

# Opioid Overdose Prevention



# Today's workshop is Sponsored by BSAS



## The Bureau of Substance Addiction Services:

- Provides access to addictions services for the uninsured
- Funds and monitors prevention, intervention, treatment and recovery support services
- Licenses addiction treatment programs and counselors
- Tracks statewide substance use trends
- Develops and implements policies and programs
- Supports the addictions workforce

## Helpful Websites

### BSAS:

[www.mass.gov/dph/bsas](http://www.mass.gov/dph/bsas)

### Helpline:

[www.helpline-online.com](http://www.helpline-online.com)

### Careers of Substance:

[www.careersofsubstance.org](http://www.careersofsubstance.org)

BSAS oversees the statewide system of prevention, intervention, treatment, and recovery support services for individuals, families, and communities affected by gambling and substance addiction

# Required Disclosures for CEUs



- **ANCC Accreditation Statement**

This continuing nursing education activity was approved by the Maryland Nurses Association, an accredited approver by the American Nurses Credentialing Center's Commission on Accreditation

- **Activity Purpose and/or Learning Outcomes**

- Describe how a person's biology contributes to the development of an opioid use disorder
- Review the history of opioids leading up to the current epidemic
- Identify risk factors for opioid overdose and corresponding harm reduction strategies
- Demonstrate how to assess for an opioid overdose
- Explain three critical actions needed to reverse an opioid overdose
- Describe how to administer and store naloxone
- Explain how naloxone works to reverse opioid overdose
- Employ key discussion points for educating clients on opioid overdose prevention

- **Successful Completion of this Continuing Nursing Education Activity**

In order to successfully complete this activity and receive full credit for this activity, you must attend all 1.5 hours of the course and participate in course discussions

- **Conflicts of interest**

There is no conflict of interest for any planner or presenter of this activity

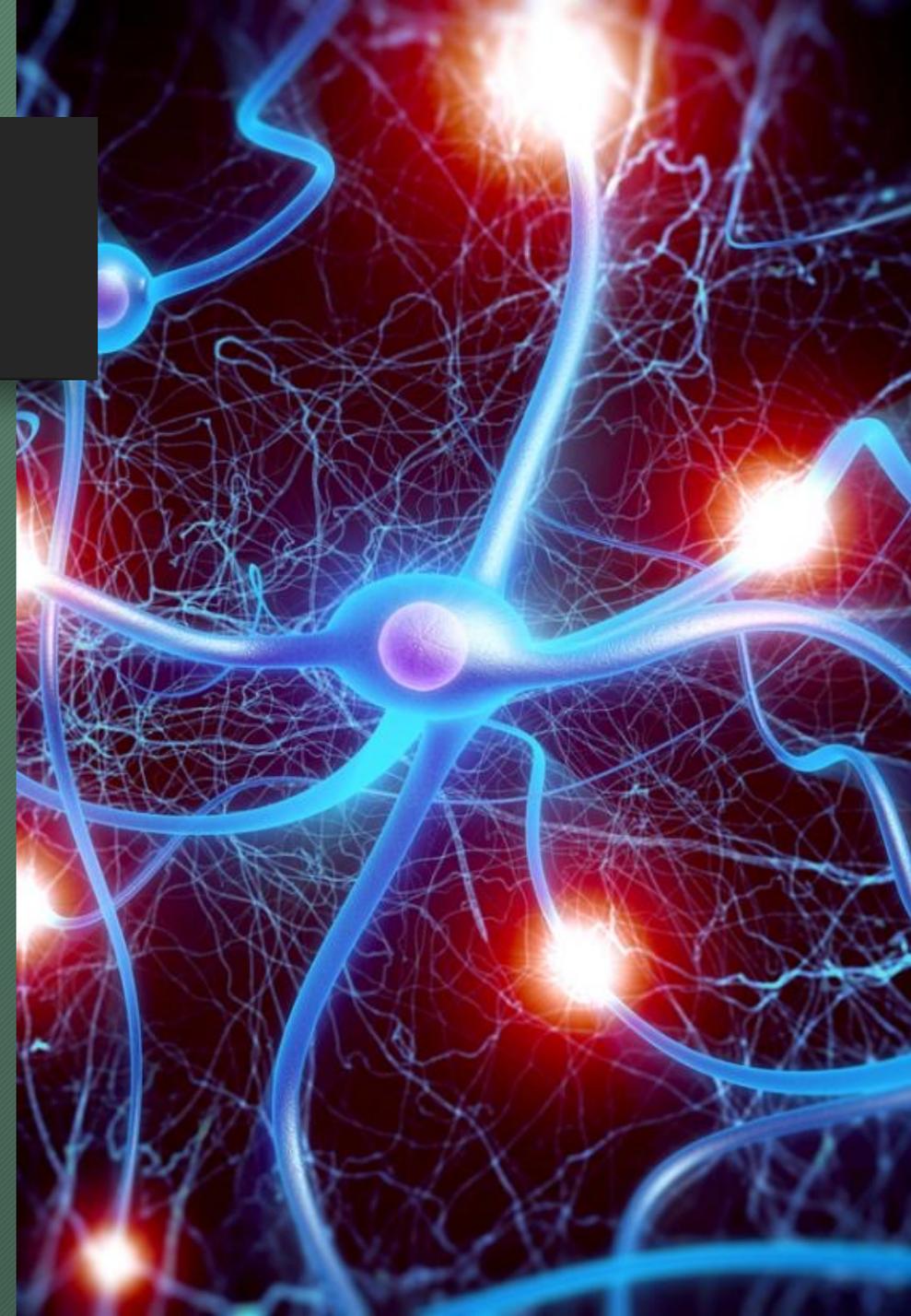
## Agenda

- General overview of opioids
- The development of opioid use disorder (OUD)
- Opioid overdose:
  - Risk factors
  - Signs and Symptoms
  - Responding to an Overdose
- Overdose prevention & harm reduction strategies



# What are Opioids?

- Opioids are a class of drugs that are typically prescribed to treat moderate to severe pain
- In addition to controlling pain, opioids can elicit feelings of euphoria and are highly addictive
- Opioids can be prescription medications, often referred to as painkillers, or street drugs, such as heroin



# Opioid Overview



## Opioid routes of administration:

- Orally- pills that are swallowed
- Snorted- heroin, fentanyl or crushed pills
- Smoked- opium, heroin
- Injected- heroin, fentanyl or crushed pills
- Others?

# Opioid Overview

## Where do opioids come from?

- The body produces its own opioids
  - Moderates pain and produces feelings of pleasure and well being
  - Known as endogenous opioids (endorphins)
- They are derived from the opium poppy
  - Travel the same pathways as endogenous opioids, but much more potent
- They are partially or completely synthesized
  - More efficiently target and alter brain chemical processes



# Opioid Overview



## Organic

Opium  
Morphine  
Codeine

## Semi-Synthetic

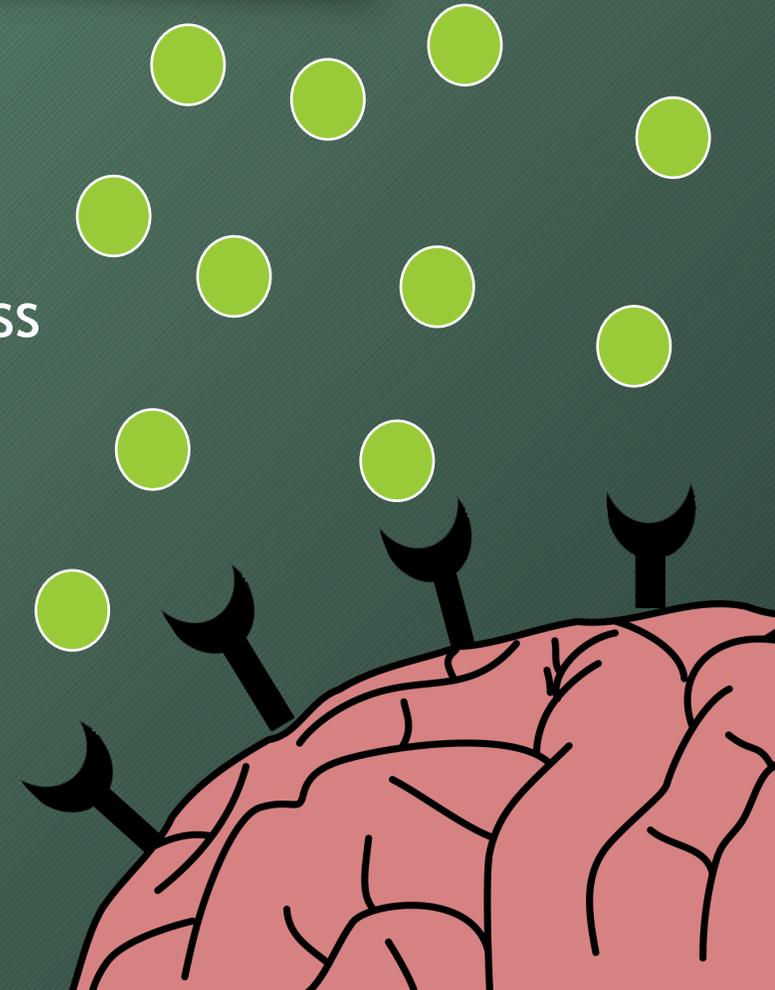
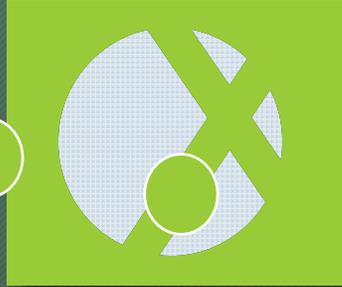
Heroin  
Hydrocodone  
Oxycodone  
Oxymorphone  
Buprenorphine

## Synthetic

Fentanyl  
Methadone  
Tramadol

# Opioid Use Disorder

- Opioid receptors are in the body because the brain releases endogenous (internal) opioids for pain management
- They keep us calm when the body is under extreme stress
  - Pain serves a purpose- it lets us know when something is wrong. However, it can start being counterproductive when it inhibits us from taking action needed for survival
  - In response, as a part of our evolution, the body developed the endogenous opioid system
  - Physical duress triggers the release of endogenous opioids to activate receptors which shut down the pain signals between the body and the brain and produces a calming effect



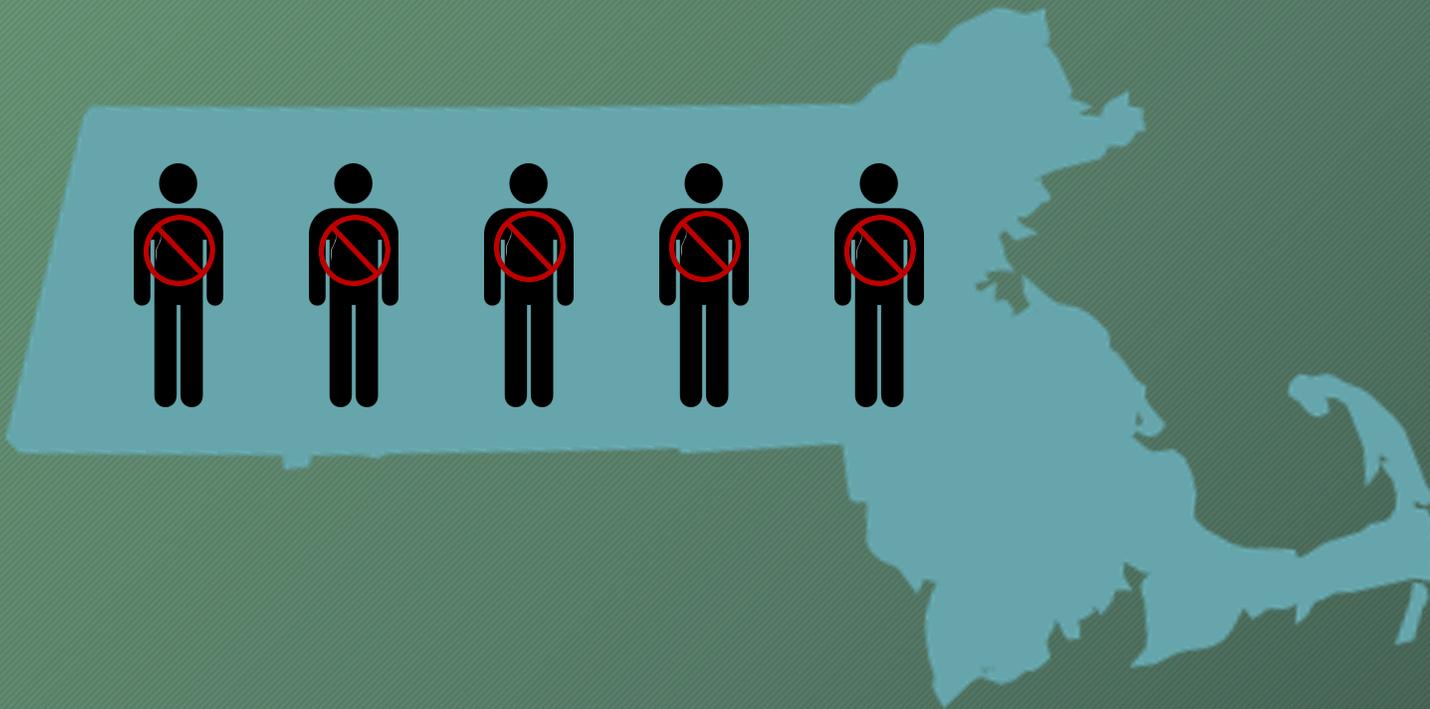
# Opioid Use Disorder

- Exogenous (external) opioids travel the same pathway but are much more potent, creating an artificial flood of endorphins and dopamine
- After repeated use, the brain stops creating dopamine & endorphins naturally and becomes dependent on the medication. When the opioids stop, the brain has a volatile reaction
- Feelings of euphoria and the threat of severe withdrawal symptoms create a compulsion to use the drug even at great personal consequence





# Opioid Use Disorder



- Massachusetts on average loses 5 people each day
- 4.6% or 275,000 of people in Massachusetts meet criteria for OUD

*(American Journal for Public Health, 2018)*

In New England terms....

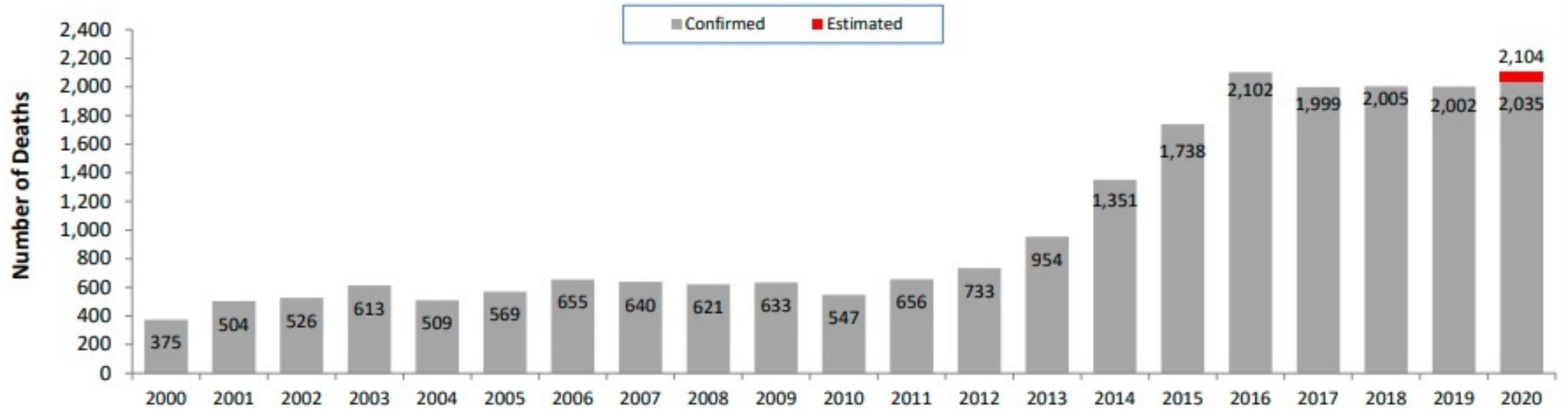


275,000 would fill more than four  
Gillette Stadiums at full capacity

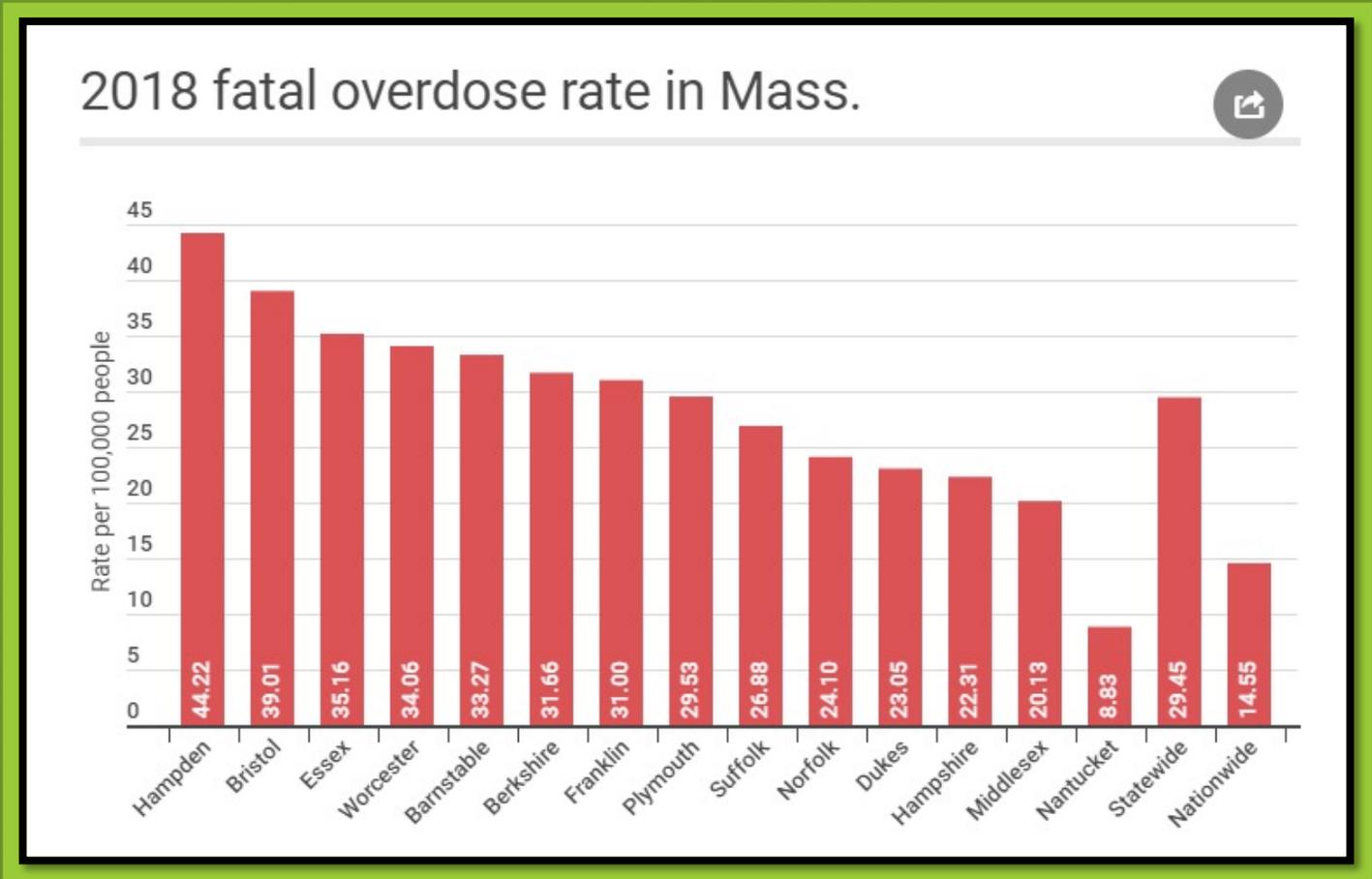
# Opioid Stats in Mass



Figure 2. Opioid-Related Overdose Deaths, All Intent  
Massachusetts Residents: 2000 - 2020



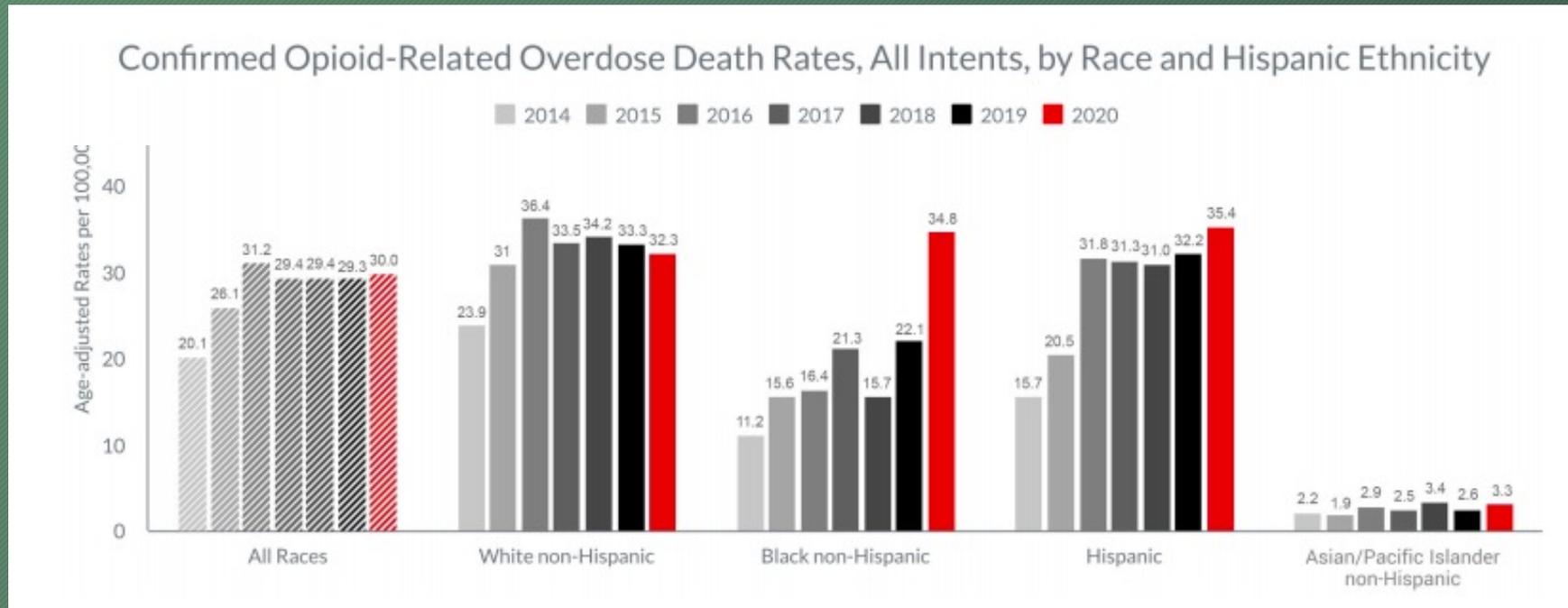
# Opioid Stats in Mass



# Opioids & Racial Disparities



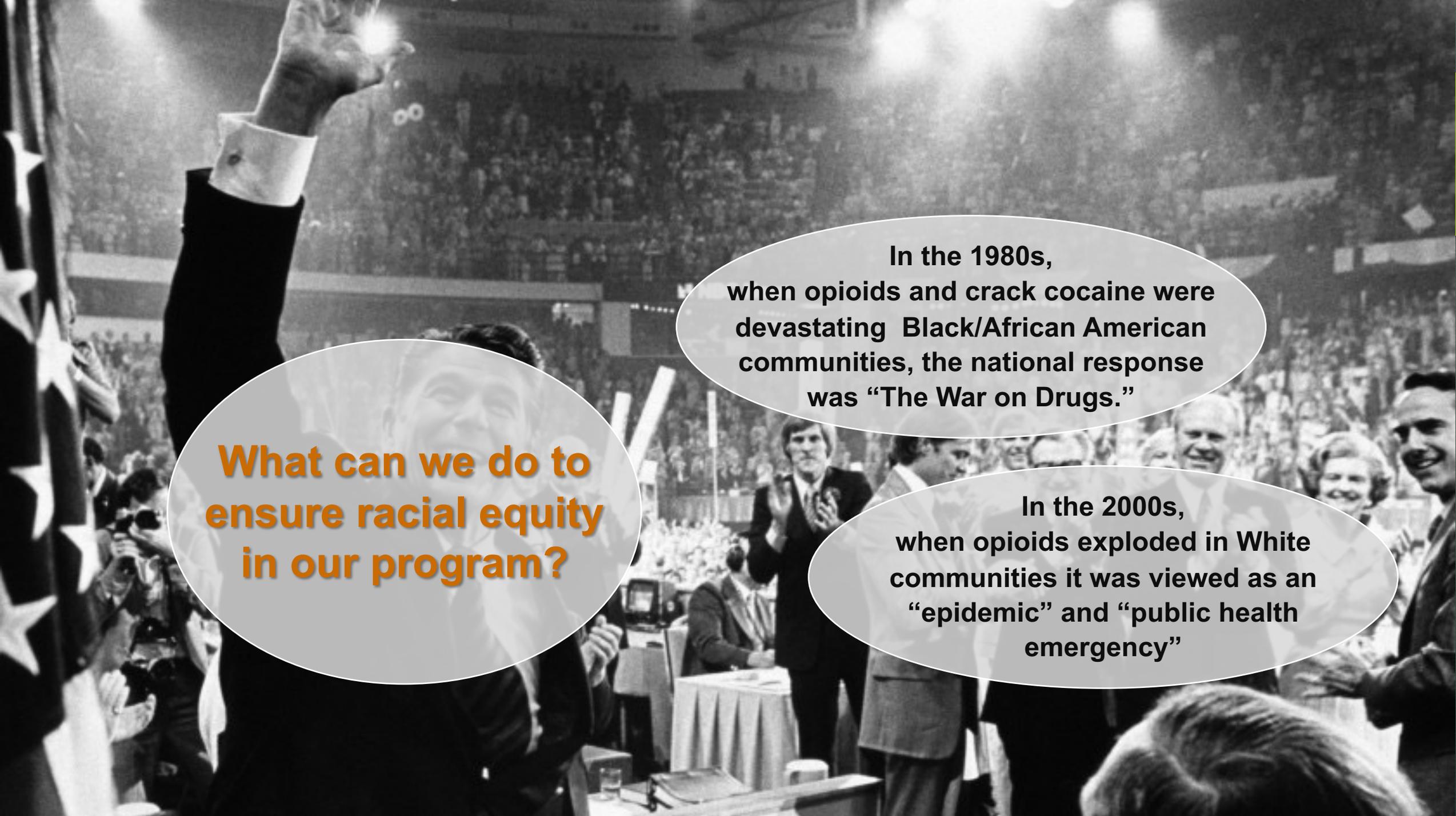
Though white Americans comprise approximately 80% of opioid overdose deaths in the U.S., people of color are seeing the largest increase in overdose deaths



# Opioids & Racial Disparities



- Implicit and racial biases may have initially insulated POC ([NIH, 2018](#))
  - POC are prescribed opioids at half the rate of their white counterparts
  - Research shows physicians may harbor false beliefs that POC are more likely to abuse substances and have a higher threshold for pain, leading to fewer opioid prescriptions
  - At the start of the epidemic, big pharma focused on suburban and rural areas
- However, synthetic opioids are increasing fatalities among POC
  - Fentanyl is increasingly being found in supplies of cocaine, methamphetamine, and counterfeit pills, which increases the number of populations at risk for overdose
  - Access is no longer dependent on prescriptions as they are readily available on the streets
- Disparities in treatment access also contribute to overdoses
  - Limited access to MAT due to income, insurance, and logistical barriers
  - Past discrimination and distrust of the medical community due to medical racism
  - Fear of legal consequences if misuse is revealed



**What can we do to ensure racial equity in our program?**

**In the 1980s, when opioids and crack cocaine were devastating Black/African American communities, the national response was “The War on Drugs.”**

**In the 2000s, when opioids exploded in White communities it was viewed as an “epidemic” and “public health emergency”**

# Most Widely Used Opioids in the U.S.



## Vicodin

A powerful pain killer prescribed for acute episodes of pain (injury, post surgery) and chronic pain. Most abused prescription in the U.S. (Hydrocodone and Acetaminophen)

## OxyContin

Originally formulated to time-release its effects- easily overridden and abused. New formulations have made it less desirable on the streets, contributing to an increase in heroin and fentanyl

## Heroin

The most widely used non-prescription opioid. It is estimated that more than half of people currently using heroin began opiate use from a prescription

## Fentanyl

Developed in the 1960s, an intravenous anesthetic used in hospitals; also used to treat severe pain, typically associated with advanced cancer

# Fentanyl

- The first documented presence of fentanyl on the streets was in Los Angeles 1979 under the name of “*China White.*”
  - To distinguish it from heroin, known as “Mexican Brown”
- Known for its intense high, it’s up to 50x stronger than heroin and 100x stronger than morphine
- Far cheaper and easier to manufacture and transport than other drugs





Potentially fatal dose of heroin

vs.

Potentially fatal dose of  
fentanyl

*For an average adult male*

# Fentanyl



- Because of its potency, portability, and price, fentanyl is often used to “cut” other drugs, such as cocaine, meth, and MDMA (or replace them entirely)
  - [MDPH Stimulant Advisory](#)
- Techniques for identifying counterfeit substances:
  - [Fentanyl testing strips](#)
  - Compare to known legitimate medication (inspect color, texture, smell of the pill)
  - [Drugs.com Pill Identifier](#)



# Fentanyl



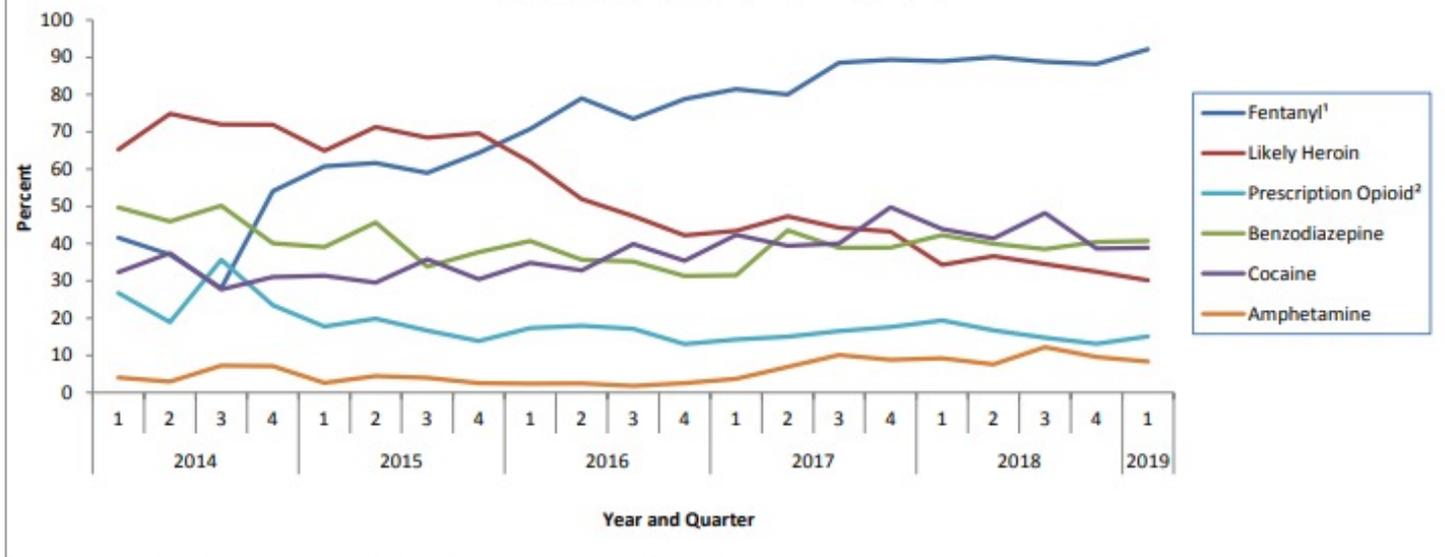
Fentanyl binds significantly faster to receptors which produces elevated feelings of euphoria, rapid onset overdose, and increased risk of infectious disease.

<u>Drug</u>	<u>Duration</u>	<u>Potency</u>
Methadone	24-32 hours	****
Heroin	6-8 hours	*****
Oxycontin	3-6 hours	*****
Codeine	3-4 hours	*
Morphine	3-6 hours	***
Fentanyl	2-4 hours	*****

# Fentanyl



Figure 4. Percent of Opioid-Related Overdose Deaths with Specific Drugs Present  
Massachusetts Residents: 2014 - Q1 2019



1. This is most likely illicitly produced and sold, **not** prescription fentanyl

2. Prescription opioids include: hydrocodone, hydromorphone, oxycodone, oxymorphone, and tramadol

Please note that previous estimates may change slightly as DPH routinely receives updated toxicology data from the Office of the Chief Medical Examiner and the Massachusetts State Police.

## In Mass:

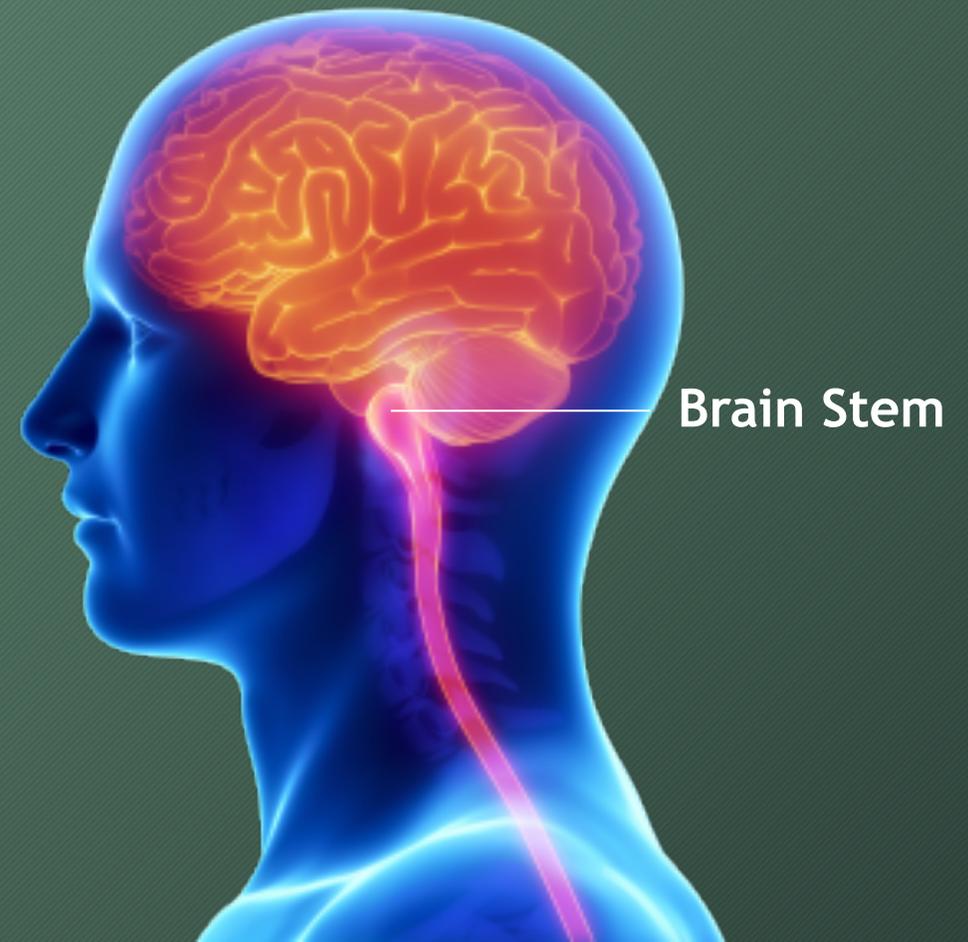
- A drop in death rates involving heroin have decreased at approximately the same rate that fentanyl-related deaths have increased
- 90% of deaths in 2019 had a toxicology screen showing a positive result for fentanyl

# Opioid Overdose



Due to their effect on the part of the brain which regulates breathing, opioids in high doses can cause respiratory depression and death

This is known as opioid overdose



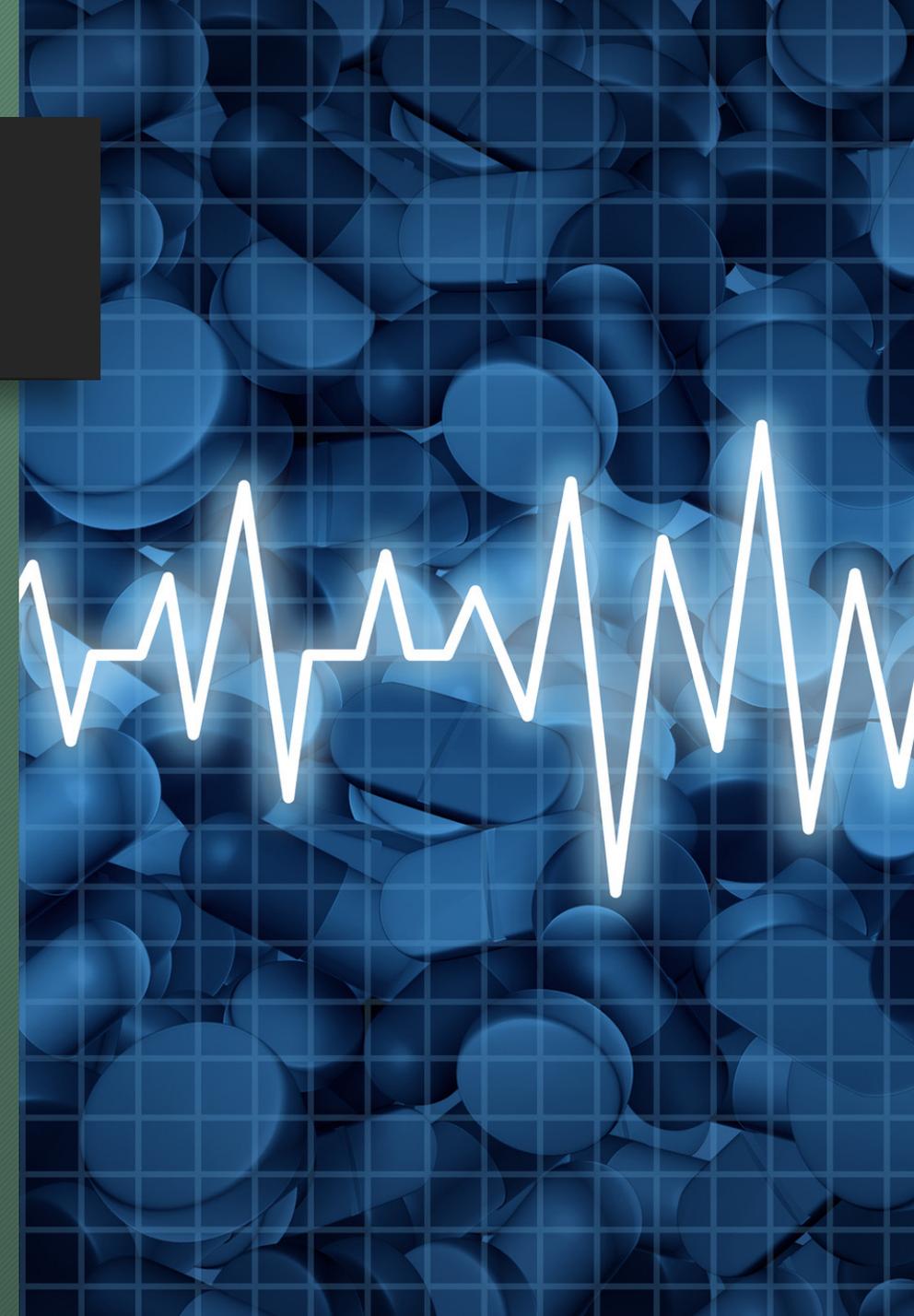
# Opioid Overdose Risk Factors



- Mixing other drugs and alcohol with opioids. Drugs commonly mixed include:
  - Benzodiazepines: prescription sedatives used for anxiety and insomnia
    - Brand name: Xanax, Valium, Klonopin; Street names: xannies, footballs, bars
  - Gabapentin: an anticonvulsant with sedative effects
    - Brand name: Neurotin; Street names: johnnies, gabbies
  - Clonidine: hypertension medication with sedation effects
    - Brand name: Catapres; Street name: Deens
  - Stimulants (cocaine, methamphetamines, etc.): drugs which increase activity in the brain and central nervous system
    - Brand names: Adderall, Ritalin; Street names: meth, ice, blow, speed

# Opioid Overdose: Risk Factors

- Not knowing the purity or exact content of the drug
  - New city/residential location
  - New dealer/source
- After periods of abstinence-misjudging body tolerance (relapse, after treatment stay, hospitalization, incarceration)
- New route of administration
- Poor physical health (advance liver damage, respiratory issues)
- Having a previous overdose



# Opioid Overdose



## Intoxicated

- Drowsy, but arousable
  - Responds to sternal rub
- Drowsy, but breathing
  - 8 or more times per minute
  - Average is 16x/min
- Normal coloring
- Slowed muscle function

## Overdosed

- Not arousable
  - No response to sternal rub
- Breathing slow or stopped
  - < 8 times per minute
  - May hear gurgling/snoring noise
- Blue/gray lips and fingertips
- Limp body

# Responding to an Overdose



➤ **Call 911**

➤ **ADMINISTER NARCAN**

➤ **Rescue breathing/Chest Compressions**

➤ Chest compressions should only be done if there is no sign of a pulse

➤ Stay with the person until help arrives

➤ Recovery position as needed



# Naloxone (Narcan)



[click to play](#)

# Naloxone (Narcan) Nasal Spray



## Single-step Administration:

- Comes with two pre-assembled applicators with Narcan built in
- Requires no assembly, just insert in nostril and push the button
- Spring-action button delivers full 4mg dose in one nostril
- If person is not revived within 2 to 3 minutes, deliver second applicator

PEEL



PLACE



PRESS



# Naloxone (Narcan)

- Lasts 30-90 minutes
  - Afterwards any opioids in the body will return to the receptors so overdoses can happen again
  - Advise against using more opioids as any opioids will not be felt for the next 30 to 90 minutes
- No intoxication, no adverse reactions, no potential for abuse, no potential for overdose
- *Must be stored at room temperature*
- Check expiration dates
- Reverses Wooden Chest Syndrome
  - A seizing of the chest muscles which makes rescue breathing ineffective



# Naloxone Formulations



Nasal with separate atomizer  
“Multi-step”

Amphastar Pharmaceuticals



Narcan Nasal Spray  
“Single-Step”

Adapt Pharma



Auto-injector

Kaleo Inc.



Naloxone Injection

*Can be injected intravenously, intramuscularly, or subcutaneously*

Various Companies

# Naloxone (Narcan) Access



- Naloxone rescue kits are available at pharmacies across the state, with or without prescriptions
  - The Department of Public Health (DPH) has issued a statewide standing order that allows pharmacies to dispense naloxone without a prescription
- Covered by most insurance companies, including as MassHealth
  - 76% have a copay of \$10 or less
- For information on naloxone programs visit the Massachusetts Substance Use Helpline at [www.helplineMA.org](http://www.helplineMA.org) or call 1-800-327-5050



## Overdose Education and Naloxone Distribution (OEND) Programs in Massachusetts



<b>Boston</b>	<b>ACCESS, Drug User Health Program</b> <b>Fenway Health</b> <b>617-599-0246</b> Serving Boston, Cambridge, Somerville, and surrounding towns		<b>AHOPE</b> <b>Boston Public Health Commission</b> <b>617-534-3976</b> Serving Boston		<b>Drug User Health Project</b> <b>Victory Programs</b> <b>617-927-0836</b> Serving Boston		
<b>Central</b>	<b>AIDS Project Worcester</b> <b>508-755-3773</b> Serving Worcester County			<b>Program RISE</b> <b>Justice Resource Institute</b> Call <b>508-935-2960</b> or text <b>978-447-4735</b> Online requests during COVID-19 may be made using the following link: <a href="https://tiny.cc/RISE-GLASS_Supplies">tiny.cc/RISE-GLASS_Supplies</a> Serving Ashland, Framingham, Natick, Westborough and surrounding towns			
<b>Northeast</b>	<b>Greater Lawrence Family Health Center</b> <b>978-989-4533</b> Serving Lawrence and Essex County	<b>Healthy Streets Health Innovations</b> <b>339-440-5633</b> Serving Beverly, Chelsea, Lowell, Lynn, Peabody, Salem, and Saugus	<b>Life Connection Center</b> <b>978-935-1801</b> Serving Lowell	<b>Lowell Community Health Center</b> <b>978-221-6767</b> Serving Lowell	<b>Lowell House</b> <b>978-459-8656</b> Serving Lowell	<b>Lynn Community Health Center</b> <b>781-691-9441</b> Serving Lynn	<b>ONESTOP North Shore Health Project</b> <b>978-381-3170</b> Serving Gloucester and Cape Ann
<b>Southeast</b>	<b>AIDS Support Group of Cape Cod</b> Falmouth: <b>774-763-6656</b> Hyannis: <b>508-778-1954</b> Martha's Vineyard: <b>774-994-7935</b> Provincetown: <b>508-487-8311</b> Serving the Cape and the Islands		<b>The COPE Center</b> <b>Brockton Area Multi-Services, Inc.</b> <b>508-583-3405</b> Serving Brockton and Plymouth	<b>Manet Community Health Center</b> <b>857-939-4108</b> Serving Braintree, Hull, Quincy, and Weymouth	<b>Project Aware SSTAR</b> <b>508-324-3561</b> Serving Fall River	<b>Seven Hills Behavioral Health</b> New Bedford: <b>508-996-0546</b> Fall River: <b>508-235-1012</b> Taunton: <b>508-967-7170</b> Serving the South Coast	
<b>Western</b>	<b>Healthy Steps</b> <b>Berkshire Medical Center</b> <b>413-447-2654</b> Serving Berkshire County		<b>Holyoke Community Health Center</b> <b>413-420-2255</b> Serving Holyoke	<b>New North Citizen's Council</b> <b>413-747-5755</b> Serving Springfield	<b>Tapestry Health</b> Chicopee: <b>413-270-3277</b> Greenfield: <b>413-475-3377</b> Holyoke: <b>413-315-3732</b> North Adams: <b>413-398-5603</b> Northampton: <b>413-586-0310</b> Springfield: <b>413-363-9472</b> Serving Western MA		

# Responding to an Overdose



✓ ➤ *Call 911*

✓ ➤ **ADMINISTER NARCAN**

➤ **Rescue breathing/Chest Compressions**

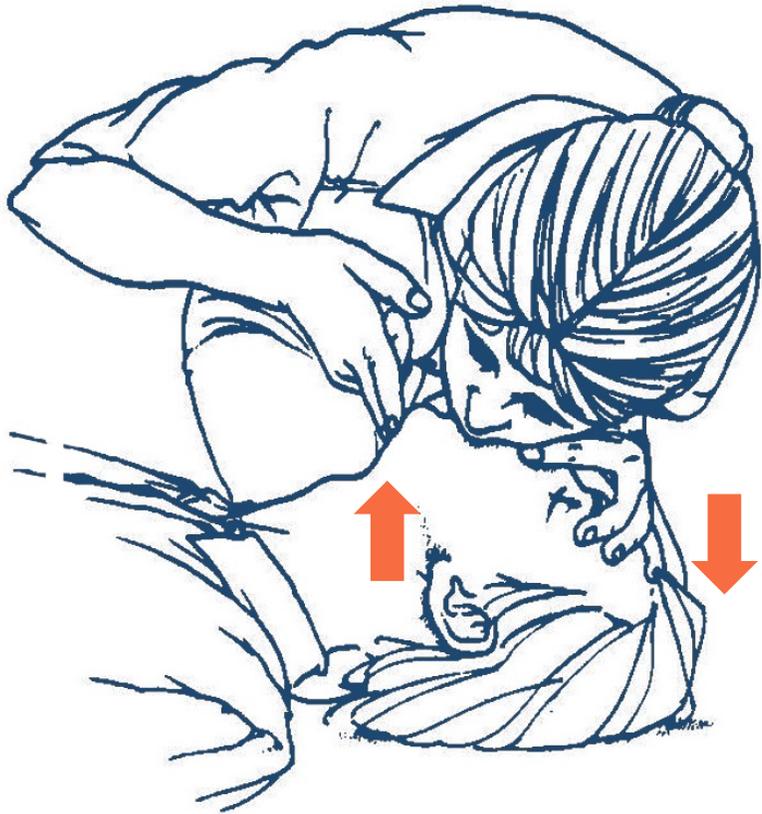
➤ Chest compressions should only be done if there is no sign of a pulse

➤ Stay with the person until help arrives

➤ Recovery position as needed



# Rescue Breathing



Make sure there is nothing in the mouth

Tilt head back, lift chin, and pinch nose

Give a breath every 5 seconds

- Essential for getting oxygen into the lungs
- The air we exhale has 17% oxygen which is more than enough to sustain someone
- Helps a person get enough oxygen until the naloxone reverses the overdose and the person starts breathing on their own
- Can help keep someone alive and prevent brain damage

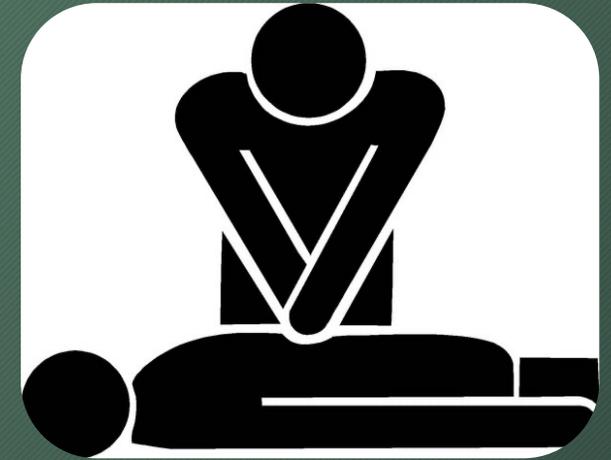
# Rescue Breathing During COVID



Bag Valve Mask



Mouth barrier  
(or a t-shirt!)



Chest compressions

# Responding to an Overdose



- ✓ ➤ *Call 911*
  - ✓ ➤ **ADMINISTER NARCAN**
  - ✓ ➤ **Rescue breathing/Chest Compressions**
    - Chest compressions should only be done if there is no sign of a pulse
- Stay with the person until help arrives
  - Recovery position as needed



# Recovery Position



If you must leave the person who is overdosing, put them into the recovery position so they will not choke on their own vomit



# Responding to an Overdose



*ACTIONS WILL DEPEND ON COMFORT LEVEL*

## Minimum

- ✓ Call 911
- ✓ Administer naloxone

## Best Practice

- ✓ Call 911
- ✓ Administer naloxone
- ✓ Perform rescue breathing
- ✓ Perform chest compressions (as needed)
- ✓ Stay with the person or put in recovery position

True or False?



If you help someone who is overdosing,  
you are at risk of overdosing yourself

**BUSTED**

# Facts on Fentanyl



- Drugs like fentanyl have minimal absorption through the skin
- Brief, incidental contact isn't going to cause somebody to absorb a therapeutic dose, let alone a toxic dose
- For that to happen, the drug would need to be absorbed by a mucous membrane, inhaled, ingested, or injected into the body
- What about Fentanyl patches, then?
  - Fentanyl patches require putting fentanyl into special liquid vehicles specifically designed for absorption through skin

True or False?



If you are using your phone who  
overdresses you will be arrested for  
possession of a gun call 911 for help

**BUSTED**

# Good Samaritan Law

In case of an overdose, the Massachusetts Good Samaritan Law protects both victims and those who call 911 for help from charge, prosecution, and conviction for possession or use of controlled substances.

It does not protect people from arrest for other offenses, such as selling or trafficking drugs, or from existing warrants

*(warrants, weapons, or weight)*

[Title XV, Chapter 94C, Section 34A](#)



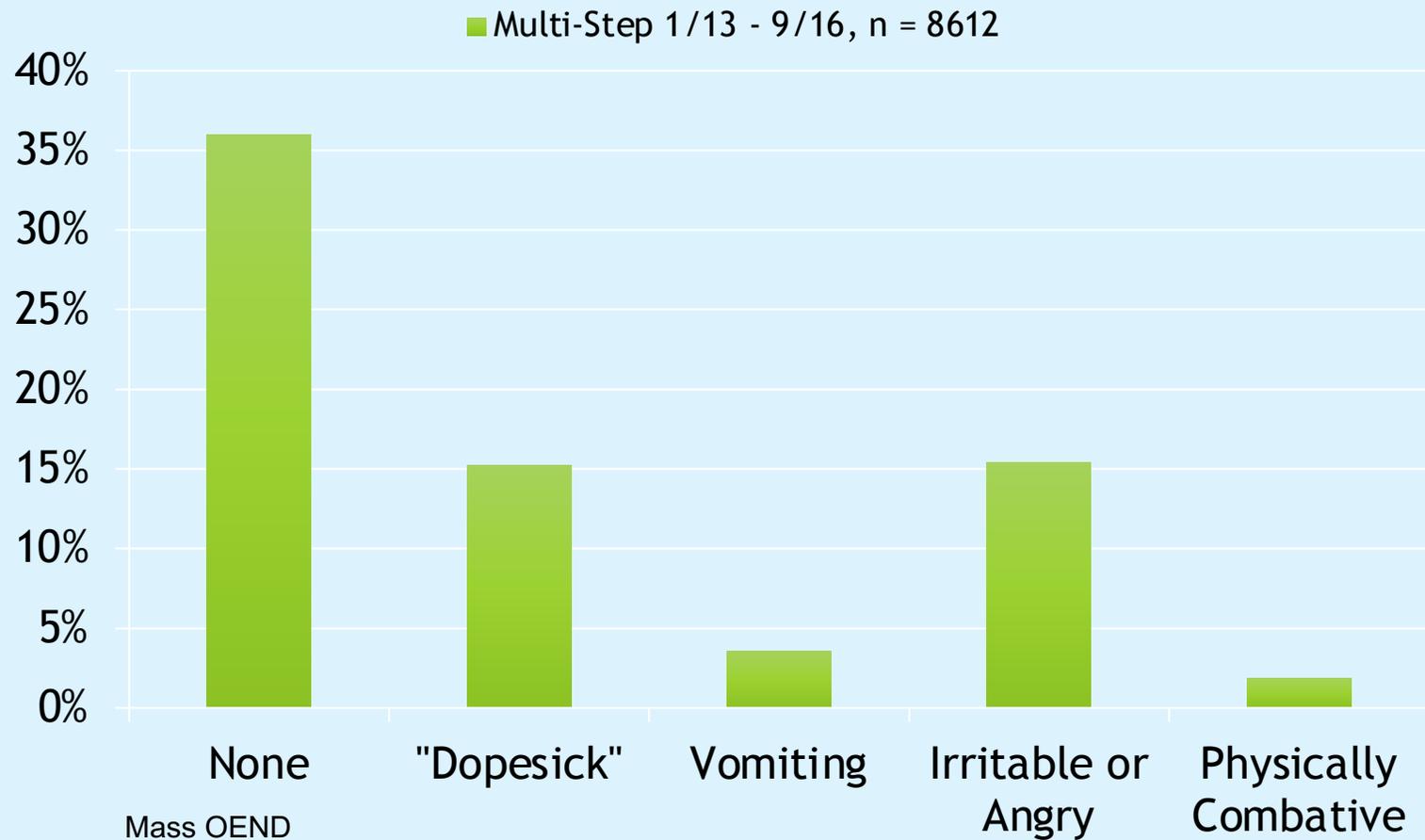
True or False?



When you have some real you  
better than look because they  
will keep swinging

**BUSTED**

## Community Bystander Naloxone Rescue Reports: Post-Naloxone Withdrawal Symptoms.



# Narcan Overdose Response



[click to play](#)

# Overdose Prevention Harm Reduction



- Do not use drugs alone
  - If alone:
    - Facetime with a trusted person
    - NeverUseAlone.com
      - MA specific hotline: (800) 972-0590
    - Canary Overdose Prevention App
    - Brave.coop



# Overdose Prevention Harm Reduction



- Keep naloxone nearby and visible
- Go low and slow
- Use only one drug at a time
- Stay with same dealer
- Do your own mixing and fixing
- [Fentanyl testing strips](#)
- Make a plan!



# Pop Quiz!



- Example of a synthetic opioid?
  - Fentanyl, Methadone, Tramadol
- Brand name of naloxone?
  - Narcan
- Number of people who die from overdoses everyday in Mass?
  - Five
- How long to wait between doses of Narcan?
  - 2 to 3 minutes
- How long Narcan lasts in the body?
  - 30 to 90 minutes

# Pop Quiz



- Risk factor for an opioid overdose?
  - New dealer, previous overdose, mixing drugs, using alone, periods of abstinence, etc.
- These are the signs of an overdose
  - Not responsive, not breathing, blue/gray coloring, limp body
- How long to wait between rescue breaths
  - 5 seconds
- These are the steps to take when someone is overdosing
  - Call 911, deliver Narcan, rescuing breathing/chest compressions, recovery position as needed
- These are the potential adverse reactions of using naloxone on someone who is not overdosing on opioids
  - None

# Thank You!

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