

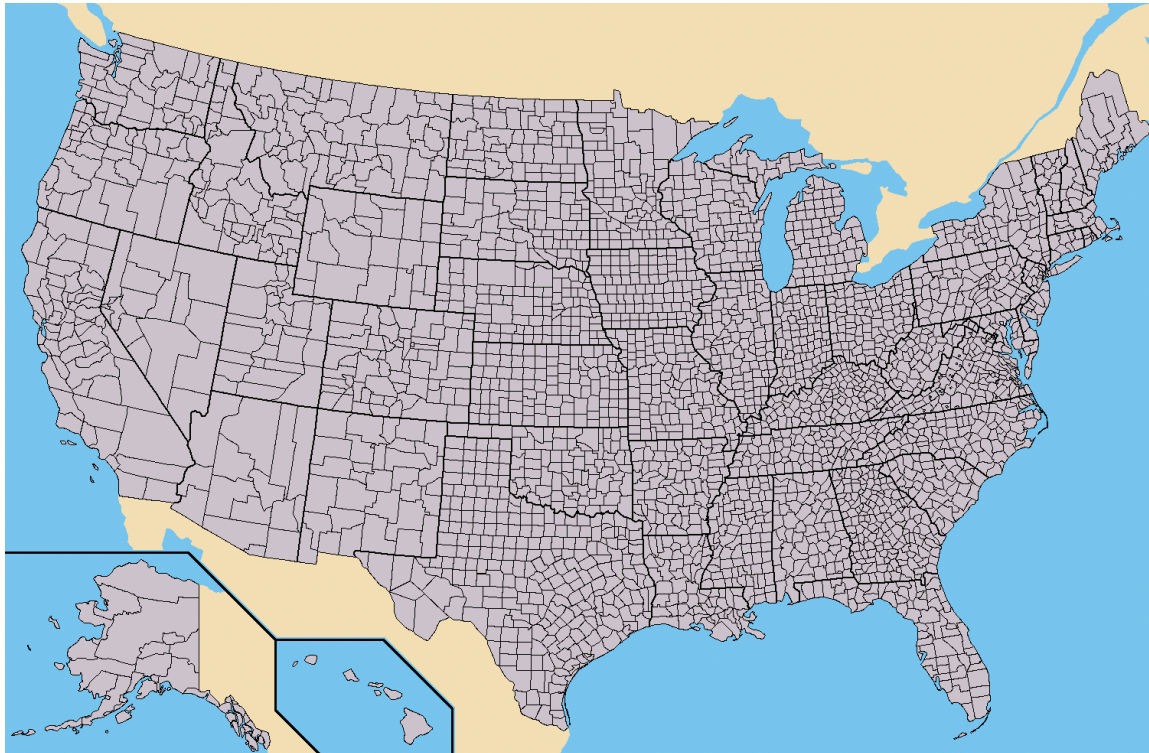
Opioid Awareness and Prevention: Resources and Tools for Educators

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Prevention, PA Commission on Crime and Delinquency

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Support Center, Penn State University

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Center for Schools and Communities
ELO Conference

BACKGROUND: NATIONAL

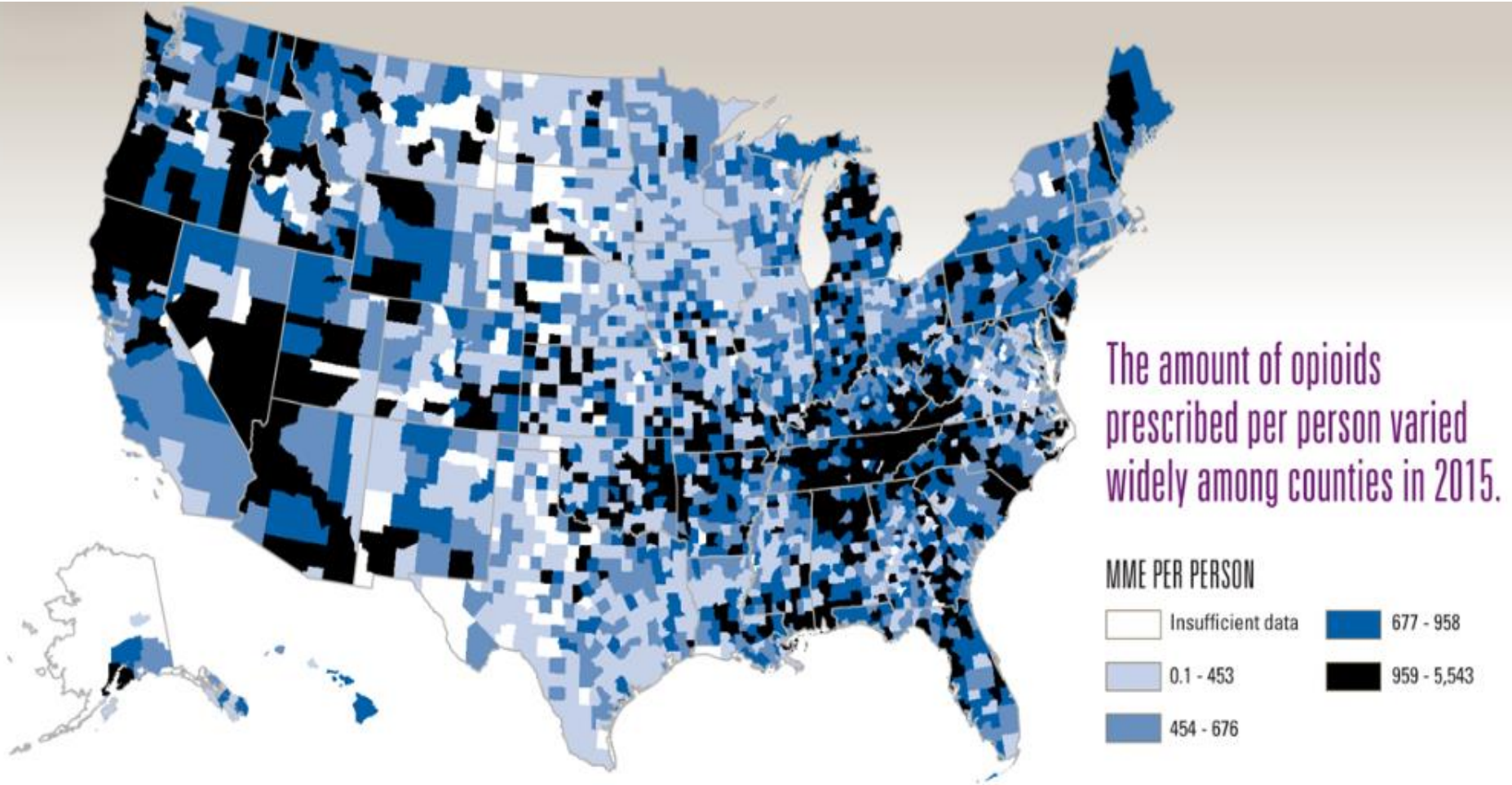


Drugs, Schedules, Notes

Substances are placed in their respective schedules based on whether they have a currently accepted medical use in treatment in the United States, their relative abuse potential, and likelihood of causing dependence when abused.

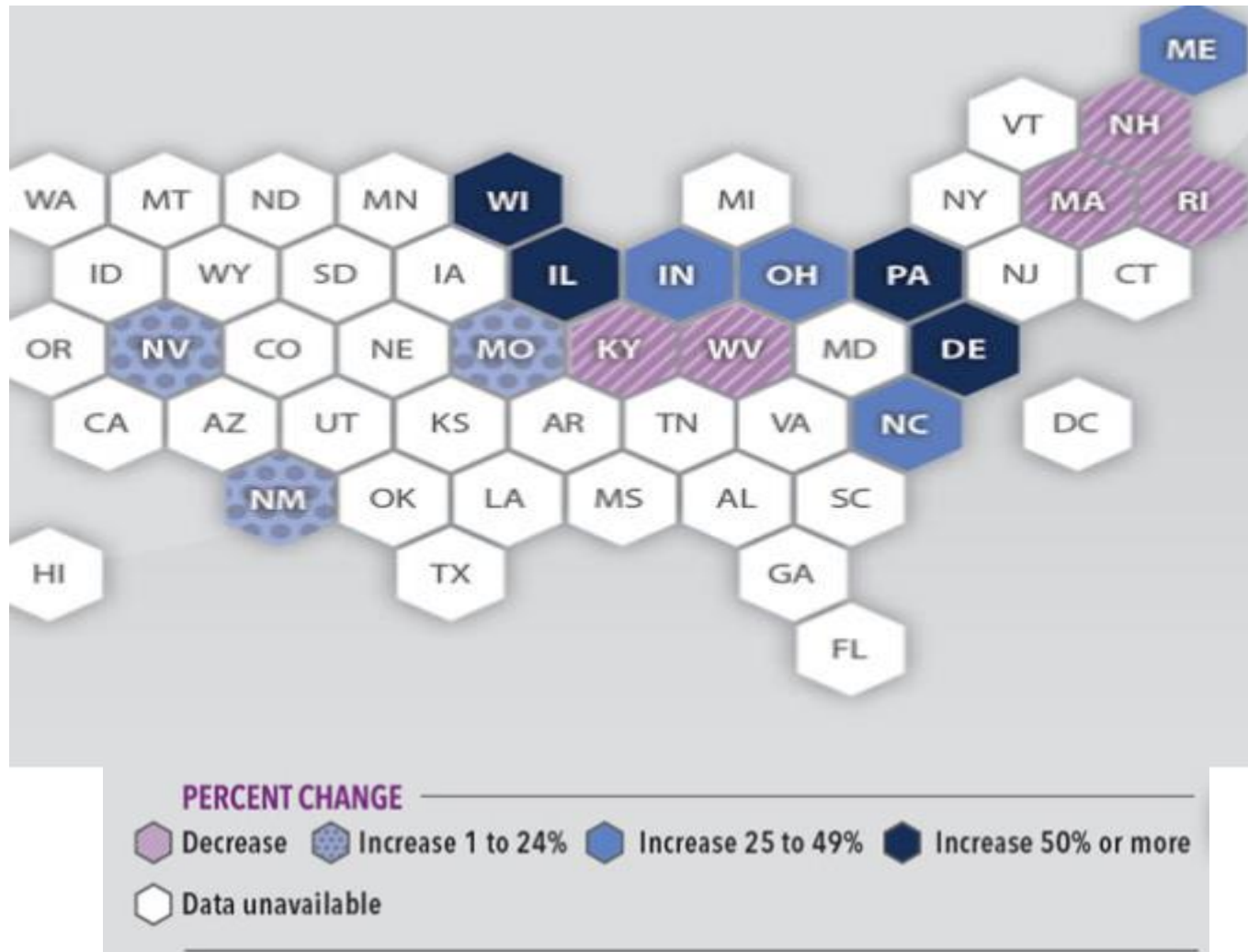
- Opioids – heroin (I), methadone (II)
 - Methadone
 - Complex dosing schedule, can remain in system up to 59 hours after dosage
 - **Lethal side effects when combined with opioid analgesics**
- Opioid analgesics (II, III)
 - Oxycodone (II; OxyContin, Percocet), fentanyl (II; Duregesic, Fentora), codeine (II), hydrocodone (III; Vicodin)
 - **Long-acting, extended-release (LA/ER) are more prone to abuse**
 - Defined as 2-3x/day
 - Methadone, OxyContin, Opana ER
 - **Higher dosage formulations are more likely to result in overdose**
 - Defined as total daily dose >100 MED; usual freq. of 4-6x/day
 - Fentanyl (II) – used for heroin-like effects
 - 30-50x more potent than heroin
 - Rx for pain, as in transdermal patches for chronic pain
 - Street market for fentanyl – one gram can be cut into 7,000 doses for street sale
 - Non-prescription fentanyl (NPF) most commonly mixed with heroin or cocaine, sold as street drug, injected
 - April 2007 DEA begins regulating N-phenethyl-4-piperidone (chemical used for making illicit NPF)
- Benzodiazepines (IV)
 - Sedatives, anti-anxiety, sleep inducement
 - Xanax, Valium, Ativan
 - Commonly prescribed in combination with opioid analgesics
 - Present higher risk of overdose

Variation in Prescribing Practices



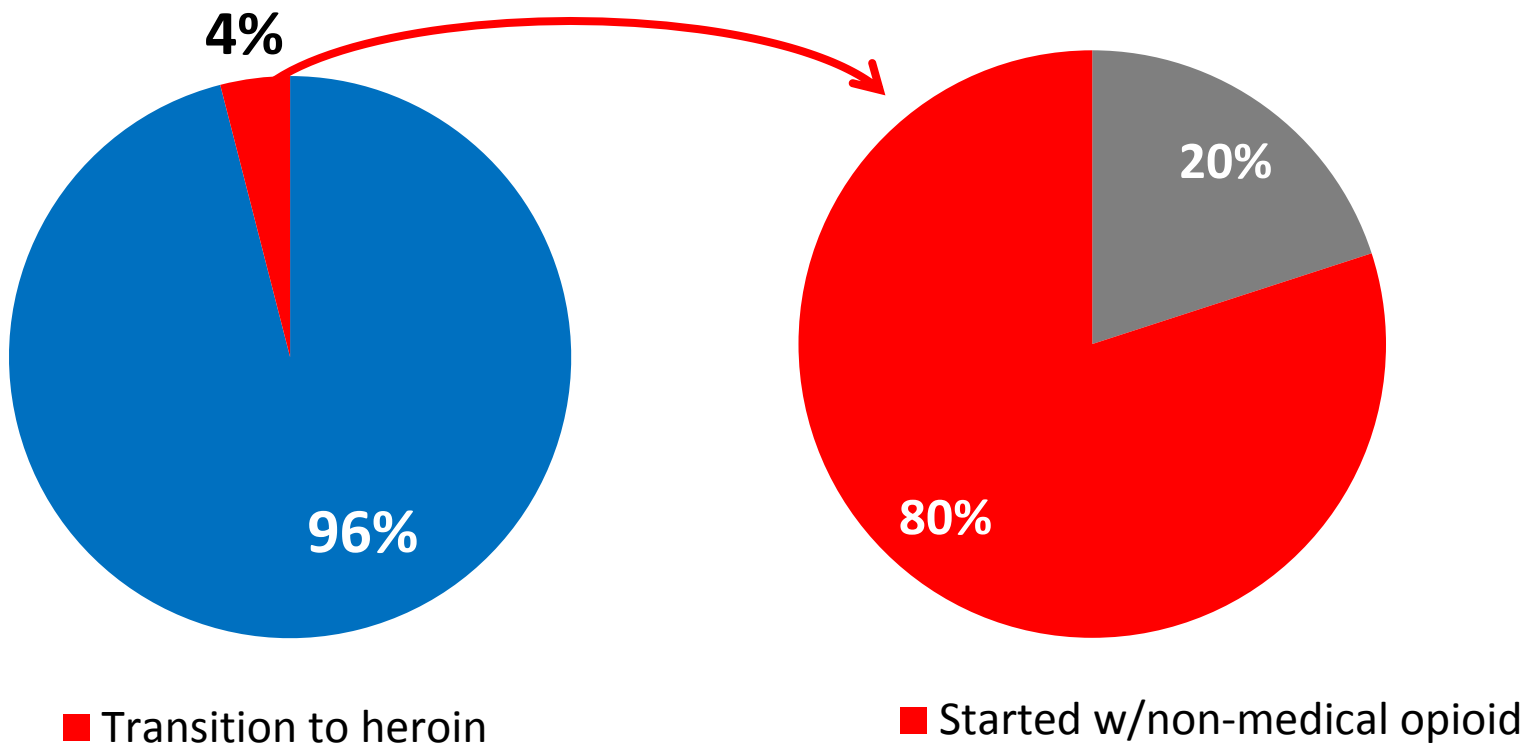
SOURCE: CDC Vital Signs, July 2017

Opioid Overdose ER Visits



Opioid Use and Heroin Use

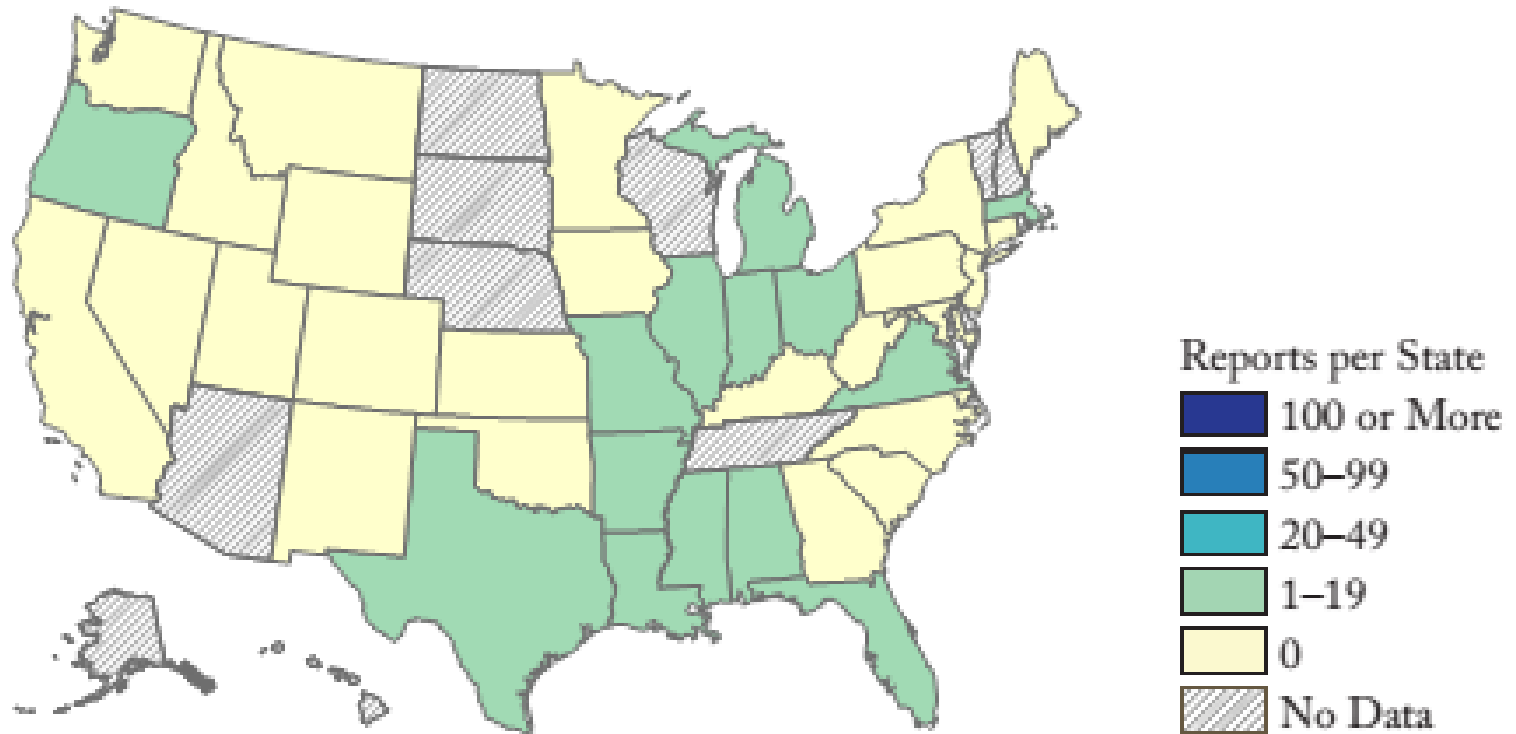
Non-medical opioid use → Heroin use



Fentanyl

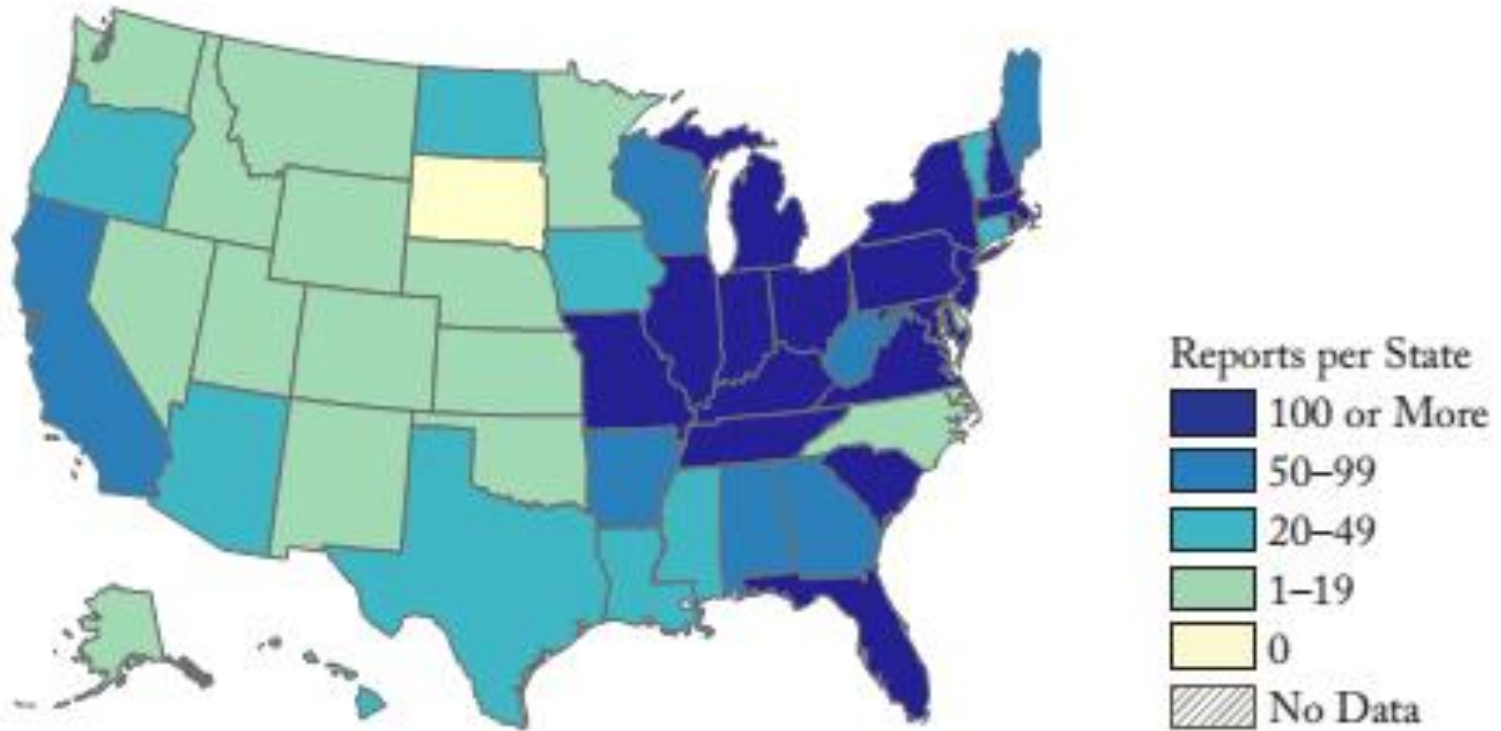
- Fentanyl is approximately 50 times more potent than heroin and 100 times more powerful than morphine.
- Fentanyl-related overdose deaths increased from about 550 deaths in 2013 to more than 2,000 deaths in 2014 and 2015.
- Although pharmaceutical fentanyl is diverted for abuse in the United States, the majority of fentanyl drug reports and fentanyl reported with other drugs results from clandestinely produced and trafficked fentanyl, not diverted pharmaceutical fentanyl.

Fentanyl Presence in Drug Seizures - 2001



U.S. Drug Enforcement Administration, Diversion Control Division. (2017). NFLIS Brief: Fentanyl, 2001-2015. Springfield, VA: U.S. Drug Enforcement Administration.

Fentanyl Presence in Drug Seizures - 2015



U.S. Drug Enforcement Administration, Diversion Control Division. (2017). NFLIS Brief: Fentanyl, 2001–2015. Springfield, VA: U.S. Drug Enforcement Administration.

UNCLASSIFIED

Analysis of Overdose Deaths in Pennsylvania, 2016

DEA-PHL-DIR-034-17

JULY 2017



(U) This product was prepared by the DEA Philadelphia Division and the University of Pittsburgh. Comments and questions may be addressed to the Chief, Analysis and Production Section at dea.phl@ic.fbi.gov. For media/press inquiries call (262) 357-7977.

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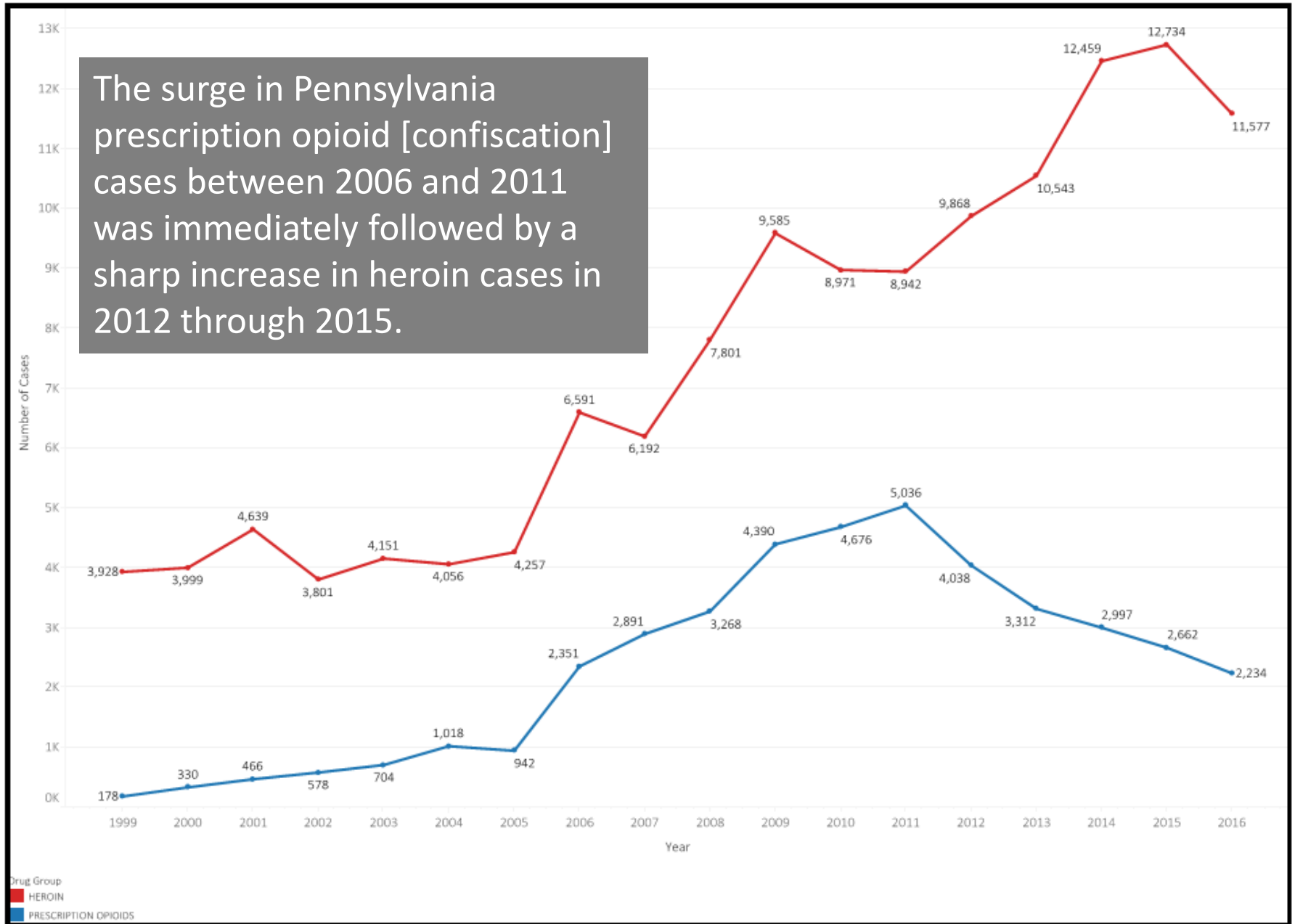
DRUGS AND OVERDOSE: PA DATA

www.dea.gov/docs/DEA-PHL-DIR-034-17%20Analysis%20of%20Overdose%20Deaths%20in%20Pennsylvania%202016.pdf

Analysis of Overdose Deaths in Pennsylvania, 2016

- The **presence of an opioid**, illicit or prescribed by a doctor, was identified in **85 percent of drug-related overdose deaths** in Pennsylvania in 2016.
- **Fentanyl and fentanyl-related substances (FRS)** were the most frequently identified in decedents (**52 percent of deaths**), a significant increase from 2015 when fentanyl/FRS were noted in 27 percent of deaths.
- In 2016, individuals **aged 15-24 saw a 380 percent increase in the presence of fentanyl in toxicology reports** compared to other age groups.
- Conversely, individuals in the 25-34 age group experienced a 970 percent increase in instances of heroin present in toxicology reports compared to other age groups.
- The **percent increase in drug-related overdose deaths** between 2015 and 2016 was larger in rural counties (**42 percent**) compared to urban counties (**34 percent**).

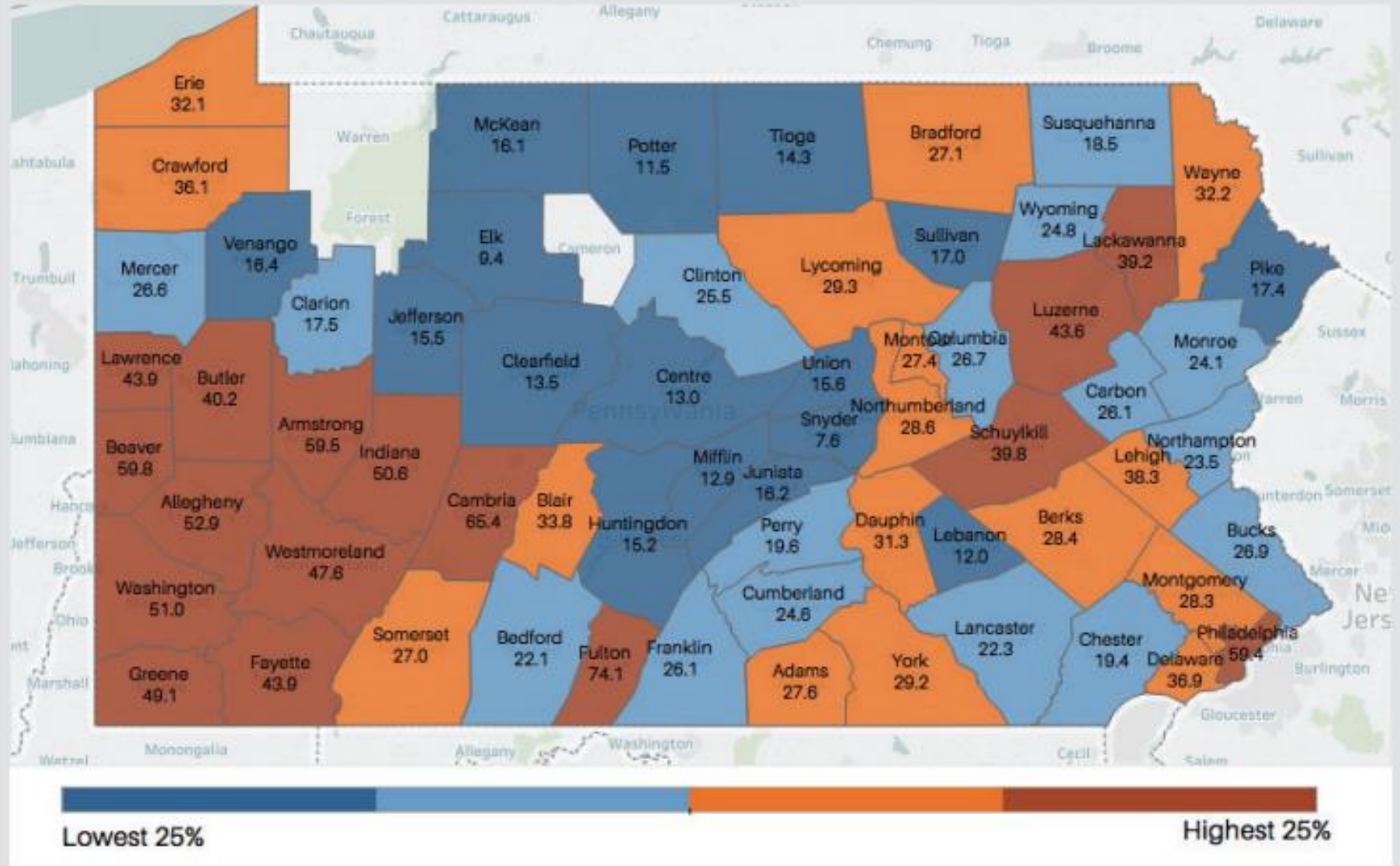
(U) Figure 2. Heroin and Prescription Opioid Cases, 1999-2016



Source: National Forensic Laboratory Information System

US Drug Enforcement Administration. (2018). *Drug presence in Pennsylvania 1999-2016*. DEA-PHL-BUL-041-18.

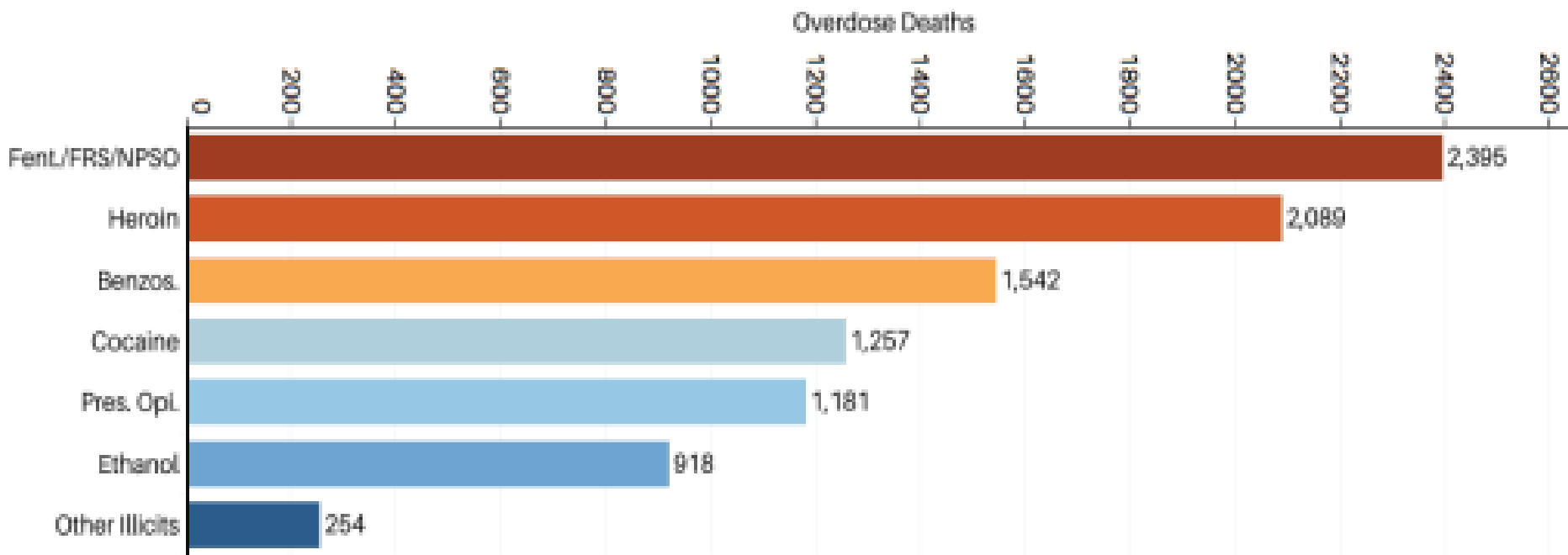
(U) Figure 2: Rate of Drug-Related Overdose Deaths per 100,000 people in Pennsylvania Counties, 2016



Source: Pennsylvania Coroner/Medical Examiner Data

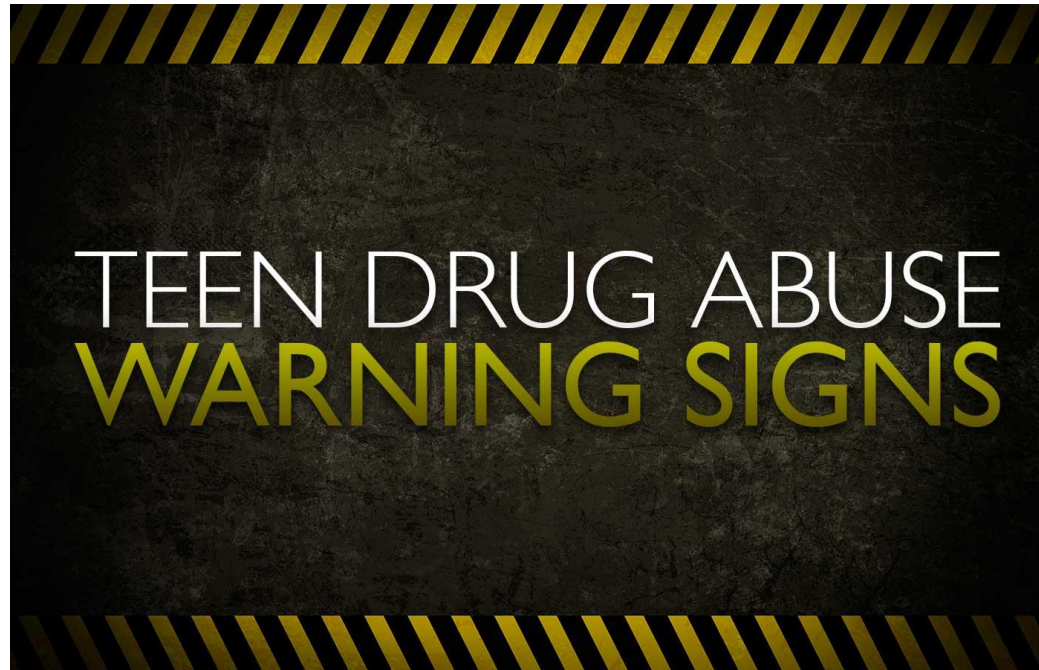
US Drug Enforcement Administration. (2017). *Analysis of overdose deaths in Pennsylvania, 2016*. DEA-PHL-DIR-034-17.

Number of PA Overdose Deaths by Drug - 2016



(U) Figure 4: Number of Drug-Related Overdose Deaths by Drug Presence, Pennsylvania, 2016

CONSEQUENCES AND SYMPTOMS



Use/Abuse/Dependency Continuum (Feeling Disease)

- Experimental/Recreational (learns the mood)
- Intentional (seeks the mood)
- Intensified (preoccupation with the mood)
- Compulsive (substances used to feel normal)

↑ Tolerance leads to ↑ Frequency & ↑ Dose

Subtle Symptoms of Chemical Abuse

1. Change in friends
2. Secrecy
3. Change in dress and/or appearance
4. Change in activities and/or interests
5. Possession of eye drops
6. Drop in grades
7. Staying out all night
8. Getting fired
9. Change in behavior
10. Drop out of sports

Not-So Subtle Symptoms of Chemical Abuse

1. Depression – sleeping a lot
2. Money problems
3. Extreme isolation
4. Older friends
5. Lots of time in the restroom
6. Unexplained absenteeism
7. Acting disconnected or spacey
8. Weight gain/loss
9. Argumentative
10. Starting to smoke tobacco

Indicators of Chemical Abuse

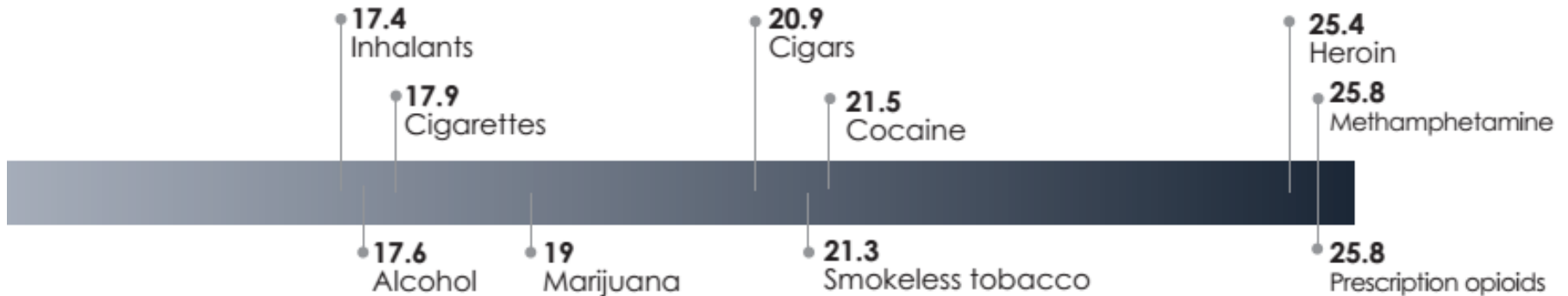
- Paraphernalia
- Things disappearing from the house
- Medicine disappearing
- Dilution of bottle medication
- Defending peer's right to use drugs
- Large amounts of money
- Blood-shot eyes
- Dilated/Constricted pupils
- Mention of suicide
- Spending time with known drug users

RESEARCH: RISK AND PROTECTION



Initiation of Substance Use

Figure 3. **Average age of drug-use initiation (among ages 12-49), U.S. (2015)**



Data from 2015 National Survey on Drug Use and Health (NSDUH), as reported in Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs and Health. U.S. Department of Health and Human Services, 2017; Source for cigarettes, cigars and smokeless tobacco: Mean Age at First Substance Use among Past Year Initiates Aged 12 to 49, NSDUH (2015).

General Patterns of Substance Use

- Non-users, alcohol experimenters, occasional multi-drug users, frequent multi-drug users ^{1,2}
- Correlates/predictors of use:
 - Child antisocial behavior ²
 - Perceived harm from use ²
 - Parental drinking ²
 - Peer substance use ²
- Externalizing -> Cigarette use -> Hard drug use ³

1. Zapert, K., Snow, D. L., & Tebes, J. K. (2002). Patterns of substance use in early through late adolescence. *American Journal of Community Psychology*, 30, p.835-852.

2. Connell, C. M., Gilreath, T. D., Aklin, W. M., & Brex, R. A. (2010). Social-ecological influences on patterns of substance use among non-metropolitan high school students. *American Journal of Community Psychology*, 45, 36-48.

3. Helstrom, A., Bryan, A., Hutchison, K. E., Riggs, P. D., & Blechman, E. A. (2004). Tobacco and alcohol use as an explanation for the association between externalizing behavior and illicit drug use among delinquent adolescents. *Prevention Science*, 5, p.267-277.

Risks for Opiate Drug Use

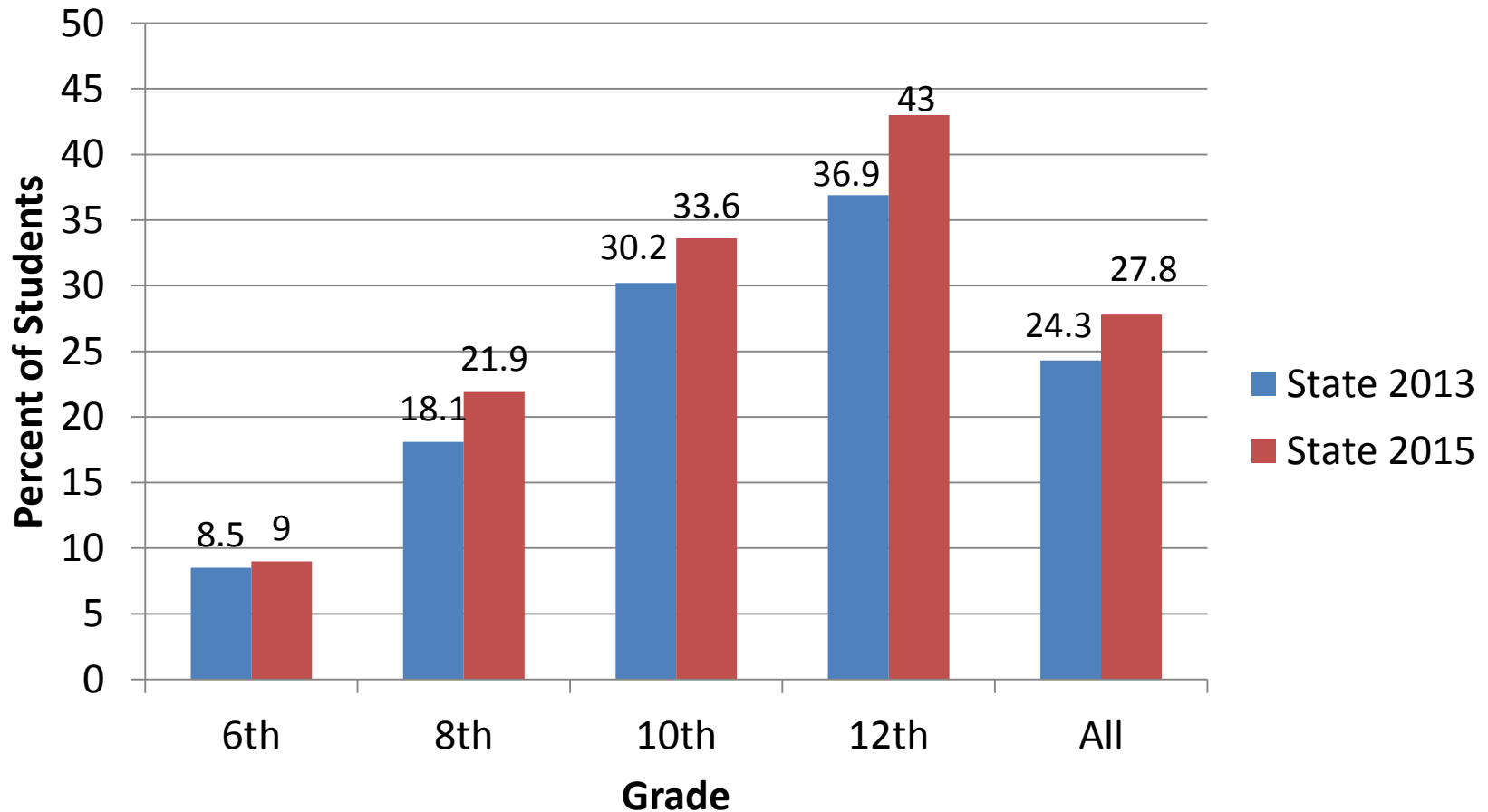
- Lifetime cigarette use associated with more approval of heroin use. ⁴
- Use of multiple hard drugs also associated with more approval of heroin use. ⁴
- High religiosity associated with more disapproval of heroin use. ⁴
- Perceived harmfulness is protective ⁵
 - *Except* for those who are high sensation-seekers (need for excitement, unpredictability, and novelty, as well as the tendency to act quickly without thinking) ⁵
- Nicotine stimulates opioid system in brain ⁶

4. Palamar, J. J. (2013). Predictors of disapproval toward “hard drug” use among high school seniors in the US. *Prevention Science*.

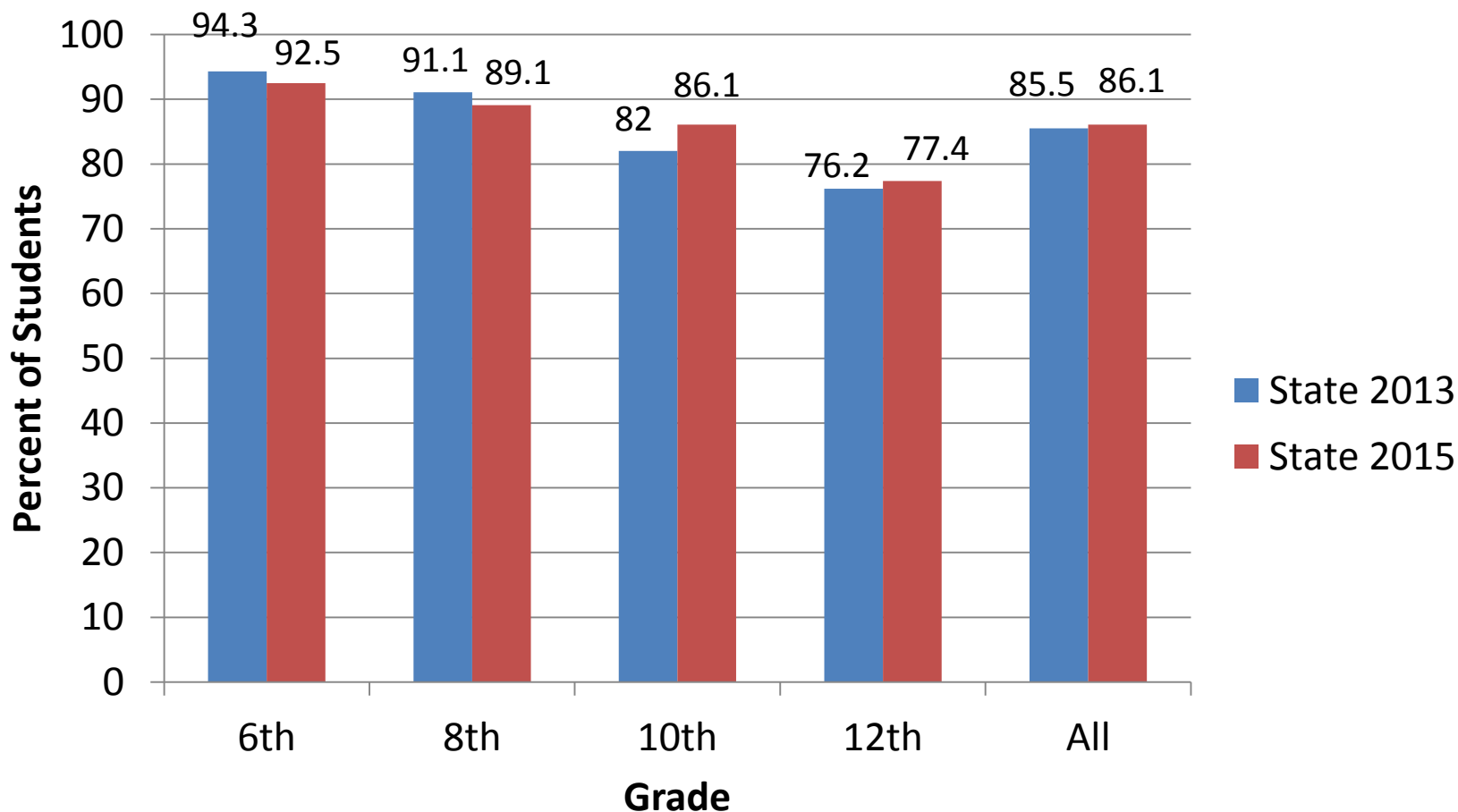
5. Arria, A. M., Caldeira, K. M., Vincent, K. B., O’Grady, K. E., & Wish, E. D. (2008). Perceived harmfulness predicts nonmedical use of prescription drugs among college students: Interactions with sensation-seeking. *Prevention Science*, 9, 191-201.

6. National Institute of Drug Abuse (2015). The role of the brain’s opioid system in cigarette addiction. Retrieved from <https://www.drugabuse.gov/news-events/latest-science/role-brains-opioid-system-in-cigarette-addiction> on March 20, 2018.

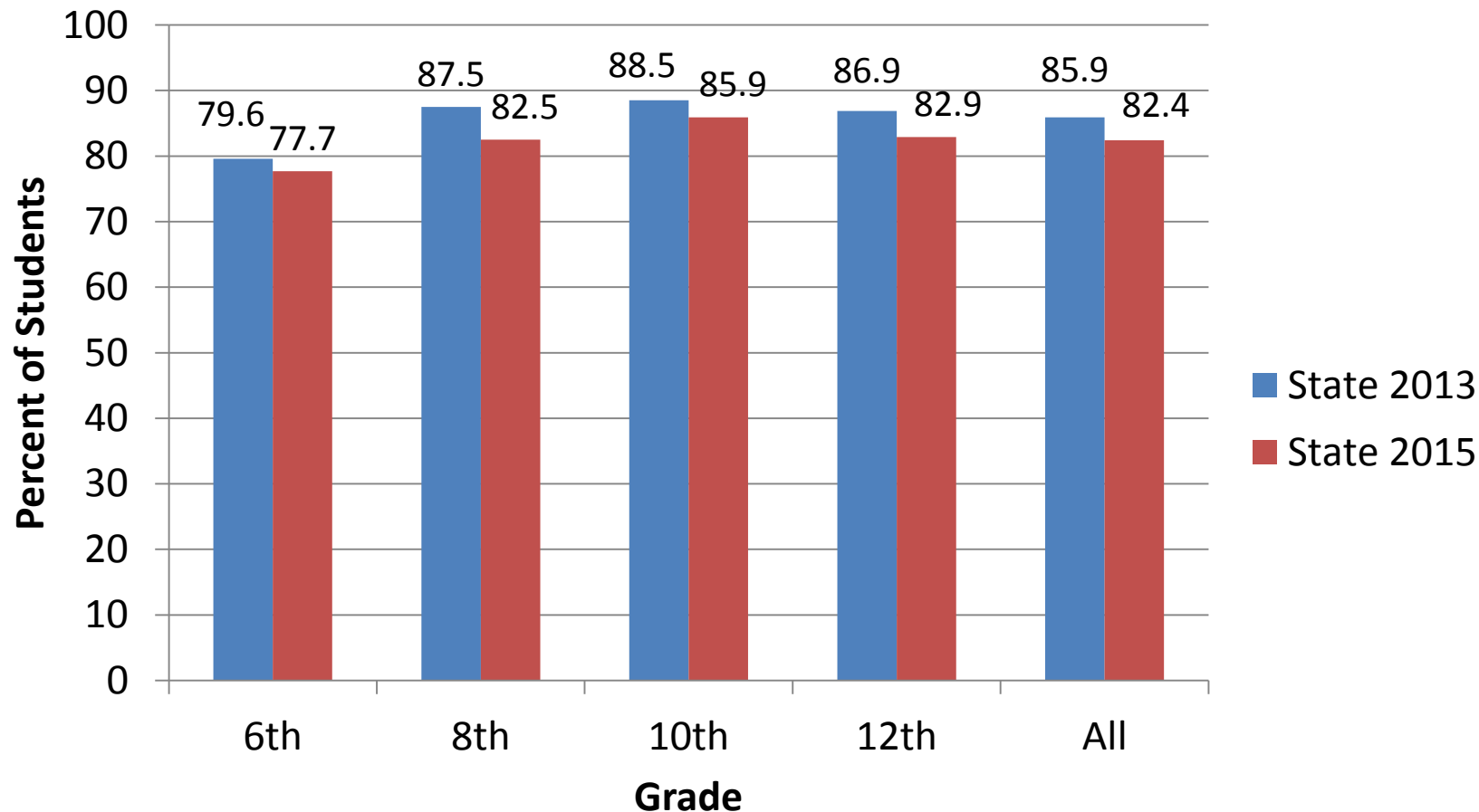
Ease of access to prescription pain drugs: “Sort of easy” / “Very easy”



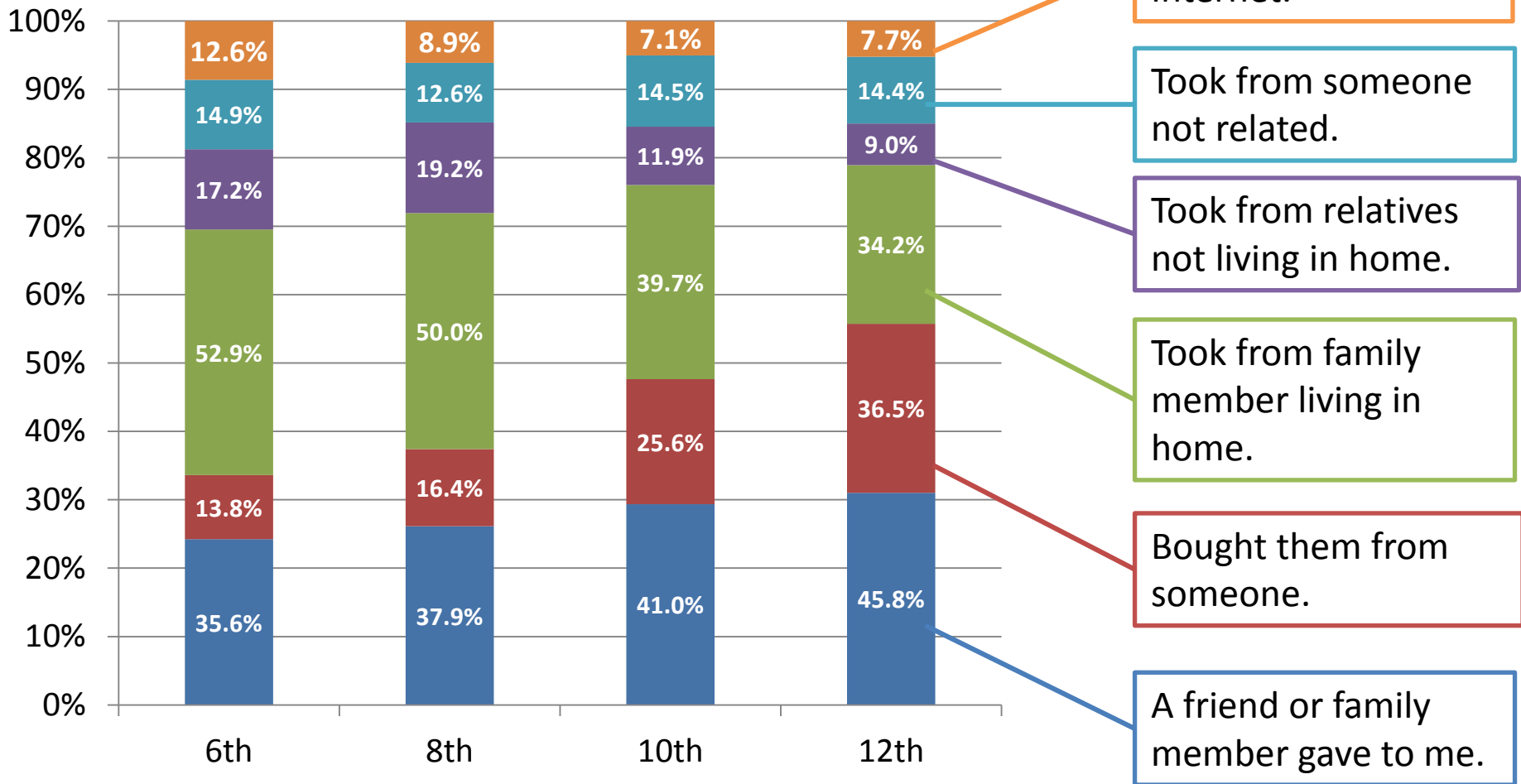
Perception of peer disapproval of non-prescribed prescription drugs: “Wrong” / “Very Wrong”



Perception of risk of non-prescribed prescription drugs: “Moderate Risk”/“Great Risk”



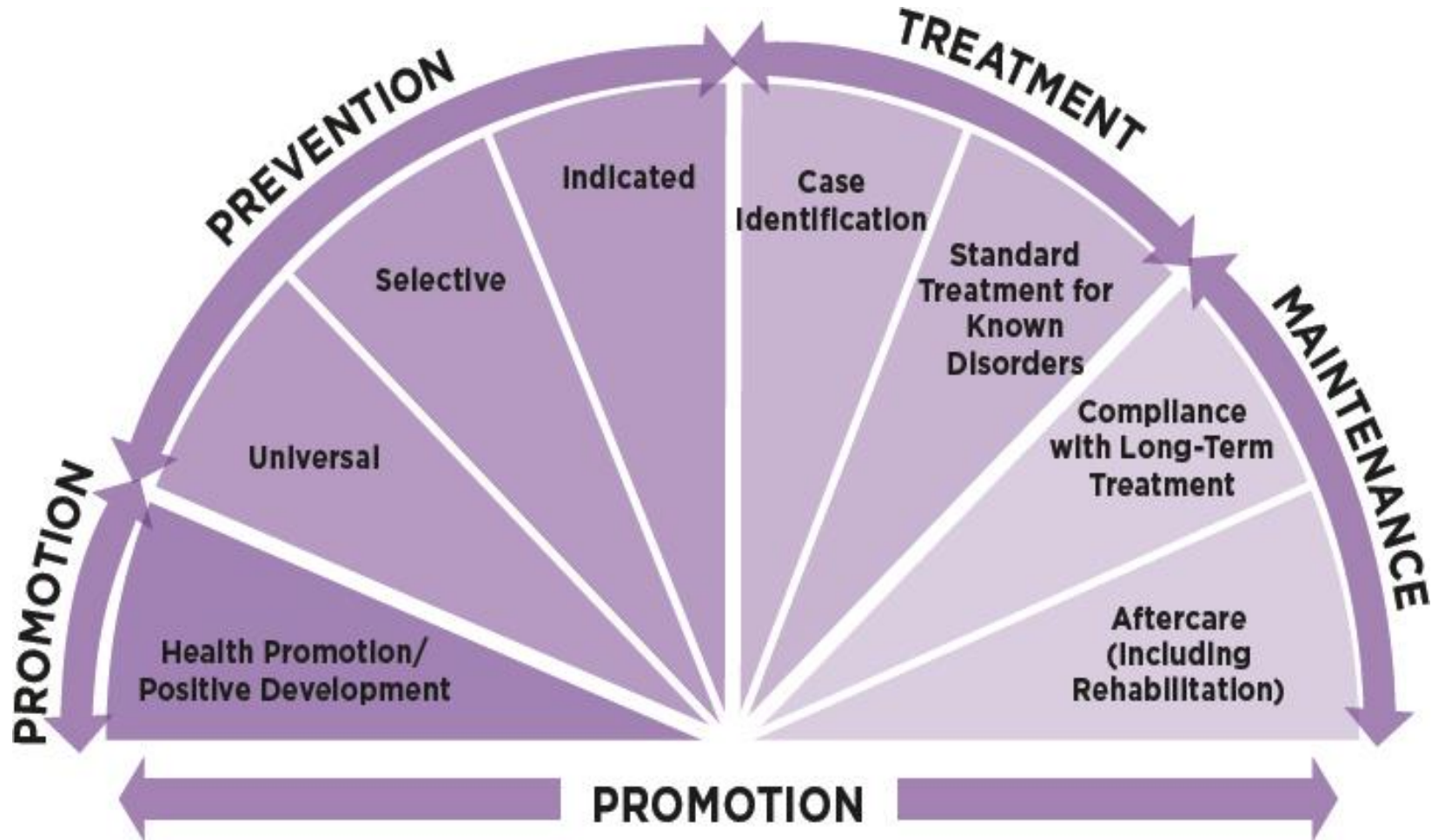
Youth Reported Sources for Non-Prescribed Medications



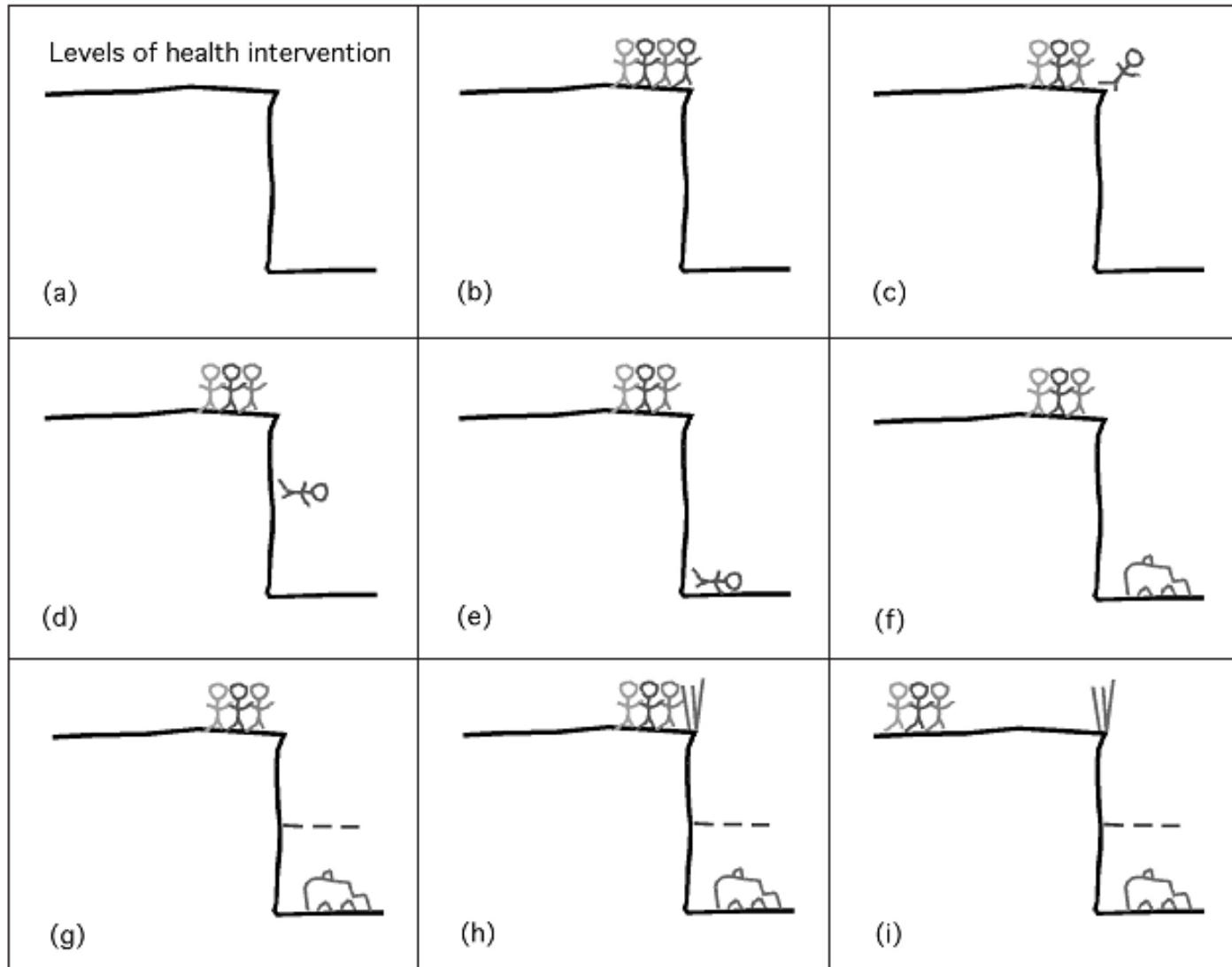
PREVENTION: EFFECTIVE AND INEFFECTIVE APPROACHES



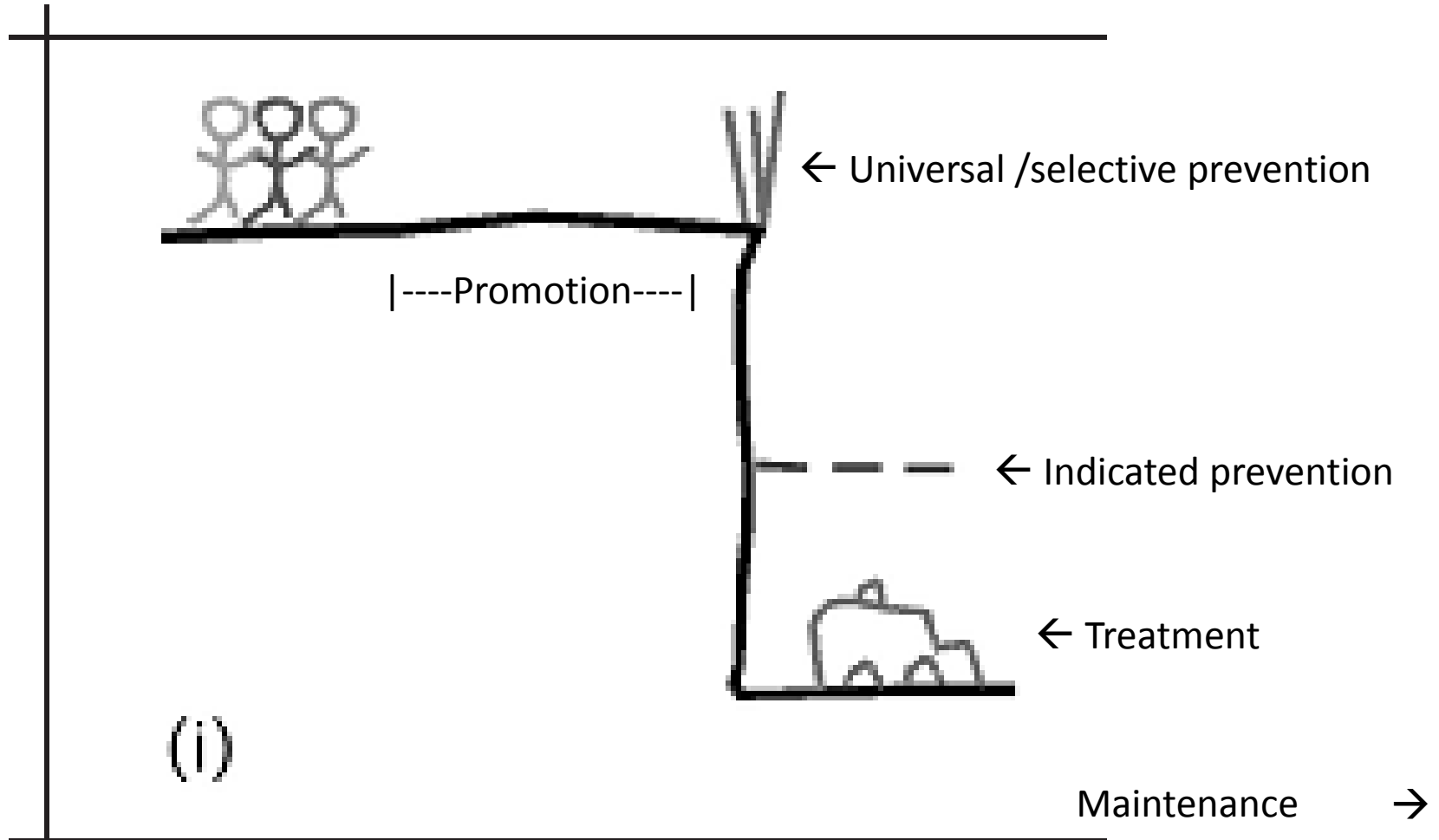
Institute of Medicine (IOM) Continuum of Intervention



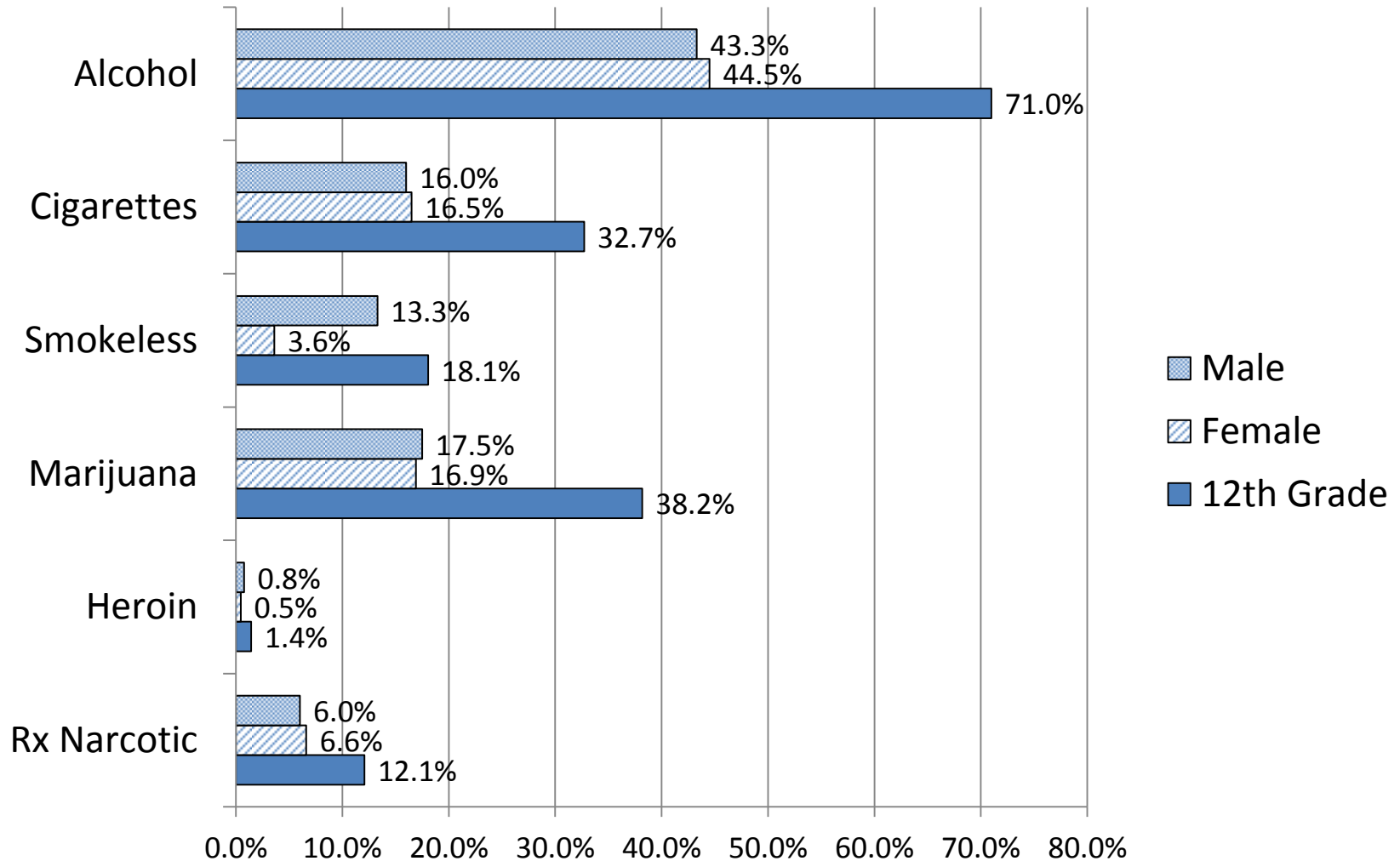
Levels of “Prevention”



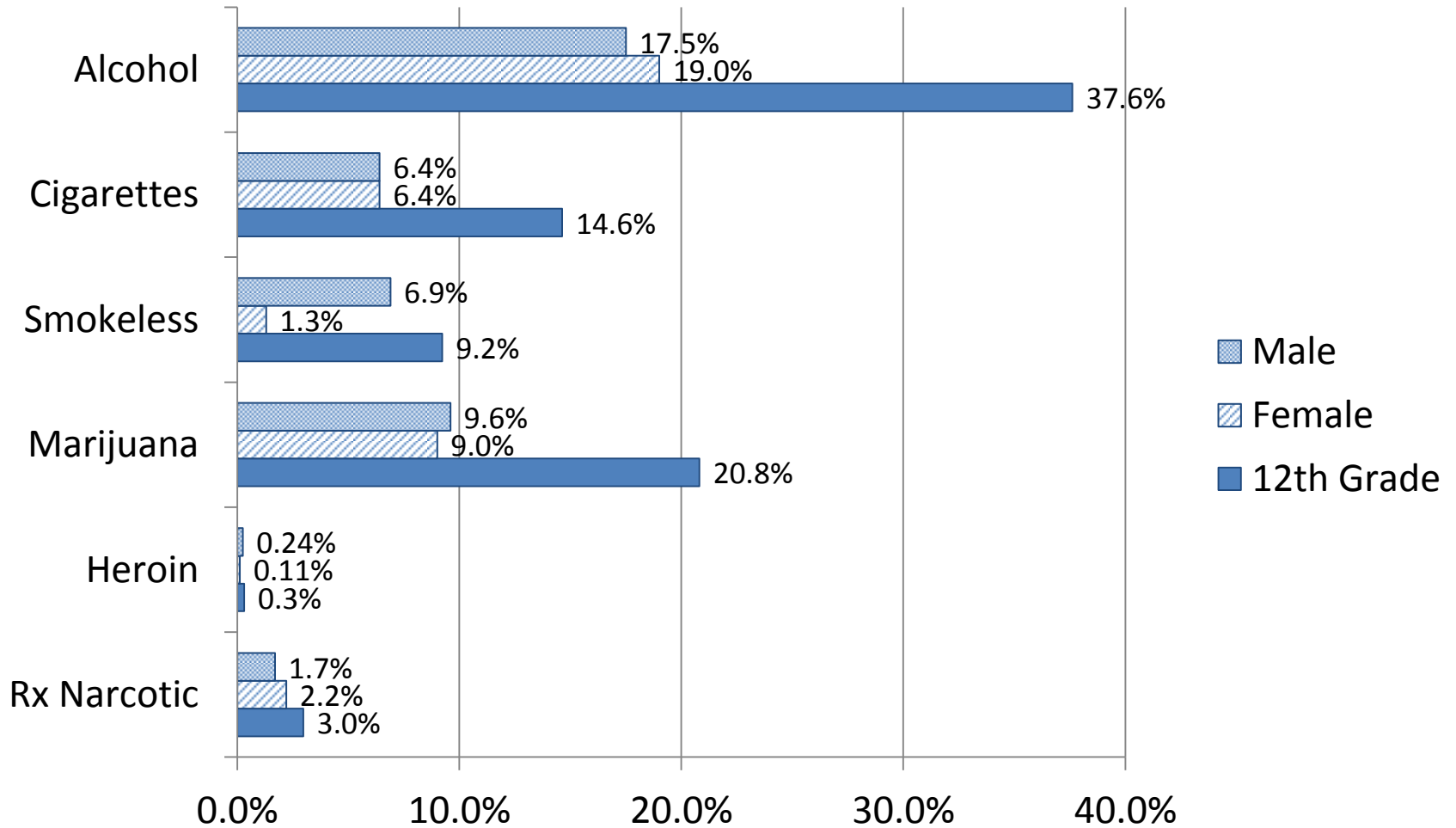
Understanding Prevention



2015 PAYS: Lifetime Use

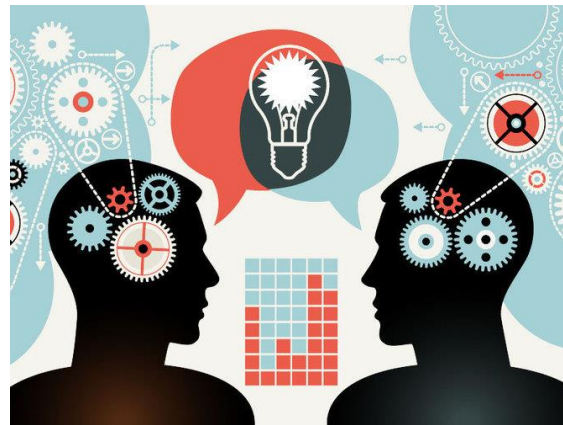


2015 PAYS: Past 30-day Use



A quick brainstorm

What are some reasons that a teen might try or use alcohol, tobacco, or marijuana?



Consider characteristics of communities, schools, families, peers, and individual youth.

A quick brainstorm

What are some reasons that a teen might try alcohol, tobacco, or marijuana?

- **Community**
- School
- Family
- Peer/Social
- Individual

1. Ease of access, availability in community
2. Laws and norms favorable to access/use
3. Media representations of norms
4. Few opportunities for prosocial involvement

A quick brainstorm

What are some reasons that a teen might try alcohol, tobacco, or marijuana?

- Community
- **School**
- Family
- Peer/Social
- Individual

1. Ease of access/availability in school
2. Low monitoring
3. School norms
4. Few opportunities for prosocial involvement; unstructured free-time

A quick brainstorm

What are some reasons that a teen might try alcohol, tobacco, or marijuana?

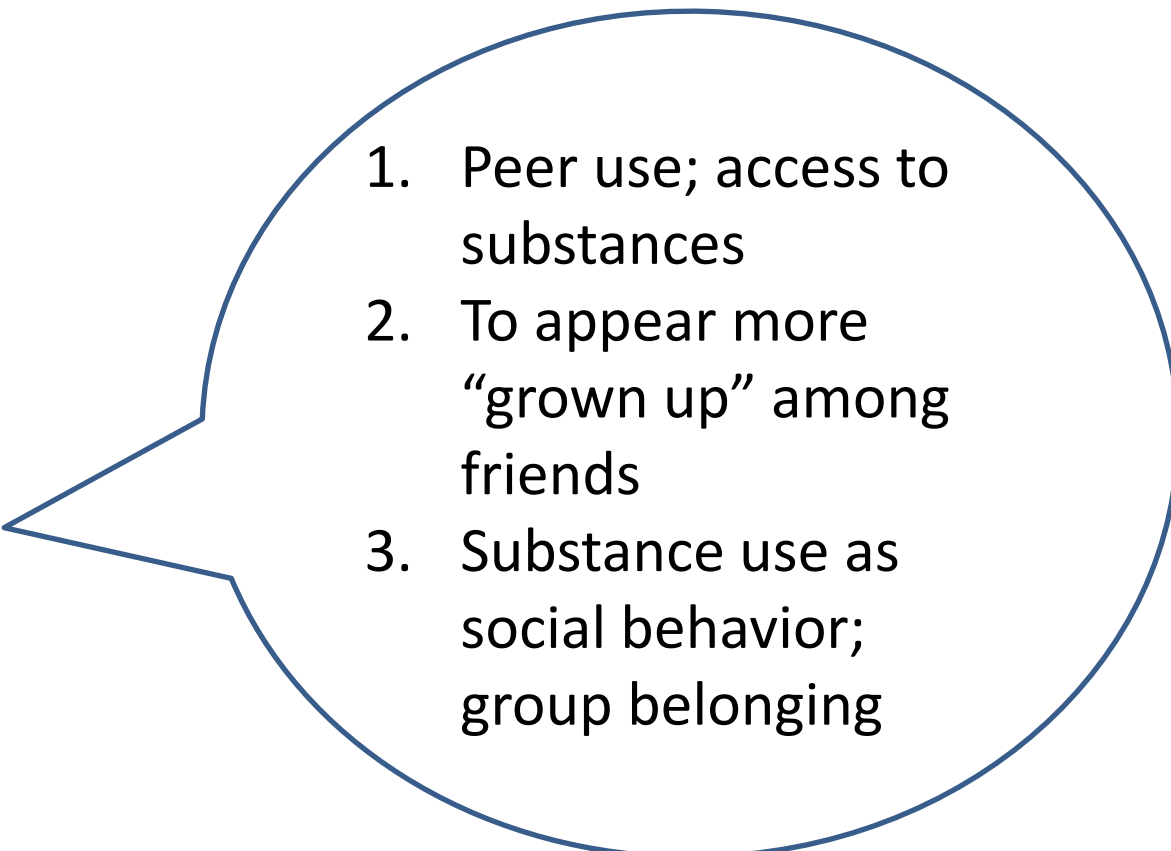
- Community
- School
- **Family**
- Peer/Social
- Individual

1. Parental substance use; favorable attitudes
2. Access via older siblings
3. Low monitoring; low boundaries
4. Family conflict

A quick brainstorm

What are some reasons that a teen might try alcohol, tobacco, or marijuana?

- Community
- School
- Family
- **Peer/Social**
- Individual

- 
1. Peer use; access to substances
 2. To appear more “grown up” among friends
 3. Substance use as social behavior; group belonging

A quick brainstorm

What are some reasons that a teen might try alcohol, tobacco, or marijuana?

- Community
- School
- Family
- Peer/Social
- **Individual**

1. Already using other substances
2. Poor social skills
3. Coping, self-harm
4. Curiosity, experimentation
5. Magical or invincible thinking
6. Depression/Anxiety (self-medication)

Brainstorm “take-away”

- There are multiple, complex reasons why youth may experiment with or use substances.



- Very rarely is it the case that youth simply do not have enough information or are not “scared enough” of the consequences.

Prevention Approaches

1. Informational, includes fear arousal approaches
 - Pamphlets, PSAs, poster competitions,
 - Brief/one-time presentations; guest speakers, school assemblies
 - “Reality” tours of jails, recovery stories
2. Moral appeals
 - “Preaching” about the evils and dangers; abstinence-only, Just Say No
3. Alternatives (to substance use)
 - Programs offering alternative social environments, community service, academic tutoring, sports
4. Psycho-social approach
 - Target social and psychological reasons for substance use
 - Social situations, resistance training, personal and social skills training

Juvenile Awareness Programs

Study	Year	Tour Group Recidivism	Control Group Recidivism	Difference
Michigan DOC	1967	43%	17%	+ 26%
Illinois Scared Straight	1979	17%	12%	+ 5%
Michigan JOLT <small>(Avg offense rate)</small>	1979	.69	.47	+ .22
Virginia Insiders	1981	41%	39%	+ 2%
Texas Face-to-Face	1981	36-39%	28%	+ 8%
New Jersey Scared Straight	1982	41%	11%	+ 30%
California SQUIRES	1983	81%	67%	+ 14%
Mississippi Project Aware <small>(Avg offense rate)</small>	1992	1.32	1.25	+ .07

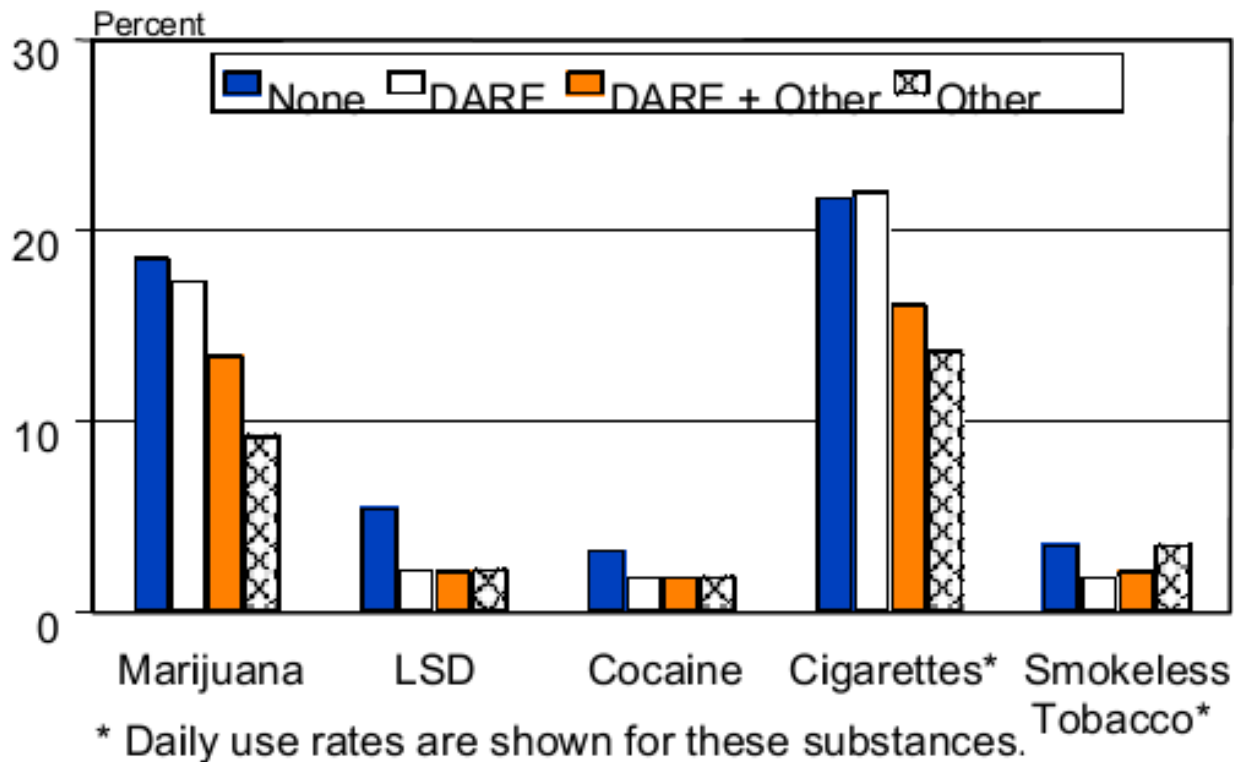
Youth in awareness programs were 72% more likely to have delinquency outcomes compared to youth who did not participate in these programs.

Petrosino, A., Turpin-Petrosino, C., and Buehler, J. (2003). Scared Straight and other juvenile awareness programs for preventing juvenile delinquency: A systematic review of the randomized experimental evidence. *The ANNALS of the American Academy of Political and Social Science*, 589, 41-62.

D.A.R.E. Evaluation in PA

Figure 3

Reported Use: Past Month*



Marijuana:
Findings show DARE was slightly better than doing nothing, but not as good as doing other programs.

Cigarettes:
Findings show DARE was comparable to doing nothing.

Prevention Approaches

1. Informational, includes subset of fear arousal

- Pamphlets, PSAs, poster competitions,
- Brief/one-time presentations; guest speakers, school assemblies

The first three of these approaches are ineffective at best,

2. Moral appeals **and harmful at worst.**

- “preaching” about the evils and dangers

3. Alternatives (to substance use)

- Programs offering alternative social environments, community service, academic tutoring, sports

4. Psycho-social approach

- Target social and psychological reasons for substance use
- Social situations, resistance training, personal and social skills training

WHY THE PSYCHO-SOCIAL APPROACH?



Adolescent Brain Development

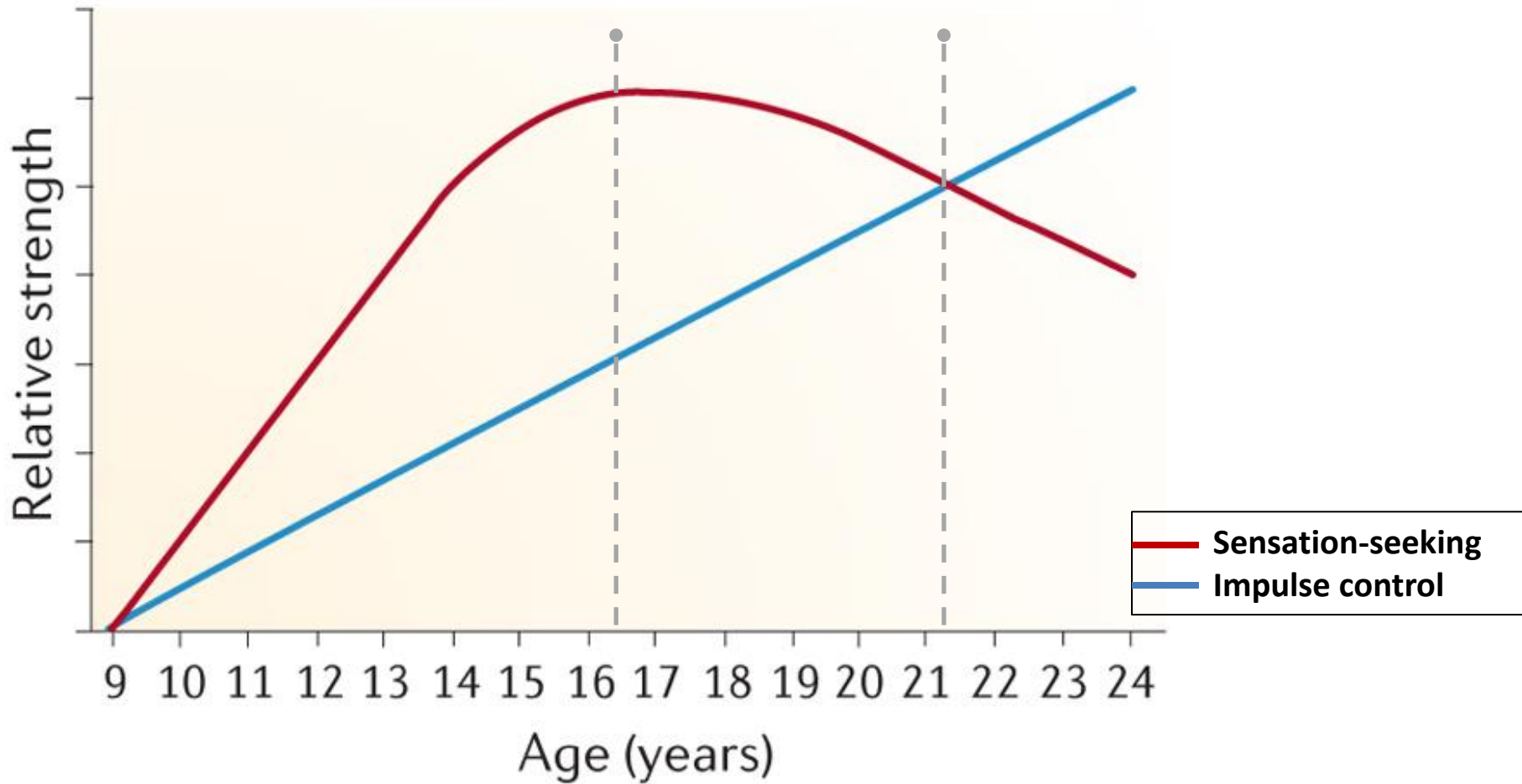


Image from: Steinberg, L., (2013). The influence of neuroscience on US Supreme Court decisions about adolescents' criminal culpability. *Nature Reviews Neuroscience*, 14, 513-18.

Understanding Risk and Protection

Risk factors are conditions that increase the likelihood of a young person becoming involved in drug use, delinquency, school dropout, and/or violence

	Substance Abuse	Delinquency	Teen Pregnancy	School Drop-Out	Violence	Depression & Anxiety
Community	Availability of Drugs	✓			✓	
	Availability of Firearms		✓		✓	
	Community Laws and Norms Favorable Toward Drug Use, Firearms and Crime	✓	✓		✓	
	Media Portrayals of the Behavior	✓			✓	
	Transitions and Mobility	✓	✓		✓	✓
	Low Neighborhood Attachment and Community Disorganization	✓	✓		✓	
	Extreme Economic Deprivation	✓	✓	✓	✓	✓
Family	Family History of the Problem Behavior	✓	✓	✓	✓	✓
	Family Management Problems	✓	✓	✓	✓	✓
	Family Conflict	✓	✓	✓	✓	✓
School	Favorable Parental Attitudes and Involvement in the Problem Behavior	✓	✓		✓	
	Academic Failure Beginning in Late Elementary School	✓	✓	✓	✓	✓
	Lack of Commitment to School	✓	✓	✓	✓	✓
Peer / Individual	Early & Persistent Antisocial Behavior	✓	✓	✓	✓	✓
	Rebelliousness	✓	✓	✓	✓	✓
	Gang Involvement	✓	✓			✓
	Friends Who Engage in the Problem Behavior	✓	✓	✓	✓	✓
	Favorable Attitudes Toward the Problem Behavior	✓	✓	✓	✓	✓
	Early Imitation of the Problem Behavior	✓	✓	✓	✓	✓
	Constitutional Factors	✓	✓			✓

NOTE: THE LIST ABOVE REPRESENTS THE CONCEPTUAL MODEL ORIGINALLY ESTABLISHED BY THE RISK AND PROTECTIVE FACTOR MODEL OF PREVENTION. PAYS USES A REFINED AND TARGETED SUBSET OF RISK FACTORS THAT ARE BASED ON THIS MODEL.

Protective factors, also known as "assets," are conditions that buffer youth from risk by reducing the impact of the risks or changing the way they respond to risks.

	Healthy beliefs and Clear Standards	Bonding	Opportunities	Skills	Recognition
Community	Opportunities for Prosocial Involvement	✓	✓		
	Rewards for Prosocial Involvement	✓			✓
Family	Family Attachment	✓			
	Opportunities for Prosocial Involvement	✓	✓		
	Rewards for Prosocial Involvement	✓	✓		✓
School	Opportunities for Prosocial Involvement	✓	✓		
	Rewards for Prosocial Involvement		✓		✓
Peer / Individual	Interaction with Prosocial Peers	✓		✓	
	Prosocial Involvement	✓		✓	
	Rewards for Prosocial Involvement		✓		✓
	Belief in the Moral Order	✓			
	Religiosity	✓			

Same Risk Factor May Lead to Different Outcomes



Different RPFs May Lead to the Same Outcome

Family History of School Dropout

Family Conflict

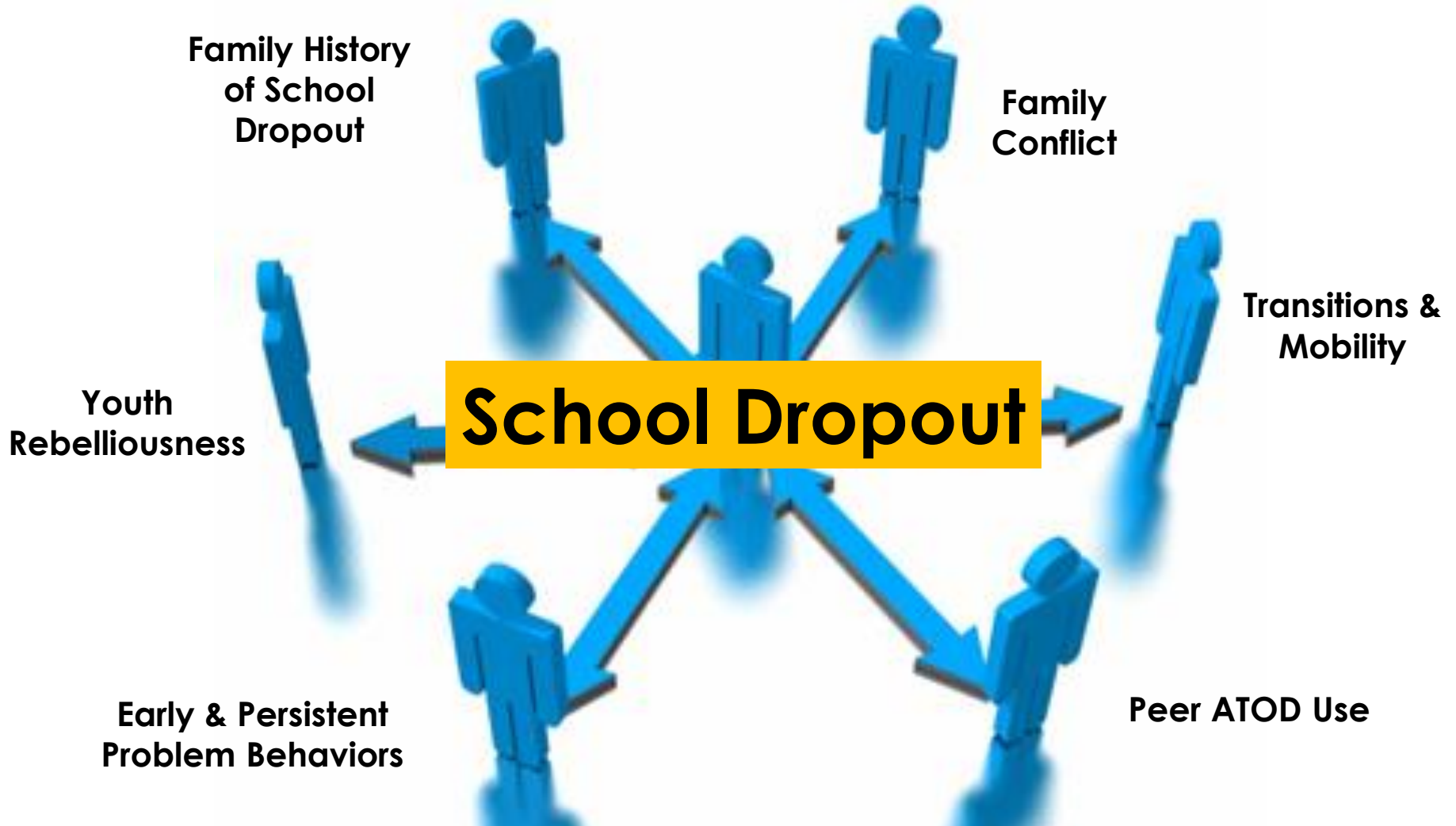
Transitions & Mobility

Youth Rebelliousness

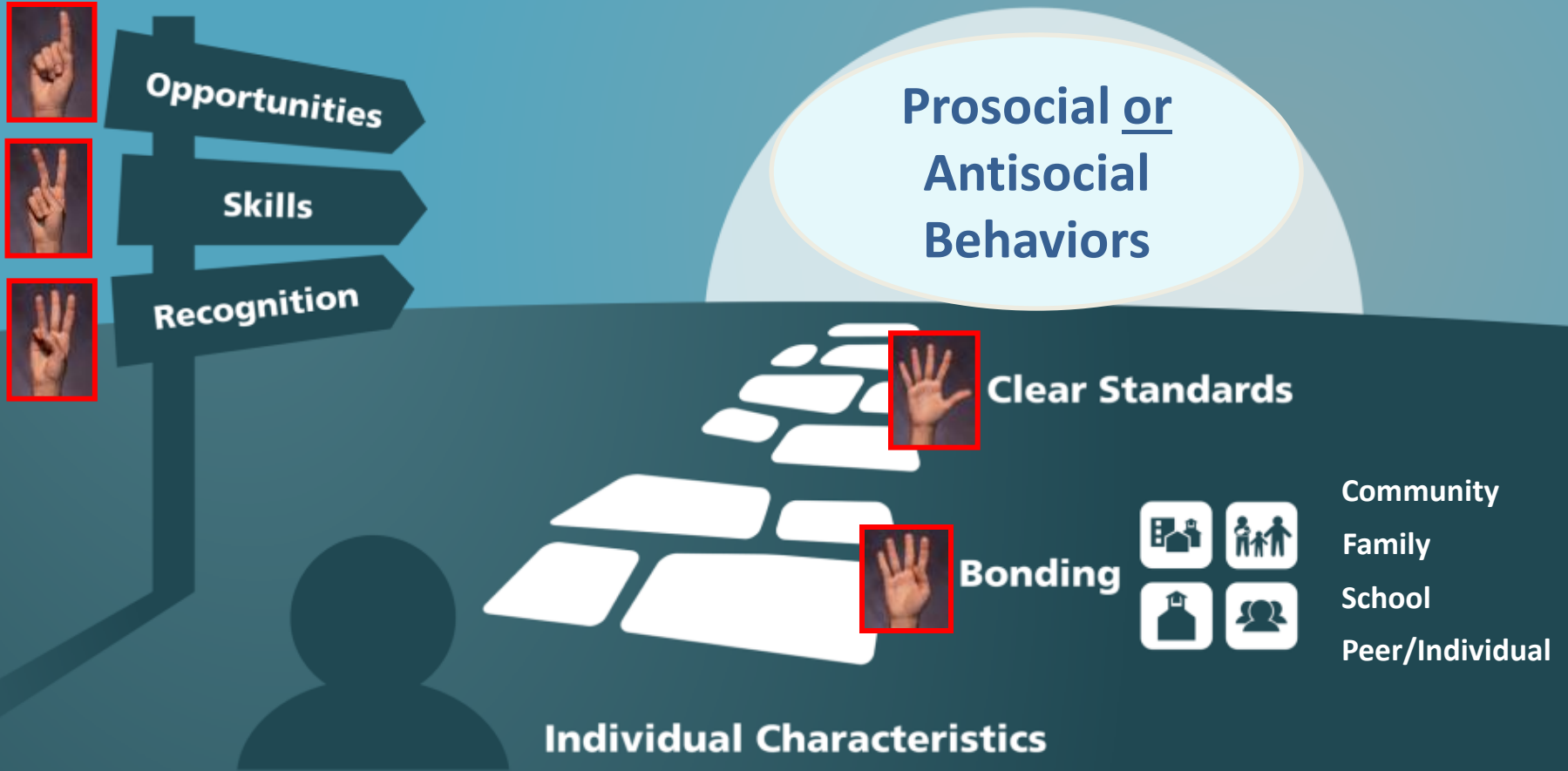
School Dropout

Peer ATOD Use

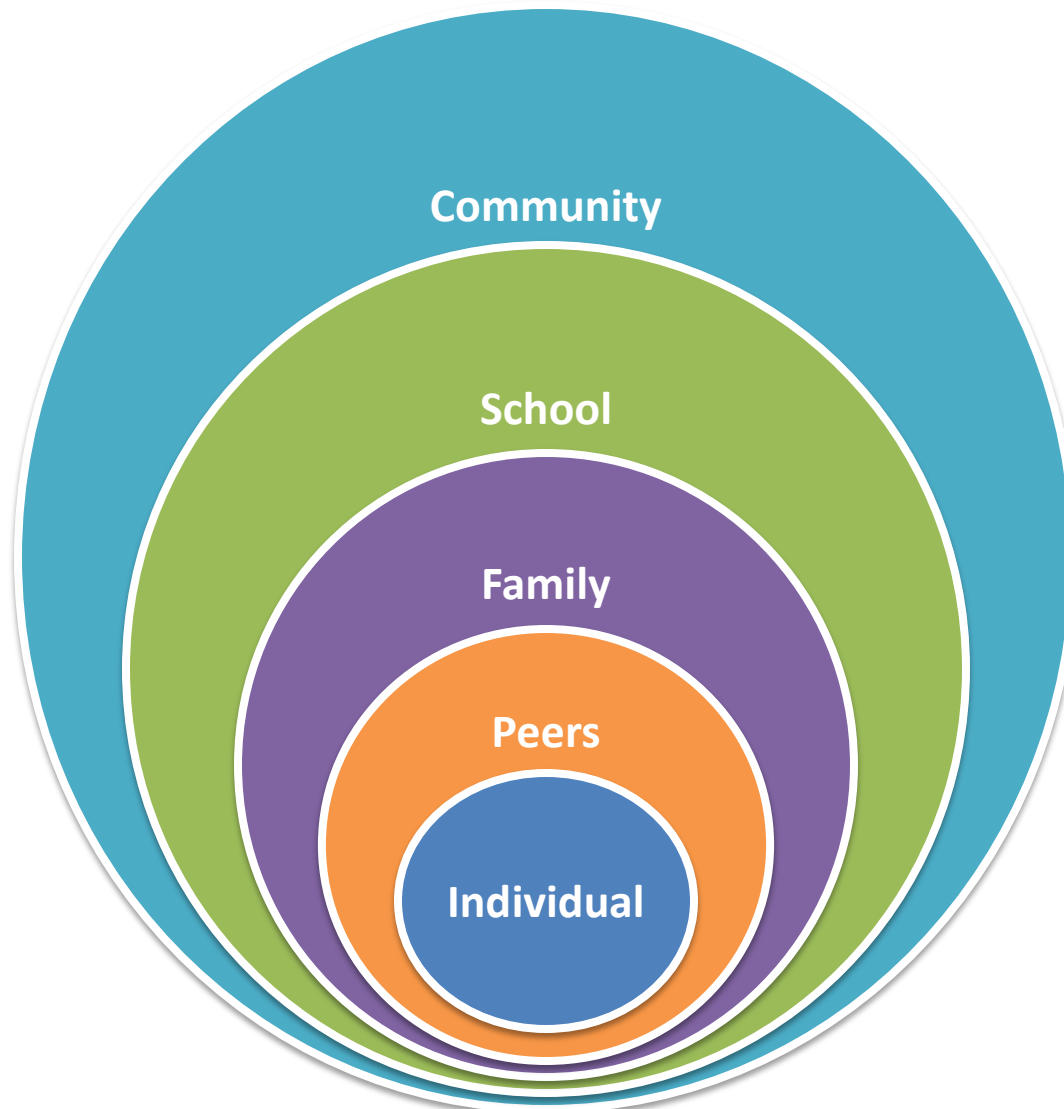
Early & Persistent Problem Behaviors



SOCIAL DEVELOPMENT STRATEGY



Targets of Prevention



KEYS TO EFFECTIVE PREVENTION

INSTEAD OF
FOCUSING ON
YOUR WEAKNESSES,
FOCUS ON YOUR
STRENGTHS.

What Works in Prevention

Improving Knowledge + Beliefs/Attitudes + Skills

- Learning the facts; resources for getting help
- Clarifying norms; changing attitudes
- Developing competencies



What Works in Prevention

Strengths-based approaches

- Framing in the positive
- Identifying and building on existing strengths



Are interactive, and hands-on

Attend to all domains in a child's life

Include enough time (weeks/hours) to have impact

Age Appropriate – Different ages, different approaches


Ineffective Approaches

Rely on emotional appeals, focused on danger or deterrence

- Horror stories
- Dramatization of dangerous/harmful effects
- Gruesome photos or videos
- Tours of jails; boot camps

Research on these approaches consistently shows their inability to prevent substance use. Youth exposed to these approaches have been shown to be MORE likely to use substances. No scientific debate on these because there is no evidence of effectiveness AND there is evidence of harm.

COMMUNITY PREVENTION PARTNERSHIPS



**If you want
to go fast,
go alone;
if you want
to go far,
go together.**
--African proverb

Building Prevention Capacity

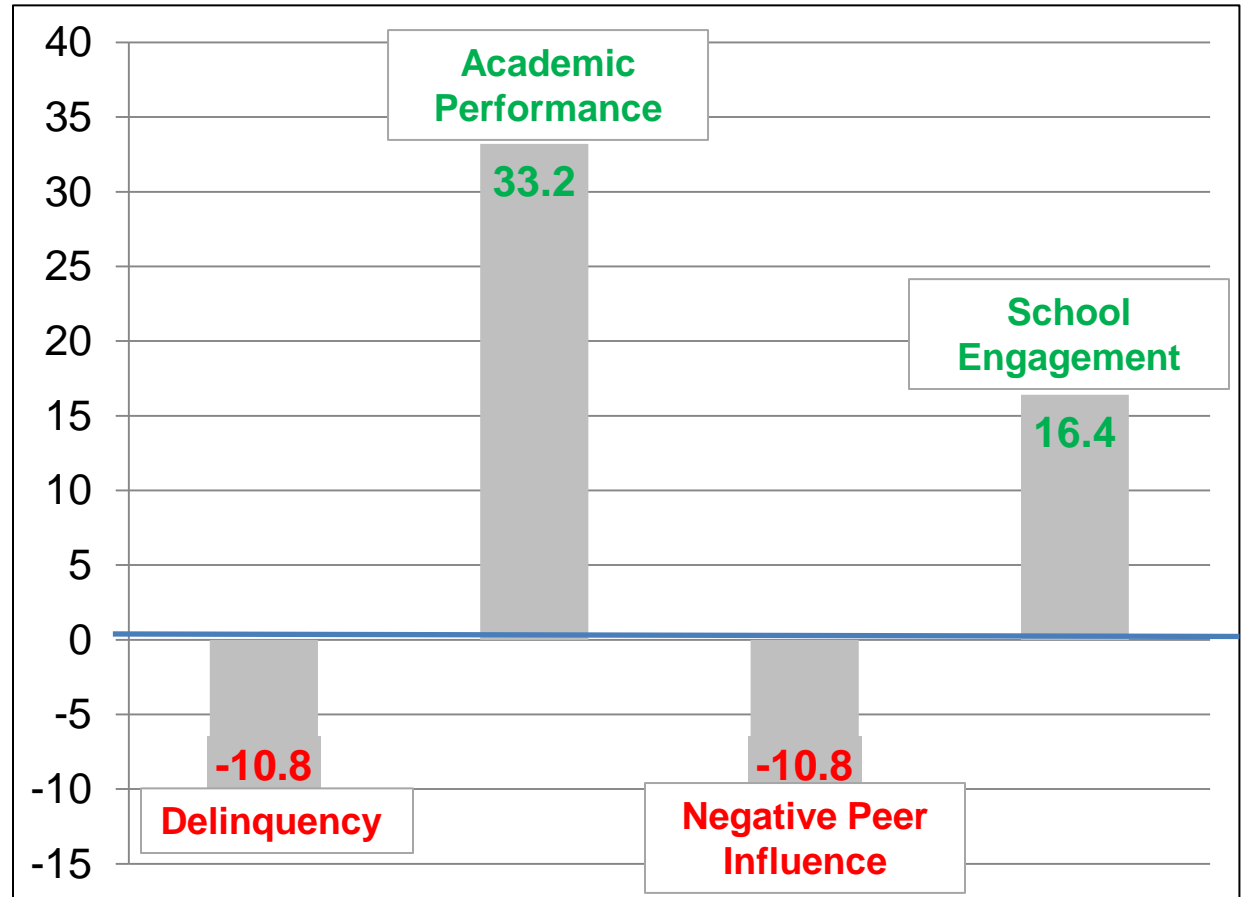
- Local, cross-sector coalitions
- Universal and/or risk-focused prevention
- Communities That Care (CTC) coalitions
- PROSPER coalitions
- Non-profit service providers
- Technical assistance

Communities That Care

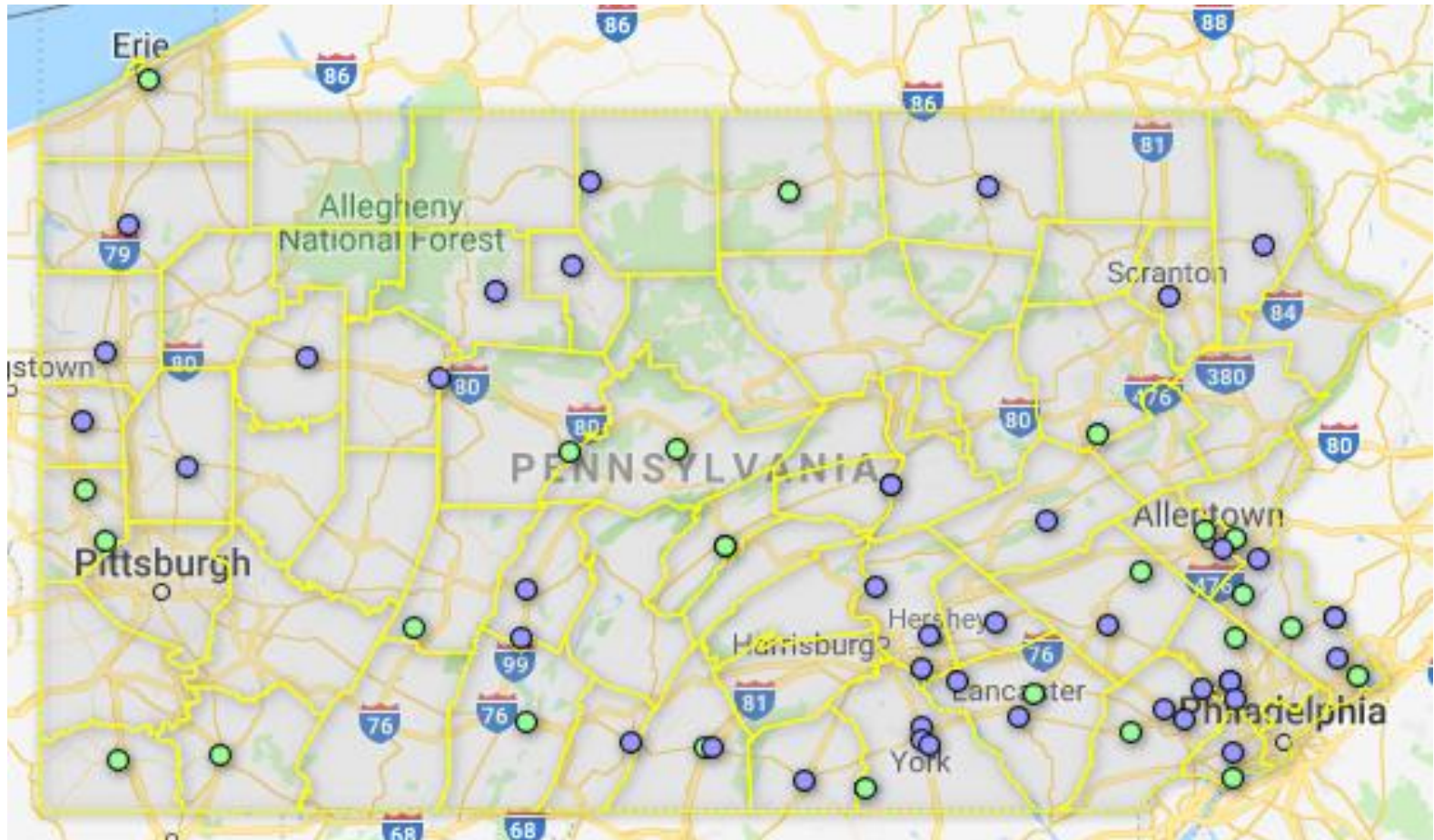
- 419 age-grade cohorts over a 5-year period

Youth in CTC communities with EBPs:

- Lower rates of delinquency
- Greater resistance to negative peer influence
- Stronger school engagement
- Better academic achievement



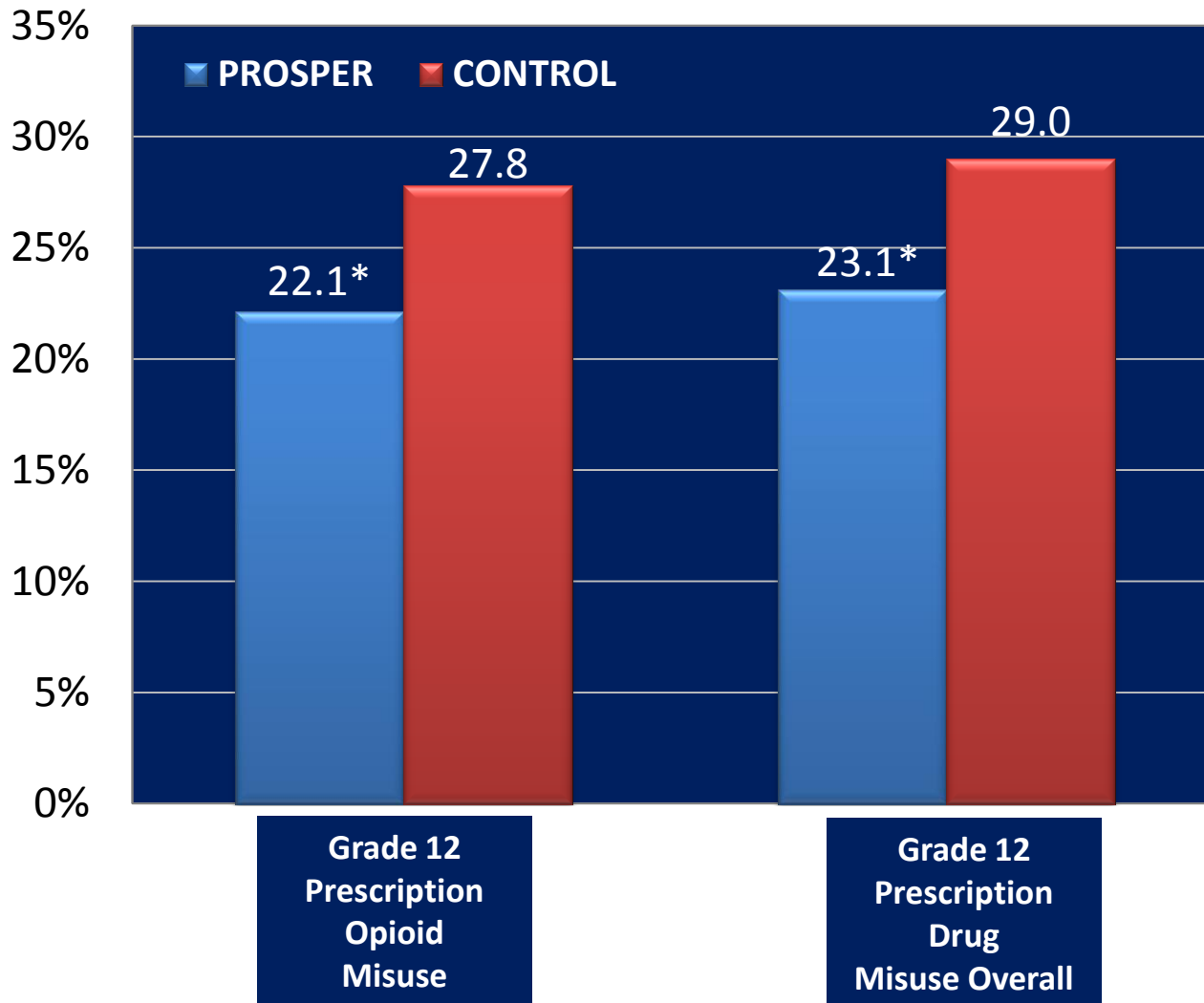
EPIS Supported Prevention Coalitions



- **Funded** Sites Currently Receiving PCCD Funding and comprehensive Technical Assistance.
- **Other** Any other coalition that receives Technical Assistance.

<http://episcenter.psu.edu/ctcmap>

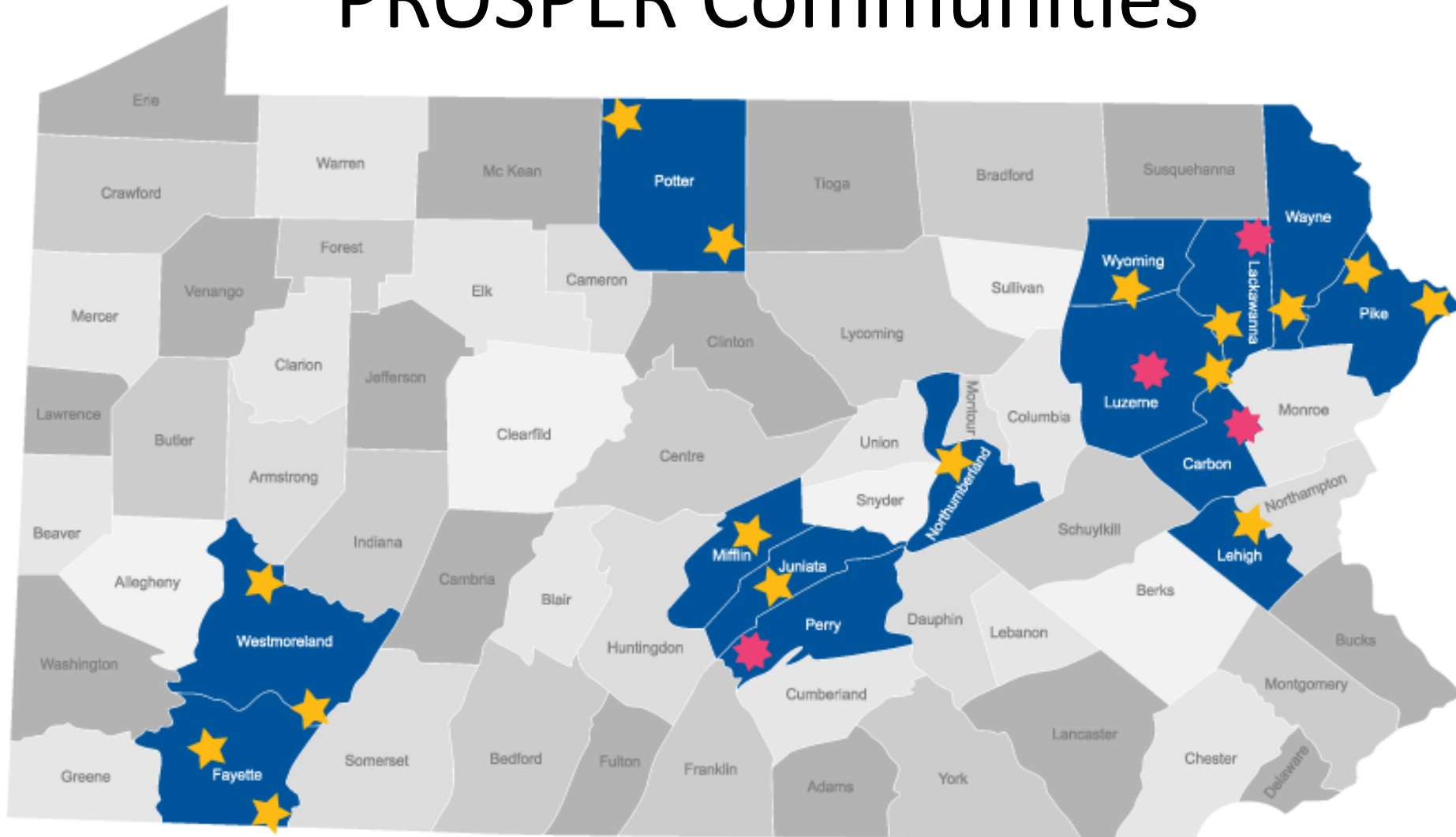
PROSPER: Long-term Impact on Prescription Drug Misuse



PROSPER vs. control differences are practically significant: For every 100 users in non-PROSPER communities, would have about 20 fewer in PROSPER communities.

Note: * $p < .05$;
RRRs=20-21%

PROSPER Communities



★ original

★ expansion

RESPONSE AND RESOURCES



Resources

- www.pa.gov/guides/opioid-epidemic/
 - Call **1-800-662-HELP** (4357) for information about treatment resources. Confidential. Staffed by trained professionals, 24/7, available in English and Spanish.
 - Find a Single County Authority
 - Find a Center of Excellence

Resources

- PA Commission on Crime and Delinquency
 - Violence and delinquency prevention grants
- EPISCenter (PSU)
 - Technical assistance for local prevention efforts
- PASTOP.org
 - free materials about opiate addiction for D&A professionals; information and resources for anyone looking for help
- National Institute on Drug Abuse for Teachers
 - <https://teens.drugabuse.gov/teachers/lessonplans>

Data Sources

- Pennsylvania Youth Survey (PAYS)
- Drug Enforcement Administration (DEA)
- Center for Disease Control and Prevention (CDC)
- National Survey on Drug Use and Health (NSDUH)

Thank you!

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