



# Minnesota's Growing and Evolving Opioid Crisis

Colin Planalp, MPA  
Senior Research Fellow, SHADAC

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# Background

## What are opioids?

- A family of addictive drugs that act on the opioid receptors in pleasure centers of the brain

## What are their effects?

- Can relieve pain and cause euphoria

## Types of opioids:

- Natural opioids, derived from opium poppy (e.g., morphine)
- Semi-synthetic opioids, synthesized from natural opioids (e.g., oxycodone, heroin)
- Synthetic opioids, synthesized from non-opioid compounds to mimic opioid effects (e.g., fentanyl)



# Opioid overdose death records

## Natural and semi-synthetic opioids

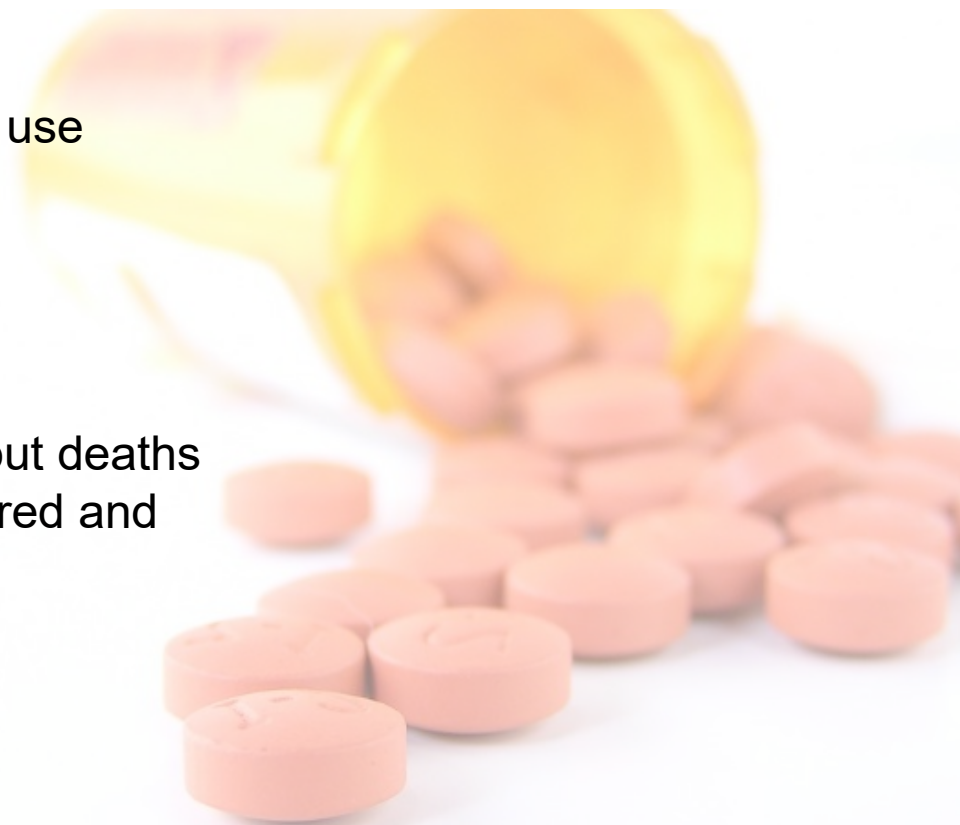
- i.e., prescription opioid painkillers

## Heroin

- Illicit opioid with no legal medical use

## Synthetic opioids

- e.g., fentanyl
- Some have legal medical uses, but deaths dominated by illegally manufactured and trafficked fentanyl

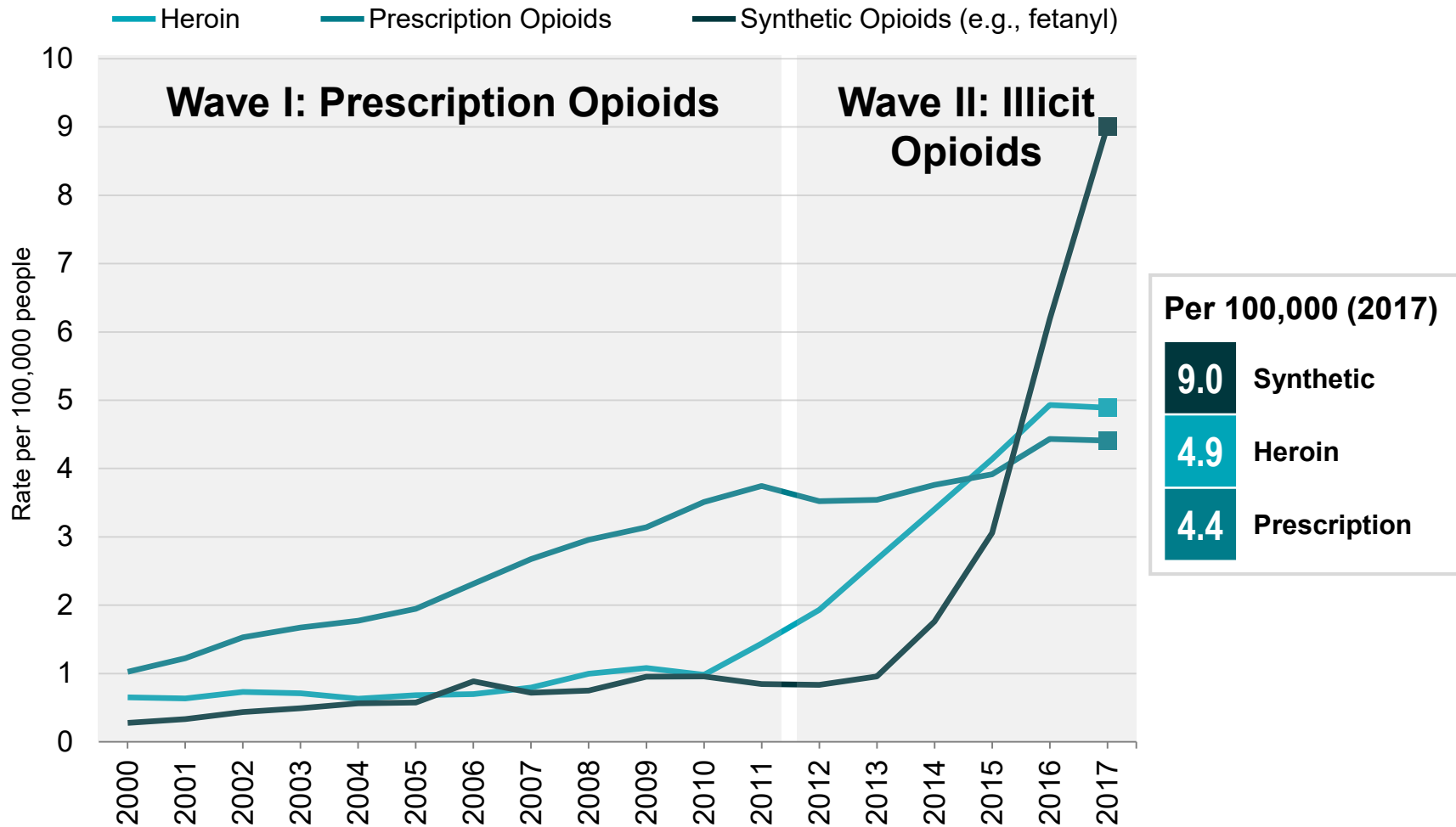


# U.S. Trends

*Prescription Opioid, Synthetic Opioid, and Heroin Overdose Deaths*

# U.S. Opioid Deaths

## *Rates per 100,000 People, by Opioid Type*



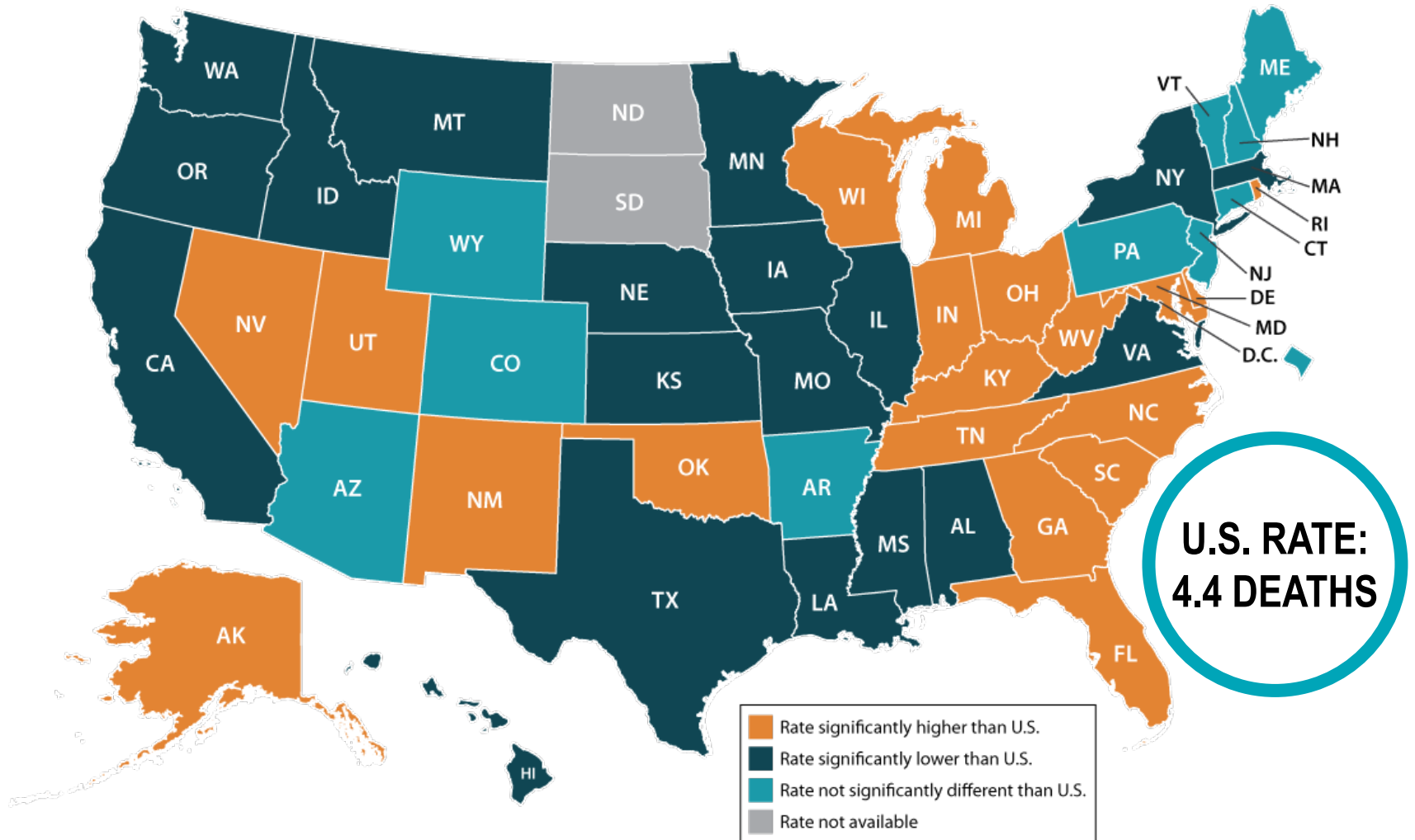
Source: SHADAC analysis of age-adjusted rates of drug poisoning deaths, National Center for Health Statistics

# State Trends and Variation

Opioid Overdose Deaths

# Prescription Opioid Deaths

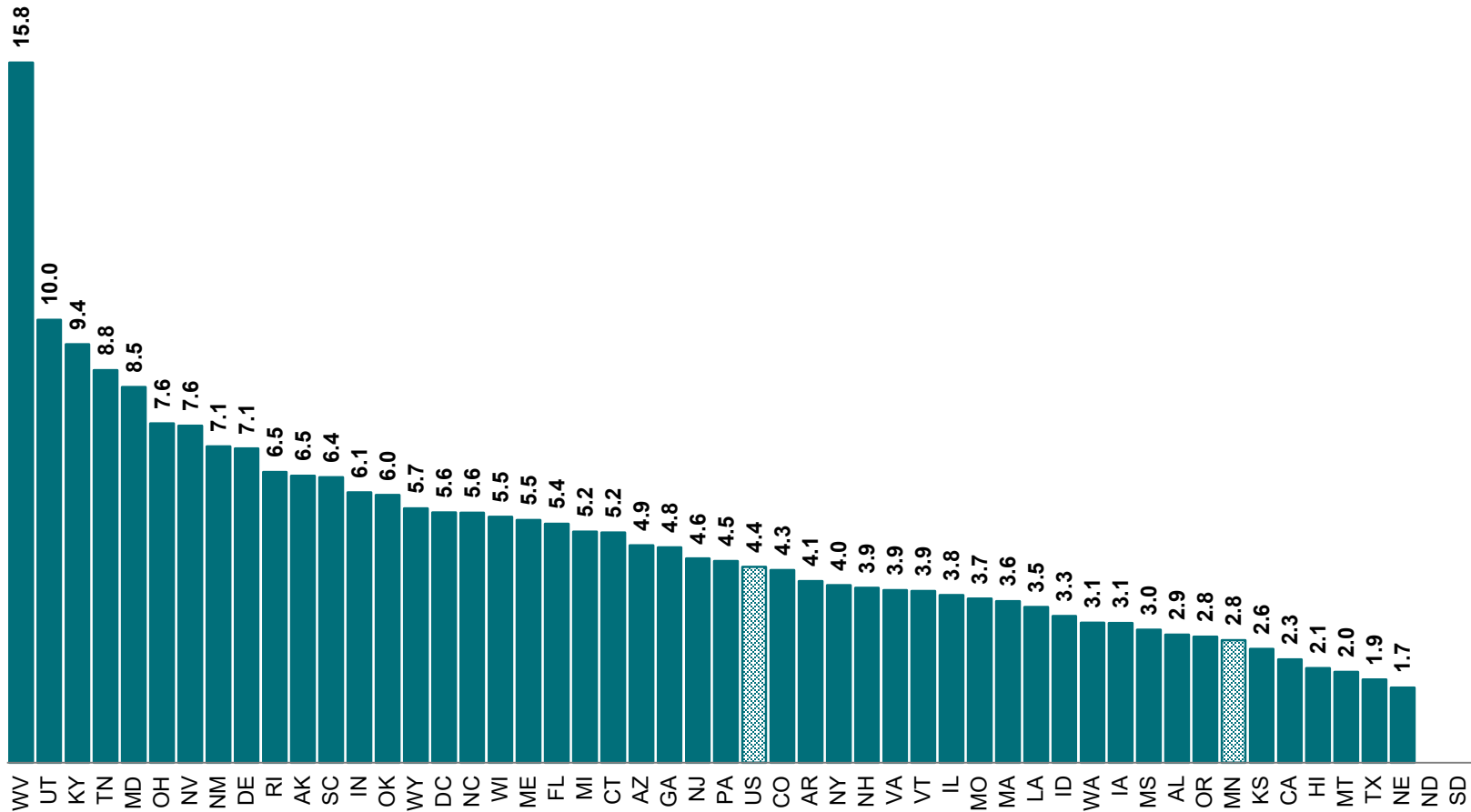
## *Rates per 100,000 People, 2017*



Source: SHADAC analysis of vital statistics data from the CDC WONDER system.

# Prescription Opioid Deaths

## *Rates per 100,000 People, 2017*

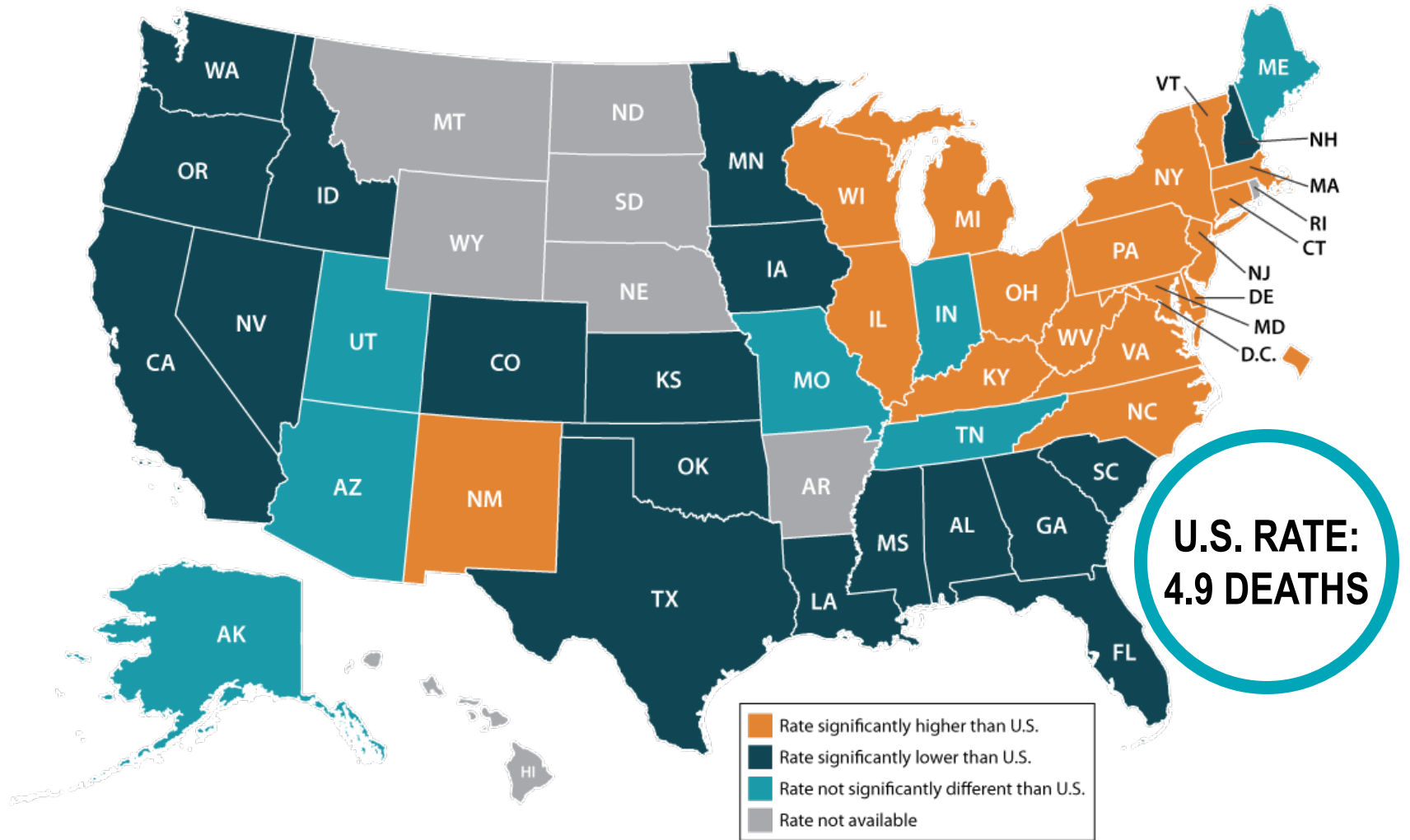


Source: SHADAC analysis of vital statistics data from the CDC WONDER system.



# Heroin Deaths

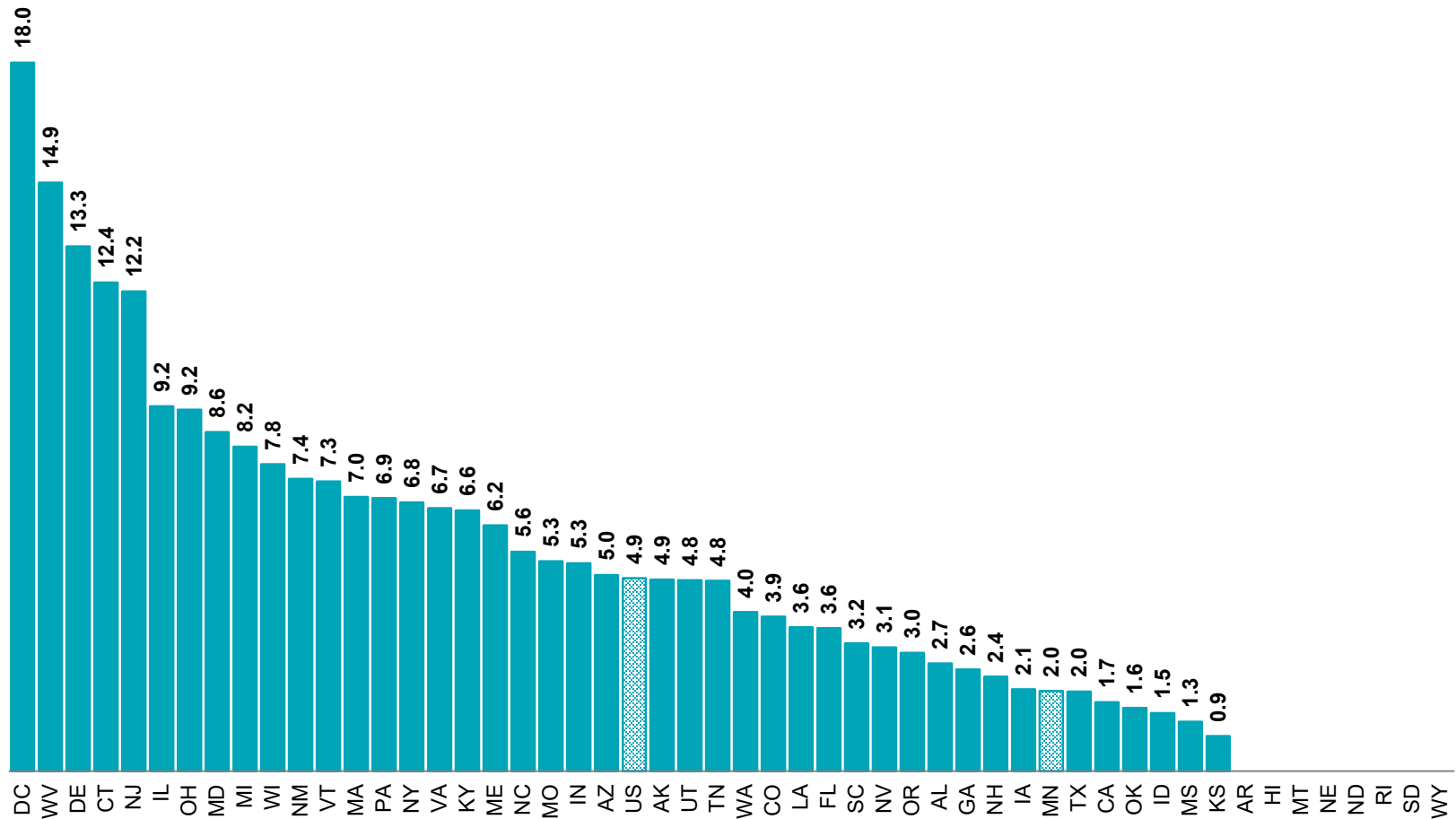
## *Rates per 100,000 People, 2017*



Source: SHADAC analysis of vital statistics data from the CDC WONDER system.

# Heroin Deaths

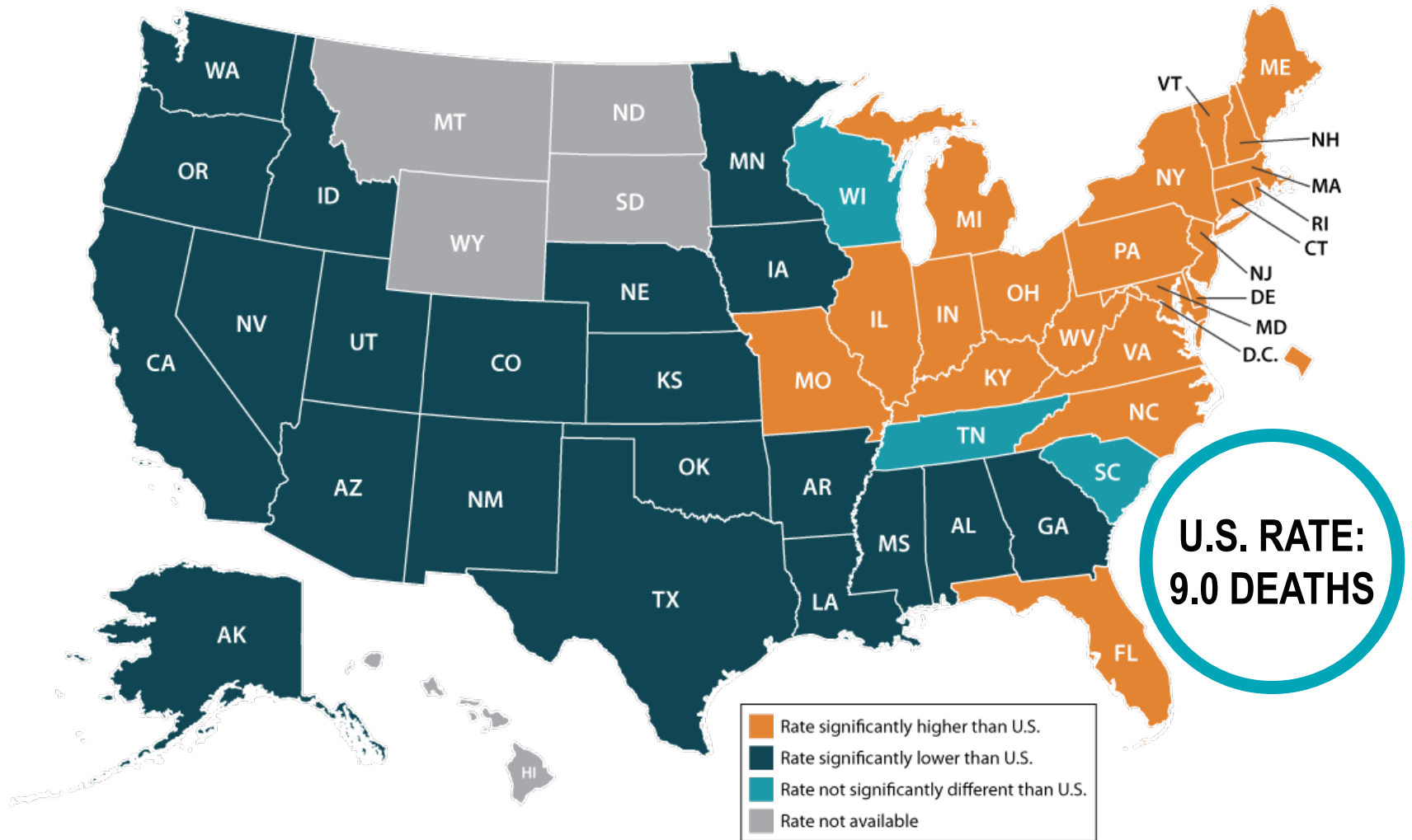
## *Rates per 100,000 People, 2017*



Source: SHADAC analysis of vital statistics data from the CDC WONDER system.

# Synthetic Opioid Deaths

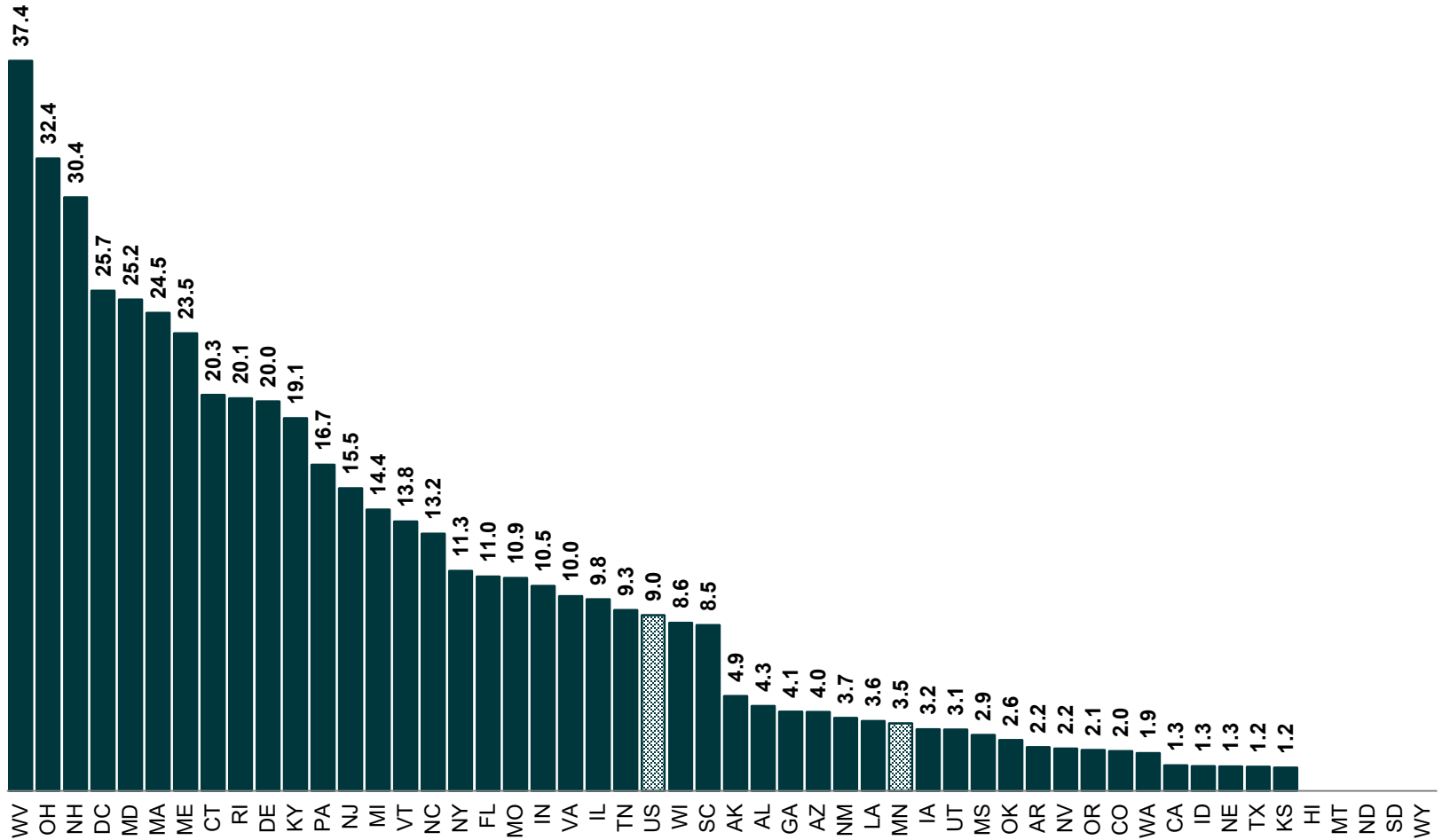
## *Rates per 100,000 People, 2017*



Source: SHADAC analysis of vital statistics data from the CDC WONDER system.

# Synthetic Opioid Deaths

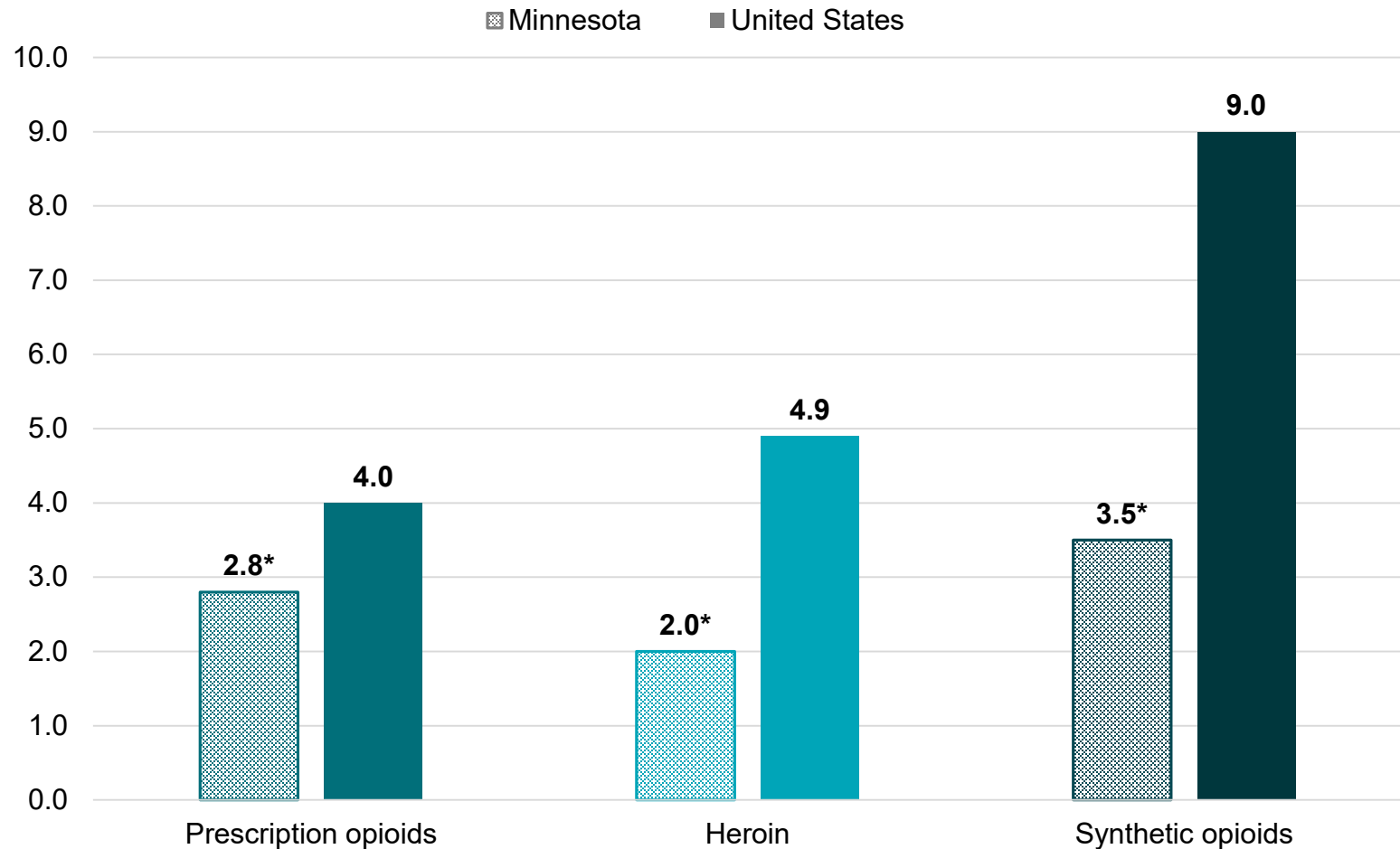
## *Rates per 100,000 People, 2017*



Source: SHADAC analysis of vital statistics data from the CDC WONDER system.

# Minnesota and U.S. Opioid Deaths

## *Rates per 100,000 People by Type, 2017*



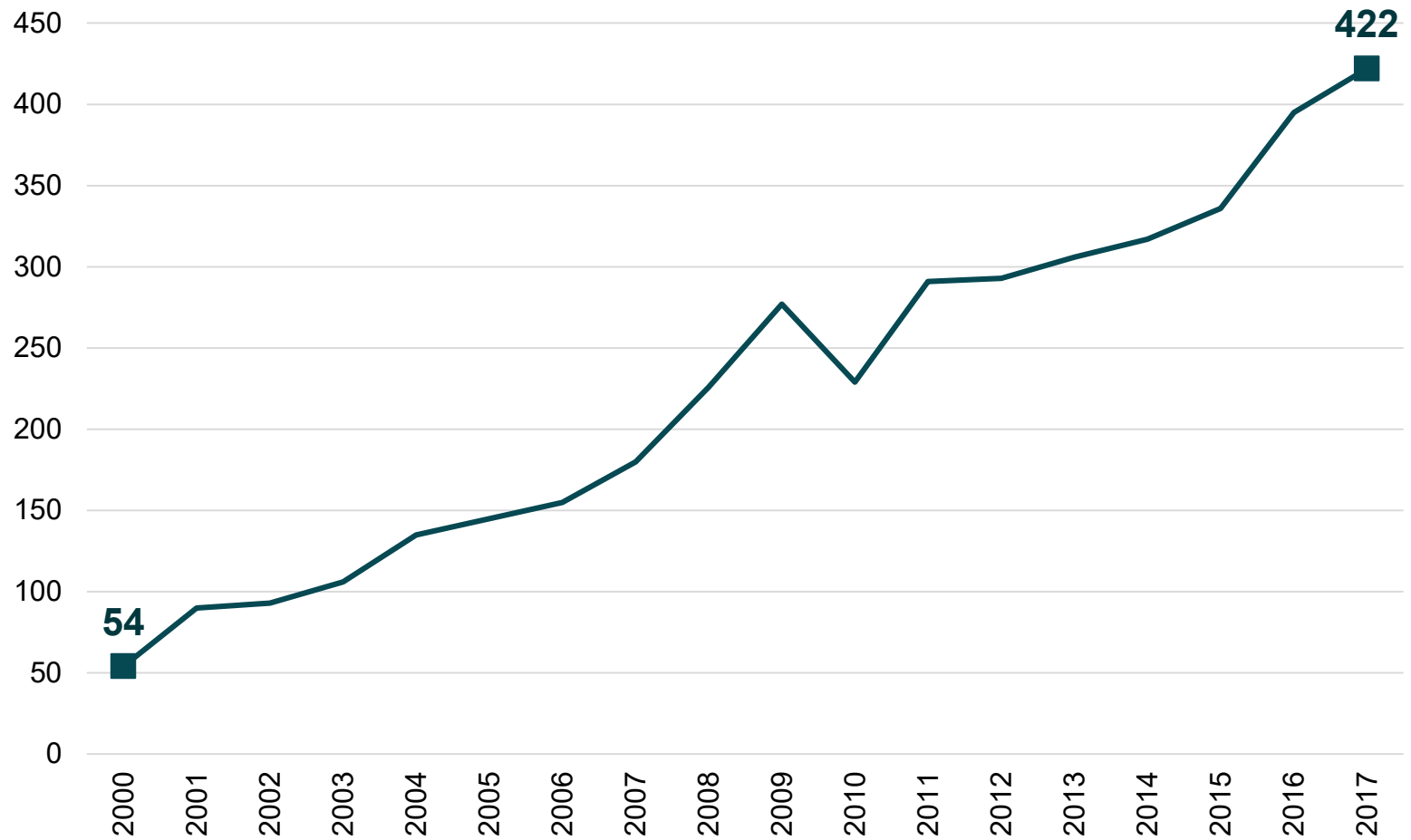
\* Statistically significant difference from U.S. rate at 95% level.

Source: SHADAC analysis of age-adjusted rates of drug poisoning deaths, National Center for Health Statistics

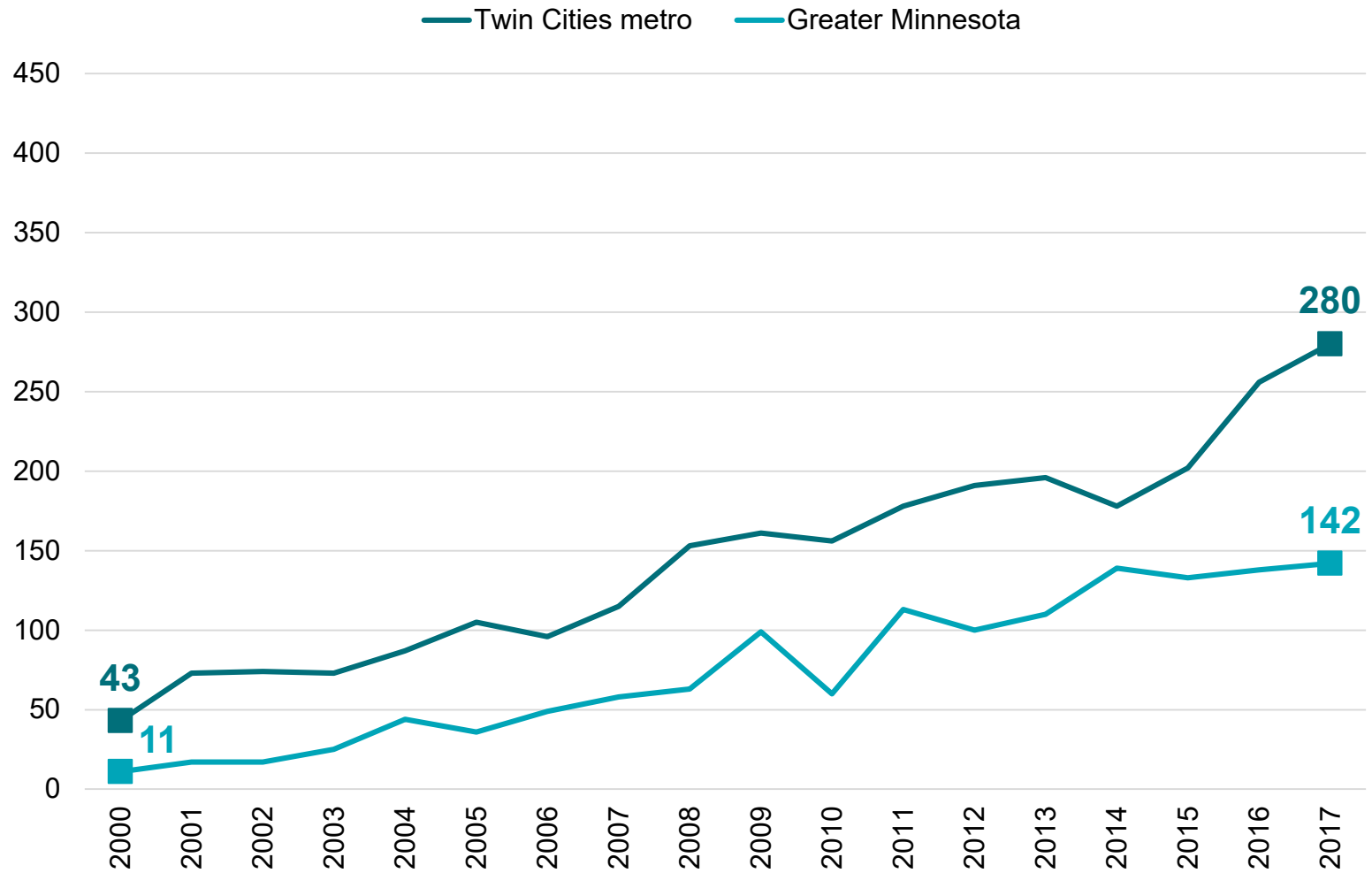
# Minnesota Trends

Opioid Overdose Deaths

# Number of Opioid Deaths in Minnesota, 2000-2017



# Number of Opioid Deaths in Minnesota, 2000-2017





# Number of Opioid Overdose Deaths *by Minnesota Counties, 2016*

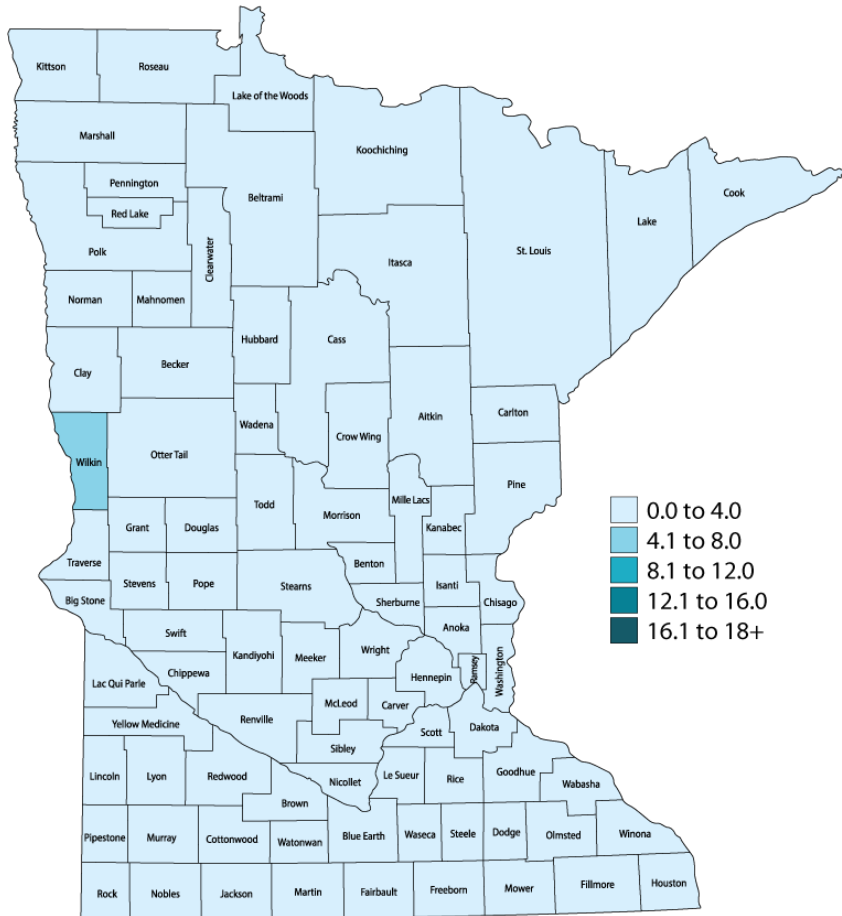
## Top 5 Counties in Minnesota with the Highest Number of Opioid Overdose Deaths

County	# of opioid deaths	Rate per 100,000
Hennepin (Minneapolis)	146	11.2
Ramsey (St. Paul)	34	6.3
Anoka (Blaine)	26	7.5
Dakota (Eagan)	26	6.2
St. Louis (Duluth)	23	11.5

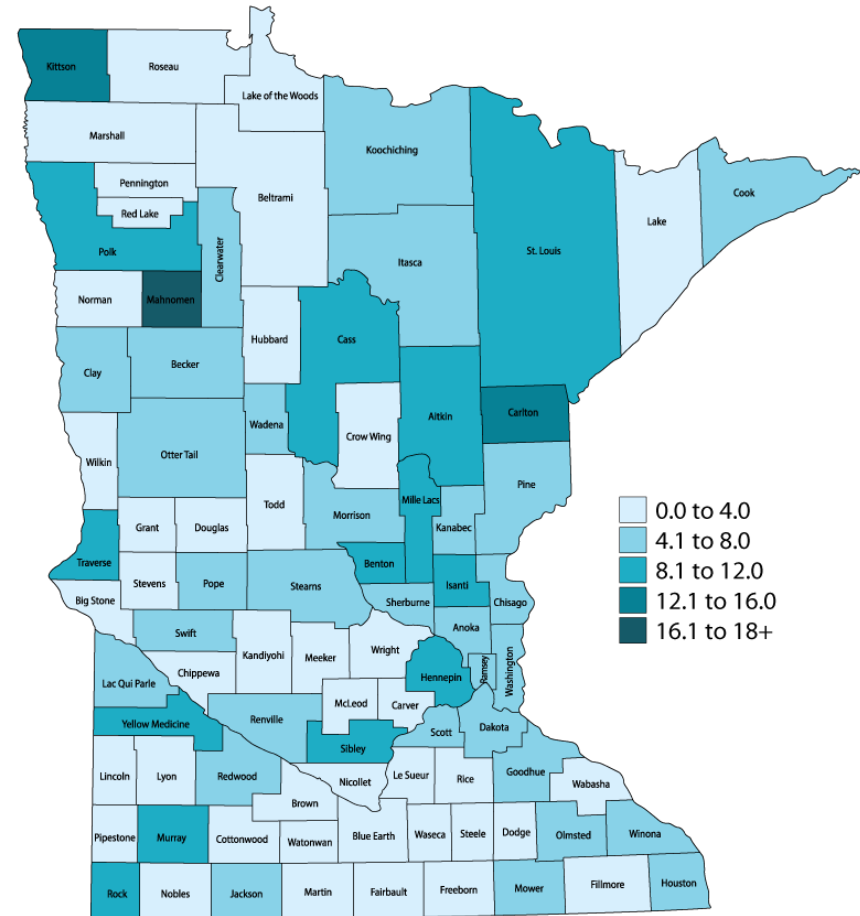
# Opioid Overdose Deaths by Minnesota Counties

*Rates per 100,000 people, 2000-2002 and 2014-2016*

## 2000-2002

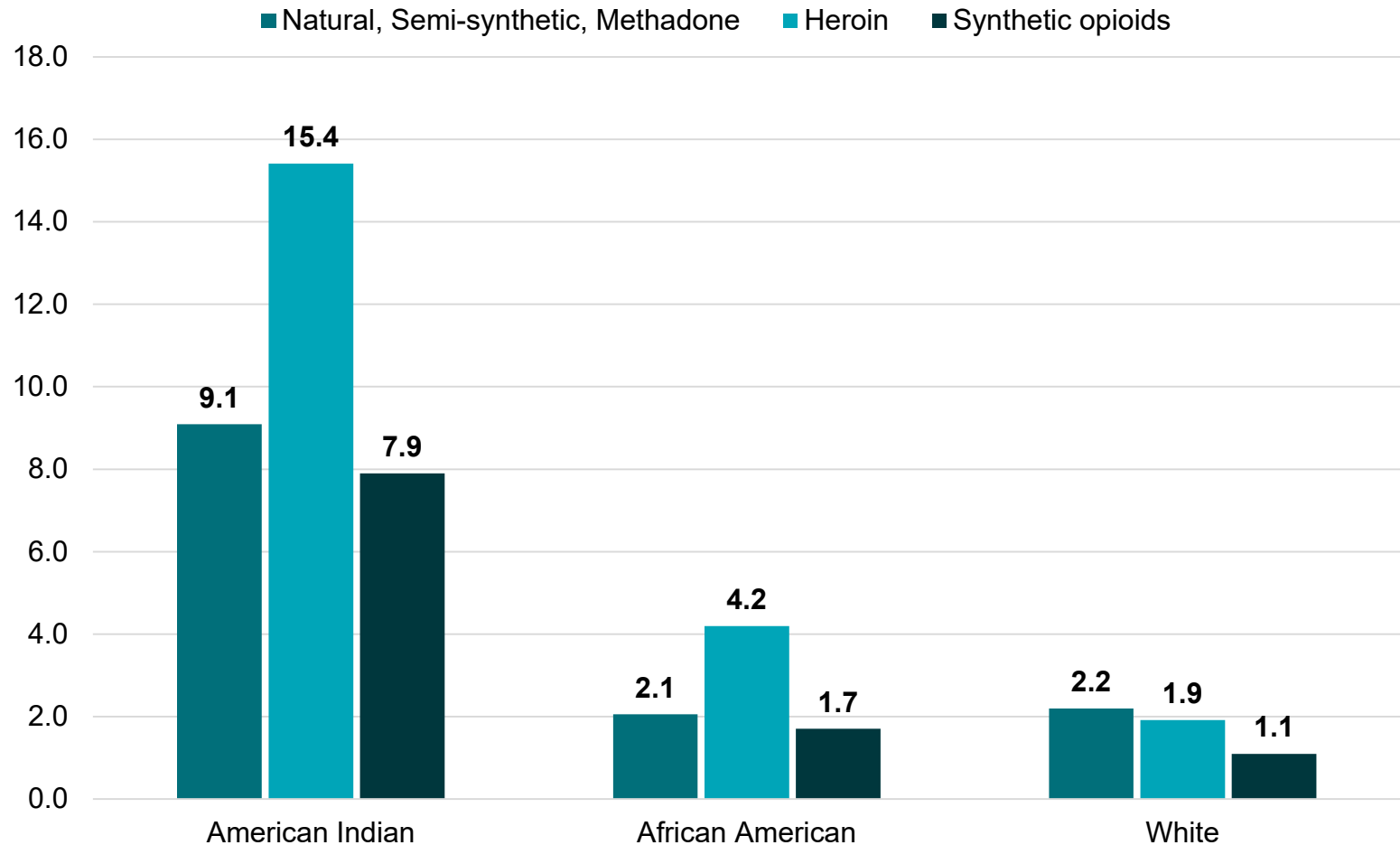


## 2014-2016

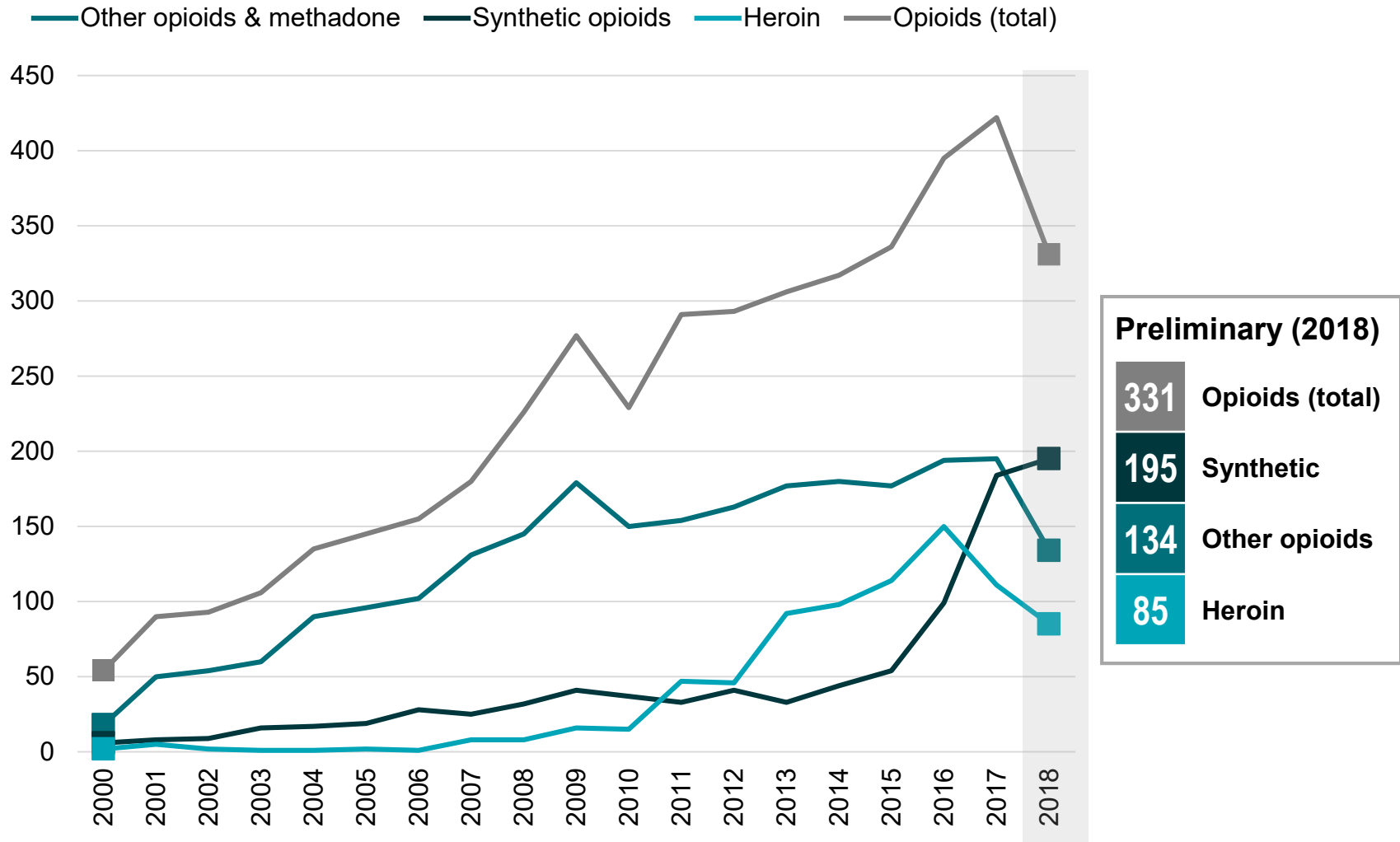


# Minnesota Opioid Overdose Deaths

## *Rates per 100,000 People by Race, 2014-2016*



# Number of Minnesota Drug Overdose Deaths, 2000-2018 (preliminary)



## Preliminary (2018)

331	Opioids (total)
195	Synthetic
134	Other opioids
85	Heroin

# State Trends

Non-opioid Illicit Drug Overdose Deaths

# Non-opioid illicit drugs

## Cocaine

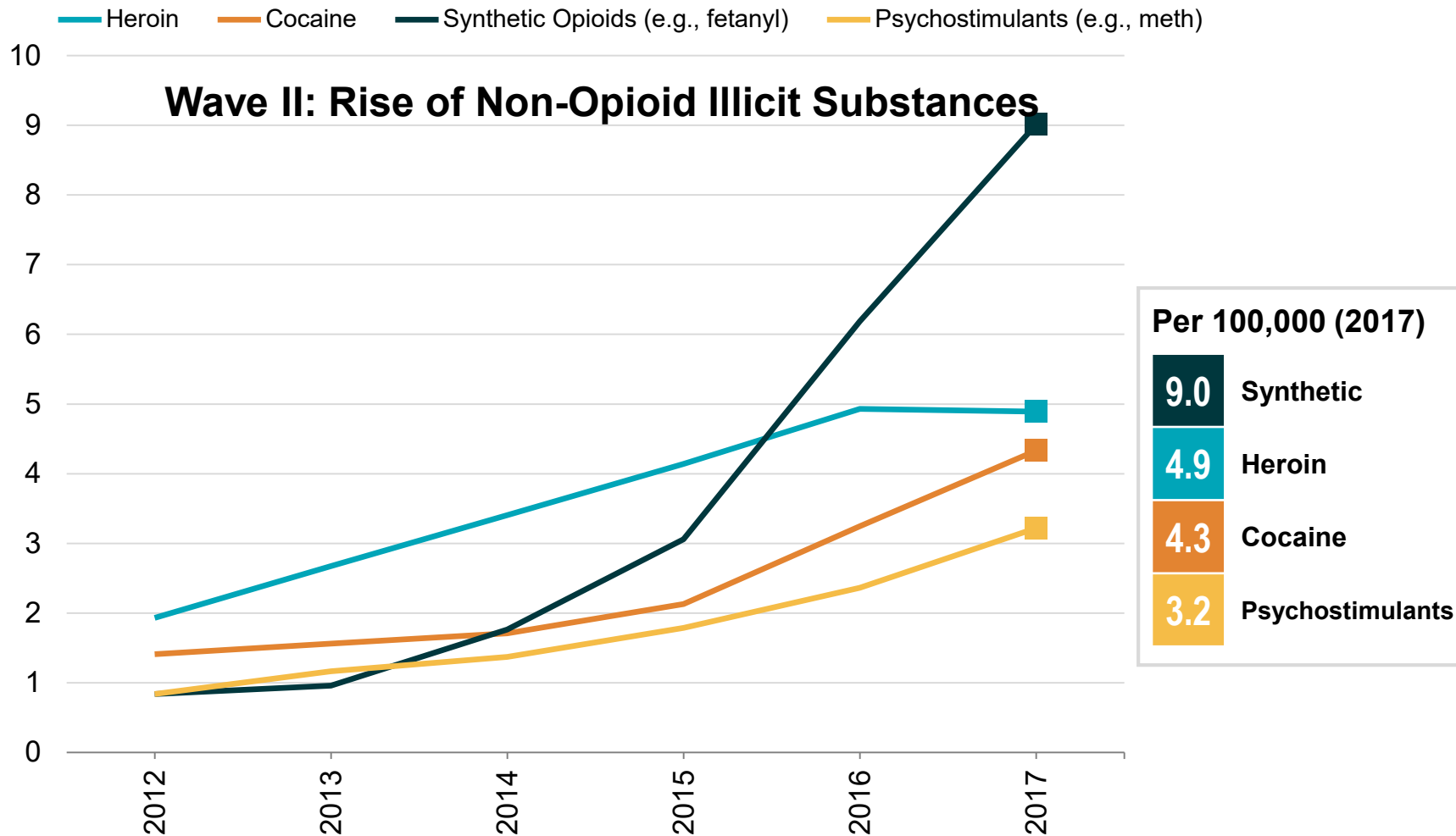
- Limited legal medical uses in U.S. (e.g., topical anesthetic) but also is trafficked illicitly

## Psychostimulants with abuse potential

- Broader category of substances including prescription stimulants (e.g., Ritalin, Adderall) and illicit drugs (e.g., methamphetamine, MDMA)
  - Most common cause of psychostimulant death is methamphetamine, according to CDC research

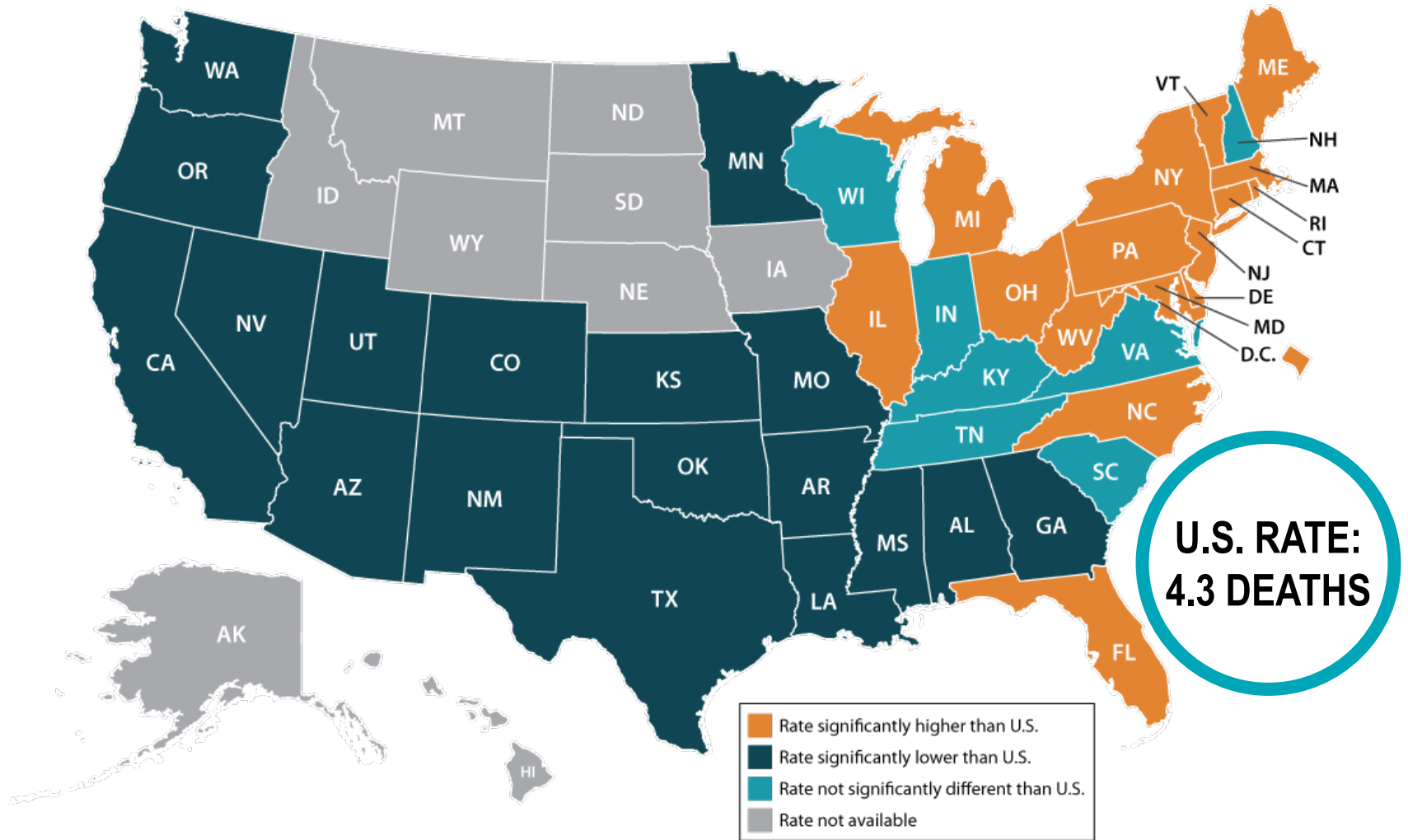
# U.S. Drug Overdose Deaths

*Rates per 100,000 People, by Drug Type, 2012-2017*



# Cocaine Deaths

## *Rates per 100,000 People, 2017*

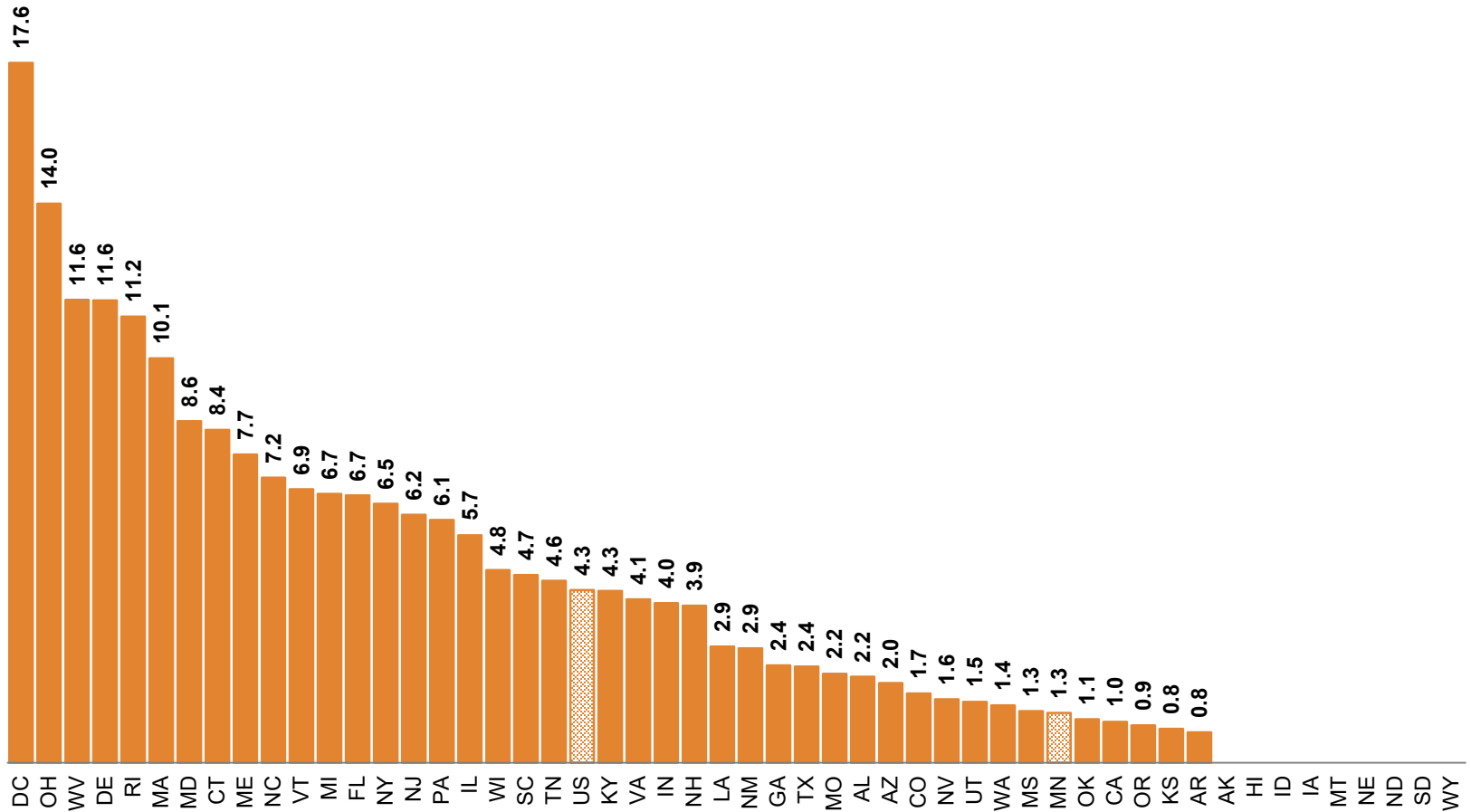


Source: SHADAC analysis of vital statistics data from the CDC WONDER system.



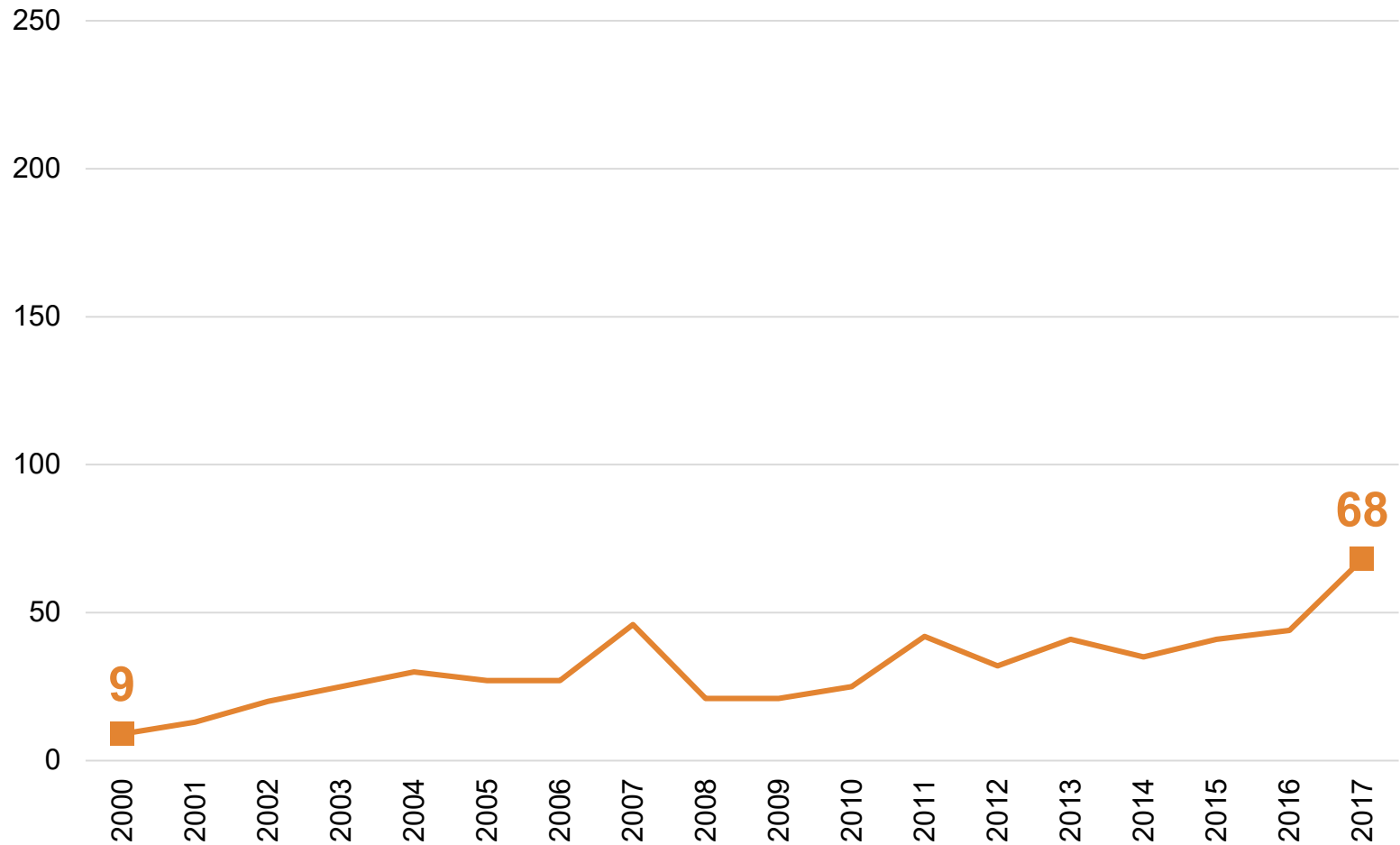
# Cocaine Deaths

## *Rates per 100,000 People, 2017*



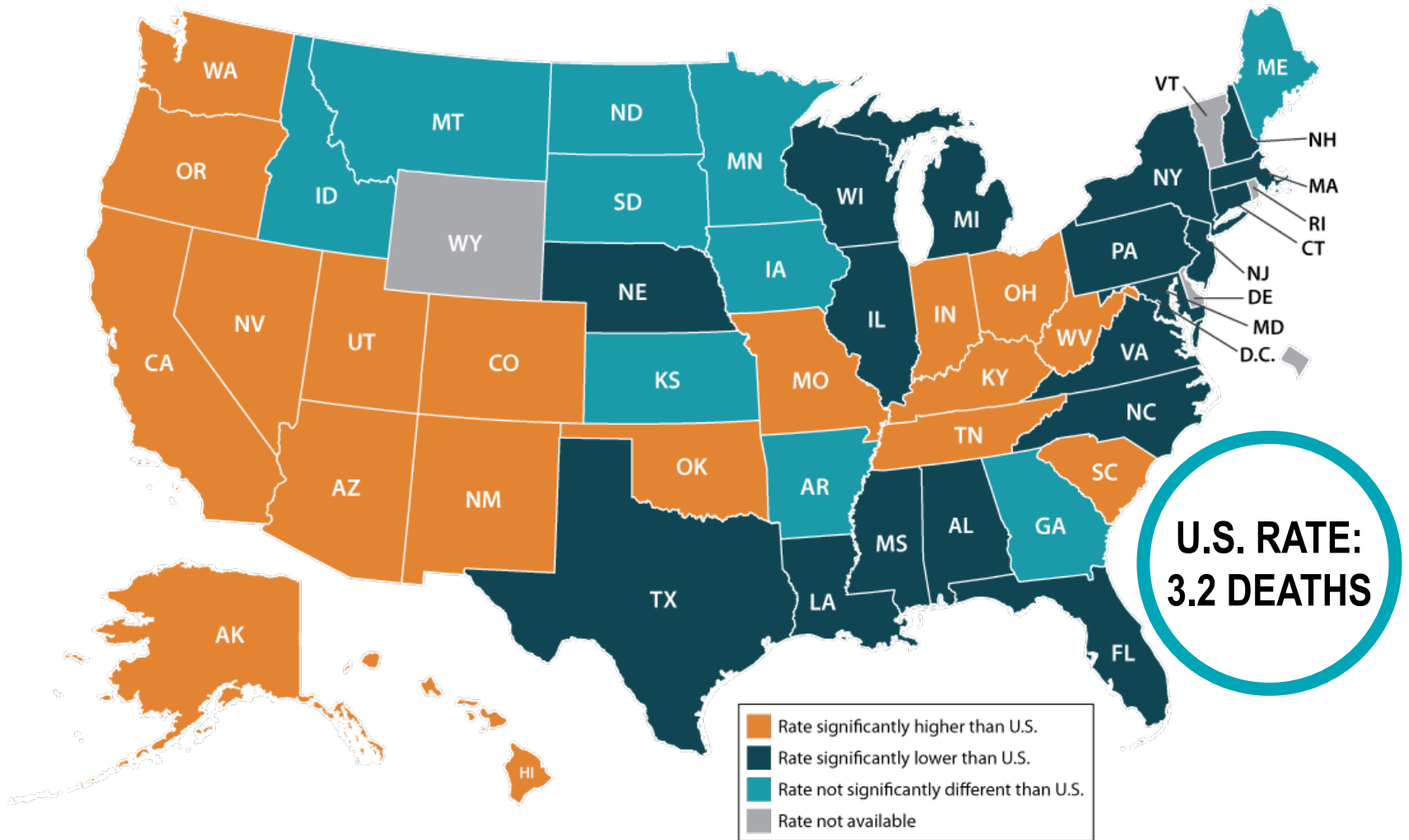
Source: SHADAC analysis of vital statistics data from the CDC WONDER system.

# Number of Minnesota Cocaine Deaths, 2000-2017



# Psychostimulant Deaths

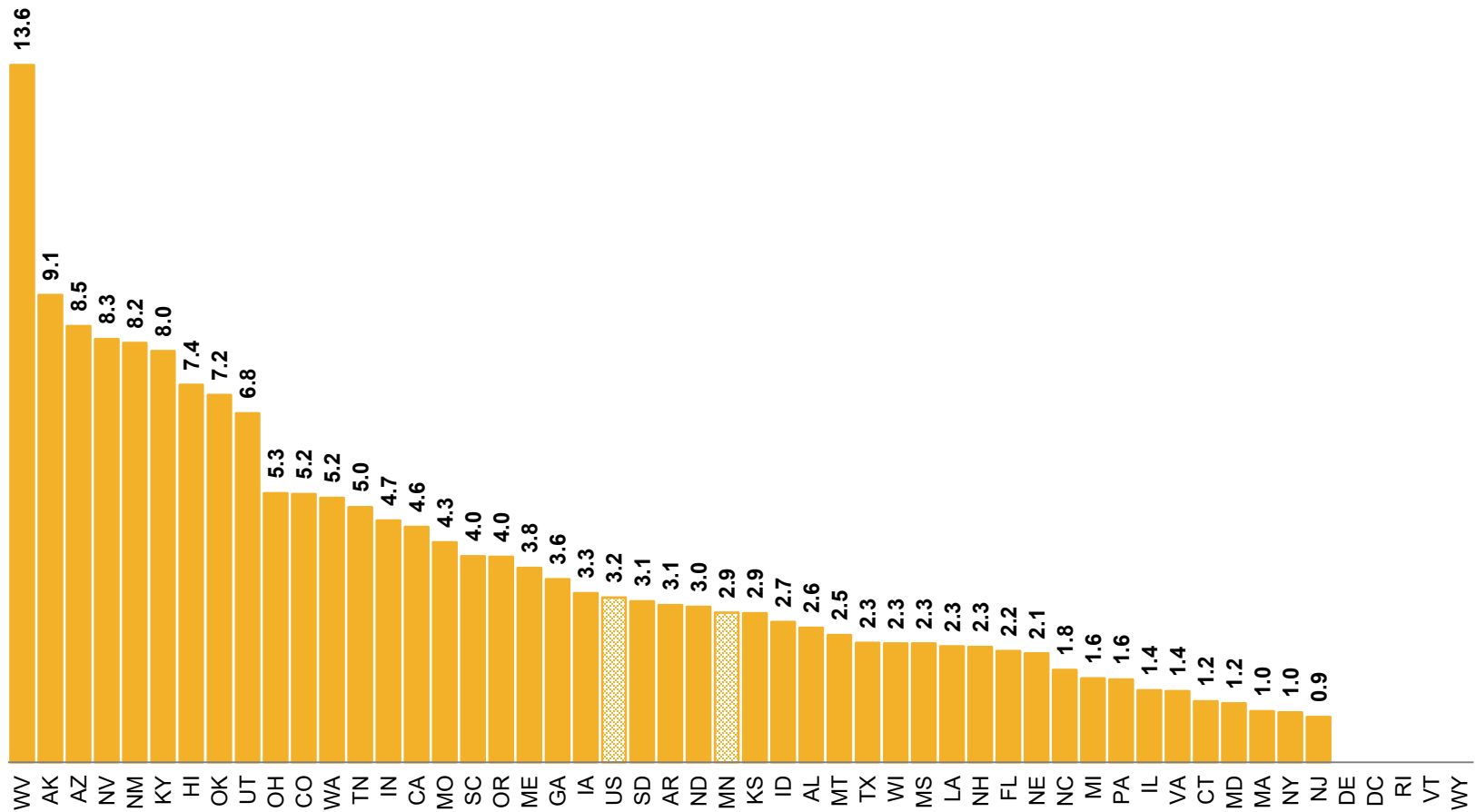
## *Rates per 100,000 People, 2017*



Source: SHADAC analysis of vital statistics data from the CDC WONDER system.

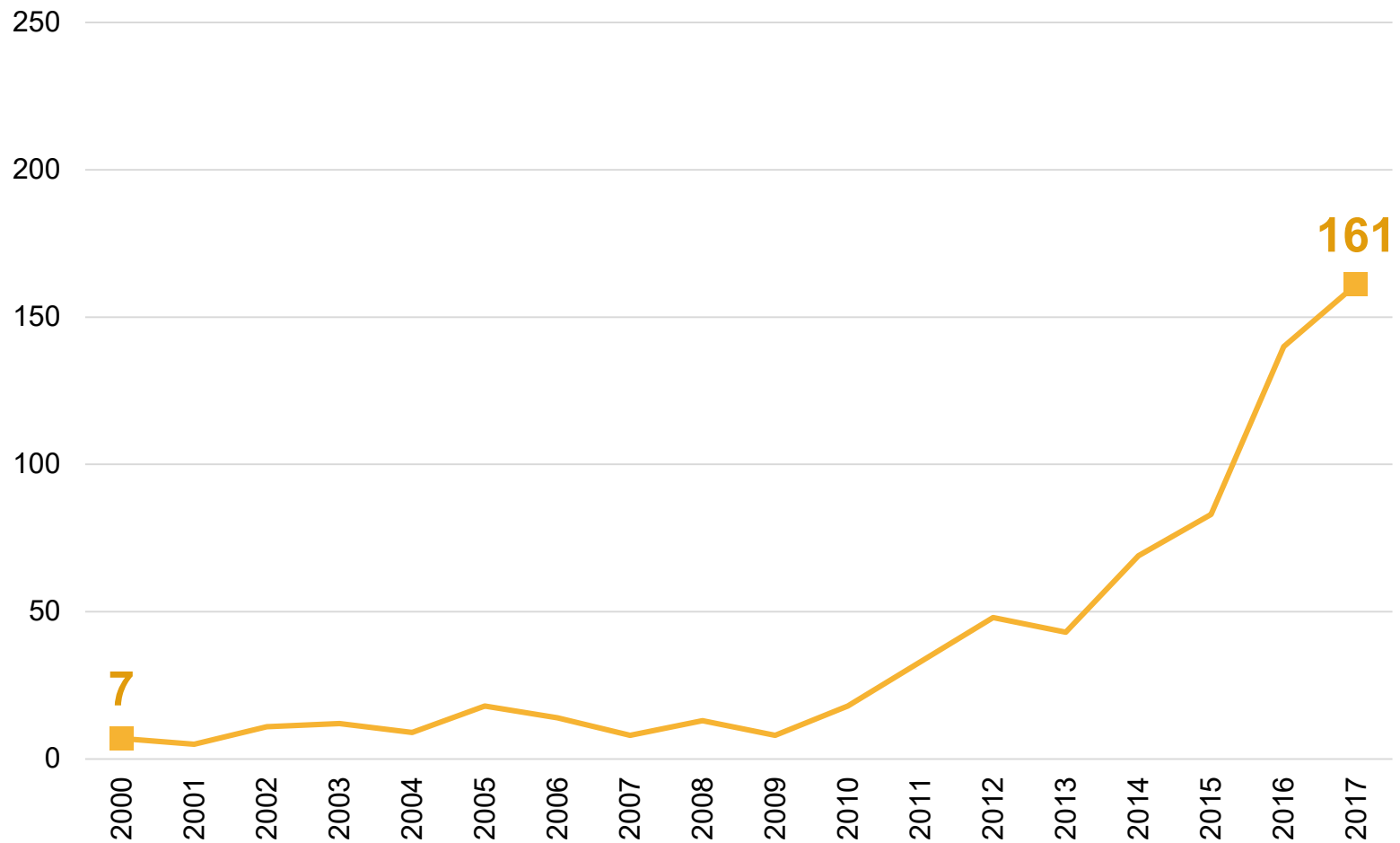
# Psychostimulant Deaths

## *Rates per 100,000 People, 2017*

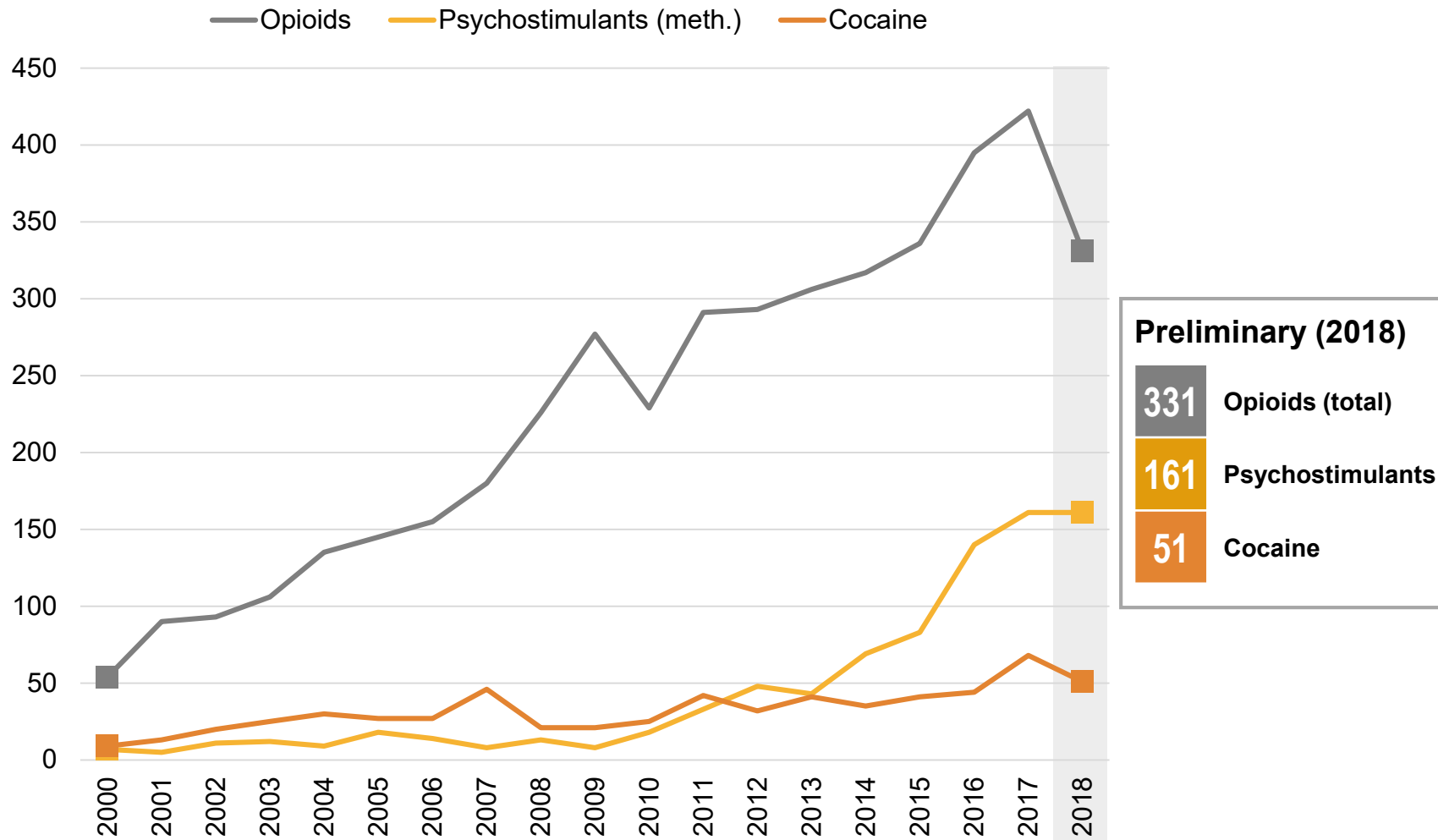


Source: SHADAC analysis of vital statistics data from the CDC WONDER system.

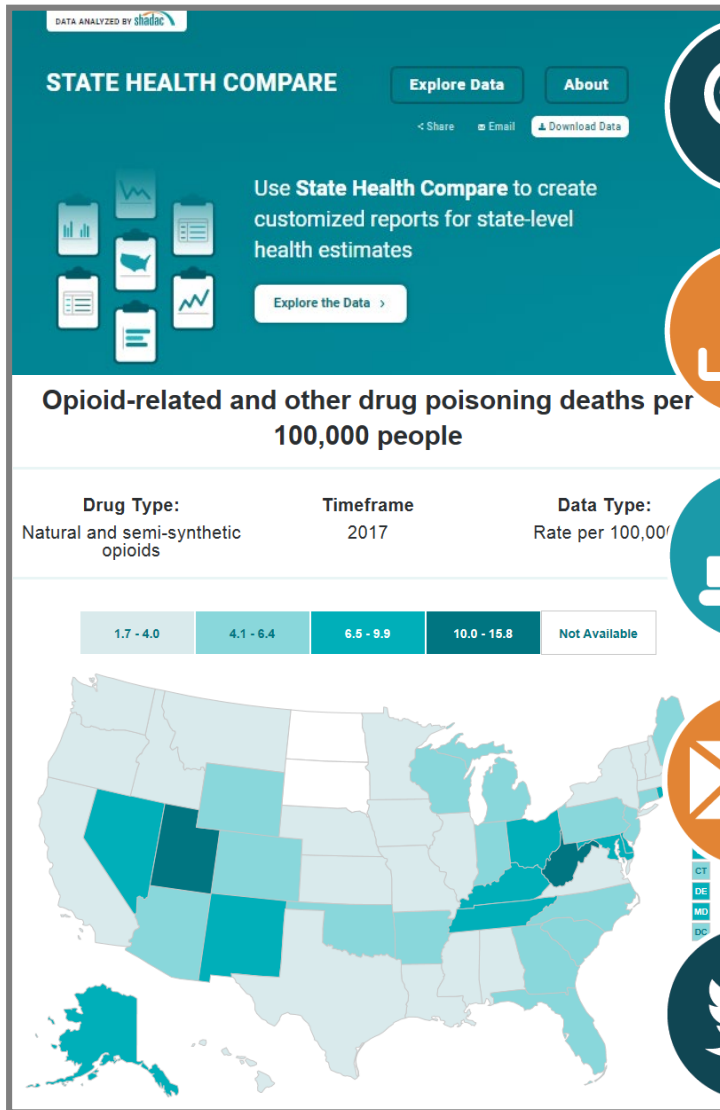
# Number of Minnesota Psychostimulant Deaths, 2000-2017



# Number of Minnesota Drug Overdose Deaths, 2000-2018 (preliminary)



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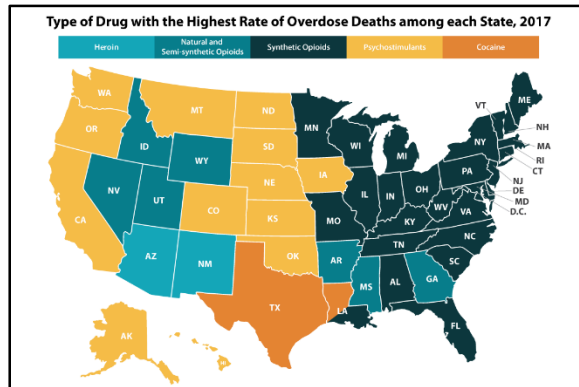
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## [SHADAC.org/resource-opioids](http://SHADAC.org/resource-opioids)



### THE EVOLVING OPIOID CRISIS ACROSS THE UNITED STATES

#### MINNESOTA

For nearly two decades, the United States has experienced a trend of increasing drug overdose deaths. At the national level, the growth in overdose deaths since 2000 was initially driven by natural and semi-synthetic opioids—largely, prescription opioid painkillers such as oxycodone and hydrocodone. However, the crisis has evolved in recent years. Since 2010, rapid increases in deaths from illicit opioids—including heroin and illegally manufactured and trafficked synthetic opioids (e.g., fentanyl)—have outpaced deaths from natural and semi-synthetic opioids. Additional data suggest that the overdose crisis may now be expanding beyond opioids. In recent years, deaths from other illegal drugs such as cocaine and psychostimulants (e.g., methamphetamine) have also grown sharply, which may be due to traffickers often selling illicit drugs alongside each other, sometimes even mixing drugs together.<sup>1</sup>

The data also show that the impact of the overdose crisis varies across states. To that end, SHADAC has developed these state-level snapshots of data on overdose deaths as a resource for people to better understand the crisis in their states—a key step in developing and deploying effective policy solutions. The data presented here come from SHADAC's State Health Compare web tool. Visit [StateHealthCompare.org](http://StateHealthCompare.org) to explore these data in more detail.

In 2017,  
**376**  
opioid overdose  
deaths occurred  
in Minnesota.<sup>2</sup>

#### Trends in Drug Overdose Deaths per 100,000 people, by Drug Type (2000-2017)

Drug Type	Rate per 100,000 people
Heroin	2.0*
Natural and Semi-synthetic Opioids	2.8*
Synthetic Opioids	3.5*
Psychostimulants	2.9
Cocaine	1.3

#### Minnesota vs. United States with Comparison to Motor Vehicle Death Rate

Drug Type	Minnesota Rate	United States Rate	U.S. Motor Vehicle Death Rate
Heroin	2.0*	4.9	1.3
Natural and Semi-synthetic Opioids	2.8*	4.4	1.3
Synthetic Opioids	3.5*	9.0	1.3
Psychostimulants	2.9	3.2	1.3
Cocaine	1.3	4.3	1.3

\*Difference from U.S. average significant at 95% confidence level.

1. Hodgegaard H, Bastian BA, Trinsaad JP, Ripnerer M, Warner M. Drugs most frequently involved in drug overdose deaths: United States, 2011-2016. National Vital Statistics Reports, vol 67 no 8. Hyattsville, MD: National Center for Health Statistics; 2018. <https://www.hhs.gov/nchs/data/nvsr/nvsr67/nvsr67-08-008.pdf>

2. Includes drug poisoning deaths associated with natural and semi-synthetic opioids (e.g., hydrocodone, oxycodone), synthetic opioids (e.g., fentanyl), and heroin.

STATE HEALTH ACCESS DATA ASSISTANCE CENTER

Robert Wood Johnson Foundation

JUNE 2019

## The Opioid Epidemic: National Trends in Opioid-Related Overdose Deaths from 2000 to 2017

**AUTHOR**

**Colin Flanagy, MPA**  
Senior Research Fellow,  
State Health Access Data Assistance Center

**Robert Heet, MPP**  
Research Fellow, State Health Access Data Assistance Center

**Megan Lahr, MPH**  
Research Fellow, University of Minnesota Rural Health Research Center

**INTRODUCTION**

Over the past two decades, the United States has experienced a growing crisis of substance abuse and addiction that is illustrated most starkly by the rise in deaths from drug overdoses. Since 2000, the annual number of drug overdose deaths has quadrupled from 17,500 to 70,000 in 2017.<sup>1,2</sup> Most of these deaths involved opioids, including heroin, prescription painkillers, and synthetic opioids such as fentanyl.<sup>3</sup> In the years since the U.S. Centers for Disease Control and Prevention (CDC) declared overdoses from prescription painkillers an "epidemic" in 2011, the opioid overdose crisis has evolved rapidly from a problem tied mostly to prescription opioid painkillers to one increasingly driven by illicitly trafficked heroin and synthetic opioids. More recently, early evidence suggests that the problem also may be spreading beyond opioids to other illicit drugs, such as cocaine and methamphetamine.

This brief provides high-level information about opioids and opioid addiction, presents the historical context for the epidemic of opioid and related addiction and mortality in the United States, and examines trends in opioid-related mortality across the country and among population subgroups.

**Background**

*Addictive properties of opioids*

To better understand the development of the opioid crisis, it is important to recognize the addictive properties of opioids and the relationship between different opioid types. Generally, there are three kinds of opioids: 1) natural opiates, like morphine, which are made from the opium poppy plant; 2) semi-synthetic opioids, like hydrocodone and oxycodone, which are chemically derived from natural opiates; and 3) fully synthetic opioids, like fentanyl, which are chemically created to mimic natural opiates but are typically much more potent. In addition, opioids can be segmented into illicit opioids (such as heroin) and legal opioids (such as painkillers including oxycodone and hydrocodone).<sup>4</sup> Illicit and legal opioids are chemically similar, stimulating the same opioid receptors in the reward centers in the brain and creating similar feelings of euphoria.<sup>5</sup> Repeated use of opioids can affect the chemistry and wiring of the brain, causing addiction that prompts people to crave and use opioids habitually, even if they recognize their opioid use is causing them harm, and can cause symptoms of withdrawal if people stop using opioids.<sup>6</sup>

Because all opioids act similarly in the same parts of the brain, someone who is chemically dependent on a prescription opioid painkiller and unable to obtain it may switch to an illicit opioid, such as heroin, to relieve their cravings or withdrawal symptoms. In fact, studies have shown that many people who use heroin or misuse prescription opioids began with legitimate prescriptions for their own pain treatment or obtained these painkillers from friends or family members with prescriptions.<sup>7,8</sup> For example, a national study found that 80 percent of people who reported using heroin also reported earlier misuse of prescription opioids.<sup>9</sup> Research also shows that people often advance from misuse of prescription opioids to heroin because heroin provides stronger effects and is often less expensive than prescription opioids.<sup>10</sup>

**SUMMARY**

This brief examines the United States opioid epidemic analyzing trends in overdose deaths from heroin and other opioids, such as prescription painkillers. Using vital statistics data, it also looks at differences in opioid deaths by age, sex, race/ethnicity and urbanization.

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**COMPANION BRIEF**

To read SHADAC's analysis of state-level data on opioid-related overdose deaths, visit: [www.shadac.org/2017OpioidBrief](http://www.shadac.org/2017OpioidBrief)

State Health Access Data Assistance Center



# Thank you

**Colin Planalp, MPA**  
Senior Research Fellow  
[cplanalp@umn.edu](mailto:cplanalp@umn.edu)

State Health Access Data Assistance Center (SHADAC)  
University of Minnesota, Minneapolis  
[www.SHADAC.org](http://www.SHADAC.org)

