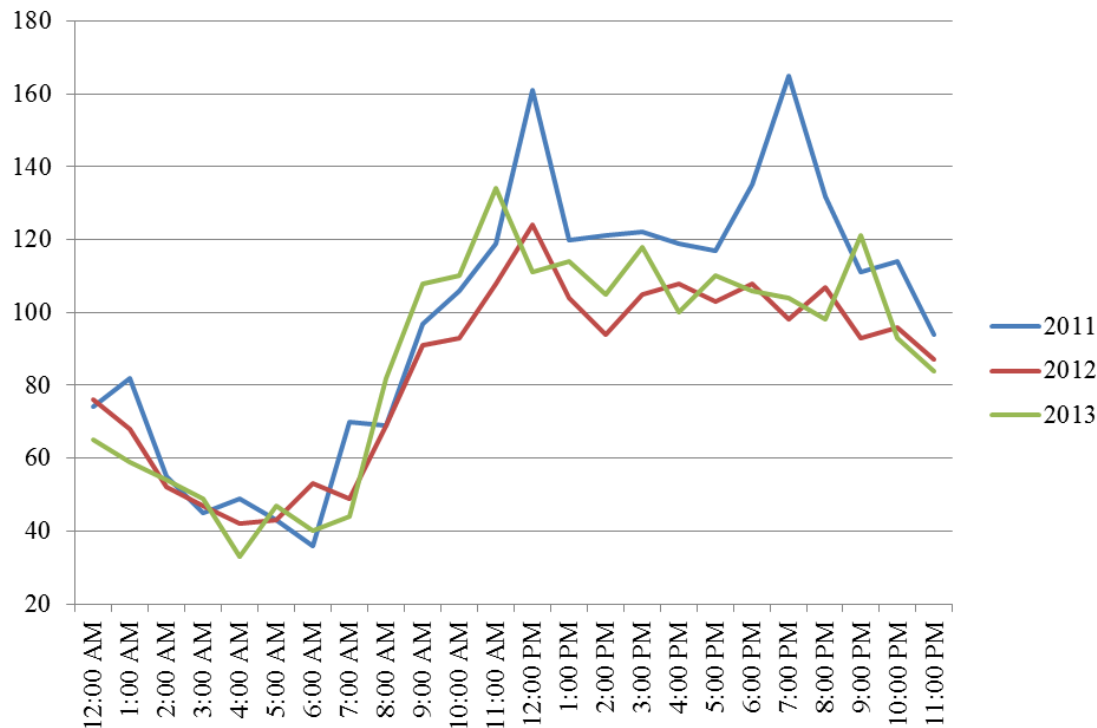
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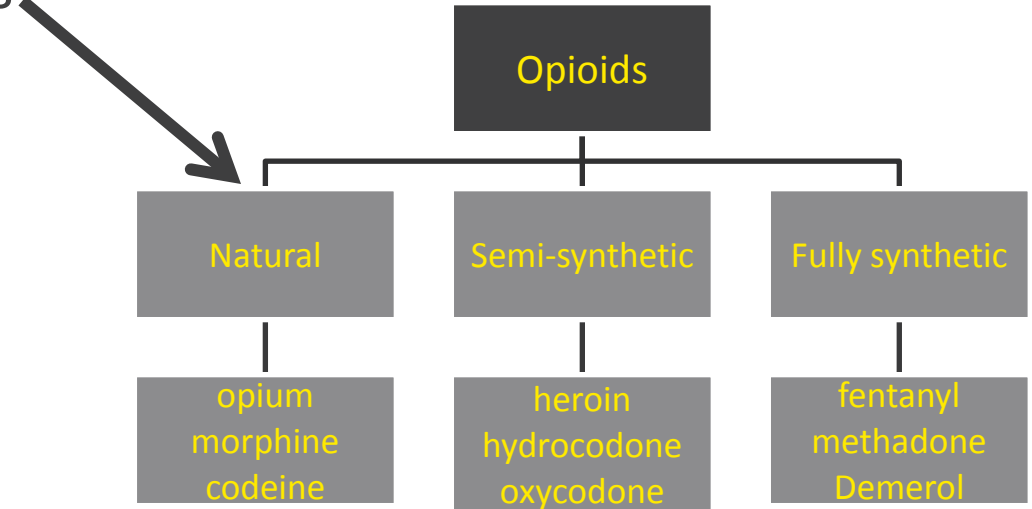
# The Solution

Figure 9. Naloxone Administration by Time of Day Per Year



Opioids are used primarily in medicine for pain relief, treatment of opioid use disorders, and cough relief.

Opiates



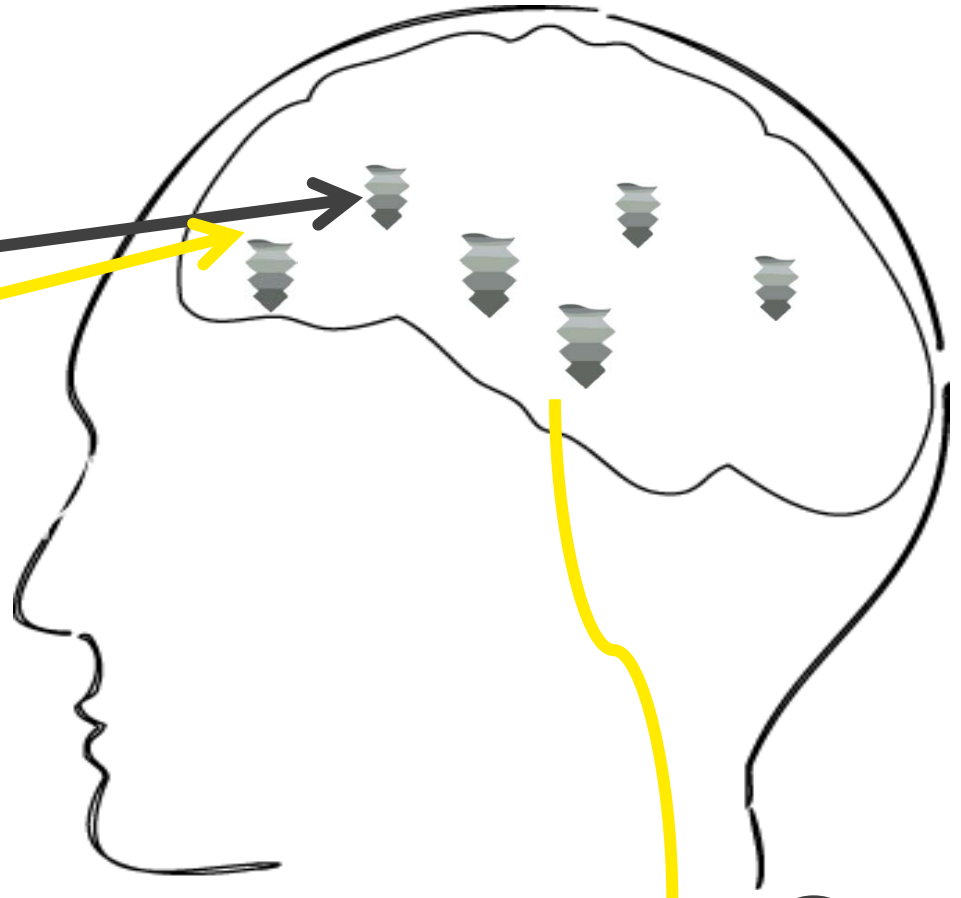
***All categories have overdose risk***

How do opioids affect breathing?

# OVERDOSE

Opioid Receptors, brain

Opioid





# Narcan<sup>®</sup> (naloxone)

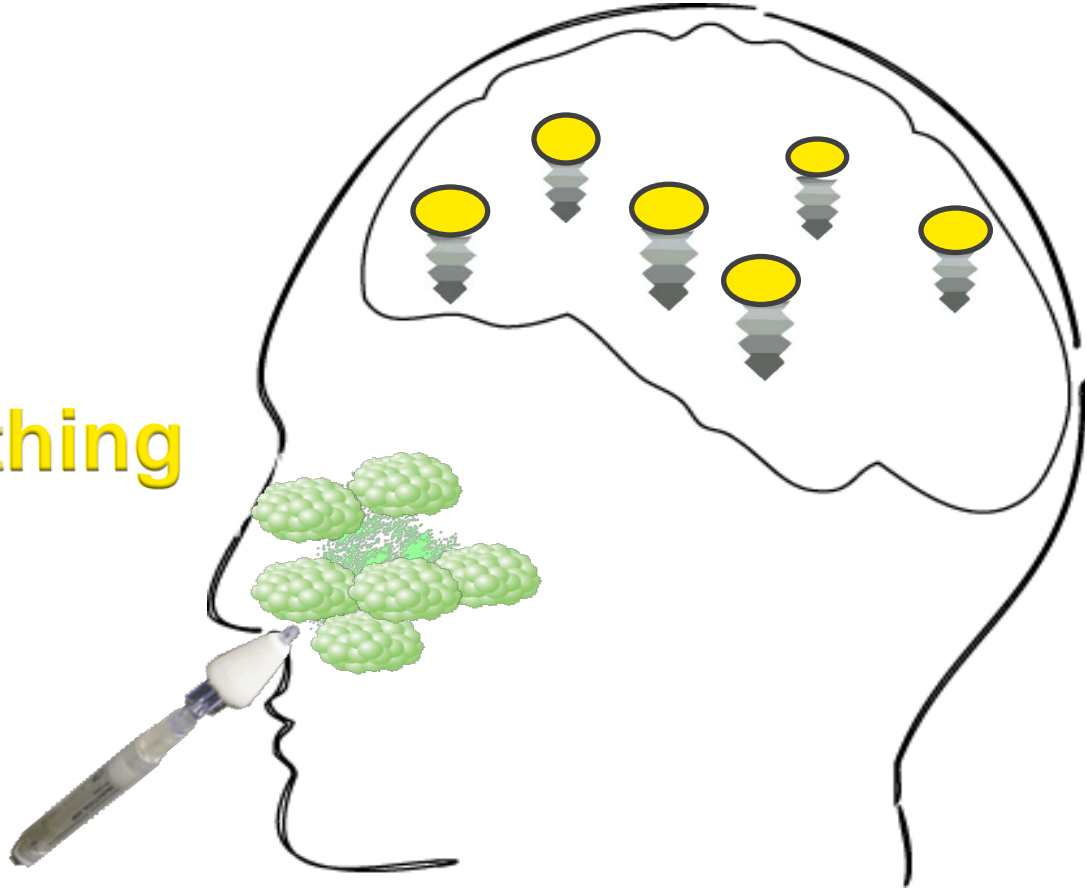
- Narcan knocks the opioid off the opioid receptor
- Only blocks opioid receptors; no opioids = no effect
- Not harmful if no opioids in system
- *Temporarily* takes away the “high,” giving the person the chance to breathe
- Narcan works in 1 to 3 minutes and lasts 30 to 90 minutes
- Narcan can **neither** be abused nor cause overdose
- Only known contraindication is sensitivity, which is very rare
- Narcan can cause withdrawal symptoms such as:
  - nausea/vomiting
  - diarrhea
  - chills
  - muscle discomfort
  - disorientation
  - combativeness

TOPIC

02

Opioid  
Basics

**Restores breathing**



TOPIC

03

# Identifying **An Opioid Overdose**

Recognition, Response and Administration of Naloxone (Narcan)  
**Opioid Overdose 101**



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# Identify an Opioid Overdose


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REALLY HIGH	OVERDOSE
Pupils pinned	Pupils pinned
Nodding, but arousable (responds to sternal rub)	Not arousable (no response to sternal rub)
Speech is slurred	Very infrequent or no breathing
Sleepy, intoxicated, but breathing <ul style="list-style-type: none"> <li>• 8 or more times per minute</li> </ul>	Breathing slow or stopped <ul style="list-style-type: none"> <li>• Less than 8 times per minute</li> <li>• May hear choking sounds or gurgling/snoring noises</li> <li>• Blue lips, blue fingertips</li> </ul>
<b><i>Stimulate and observe</i></b>	<b><i>Rescue breathe + give naloxone</i></b>

TOPIC

04

# Naloxone Intervention:

## **Respond to an Opioid Overdose**

Recognition, Response and Administration of Naloxone (Narcan)  
**Opioid Overdose 101**



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# Respond to Opioid Overdose

1. Stimulate
2. Alert EMS
3. Administer naloxone
4. CPR – Rescue breathing/ventilations
5. Repeat 3 & 4, if necessary
6. Recovery position, if breathing



# Safety Considerations

- Prior to administration of naloxone, review ABCs
- Assess for other causes of altered mental status and/or respiratory depression
- The half-life of naloxone is relatively brief
- Monitored closely for recurrent symptoms
  - Altered mental status, respiratory depression, etc.

# Safety Considerations

The medical director should include parameters within the protocols for EMRs and EMTs on how to address these adverse effects

- Agitation
- Tachycardia
- Pulmonary edema
- Nausea
- Vomiting
- Seizures

# Risk Factors with Opioid Overdose

- Hypercarbia
- Aspiration
- Cardiopulmonary arrest
- Incidence of risk factors increases with use of other substance
  - Alcohol, benzodiazepines, or other medications

TOPIC

04

Naloxone  
Intervention:  
Respond to an Opioid  
Overdose

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# Fentanyl (Duragesic)



TOPIC

04

Naloxone  
Intervention:  
Respond to an Opioid  
Overdose

# Waking The Dragon



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# Respond: Stimulate & Alert EMS

1. Stimulate victim with a sternal rub



2. If no response, delirious, or altered consciousness, call for EMS support



# Respond: **Administer Naloxone**

3. If no response from stimulation,  
*give naloxone*

Kit contents:

- Two **(2)** individual pre-filled syringes of naloxone
- One **(1)** mucosal atomizer (nose pieces/spray device)



TOPIC

04

# Naloxone Intervention: Respond to an Opioid Overdose

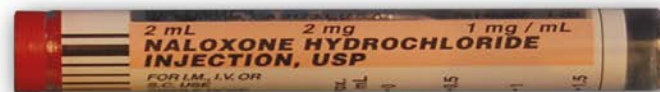


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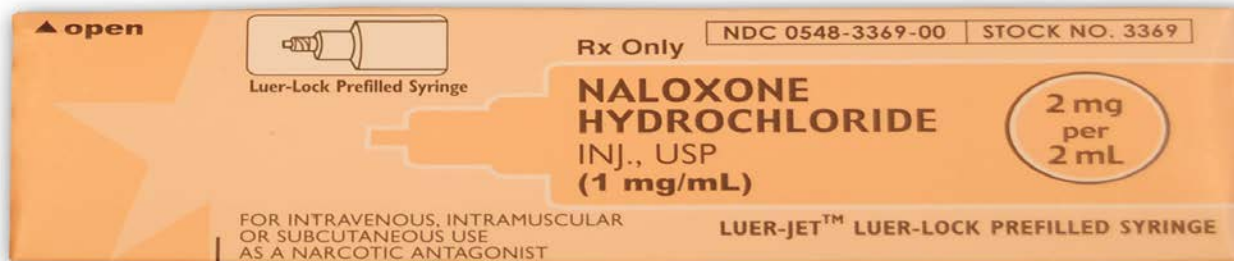
Mucosal  
Atomization Device  
(MAD)



Prefilled ampule  
of naloxone



Luer-lock  
syringe



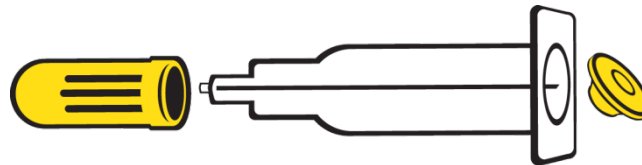
TOPIC

04

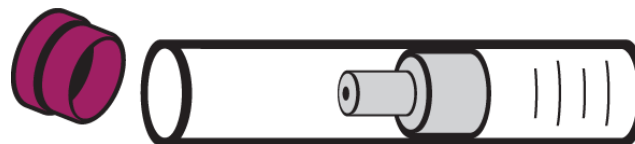
Naloxone  
Intervention:  
Respond to an Opioid  
Overdose

# How to Give Nasal Spray Narcan

1. Remove yellow caps from delivery device

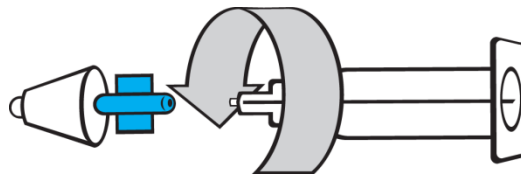


2. Remove purple cap from medication vial

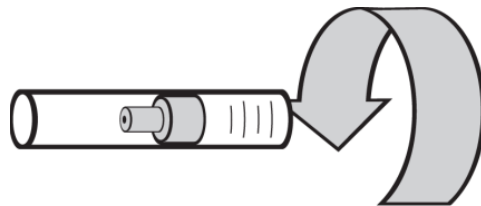


# How to Give Nasal Spray Narcan

**3. Thread atomizer on to the top of the delivery device**



**4. Gently screw the medication vial into the delivery device until you feel it catch.**



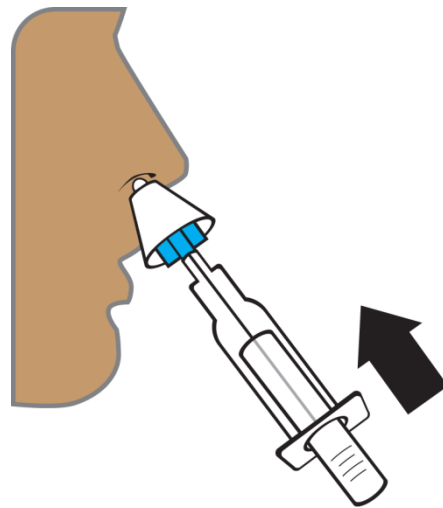
TOPIC

04

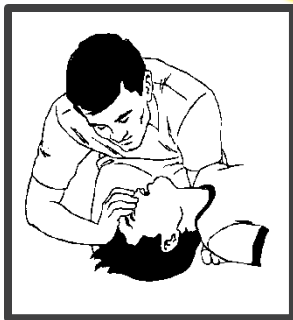
Naloxone  
Intervention:  
Respond to an Opioid  
Overdose

# How to Give Nasal Spray Narcan

**5. Spray half (1 ml) up  
one nostril and half up  
the other nostril.**

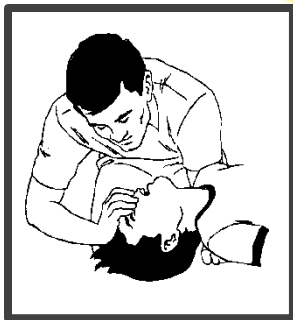


## Respond: Rescue Breathing



4. Give rescue breaths, if you have proper safety equipment and training
- Place 1 hand on the chin and tilt head back to open airway
  - Make sure the airway is clear and remove anything in their mouth
  - Pinch the nose closed
  - Give 2 slow rescue breaths into the mouth
  - Use a rescue breathing mask if available
  - Use a bag valve mask if you are trained

# Respond: Rescue Breathing



4. Give rescue breaths, if you have proper safety equipment and training
- Make sure the chest (not the stomach) is rising with the breaths
  - Give 1 breath every 5 seconds until the person can breathe on their own
  - If no pulse, start CPR

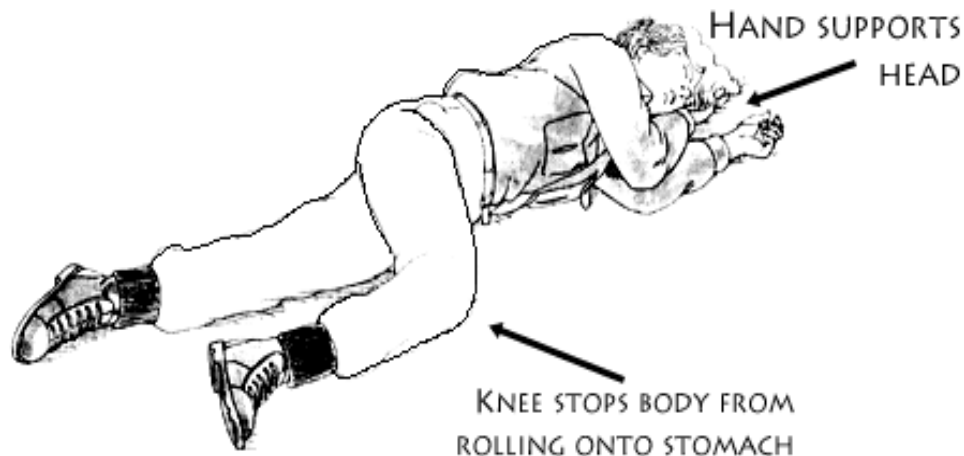


# Respond: Repeat 3 & 4 if Necessary

5. After 3-5 minutes, if the victim is still unresponsive with slow or no breathing, administer another dose of naloxone and continue rescue breathing.

# Respond: Recovery Position

6. Recovery position, when breathing is restored



# **Review: Respond to Opioid Overdose**

1. Stimulate
2. Alert EMS
3. Administer naloxone
4. CPR – Rescue breathing/ventilations
5. Repeat 3 & 4, if necessary
6. Recovery position, if breathing

# Respond to Opioid Overdose:

Naloxone Administration

**Intranasal delivery route has advantages:**

- Uncomplicated and convenient
- Nose is an easy access point for medication delivery
- It is painless
- No shots needed
- It eliminates any risk of a needle stick

# Naloxone Deployment & Supply:

- Initial supply = 2 units for each posted ambulance
- Use it/Lose it = request re-supply
- Store naloxone at room temperature (59-86 degrees F) and per additional manufacturer guidelines

TOPIC

05

# Relevant Procedures and Legal Issues

Recognition, Response and Administration of Naloxone (Narcan)  
**Opioid Overdose 101**



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## Key Points for Administration of Intranasal Naloxone or a Naloxone Auto-Injector

- Medical director approval is *mandatory*
- Training is *mandatory*
- A protocol from the medical director is *mandatory*

## Key Points for Administration of Intranasal Naloxone or a Naloxone Auto-Injector

- Medical director retains authority to *limit or prohibit* administration of intranasal or auto-injector naloxone
- Administration of naloxone by the endotracheal, intramuscular (exception via an auto-injector), or intravenous routes remains *prohibited* for EMRs and EMTs



# Legal Considerations:

## Oklahoma Naloxone Law

### **Okla. Stat. tit. 63, § 1-2506.1 Administration of opiate antagonists effective November 1, 2013.**

A. First responders shall have the authority to administer, without prescription, opiate antagonists when encountering an individual exhibiting signs of an opiate overdose. For the purposes of this provision, a first responder shall include:

1. Law enforcement officials;
2. Emergency medical technicians;
3. Firefighters; and
4. Medical personnel at secondary schools and institutions of higher education.

B. Any first responder administering an opiate antagonist in a manner consistent with addressing opiate overdose shall be covered under the Good Samaritan Act.

# Legal Considerations:

## Oklahoma Naloxone Law

### **Okla. Stat. tit. 63, § 1-2506.2 Prescription of opiate antagonists to family members**

A. Upon request, a provider may prescribe an opiate antagonist to an individual for use by that individual when encountering a family member exhibiting signs of an opiate overdose.

B. When an opiate antagonist is prescribed in accordance with subsection A of this section, the provider shall provide:

1. Information on how to spot symptoms of an overdose;
2. Instruction in basic resuscitation techniques;
3. Instruction on proper naloxone administration; and
4. The importance of calling 911 for help.

C. Any family member administering an opiate antagonist in a manner consistent with addressing opiate overdose shall be covered under the Good Samaritan Act.

# Documentation:

Memorandum of Agreement

- MOA must be signed by agency
- Required for access to free intranasal naloxone kits from OSDH

# Documentation:

Naloxone Training Form

- Used every time you train others
- Sign-in sheet
- Pre/post training evaluation used to report knowledge and perception of project

# Documentation:

Naloxone Administration  
Reporting Form

- Used to report overdose events
- Used to obtain refills of naloxone
- Check boxes used to describe overdose events
- No identifying information on victim is reported
- Needs to be completed right away



# Review Learning Objectives:

- Obtain baseline understanding of the opioid overdose problem
- Understand how opioids work
- Identify an opioid overdose
- Learn how to respond to an opioid overdose
- Learn how to administer Narcan (naloxone), an opioid antidote
- Become familiar with OK statute §63-1-2506

## Contact Information

- For medical questions:
  - Dr. Cathey
    - [TimC@health.ok.gov](mailto:TimC@health.ok.gov)
    - 405-271-4027
- To order naloxone kits:
  - Avy Redus
    - [AvyD@health.ok.gov](mailto:AvyD@health.ok.gov)
    - 405-271-3430
  - Rachel Jantz
    - [RachelJ@health.ok.gov](mailto:RachelJ@health.ok.gov)
    - 405-271-3430

# Training Videos

- 3-minute video
  - “Naloxone Administration for Opioid Overdose”
  - [https://www.youtube.com/watch?v=vV3HR\\_J3Ws8](https://www.youtube.com/watch?v=vV3HR_J3Ws8)
- 6-minute video
  - “Oklahoma Naloxone Initiative”
  - <https://www.youtube.com/watch?v=dppkYdnGI5U>
- 11-minute video
  - “Opioid Medication Safety: The Role of Naloxone”
  - <http://vimeo.com/37778160>



# References

1. Centers for Disease Control and Prevention. Wide-ranging Online Data for Epidemiologic Research (WONDER) [online]. (2012) Available from URL: <http://wonder.cdc.gov/mortsql.html>. Massachusetts Department of Public Health
2. Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2010 on CDC WONDER Online Database, released 2012. Data are from the Multiple Cause of Death Files, 1999-2010, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. <http://wonder.cdc.gov/mcd-icd10.html> (accessed July 2013).
3. Oklahoma State Department of Health, Injury Prevention Service. Unintentional Poisoning Fatality Surveillance System (abstracted from medical examiner reports).
4. U.S. Department of Justice, Drug Enforcement Administration, Office of Diversion Control, Automation of Reports and Consolidated Orders System (ARCOS) Reports, Retail Drug Summary Reports by State, Cumulative Distribution Reports (Report 4).
5. Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death, 2010 on CDC WONDER Online Database, released 2012.
6. Centers for Disease Control and Prevention. Community-Based Opioid Overdose Prevention Programs Providing Naloxone — United States, 2010, Morbidity and Mortality Weekly Report. February 17, 2012 / 61(06);101-105

*We acknowledge the DuPage County Department of Public Health and the Massachusetts Department of Public Health for permitting use of training content.*



## Case Study

You respond to a known drug abuser who is found unconscious with a hypodermic needle inserted into her arm. Her pupils are pinpoint and she does not respond to painful stimuli. Upon assessment of vital signs, her blood pressure is 110/70, pulse is 60, respiratory rate is 2, and she has a pulse oximeter reading of 84%.

What is the first action you should take?

## Case Study

- This patient is apneic as evidenced by her respiratory rate of 2. The appropriate initial action to take is to open and maintain the airway and administer oxygen via bag valve mask.
- Therapeutic interventions to support the patient's airway, breathing, and circulation should be initiated prior to the administration of naloxone.