

Nonmedical Use of Prescription Opioids by Adolescents and Young Adults: Strategies for Pharmacists

Kelly L. Matson, Pharm.D., BCPPS
Clinical Professor
University of Rhode Island
Kingston, Rhode Island

Jeffrey P. Bratberg, Pharm.D.
Clinical Professor
University of Rhode Island
Kingston, Rhode Island



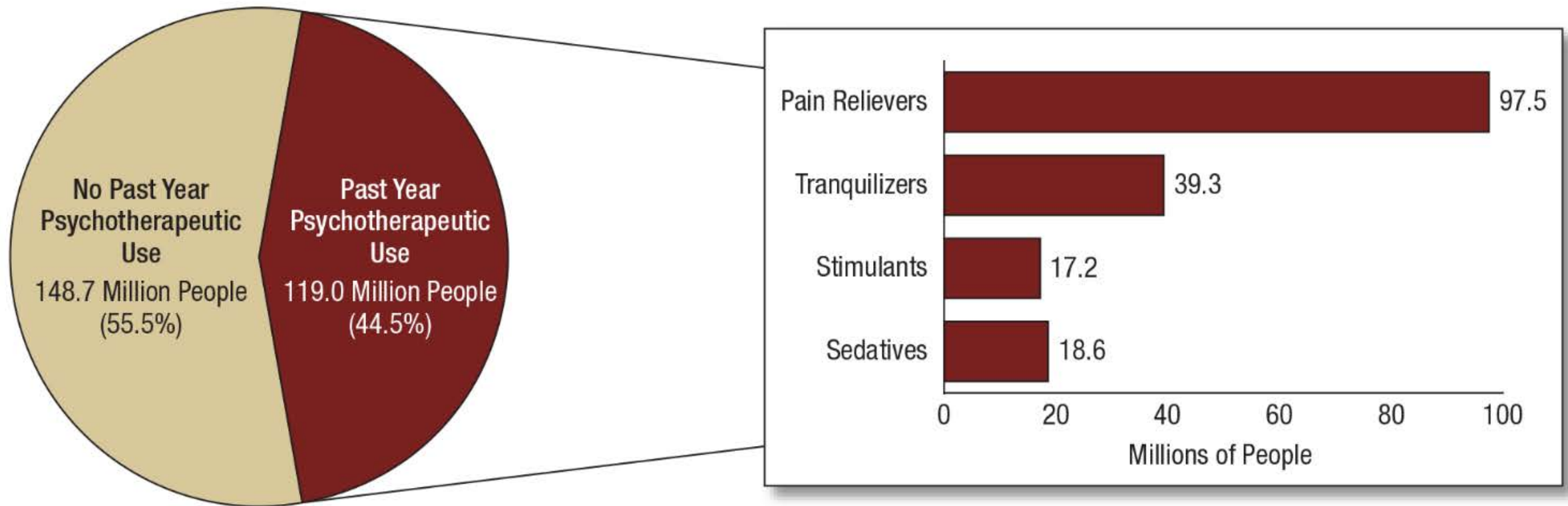
Learning Objectives

- Assess an adolescent or young adult patient using appropriate screening tools for opioid misuse or opioid use disorder and determine whether brief intervention or referral for treatment is needed.
- Develop a treatment approach for detoxification and medication-assisted recovery in an adolescent or young adult with opioid use disorder.
- Recommend co-prescribing of naloxone with a prescription opioid and provide caregiver training on naloxone administration.
- Recommend school- and home-based opioid misuse prevention strategies for adolescent and young adult patients and their families.

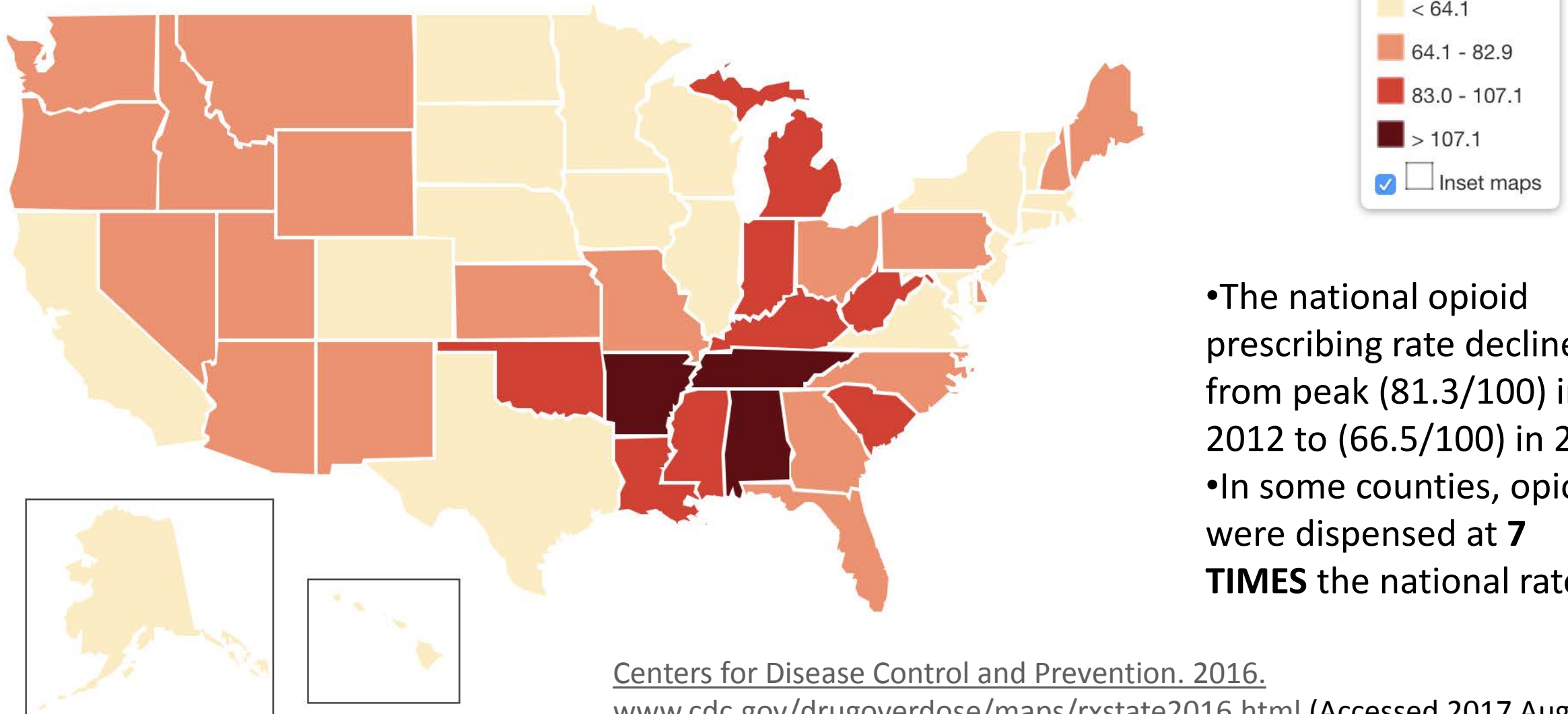
Disclosures

- All planners, presenters, and reviewers of this session report no financial relationships relevant to this activity.

Numbers of Past Year Prescription Psychotherapeutic Users among People Aged 12 or Older: 2015



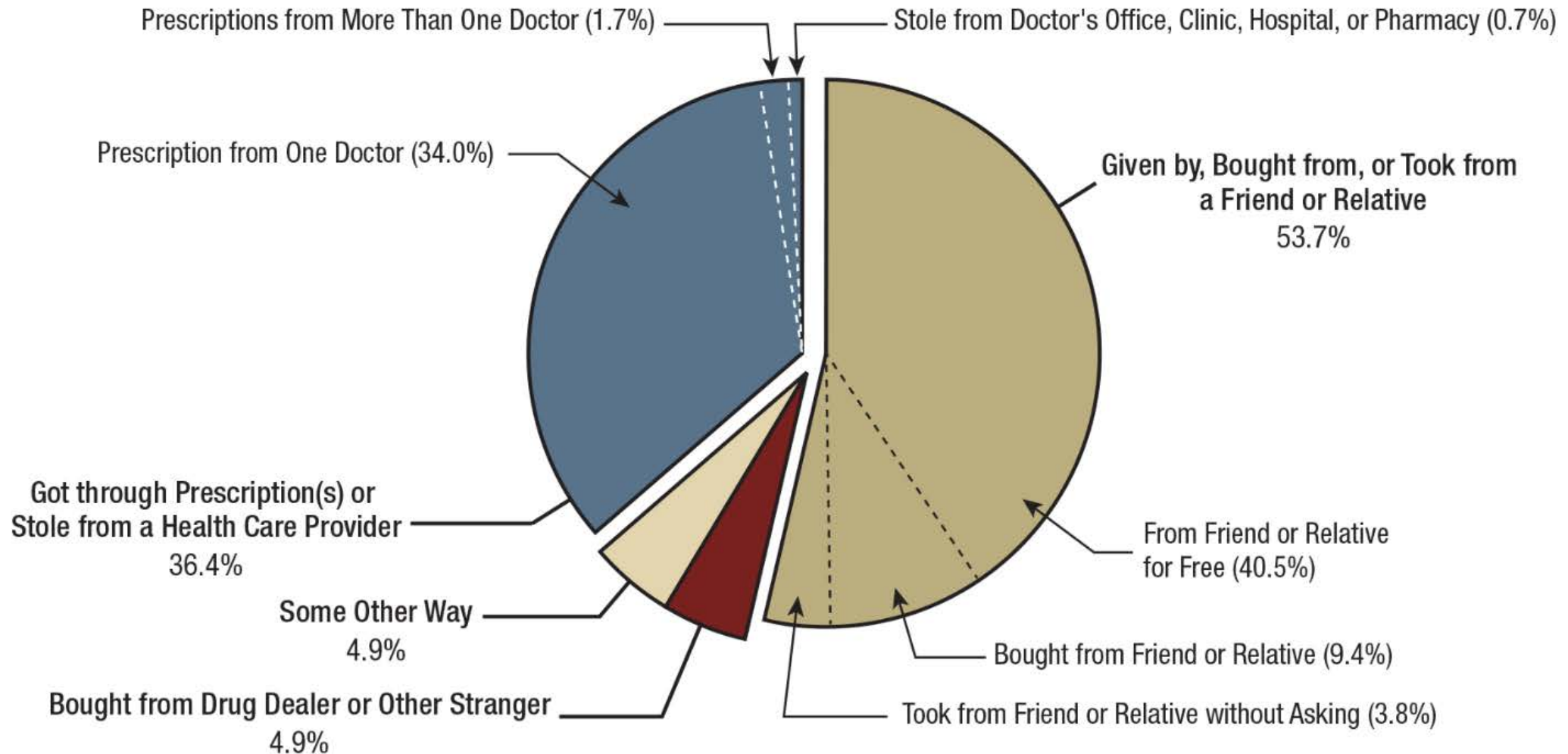
Rate of Retail Opioid Prescriptions/100 people, 2016



- The national opioid prescribing rate declined from peak (81.3/100) in 2012 to (66.5/100) in 2016
- In some counties, opioids were dispensed at **7 TIMES** the national rate

Centers for Disease Control and Prevention. 2016.
www.cdc.gov/drugoverdose/maps/rxstate2016.html (Accessed 2017 Aug 11).

Source Where Pain Relievers Were Obtained for Most Recent Misuse among People Aged 12 or Older Who Misused Prescription Pain Relievers Past Year, 2015



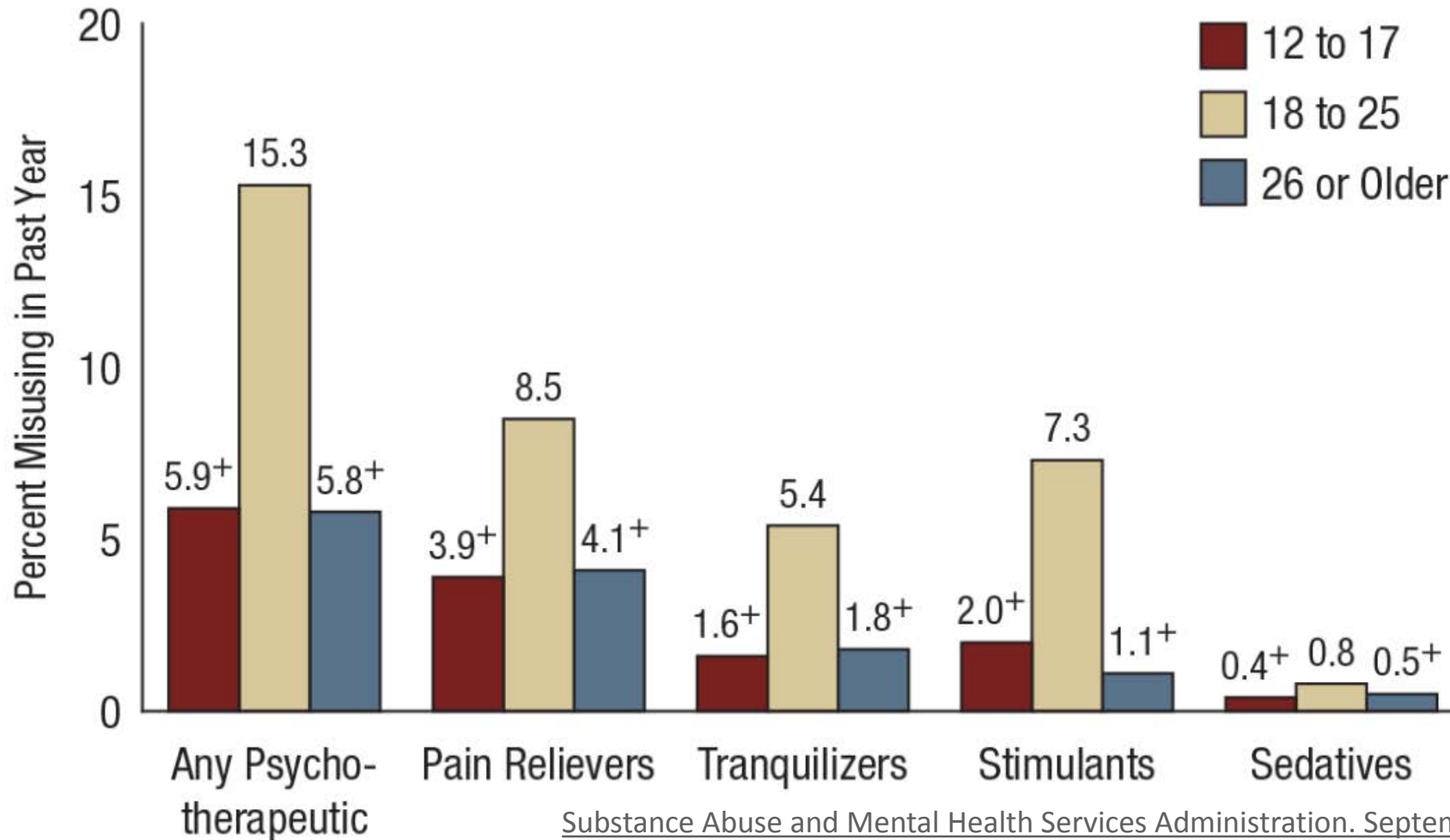
Substance Abuse and Mental Health Services Administration. September 2016.

<https://www.samhsa.gov/data/sites/default/files/NSDUH-FFR2-2015/NSDUH-FFR2-2015.htm>. (Accessed 2017 Aug 11).

1. Which of the following age groups had both the highest rate of prescription opioid misuse in the past month and opioid use disorder?

- A** < 12 yr
- B** 12-17 yr
- C** 18-25 yr
- D** \geq 26 yr

Past Year Misuse of Prescription Psychotherapeutics among People Aged 12 or Older, by Drug Type and Age Group: Percentages, 2015



⁺ Difference between this estimate and the 18 to 25 estimate is statistically significant at the .05 level.

Substance Abuse and Mental Health Services Administration. September 2016.

<https://www.samhsa.gov/data/sites/default/files/NSDUH-FFR2-2015/NSDUH-FFR2-2015.htm>. (Accessed 2017 Aug 11).

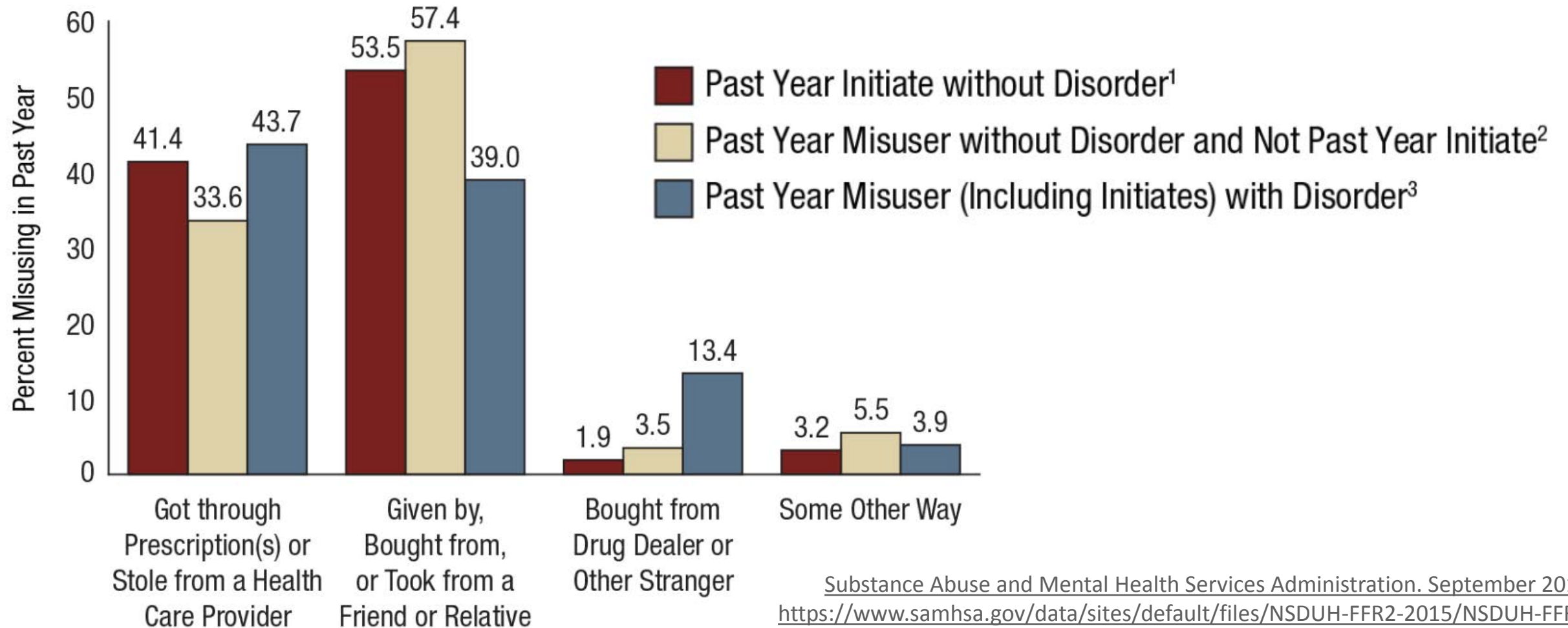
Main Reason for Rx Opioid Misuse, Age ≥ 12 yr, 2015

Reason	
Relieve Physical Pain	62.6%
Feel Good or Get High	12.1%
Relax or Relieve Tension	10.8%
Help with Sleep	4.4%
Help with Feelings or Emotion	3.3%
Experiment of See What It's Like	2.5%
Because I am Hooked or Have to Have It	2.3%
Some Other Reason	1.2%

Any Use and Misuse of Prescription Psychotherapeutics in the Past Year among Individuals Aged 12 or Older, by Demographic Characteristics

Demographic	Psychotherapeutics Any Use (%)	Psychotherapeutics Any Misuse (%)	Pain Reliever Any Use (%)	Pain Reliever Misuse (%)	Past Month Misuse (%)
Total	44.5	7.1	36.4	4.7	1.4
12-17 yr	28.1	5.9	22.7	3.9	1.1
≥ 18 yr	46.1	7.2	37.8	4.7	1.4
18-25 yr	44.3	15.3	34.8	8.5	2.4
≥ 26 yr	46.4	5.8	38.3	4.1	1.3
Male	40.9	7.8	33.9	5.3	1.6
Female	47.8	6.4	38.8	4.0	1.2

Source Where Pain Relievers Were Obtained for Most Recent Misuse for People Aged 12 or Older Who Misused Prescription Pain Relievers in the Past Year, by Past Year Initiation Status and Pain Reliever Disorder Status: Percentages, 2015

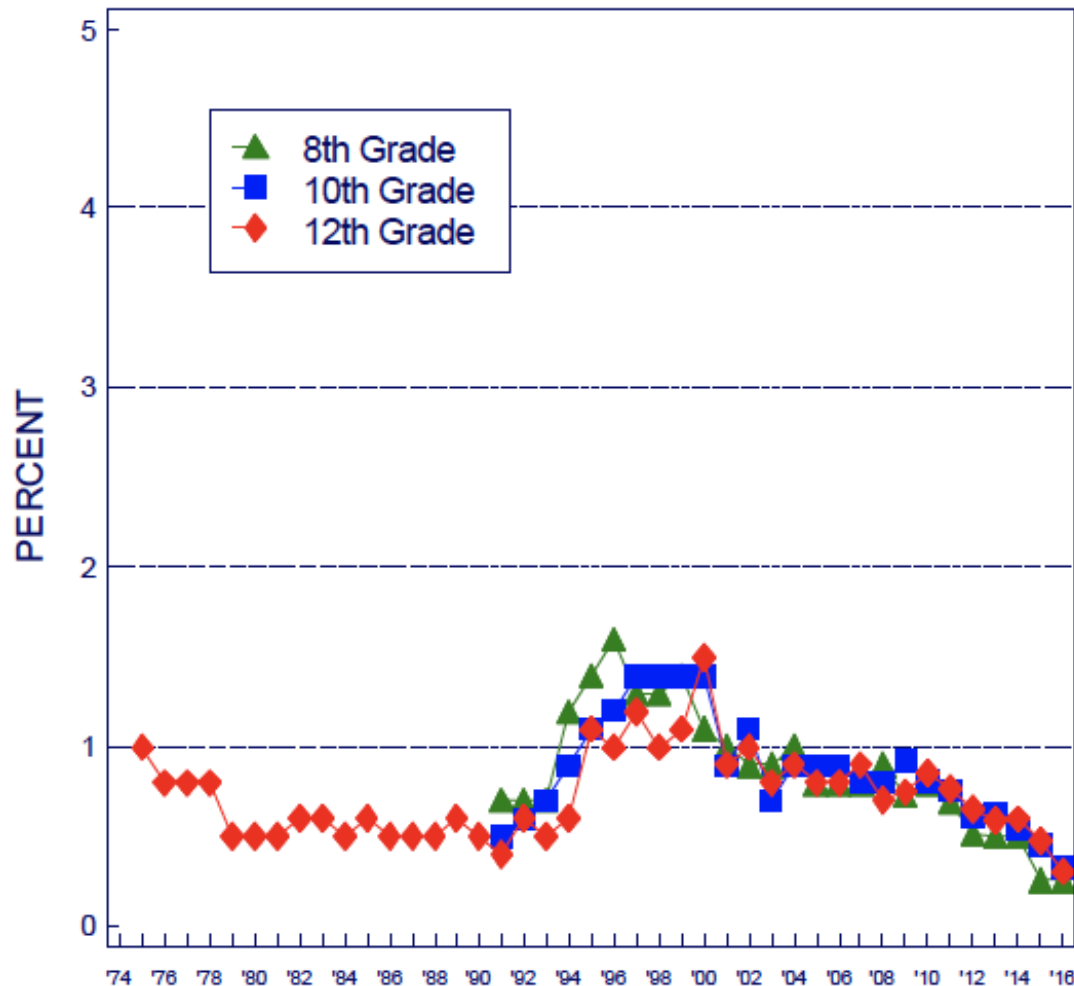


2. Select the correct trends: Among ages < 24 yr, heroin deaths are ____ and perception of risk of harm from heroin is ____.

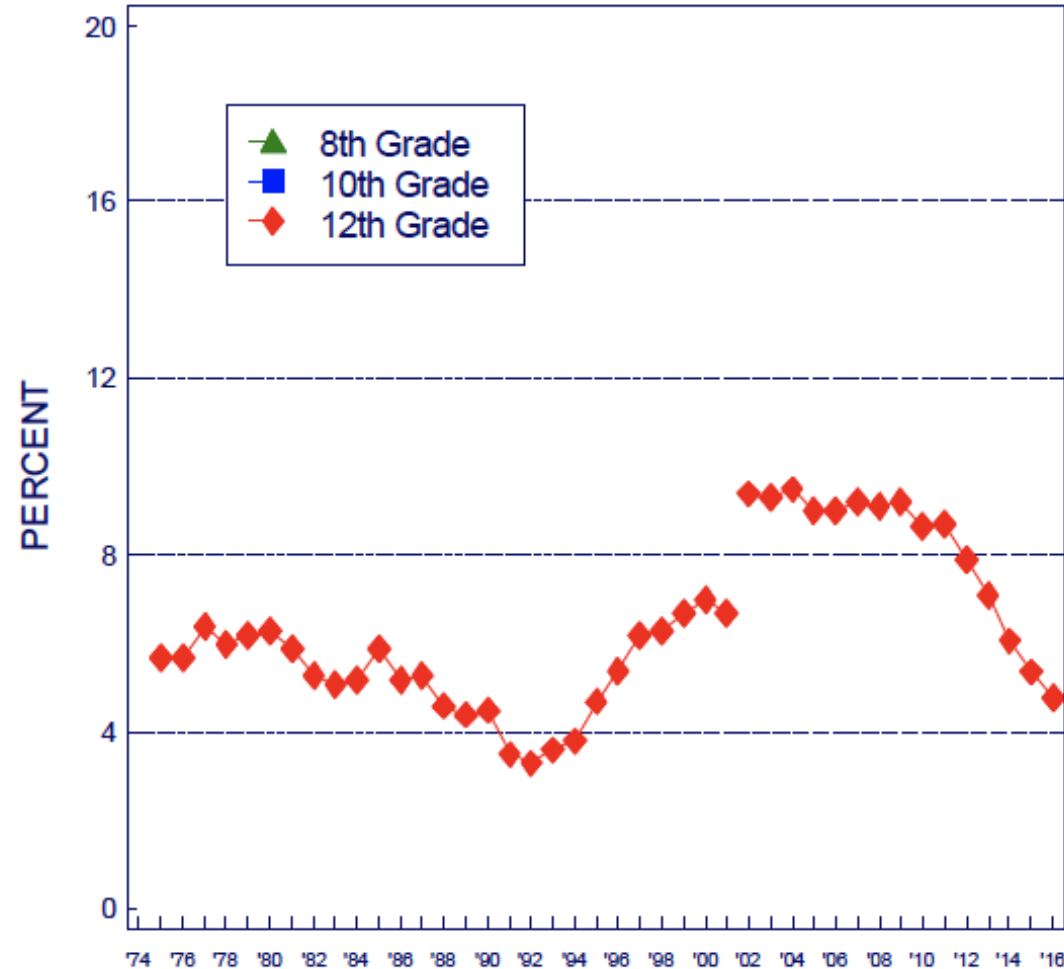
- A** Increasing, increasing
- B** Decreasing, decreasing
- C** Increasing, decreasing
- D** Decreasing, increasing

Trends in % Use of Heroin and Other Narcotics in past 12 months, by Year

Heroin



Other Narcotics



Johnston LD *et al.* Monitoring the future national survey results on drug use, 1975-2016: 2016 overview, key findings on adolescent drug use. 2017. <http://www.monitoringthefuture.org/pubs/monographs/mtf-overview2016.pdf>. (Accessed 2017 Aug 11).

% Prevalence Heroin Use, 2006, 2016

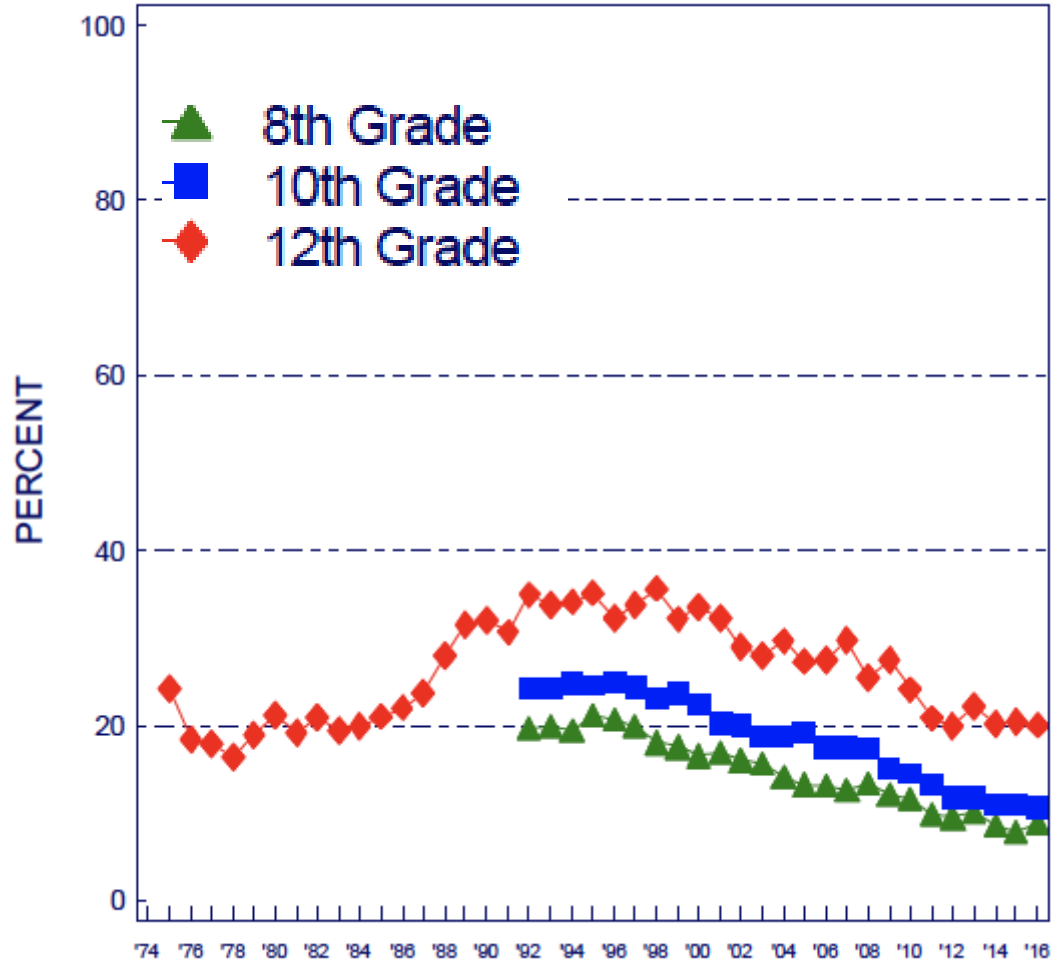
Demographic	Lifetime 2006	<i>Lifetime 2016</i>	Annual 2006	<i>Annual 2016</i>	30-Day 2006	<i>30-Day 2016</i>
8th grade	1.4	<i>0.5</i>	0.8	<i>0.3</i>	0.3	<i>0.2</i>
10th grade	1.4	<i>0.6</i>	0.9	<i>0.3</i>	0.5	<i>0.2</i>
12 th grade	1.4	<i>0.7</i>	0.8	<i>0.3</i>	0.4	<i>0.2</i>
College students	0.7	<i>0.5</i>	0.3	<i>0.2</i>	0.2	<i>0.2</i>
Young adults (19-28 yr)	1.9	<i>1.6</i>	0.4	<i>0.4</i>	0.2	<i>0.3</i>

% Prevalence Narcotics (not Heroin) Use, 2006, 2016

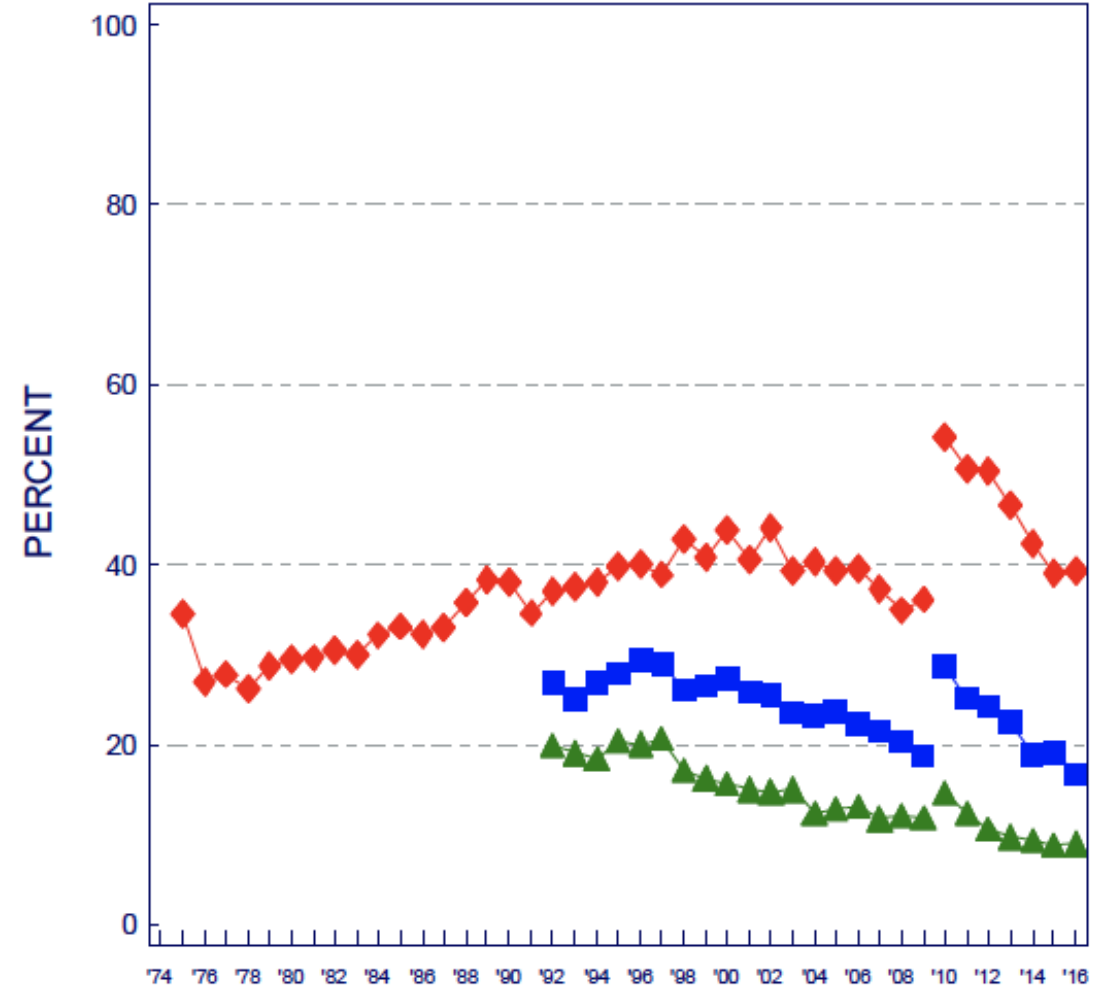
Demographic	Lifetime 2006	Lifetime 2016	Annual 2006	Annual 2016	30-Day 2006	30-day 2016
12 th grade	13.4	7.8	9.0	4.8	3.8	1.7
College students	14.6	7.4	8.8	3.8	3.1	1.1
Young adults	18.7	14.3	9.1	5.2	3.2	1.9

Trends in % Availability of Heroin and Other Narcotics in past 12 months, by Year

Heroin

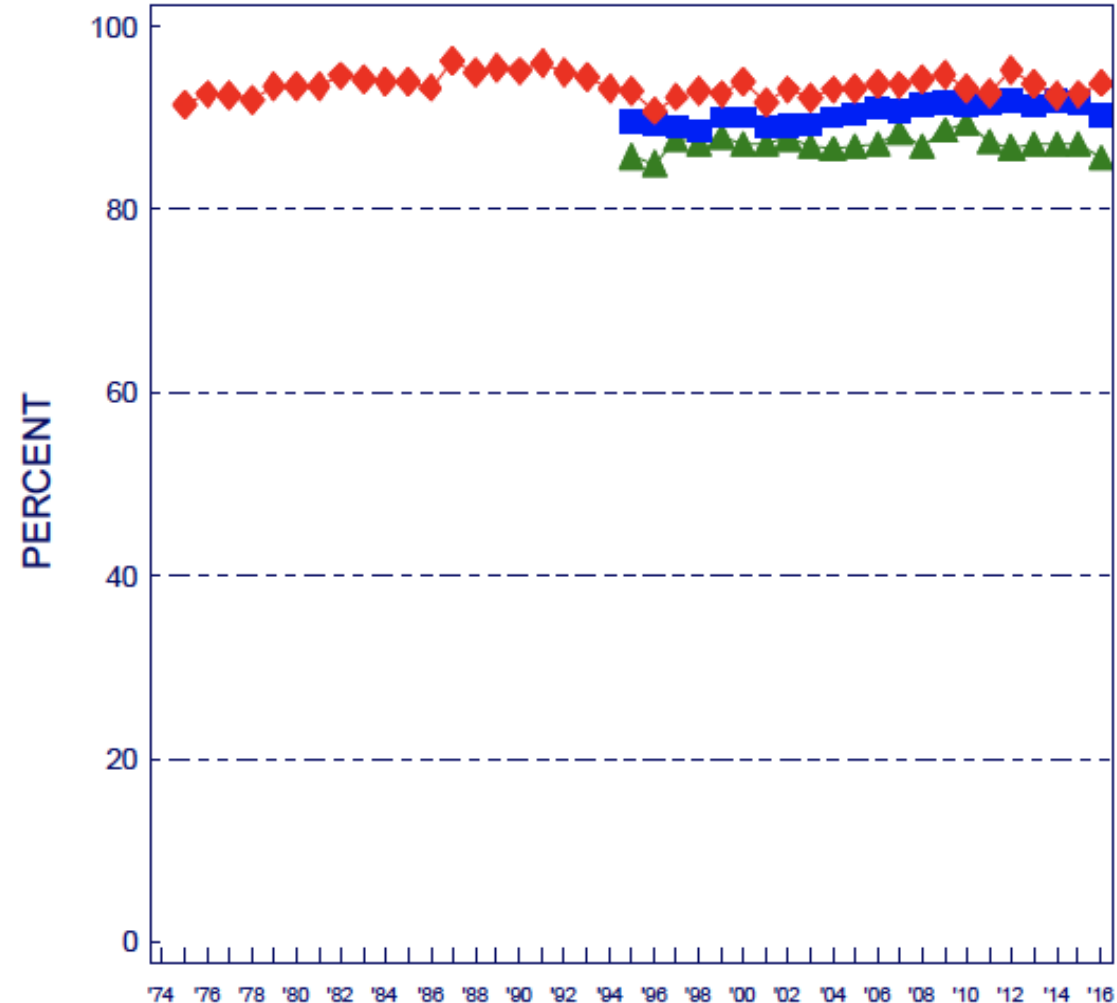
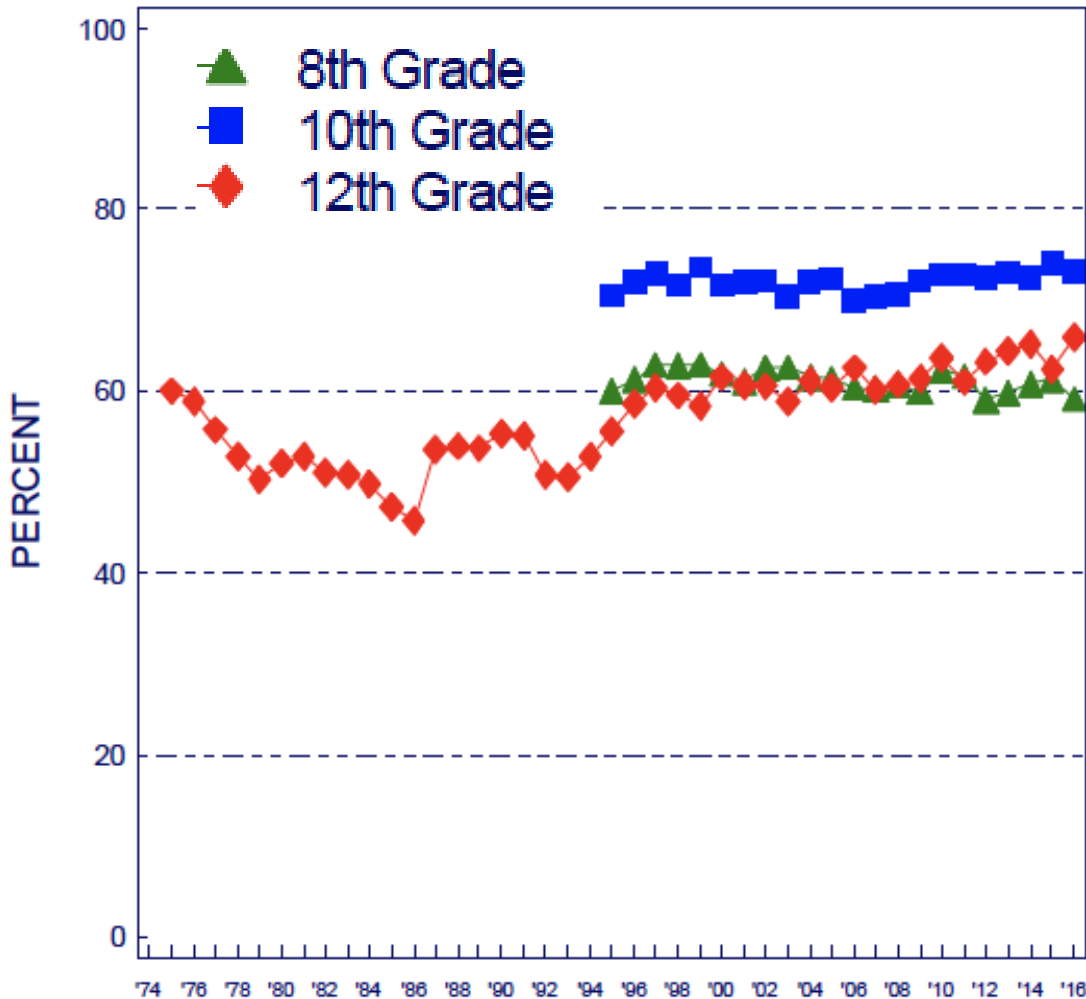


Other Narcotics



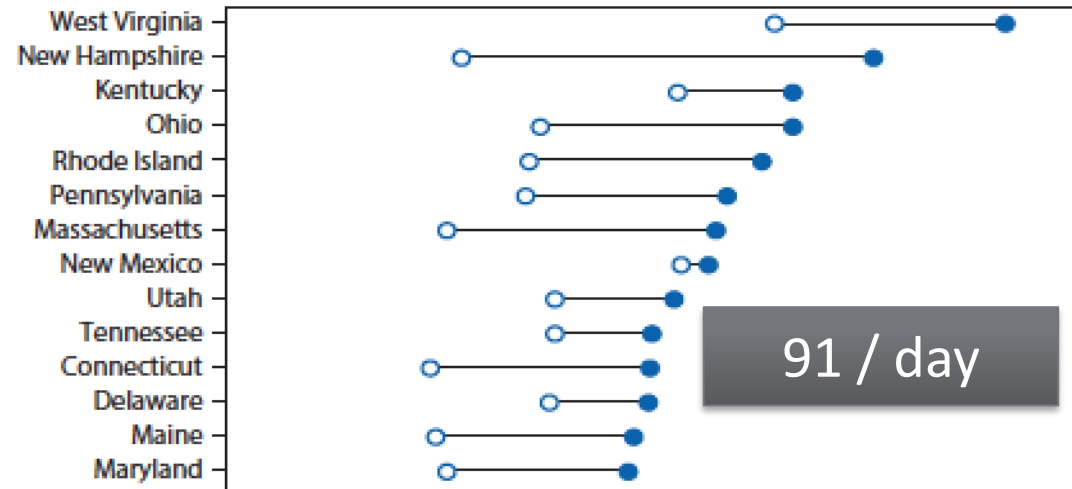
Johnston LD *et al.* Monitoring the future national survey results on drug use, 1975-2016: 2016 overview, key findings on adolescent drug use. 2017. <http://www.monitoringthefuture.org/pubs/monographs/mtf-overview2016.pdf>. (accessed 2017 Aug 11).

Trends in % Perceived Risk and Disapproval of Heroin in past 12 months, by Year



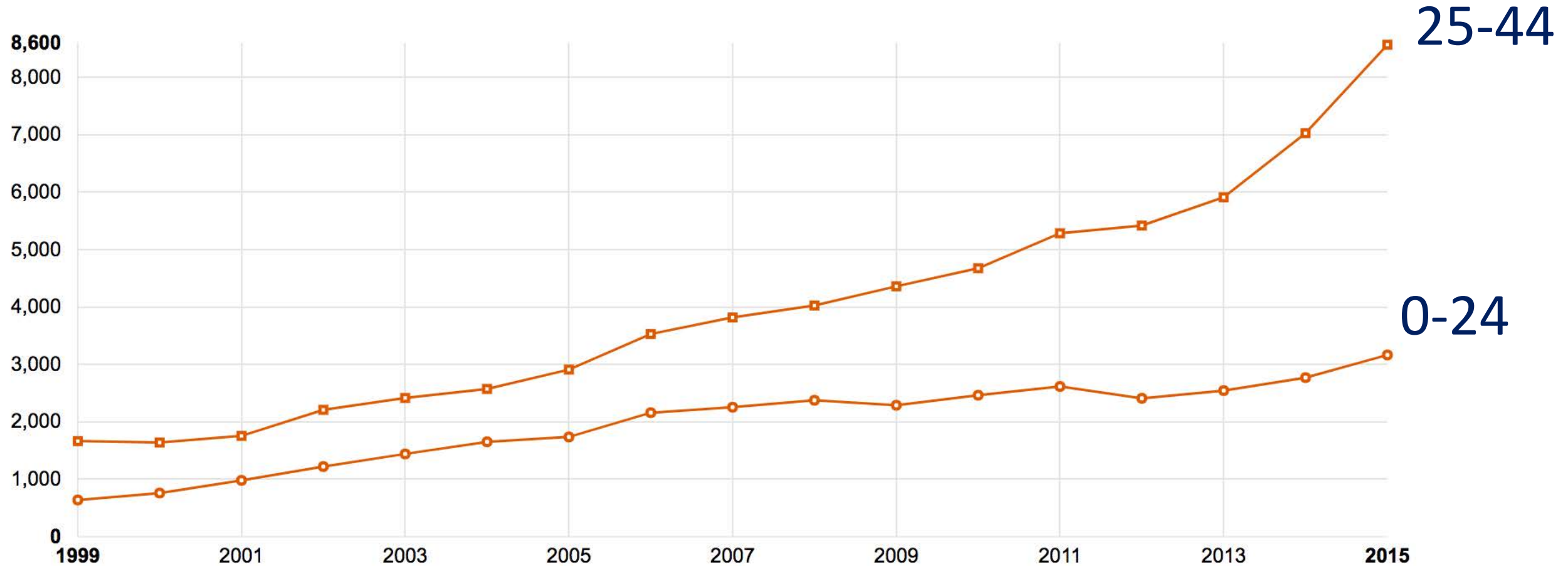
Age-Adjusted Rate of Drug Overdose Deaths, 2010-2015

- Total drug overdoses at all-time high: **52,404 deaths** in 2015
- Opioid OD 33,091 (63% of total), ↑15% from 2015
- **Largest change in deaths from synthetic opioids other than methadone: MA, NH, OH, RI, WV**
- Drug Enforcement Administration (DEA) Nov 2016: Rx drugs, heroin, and fentanyl **most significant drug-related threats in U.S.**

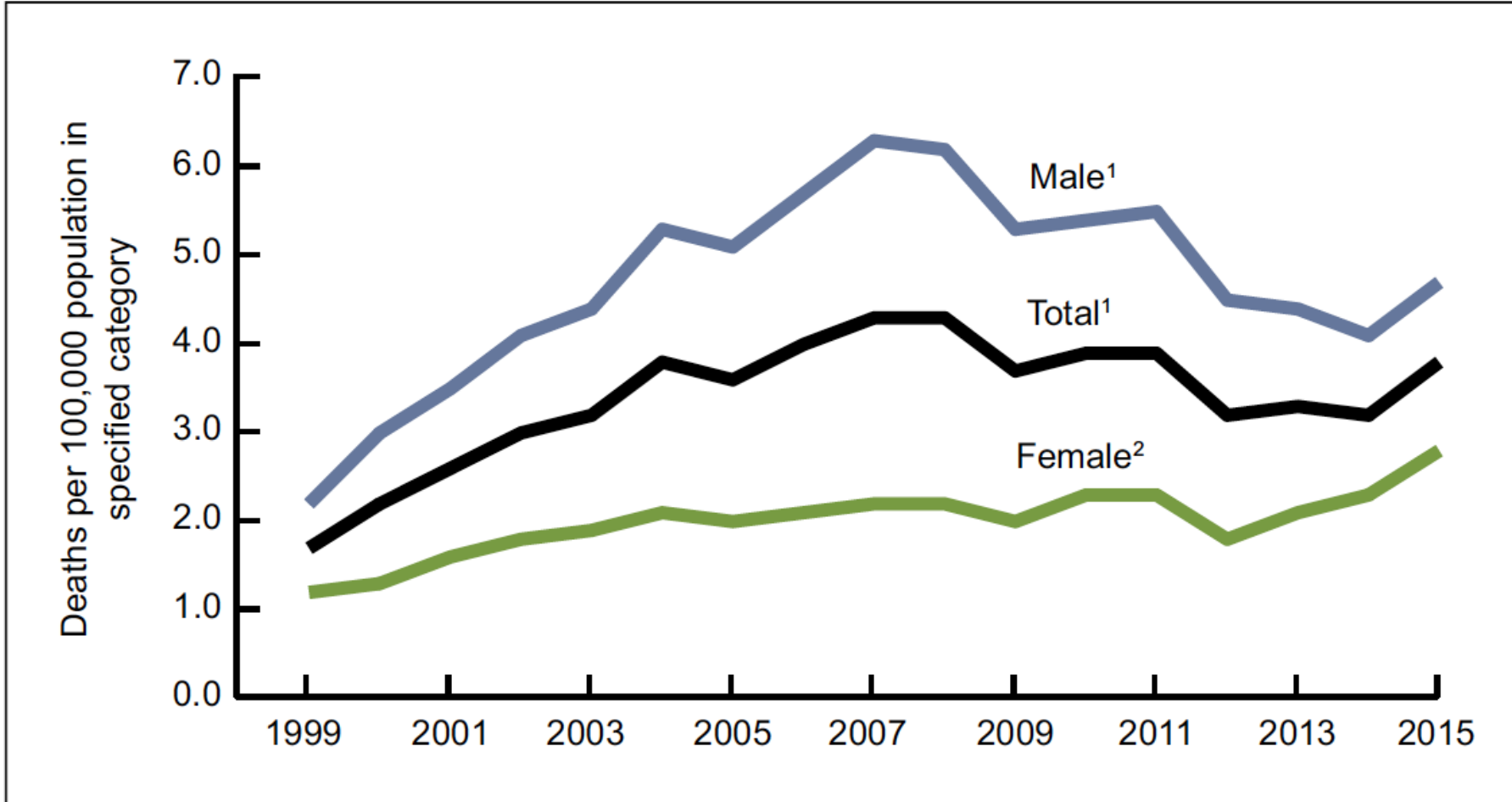


Death rates from Rx opioids, heroin, & synthetic opioids
 ↑ **2.6%** ↑ **20.6%** ↑ **72.2%**

Trend: Number of U.S. Opioid Overdose Deaths: Age 0-24, 25-44



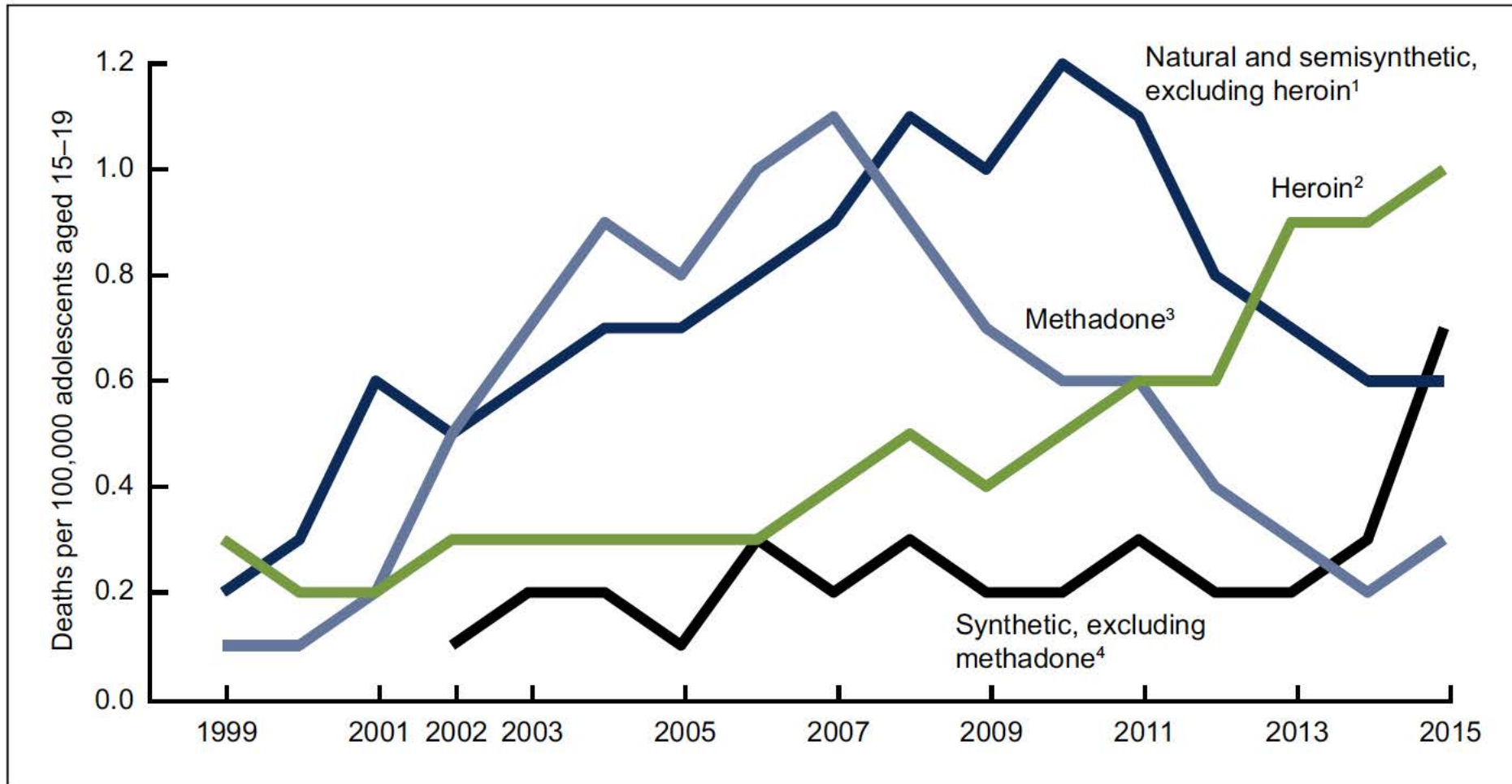
Drug Overdose Death Rates ages 15-19, by Sex, 1999-2015



1999-2007: Rate Doubled
 2008-2014: Declined 26%
 2014-2015: **Increased 3.7%**

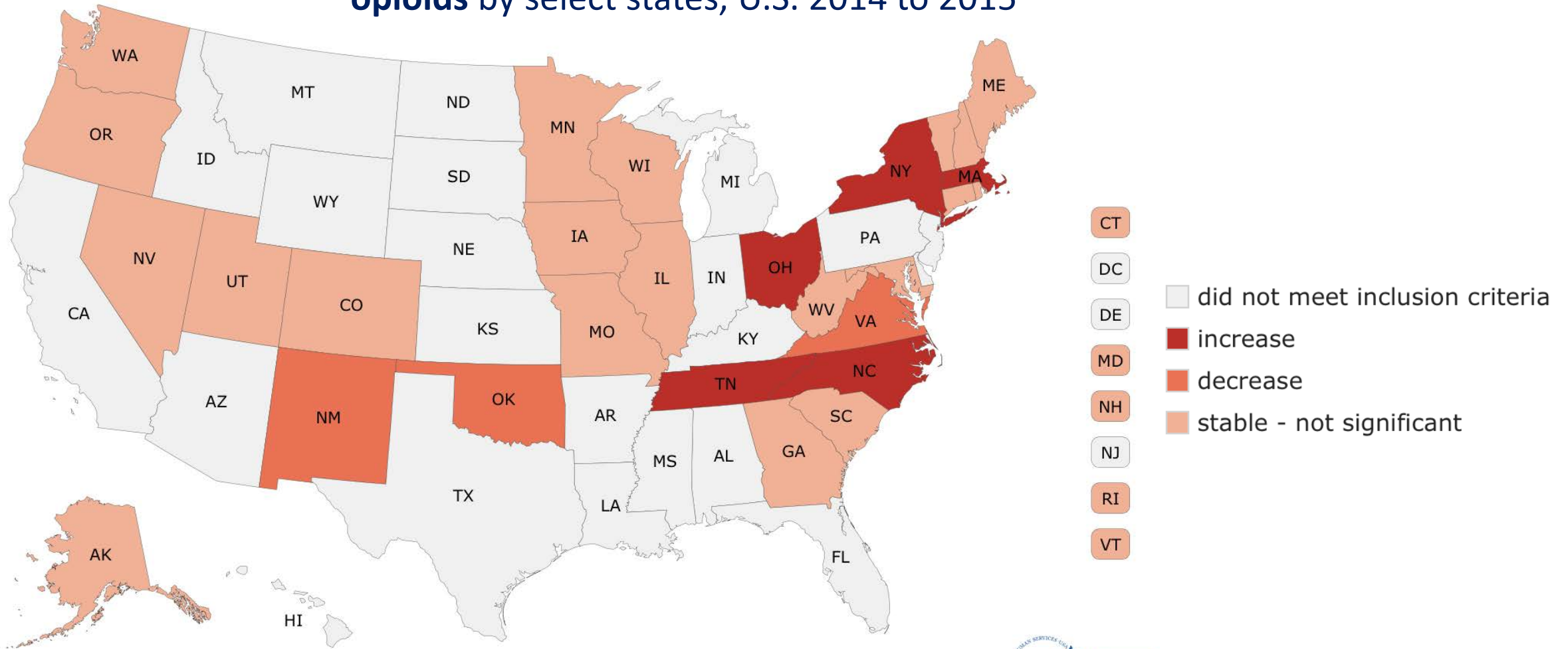
Majority Unintentional

Drug Overdose Death Rates ages 15-19, by Type of Drug Involved, 1999-2015

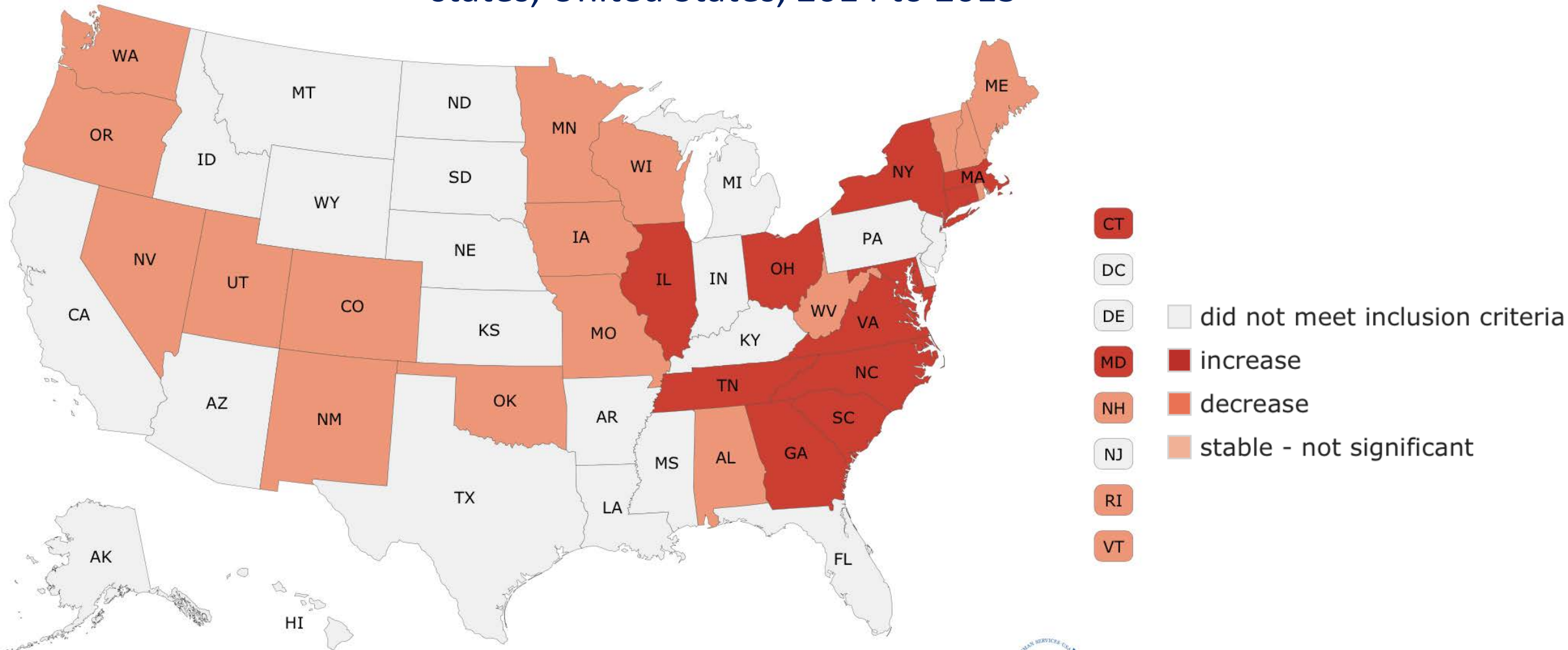


- Heroin:
 - Highest death rates
- Synthetic opioids (i.e. fentanyl):
 - Second highest death rate
 - Highest rate of increase**

Statistically significant changes in drug overdose death rates involving **natural and semi-synthetic opioids** by select states, U.S. 2014 to 2015

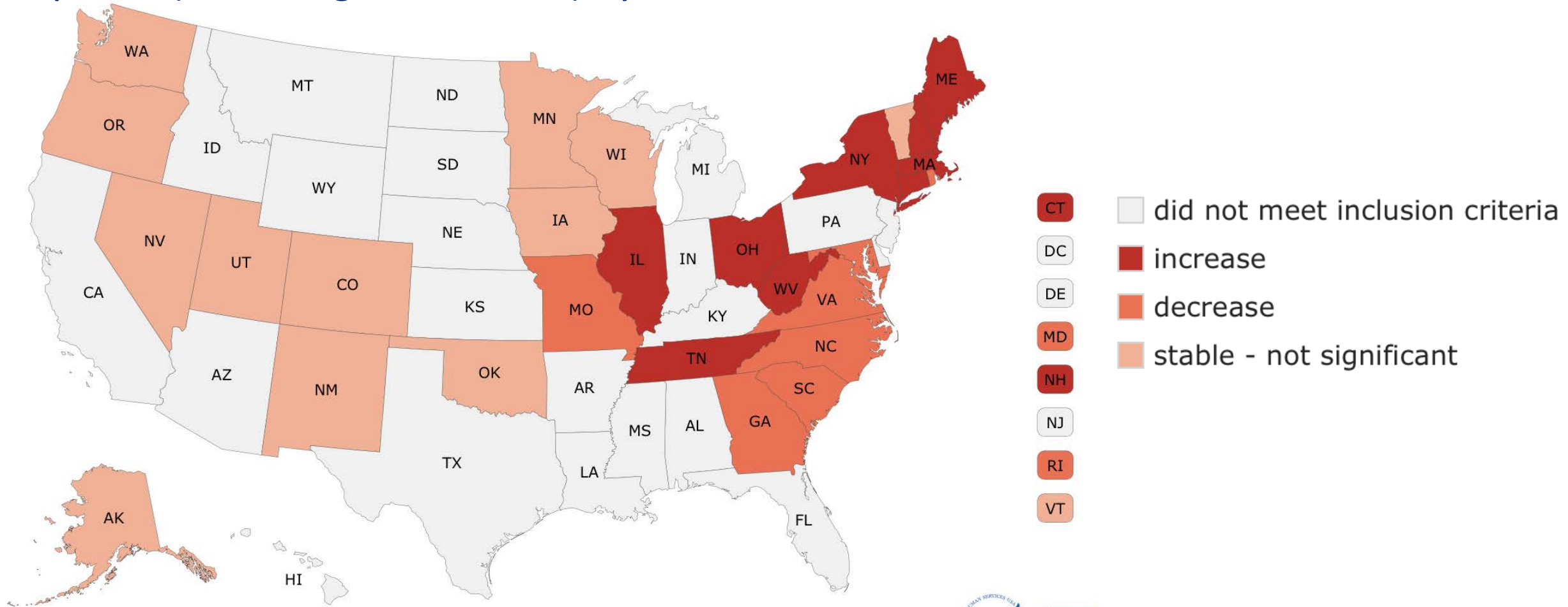


Statistically significant changes in drug overdose death rates involving heroin by select states, United States, 2014 to 2015

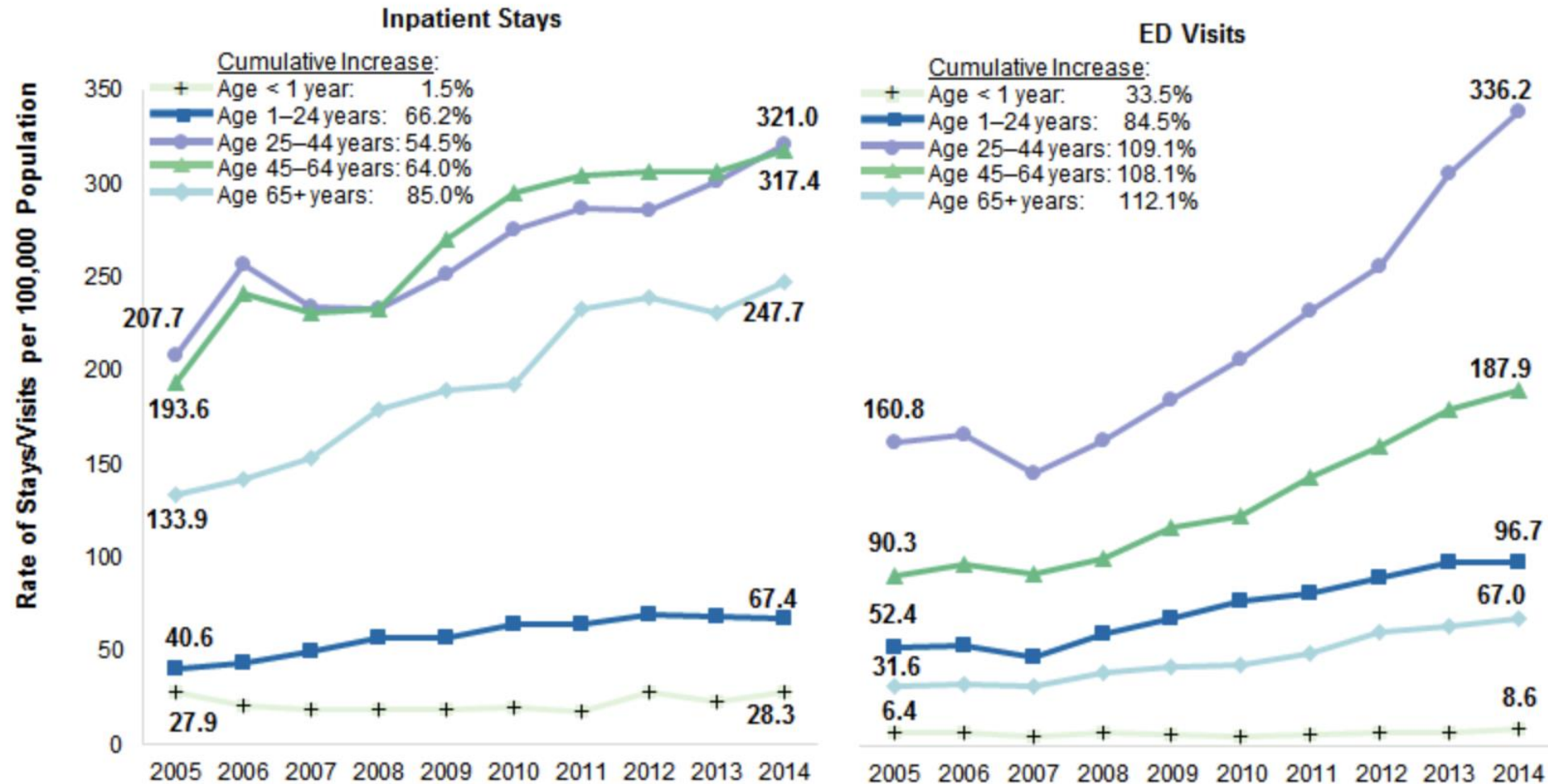


Centers for Disease Control and Prevention. Heroin overdose data.
<https://www.cdc.gov/drugoverdose/data/heroin.html> (accessed 2017 Aug 11).

Statistically significant changes in drug overdose death rates involving synthetic opioids (excluding methadone) by select states, United States, 2014 to 2015



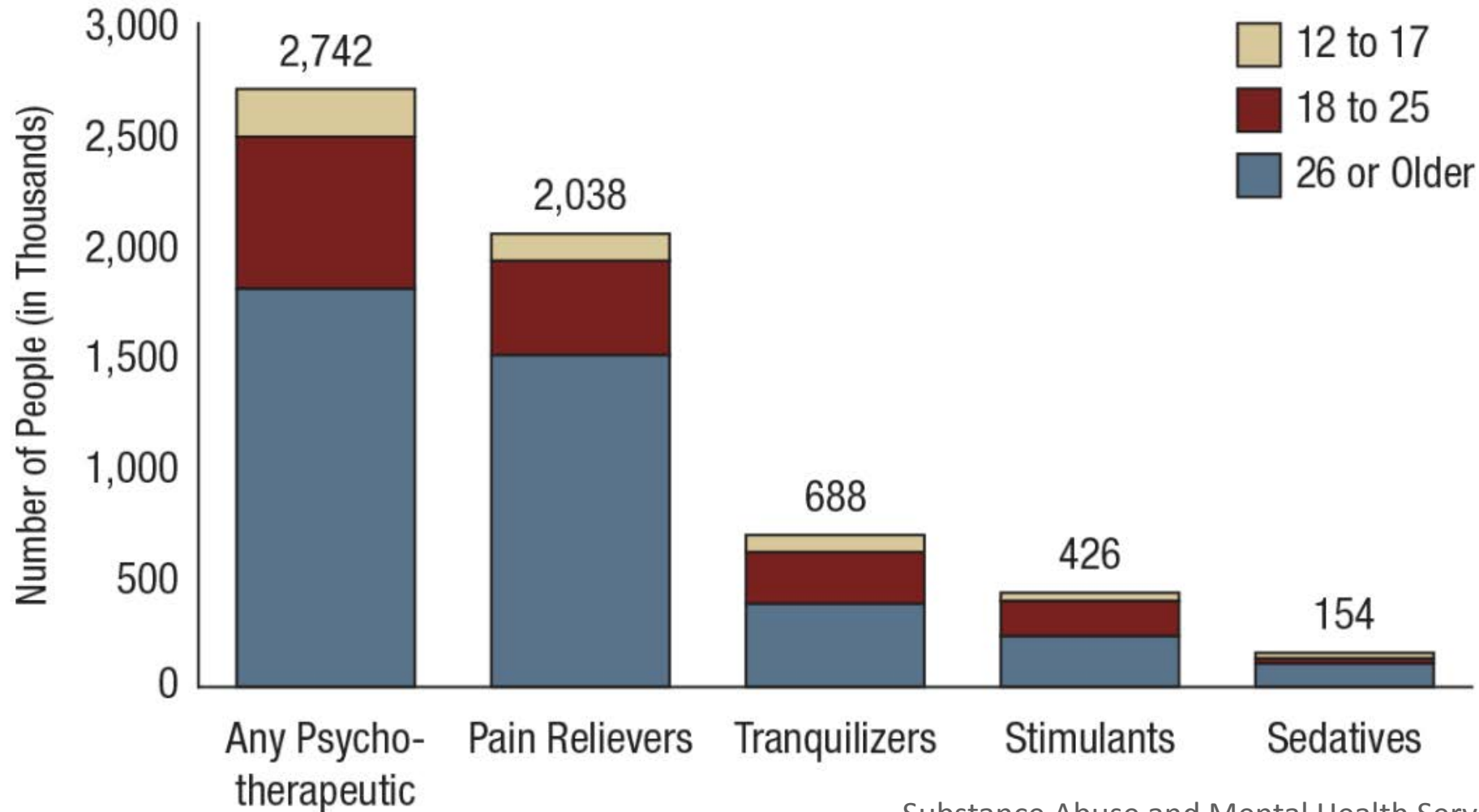
National rate of opioid-related inpatient stays and Emergency Department (ED) visits by patient age, 2005-2014



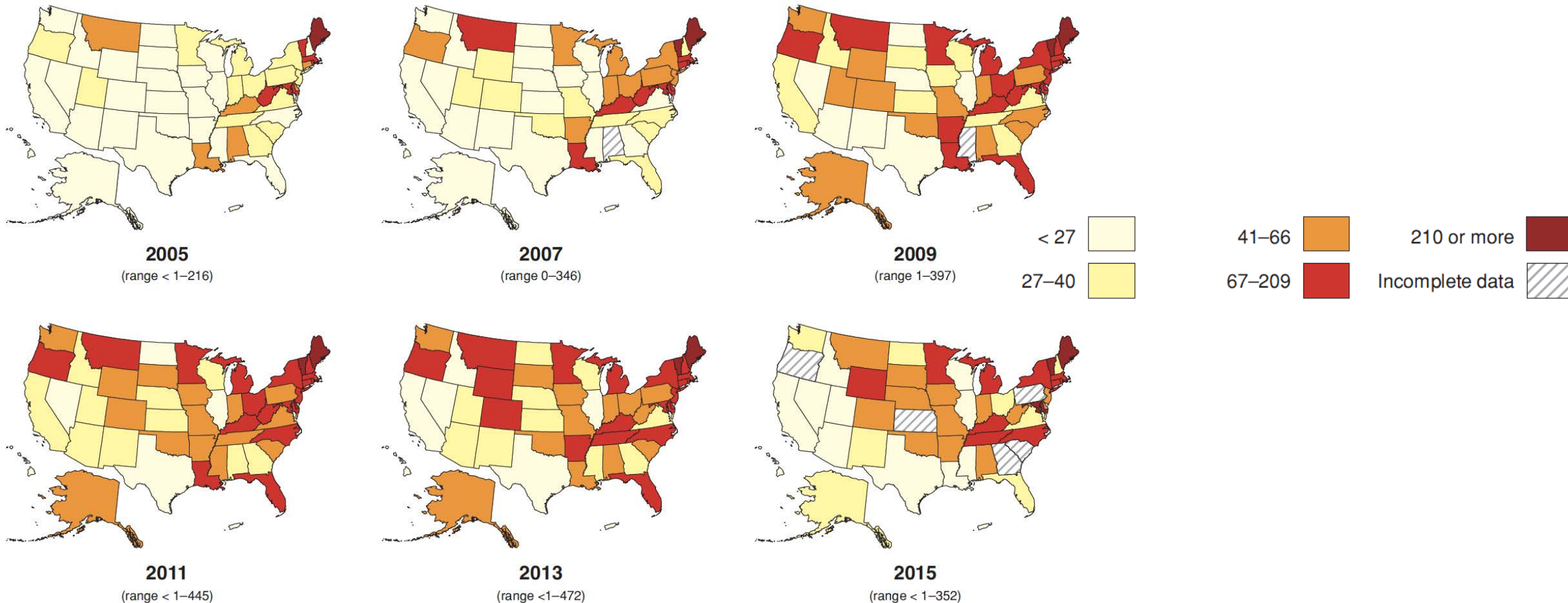
Annual Prevalence (%) of Opioid Use, Misuse, and Opioid Use Disorder Among U.S. Adults, 2015

Characteristic	Any use of Rx Opioids (n=51,200)	Rx Opioid Use without Misuse (n=19,000)	Rx Opioid Misuse without Disorder	Rx Opioid Use Disorder
Overall	37.8	87.5	10.4	2.1
Age 18-29 yr	35.7	76.4	20.1	3.5
Age 30-49 yr	37.0	85.4	11.8	2.8
Age \geq 50 yr	39.5	93.7	5.3	1.0
Male	35.3	84.3	12.8	2.9
Female	40.2	90.1	8.5	1.4

Substance Use Disorder in Past Year by Substance and Age Group, 2015



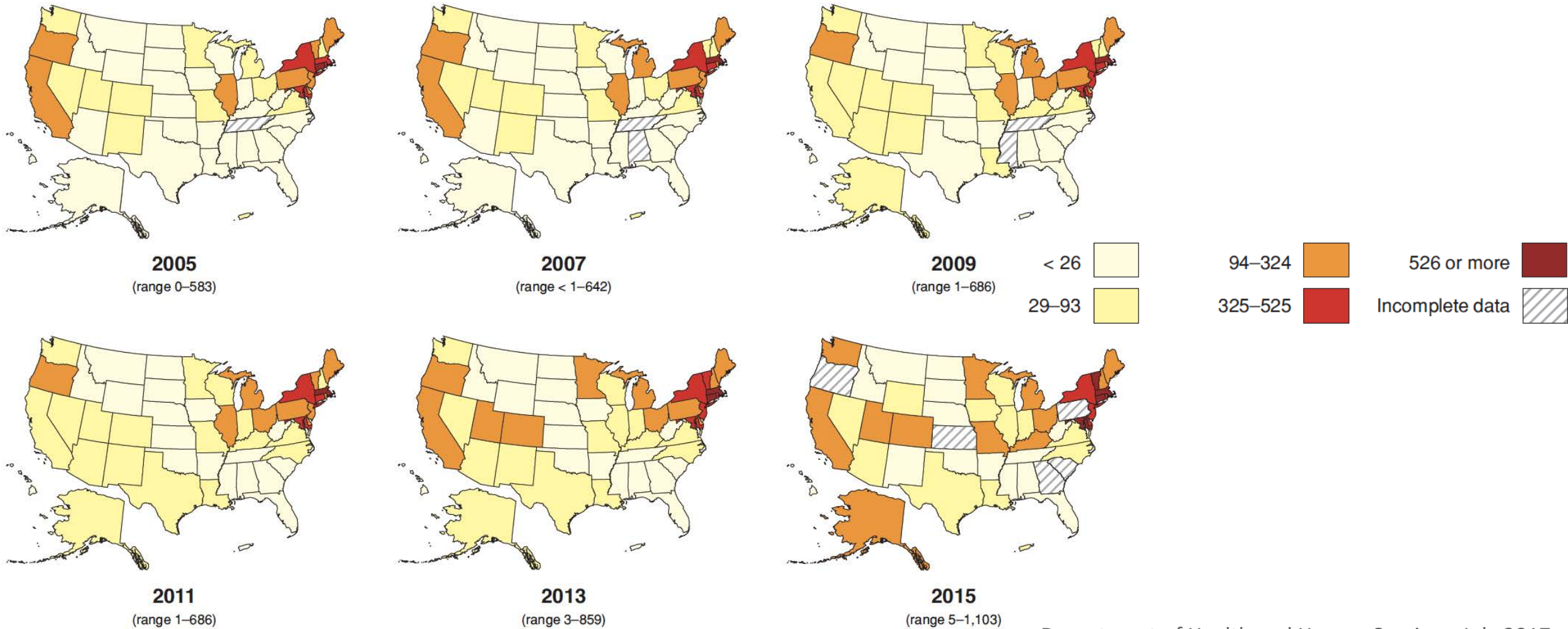
Primary Opiates other than Heroin Treatment Admission Rates, 2005-2015, per 100k, aged ≥ 12 yr



Department of Health and Human Services. July 2017.

https://www.samhsa.gov/data/sites/default/files/2015%20TEDS_State%20Admissions.pdf (accessed 17 Aug 2017).

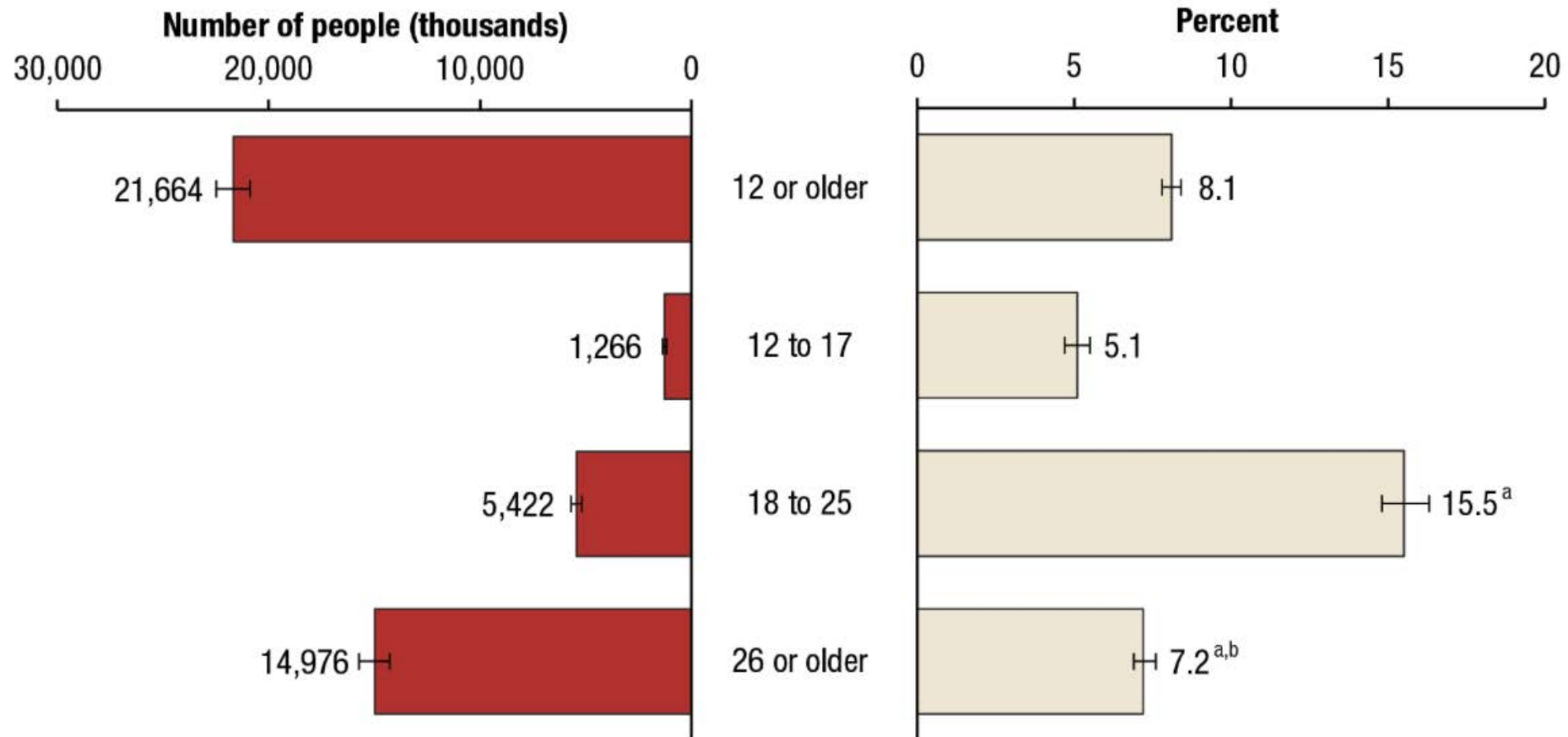
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Department of Health and Human Services. July 2017.

https://www.samhsa.gov/data/sites/default/files/2015%20TEDS_State%20Admissions.pdf (accessed 17 Aug 2017).

Need for substance use treatment in the past year among people aged 12 or older, by age group: 2015



Demographic and Substance Use Trends Among Heroin Users – U.S. 2002-13

Heroin use is part of a larger substance abuse problem.

Nearly all people who used heroin also used at least 1 other drug.

Most used at least **3** other drugs.

Heroin is a highly addictive opioid drug with a high risk of overdose and **death** for users.

People who are addicted to...



ALCOHOL

are

2x



MARIJUANA

are

3x



COCAINE

are

15x



Rx OPIOID PAINKILLERS

are

40x

...more likely to be addicted to heroin.

Rhode Island (RI) Admissions Aged 12 and older, By primary substance of abuse: 2005-2015

RI Rate of Opioid-related ED visits, 2014 (per 100k by age group (yr))

Ages 1-24	Ages 25-44	Ages 45-64	Ages > 65	Total (rank)
166.0	625.2	294.4	64.7	298.3 (3rd)

RI Rate of Opioid-related Inpatient stays, 2014 (per 100k by age group (yr))

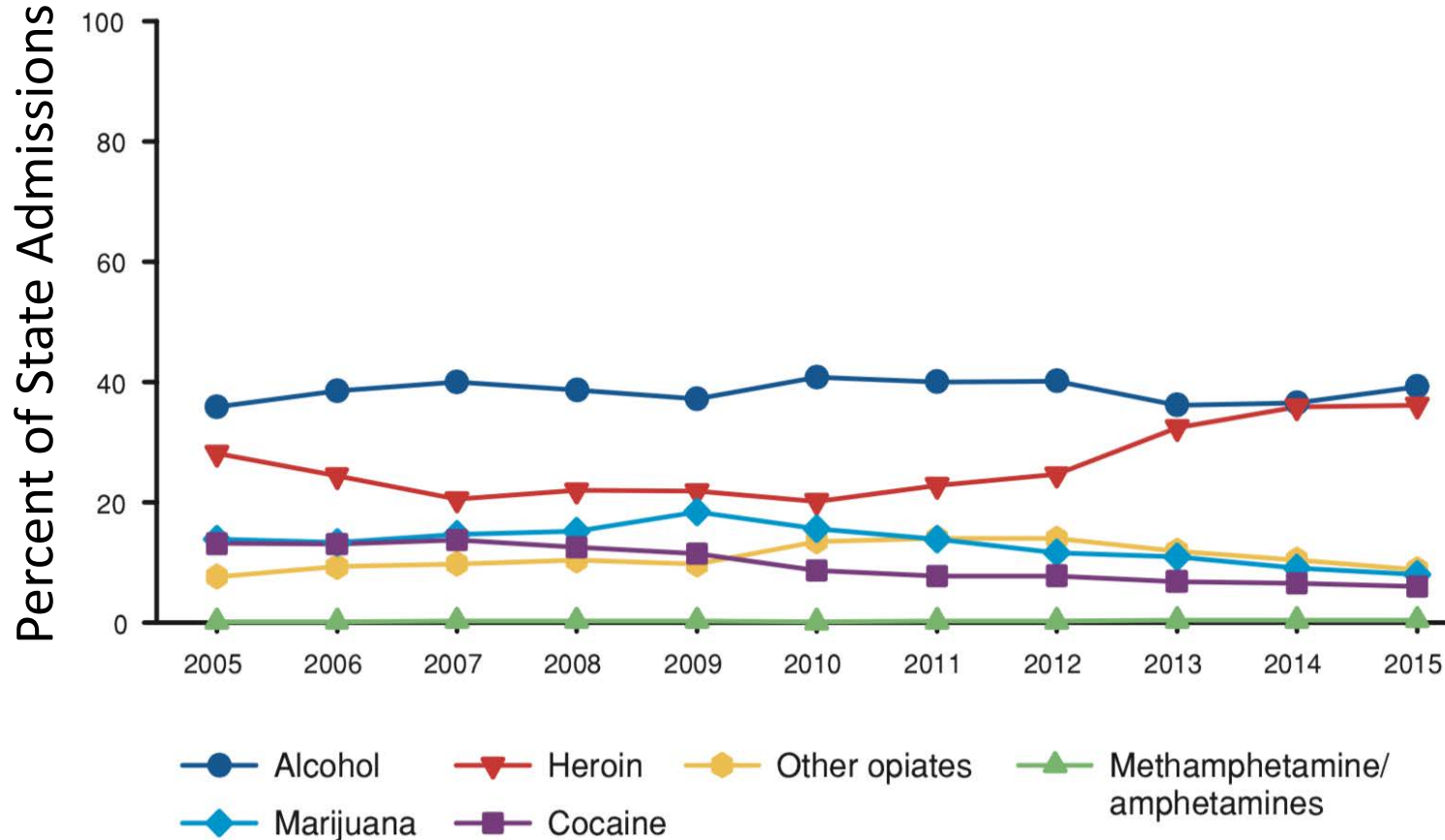
Ages 1-24	Ages 25-44	Ages 45-64	Ages > 65	Total (rank)
86.9	623.6	540.1	281.2	377.4 (4th)

Department of Health and Human Services. July 2017.

https://www.samhsa.gov/data/sites/default/files/2015%20TEDS_State%20Admissions.pdf (accessed 17 Aug 2017).

Agency for Healthcare Research and Quality. Healthcare Cost and Utilization Project. July 2017

www.hcup-us.ahrq.gov/reports/statbriefs/sb224-Patient-Characteristics-Opioid-Hospital-Stays-ED-Visits-by-State.jsp (accessed 2017 Aug 11).



State-specific Data

- Rate and trends of ED and inpatient visits related to opioids
- State substance use disorder treatment admission rate trends

3. Which of the following is not a risk factor for nonmedical prescription opioid use in adolescents and young adults?

- A** Availability of prescription opioids
- B** Lack of parental/caregiver monitoring
- C** Male gender
- D** Perceived stress

Risk and Protective Factors

Substance Misuse and Use Disorder

- RISK

- Increase the likelihood of:
 - Beginning substance use
 - Ongoing and harmful use
 - Other behavioral health problems associated with use

- PROTECTIVE

- Directly decrease the likelihood of substance use and behavioral health problems
- Reduce the impact of risk factors on behavioral health problems

Risk and Protective Factors

Substance Misuse and Use Disorder

- Influential at different times during development
- Relate to physiological changes that occur over the course of development or to factors in a person's environment
 - Puberty
 - Attending new school
 - Parental divorce
 - Military deployment
 - Graduation

Substance Abuse and Mental Health Services Administration (US), Office of the Surgeon General (US). Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs, and Health Nov 2016. <https://addiction.surgeongeneral.gov/surgeon-generals-report.pdf>.

Individual/Peer

Substance Misuse and Use Disorder

Risk Factors	Definition	Adolescent Substance Use	Young Adult Substance Use
Early initiation of substance use	Engaging in alcohol or drug use at a young age	X	X
Early and persistent problem behavior	Emotional distress, aggressiveness, and “difficult” temperaments in adolescents	X	
Rebelliousness	High tolerance for deviance and rebellious activities	X	X
Favorable attitudes towards substance use	Positive feelings towards alcohol or drug use, low perception of risk	X	X
Misperception of prevalence	Not understanding normative use	X	X
Peer substance use*	Friends and peers who engage in alcohol or drug use	X	X
Genetic predictors	Genetic susceptibility to alcohol or drug use	X	X

*One of the strongest and most consistent risk factors for nonmedical use of prescription drugs.

Family

Substance Misuse and Use Disorder

Risk Factors	Definition	Adolescent Substance Use	Young Adult Substance Use
Family management problems	Poor management practices, including parents' failure to set clear expectations for children's behavior, failure to supervise or monitor children, and excessively severe, harsh or inconsistent punishment	X	X
Family conflict	Conflict between parents or between parents and children, including abuse or neglect	X	X
Favorable parental attitudes	Parental attitudes that are favorable to drug use and parental approval of drug use	X	X
Family history of substance misuse	Persistent, progressive, and generalized substance use, misuse, and use disorders by family members	X	X

Substance Abuse and Mental Health Services Administration (US), Office of the Surgeon General (US). Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs, and Health Nov 2016.

Nargiso et al. *J Stud Alcohol Drugs*. 2015.

Trajectories of Substance Use Among Teens

- Adolescents surveyed for exposure to substance use in parents, siblings, and peers in primary care setting (n = 860)
 - Baseline and 12-month follow-up for alcohol and drug use among teens

	Remain Abstinent (OR)	Rapid Escalation of Use (OR)
Parents Used	0.59 (95% CI: 0.48-0.72)	NS (95% CI: 0.92-1.62)
Siblings Used	0.47 (95% CI: 0.39-0.55)	1.68 (95% CI: 1.35-2.08)
Peers Used	0.43 (95% CI: 0.35-0.52)	2.15 (95% CI: 1.55-2.98)

OR = odds ratio; NS = non-significant; CI: confidence interval

School

Substance Misuse and Use Disorder

Risk Factors	Definition	Adolescent Substance Use	Young Adult Substance Use
Academic failure beginning in late elementary school	Poor grades in school; low Grade Point Average (GPA)	X	X
Lack of commitment to school	When a young person no longer considers the role of the student as meaningful and rewarding, or lacks investment or commitment to school	X	X
Fraternity and sorority life	Student's affiliation with fraternity or sorority		X
Attending a 4-year competitive university	Function of admission criteria competitiveness		X

Substance Abuse and Mental Health Services Administration (US), Office of the Surgeon General (US). Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs, and Health Nov 2016.
 Nargiso JE et al. *J Stud Alcohol Drugs*. 2015; 76:5-20.
 Tapscott BE et al. *Adolesc Med State Art Rev*. 2013; 24: 597-610.
 McCabe SE et al. *Addict Behav*. 2005; 30:789-805.

Community

Substance Misuse and Use Disorder

Risk Factors	Definition	Adolescent Substance Use	Young Adult Substance Use
Ease of access	Increased availability of drugs	X	X
Media portrayal of substance use	Exposure to actors or musicians using/singing about substance use	X	
Low neighborhood attachment	Low level of bonding to the neighborhood	X	
Community disorganization	Living in neighborhoods with high population density, lack of natural surveillance of public places, physical deterioration and high rates of adult crime	X	
Low socioeconomic status	A parent's low socioeconomic status, as measured through a combination of education, income, and occupation	X	
Transition and mobility	Communities with high rates of mobility within or between communities	X	

Substance Abuse and Mental Health Services Administration (US), Office of the Surgeon General (US). Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs, and Health Nov 2016.

Nargiso JE et al. *J Stud Alcohol Drugs*. 2015; 76:5-20.



Adolescent Risk Factors for Nonmedical Use of Prescription Drugs

- Nonmedical use of **pain relievers** was more prevalent than for stimulants, sedatives, and tranquilizers
 - Female gender
 - Older age
 - White race
 - Illicit drug use
 - Delinquency
 - Substance use disorder/dependence

Adverse Childhood Experience (ACE) Study

- Ten categories of adverse childhood experiences
- Each ACE increased the likelihood of early initiation of illicit drug use 2- to 4-fold and likelihood of lifetime use
- Compared with persons with no ACEs, children with ≥ 5 ACEs were 7- to 10-fold more likely to report addiction, parenteral drug use, or substance use disorder

Adolescent and Young Adult Risk Factors for Nonmedical Use of Prescription Drugs

- Mental health issues*
 - Poor self-reported health
 - Major depressive disorder
 - Stress disorder (higher levels of perceived stress)
 - Anxiety or mood disorder
 - Post traumatic stress order (PTSD)
 - Pain reliever use has been associated with sexual victimization

* Female > male

Young A et al. *J Addict Dis* 2012; 31: 332-341.

Young AM et al. *Journal of Adolescent Health*. 2012; 51:6-17.

Tapscott BE et al. *Adolesc Med State Art Rev*. 2013; 24:597-610. Schwinn TM et al. *Subst Abus*. 2016; 37:564-570.

Motives for Nonmedical Use of Prescription Medications

- Recreational use
 - Intentionally got high or used to increase other drug or alcohol effects
 - Associated with increased risk for substance use disorder
- Self-medication
 - To treat physical pain
 - Migraines and menstrual cramps were motives for self-treatment using pain relievers in females
 - To treat anxiety/depression
 - Not associated with increase risk for substance use disorder

Young A et al. *J Addict Dis.* 2012; 31: 332-341.

Young AM et al. *Journal of Adolescent Health.* 2012; 51: 6-17.

Tapscott BE et al. *Adolesc Med State Art Rev.* 2013; 24:597-610.

McCabe SE et al. *J Pain.* 2013; 14: 1208-1216.

Medical Opioid Use and Future Use

- Monitoring the Future Study Data
 - Early studies suggested no increase in risk of nonmedical use in adolescents who were prescribed opioid for medical purpose
 - Small studies with only few years of data
 - Miech et al 2015
 - Legitimate use of opioids for medical purpose before high school graduation associated with 33% increase in risk for future nonmedical opioid use as young adults
 - Association concentrated among persons with little to no history of drug use and strong disapproval of illegal drugs at baseline
 - 1990-2012 data; 6220 individuals surveyed

Boyd CJ et al. *Drug Alcohol Depend.* 2006; 81: 37-45

McCabe SE et al. *J Adoles Health.* 2007; 40:76-83.

McCabe SE et al. *Arch Pediatr Adolesc Med.* 2011; 165: 729-35.

McCabe SE et al. *Arch Pediatr Adolesc Med.* 2012; 166: 797-802

Miech R et al. *Pediatrics.* 2015; 136: e1169-77.

Diversion and Sources of Prescription Medications

- One's own prescription is a common source followed by friends
- Adolescents
 - Nearly 24% had loaned and 27% had borrowed pain relievers
- College students
 - New England public university
 - Of students surveyed, 27% had loaned and 41% had borrowed pain relievers



Heroin Use Predictors

- Regional (Ohio) and national sample data
 - Prior history of nonmedical use of prescription opioids as an adolescent strongly associated with heroin initiation in young adulthood
 - Early age increased risk of transition
 - Using nonmedical prescription opioids to “get high”
 - Lifetime nonmedical use of prescription opioids

Individual/Peer

Substance Misuse and Use Disorder

Protective Factors	Definition	Adolescent Substance Use	Young Adult Substance Use
Social, emotional, behavioral, cognitive, and moral competence	Interpersonal skills that help youth integrate feelings, thinking, and actions to achieve specific social and interpersonal goals	X	X
Self-efficacy	An individual's belief that they can modify, control, or abstain from substance use	X	X
Perceived harm	Individual's fear of damage to physical or mental health	X	X
Spirituality	Belief in a higher being, or involvement in spiritual practices or religious activities	X	X
Resiliency	An individual's capacity for adapting to change and stressful events in healthy and flexible ways	X	X
Peer disapproval of substance use	Friends and peers who disapprove of misuse	X	X

Substance Abuse and Mental Health Services Administration (US), Office of the Surgeon General (US). Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs, and Health. Nov 2016. Nargiso JE et al. *J Stud Alcohol Drugs*. 2015; 76: 5-20. Brandt SA et al. *Drug Alcohol Depend*. 2014; 143: 272-6. Steiger RM et al. *Addict Behav*. 2017; 65: 269-274. Schwinn TM et al. *Subst Abus*. 2016; 37: 564-570.

Family, School, and Community

Substance Misuse and Use Disorder

Protective Factors	Definition	Adolescent Substance Use	Young Adult Substance Use
Opportunities for positive social involvement	Developmentally appropriate opportunities to be meaningfully involved with the family, school, or community	X	X
Recognition for positive behavior	Parents, teachers, peers, and community members providing recognition for effort and accomplishments to motivate individuals to engage in positive behaviors in the future	X	X
Bonding	Attachment and commitment to, and positive communication with, family, schools and communities	X	X
Marriage or committed relationship	Married or living with a partner in a committed relationship who does not misuse drugs		X
Healthy beliefs and standards for behavior	Family, school, and community norms that communicate clear and consistent expectations about not misusing drugs	X	X

Substance Abuse and Mental Health Services Administration (US), Office of the Surgeon General (US). Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs, and Health Nov 2016. Nargiso JE et al. *J Stud Alcohol Drugs*. 2015; 76: 5-20.

Prevention Strategies

- **Education**
 - Increase awareness of prescription drug misuse dangers for the public and health care providers
 - Opportunities to teach individuals how to properly dispense, store, and dispose of controlled substances
- **Tracking and monitoring**
- **Proper medication disposal**
 - Limit access and availability, as well as raise awareness of prescription drug misuse
- **Harm reduction**
 - Combine overdose education and naloxone distribution
- **Multi-component**
 - Programs combine more than one type of strategy to address multiple risk factors

Education IS Prevention

- Pharmacists are key to education
 - Appropriate pain management education for prescribers and management of patients under collaborative agreements
 - Prescriber and parents education about alternative agents
 - Advocate proper medication storage and disposal
 - Most adolescents and young adults initiate misuse with own prescription
 - Serve as medication safety experts for schools, families, and communities

Arria AM. Presentation at APhA Institute on Alcoholism and Drug Dependencies June 2016, Salt Lake City, UT.

McCabe SE et al. *J Pain*. 2013; 14: 1208-1216.


Tommasello AC. *Harm Reduct J*. 2004; 1:3.

Miech R et al. *Pediatricss* 2015; 136: e1169-77.

Keeping Medications Secure



Prescription Drug Abuse is on the Rise

- 48% of all emergency room visits for prescription drug abuse are by young people ages 12-20.
- 70% of children who abuse prescription drugs got them from family and friends.
- Many teens believe that prescription drugs are safer than “street drugs” like cocaine and heroin.





Help Prevent Over-the-Counter (OTC) & Prescription Drug Abuse. Here's how—

- Talk to your teen about the dangers of OTC and prescription drug misuse and abuse.
- Know what meds are in your home and dispose of expired and unused drugs.
- Lock your meds in a secure area in your home.
- Dispose of medications properly.





For more information, ask your pharmacist or contact the Connecticut Department of Consumer Protection (DCP) Prescription Monitoring Program (PMP) at (860) 713-6073 or visit our website at www.ct.gov/dcp.





Connecticut Department of Consumer Protection
Prescription Monitoring Program
 165 Capitol Ave., Rm 145 • Hartford, CT 06106



This program was supported by Grant No. 1007-PH-000002 awarded by the Bureau of Public Assistance, The Bureau of Public Assistance is a component of the Office of Public Programs, which also includes the Bureau of Family Services, the National Bureau of Justice, the Office of Juvenile Justice and Delinquency Prevention, and the Office for Victims of Crime. Funds of state or federal origin are subject to the applicable laws and regulations of the donor agency and are subject to the applicable laws and regulations of the Connecticut Department of Justice.

Medication Take-Back

- Findlay, OH
 - Seven take-back days
 - N = 60,320 analgesics (50% opioids)
- East Greenwich, RI
 - Disposal box (3-month review)
 - N = 8995 dosage forms
 - 8.15% controlled medications
 - Opioids most commonly returned medications

CT Dept of Consumer Protection, http://www.ct.gov/dcp/lib/dcp/drug_control/pmp/pdf/kms_poster.pdf;

Perry LA et al. J Am Pharm Assoc 2014; 54: 275-279.

Pawasausakas et al. American College of Clinical Pharmacy Annual Meeting. 2014.

Prevention Strategies

- Interim Report of the White House Commission on Combating Drug Addiction and the Opioid Crisis
 - *Evidence-based prevention programs for schools and tools for teachers and parents to enhance youth knowledge of the dangers of use, as well as early intervention strategies for children with environmental and individual risk factors (trauma, foster care, adverse childhood experiences and developmental disorders)*

Issued Monday, July 31, 2017

Prevention is Cost Effective

- Substance use disorder is a pediatric disease
- For every \$1 invested in youth prevention
 - \$4 savings in health care costs
 - \$7 savings in law enforcement and other criminal justice costs

National Institute on Drug Abuse. Preventing drug use among children and adolescents: a research-based guide for parents, educators, and community leaders, 2nd edition; NIDAMED. Adolescent substance use and Rx medication misuse.

4. Of the following programs, which is considered an effective universal, school-based prevention strategy?

- A** Drug Abuse Resistance Education (D.A.R.E.)
- B** Preventure/Adventure
- C** Brief Alcohol Screening and Intervention for College Students (BASICS)
- D** Life Skills Training



Types of Prevention Interventions

- Universal
 - Designed to deter or delay the onset of a condition by reducing risk factors and promoting broad range of protective factors
- Selective
 - Target selected high-risk group
- Indicted
 - Directed to those already involved in a risky behavior



Universal Prevention

- Prevention Paradox
 - *A large number of people at a small risk may give rise to more cases of disease than the small number who are at a high risk*
- Universal intervention rather than to those only at the highest risk is likely to have greater benefits
 - School
 - Family
 - Community

School-Based Strategies

- Life Skills Training (LST) Program (Grades 7, 8, 9)
 - Drug resistance skills
 - Personal self-management skills
 - General social skills
- Mixed results
 - Botvin et al 2000, 6.5 year follow-up study (NY schools)
 - Reduction in marijuana use ($p < 0.05$)
 - Reduction in heroin and other narcotic use ($p < 0.001$)

Griffin KW et al. *Child Adolesc Psychiatr Clin N Am.* 2010; 19:505-526.

National Institute on Drug Abuse . Preventing drug use among children and adolescents: a research-based guide for parents, educators, and community leaders, 2nd edition.

School-Based Strategies

- Think Smart
 - Weekly interactive program for 5th and 6th graders
 - Teaches alternatives to drug use and how to refuse drug offers
 - N = 460 Alaskan youth
 - Less likely to use drugs immediately after intervention
 - No effect on past 30-day use

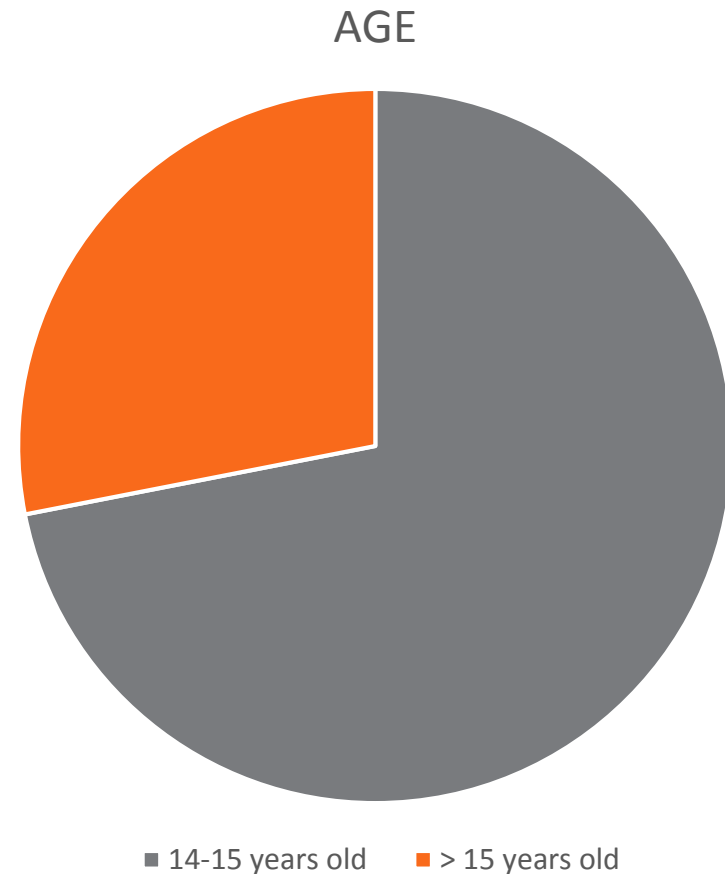
Substance Abuse and Mental Health Services Administration's Center for the Application of Prevention Technologies.
Preventing Rx drug misuse: programs and strategies, 2016.
Johnson KW et al. *Prevention Science: The Official Journal of the Society for Prevention Research*. 2009; 10: 298-312.

Rx for Addiction and Medication Safety (RAMS): Evaluation of Teen Education for Opioid Misuse

- University of Rhode Island, College of Pharmacy pilot project
 - A 4-week, 3-hour interactive curriculum to target 9th grade students
 - Medication Safety (Safe Use and Storage, Disposal Education)
 - Signs and Symptoms and Risk Factors for Opioid Misuse and Withdrawal
 - Opioid Overdose Identification and Response
 - Treatment and Recovery Resources
 - Delivery by trained pharmacy students and college faculty
 - Pilot tested in eight, Rhode Island public high schools

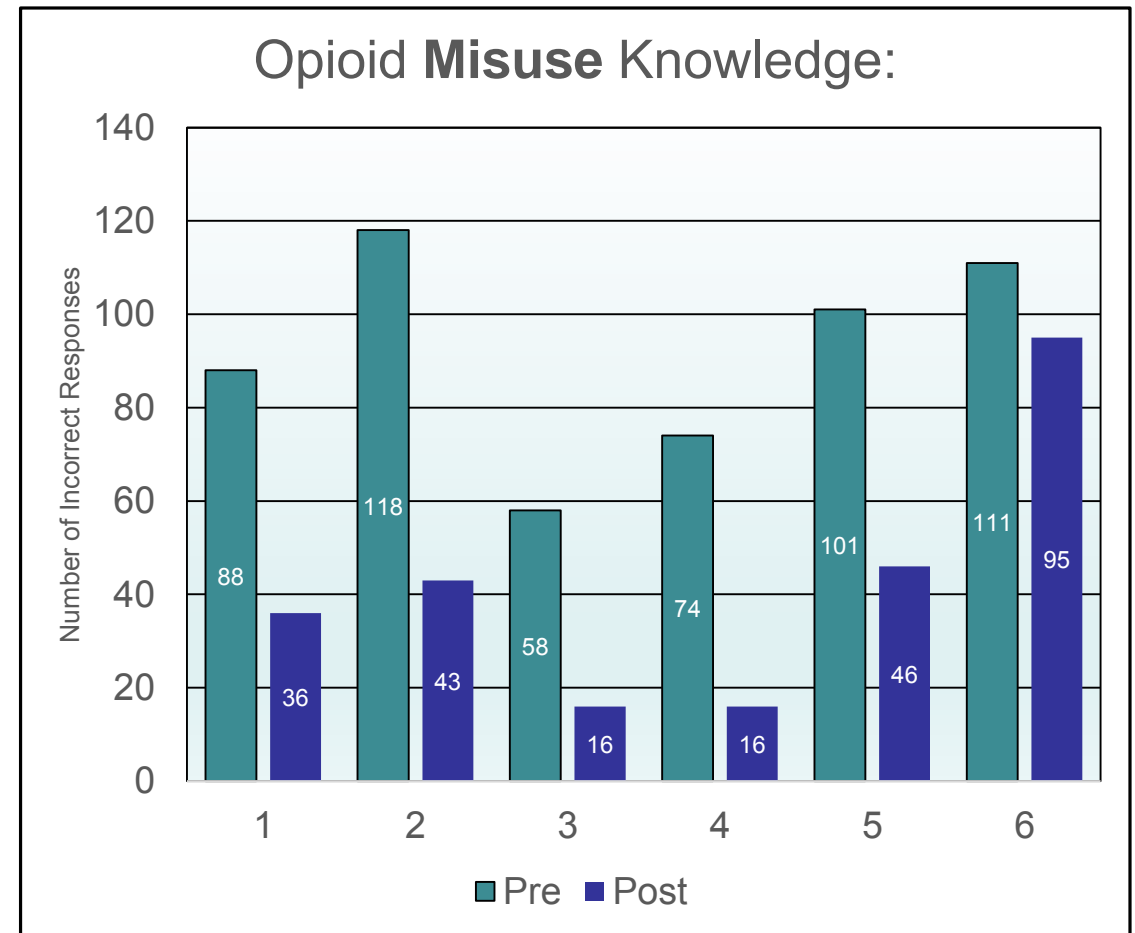
RAMS Demographics

- Pre- and post-surveys collected in 459 matched participants
 - Female (50.5%)
 - Male (48.6%)
 - Other (0.9%)



RAMS Results

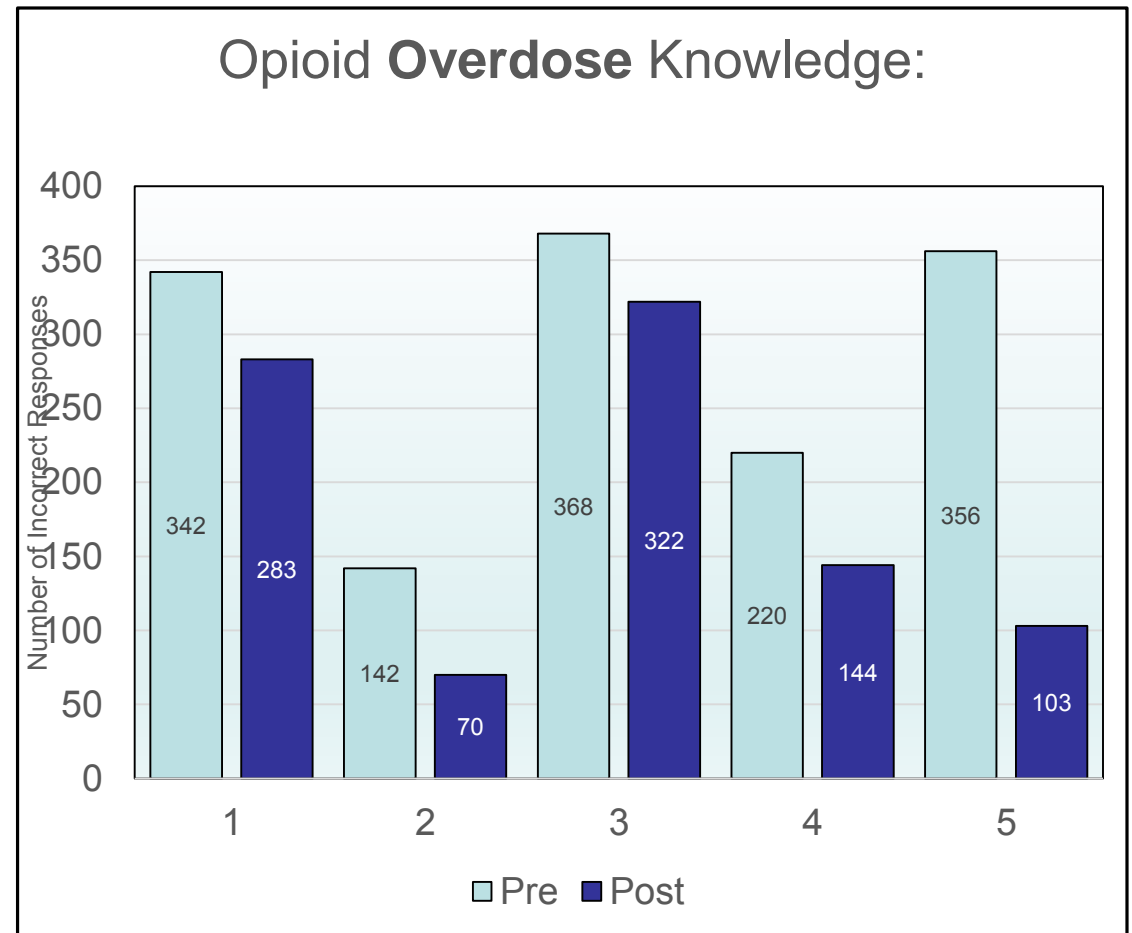
1. Addiction is a chronic brain disease or disorder **YES**
2. Drug misuse is accepting prescription medication from a friend **YES**
3. Drug misuse is use of a prescription medication is exceeding the recommended dose **YES**
4. Nonmedical use is using a prescription medication without a prescription **YES**
5. Risk factors for substance abuse
6. Withdrawal symptoms from OPIOIDs (prescription pain relief pills or heroin)



Matson KL and Bratberg JP (Unpublished data).

RAMS Results

1. Drug users are responsible for their addiction. **NO**
2. Drug users can stop using drugs whenever they want to. **NO**
3. People use drugs to avoid dealing with their own inadequacies. **NO**
4. Drug users have a weak character **NO**
5. Have you ever heard of naloxone? **NO**



RAMS Results

- Opioid Misuse
 - Lifetime use – 15.4%
 - Past-year use – 13%
 - Of those, 30.5% used in past month
- Follow-up (3 months)
 - No significant change
- Increased confidence to recognize and response to overdose and refer victims to treatment ($p < 0.001$)
- 31.5% of teens reported an increase in awareness of availability of recovery groups



American Pharmacists Association™
Improving medication use. Advancing patient care.



RAMS Video

College-Based Strategies

- No universal student-based approach at college or university level
 - Drug education about risks and consequences of nonmedical use
 - Drug diversion awareness
- Universal parent-based program (Parent Handbook)
 - Alcohol-related problems only
 - Reduction in alcohol consumption and alcohol-related consequences
- BASICS
 - Program indicated for college students who drink alcohol heavily and have had or are at risk for alcohol-related problems

Brandt SA et al. *Drug Alcohol Depend.* 2014; 143:272-6.

Garnier-Dykstra LM et al. *J Am Coll Health.* 2012; 60:226-34.

Arria AM. Presentation at APhA Institute on Alcoholism and Drug Dependencies June 2016, Salt Lake City, UT.

Substance Abuse and Mental Health Services Administration (US), Office of the Surgeon General (US). Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs, and Health Nov 2016.

Griffin KW et al. *Child Adolesc Psychiatr Clin N Am.* 2010; 19: 505-526.

Family-Based Strategies

- Guiding Good Choices
- Strengthening Families Program (SFP): For Parents and Youth 10-14
 - Widely used seven-session, family-focused program
 - Enhances parenting skills—nurturing, setting limits, and communicating
 - Adolescent substance refusal skills
 - 33 Midwestern public schools
 - Reductions in tobacco, alcohol, and drug use up to 9 years after the intervention (i.e., to age 21) compared with youth not assigned to SFP

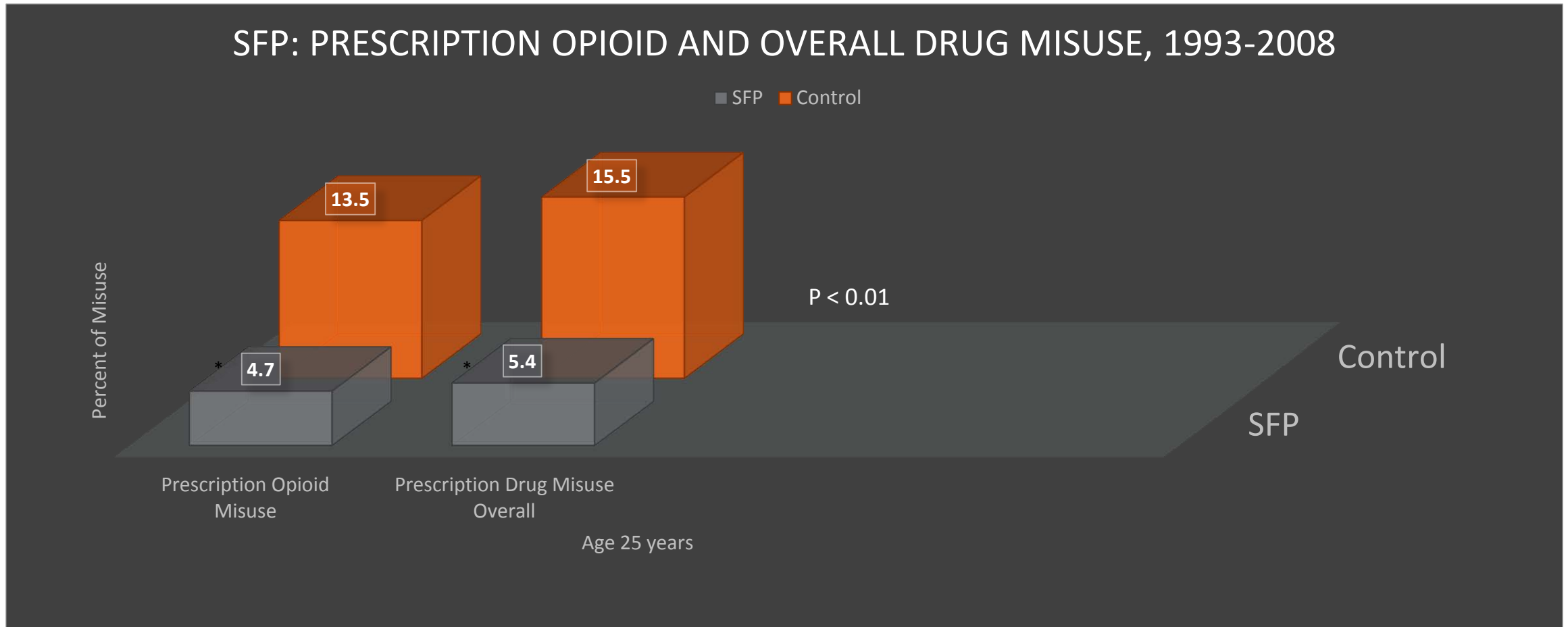
Substance Abuse and Mental Health Services Administration (US), Office of the Surgeon General (US). Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs, and Health Nov 2016.

National Institute of Drug Abuse. Preventing drug use among children and adolescents: a research-based guide for parents, educators, and community leaders, 2nd edition.

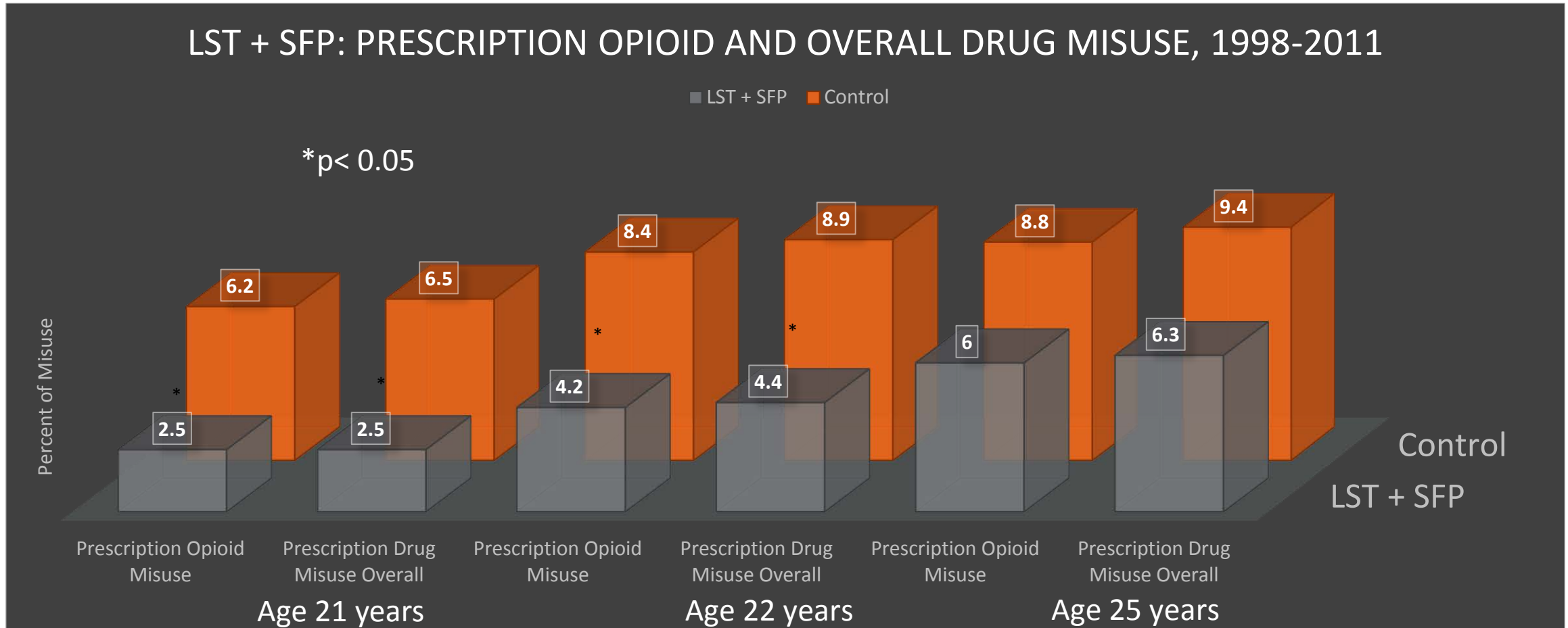
Spoth R et al. *Journal of Consulting and Clinical Psychology*. 2009; 77: 620-32.

Spoth RL et al. *Journal of Adolescent Health*. 2012; 50: 414-7.

Family-Based Strategies



School and Family Strategies



Multicomponent Strategies

- Communities That Care
- Icelandic Model
- PROmoting School-community-university Partnerships to Enhance Resilience (PROSPER)
- Project Lazarus
- Red Ribbon Week

National Institute on Drug Abuse. Preventing drug use among children and adolescents: a research-based guide for parents, educators, and community leaders, 2nd edition.

Substance Abuse and Mental Health Services Administration (US), Office of the Surgeon General (US). Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs, and Health Nov 2016.

Substance Abuse and Mental Health Services Administration's Center for the Application of Prevention Technologies. Preventing Rx drug misuse: programs and strategies, 2016.

Kristjansson AL et al. *Prev Med.* 2010; 51:168-71.

Communities That Care

- 24 Communities in 7 U.S. States
 - 4407 students in grade 5
 - By grades 10 and 12, no significant difference past-month or past-year use in prescription or illicit drug use
 - However, 25-33% reduction in alcohol, tobacco, and delinquent behavior initiation

Hawkins JD et al. Archives of Pediatrics & Adolescent Medicine 2012; 166: 141-8.

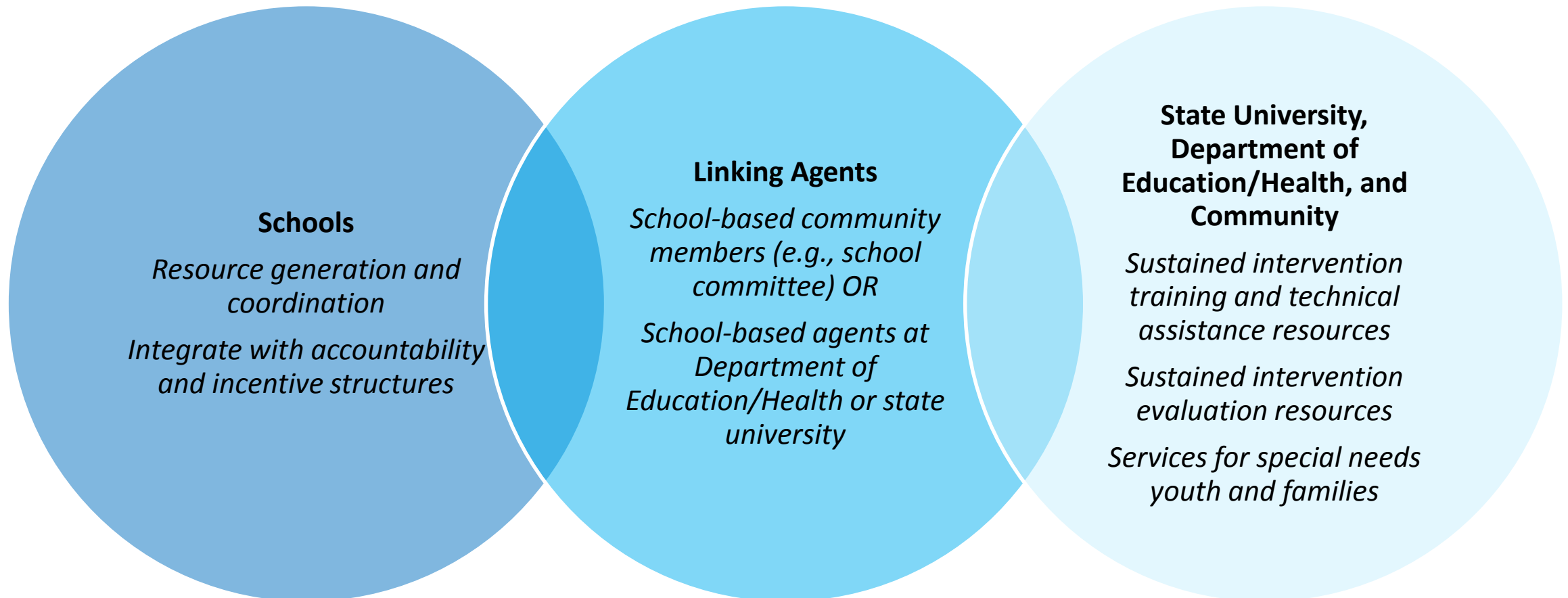
Hawkins JD et al. JAMA Pediatrics 2014; 168: 122-129.

Substance Abuse and Mental Health Services Administration (US), Office of the Surgeon General (US). Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs, and Health Nov 2016.

Icelandic Model

- Collaboration between policy makers, behavioral scientists, field-based practitioners, and community residents in Iceland
 - National funding for recreational activities
 - Parental organization established in every school, along with school councils with parent representatives by law
 - Law prohibiting children aged 13-16 years to be “outside” after 10 pm and midnight in winter and summer, respectively

PROSPER



PROSPER

- 28 Pennsylvania and Iowa small towns and rural communities
 - 10,849 students in grade 6
 - SPF + 1 school-based program
 - Lifetime Illicit Substance Use
 - Relative reduction rate was 18.8% lower in intervention group vs. control at grade 11 ($p < 0.01$) and 15% lower at grade 12 ($p < 0.01$)
 - Prescription opioid misuse reduced by intervention from 27.8% to 22.1% by grade 12

Prevention Resources

- DEA Operation Prevention
- Medication Abuse Project (Partnership for Drug-Free Kids)
- SAMHSA Opioid Overdose Prevention Toolkit
- NIDA teens, parents, and teachers resources
- Generation Rx

Generation Rx. <http://www.generationrx.org/>.

Operation Prevention. Parent Toolkit.

https://www.operationprevention.com/sites/operationprevention.com/files/PDFs/Operation_Prevention_ParentToolkit_Final.pdf.

SAMHSA Opioid Overdose Prevention Toolkit: Safety Advice for Patients & Family Members.

<https://store.samhsa.gov/shin/content/SMA16-4742/SafetyAdviceforPatientsAndFamilyMembers.pdf>.

The Medication Abuse Project. <https://drugfree.org/medicine-abuse-project/>.

NIDA for Teens. <https://teens.drugabuse.gov/>.

HOW WOULD YOU GUIDE IMPLEMENTATION OF PREVENTION STRATEGIES IN CLINICAL PRACTICE OR COMMUNITY?

5. Which of the following assessment tools should not be used for evaluating opioid misuse?

- A** Car, Relax, Alone, Friends/Family, Forget, Trouble (CRAFFT)
- B** Alcohol Use Disorder Identification Test (AUDIT)
- C** Alcohol, Smoking, and Substance Abuse Involvement Screening Test (ASSIST)
- D** Drug Abuse Screening Test (DAST) - 10

Early Identification

Substance Use and Prescription Medication Misuse

- Delay initiation
- Improve immediate patient outcomes
- Prevent negative long-term consequences
 - Decrease risk of transition to heroin
 - Screen for household dysfunction and forms of abuse
- Cost-effective approach

NIDAMED. Adolescent substance use and Rx medication misuse.
Cerdá M et al. *J Pediatr.* 2015; 167: 605-12.
Dube SR et al. *Pediatrics.* 2003; 111: 564-72.

Conversation Starters

- HEEADSSS*
 - Psychosocial interview
 - Do any of your friends smoke or drink alcohol? Use other drugs?
 - Have you ever tried smoking, alcohol, or drugs with your friends?
- SSHADESS
 - Strength- and resiliency-based tool
 - Same questions as HEEADSSS with additional question *“When/if you smoke, drink or get high, how does it make you feel or what does it do for you?”*

* Home environment, education and employment, eating, peer-related activities, **drugs**, sexuality, suicide/depression, and safety from injury and violence

Adolescence. In: Hagan JF Jr, Shaw JS, Duncan PM, eds. Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents. 3rd ed. Elk Grove Village, IL: American Academy of Pediatrics; 2008:515-575. http://brightfutures.aap.org/pdfs/Guidelines_PDF/18-Adolescence.pdf;

Ginsburg KR, Kinsman SB, eds. Reaching teens: strength-based communication strategies to build resilience and support healthy adolescent development. Chicago: American Academy of Pediatrics; 2014.

Universal Screening

- Screening to Brief Intervention (S2BI)

- *“In the past year, how many times have you used...”**

- Tobacco, Marijuana, Alcohol, (never, once or twice, monthly, weekly or more)

- STOP if all above answers were “never”

- If yes to above, continue in same manner

- Prescription and illegal drugs, inhalants, herbs or synthetic drugs

- Efficacious identification of Diagnostic and Statistical Manual of Mental Disorders, 5th Edition: DSM-5 substance use disorder

- Discriminates clinically relevant use-risk categories

*Alternative approach: *“Use anything else to get high? Including prescription or illegal drugs and things that you sniff or huff”*



Universal Screening

- Brief Screener for Tobacco, Alcohol and Other Drugs (BSTAD)
 - Asks questions about friends' use and personal use of substances
 - *“Which of the following medications have you used in the past year that were not prescribed for you or you took more of than you were supposed to take?”*
 - Prescription pain relievers, sedatives, stimulants, and over-the-counter medications
 - If used, inquire about duration of use

Brief Assessment Tools

- Car, Relax, Alone, Friends/Family, Forget, Trouble (CRAFFT)
- Global Appraisal of Individual Needs (GAIN)†
- Problem Oriented Screening Instrument for Teenagers (POSIT)
- CAGE-AID
- DAST-10†
- NIDA-Quick Screen and Modified-ASSIST*

†Adolescents and young adults *Young adults

Levy SJ et al. *Pediatrics*. 2016; 138: pii: e20161211.

National Institute on Drug Abuse. Screening for drug use in general medical setting: resource guide.

McCabe SE et al. *Arch Pediatr Adolesc Med*. 2011; 165: 729-35.

Stage of Use and Intervention

Stage	Description	Goals
Abstinence	Time before individual uses drugs	Prevent or delay initiation
Substance use without a disorder (experimentation)	Limited use, generally social situations, without related problems	Advise to stop. Provide counseling for risk reduction
Mild-moderate SUD	Use in high-risk situations; use associated with problem or for emotional regulation	Brief assessment to explore patient-perceived problems; motivational interviewing
Severe SUD	Loss of control or compulsive drug use	Motivational interviewing; referral to treatment

SUD: Substance Use Disorder

Motivational Interviewing

Express Empathy

Build rapport

Develop Discrepancy

Elicit pros and cons

Roll with Resistance

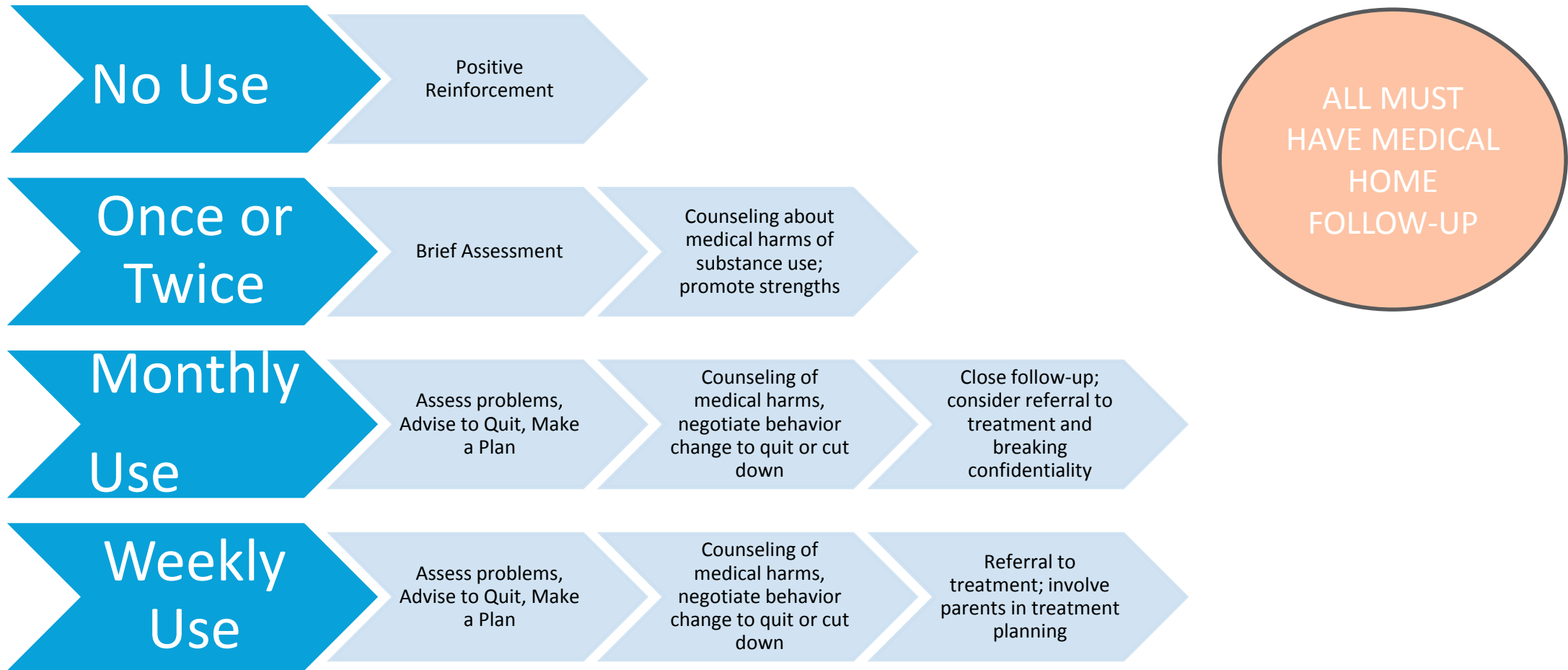
*Respect patient
autonomy*

Support Self-Efficacy

*Communication of
patient's capacity to
change*

Motivational Interviewing: Key Skills

- Use open-ended questions
- Affirming and Supportive
 - Actively listen for patient strengths, values, aspirations, positive qualities
 - Reflect those to client in affirming manner
- Reflective Listening
 - Collaborative and nonjudgmental
 - Deepens the conversation
- Summarizing



Screening, Brief Intervention, and Referral to Treatment (SBIRT): Practice Case

A 16-year-old female is seen in the pediatric asthma clinic for medication review following asthma exacerbation



Screen: Ask and Assess

- She reports weekly use of marijuana and prescription opioids
 - Uses marijuana to help her relax when she is stressed
 - Mixes substances to experience better effect
 - States mother knows about her marijuana use, but would be upset if she found out about the hydrocodone/acetaminophen that she is buying from her cousin

6. What is the patient's DAST-10 score?

- A 1
- B 2
- C 3
- D 4

Screen: Ask and Assess

DAST-10	0	1
In the past 12 months		
1. Have you used drugs other than those required for medical reasons?	N	Y
2. Do you abuse more than one drug at a time?	N	Y
3. Are you always able to stop using drugs when you want to?	Y	N
4. Have you ever had “blackouts” or “flashbacks” as a result of drug use?	N	Y
5. Do you ever feel bad or guilty about your drug use?	N	Y
6. Does your partner (or parents) ever complain about your involvement with drugs?	N	Y
7. Have you neglected your family (or friends) because of your use of drugs?	N	Y
8. Have you engaged in illegal activities in order to obtain drugs?	N	Y
9. Have you ever experienced withdrawal symptoms (felt sick) when you stopped taking drugs?	N	Y
10. Have you had medical problems as a result of your drug use?	N	Y

Motivational Interviewing Vignette

- *“I’d like to know more about your use of hydrocodone/acetaminophen and marijuana. Help me to understand what you enjoy about using those drugs” – Pharmacist*
 - *“My friends know I get anxious, so we smoke together to chill out. My mom is cool with it as long as I do it at home” –Patient*
- *“Your mom doesn’t know about your hydrocodone/acetaminophen use. Why?”*
 - *“She would flip out. She thinks my cousin is an addict and would think I am too if she knew.”*
- *“Do you ever feel guilty about not telling her about it or regret using hydrocodone/acetaminophen”*
 - *“No. However, my grades are not great and we keep arguing about it. I wish I could tell her about how stressed I am, but I just can’t talk about it with her”*

Motivational Interviewing Vignette

- *“So it seems using marijuana and hydrocodone/acetaminophen helps manage your stress, but your grades are suffering as well as your relationship with your mom. I need to tell you that the health risks of using are serious”*
 - *(Silence)*
- *“Mixing drugs can really get you into trouble even if taking a couple of pills. You could overdose. I need you to stop using before you flunk out of school”*
 - *(Silence)*
- *“Given what we have been talking about, help me better understand how you feel about making a change in your drug use. On a scale from 0-10, how ready are you to change your use. A 10 would mean fully ready to change”*
 - *“7”*
- *“Why did you choose that number and not a lower one like 1 or 2”*
 - *“I use to be a good student, but the stress was too much...so I started using. I would like to go to college and I’m not sure I can if my grades don’t improve”*

Motivational Interviewing Vignette

- *“Do you think you can quit? How confident are you that you can quit?”*
 - *“I think I could do it”*
- *“Good! What needs to happen for you to feel more confident? Tell me something that you have done in the past that you were successful at. What methods did you use?”*
 - *“I need a way to deal with my stress. Before I went running when I was anxious about school, but since my asthma has been worse I don’t run anymore”*
- *“Would it be okay for me to discuss what we have talked about with your doctor? I think he or she could help give you ideas to help with your stress. But in the meantime, I can help you with your asthma medications and hopefully get you back to running. Can you show me how you use your inhaler?”*

BRIEF INTERVENTION BREAKOUT



7. What principles and skills of motivational interviewing did the pharmacist fail to use in the vignette?

- A** Reflective listening
- B** Roll with resistance
- C** Develop discrepancy
- D** Summarize and negotiate goal



Additional Diagnostic Assessments

- Abstinence challenge or controlled-use trial
 - Assessment of certain DSM-5 criteria
 - Unsuccessful efforts to cut down or quit
 - Continued use despite problems
 - Craving or strong desire to use
 - Tolerance
 - Withdrawal

Levy S et al. *Pediatr Clin North Am.* 2002; 49: 329-43.

Levy SJ et al. *Pediatrics.* 2016; 138: pii: e20161211.

SBIRT Settings

- SBIRT practice can be applied across a variety of practice settings and clinicians providing health care to adolescents and young adults, including pharmacists
 - Primary and ambulatory care
 - Emergency departments
- Ohio pharmacist survey
 - Pharmacists felt more confident than prescribers to identify SUD (76% vs. 67%, respectively)
 - Pharmacists felt comfortable in counseling (34%) and referral to treatment (28%) for patient with SUD
 - Use of validated screening instruments among pharmacists less than 5%

Levy S et al. *Pediatr Clin North Am.* 2002; 49: 329-43.

Levy SJ et al. *Pediatrics.* 2016; 138: pii: e20161211.

Mitchell SG et al. *J Subst Abuse Treat.* 2013; 44: 463-72.

Tommasello AC. *Harm Reduct J.* 2004; 1:3.

Adhikari. Screening, intervention and referral practices among prescribers and pharmacists treating patients with substance abuse disorder in Ohio.

<http://mha.ohio.gov/LinkClick.aspx?fileticket=4UwEbO9WaFs%3D&portalid=0>.



SBIRT Settings

- Schools
 - 2 urban New York schools (n=248, grades 6-12)
 - Feasibility study for SBIRT in school health clinic
 - 13 New Mexico high schools (n=629, 14-17 years of age)
 - Universal screening by health center staff for students seen in clinic
 - Brief intervention (85%), brief treatment or referral to treatment (15%)
 - At 6-month follow up, decrease in drug use ($p < 0.001$)
 - Screen U (University-based SBIRT)

American Society of Addiction Medicine (ASAM) Definitions

- **Opioid Use Disorder (OUD)** – Chronic, relapsing disease with significant personal, economic, and public health consequences; individual continues use despite harm
- **Addiction** – primary, fundamental chronic disease and dysfunction of brain reward, motivation, and memory
- **Detoxification** – safe withdrawal of psychoactive substances from a person
- **Treatment** – scheduled pharmacotherapy to mitigate pathological pursuit of reward and withdrawal relief for harm reduction and/or long-term recovery
- **Recovery** – Sustained action addressing biological, psychological, social, and spiritual disturbances from addiction

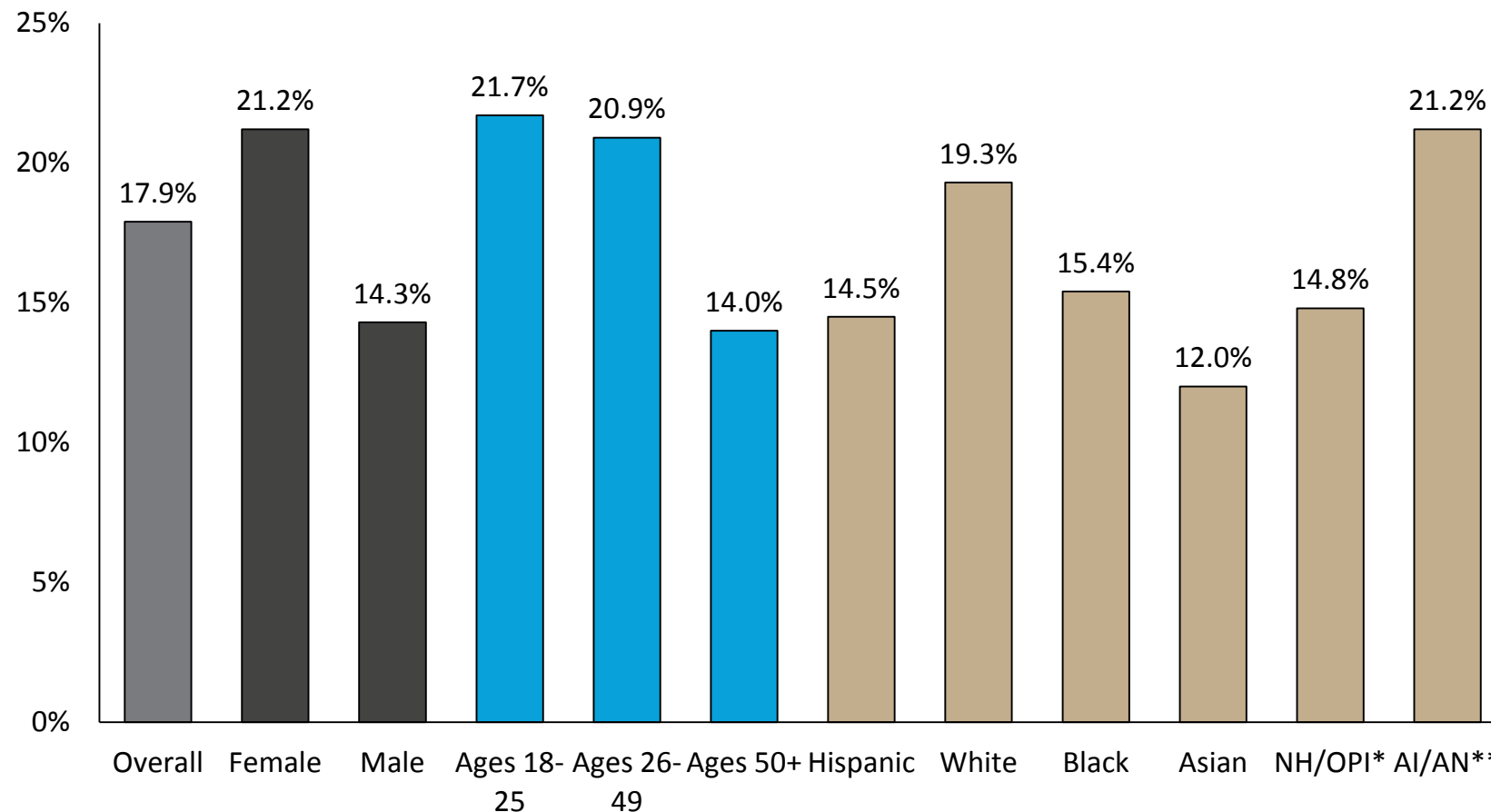
Overall Outcomes from OUD Pharmacotherapy

- Increased
 - Overall survival
 - Treatment retention
- Decreased
 - Opioid use
 - Overdose deaths
 - HIV /Hepatitis C virus (HCV) transmission
 - Criminal behavior
 - Incarceration

ASAM National Practice Guideline: Adolescents

- Treat adolescents with OUD using full range of treatment options, including pharmacotherapy
 - Methadone
 - Buprenorphine
 - Naltrexone
- Consider FDA and federal laws for < 18 yr; confidentiality
- Psychosocial treatment is recommended
- Reduce sexually-transmitted infections (STIs) and bloodborne infections (BBIs)
- Consider specialized treatment facilities
- Overall evidence is limited: guidance by consensus, no comparisons

Eighteen percent of adults in the United States have a mental, behavioral, or emotional disorder



12-month prevalence of any mental illness among adults ages 18+, by gender, age, and race, 2015

*NH/OPI=Native Hawaiian/Other Pacific Islander

**AI/AN =American Indian/Alaska Native

Psychosocial Interventions for OUD: Adolescents

- Contingency management
- Motivational incentives
- 12-step facilitation therapy
- Vocational support
- Evidence-based interventions
 - Reduce infections (BBIs, STIs)
 - Treat comorbid psychiatric conditions (depression, anxiety, personality disorders, PTSD)
- Family Therapy
 - Better outcomes from treatment and prevention
 - Decreased frequency of and consequences of opioid use
 - Financial/social/medication support
 - Family health related to OUD health – primary care
 - Stigma

American Society of Addiction Medicine. <https://www.asam.org/docs/default-source/practice-support/guidelines-and-consensus-docs/asam-national-practice-guideline-supplement.pdf?sfvrsn=24>. (accessed on 2017 Aug 28).

Ventura AS, et al. *J Addict Med*. 2017 Sep/Oct;11(5):339-34.

Considerations in Using SUD Pharmacotherapy in Adolescents

Considering Medication

- Severity of SUD
- Comorbid psychiatric disorders
- Failed/lack of improvement from psychosocial interventions
- High risk of morbidity/mortality
- Family engagement

Choosing Medication

- Effects of previous medications
- Family/patient wishes
- Comorbidities
- Contraindications/interactions
- Likelihood of adherence

American Academy of Pediatrics

- Spontaneous remission rates are low; improved with therapies
- Effective medications and counseling are underused
- Access to treatment is severely restricted
- New treatments, access required to save lives
 - Primary care integration
 - Developmentally appropriate counseling
 - DATA2000 waiver course for pediatricians
- **Consider offering medications or referrals to youths with severe OUD**

Significant Treatment Gaps

- 1.4 million people in gap between OUD diagnosis and treatment capacity
 - 53% of U.S. counties lack ANY DATA2000 waived prescriber
 - 30 million people lack access to OUD treatment
- 23% of publicly funded treatment programs offer effective pharmacotherapy
- Widespread health professional stigma
- 2013 Treatment Episode Data Set (TEDS)
 - N=139,092 treatment episodes
 - Heroin treatment with Medications for Addiction Treatment (MAT)
 - 2.4% adolescents
 - 26% adults
 - Prescription misuse treatment w/MAT
 - 0.4% adolescents
 - 12% adults

American Society of Addiction Medicine. <http://www.asam.org/quality-practice/practice-resources/nurse-practitioners-and-physician-assistants-prescribing-buprenorphine> (accessed on 28 August 2017).

Jones CM, et al. *Am J Pub Health*. 2015;105(8) e55-63.

van Boekel LC, , et al. *Drug Alcohol Depend*. 2013;131(1-2): 23-35.

Feder KA, et al. *J Adolesc Health* 2017;60(6): 747-750.

Trends in Receipt of Buprenorphine (BUP) and Naltrexone (NTX) for Opioid Use Disorder Among Adolescents & Young Adults, 2001-14

- Objective: Identify disparities in OUD pharmacotherapy in youth (13-25 yr) within 6 months after diagnosis
- Adolescents have more difficulty accessing care than adults, only 1/13 in specialty care
- Retrospective cohort analysis of commercial insurance database (Optum)
- N=20822; mostly white males; females, younger less likely to receive treatment
- OUD diagnosis rate increased 600% 2001-2014; highest 21-25 yr
- 90% BUP / 10% NTX – despite approval of extended-release(XR)-NTX
- 2009-2014: insurance coverage increased, OUD diagnoses increased, yet MAT receipt decreased from peak of 31.8% in 2009 to 27.5% in 2014
- **Overall MAT receipt was 26.8% between 2001-2014**



8. Which of the following medications has the greatest evidence for efficacy and safety among adolescents with opioid use disorder?

- A** Buprenorphine/naloxone
- B** Methadone
- C** Naloxone
- D** Naltrexone

9. Which of the following medications has the highest risk of opioid-induced respiratory depression?

- A** Buprenorphine/naloxone
- B** Methadone
- C** Naloxone
- D** Naltrexone

10. Which of the following medications could be administered by a community pharmacist?

- A** Buprenorphine/naloxone
- B** Methadone
- C** Naloxone
- D** Naltrexone

Adolescent Buprenorphine Trial Summaries

- Marsch et al. (Arch Gen Psych 2005)
Buprenorphine/naloxone vs. clonidine for detoxification
- N=36
- Psychosocial and negative urine test incentives
- @ 28 days - 72% BUP retained in treatment vs. 39% clonidine
- Buprenorphine/naloxone
 - More likely to transition to naltrexone
 - Fewer HIV risk behaviors
 - Higher % negative urine tests
- Woody et al. (JAMA 2008)
- Groups: 2-week buprenorphine/naloxone detoxification vs 12-week maintenance
- n=152
- Both groups received behavioral therapies
- Primary outcome: negative urines @ 4, 8, 12 weeks
- Results: Fewer positive 4- and 8 -week urine tests in maintenance group
- Relapse rate at 12 months
 - 53% maintenance
 - 72% detox / 2 week
- Predictors for maintenance success: IV use, severe OUD, psych predicted lower opioid use

Marsch LA, et al. *Arch Gen Psych* 2005; 62(10): 1157-64.

Woody GE, et al. *JAMA*. 2008;300(17):2003-2011.

Characteristic	Buprenorphine	Methadone	Naltrexone
Mechanism of Action	Partial opioid agonist	Full opioid agonist	Full opioid antagonist
Misuse/diversion potential	Moderate (pharmacy); less w/ co-formulations w/naloxone	Minimal (Opioid Treatment Program (OTP)-based)	None
Routes of Administration	Buccal Film Oral Sublingual Transdermal Long-acting implant Long-acting injection (under FDA review)	Oral Liquid (daily dosing)	380 mg IM monthly into gluteal muscle 25 mg by mouth daily initially, then 50 mg/day weekdays and 100 mg Saturday OR 100 mg by mouth every other day

<https://www.asam.org/docs/default-source/practice-support/guidelines-and-consensus-docs/asam-national-practice-guideline-supplement.pdf?sfvrsn=24>. (accessed 2017 Aug 28).

Hammond CJ. *Child Adolesc Psychiatr Clin N Am*. 2016;25(4):685-711. <http://www.ncbi.nlm.nih.gov/books/NBK385163/> (accessed 2017 Aug 27).

Srivastava A, et al. *Can Fam Physician*. 2017;63(3):200-205.

Characteristic	Buprenorphine	Methadone	Naltrexone
Access (source)	Age 16 (FDA) Only by waived prescribers Can be managed collaboratively and dispensed by pharmacists	Age 18 OR 2 unsuccessful attempts at withdrawal management + parental consent Dispensed only through OTP	Age 18 (FDA) Can be managed collaboratively, dispensed, and administered by pharmacists
DEA Schedule	III	II	none
Overdose risk	Very rare (more often with benzodiazepines)	Present	None
Frequency/Duration	Daily for OUD; many months	Daily for OUD; 1 year minimum	Daily oral; Monthly IM (XR-NTX); unknown

<https://www.asam.org/docs/default-source/practice-support/guidelines-and-consensus-docs/asam-national-practice-guideline-supplement.pdf?sfvrsn=24>.

(accessed 2017 August 28).

Hammond CJ, et al. *Child Adolesc Psychiatr Clin N Am*. 2016;25(4):685-711.
DiPaula B, et al. *J Am Pharm Assoc* (2003) 2015; 55(2):187-192.

Characteristic	Buprenorphine	Methadone	Naltrexone
Potential populations	<p>Comorbid psychiatric illness(es)</p> <p>Pregnancy</p> <p>Oral Rx opioid use</p> <p>Benzodiazepine use</p> <p>QTc-prolonging drug use</p> <p>Lack of OTP access (rural)</p> <p>Occupational need for alertness</p> <p>Existing primary care need</p>	<p>Comorbid psychiatric illness(es)</p> <p>Injection opioid use</p> <p>Risk for treatment dropout (unstable housing and/or lack of social support)</p>	<p>Shorter duration opioid misuse</p> <p>Concomitant alcohol use disorder</p> <p>Poor adherence</p> <p>Justice-involved</p> <p>Diversion</p> <p>Occupational (Healthcare Worker (HCW), Law Enforcement Officer (LEO), drivers)</p> <p>Risk for treatment dropout</p>

<https://www.asam.org/docs/default-source/practice-support/guidelines-and-consensus-docs/asam-national-practice-guideline-supplement.pdf?sfvrsn=24>. (accessed 2017 Aug 28).

Hammond CJ. *Child Adolesc Psychiatr Clin N Am*. 2016;25(4):685-711.

<http://www.ncbi.nlm.nih.gov/books/NBK385163/> (accessed 2017 Aug 27).

Srivastava A, et al. *Can Fam Physician*. 2017;63(3):200-205.

Characteristic	Buprenorphine	Methadone	Naltrexone
Advantages	Fewer positive urine screens for opioids Treatment program retention dose-related; Most data in adolescents	Better treatment program retention (dose-related) Most data (in adults)	No physical dependence
Disadvantages	Few waived physicians	OTP clinic only Age 18 mostly	Lack of overall efficacy data Age 18 only

<https://www.asam.org/docs/default-source/practice-support/guidelines-and-consensus-docs/asam-national-practice-guideline-supplement.pdf?sfvrsn=24>. (accessed 2017 Aug28).

Hammond CJ. *Child Adolesc Psychiatr Clin N Am*. 2016;25(4):685-711.

<http://www.ncbi.nlm.nih.gov/books/NBK385163/> (accessed 2017 Aug 27).

Srivastava A, et al. *Can Fam Physician*. 2017;63(3):200-205.

Social Risk Factors for Opioid Overdose

- Using alone
- Rural area
- Multiple pharmacies (≥ 4)
- Multiple providers (≥ 4)
- Past overdose
- Incarceration release
- Detoxification release
- Unemployment
- Medicaid (non-private insured)

Volkow ND, et al *N Engl J Med*. 2016;374(13):1253-1263.

Dilokthornsakul P, et al 2016 *Apr*;17(4):436-43.

Garg RK, et al. *Med Care*. 2017;55(7):661-668.

Park TW, et al. *J Addict Med*. 2016;10(6):369-381.



Drug Risk Factors for Opioid Overdose

- Route of administration (IV)
- Duration of use (> 3 months)
- Dose (Daily 100 MME > 50 MME > 20 MME)
- Drug (methadone, oxycodone)
- Lack of purity (fentanyl-contaminated heroin)
- Long-acting formulations
- OUD Treatment (buprenorphine)
- Combinations
 - Long + short-acting opioids
 - Antidepressants
 - Benzodiazepines (current/past)
 - “Holy Trinity”
(opioid+benzodiazepine+skeletal muscle relaxant)

Volkow ND, et al *N Engl J Med*. 2016;374(13):1253-1263.

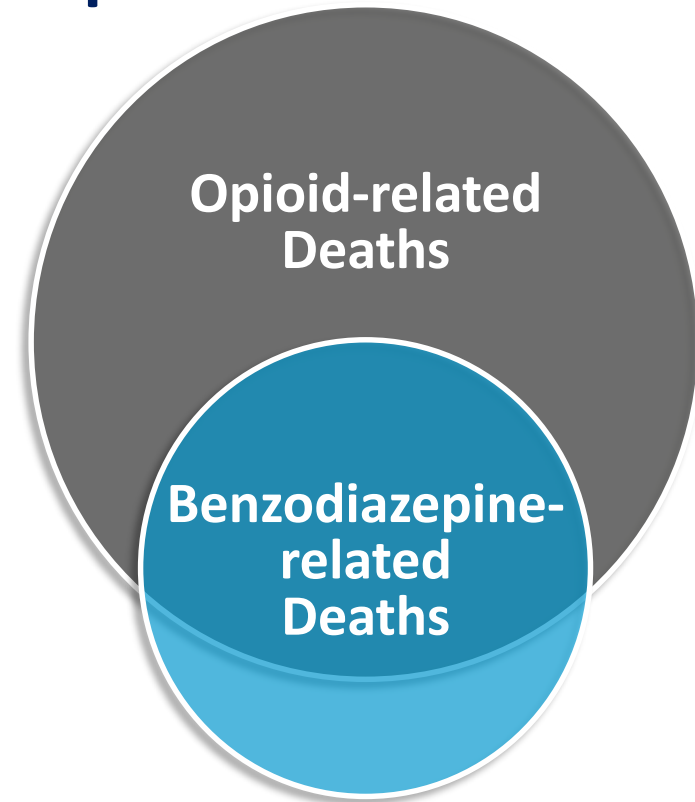
Dilokthornsakul P, et al. *J Pain*. 2016 Apr;17(4):436-43.

Garg RK, et al. *Med Care*. 2017; 55(7):661-668.

Park TW, et al. *J Addict Med*. 2016; 10(6):369-381.

Benzodiazepines and Opioids

- Benzodiazepines are present in 31% of opioid-related overdose deaths
- Opioids are present in 75% of benzodiazepine-related overdose deaths
- Among people prescribed opioids, the risk of overdose deaths is 3.8 times higher for people prescribed benzodiazepine also



Citizen Petition: Black Box Warnings

Opioids Black Box Warning

WARNING: Concurrent use with benzodiazepines reduces the margin of safety for respiratory depression and contributes to the risk of fatal overdose, particularly in the setting of misuse.

Benzodiazepines Black Box Warning

WARNING: Concurrent use with opioids reduces the margin of safety for respiratory depression and contributes to the risk of fatal overdose, particularly in the setting of misuse.

Requires medication guides for both classes of medications that specifically warn patients of the potential dangers of combined use of opioids and benzodiazepines.

Disease / Demographic Risk Factors for Opioid Overdose

- Chronic pain
- Psychiatric disorders
- Substance use disorder
 - Opioid use disorder
 - Alcohol use disorder
- Male
- White
- Age 35-44 yr vs. 18-24 yr
- Chronic comorbid diseases
 - Renal
 - Pulmonary
 - Hepatic

Volkow ND, et al. *N Engl J Med*. 2016;374(13):1253-1263.

Dilokthornsakul P, et al. *J Pain*. 2016 Apr;17(4):436-43.

Garg RK, et al. *Med Care*. 2017;55(7):661-668.

Park TW, et al. *J Addict Med*. 2016;10(6):369-381.

For Pharmacists: Assessing Risk

- Multiple psychoactive or sedating medications?
- Dispensing buprenorphine or methadone?
- Multiple prescribers and/or multiple pharmacies?
- Are prescribers aware of all prescriptions?
- Is patient aware of risks?
- Other children or pets at home?
- Patient, friends, and family know how to respond to signs/symptoms of overdose?
- Does patient/do family members have naloxone?

Naloxone Co-prescribed to Patients on Long-term Opioid Therapy for Noncancer Pain

- Retrospective cohort study funded by NIDA
- Six primary care safety-net clinics in San Francisco, CA
- 1985 racially diverse patients
- Morphine Equivalent Dose (MED) < 60 mg/day in 54.3% of subjects
- Naloxone co-prescribed to 38.2% of subjects
 - More likely opioid-related ED visit in past year
 - More likely > 60 mg/mg MED

Naloxone Co-Prescribed to Patients on Long-term Opioid Therapy for Noncancer Pain

- Regression modeling demonstrated a statistically significant DECREASE in opioid-related ED visits in subjects with co-prescribed naloxone
 - 47% ↓ in 6 months
 - 63% ↓ in 12 months
- No change in opioid dose in both study arms
- No naloxone-related adverse events reported
- Conclusions
 - Primary care naloxone co-prescribing is feasible
 - High risk patients may derive greater benefit from co-prescribing naloxone

Naloxone Co-Prescribing as a Universal Precautions Model for Patients on Chronic Opioid Therapy

- Goal: Universal Precautions approach to naloxone co-Rx for chronic [noncancer] pain patients in one New Mexico ambulatory interdisciplinary pain clinic
- N=164 patients > 18 yr
- Exclusions: naloxone allergy, pregnancy, acute pain
- Opioid only n=128 (78.0%)
- Opioid and benzodiazepine n=36 (22.0%)
- Comorbid depression n=93 (57%)
- Median MED = 90 mg/day; Median Current Opioid Misuse Measure (COMM) = 5.0 ($\geq 9 = \uparrow$ risk)
- **Opioid overdose = 0**

Naloxone Co-Prescribing as a Universal Precautions Model for Patients on Chronic Opioid Therapy

- Overdose prevention messaging (safe use and safe storage)
- Recognition of opioid overdose
- Response to overdose with rescue breathing
- Intranasal naloxone administration (assembly and administration)
- Calling 911 to ensure emergency medical system response
- Review of New Mexico Good Samaritan Law relative to activation of 911 in the event of suspected drug overdose.

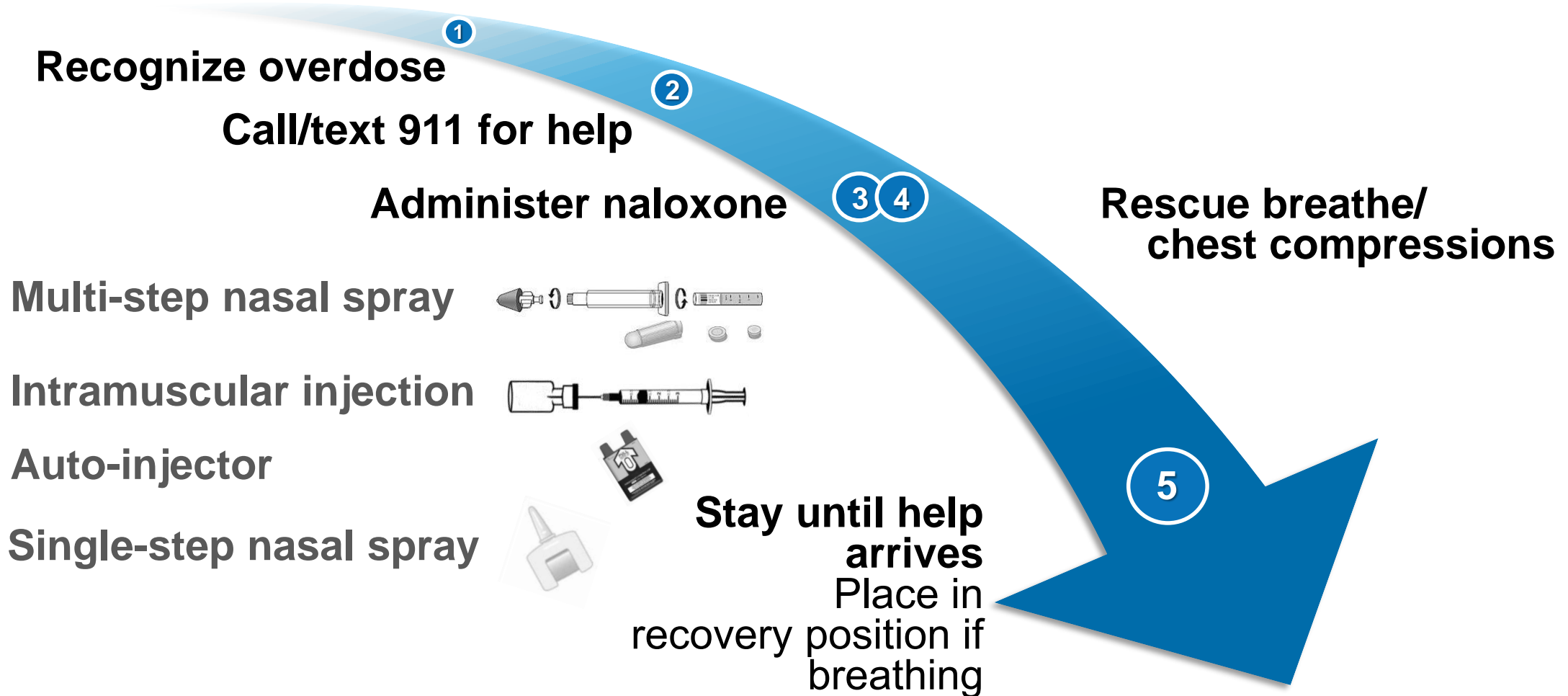
Co-Prescribing Naloxone Does not Increase Liability Risk

- The legal risk associated with prescribing naloxone is no higher (and may be lower) than that associated with any other medication
- **No instance** in which prescribing or dispensing of naloxone was grounds for a lawsuit
- Liability associated with prescribing naloxone in good faith to patient at risk of overdose is either extremely low or absent entirely
- Co-prescribing naloxone is a prudent clinical and legal decision
- **No clinician should fail or refuse to issue such a prescription based on liability concerns**

11. How long does overdose education and naloxone administration training take?

- A** 5 minutes – new inhaler technique demonstration
- B** 15 minutes – Immunization including observation time
- C** 30 minutes – Rapid HIV testing and risk counseling
- D** 45 minutes – Medication Therapy Management (MTM)
Comprehensive Medication Review (CMR)

How to Respond to an Opioid Overdose



How to Recognize an Opioid Overdose

How to Recognize an Overdose

Common Signs to Look For



Breathing slowly

A person may have very slow, shallow breaths, make gurgling noises, or stop breathing.

Can't be woken up

They may be awake but unable to talk or may not respond when you try to wake them up.



How to Recognize an Overdose



Turning blue

They could look very pale or have blue fingernails and lips.

What to do next

Call 911, give naloxone, and begin rescue breathing if the person doesn't wake up.

We all have a role to play in ending the overdose crisis. **What's yours?**
Find out at PreventOverdose.RI.gov

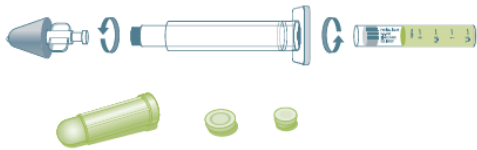
Prevent Overdose RI 

Call/Text 9-1-1

- People are often scared to call or text 911 in the event of a suspected overdose
 - Police notified of a 911 call involving an overdose often come to the scene
 - People may be hesitant to call if they are on parole or have outstanding arrest warrants
 - Some Good Samaritan laws provide immunity only for minor crimes, not immunity from prosecution for possession or distribution of illicit drugs
 - Some bystanders use home remedies instead of calling 911 or using naloxone
 - Calling 911 is estimated to occur only 10-56% of the time when an overdose is suspected
 - Key part of education to ensure definitive medical care and access to treatment and recovery services

Give Naloxone

A



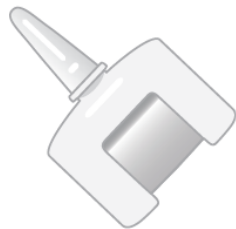
MULTI-STEP NASAL SPRAY

DIRECTIONS: Spray 1 mL (half of the syringe) into each nostril.

NO BRAND NAME/GENERIC

COST: \$-\$\$

B



SINGLE-STEP NASAL SPRAY

DIRECTIONS: Spray full dose into one nostril.

BRAND NAME: Narcan

COST: \$\$\$

C



INTRAMUSCULAR INJECTION

DIRECTIONS: Inject 1 mL in shoulder or thigh.

NO BRAND NAME/GENERIC

COST: \$-\$\$

D



AUTO-INJECTOR

DIRECTIONS: Use as directed by voice-prompt. Press black side firmly on outer thigh.

BRAND NAME: Evzio

COST: \$\$\$\$*

Rescue Breathing

- Make sure airway is clear
- Place one hand on chin
- Tilt head back to open airway
- Pinch nose closed
- Give two slow rescue breaths into mouth
- Make sure chest rises with each breath
- Give 1 breath every 5 seconds until person can breathe on own
- If the person is still unresponsive with slow or no breathing after 2-3 min, administer another dose of naloxone
- Continue rescue breathing until help arrives

Stay Until Help Arrives, Place in Rescue Position

- **Do not leave the person alone** after giving naloxone
- If the person took a long-acting opioid, his or her condition could worsen after the effects of naloxone wear off
- Make sure the person does not take any more opioids
- If the responder needs to leave at anytime – to call/text 911 or get naloxone – use the rescue position
- Put the person on his or her side with their top leg and arm crossed over their body
- This position makes it difficult for the person to roll over and lessens the chance of aspiration in the event of vomiting caused by withdrawal

Implementing Models in the Field

Three approaches to patient selection for naloxone prescribing for overdose risk reduction:

- Self-selection: patient or family member requests based on self-assessment of risk
- Risk-based: provider assesses individual risk and prescribes based on criteria
- Universal: all patients prescribed an opioid, independent of risk characteristics

Each approach has different implications for policies and procedures, staffing, supply, and cost

8 Focus Groups (n=61) Results: Pharmacy Naloxone

“...[You can take] the stigma away [from naloxone] by making it...as common as ...'Do you want fries with that?’” – Caregiver, MA



- Very few had attempted to obtain naloxone at a pharmacy, mostly because they did not know it was there, or how to ask for it
 - Generally see pharmacists as knowledgeable, helpful but very busy
 - **Automatic opt-out “corporate/state policy” offering naloxone is universally endorsed, considered LEAST stigmatizing**



- Pharmacists: Very uncomfortable, stigmatizing
- **Standardized, opt-out naloxone offer policies would reduce concerns**

Perpetuating stigma or reducing risk? Perspectives from naloxone consumers and pharmacists on pharmacy-based naloxone in 2 states (RI/MA)

“If it was up to me, every single opiate prescription that was being filled would also be dispensed with Narcan. Even if the patients aren’t using them or the families aren’t using it, it would help, I think, to over time kind of reduce the stigma and that Narcan is only for heroin.” – RI Pharmacist in Focus Group ‘16

“[W]e can say, you know, I have to hand this out to you on any prescription refill, and this is just to let you know there is a little section here on Narcan and if you have any questions, please feel free to ask and leave it at that and move on.” – MA Pharmacist in Focus Group ‘16

Pharmacists' willingness to participate in dispensing naloxone

Survey Question, willingness to: (n=1282)	Very willing (5 or 6)	Not Willing (1 or 2)
Dispense naloxone by prescription	54%	13%
Attend education on overdose prevention	50%	11%
Educate patients to recognize overdose and administer naloxone	46%	13%
Initiate naloxone dispensing under a protocol	37%	28%
Proactively identify individuals for naloxone	33%	21%

Pharmacists' willingness to participate in dispensing naloxone

- Multivariate analyses revealed significant findings
 - Women pharmacists more willing to initiate naloxone than men
 - As confidence in educating patients about naloxone increased, the willingness to initiate naloxone increased
- Barriers to implementation (more prominent in community practice settings)
 - Inadequate time
 - Lack of knowledge of naloxone laws

Integrate Naloxone into Standard Medication Counseling

- Maximize close relationships with patients by incorporating naloxone into your usual counseling points for new and refill opioid prescriptions
 - Bowel regimen for the common risk of constipation, and naloxone for the rare risk of overdose / breathing emergency
 - Overdose education and naloxone dispensing have been shown to take ≤ 5 minutes to complete, similar to inhaler counseling
- Videos for each naloxone product can be downloaded:
prescribetoprevent.org

Naloxone Conversation Starters

“Opioids can cause bad reactions that make your breathing slow or even stop. This can happen if your body can’t handle the opioids you take that day, or if you take opioids with alcohol or other drugs. Naloxone is a lifesaver, just like a seatbelt or a fire extinguisher.”

“These medications can be helpful but have a range of side effects, like slowing down or even stopping breathing completely. Naloxone can help if this happens by restoring breathing.”

“Opioid medications increase the risk of breathing emergency. Naloxone is needed in case of emergency.”

“Let’s keep you and your family as healthy as possible while this powerful medication is in your house. Just in case, get naloxone.”



Case

You are asked to counsel a 16-year-old African-American boy in a family medicine clinic about his pain medications. He is currently taking extended-release morphine sulfate 30 mg by mouth twice daily and immediate-release morphine sulfate 5 mg by mouth every 4-6 hours as needed for breakthrough pain for joint and chest pain related to sickle cell disease. He lives with his mother, who is present for the session.

Naloxone Offer Vignette

“I see that you’ve been taking opioid pain relievers for a while, did you you know that they could cause you to stop breathing, even if you took them as prescribed?” –Pharmacist

“No, no one every told me that. My mom makes sure that I take them at exactly the same time every day, and I rarely take the other pills, only when I’m having an episode.” –Patient

“How do you store them? What do you think would happen if someone accidentally took your pain pills and stopped breathing?”

“My little sister is only 10, I would feel horrible if something happened to her. That’s one reason why we keep the pills in a locked box in a high kitchen cabinet.”

“That’s a great idea. Another idea is to have naloxone, an antidote to opioids that helps you breathe in an overdose, in your house, in case of this kind of emergency. You can pick it up at any pharmacy, and your insurance will cover the cost besides the co-pay. Would you like me to go over the steps of how to use it, now?”

“Yes, please. I’m glad my mom is here, she would be the person to help me or my sister if something happened like an overdose.”

Naloxone and Overdose Educational Vignette

“We’re going to review this instructional sheet on how to recognize and respond to a breathing emergency using naloxone. There are four types of naloxone, two injection and two forms you spray into your nose. Which form would you like?”

“(Mom) “I don’t want any needles around the house, so I would feel more comfortable with the intranasal.”

“That’s great, I’ll call your pharmacy and make sure that it’s in stock, and talk to your insurance company about which intranasal form is the least expensive for you.”

“Thank you, that’s very helpful.”

“The first step is to recognize an overdose – a person will be snoring or breathing very slowly, have blue or gray skin and lips, and won’t wake up if you yell their name, shake them, or even if you use your knuckle and rub the center of their chest. If they don’t wake up, you need to call 911 and tell the dispatcher your location and that someone is not breathing. Do you have any questions?”

“No, I think I can do that.”

Naloxone and Overdose Educational Vignette

“Now you need to get your naloxone. It’s important to always have it with you, or in place that’s easily accessed in your house. You will either assemble it and spray half the contents in each nostril, or use the one-step formulation and spray it into one nostril. If the person doesn’t start breathing or wake up, you should start rescue breathing until rescue personnel arrive. If the person doesn’t start breathing in 2-3 minutes, you should give the other dose of naloxone. Let’s review the steps in recognizing and responding to an overdose, Mom, can you tell me the steps?”

(Mom) “Yeah, I think so. If he’s blue and not breathing, I should rub my knuckle on his chest. If he doesn’t wake up, I should call 911 and get naloxone. I give him the naloxone in his nose, and if he doesn’t wake up, I should breathe into his mouth for him for 2 minutes, and give another dose of naloxone then.”

“Almost perfect. When you call 911, tell them where you are and what’s happening, your son isn’t breathing. Be sure to pinch his nose when you breathe into his mouth, and do this every 5 seconds.”

Key Takeaways

- Pharmacists should serve as medication safety experts for patients, families, communities, and prescribers to increase awareness of opioid misuse, encourage opioid misuse prevention, use SBIRT practices to identify patients with or at risk for OUD, and make treatment referrals as needed
- Naloxone should be co-prescribed for adolescents and young adults who receive opioids to optimize opioid safety and reduce risk of overdose, an approach accepted by patients, caregivers, and providers when communicated in terms of safety, not overdose
- Medications for treatment of OUD are safe and effective and reduce the risk of and deaths from overdose, but they are underused by adolescents and young adults, who have the highest prevalence of OUD

Questions?

