



Suicide Rates on the Rise: National and State Trends and Variation from 2000 to 2018

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October 21, 2020

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- Participant audio has been automatically muted and video has been turned off
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- Download the slides at: <https://shadac.org/news/october-21st-webinar-rising-suicide-rates>
- Webinar recording will be posted on SHADAC's website
 - E-mail notice will be sent to participants

Presenters



Lynn Blewett
Director



Carrie Au-Yeung
Research Fellow

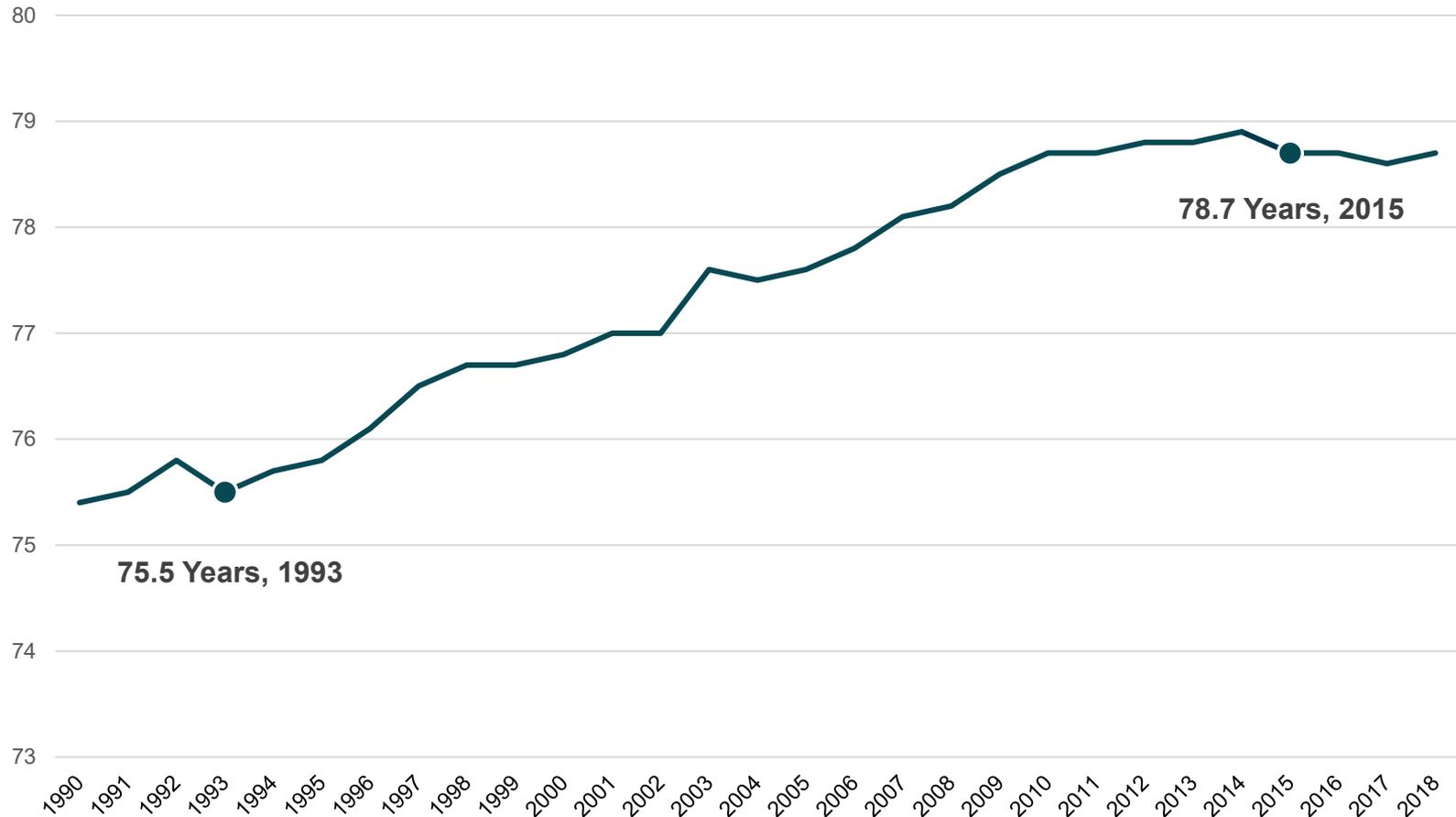


Robert Hest
Research Fellow

Introduction

U.S. Life Expectancy Dropped in 2015 – First Time since 1993

U.S. Life Expectancy, 1990-2018



Source: Bastian B, Tejada Vera B, Arias E, et al. Mortality trends in the United States, 1900–2018. National Center for Health Statistics. 2020. Available at <https://www.cdc.gov/nchs/data-visualization/mortality-trends/index.htm>

The Washington Post

U.S. life expectancy declines for the first time since 1993

PUBLIC HEALTH

Life Expectancy In U.S. Drops For First Time In Decades, Report Finds

December 8, 2016 · 12:02 AM ET

Heard on Morning Edition



The New York Times

Life Expectancy in U.S. Declines Slightly, and Researchers Are Puzzled

Two Consistent Factors

1. Suicide
2. Unintentional injuries, including accidental drug overdoses

Suicide and unintentional injuries are among the top 10 leading causes of death and have been every year since 2008.

Source: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. (2020). WISQARS: Leading Causes of Death Reports, 1981-2018 [Data set].

<https://webappa.cdc.gov/sasweb/ncipc/leadcause.html>

Increasing “Deaths of Despair”

Researchers Anne Case and Angus Deaton at the Brookings Institution have posited that increased “deaths of despair” may be a response to decades of economic and social changes

- Leaving many Americans feeling their life situations have not met their expectations
- Without strong social institutions to help them navigate the turbulence



Study Overview

Study Design: Objectives

- Examine the trend of increasing suicide death rates in the United States from 2000 to 2018 overall and by demographics as well as by suicide method (firearm vs. non-firearm)
 - Demographics: Age, sex, race/ethnicity, and urbanization
- Examine how suicide rates vary at the state level, how state trends compare to the U.S. trend, and how states differ from one another in rates of suicide by method

Study Design: Data

- Age-adjusted suicide death rates from CDC's National Vital Statistics System for 2000 to 2018 (accessed through CDC Wonder System) for the U.S., all 50 states, and the District of Columbia

*CDC Wonder System: “**Wide-ranging Online Data for Epidemiologic Research**” freely available to public health professionals and the public at large.*

Results of quick turnaround online data requests are viewable online and downloadable by exporting a tab delimited file.

Range of Data Topics: Natality, Cancer, Mortality, Population Estimates, Sexually Transmitted Diseases, Tuberculosis, and Vaccine Adverse Events, among others.

Study Design: Methods

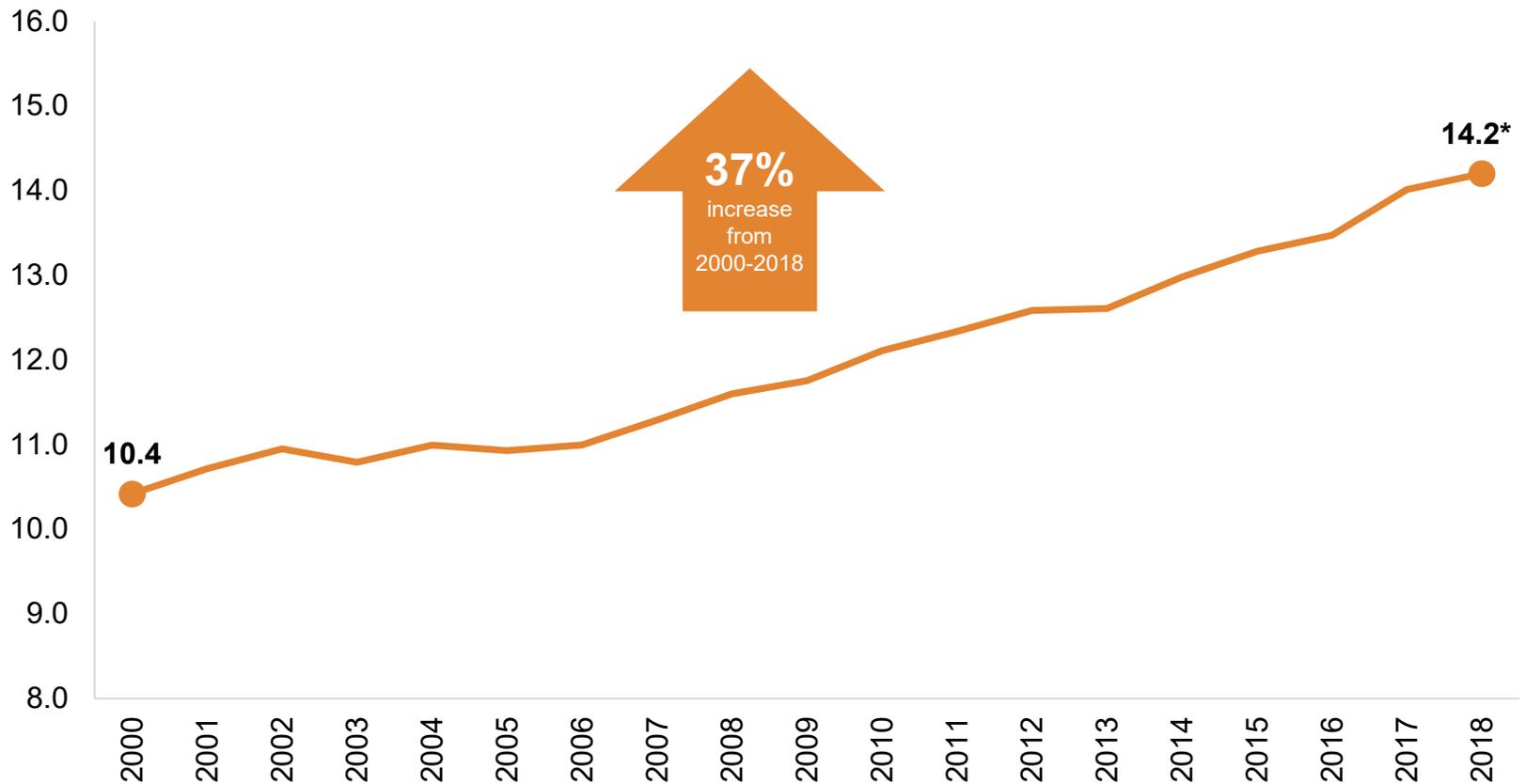
- Test for significant differences in national and state-level rates over time and between states and the U.S., looking at rates overall and by firearm and non-firearm method and across subpopulations

Suicide Death Rates

National Trends and Demographics, 2000-2018

Suicide Death Rate Increasing Over Time

United States Suicide Death Rate per 100,000 People, 2000-2018

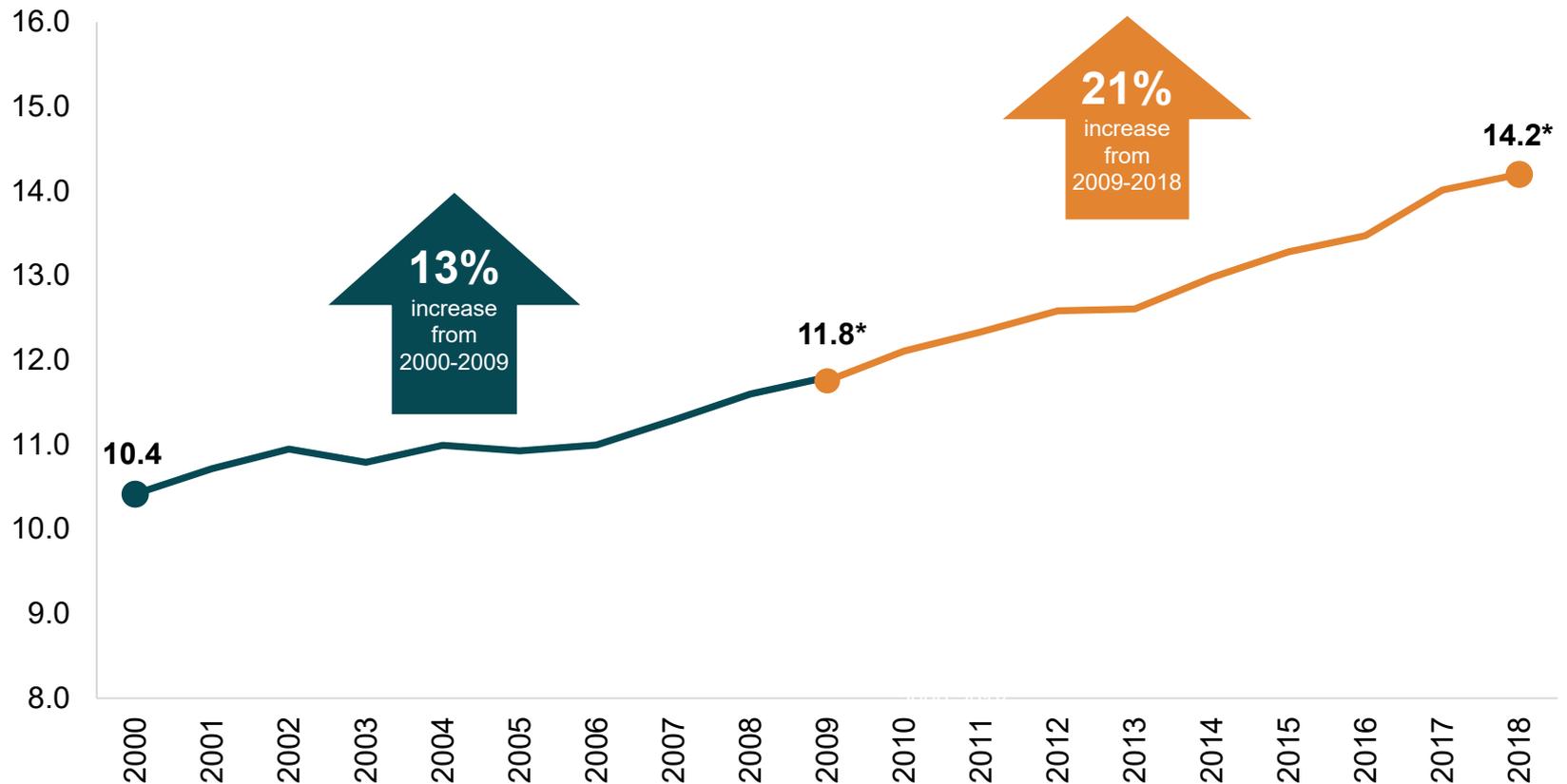


*Statistically significant increase at 95% level.

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

Suicide Death Increases Are Accelerating

Increases in United States Suicide Death Rates per 100,000 People, 2000-2009 and 2009-2018



*Statistically significant increase at 95% level.

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

2009-2018 Saw More and Larger Increases in Suicide Death Rates

2000-2009

Increases in 5 out of 9 years



Largest annual increase:
0.3 deaths per 100,000 people

2009-2018

Increases in 8 out of 9 years



Largest annual increase:
0.5 deaths per 100,000 people

Suicide Death Rates by Age

Widespread increases of varying magnitude

- Adults 25-64 saw some of largest increases & had rather high rates to begin with
- Children 10-14 had lowest rate but largest increase

United States Suicide Death Rates per 100,000 People by Age, 2000 vs 2018



*Statistically significant difference from 2000 rate at 95% level.

[^]Statistically significant difference from total rate at 95% level.

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

Suicide Death Rates by Sex

Male rates were higher, but female rates increased more quickly

United States Suicide Death Rates per 100,000 People by Sex, 2000 vs 2018



*Statistically significant difference from 2000 rate at 95% level.

^Statistically significant difference from total rate at 95% level.

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

Suicide Death Rates by Race/Ethnicity

Rates up for all groups but higher and grew faster for American Indians and Alaska Natives and Whites

United States Suicide Death Rates per 100,000 People” by Race/Ethnicity, 2000 vs 2018



*Statistically significant difference from 2000 rate at 95% level.

^Statistically significant difference from total rate at 95% level.

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

Suicide Death Rates by Urbanization

Rates lowest in large metros but up for all areas
Rates grew more quickly in non-metro (rural) areas

United States Suicide Death Rates per 100,000 People by Urbanization, 2000 vs 2018



*Statistically significant difference from 2000 rate at 95% level.

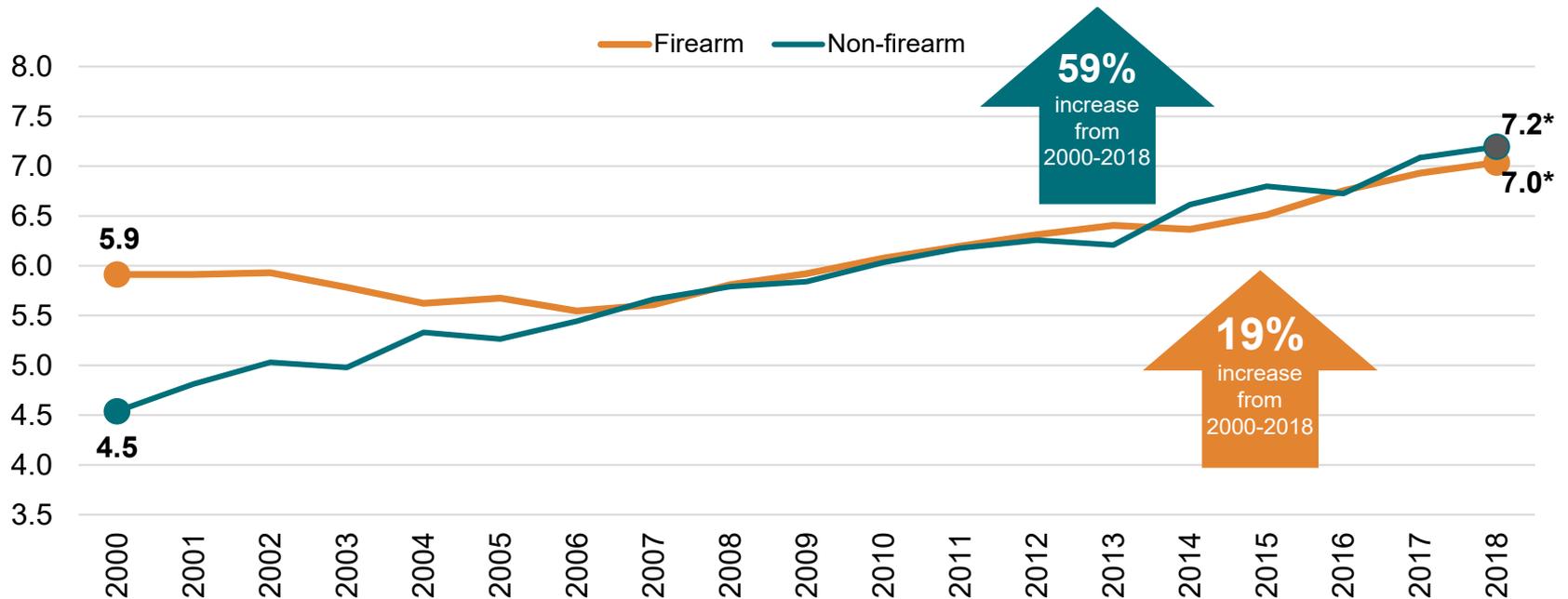
^Statistically significant difference from total rate at 95% level.

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

Suicide Death Rates by Method

Rates grew for both firearm and non-firearm methods
Rates grew more quickly for non-firearm methods

**United States Suicide Death Rates per 100,000 People
by Firearm and Non-Firearm Methods, 2000 vs 2018**



*Statistically significant difference from 2000 rate at 95% level.

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

Suicide Death Rates

State Trends and Variation, 2000-2018

Highest and Lowest State Suicide Rates per 100,000 People, 2018

States with the Highest Suicide Rates

Wyoming	25.2
New Mexico	25.0
Montana	24.9
Alaska	24.6
Idaho	23.9

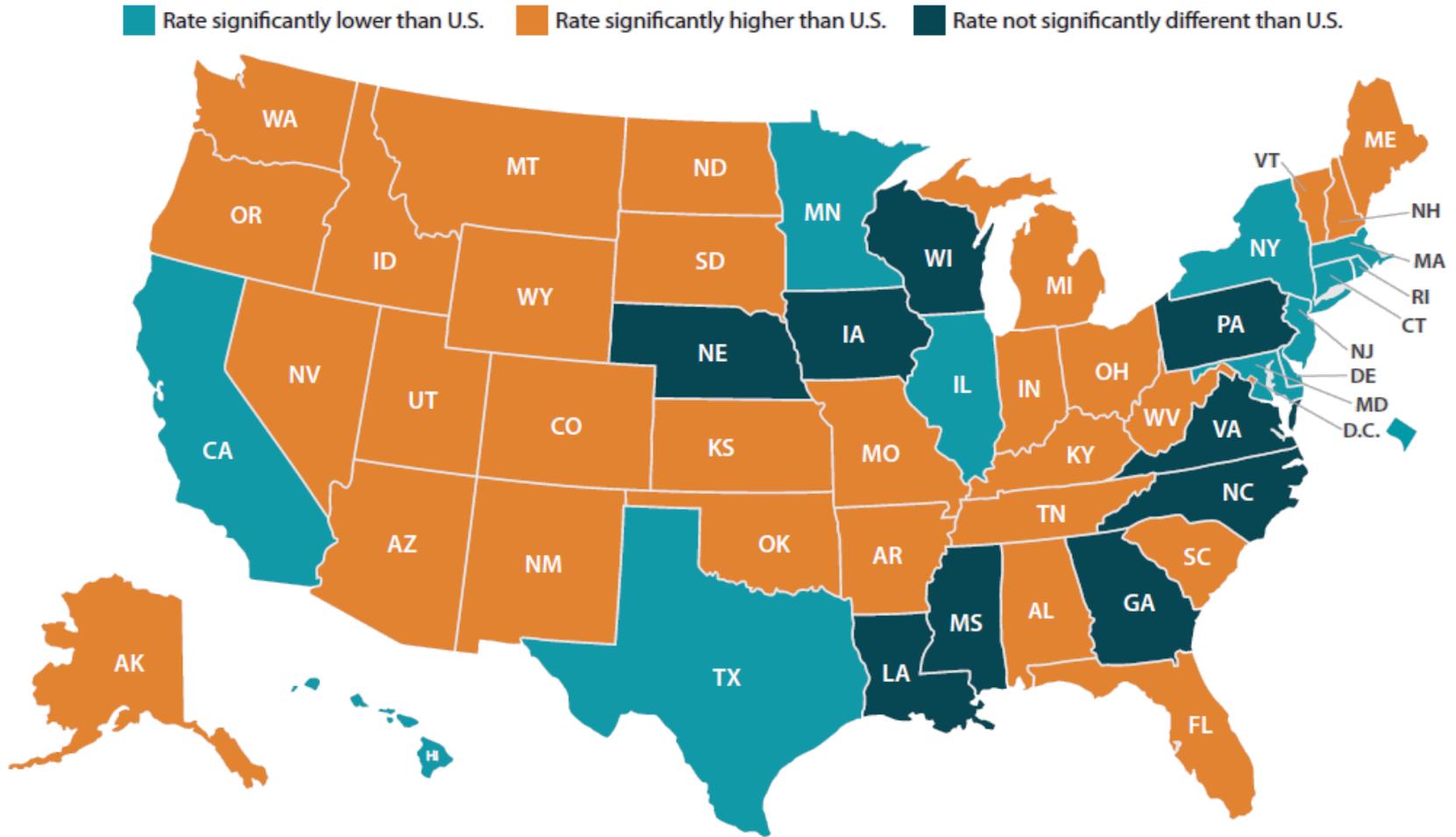
United States Suicide Rate

14.2

States with the Lowest Suicide Rates

District of Columbia	7.5
New York	8.3
New Jersey	8.3
Rhode Island	9.5
Massachusetts	9.9

State Suicide Death Rates per 100,000 People Compared to the U.S. Rate, 2018

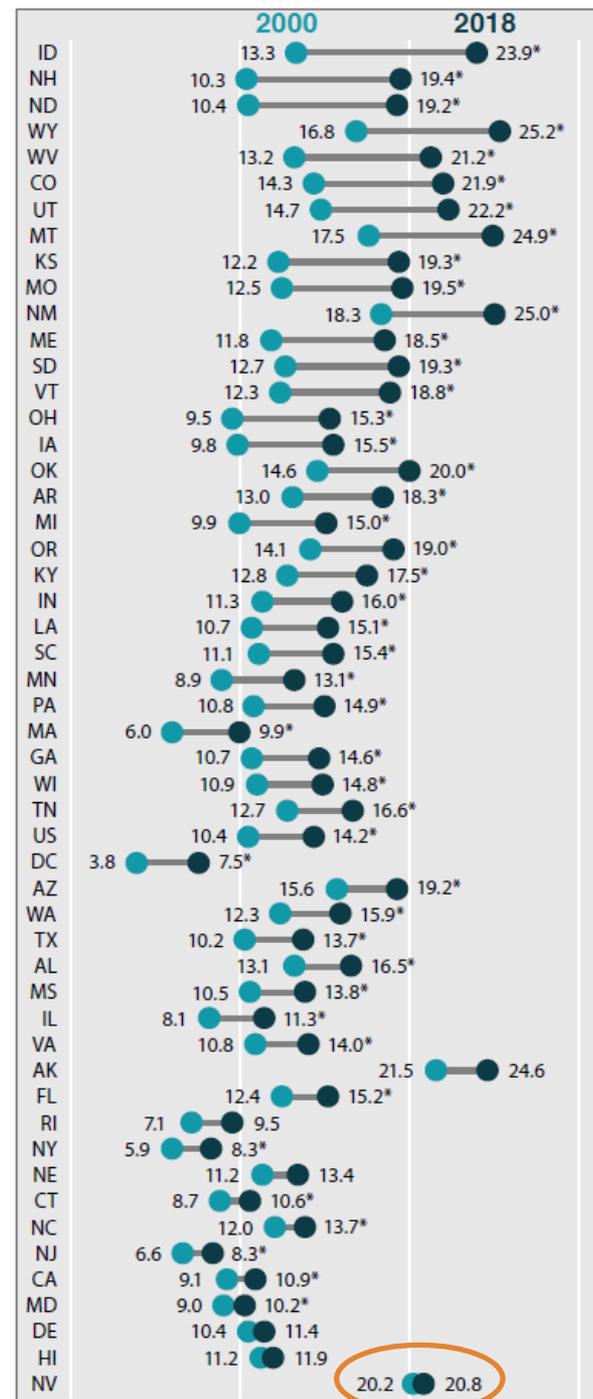


Statistically significant at 95% level.

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

Increases in State Suicide Death Rates per 100,000 People, 2000-2018

- Nearly all states experienced significant increases
- Only six states experienced no significant change: Alaska, Delaware, Hawaii, Nebraska, Nevada, and Rhode Island
- Three of these—Delaware, Hawaii, and Rhode Island—were also significantly below the U.S. rate in 2018



Statistically significant increase since 2000 at 95% level.
 Source: SHADAC analysis of vital statistics data from the CDC WONDER System.

Largest and Smallest Significant Increases in State Suicide Rates per 100,000 People, 2000-2018

States with the Largest Significant Increases

District of Columbia	97%
New Hampshire	88%
North Dakota	84%
Idaho	80%
Massachusetts	66%

Increase in the U.S. Suicide Rate

37%

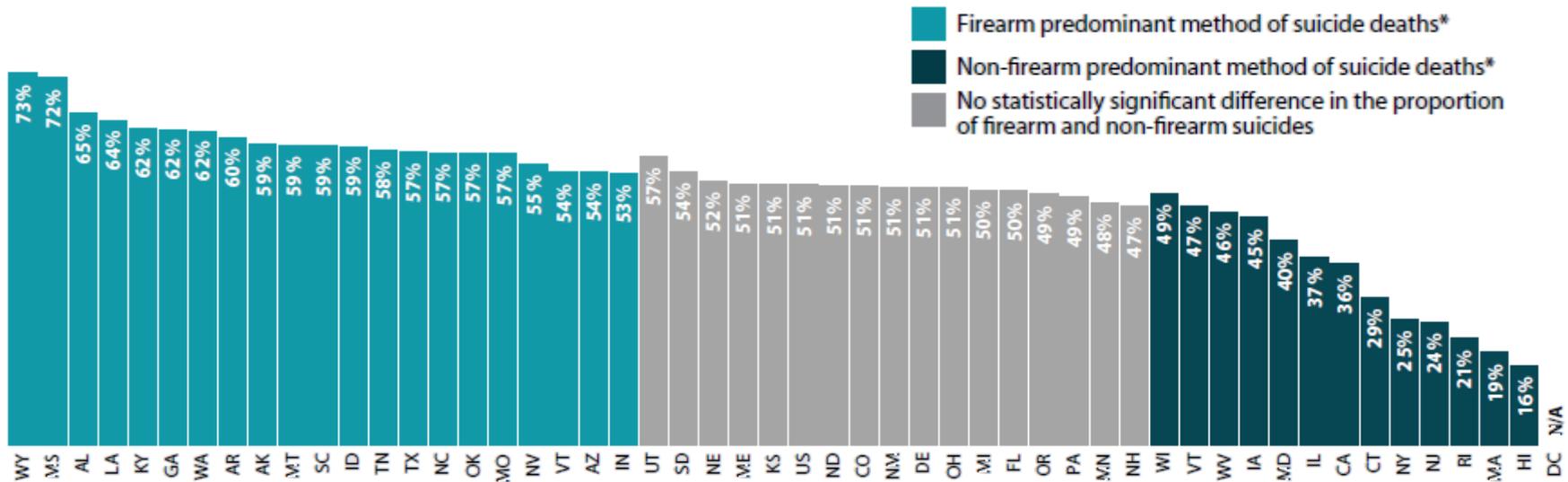
States with the Smallest Significant Increases

Maryland	14%
North Carolina	15%
California	19%
Connecticut	21%
Florida	22%

State Suicide Death Rates by Method (Firearm vs. Non-Firearm), 2018

- Firearms accounted for the significant majority of suicide deaths in 21 states
- Non-firearm methods accounted for the majority of suicide deaths in 13 states
- In 16 states there was no significant difference in the proportion of firearm vs. non-firearm suicides

Percentage of State Suicide Deaths by Firearm, 2018



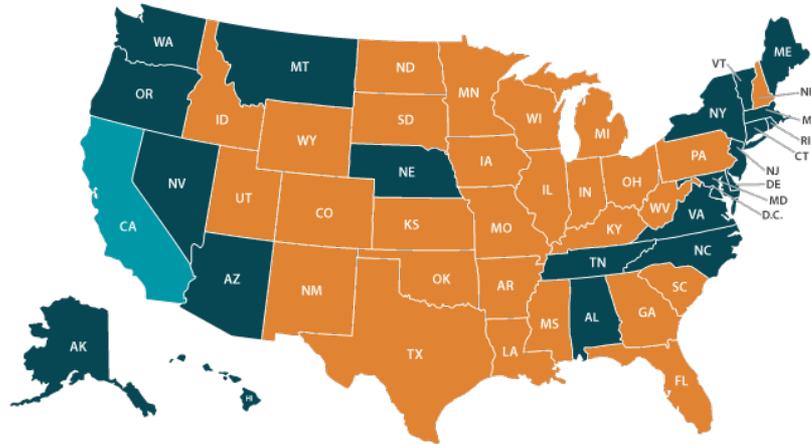
*Statistically significant at 95% level.

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

State Suicide Death Rates by Method (Firearm vs. Non-firearm), 2000-2018

Decrease Increase No Change

Firearm



28 STATES

saw increases in firearm
suicide death rates

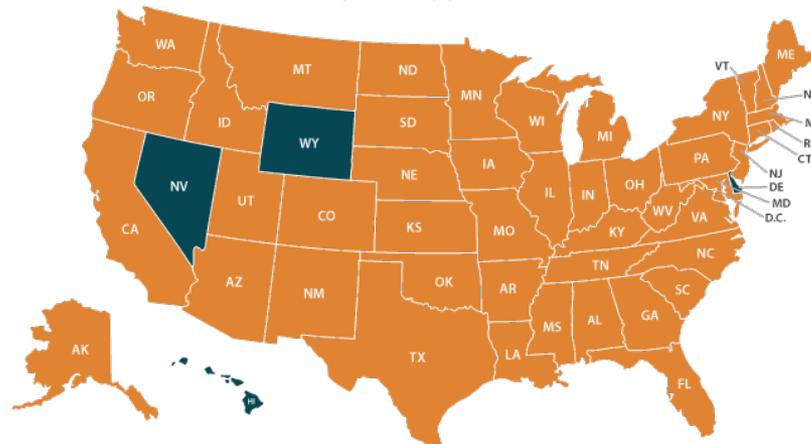
21 STATES

saw no changes in firearm
suicide death rates

1 STATE (CA)

saw a decrease in its firearm
suicide death rate

Non-firearm



46 STATES

saw increases in non-firearm
suicide death rates

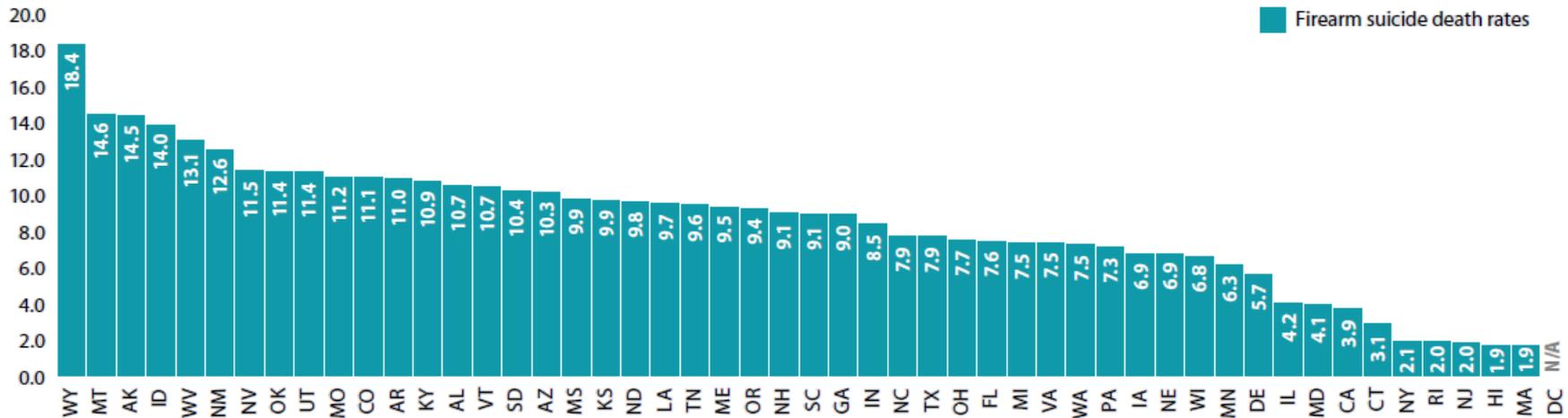
Only **Delaware, Hawaii, Nevada,** and **Wyoming** saw no
changes in their non-firearm
suicide rates

*Statistically significant change at 95% level.

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

State Variation in Firearm Suicide Death Rates, 2018

Firearm Suicide Death Rates per 100,000 People, 2018



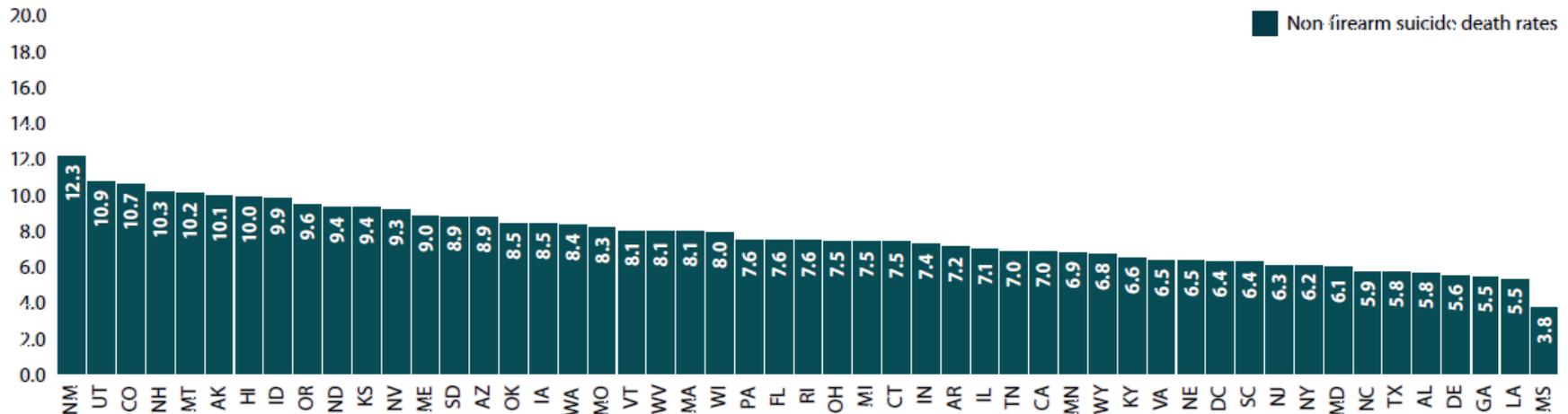
Source: SHADAC analysis of vital statistics data from the CDC WONDER System.

- The firearm suicide death rate in 2018 reached a high of **18.4 deaths per 100,000** people in **Wyoming**
- This high was almost **10 times** the lowest rate of **1.9 deaths per 100,000** people in both **Hawaii** and **Massachusetts**

State Variation in Non-firearm Suicide Death Rates, 2018

- There was less variation among states for non-firearm than for firearm suicide deaths
- Non-firearm suicide death rates were highest at 12.3 deaths per 100,000 people in New Mexico
- This was more than triple the low of 3.8 deaths per 100,000 people in Mississippi

Non-firearm Suicide Death Rates per 100,000 People, 2018



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

Conclusions – National Picture

- Suicide death rates increased nationwide by 37% from 2000 to 2018
 - More than 110,000 additional lives lost than if rate had held steady
- Almost no demographic group has escaped this increase, but some have been more affected than others
 - Working age adults (25-64) high suicide death rates and large increases
 - Children (10-14) low rates but largest increase (95%)
 - Gap between rates for men and women is narrowing as rates have increased for women
 - American Indians and Alaska Natives, closely followed by Whites, had highest rates and largest increases among racial/ethnic groups
 - Rural areas had highest rates and highest growth, although small/medium metros are nearing rural levels
- Increase in U.S. suicide death rate appears to be accelerating, with the increase from 2009-2018 nearly double that for 2000-2009

Conclusions – State Picture

- Nearly all states have seen increases in their suicide death rates since 2000, but some have experienced more dramatic growth than others
 - California, Maryland, and North Carolina saw increases of 10-20%
 - District of Columbia, Idaho, New Hampshire, and North Dakota saw increases above 80%
- Size of state suicide death rates in 2018 varied widely
 - High of 25.2 deaths per 100,000 people in Wyoming was more than triple the low of 7.5 deaths per 100,000 people in the District of Columbia
- Substantial variation in predominant method of suicide by state
 - Firearms accounted for only 16% of suicide deaths in Hawaii but for 73% in Wyoming
- State-level data, like the national data, indicate that the increase in suicide rates over the past two decades may be accelerating
 - 22 states experiencing suicide death rate increases from 2000 to 2009 and 40 states and the District of Columbia seeing increases from 2009 to 2018

Suicide Rates in the Context of COVID-19

- National mortality data for 2020 won't be available until late 2021 at the earliest
- COVID-19 is exacerbating risk factors for suicide such as social isolation, economic stress, and grief
- According to June 24-30, 2020, survey data from the CDC's *Morbidity and Mortality Weekly Report*
 - Almost one-third of U.S. adults reported symptoms of clinical anxiety and depression related to COVID-19
 - Almost 10.7% of respondents from June 24-30, 2020, reported suicidal ideation within the previous 30 days—more than twice the 4.3% of respondents reporting suicidal ideation in 2018

Source: Centers for Disease Control and Prevention (CDC). (2020, August 14). Mental Health, Substance Use, and Suicidal Ideation During the COVID-19 Pandemic –United States, June 24, 30, 2020. *Morbidity and Mortality Weekly Report*, 69(32), 1049-1057. https://www.cdc.gov/mmwr/volumes/69/wr/pdfs/mm6932-H.pdf?deliveryName=USCDC_921-DM35222

State and National Issue Briefs

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STATE HEALTH ACCESS DATA ASSISTANCE CENTER

Robert Wood Johnson Foundation

JUNE 2020

Suicide Rates on the Rise: National Trends and Demographics in Suicide Deaths from 2000 to 2018

AUTHORS

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INTRODUCTION

When the U.S. Centers for Disease Control and Prevention (CDC) announced in 2016 that life expectancy in the United States had dropped, the finding made national headlines.¹ Prior to that, U.S. life expectancy hadn't dropped in decades—not since 1993.² Similar findings of further declines in life expectancy announced in 2017 and 2018 showed this decline wasn't a fluke, as data continued to reveal that Americans were leading increasingly shorter lives.³ Although death records show there are multiple causes of death contributing to decreased life expectancy (e.g., increased death rates from lung and Alzheimer's disease), two factors have consistently played a role in the trend: suicide and unintentional injuries, including accidental drug overdoses.^{4,5}

Around the same time the CDC was documenting declines in U.S. life expectancy, researchers from Princeton University began to study death rates and found that the U.S. was unique among industrialized countries. While death rates were declining in other wealthy nations—such as Canada, Japan, and Germany—death rates have been increasing among certain American populations, particularly non-Hispanic whites with lower incomes and lower levels of education.^{6,7} Those same researchers found three main causes of death that accounted for the increased death rates—suicide, drug overdoses, and alcohol-related liver disease—which they called “deaths of despair.” They and other researchers have posited that increased deaths of despair may be a response to decades of economic and social changes, leaving many Americans feeling their life situations have not met their expectations and without strong social institutions to help them navigate through the turbulence.⁸

While recent increases in deaths from drug overdoses, especially opioids, have received substantial attention, the toll of other deaths of despair is less widely known.^{9,10}

Since 2000, suicide deaths have killed over 700,000 people—more than the number killed by opioids during the same time period.

This issue brief examines the trend of increasing suicide death rates in the United States from 2000 to 2018. Using vital statistics data, it also looks at differences in suicide deaths by demographic groups of age, sex, race/ethnicity and urbanization, as well as by firearm and non-firearm methods of suicide.

State Health Access Data Assistance Center

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Since 2000, suicide deaths have killed over 700,000 people—more than the number killed by opioids during the same time period.

This issue brief examines state-level data on suicide death rates from 2000 to 2018. Using vital statistics data, it examines how state suicide rates vary and how their trends compare to the U.S. trend of increasing suicide rates, as well as differences across the states in rates of suicide by firearm and non-firearm methods.

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<https://www.shadac.org/2020SuicideBriefs>

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Related Content: Drug Overdose Deaths

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AUGUST 2020

Overdose Crisis in Transition: Changing State Trends in a Widening Drug Death Epidemic

STATE BRIEF

INTRODUCTION
In January 2020, the U.S. Centers for Disease Control and Prevention (CDC) announced that the national mortality rate from drug overdoses had declined by 4.6 percent from 2017 to 2018—dropping from about 70,200 to 67,400 deaths.¹ Although drug overdose death rates still hovered near record highs, the improvement offers encouragement that federal, state and local efforts to fight the opioid crisis may be starting to return desired results. However, a deeper examination of the overdose data across individual drug types paints a more nuanced picture.

While the United States has made progress in reducing deaths from some types of opioids, deaths from other opioids have continued to climb. In 2018, U.S. overdose death rates from natural and semi-synthetic opioids (i.e., prescription opioid painkillers) declined significantly compared with the prior year, as did those from the illicit opioid heroin. But death rates from synthetic opioids (e.g., fentanyl) again increased significantly—reaching yet another record high.

Also concerning are emerging signs that the opioid crisis is increasingly broadening to encompass deaths from non-opioid illicit substances; for instance, in 2018, U.S. overdose death rates for cocaine and for psychostimulants (e.g., methamphetamine) increased significantly. Substantial evidence has recently emerged linking the growth in death rates from cocaine and psychostimulants with the opioid crisis. The CDC released research findings that indicate more than 70 percent of cocaine overdoses, and roughly 50 percent of methamphetamine overdoses, also involve opioids,² and U.S. Drug Enforcement Administration (DEA) reports reveal that illicitly trafficked cocaine and methamphetamine have increasingly begun to also contain opioids.^{3,4}

This brief examines variation and changes in opioid-related drug overdose deaths across the states, with a particular focus on changes in death rates in recent years, especially in 2018. National-level analysis can be found in the companion brief, *Opioid Crisis in Transition: Changing National Trends in a Widening Drug Death Epidemic*.

Disaggregating the Crisis
For nearly two decades, the U.S. has experienced statistically significant increases in overdose deaths related to opioids; these increases have occurred throughout the country, with nearly every state experiencing increases in overdose deaths from one or more types of opioids since 2000.⁵ However, while examining composite data on opioids points towards a singular overarching trend of increase, breaking down overdose deaths by individual or related drug types shows a more complex story, with related but distinct trends in mortality for different types of opioids and associated drugs. Additionally, while opioid death rates have increased almost universally across different subpopulations in the U.S. (e.g., age, sex, race/ethnicity, and metropolitan/non-metropolitan communities), not all groups have been affected equally.

This analysis focuses primarily on the three categories of opioids that account for the bulk of opioid overdose deaths, as well as two other categories of non-opioid drugs that evidence suggests are related to the opioid crisis, and are grouped according to how overdose data are recorded.

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COMPANION BRIEF & MORE
To read SHADAC's analysis of national data on opioid-related overdose deaths, visit www.shadac.org/2020_OpioidBriefs
To read more about the history of the opioid crisis and the drugs involved, read SHADAC's earlier papers on the topic:
National and State Trends in Opioid-Related Overdose Deaths from 2000 to 2017

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This brief examines changes in opioid and related drug overdose deaths across the U.S. in recent years. It focuses especially on 2018 overdose death rates and changes from the prior year, as well as differences across groups by age, sex, race/ethnicity, and metro/non-metro communities. State-level analysis can be found in the companion brief, *Opioid Crisis in Transition: Changing State Trends in a Widening Drug Death Epidemic*.

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Question & Answer



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Thank you!

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