

YOUTH OPIOID OVERVIEW



Opioid
Response
Network
STR-TA



Anthem®
BlueCross



YOR CA PROJECT

The Youth Opioid Response (YOR) California project is part of the California Statewide Opioid Response.

This presentation is funded by YOR CA and Anthem Blue Cross.

GOALS

- Define opioids and how they impact the adolescent brain and adolescent behavior.
- Understand trends in U.S. and California opioid youth, including addiction, overdose, and death.
- Understand risk factors for opioid use, opioid addiction, and other substance abuse disorders.
- Understand the role of educators and health care providers in addressing the adolescent opioid crisis.

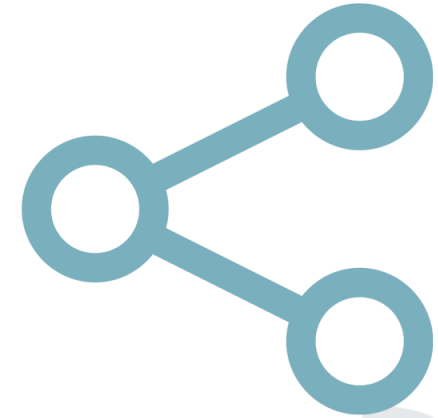


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being recorded



Supporting
materials will be
shared



Presenter

Albert Hasson, MSW

Trainer/Project Director, UCLA
Integrated Substance Abuse Programs



Moderator

Sierra Jue-Leong, MPH

Project Director, California School-
Based Health Alliance

Putting Health Care in Schools

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The Opioid Epidemic in the United States

Albert L. Hasson, MSW

November 7, 2019

Pacific Southwest Addiction Technology Transfer Center at
UCLA Integrated Substance Abuse Programs



Opioid
Response
Network
STR-TA

Working with communities to address the opioid crisis.

- ✧ SAMHSA's State Targeted Response Technical Assistance (STR-TA) grant created the *Opioid Response Network* to assist STR grantees, individuals and other organizations by providing the resources and technical assistance they need locally to address the opioid crisis .
- ✧ Technical assistance is available to support the evidence-based prevention, treatment, and recovery of opioid use disorders.

Funding for this initiative was made possible (in part) by grant no. 6H79TI080816 from SAMHSA. The views expressed in written conference materials or publications and by speakers and moderators do not necessarily reflect the official policies of the Department of Health and Human Services; nor does mention of trade names, commercial practices, or organizations imply endorsement by the U.S. Government.



Working with communities to address the opioid crisis.

- ✧ The Opioid Response Network (ORN) provides local, experienced consultants in prevention, treatment and recovery to communities and organizations to help address this opioid crisis.
- ✧ The ORN accepts requests for education and training.
- ✧ Each state/territory has a designated team, led by a regional Technology Transfer Specialist (TTS), who is an expert in implementing evidence-based practices.



Contact the Opioid Response Network

✧ To ask questions or submit a request for technical assistance:

- Visit www.OpioidResponseNetwork.org
- Email orn@aaap.org
- Call 401-270-5900



Opioids and Opiates

What we'll cover today

- Neurobiology of Addiction
- What are they? & What do they do?
- Why do we care?
 - Increased vulnerability
 - Risk factors
 - Overdose potential
- Who's using them?
- What is being done about it?

■ FRONTIERS IN NEUROSCIENCE: THE SCIENCE OF SUBSTANCE ABUSE ■

Addiction Is a Brain Disease, and It Matters

Alan I. Leshner

Scientific advances over the past 20 years have shown that drug addiction is a chronic, relapsing disease that results from the prolonged effects of drugs on the brain. As with many other brain diseases, addiction has embedded behavioral and social-context aspects that are important parts of the disorder itself. Therefore, the most effective treatment approaches will include biological, behavioral, and social-context compo-

Recognizing addiction as a chronic, relapsing brain disorder characterized by compulsive drug seeking and use can impact society's overall health and social policy strategies and help diminish the health and social costs associated with drug abuse and addiction.

affects both the health of the individual and the health of the public. The use of drugs has well-known and severe negative consequences for health, both mental and physical. But drug abuse and addiction also have tremendous implications for the health of the public, because drug use, directly or indirectly, is now a major vector for the transmission of many serious infectious diseases—particularly acquired immunodeficiency syndrome (AIDS), hepatitis, and tu-

Why do people take drugs?

To feel good

To have novel:
Feelings
Sensations
Experiences
AND
To share them

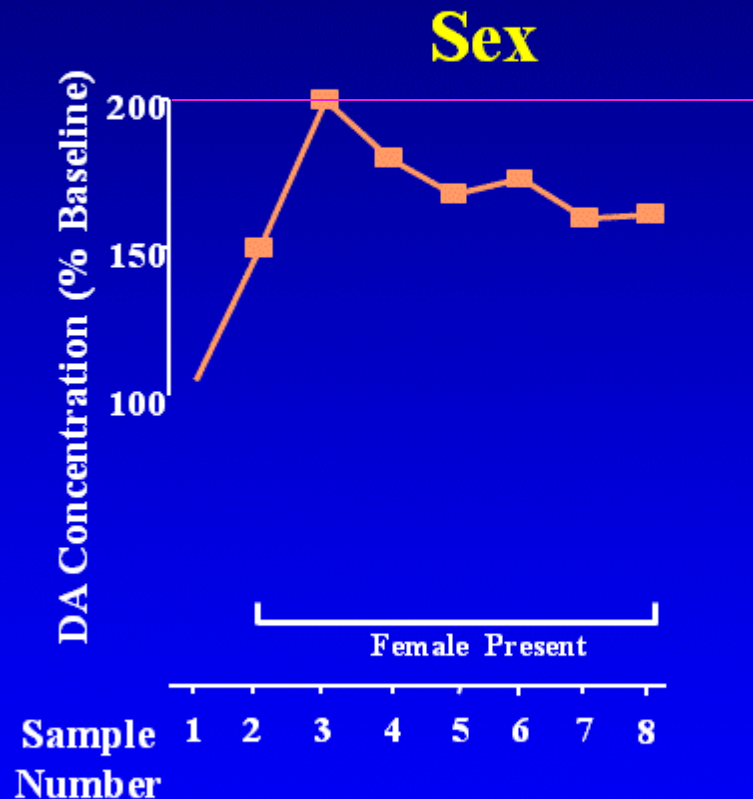
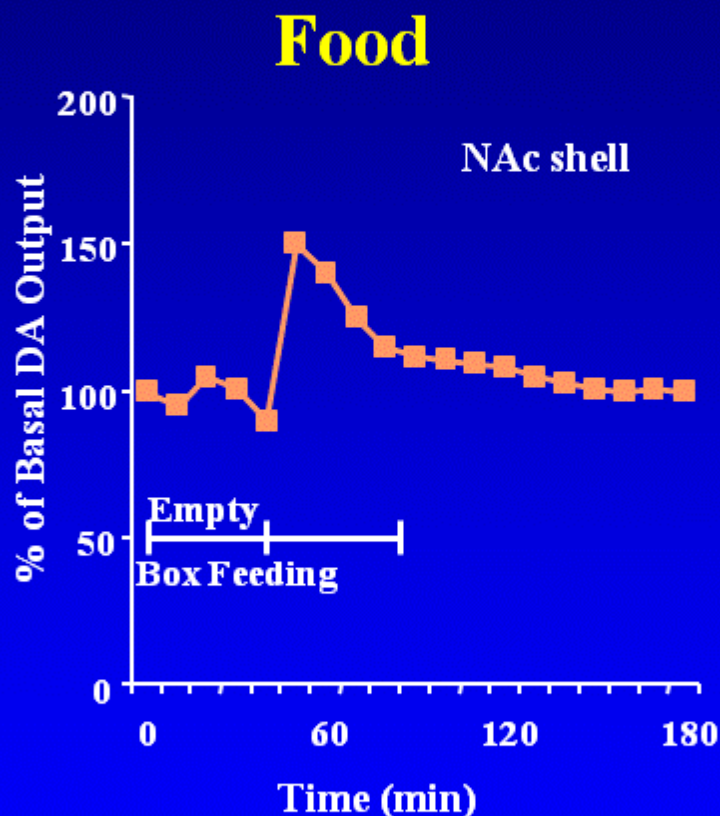


To feel better

To lessen:
Anxiety
Worries
Fears
Depression
Hopelessness
Withdrawal

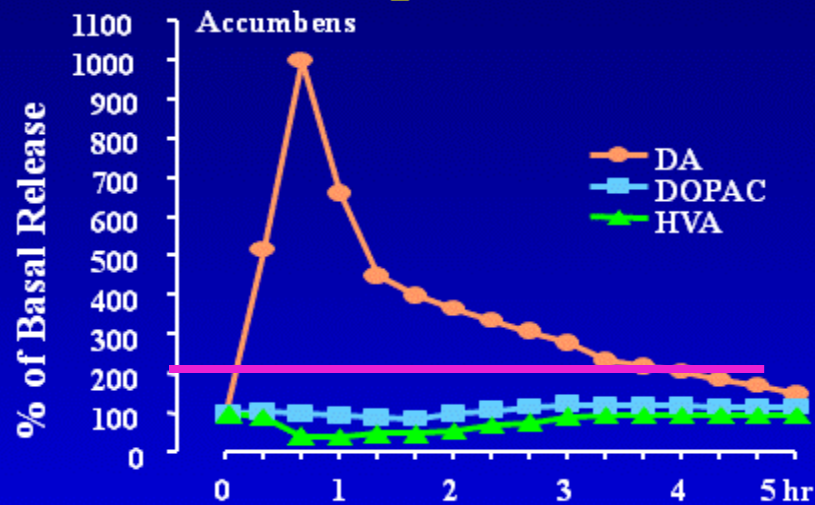


Natural Rewards Elevate Dopamine Levels

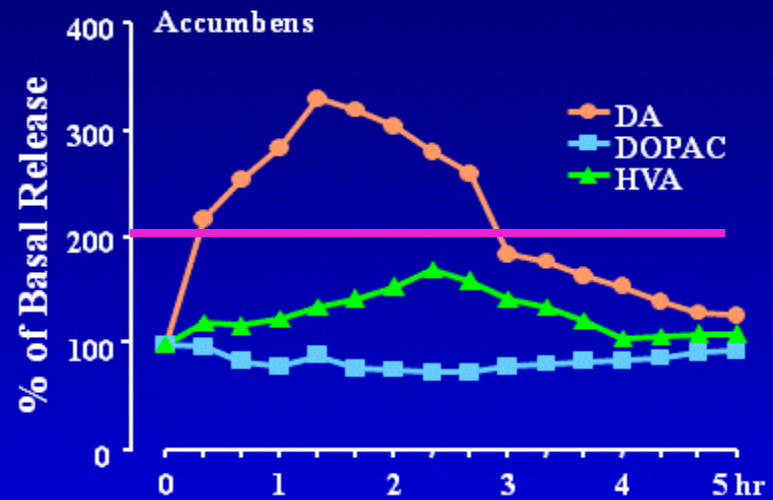


Effects of Drugs on Dopamine Release

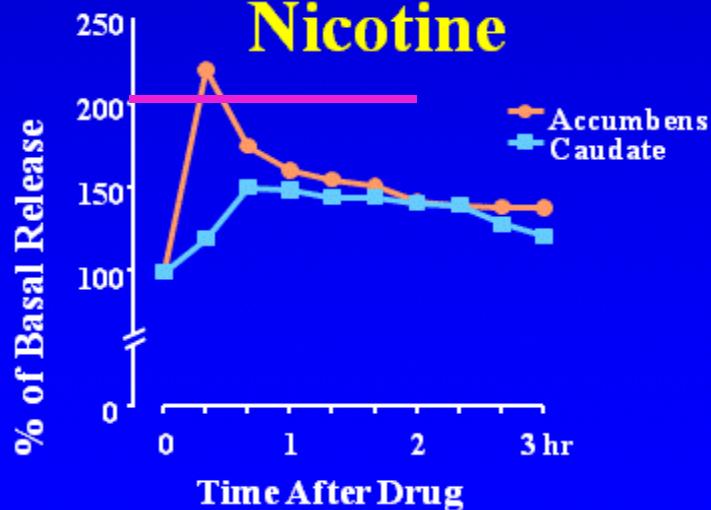
Amphetamine



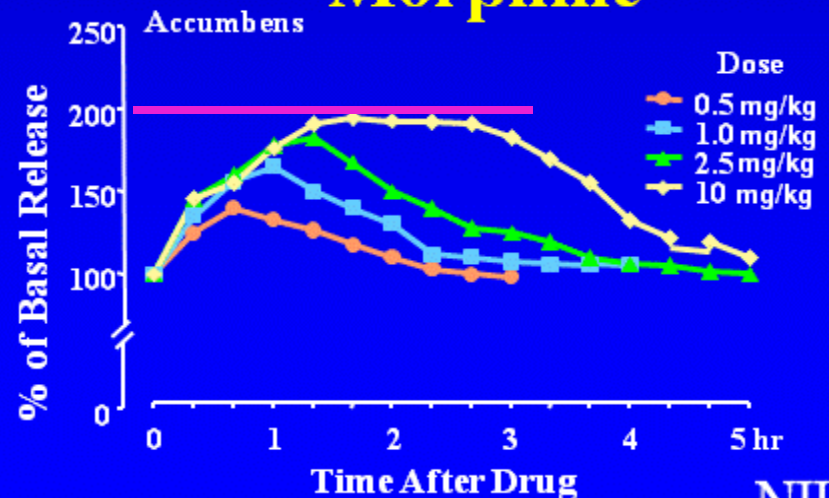
Cocaine



Nicotine

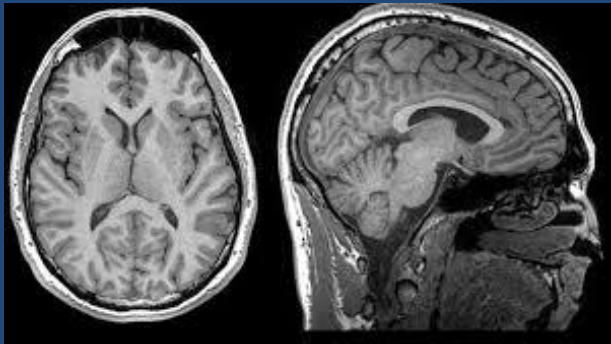


Morphine



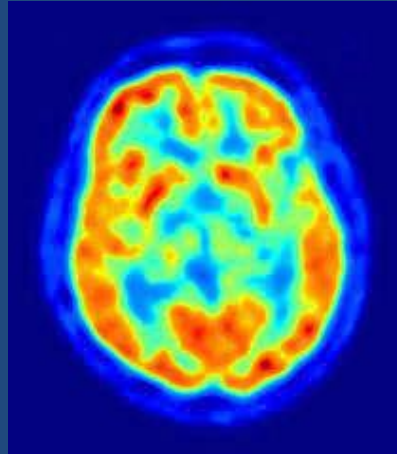
The Neurobiology of Addiction

MRI scan



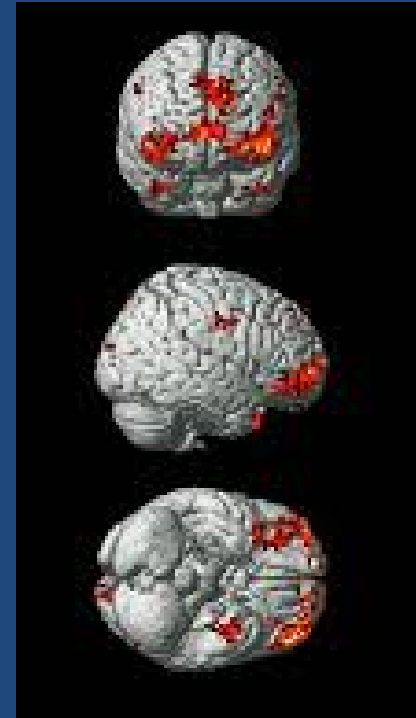
**Gray- and White-Matter
Structure**

PET Scan



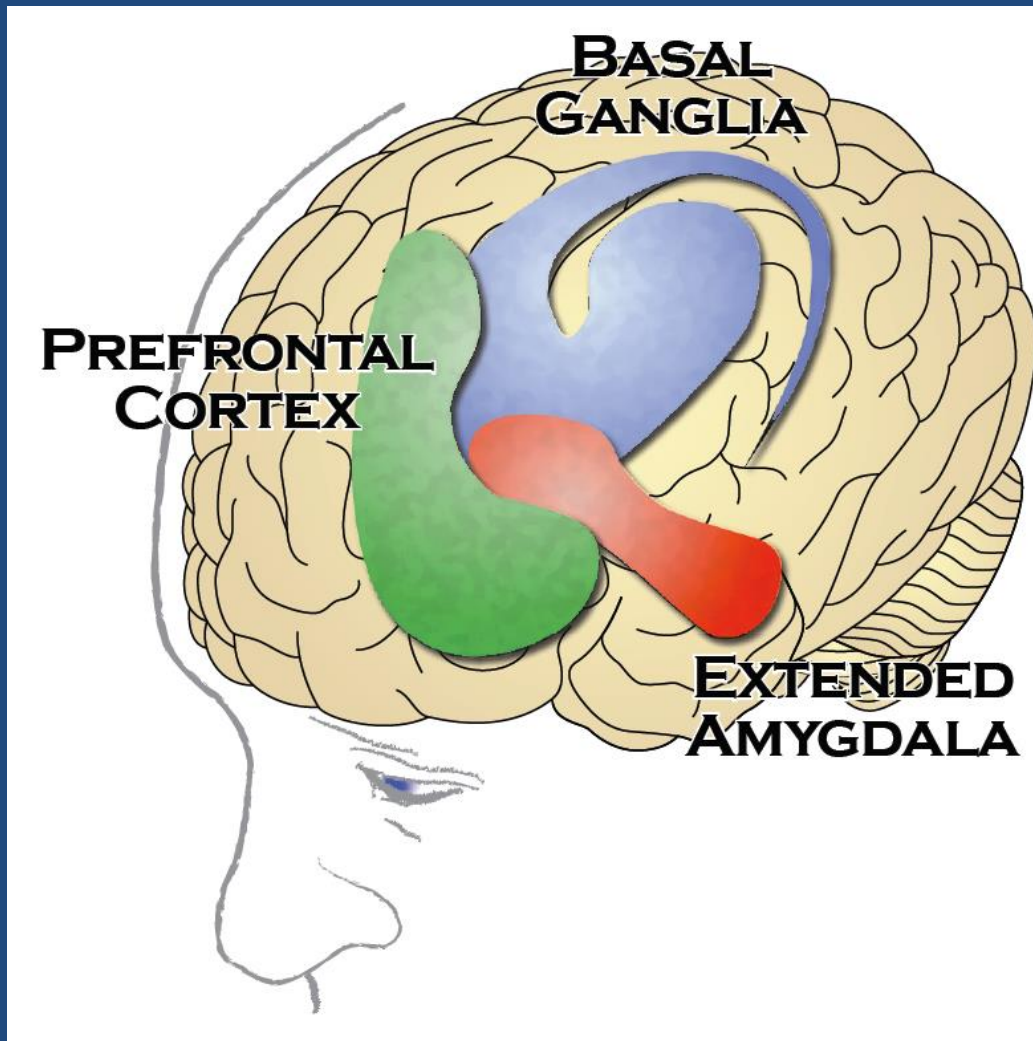
**Biochemistry
Molecular Dynamics**

functional MRI



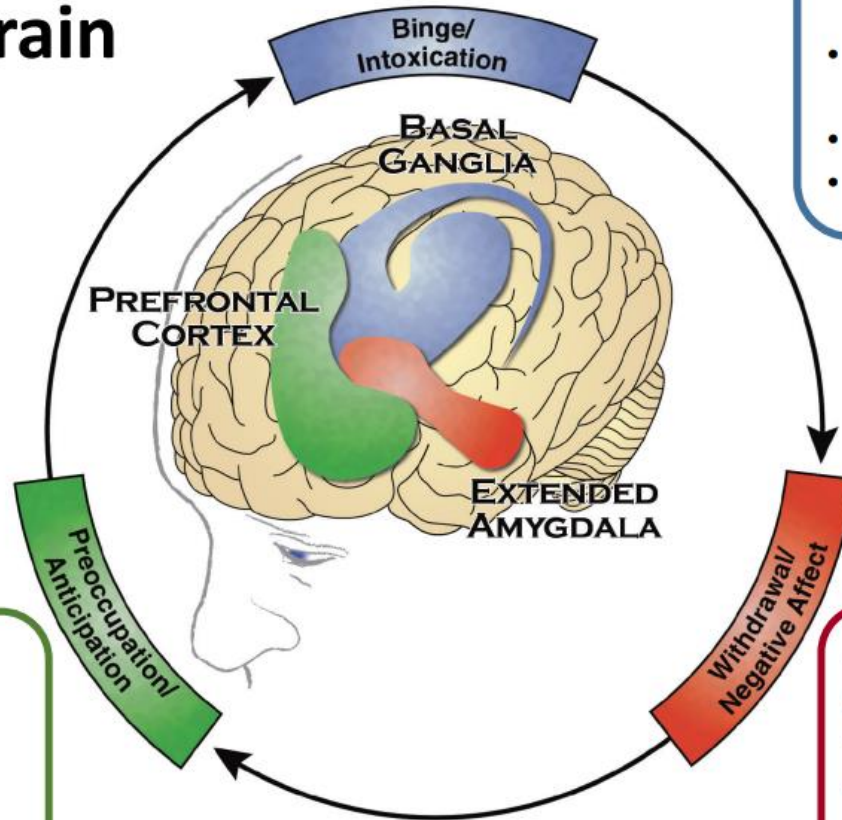
Brain activity

Brain Regions Involved in Substance Use



National Academies of Sciences, Engineering, and Medicine 2019. *Medications for Opioid Use Disorder Save Lives*. Washington, DC: The National Academies Press.
<https://doi.org/10.17226/25310>.

Addiction is a Progressive Brain Disorder



- Diminished response to natural reward
- Increased motivation to seek substance
- Conditioned cravings (triggers)
- Compulsivity

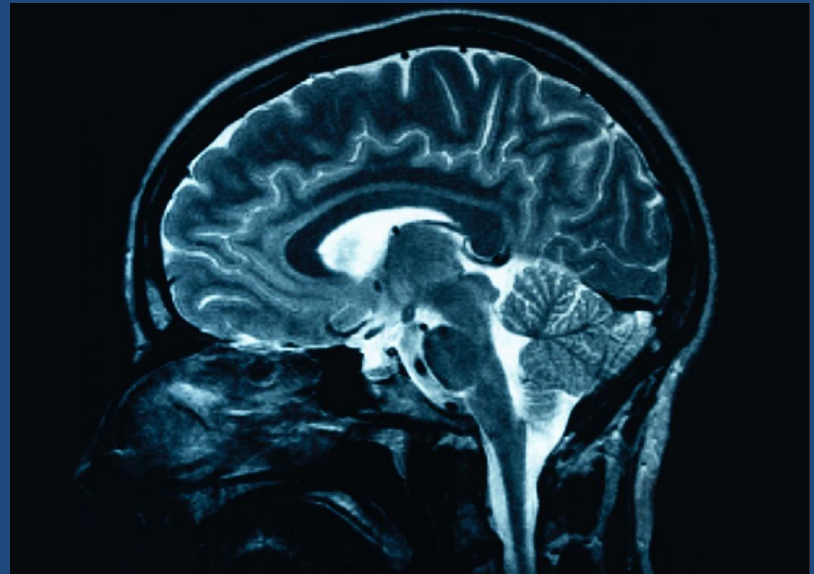
- Cravings
- Altered perception of substance's value
- Impulse control deficit
- Decision making impairments

- Withdrawal symptoms
- Anxiety and agitation
- Excessive stress
- Negative reinforcement (avoiding pain of withdrawal)

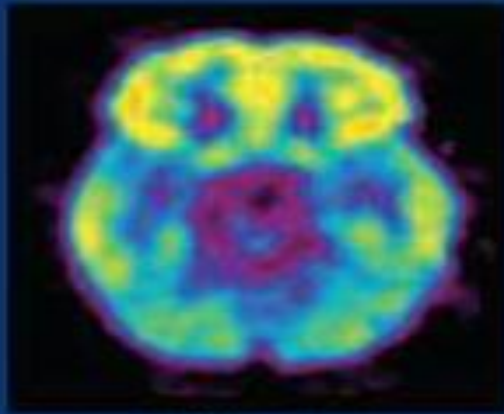
<https://addiction.surgeongeneral.gov/sites/default/files/chapter-2-neurobiology.pdf>

Drug addiction is a chronic brain disorder

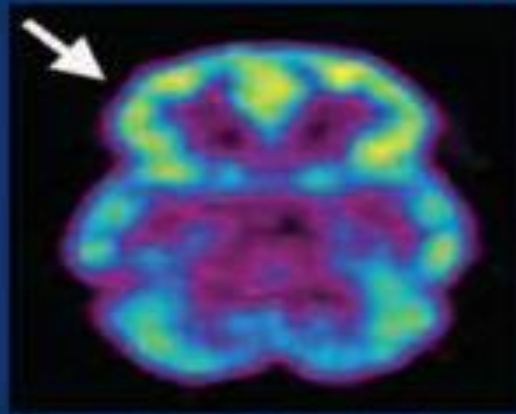
The brain shows distinct changes after drug use that can persist *long after the drug use has stopped*



DECREASED BRAIN METABOLISM IN **PERSON WHO ABUSES DRUGS**



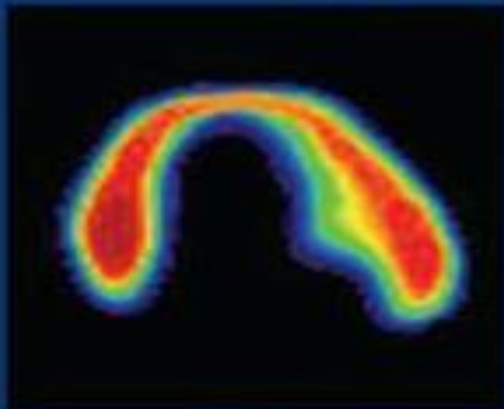
Healthy Brain



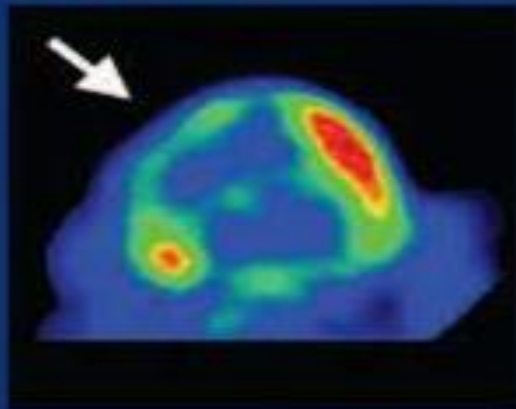
Diseased Brain/Cocaine Abuser



DECREASED HEART METABOLISM IN **HEART DISEASE PATIENT**



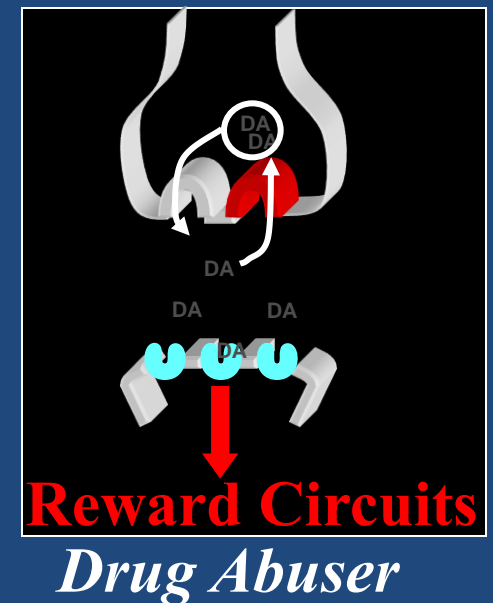
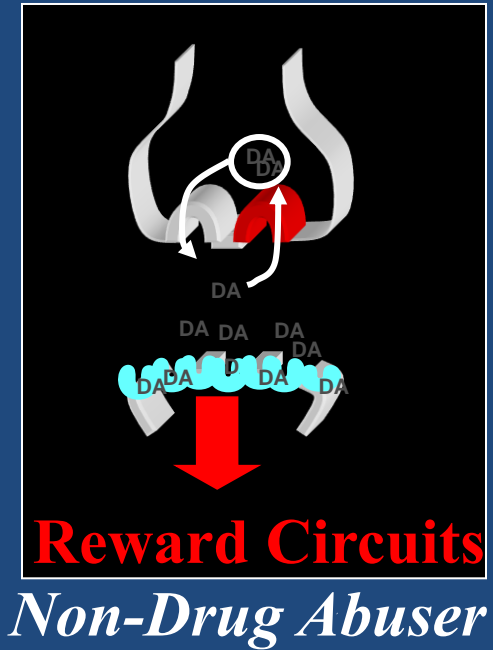
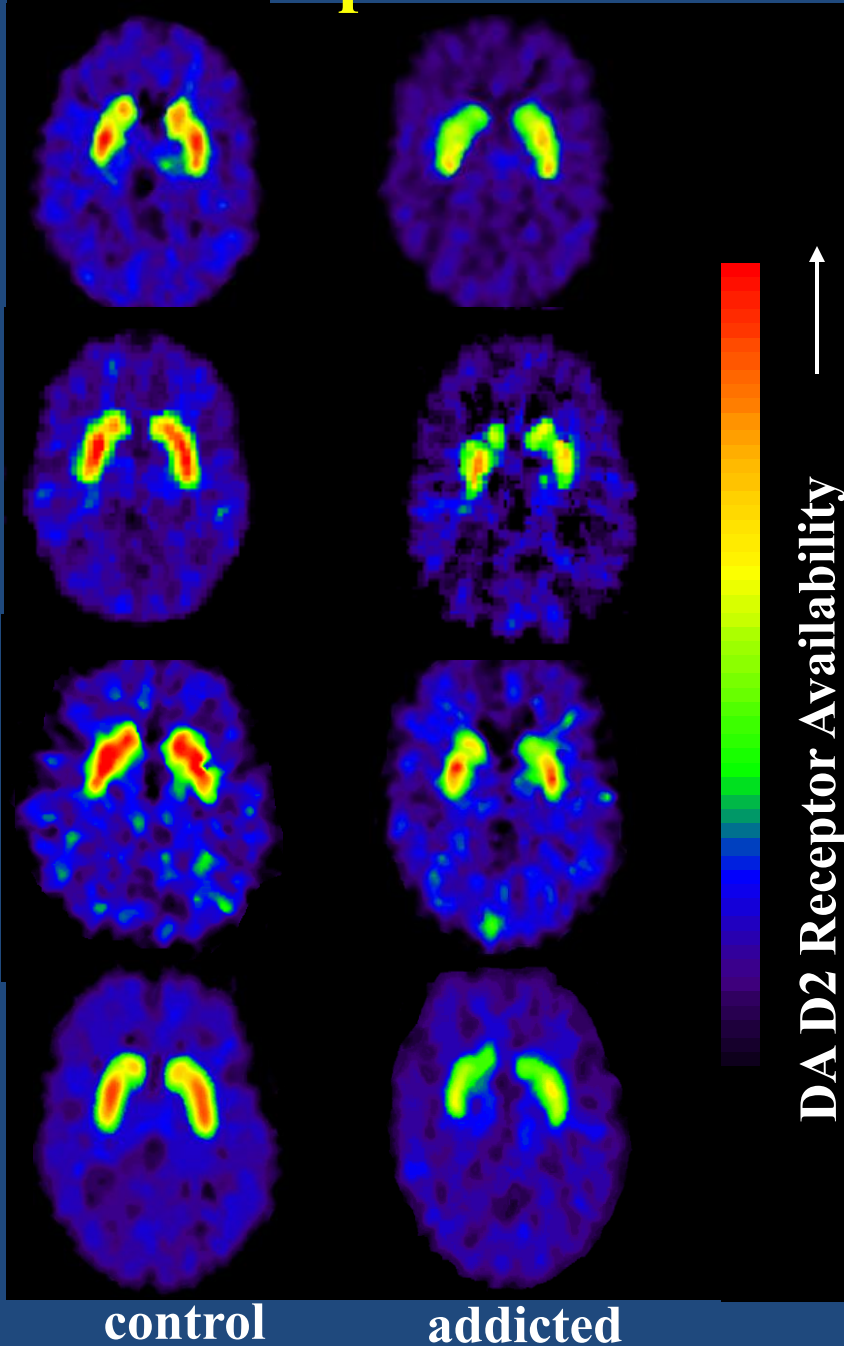
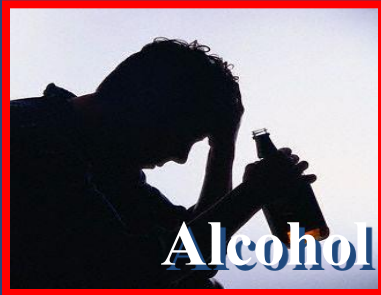
Healthy Heart



Diseased Heart

Source: From the laboratories of Drs. N. Volkow and H. Schelbert

Dopamine D2 Receptors are Lower in Addiction



Vulnerability to Addiction Differs from Person to Person

Between 40 and 60 percent of a person's vulnerability to alcohol and tobacco addiction is due to **genetic influences**



Addiction is, Fundamentally,
A *Brain Disease*

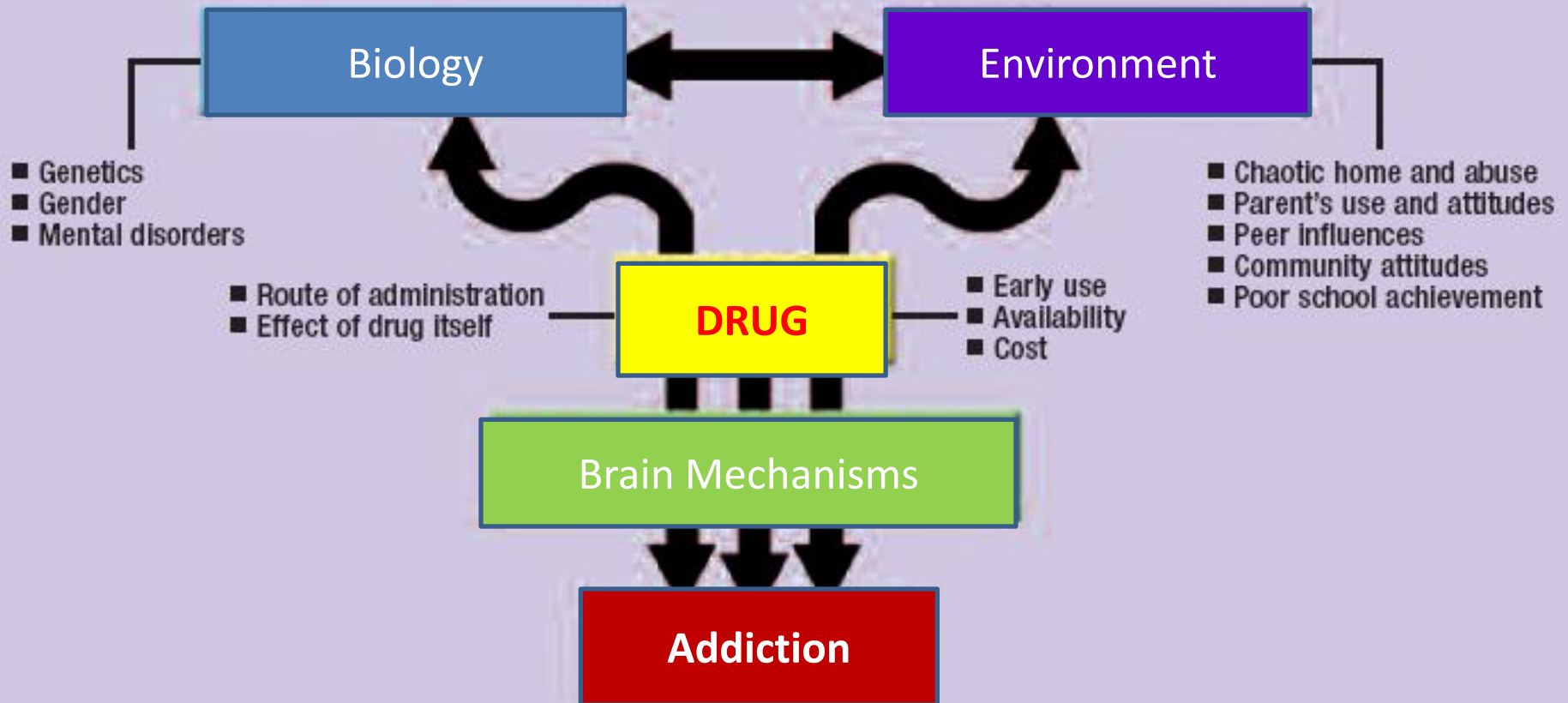
...*BUT*

It's Not *Just* a Brain Disease

Vulnerability to addiction differs from
person to person

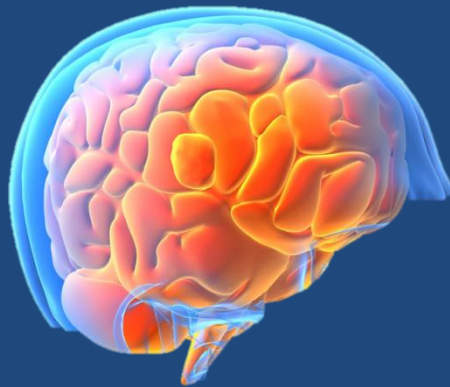
Environmental factors (e.g., conditions at
home, at school, and in the
neighborhood) also play a role

RISK FACTORS

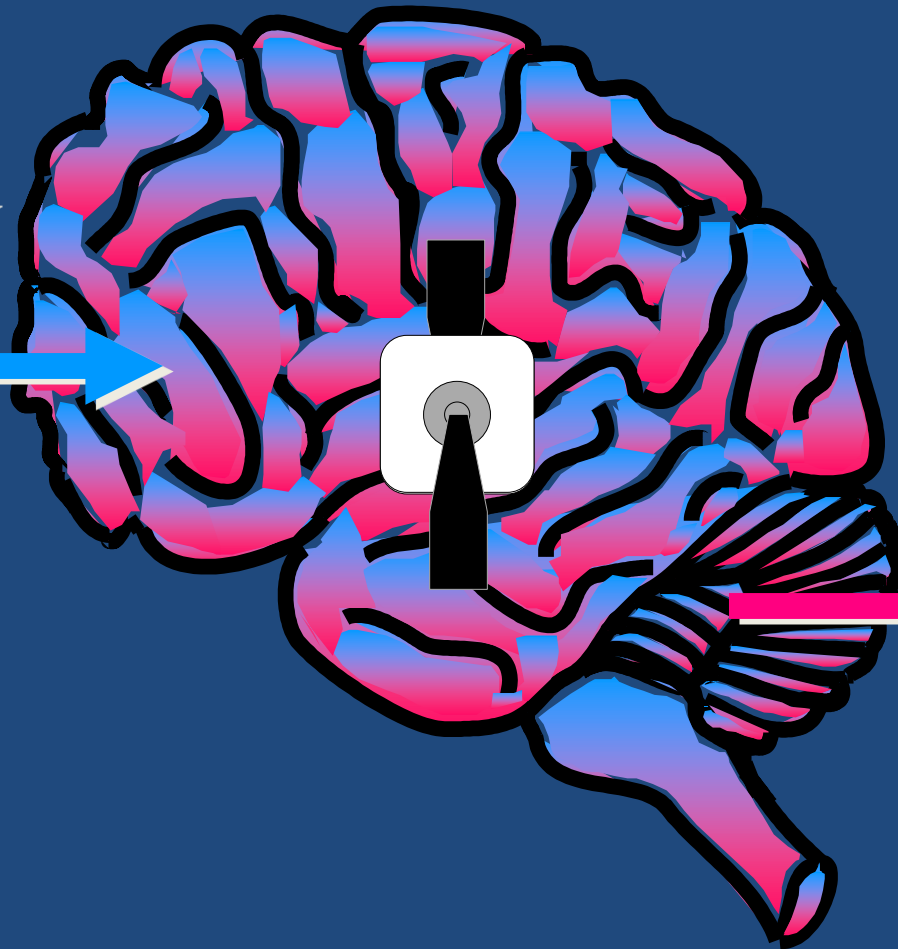


Why Can't People Just Stop Drug Use?

Prolonged drug use changes the brain in fundamental and long-lasting ways!



**Voluntary
Drug Use**



**Compulsive
Drug Use
(Addiction)**

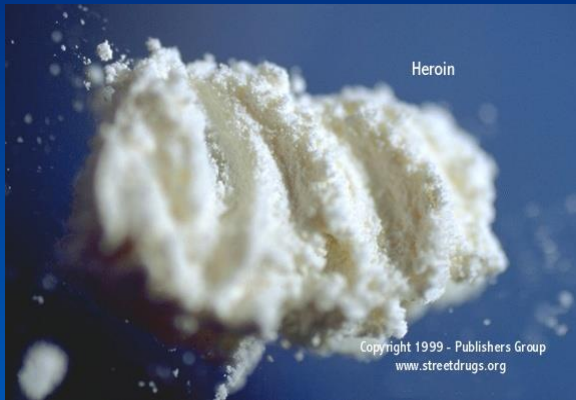


Opioids and Opiates

What we'll cover today

- Neurobiology of Drug Addiction
- What are they? & What do they do?
- Why do we care?
- Who's using them?
- How did we get here?
- What is being done about it?

Opioids



What are Opioids?

- The term “Opioid” refers to ALL:
 - Opiates
 - Derived compounds
 - Natural and synthetic analogs

Type	Examples
Endogenous Opioids	Endorphins, Dynorphins, Enkephalins
Opiates	Morphine, Codeine
Semisynthetic Opioids	Buprenorphine, Heroin, Oxycodone
Fully Synthetic Opioids	Fentanyl, Methadone

What do they do?

Description:

Opium-derived or synthetic compounds that are usually prescribed to treat pain; reduce the signaling of pain messages to the brain and reduce pain. Act on the opioid receptors to produce morphine-like effects including dependence, and can relieve symptoms during withdrawal from morphine addiction.

Route of administration:

Intravenous, smoked, intranasal, oral, intrarectal, and implantable

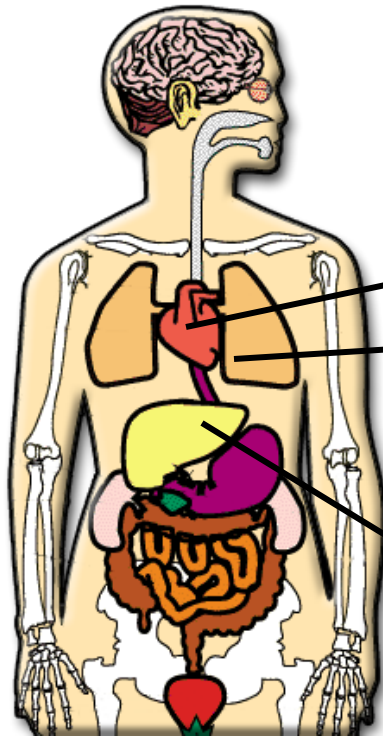
Effects of Opioids on the Brain

- Opioids are highly addictive.
- Brain cells can become dependent to the extent that users need it in order to function in their daily routine.
- Opioids initially cause a rush of pleasure.
- Opioids slow down the way you think, slows down reaction time, and impacts memory. This affects the way you act and make decisions.

Acute Opioid Effects

- ▶ Pupil constriction
- ▶ Slurred speech
- ▶ Impaired attention/memory
- ▶ Constipation
- ▶ Urinary retention
- ▶ Nausea
- ▶ Confusion, delirium
- ▶ Seizures
- ▶ Slowed heart rate
- ▶ Euphoria
- ▶ Sedation
- ▶ Pain Relief
- ▶ Suppresses Cough
- ▶ Warm flushing of the skin
- ▶ Drowsiness and lethargy
- ▶ Sense of well-being
- ▶ Histamine release
- ▶ Respiratory depression

Long-Term Effects of Opioids



- Fatal overdose
- Collapsed veins (intravenous use)
- Infectious diseases
- Higher risk of HIV/AIDS and hepatitis
- Infection of the heart lining and valves
- Pulmonary complications & pneumonia
- Respiratory problems
- Abscesses
- Liver disease
- Low birth weight and developmental delay
- Constipation
- Cellulitis

Opioid Withdrawal

- All opioids produce similar withdrawal symptoms when stopped abruptly
 - Severity varies with the amount and duration of use
- Timing of withdrawal symptoms depends on the opioid:
 - With longer-acting opioids, symptoms usually begin later and last longer:

Opioids used	onset of withdrawal	symptoms peak	duration of withdrawal
short-acting opioids (e.g. heroin, oxycodone)	6-12 hours	36-72 hours	about 5 days
long-acting opioids (e.g. methadone)	36-48 hours	~ 72 hours	up to 3 weeks

Symptoms of Opioid Withdrawal

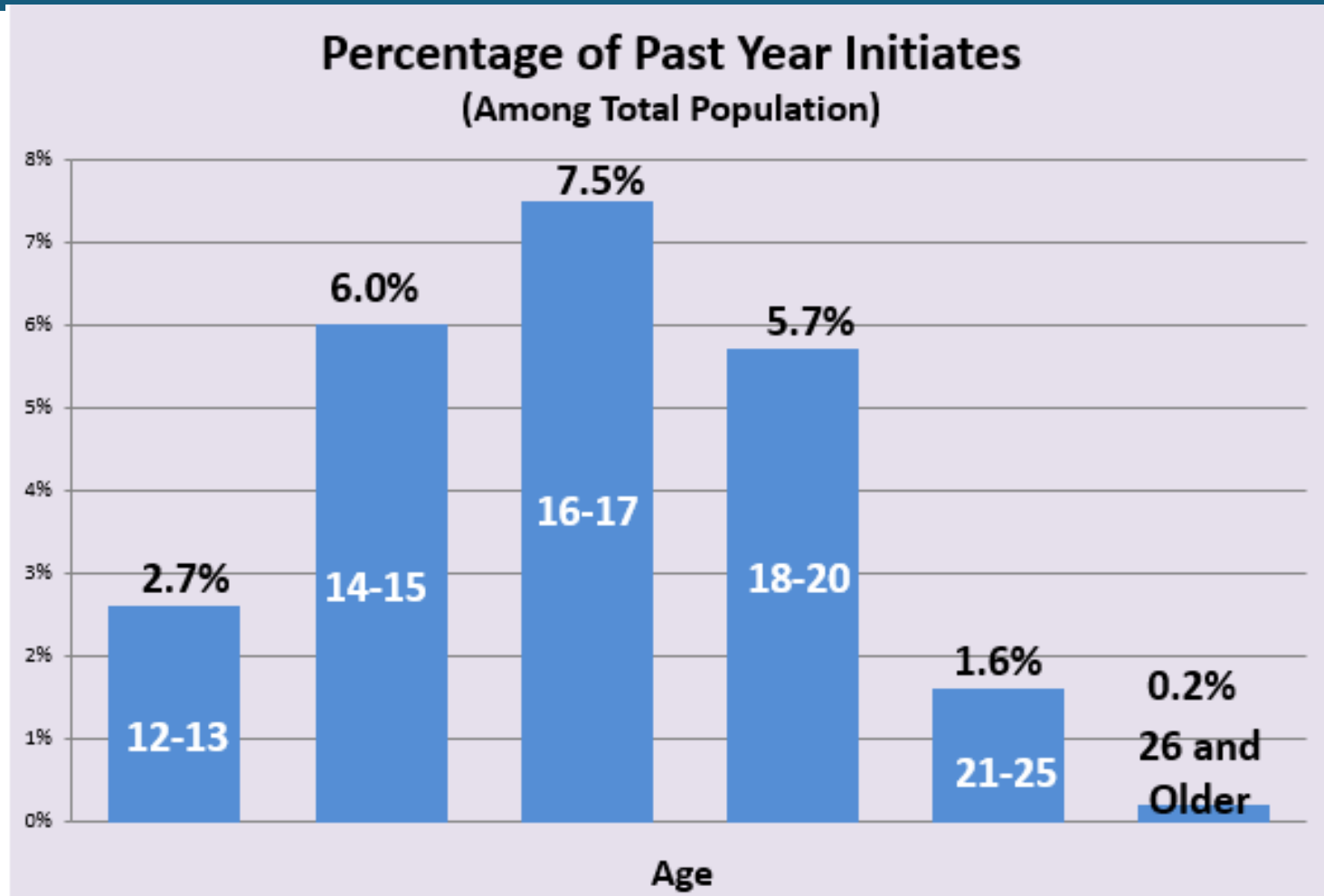
- Dysphoric mood
- Nausea or vomiting
- Diarrhea
- Tearing or runny nose
- Dilated pupils
- Muscle aches
- Goosebumps
- Sweating
- Yawning
- Fever
- Insomnia
- Protracted withdrawal generally less severe than the acute symptoms may persist for weeks/months

Opioids and Opiates

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- Who's using them?
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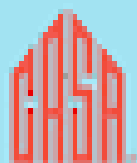
Most Illicit Drug use Starts in Adolescence



Source: Center for Behavioral Health Statistics, Substance Abuse and Mental Health Services Administration. *RESULTS FROM THE 2013 NATIONAL SURVEY ON DRUG USE AND HEALTH: DETAILED TABLES*. Rockville, MD; 2014. <https://www.samhsa.gov/data/sites/default/files/NSDUH-DetTabs2013.pdf>. Accessed April 14, 2018.

Age of First Drug Use Matters

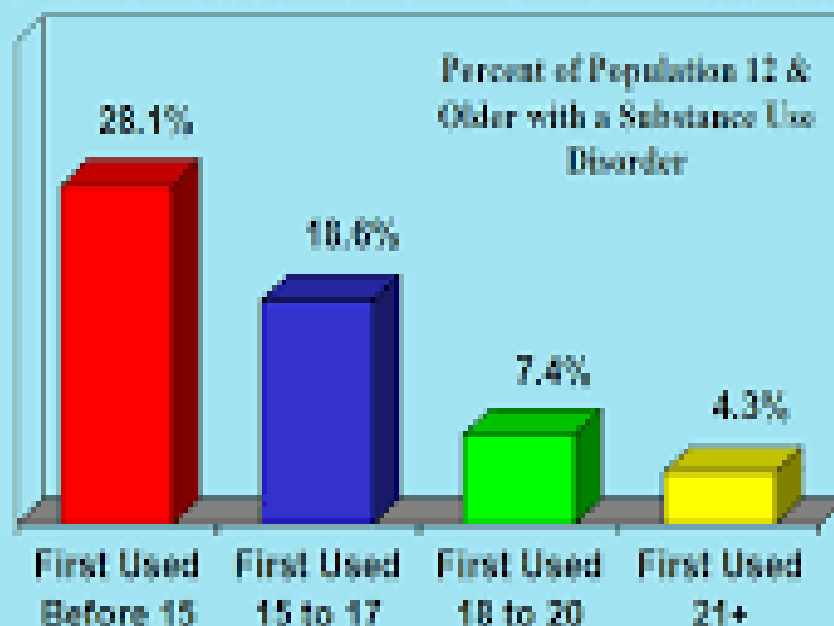
- ✧ Age of first use associated with risk of later SUD
- ✧ Initiation < 18 years
25% risk of SUD
- ✧ Initiation > 18 years
4% risk of SUD



Adolescent Substance Abuse:
America's #1 Public Health Problem

NIJ

The Earlier Teens Use Any Substance, the Greater the Risk of Addiction



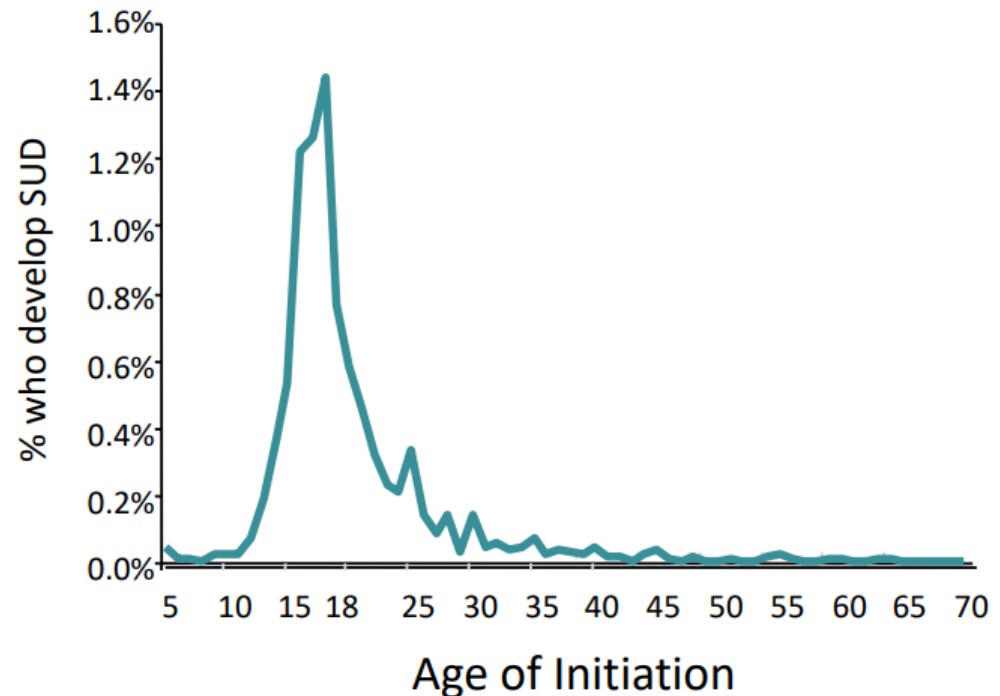
Source: CASA analysis of the National Household Survey on Drug Use and Health (NSDUH), 2009.

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Addiction is a Pediatric Disorder

- 90 percent of adults with any substance use disorder initiated substance use as teens
- Early adverse experiences strongly influence risk for substance use disorder
 - Child neglect and maltreatment
 - Drug use and addiction among parents



[http://www.jpedhc.org/article/S0891-5245\(16\)30279-6/pdf](http://www.jpedhc.org/article/S0891-5245(16)30279-6/pdf); NIAAA National Epidemiologic Survey on Alcohol and Related Conditions, 2003



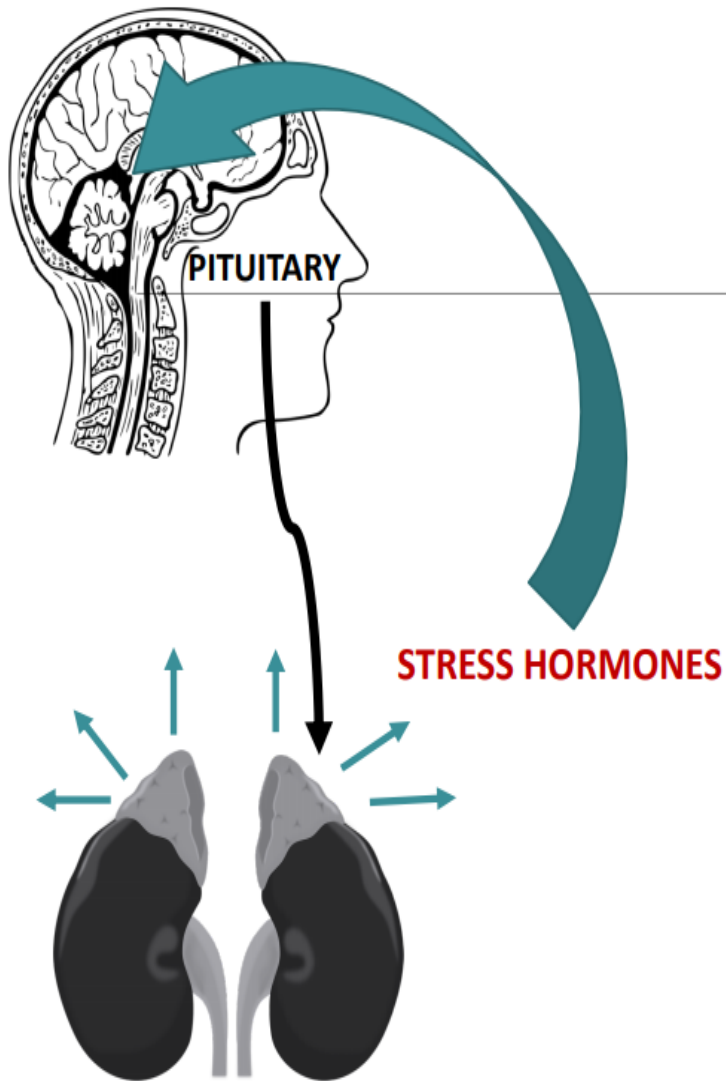
Addiction is a Pediatric Disease



- **9 out of 10** people with a substance use disorder started using in adolescence
- Those who use addictive substances before age 15 are **6.5 times more likely** to develop an addiction as those who delay use until age 21 or older
- **11%** of adolescents develop a substance use disorder before they reach 18
- Earlier onset of substance use **predicts greater addiction severity**

Delaying Initiation is **Key** to Prevention

Addiction Changes Your Stress Response



In a healthy brain:

- the stress response is activated
- cortisol is released and spreads through the body
- when cortisol reaches the brain it turns off the stress response

In an addicted brain:

- The brain circuits that normally turn off the stress response don't work very well
- Their stress response stays on high for longer

The interaction between the developing nervous system and drugs of abuse leads to:

- **Difficulty in decision making**
- **Difficulty understanding the consequences of behavior**
- **Increased vulnerability to memory and attention problems**

This can lead to:

- **Increased experimentation**
- **Opioid (and other substance) addiction**



Risk Factors for Prescription Opioid Pain Reliever Abuse and Overdose



Obtaining overlapping prescriptions from multiple providers and pharmacies.



Taking high daily dosages of prescription opioid pain relievers.



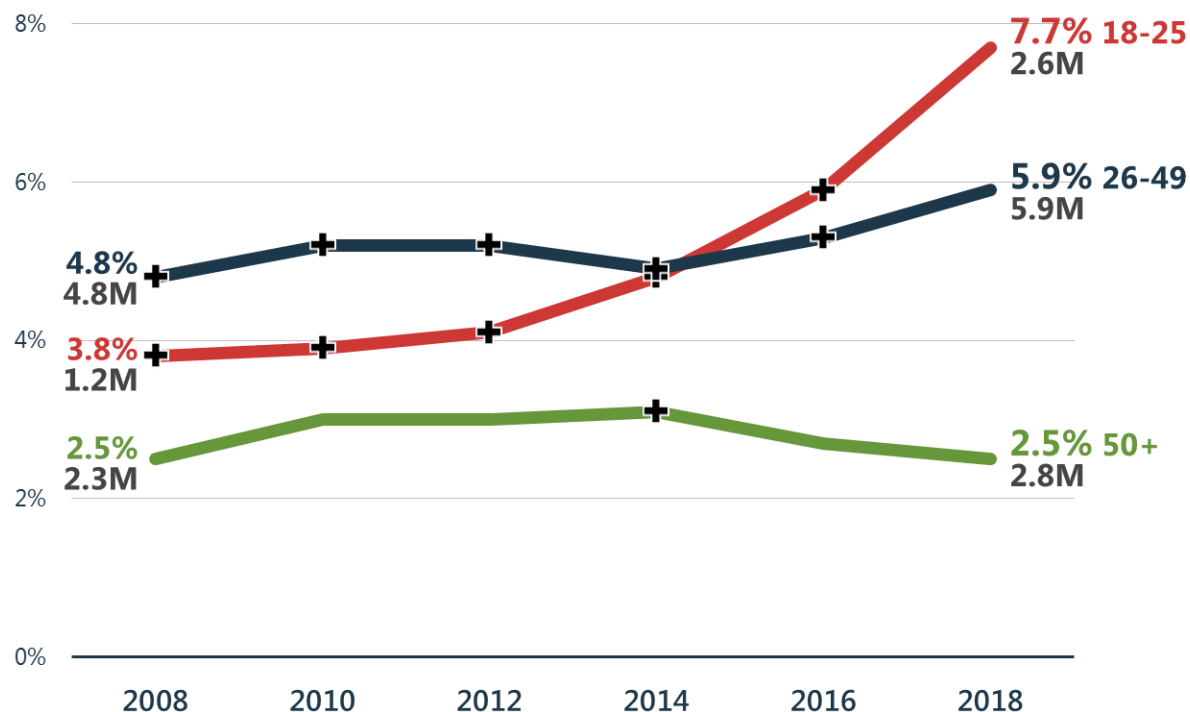
Having mental illness or a history of alcohol or other substance abuse.



Living in rural areas and having low income.

Serious Mental Illness (SMI) Rising among Young Adults (18-25 y.o.) and Adults (26-49 y.o.)

PAST YEAR, 2008-2018 NSDUH, 18+



+ Difference between this estimate and the 2018 estimate is statistically significant at the .05 level.

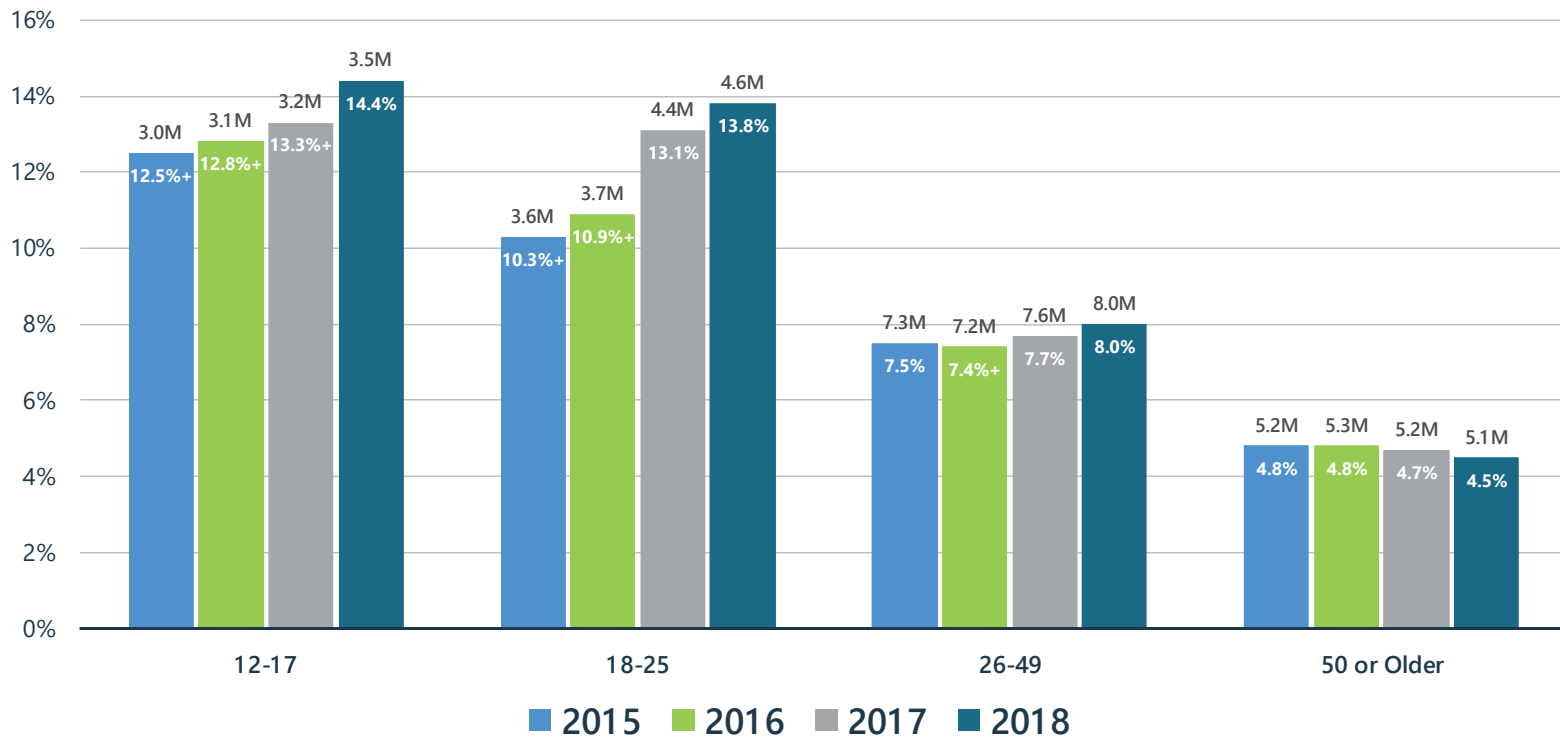


53.8%
1.4 MILLION YOUNG ADULTS WITH SMI RECEIVED TREATMENT IN 2018
46.2% got NO treatment

63.7%
3.8M adults (26-49 y.o.) with SMI received treatment;
36.3% got NO treatment

Major Depressive Episodes

PAST YEAR, 2015-2018 NSDUH, 12+

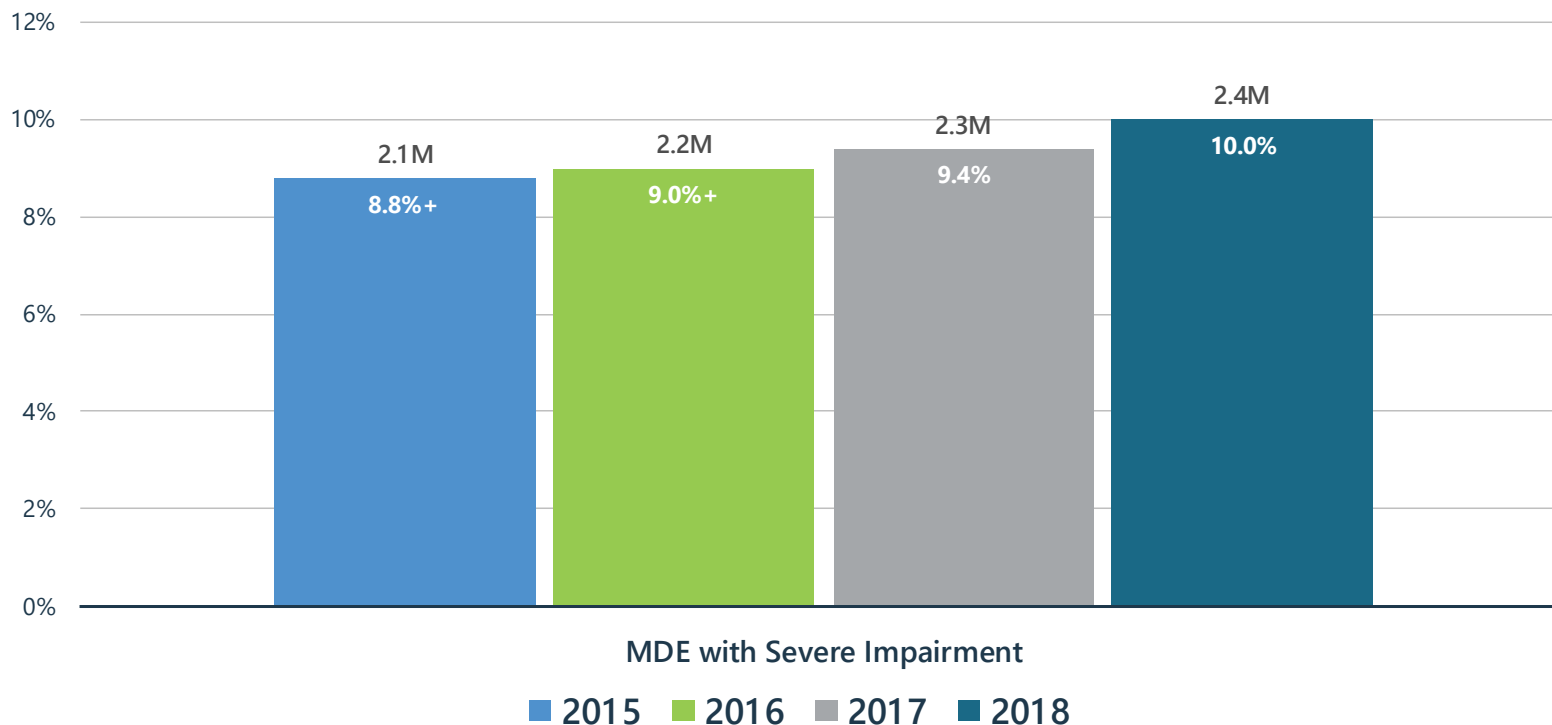


+ Difference between this estimate and the 2018 estimate is statistically significant at the .05 level.

Note: The adult and youth MDE estimates are not directly comparable.

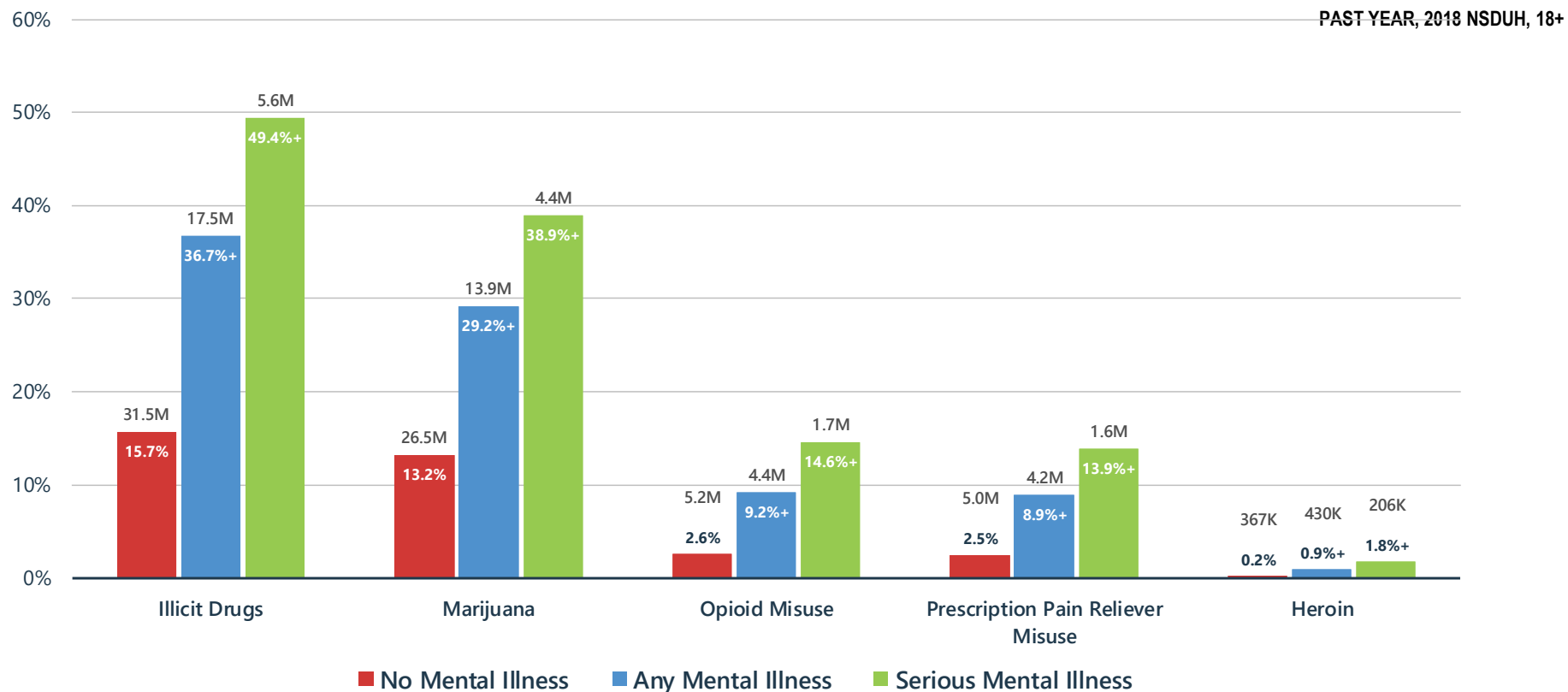
Major Depressive Episodes with Severe Impairment among Adolescents

PAST YEAR, 2015-2018 NSDUH, 12-17



+ Difference between this estimate and the 2018 estimate is statistically significant at the .05 level.

Co-Occurring Issues: Substance Use Is More Frequent among Adults (≥ 18 y.o.) with Mental Illness



+ Difference between this estimate and the estimate for adults without mental illness is statistically significant at the .05 level.



THE OPIOID EPIDEMIC BY THE NUMBERS

IN 2016...



116

People died every day
from opioid-related
drug overdoses



11.5 m

People misused
prescription opioids¹



42,249

People died from
overdosing on opioids²



2.1 million

People had an opioid use
disorder¹



948,000

People used heroin¹



170,000

People used heroin for
the first time¹



2.1 million

People misused prescription
opioids for the first time¹



17,087

Deaths attributed to
overdosing on commonly
prescribed opioids²



19,413

Deaths attributed to
overdosing on synthetic
opioids other than
methadone²



15,469

Deaths attributed to
overdosing on heroin²



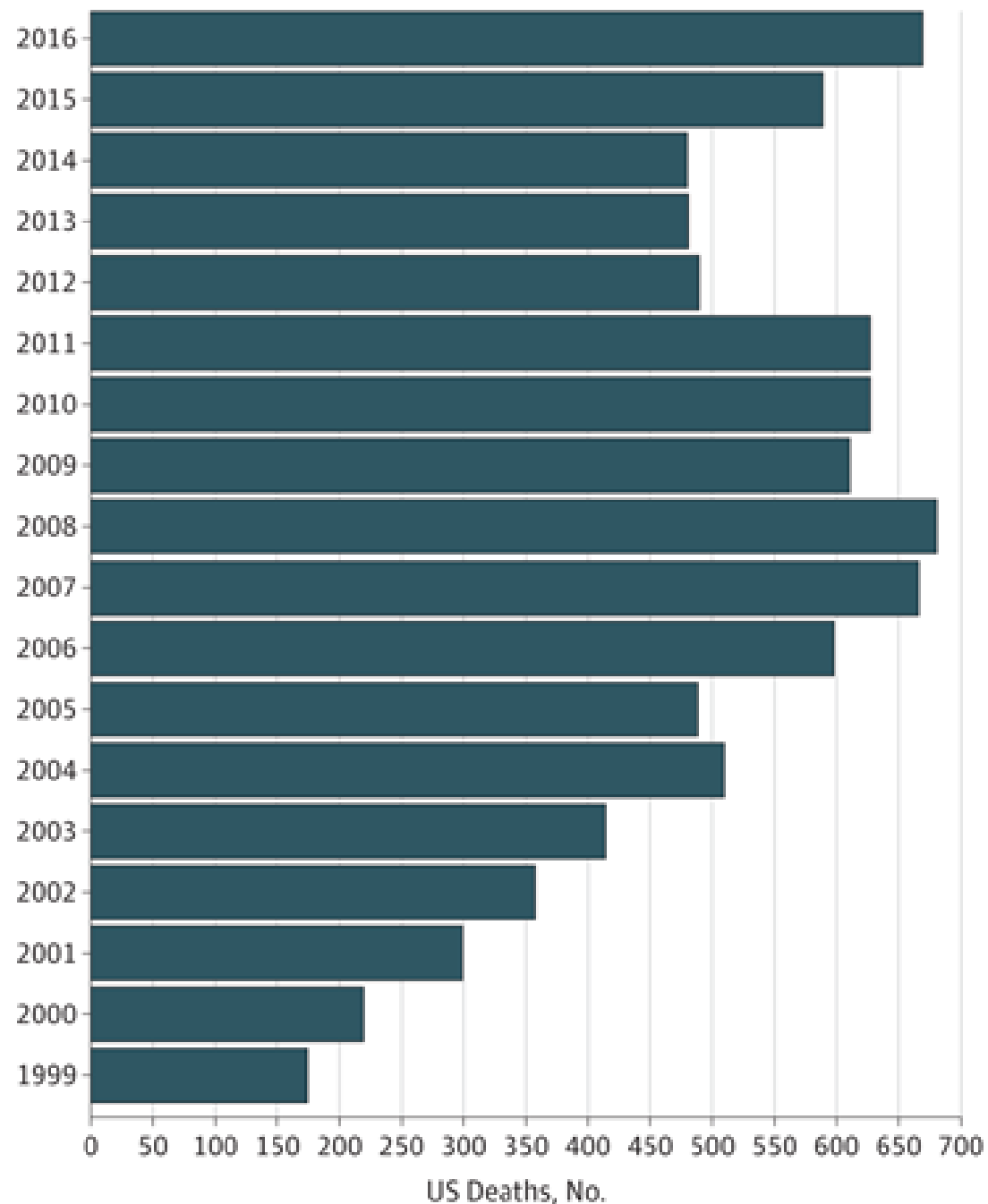
504 billion

In economic costs³

Sources: ¹ 2016 National Survey on Drug Use and Health, ² Mortality in the United States, 2016 NCHS Data Brief No. 293, December 2017, ³ CEA Report: The underestimated cost of the opioid crisis, 2017

Number of Pediatric Opioid Deaths and Mortality Rates by Year

A Annual observed death counts



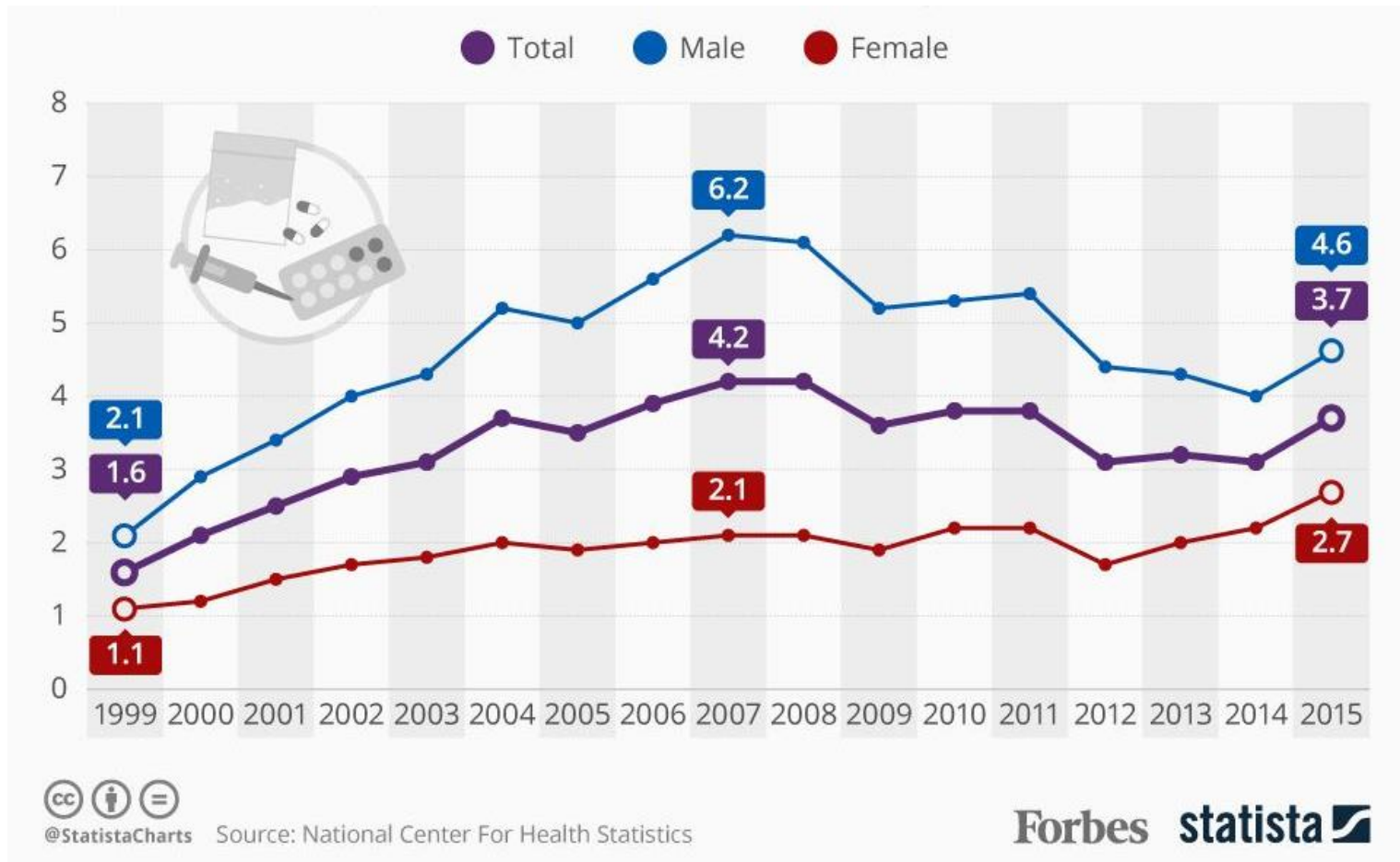
Pediatric Deaths from Prescription and Illicit Opioids

US National Trends in Pediatric Deaths from Prescription and Illicit Opioids, 1999-2016

Gaither, J, Shabanova, V and Leventhal, J., JAMA, December, 2018

Demographic and Clinical Characteristics	No. (%)
No.	8986
Age category, y	
0-4	605 (6.7)
5-9	96 (1.1)
10-14	364 (4.1)
15-19	7921 (88.1)
Sex	
Male	6567 (73.1)
Female	2419 (26.9)
Race	
Non-Hispanic white	7183 (79.9)
Non-Hispanic black	642 (7.1)
Hispanic	929 (10.3)
Other	232 (2.6)
Place of death	
Home	3419 (38.0)
Inpatient	939 (10.4)
Emergency department or outpatient	2165 (24.1)
Dead on arrival	345 (3.8)
Other or unknown	2118 (23.6)
Manner of death	
Unintentional	7263 (80.8)
Suicide	445 (5.0)
Homicide	219 (2.4)
Undetermined	1059 (11.8)

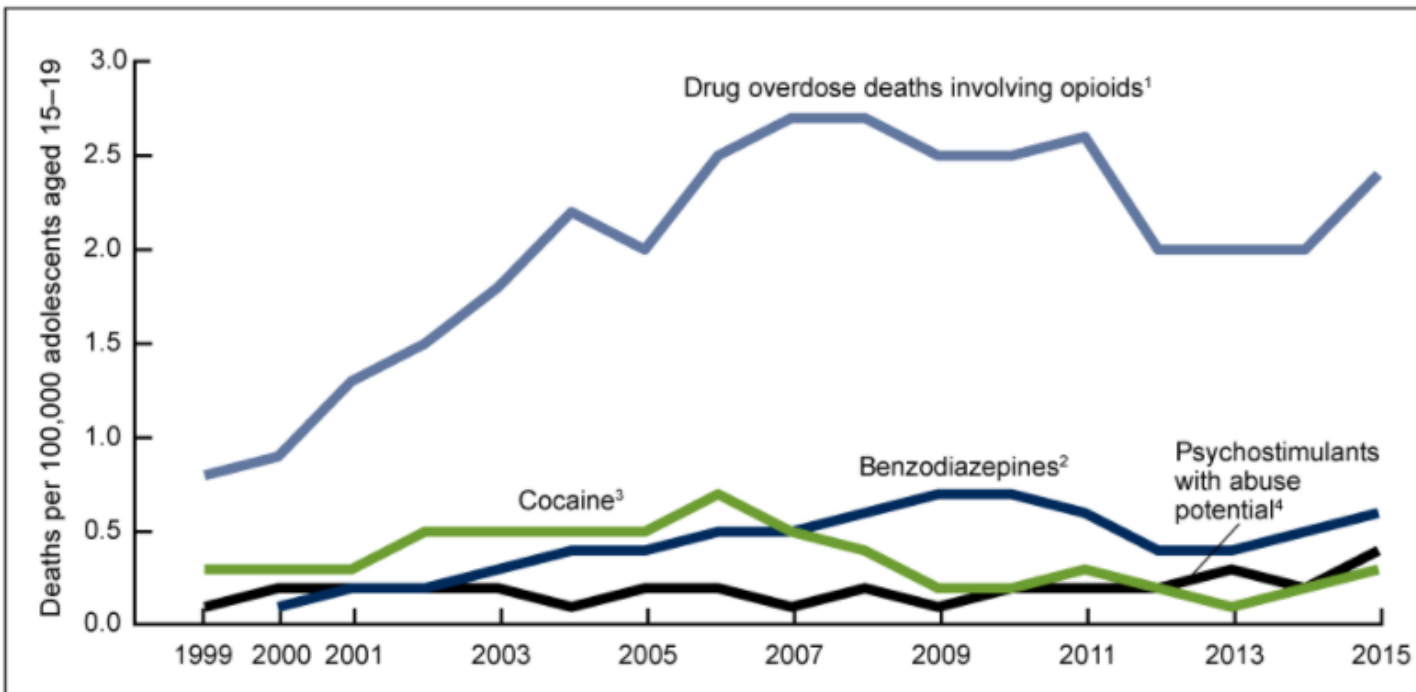
Teen Overdose Deaths in the US 1999-2015 (age 15-19)



Opioid Overdose in Youth

- ✧ Tripling of deaths from Rx & illicit opioids in youth 1999→ 2016 (Gaither, et al JAMA Network Open, 2018)
- ✧ Largest increase in deaths in youth aged 15-19 yrs

Figure 3. Drug overdose death rates for adolescents aged 15–19, by type of drug involved: United States, 1999–2015



Centers for Disease Control (2017)



Focus on Opioid Use in Youth

Percent of Students Reporting Nonmedical Use of Vicodin in Past Year, by Grade



SOURCE: University of Michigan, 2017 Monitoring the Future Study



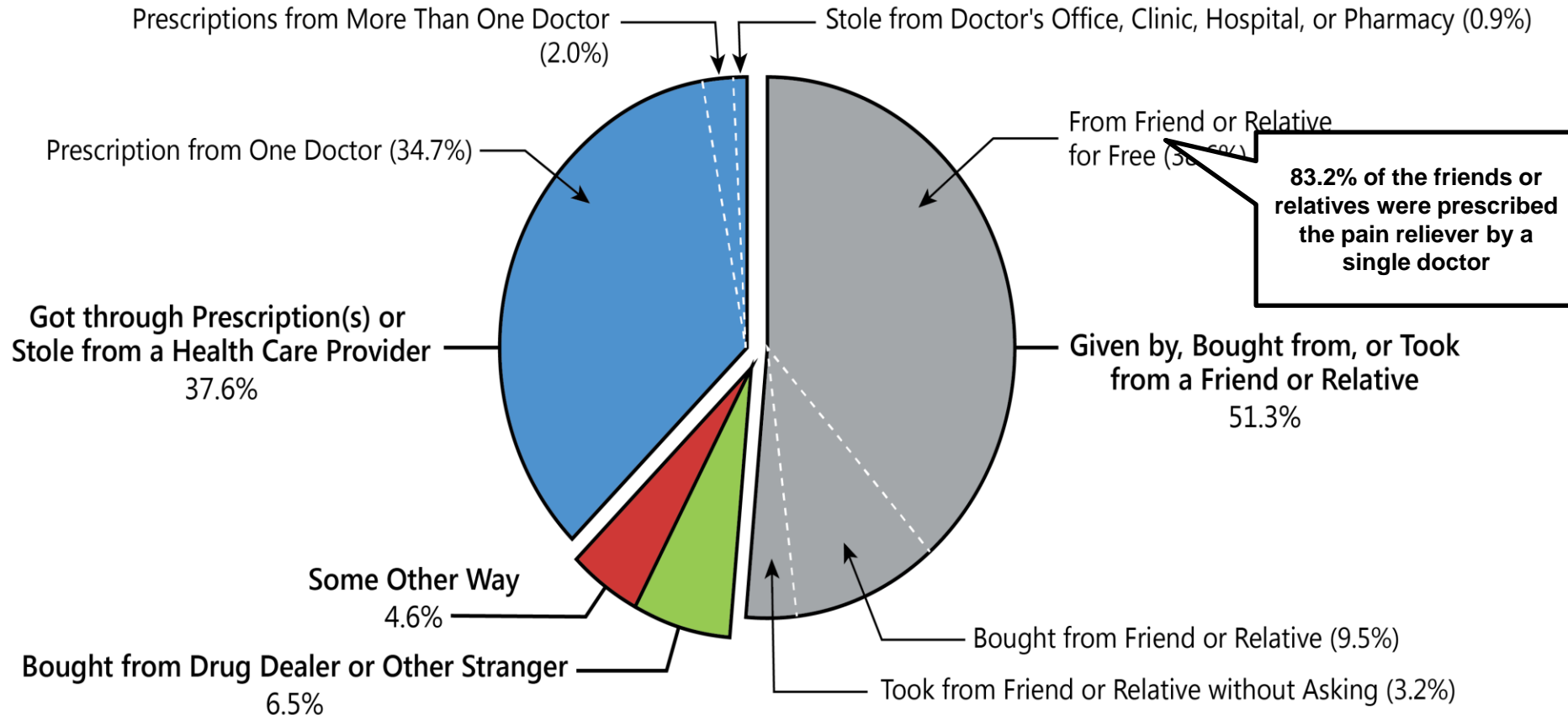
Reasons for Misusing Opioids

Easy to get from medicine cabinet	62%
Available everywhere	52%
Not illegal	51%
Easy to get through other people's prescription	50%
Can claim you have a prescription if caught	49%
Cheap	43%
Safer to use than illegal drugs	35%
Less shame attached to using	33%
Easy to purchase over the Internet	32%
Fewer side effects than street drugs	32%
Parents don't care as much if you get caught	21%



Source: Partnership for a Drug-Free America. The Partnership Attitude Tracking Study (PATs): Teens in grades 7 through 12 2005, 2006.

Where Pain Relievers Were Obtained for People Who Misused Prescription Pain Relievers



9.9 Million People Aged 12 or Older Who Misused Prescription Pain Relievers in the Past Year

Reasons for Misuse: Adults

Main reason for misuse	Pain reliever	Tranquilizer	Stimulant	Sedative
Relieve physical pain	63.4 (1.26)	-- (--)	-- (--)	-- (--)
Relax or relieve tension	10.9 (0.82)	46.2 (1.84)	-- (--)	12.0 (2.47)
Help with sleep	4.5 (0.54)	21.2 (1.54)	-- (--)	73.2 (3.42)
Help with feelings or emotions	3.2 (0.40)	10.9 (1.12)	-- (--)	3.9 (1.44)
Experiment or see what it is like	2.0 (0.25)	5.4 (0.77)	5.2 (0.76)	3.0 (0.84)
Feel good or get high	11.7 (0.75)	11.0 (1.03)	9.8 (0.95)	5.1 (1.71)
Increase or decrease effects of other drugs	0.9 (0.24)	1.6 (0.38)	1.5 (0.40)	1.3 (0.77)
Because the respondent is "hooked" or has to have it	2.5 (0.32)	0.4 (0.16)	0.1 (0.07)	** (**)
Help lose weight	-- (--)	-- (--)	4.3 (0.66)	-- (--)
Help concentrate	-- (--)	-- (--)	26.2 (1.39)	-- (--)
Help be alert or stay awake	-- (--)	-- (--)	28.4 (1.66)	-- (--)
Help study	-- (--)	-- (--)	22.4 (1.32)	-- (--)
Some other reason	1.1 (0.24)	3.4 (0.69)	2.1 (0.63)	1.6 (0.80)

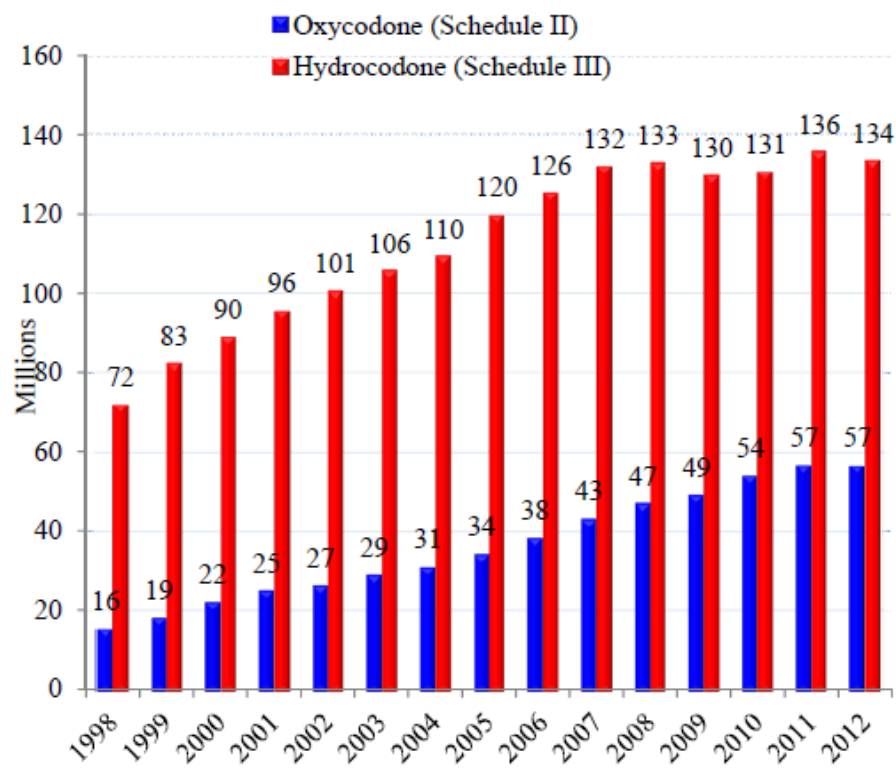
Opioids and Opiates

What we'll cover today

- Neurobiology of Drug Addiction
- What are they? & What do they do?
- Why do we care?
- Who's using them?
- How did we get here?
- What is being done about it?

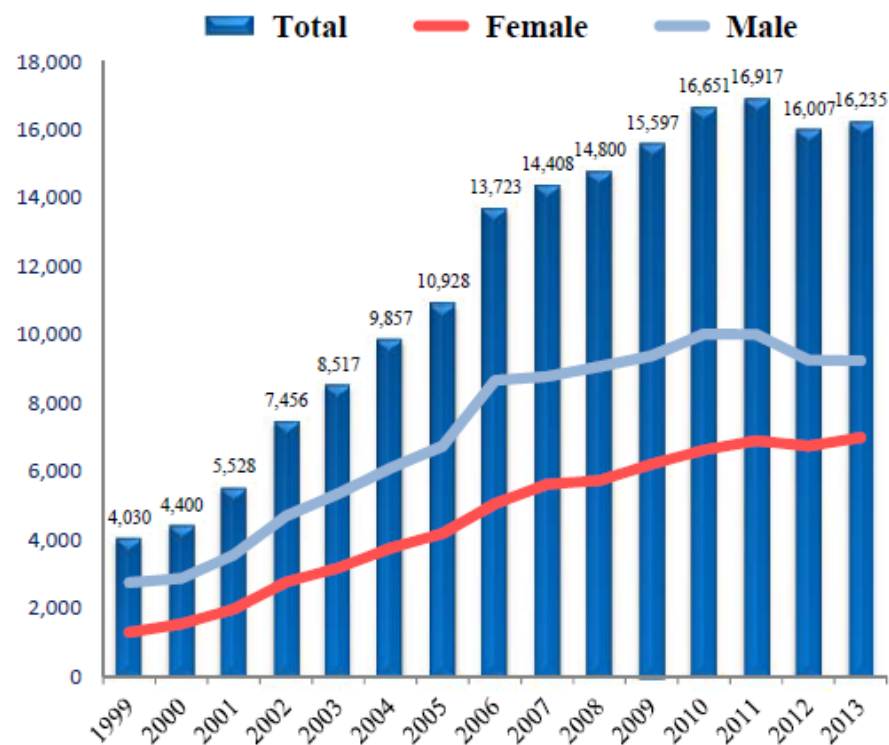
High Levels of Opioid Prescriptions have Facilitated Diversion & Contributed to Overdose Deaths

Oxycodone & Hydrocodone Prescriptions



SDI Health, VONA_02-1-13_Opioids Schedule II & III

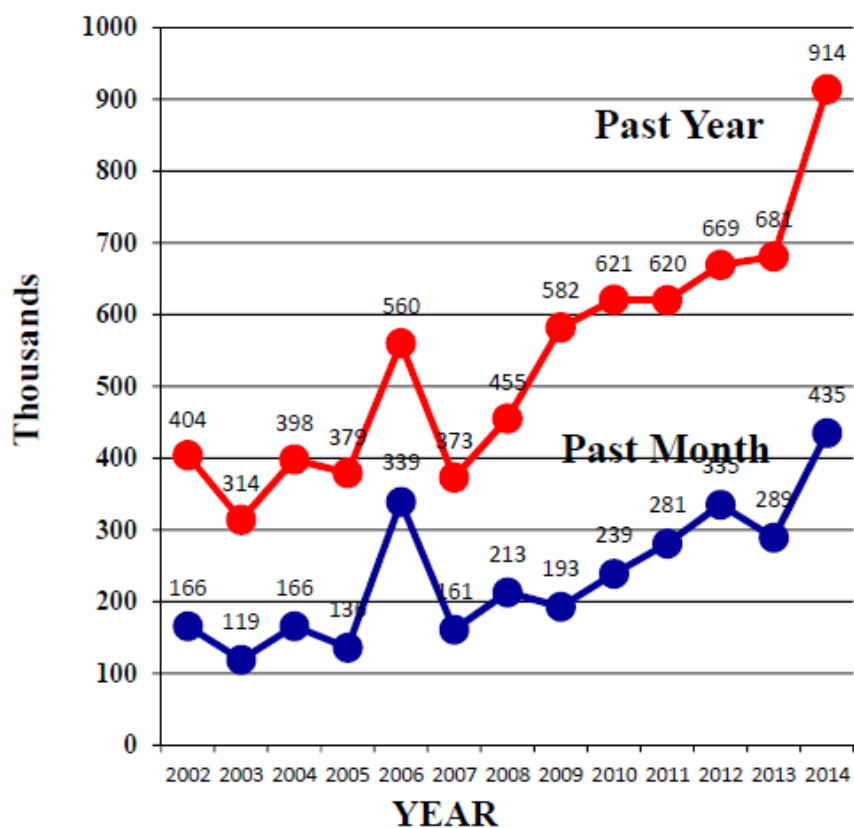
Rx Opioid Overdose Deaths



Source: CDC Wonder

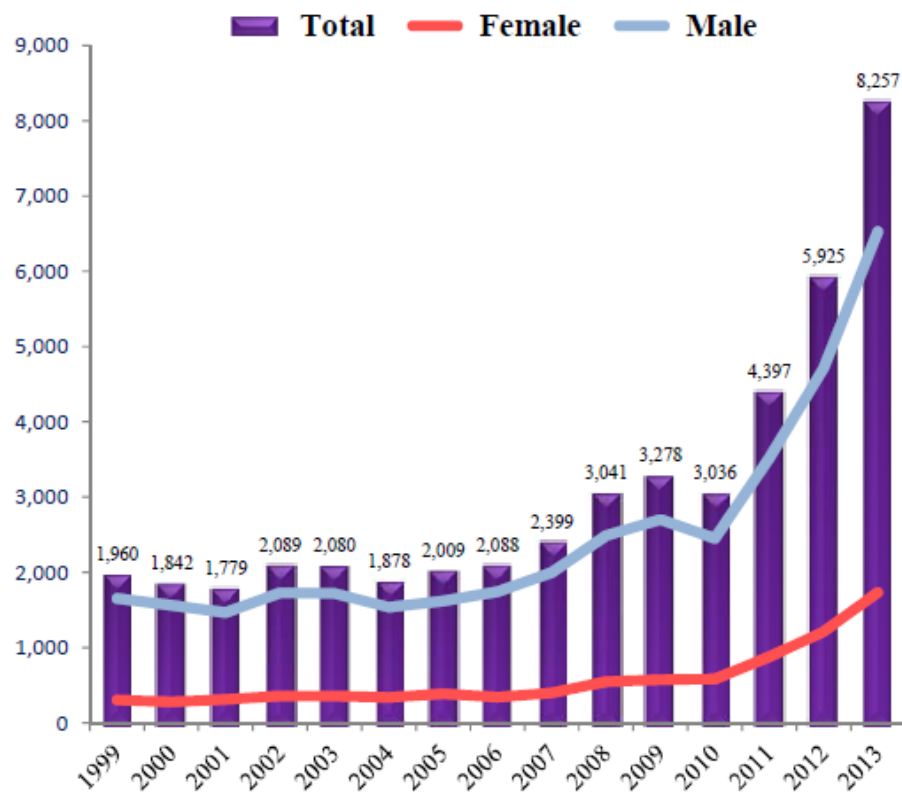
Abuse of Opioid Medications has led to a Rise in Heroin Abuse and Associated Deaths from Overdoses

Past Month & Past Year Heroin Use Persons Aged 12 or Older



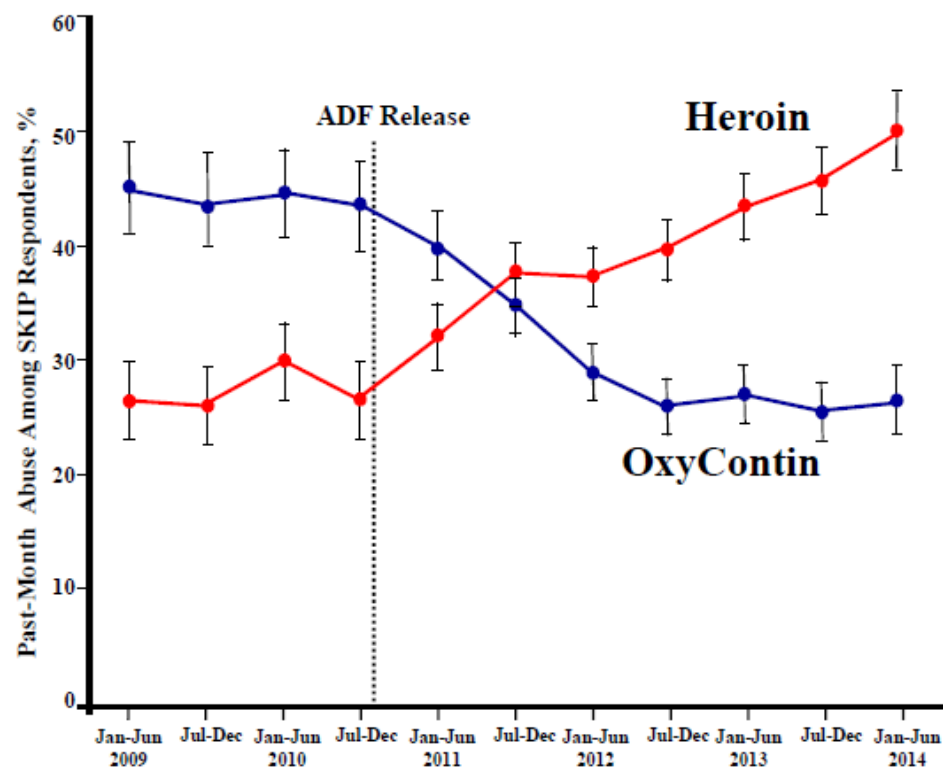
SAMHSA, 2014 National Survey on Drug Use and Health, 2015.

Heroin Overdose Deaths

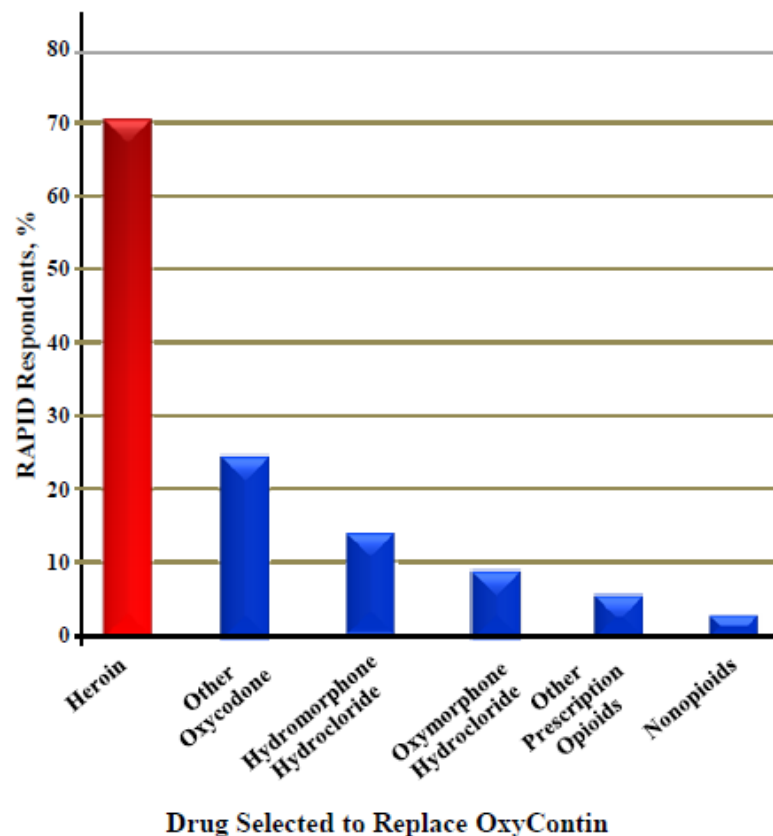


Source: CDC Wonder

Respondents Who Endorsed Past-Month Use of OxyContin or Heroin Before and After Introduction of an Abuse-Deterrent Formulation (ADF)

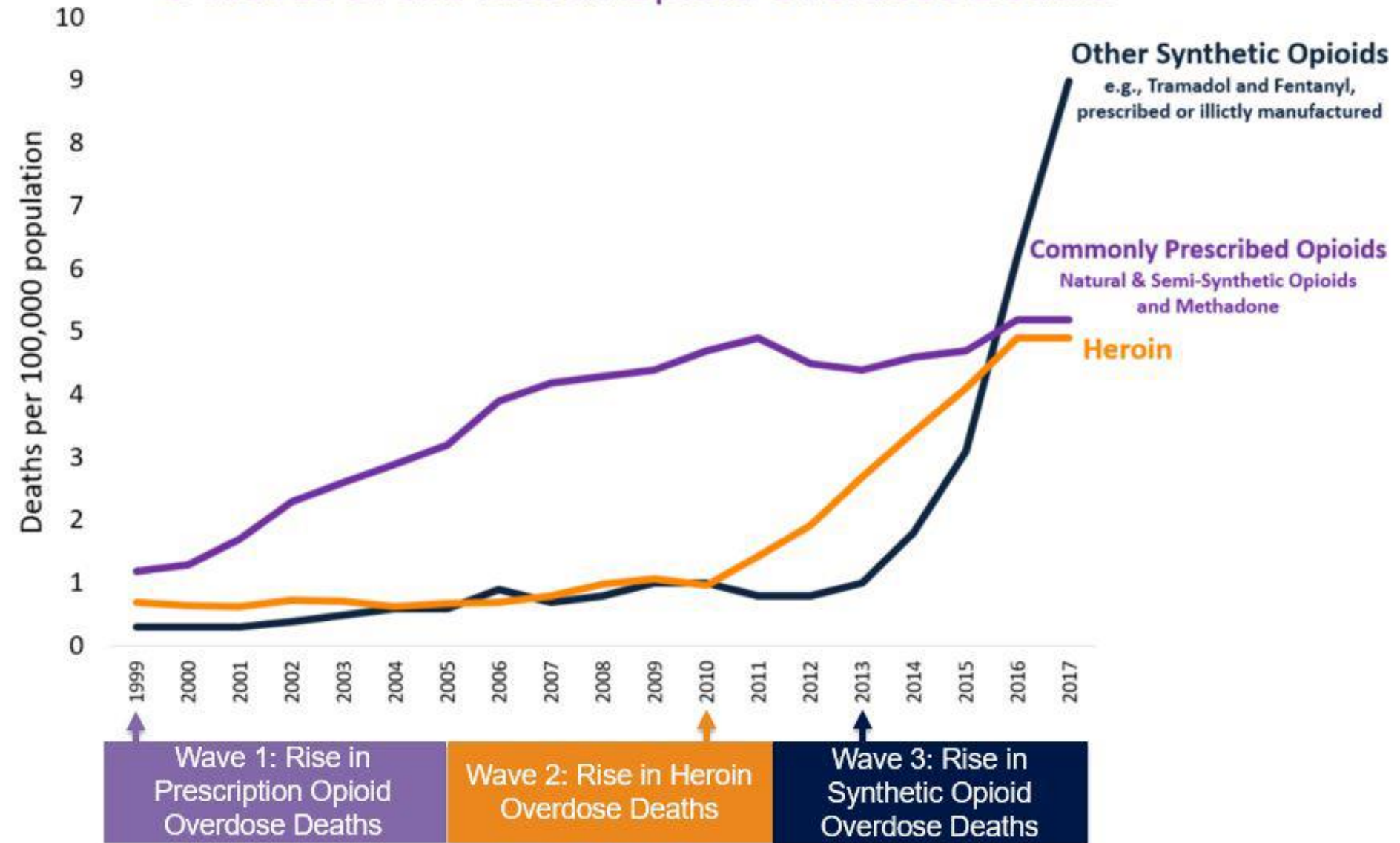


Drugs Used to Replace OxyContin After the Introduction of the Abuse-Deterrent Formulation (ADF)



Cicero TJ and Ellis MS JAMA Psychiatry. Published Online March 11, 2015.

3 Waves of the Rise in Opioid Overdose Deaths



SOURCE: National Vital Statistics System Mortality File.

Opioids and Opiates

What we'll cover today

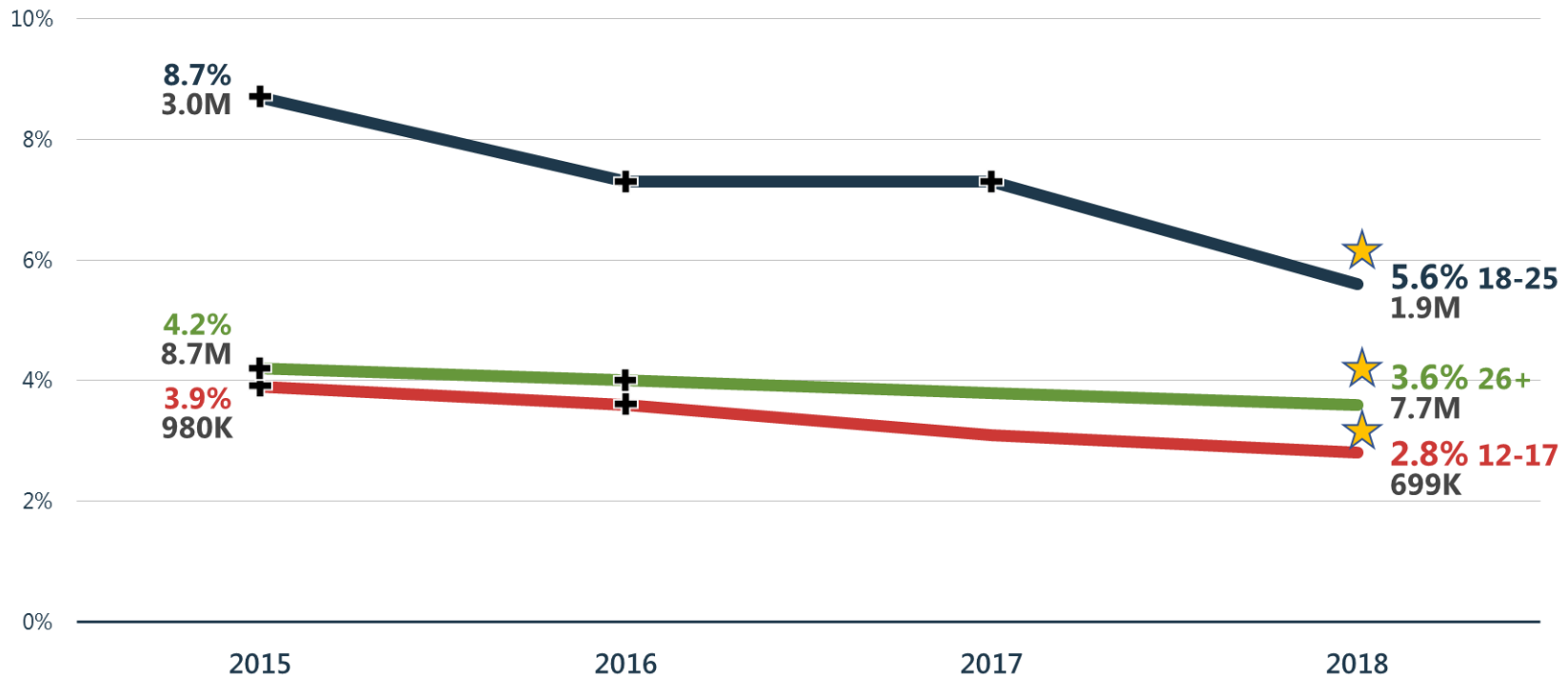
- What are they? & What do they do?
- Why do we care?
- Where do they come from?
- Who's using them?
- How did we get here?
- What are we doing about it?

What are we doing about it?

- CDC Opioid Prescribing Guidelines (When to initiate their use, Opioid Selection and Risk Assessment)
- Educational initiatives delivered in school and community settings (primary prevention)
- Comprehensive Addiction and Recovery ACT (CARA) \$1 billion in grants for states over two years to fight the opioid epidemic and to improve prescription drug monitoring programs
- Implementation of overdose education and naloxone distribution programs to issue naloxone directly to opioid users and potential bystanders
- Aggressive law enforcement efforts to address doctor shopping and pill mills
- Diverting individuals with substance use disorders to Drug Courts
- Expansion of access to MAT
- Abuse-deterrent formulations for opioid analgesics

Opioid Misuse

PAST YEAR, 2015-2018 NSDUH, 12+



+ Difference between this estimate and the 2018 estimate is statistically significant at the .05 level.

FDA Approved Medications

- Naltrexone
 - Tablet
 - Extended Release (30-day Injectable)
- Methadone
- Buprenorphine
 - Implant (6-month-Probuphine)
 - Extended Release (30-day Injectable)
- Buprenorphine/Naloxone Combination
 - Tablet and Film

Naloxone-Narcotic Antagonist

- Used to counteract life-threatening depression of the central nervous system and respiratory system.
- Non-scheduled.
- Non-addictive.
- Works only if opioids are present.
- No abuse potential.
- Can be injected or used nasally.
- Wears off in 20 – 90 minutes.

Narcan (Naloxone) Nasal Spray

Adapt Pharma

- Partnership through the Clinton Health Matters Initiative-Free to all high schools and colleges in the U.S.
- Local & state government agencies \$75.00 per dual pack.
- Without a prescription \$110.00 through a local pharmacy.



Where does this leave us?

- Opioids are here to stay.
- Prevention works.
- Know the risk factors.
- Opioid Dependence is treatable.
- Medications for the treatment of opioid dependence are effective.
- Offer up treatment options and let your patients decide what is best.

Resources

- Shared Decision Making
- <http://archive.samhsa.gov/MAT-Decisions-in-Recovery/>
- Opioid Fact Sheet Teens
<https://www.drugabuse.gov/publications/opioid-facts-teens/opioids-heroin>
- Addiction 101- Dr. Cory Waller-
<https://www.youtube.com/watch?v=M5Mky3Jr960>
- California Department of Education Healthy Kids Survey-
<https://www.cde.ca.gov/ls/he/at/chks.asp>
- NIDA Teen website- <https://teens.drugabuse.gov/>
- California Institute of Behavioral Health Solutions YOR-
<https://www.cibhs.org/glance>

Questions? Use the “Chat” Function

Thank you for your attention

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www.psattc.org

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Gracias

謝謝

Thank you

Cảm ơn

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