



How Social Determinants of Health Impact the Opioid Crisis

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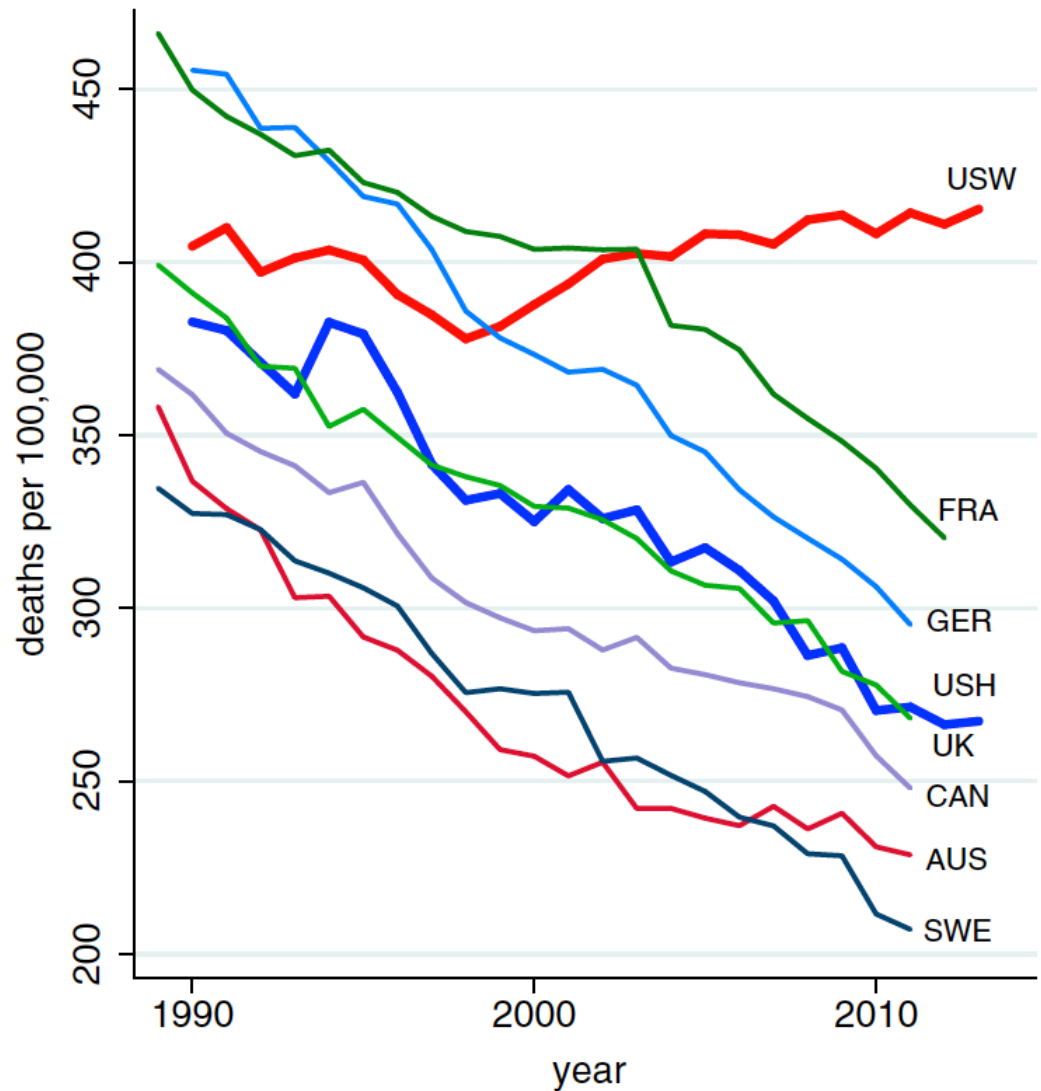
Vice President, Federal Affairs
Physicians for Responsible Opioid Prescribing



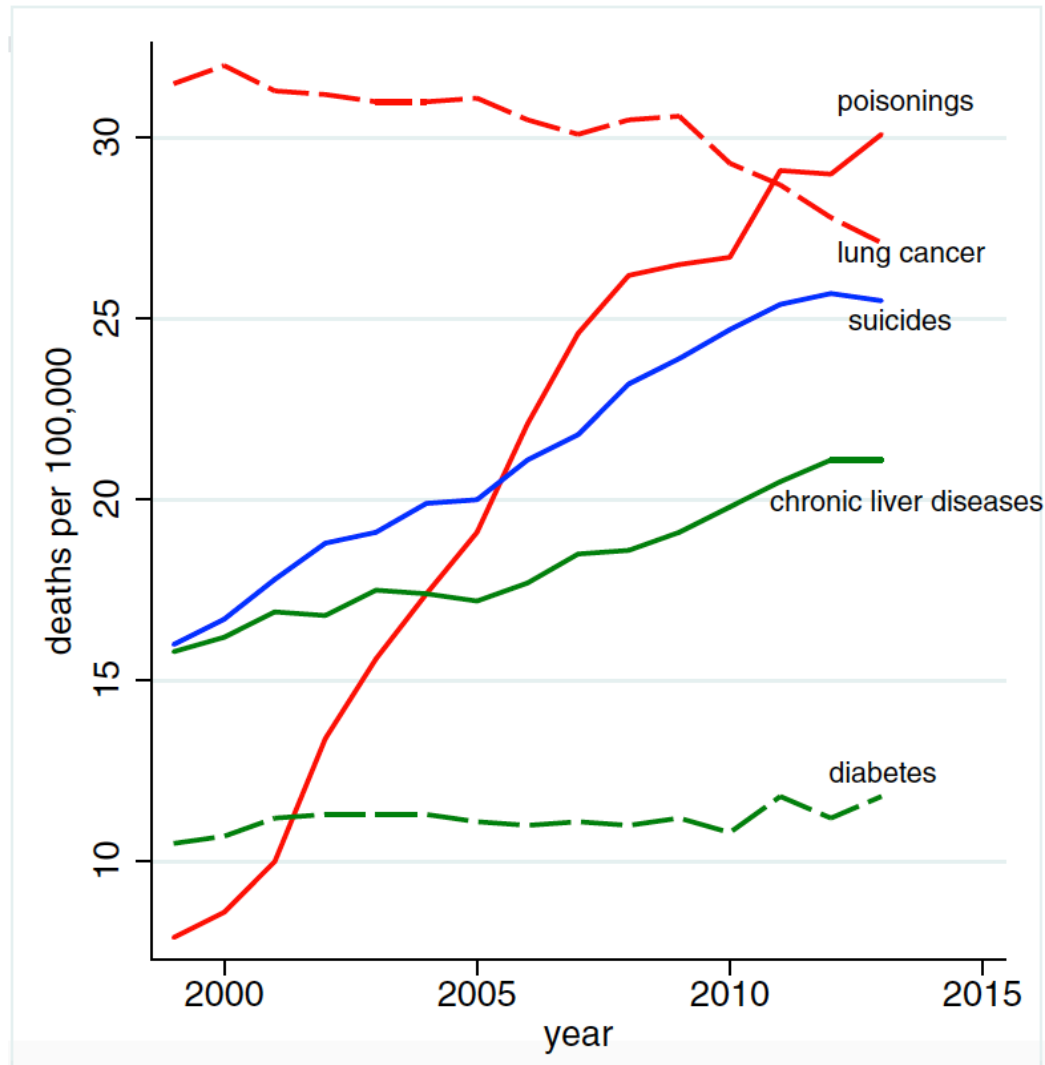
All-cause mortality, ages 45–54 for US White non-Hispanics (USW) , US Hispanics (USH)

France (FRA), Germany (GER),
the United Kingdom (UK),
Canada (CAN), Australia (AUS),
and Sweden (SWE).

Source: Anne Case, Angus Deaton.
Rising morbidity and mortality in
midlife among white non-Hispanic
Americans in the 21st century.
*Proceedings of the National
Academy of Sciences*. November 2,
2015 (online ahead of print).



Mortality by cause, white non-Hispanics ages 45–54



Source: Anne Case, Angus Deaton. Rising morbidity and mortality in midlife among white non-Hispanic Americans in the 21st century. *Proceedings of the National Academy of Sciences*. November 2, 2015 (online ahead of print).

ABSTRACT

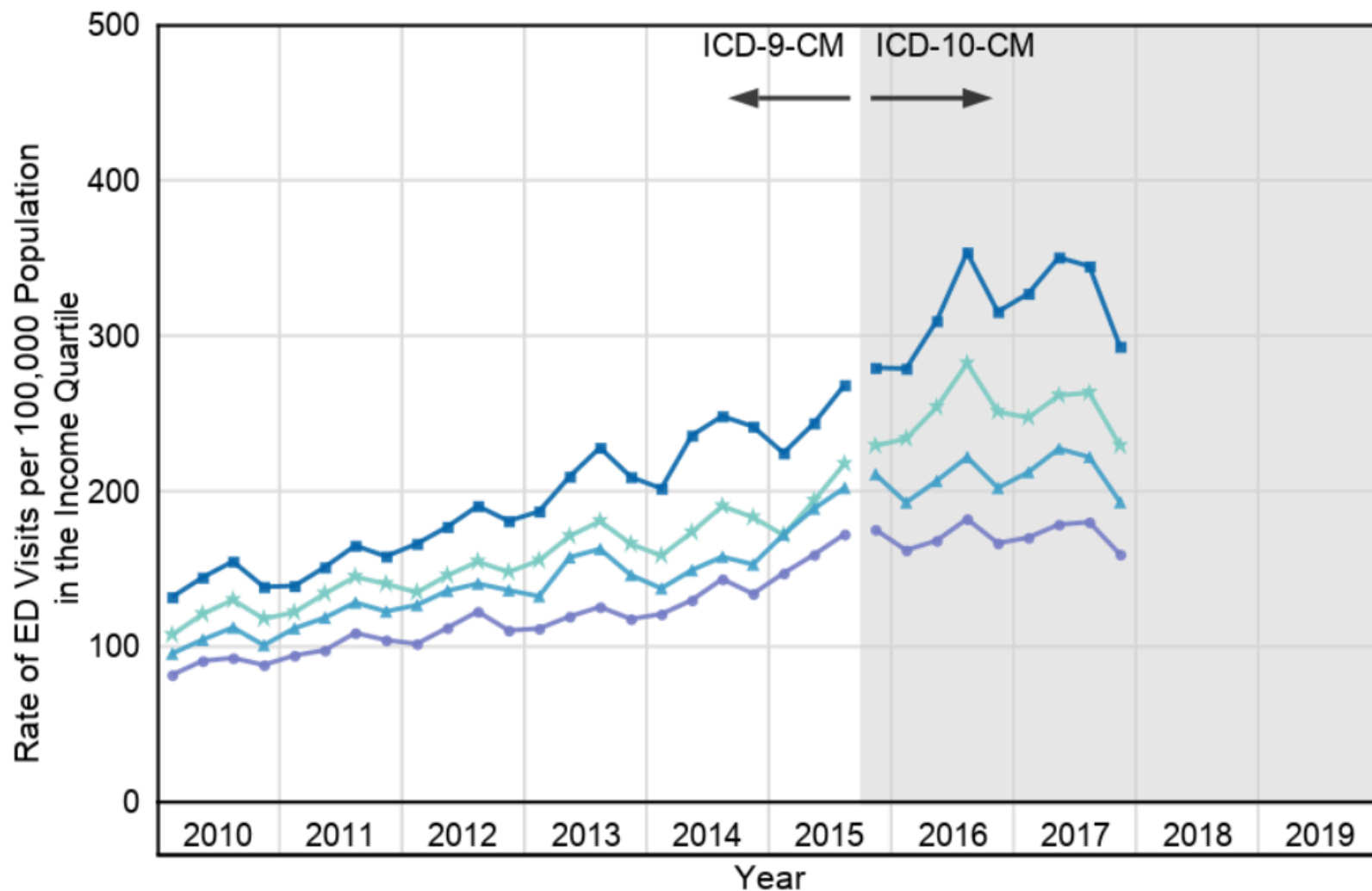
The United States is in the midst of a fatal drug epidemic. This study uses data from the Multiple Cause of Death Files to examine the extent to which increases in county-level drug mortality rates from 1999-2015 are due to “deaths of despair”, measured here by deterioration in medium-run economic conditions, or if they instead are more likely to reflect changes in the “drug environment” in ways that present differential risks to population subgroups. A primary finding is that counties experiencing relative economic decline did experience higher growth in drug mortality than those with more robust growth, but the relationship is weak and mostly explained by confounding factors. In the preferred estimates, changes in economic conditions account for less than one-tenth of the rise in drug and opioid-involved mortality rates. The contribution of economic factors is even less when accounting for plausible selection on unobservables, with even a small amount of remaining confounding factors being sufficient to entirely eliminate the relationship. These results suggest that the “deaths of despair” framing, while provocative, is unlikely to explain the main sources of the fatal drug epidemic and that efforts to improve economic conditions in distressed locations, while desirable for other reasons, are not likely to yield significant reductions in drug mortality. Conversely, the risk of drug deaths varies systematically over time across population subgroups in ways that are consistent with an important role for the public health environment related to the availability and cost of drugs. Put succinctly, the fatal overdose epidemic is likely to primarily reflect drug problems rather than deaths of despair.

Where Have All the Workers Gone?

An Inquiry into the Decline of the U.S. Labor Force Participation Rate

ABSTRACT The U.S. labor force participation rate has declined since 2007, primarily because of population aging and ongoing trends that preceded the Great Recession. The labor force participation rate has evolved differently, and for different reasons, across demographic groups. A rise in school enrollment has largely offset declining labor force participation for young workers since the 1990s. Labor force participation has been declining for prime age men for decades, and about half of prime age men who are not in the labor force may have a serious health condition that is a barrier to working. Nearly half of prime age men who are not in the labor force take pain medication on any given day; and in nearly two-thirds of these cases, they take prescription pain medication. Labor force participation has fallen more in U.S. counties where relatively more opioid pain medication is prescribed, causing the problem of depressed labor force participation and the opioid crisis to become intertwined.

U.S. National: Opioid-Related Hospital Use by Community-Level Income Rate of Emergency Department (ED) Visits

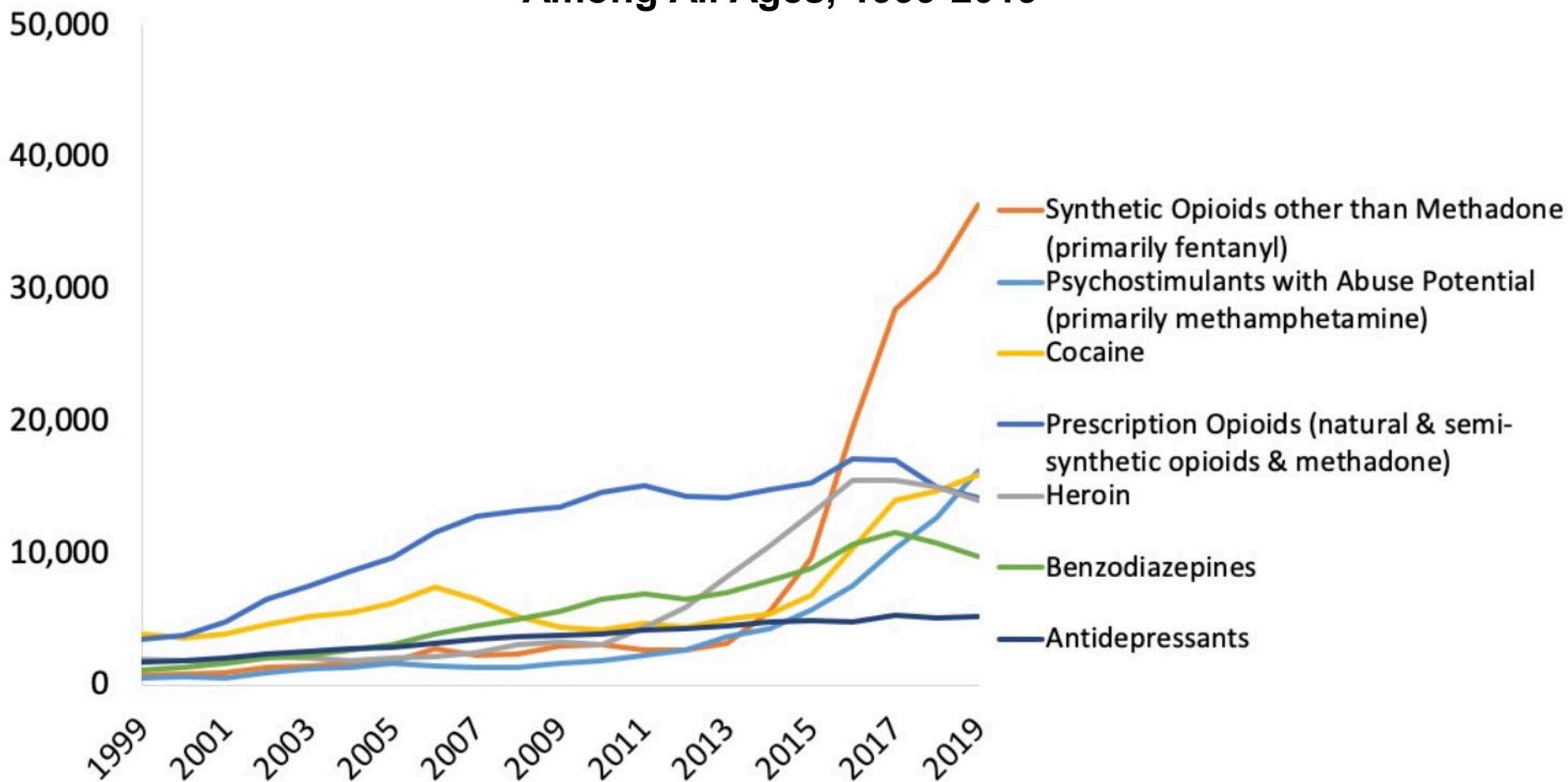


H-CUP
HEALTHCARE COST AND UTILIZATION PROJECT

Income quartile 1 (lowest) Income quartile 2 (2nd lowest)
Income quartile 3 (2nd highest) Income quartile 4 (highest)

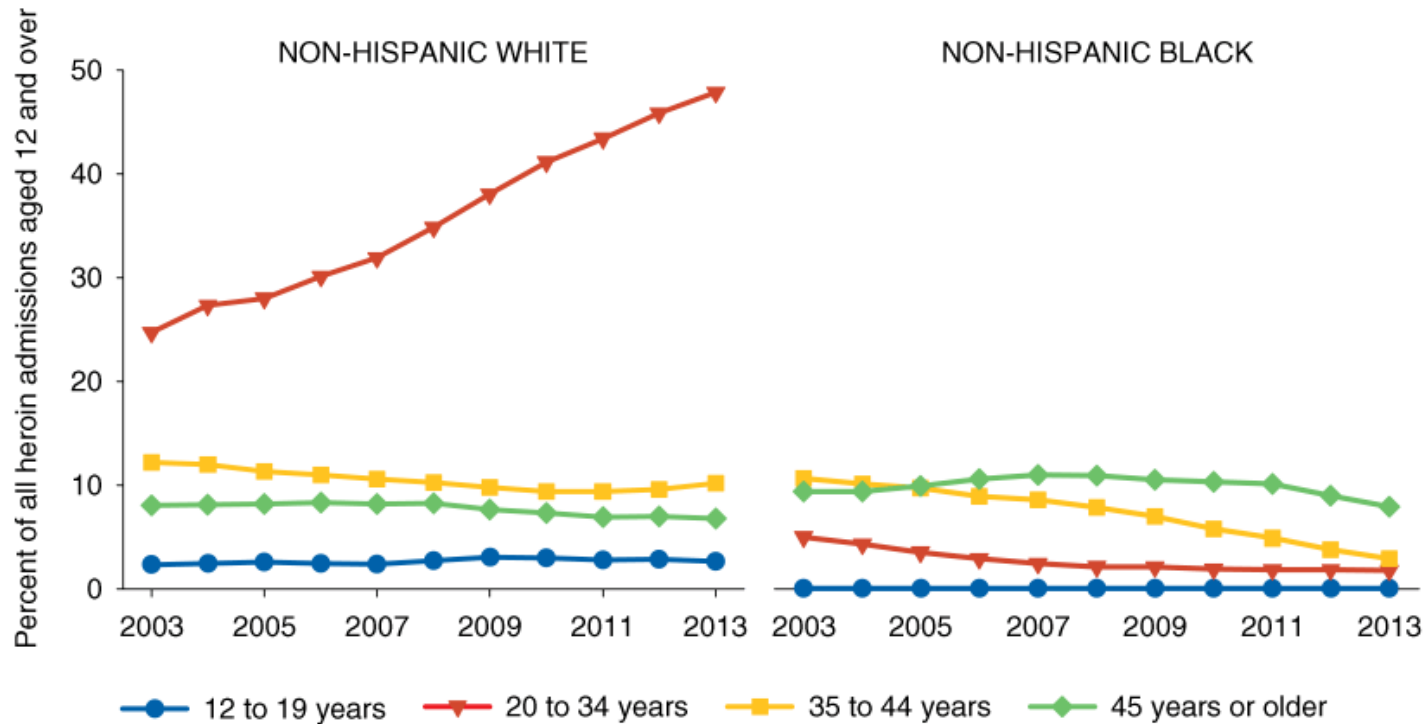
Source: Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), Nationwide Emergency Department Sample (NEDS), 2010-2017 (all available data as of 01/28/2020). Emergency department visits exclude those for patients admitted to the hospital.

National Drug-Involved Overdose Deaths by Specific Category—Number Among All Ages, 1999-2019



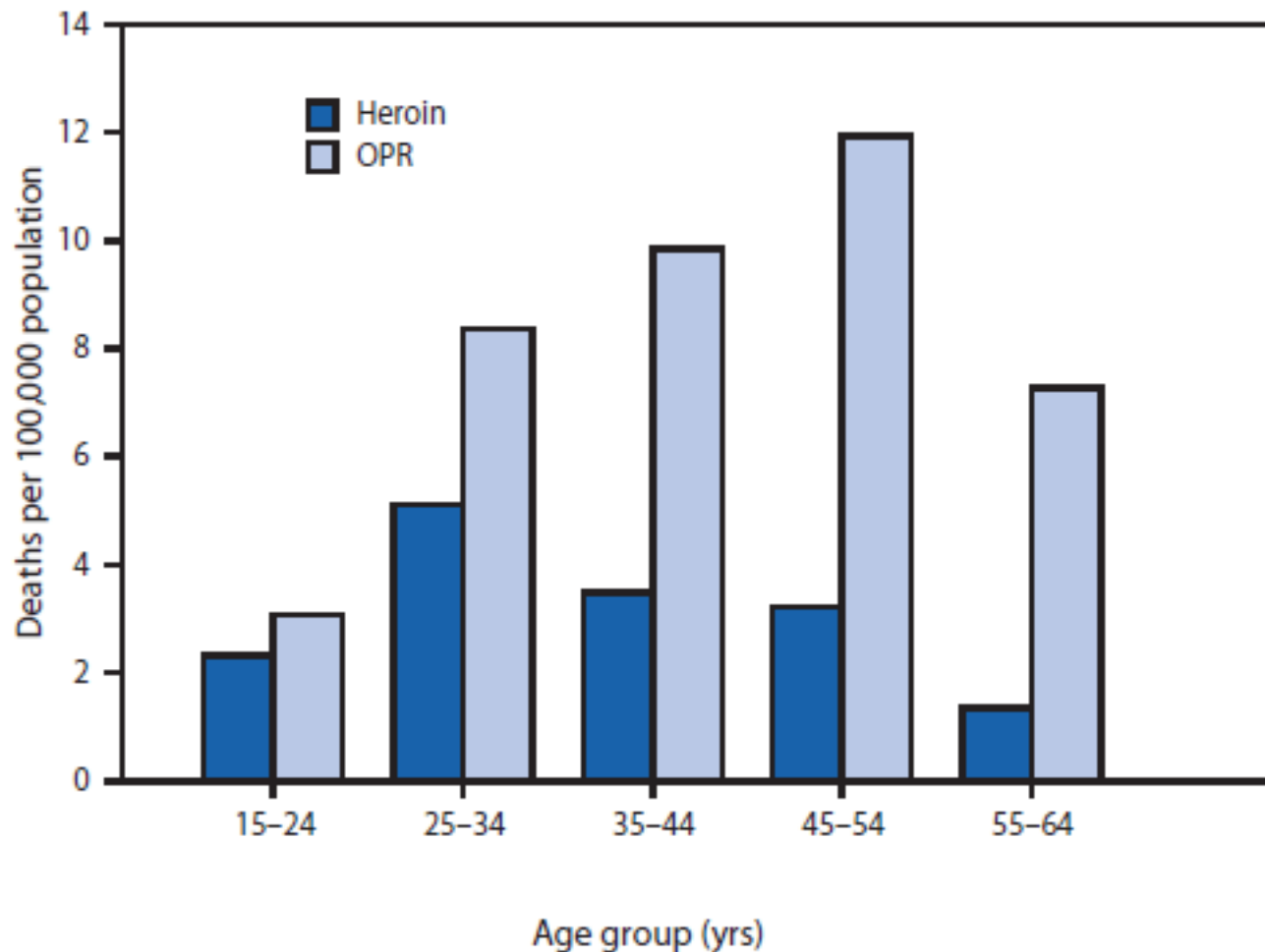
*Includes deaths with underlying causes of unintentional drug poisoning (X40–X44), suicide drug poisoning (X60–X64), homicide drug poisoning (X85), or drug poisoning of undetermined intent (Y10–Y14), as coded in the International Classification of Diseases, 10th Revision. Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2019 on CDC WONDER Online Database, released 12/2020.

Heroin treatment admissions : 2003-2013



SOURCE: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS). Data received through 01.23.15.

Death rates from overdoses of heroin or prescription opioid pain relievers (OPRs), by age group



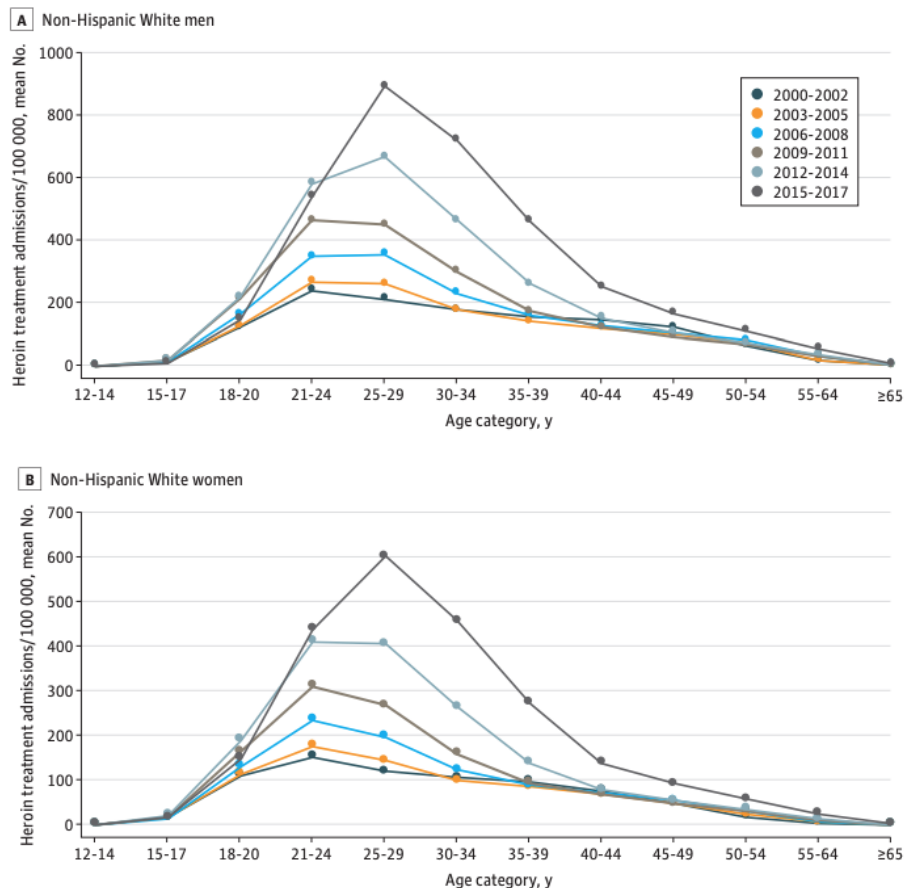
SOURCE: CDC. *Increases in Heroin Overdose Deaths — 28 States, 2010 to 2012*
MMWR. 2014, 63:849-854

Three Opioid-Addicted Cohorts

1. 20-40 y/o, disproportionately white, significant heroin use, opioid addiction began with Rx use (addicted after 1995)
2. 40 y/o & up, disproportionately white, mostly Rx opioids, opioid addiction began with Rx use (addicted after 1995)
3. 50 y/o & up, disproportionately non-white, mostly heroin users, opioid addiction began in teen years with heroin use (addicted before 1995)

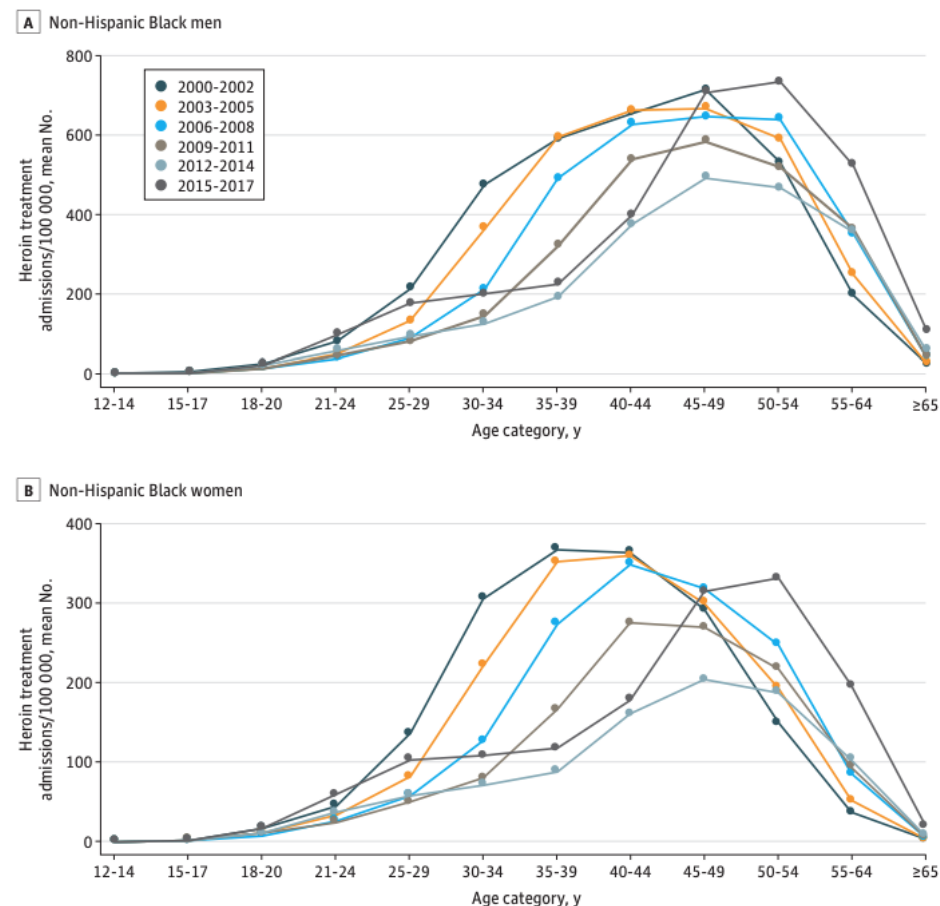
Non-Hispanic Whites

Figure 2. Heroin Treatment Admission Rates by Age Category Among Non-Hispanic White Individuals, US, 2000-2017



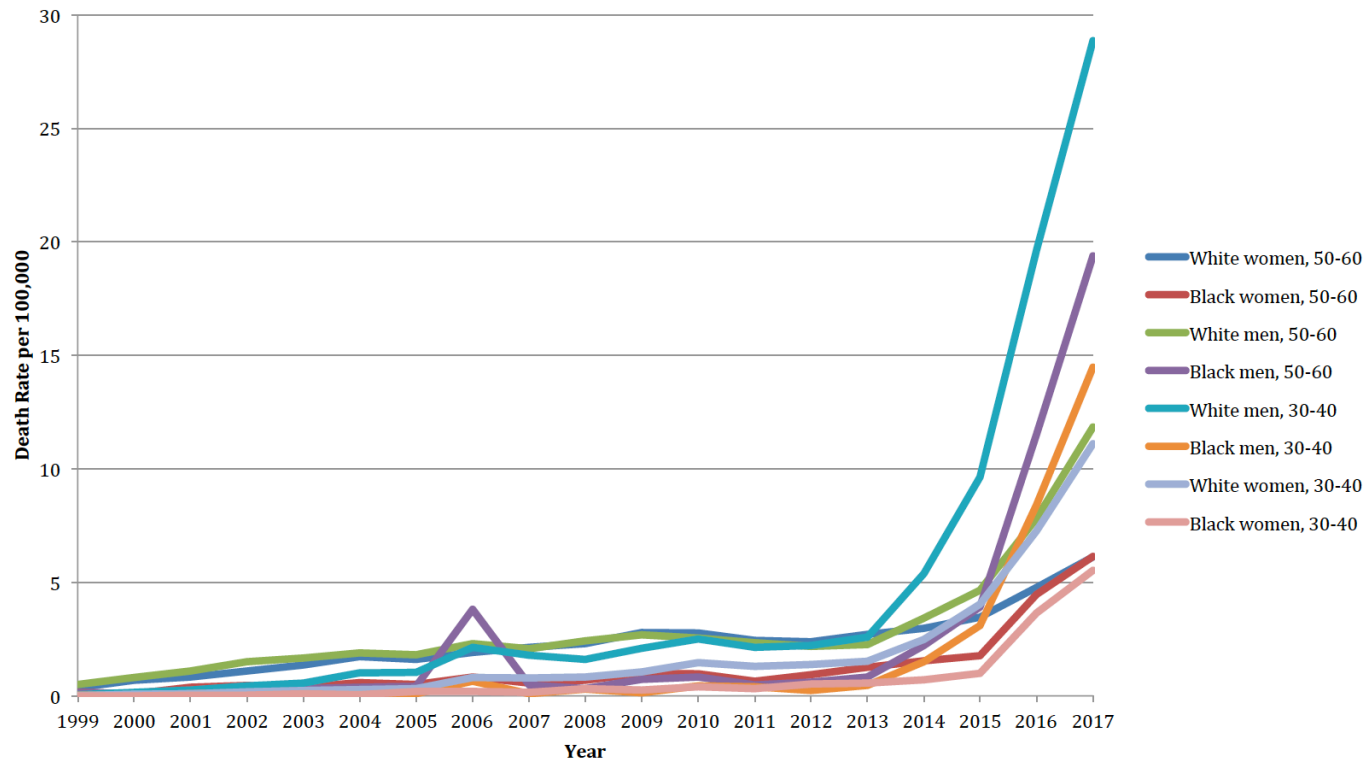
Non-Hispanic Blacks

Figure 1. Heroin Treatment Admission Rates by Age Category Among Non-Hispanic Black Individuals, US, 2000-2017



Source: Warren EC, Kolodny A. Trends in Heroin Treatment Admissions in the United States by Race, Sex, and Age. JAMA Netw Open. 2021 Feb 1;4(2):e2036640. doi: 10.1001/jamanetworkopen.2020.36640.

Opioid Overdose Death Rate per 100,000 (1999-2017) From Fentanyl + No Heroin + Any Other Opioid



SOURCE: CDC WONDER

12 Month-ending Provisional Number of Drug Overdose Deaths by Drug Class

Based on data available for analysis on:

8/1/2021

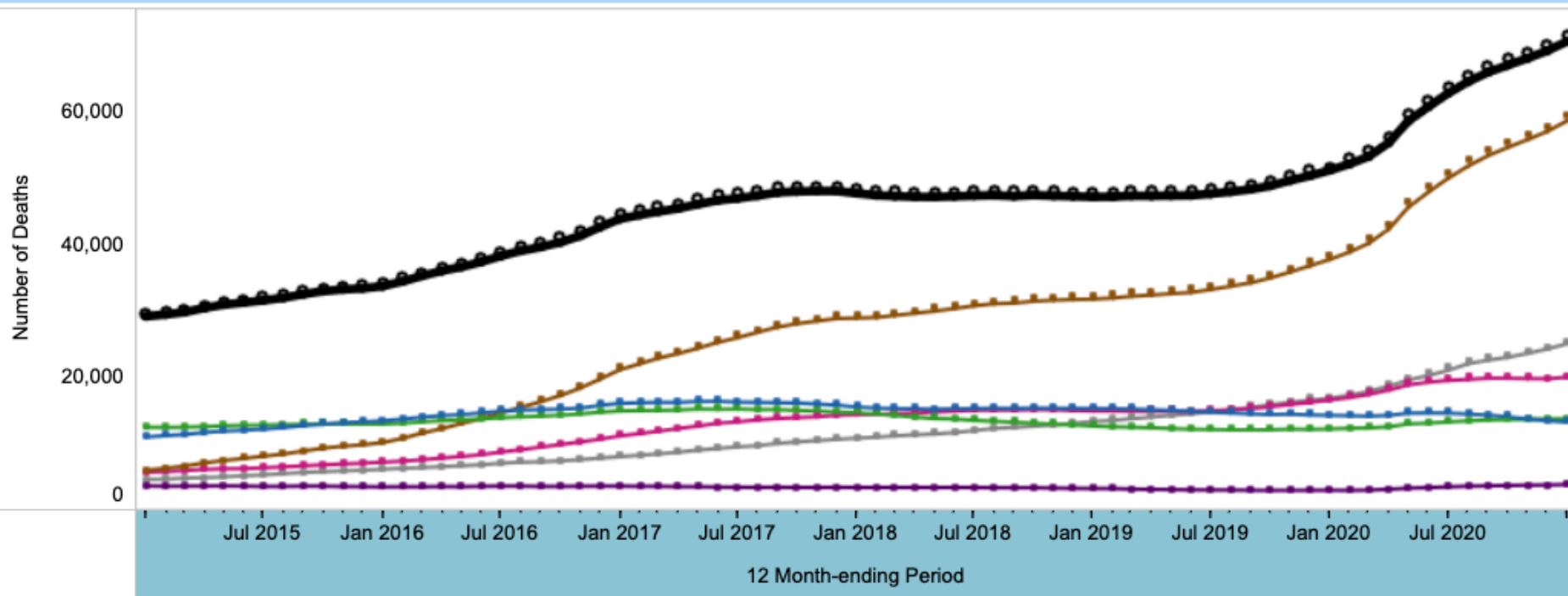
Select Jurisdiction

United States

Select specific drugs or drug classes

(Multiple values)

Figure 2. 12 Month-ending Provisional Number of Drug Overdose Deaths by Drug or Drug Class: United States



Legend for Drug or Drug Class

--- Reported Value

○ Predicted Value

Opioids (T40.0-T40.4, T40.6)

Heroin (T40.1)

Natural & semi-synthetic opioids (T40.2)

Methadone (T40.3)

Synthetic opioids, excl. methadone (T40.4)

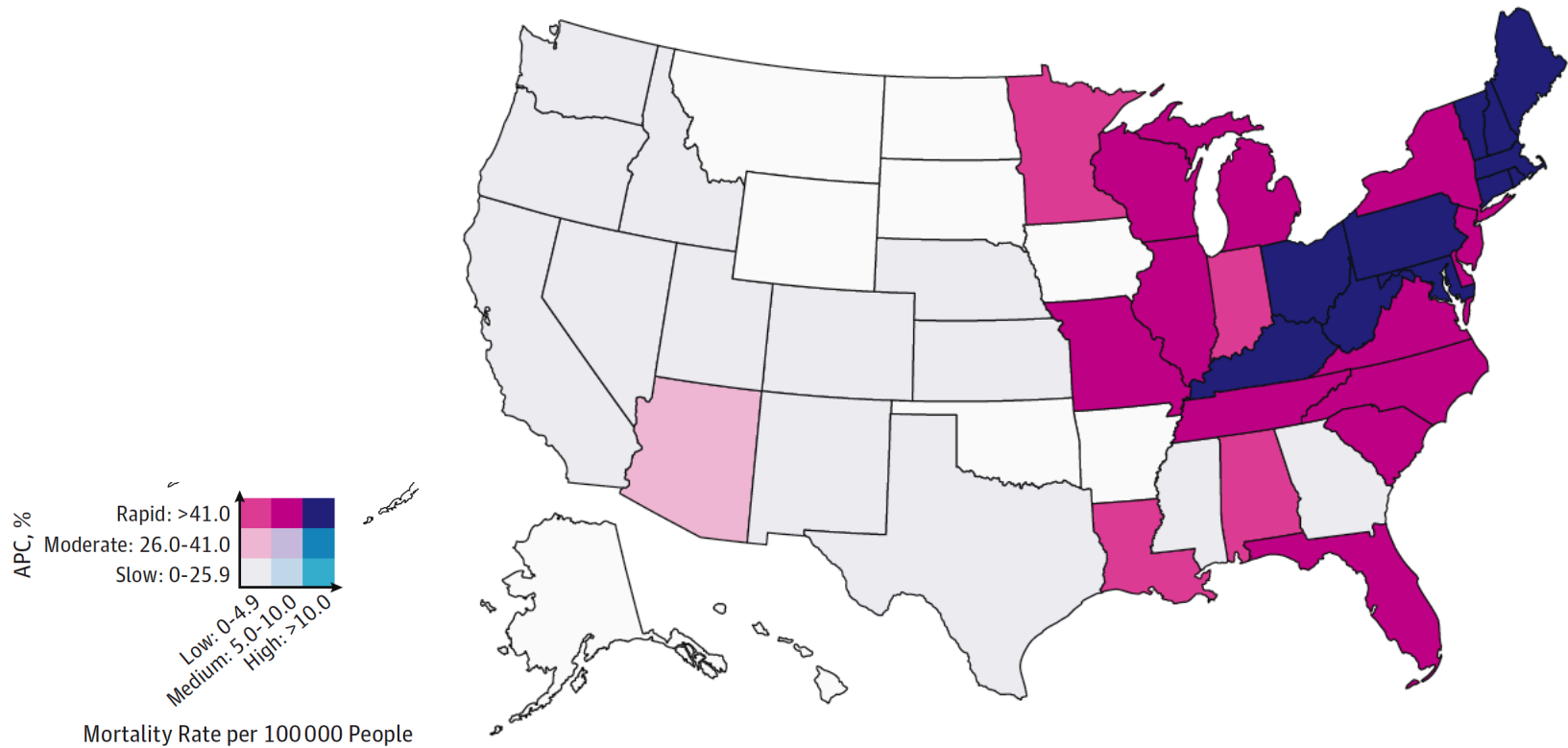
Cocaine (T40.5)

Psychostimulants with abuse potential (T43.6)

Source: National Center for Health Statistics

Growth and Level of the Synthetic Opioid OD Deaths, 2016

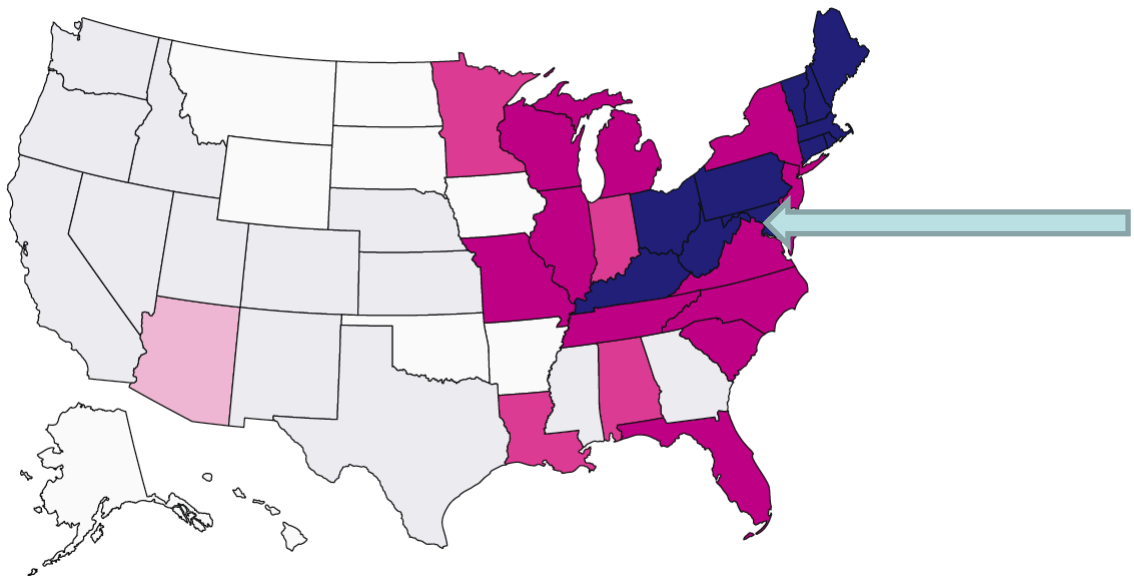
D Synthetic opioids



Source: JAMA Network Open. 2019;2(2):e190040. doi:10.1001/jamanetworkopen.2019.0040

Growth and Level of the Synthetic Opioid OD Deaths, 2016

D Synthetic opioids



The District of Columbia had the fastest rate of increase in mortality from opioids in the country, more than tripling every year since 2013

Source: JAMA Network Open. 2019;2(2):e190040. doi:10.1001/jamanetworkopen.2019.0040

What Is the Opioid Crisis?

In one year, drug overdoses killed more Americans than the entire Vietnam War did

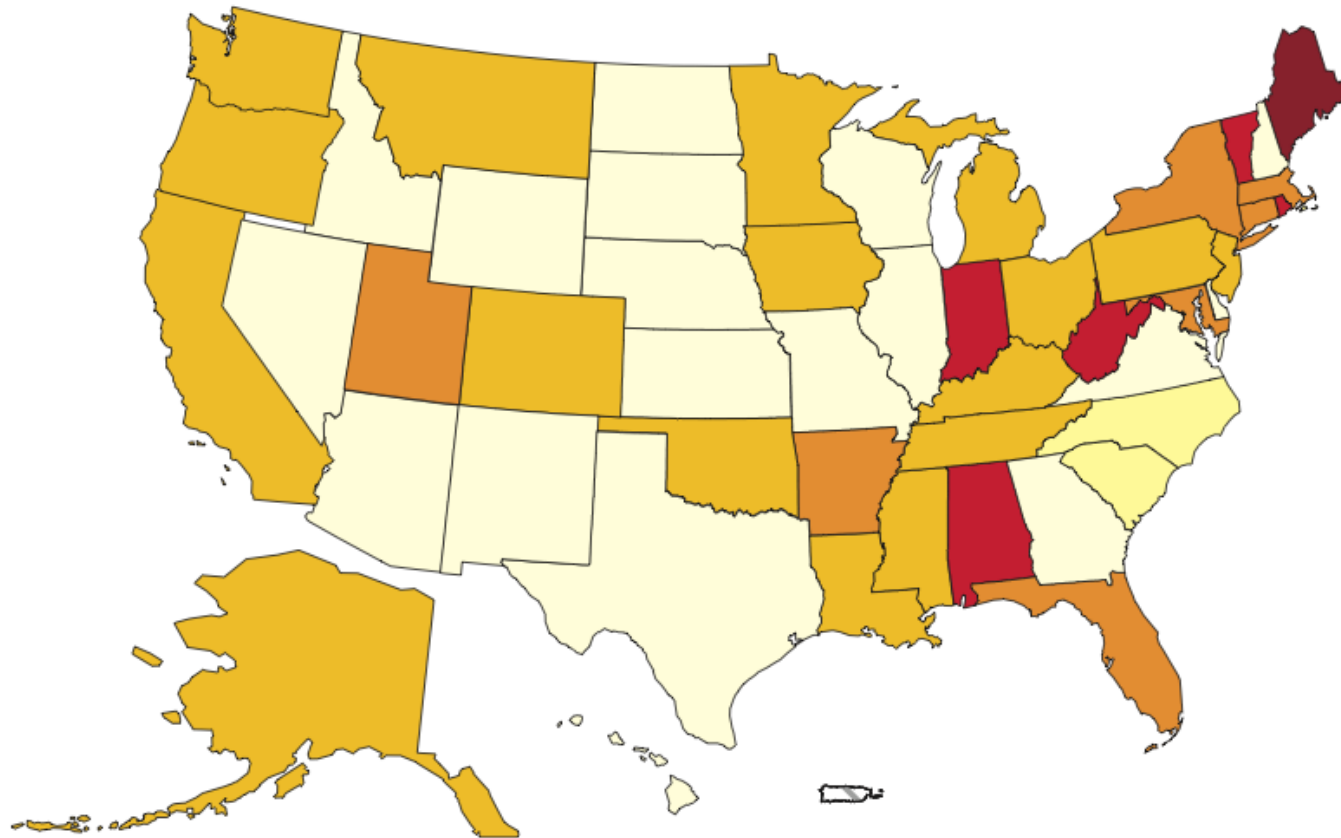
Dramatic Increases in Maternal Opioid Use and Neonatal Abstinence Syndrome

Children of the Opioid Epidemic Are Flooding Foster Homes. America Is Turning a Blind Eye.

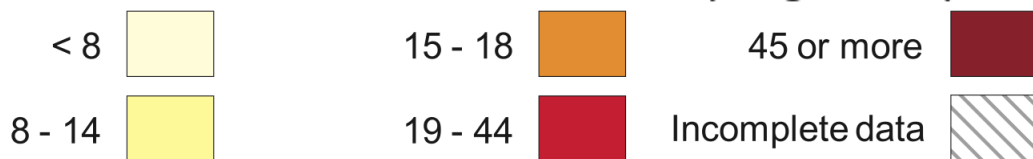
**Drug overdose deaths jump
in 2019 to nearly 71,000, a
record high, CDC says**

How the opioid crisis decimated the American workforce

Primary non-heroin opiates/synthetics admission rates, by State (per 100,000 population aged 12 and over)

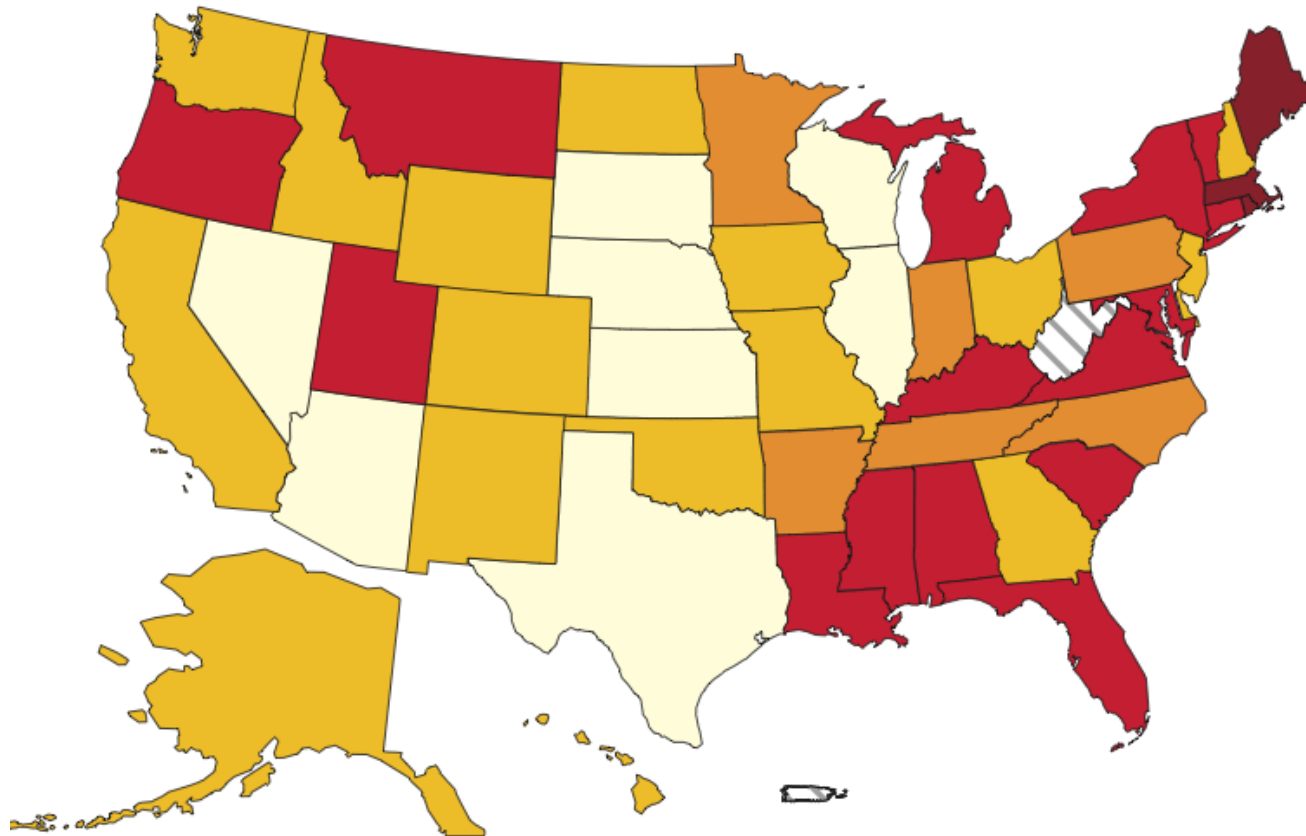


1999
(range 1 - 50)

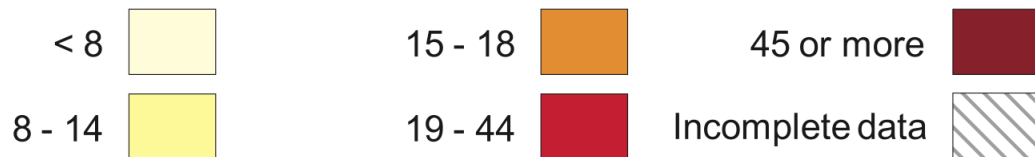


SOURCE: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS). Data received through 11.03.10.

Primary non-heroin opiates/synthetics admission rates, by State (per 100,000 population aged 12 and over)

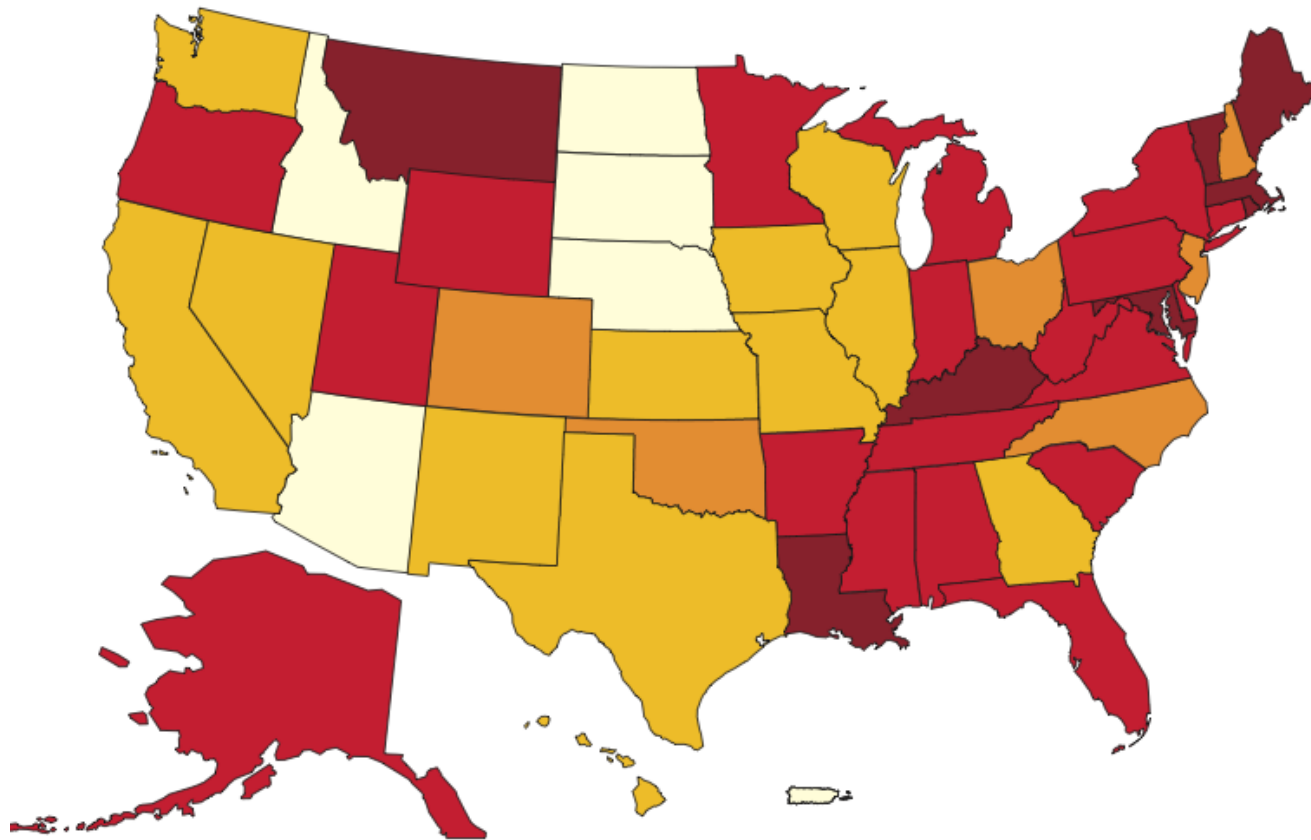


2001
(range 1 – 71)



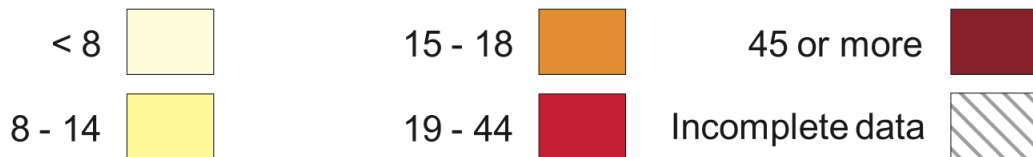
SOURCE: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS). Data received through 11.03.10.

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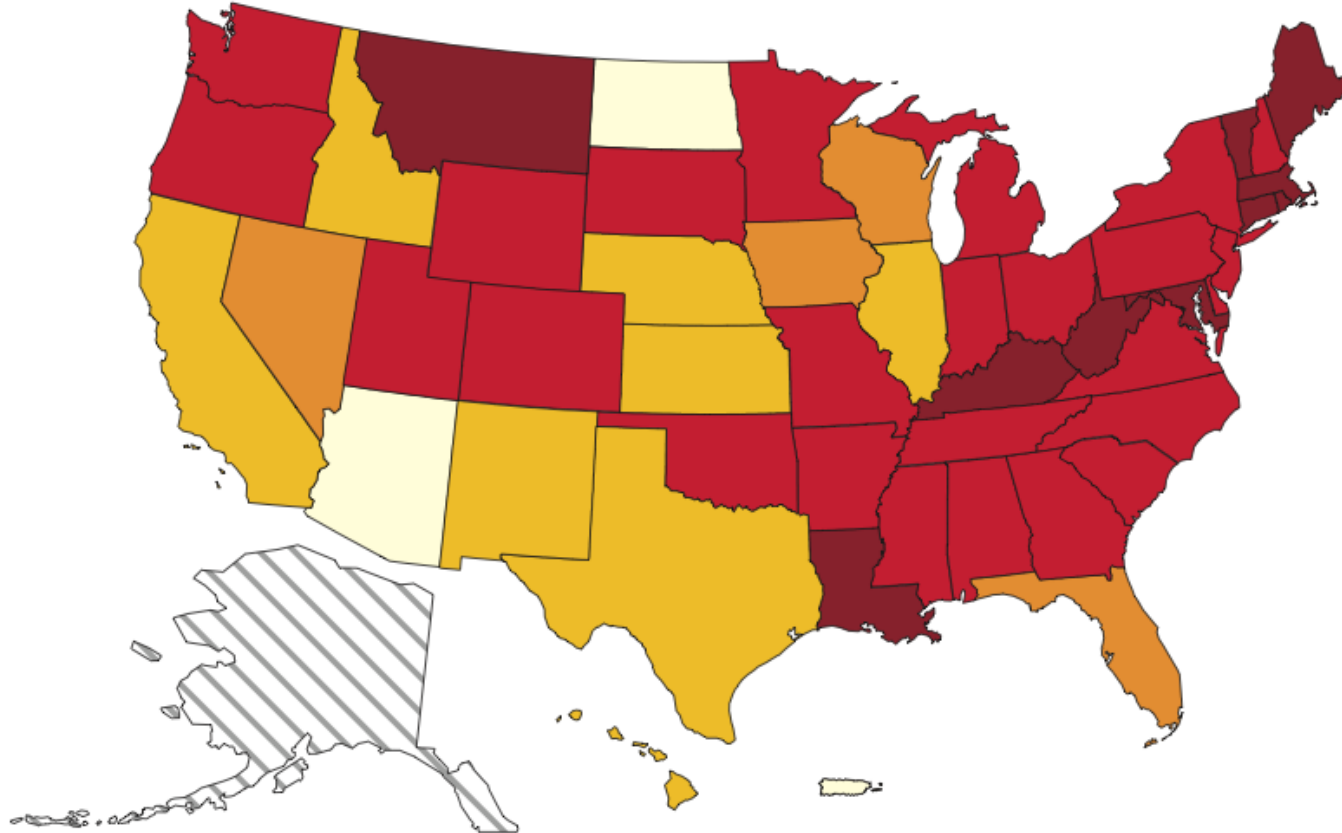
2003

(range 2 – 139)



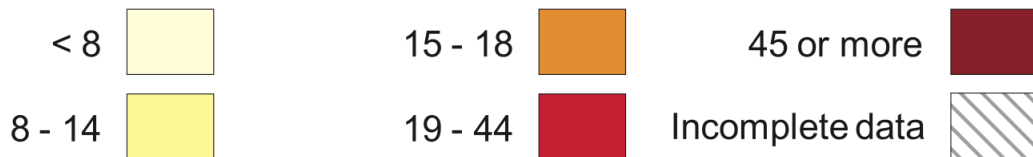
SOURCE: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS). Data received through 11.03.10.

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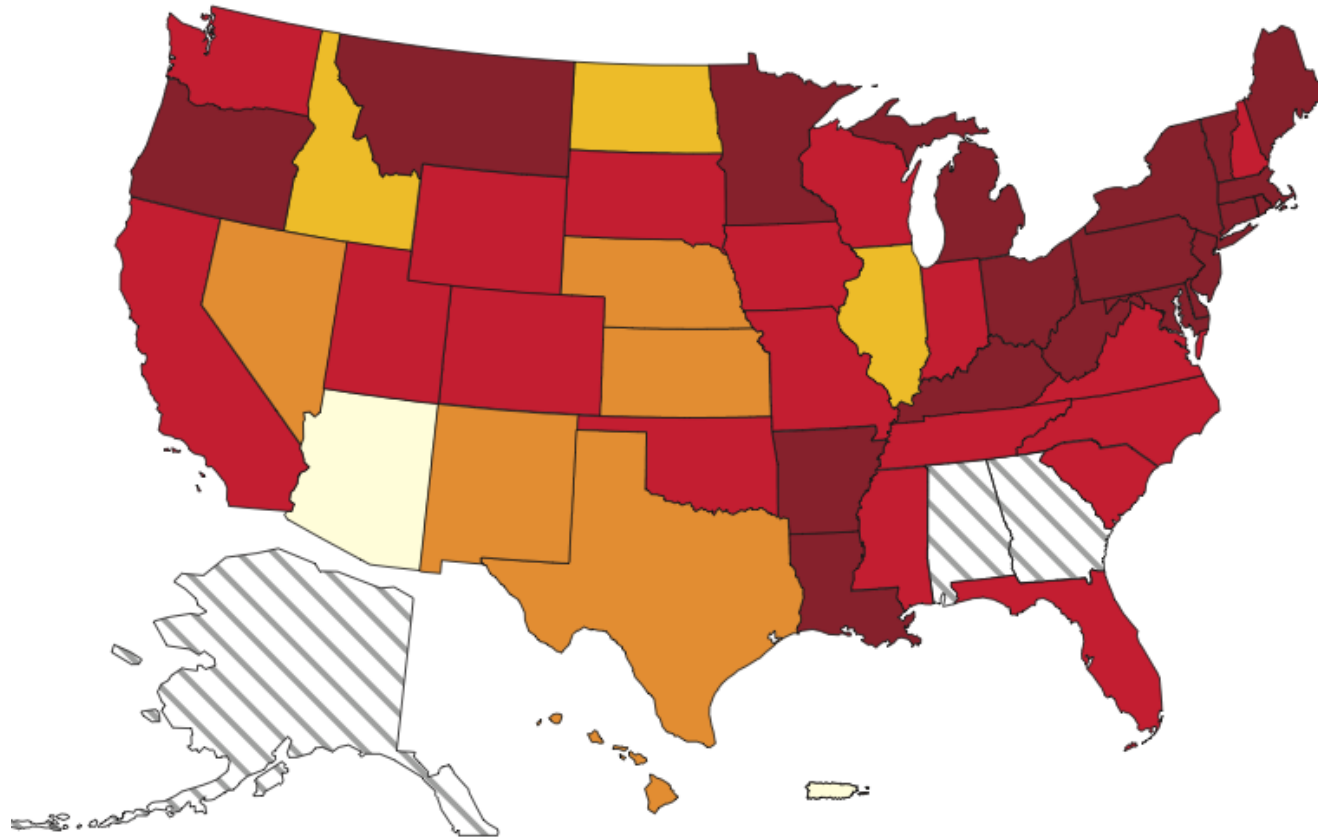
2005

(range 0 – 214)



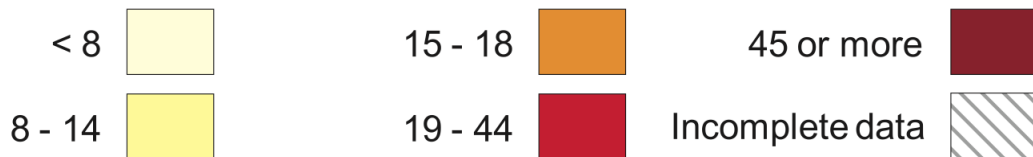
SOURCE: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS). Data received through 11.03.10.

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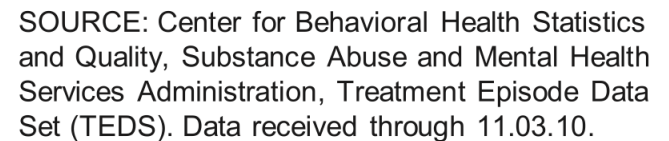
2007

(range 1 – 340)

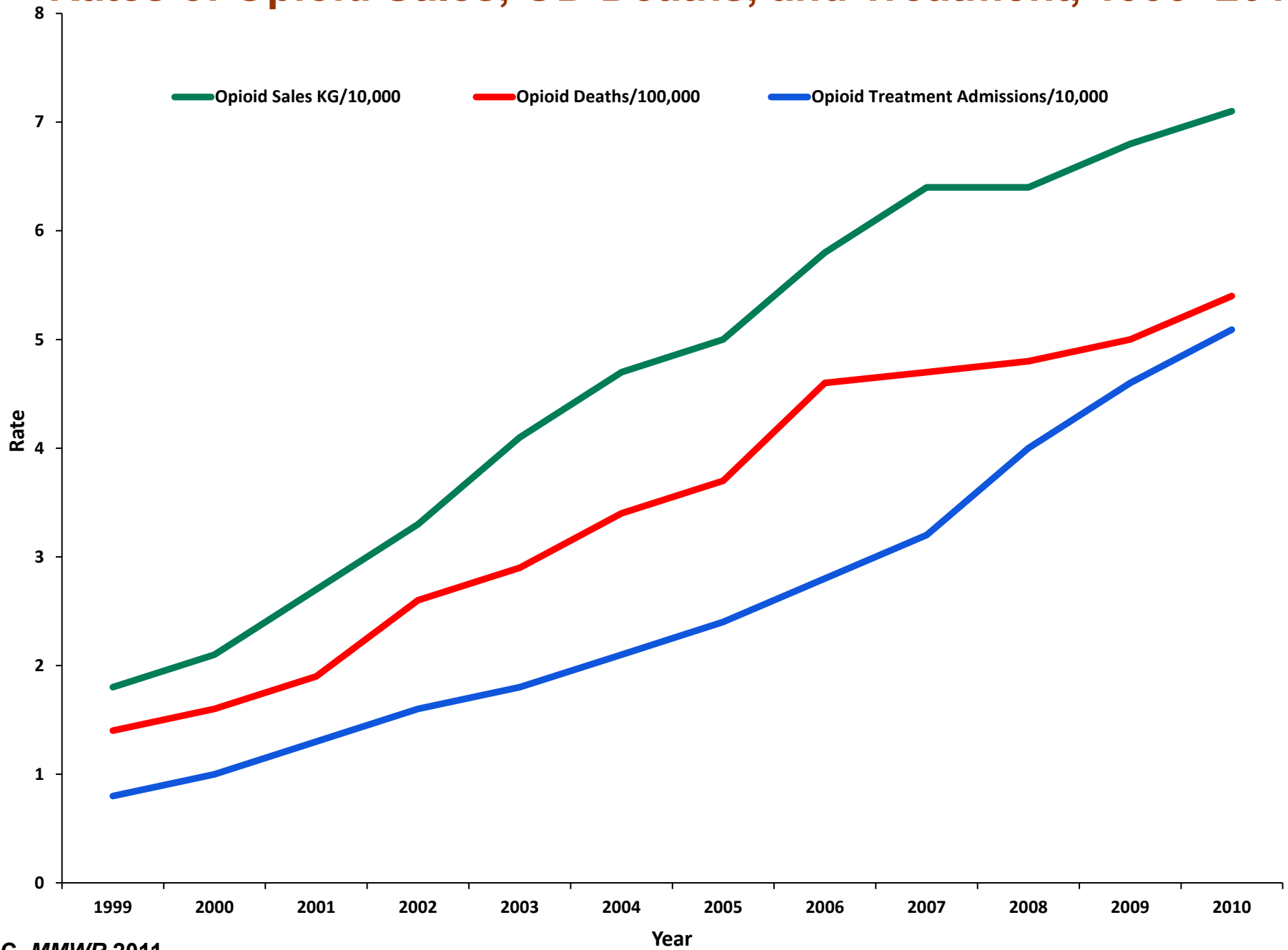


SOURCE: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS). Data received through 11.03.10.

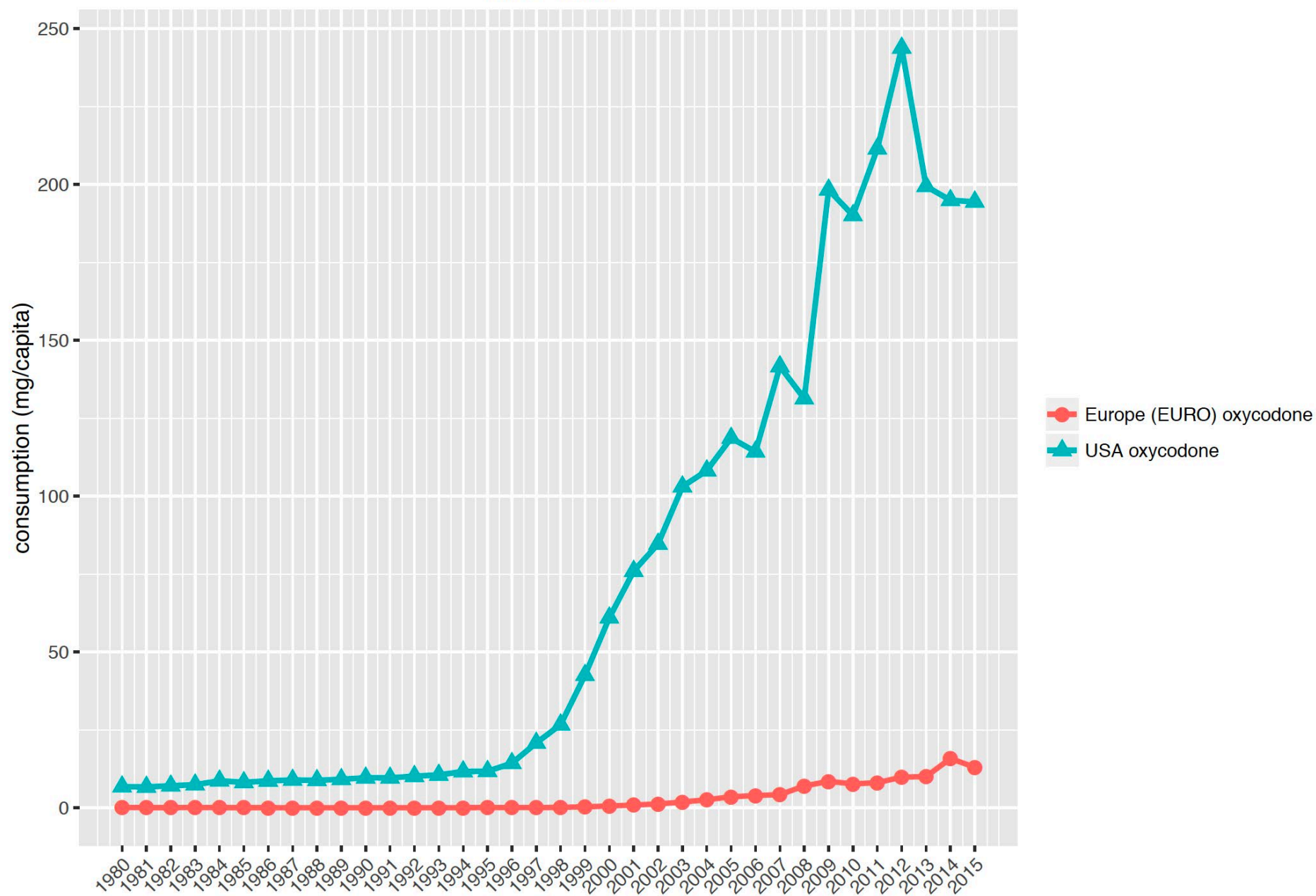
(range 1 – 379)



Rates of Opioid Sales, OD Deaths, and Treatment, 1999–2010



USA oxycodone consumption (mg/capita) 1980–2015

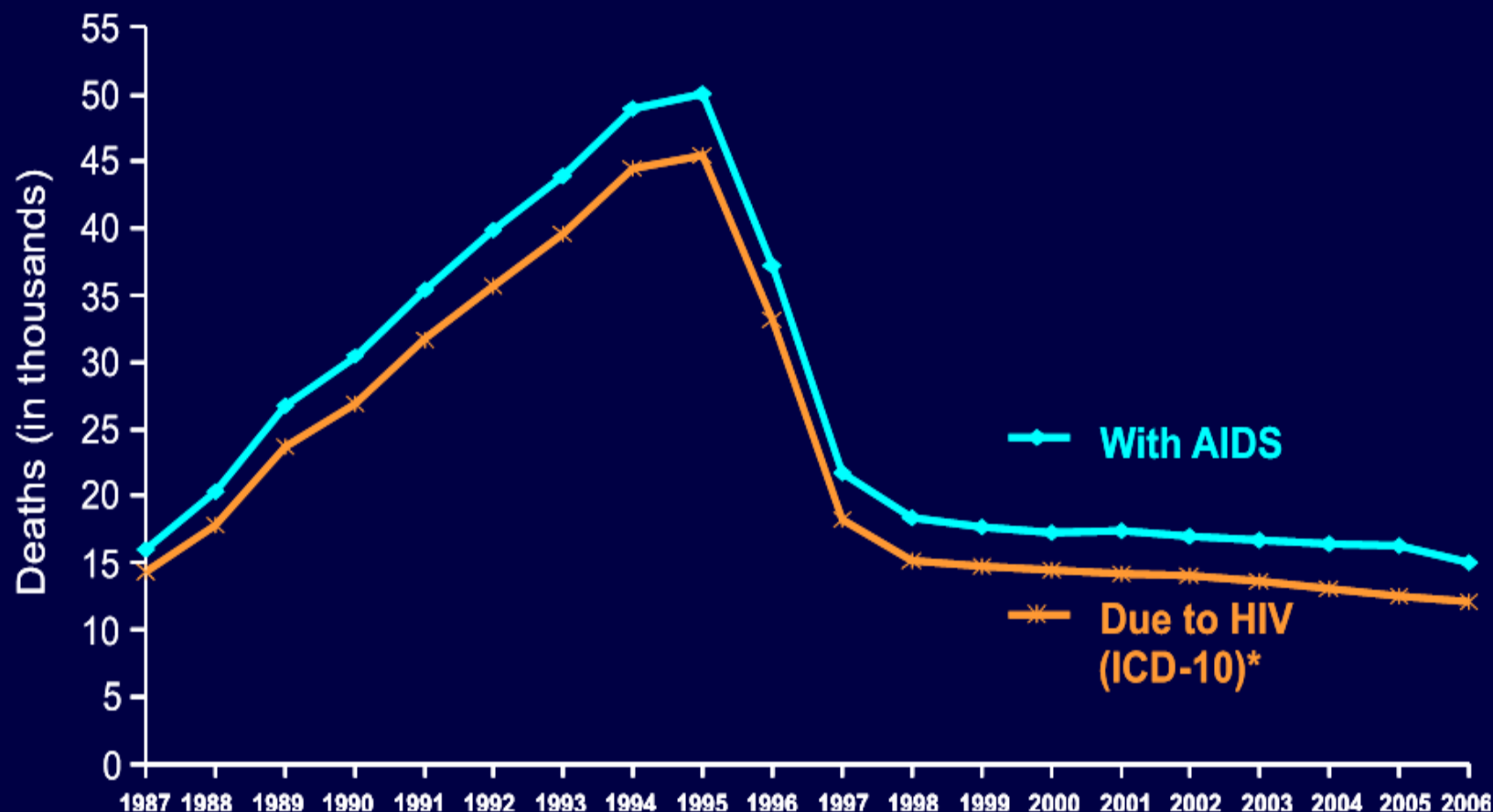


Controlling the epidemic:

A Three-pronged Approach

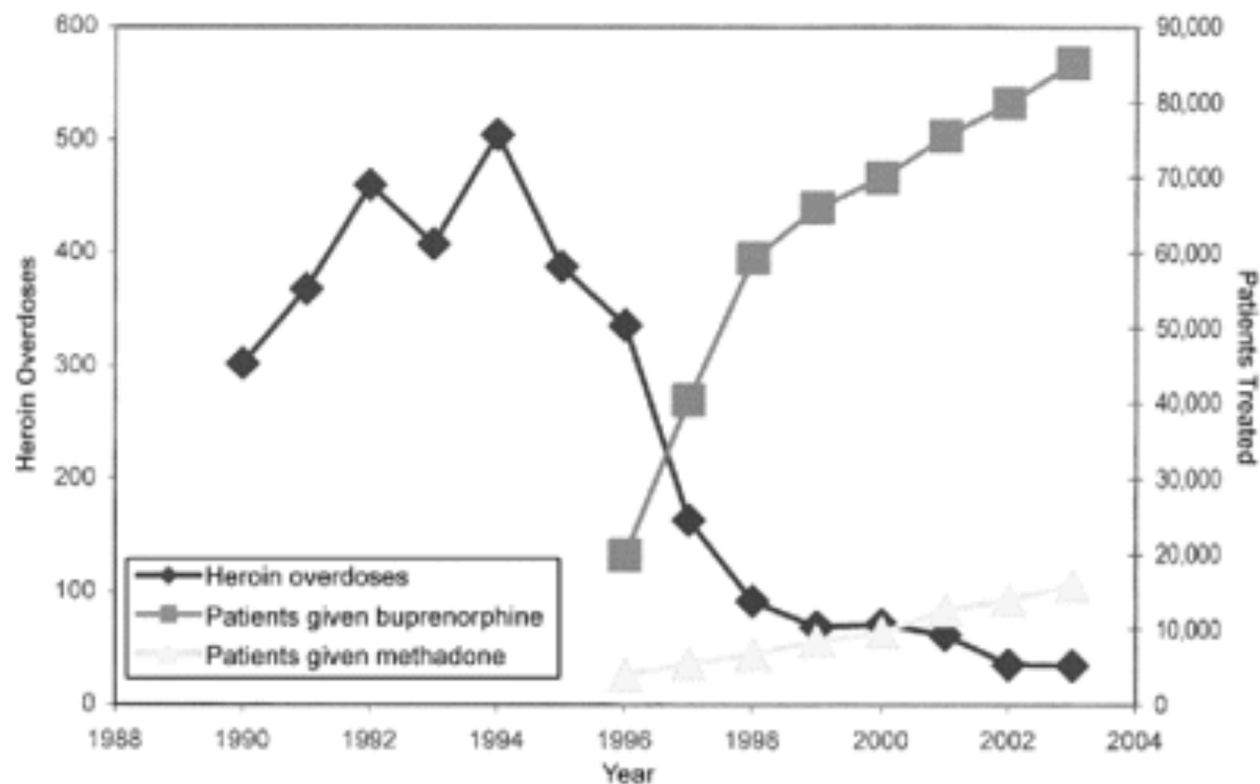
- **Prevent** new cases of opioid addiction.
- **Treat** people who are already addicted.
- **Reduce supply** from pill mills and the black-market.

Comparison of Mortality Data from AIDS Case Reports and Death Certificates in Which HIV Disease Was Selected as the Underlying Cause of Death, United States, 1987–2006



*For comparison with data for 1999 and later years, data in the bottom (red) line for 1987–1998 were modified to account for ICD-10 rules instead of ICD-9 rules.





From: Buprenorphine Use: The International Experience
Clin Infect Dis. 2006;43(Supplement_4):S197-S215. doi:10.1086/508184
Clin Infect Dis | © 2006 by the Infectious Diseases Society of America

Buprenorphine Access Is Still Inadequate

The Supply of Buprenorphine Prescribers Across the U.S.¹³

100%
of these providers
can prescribe opioids.



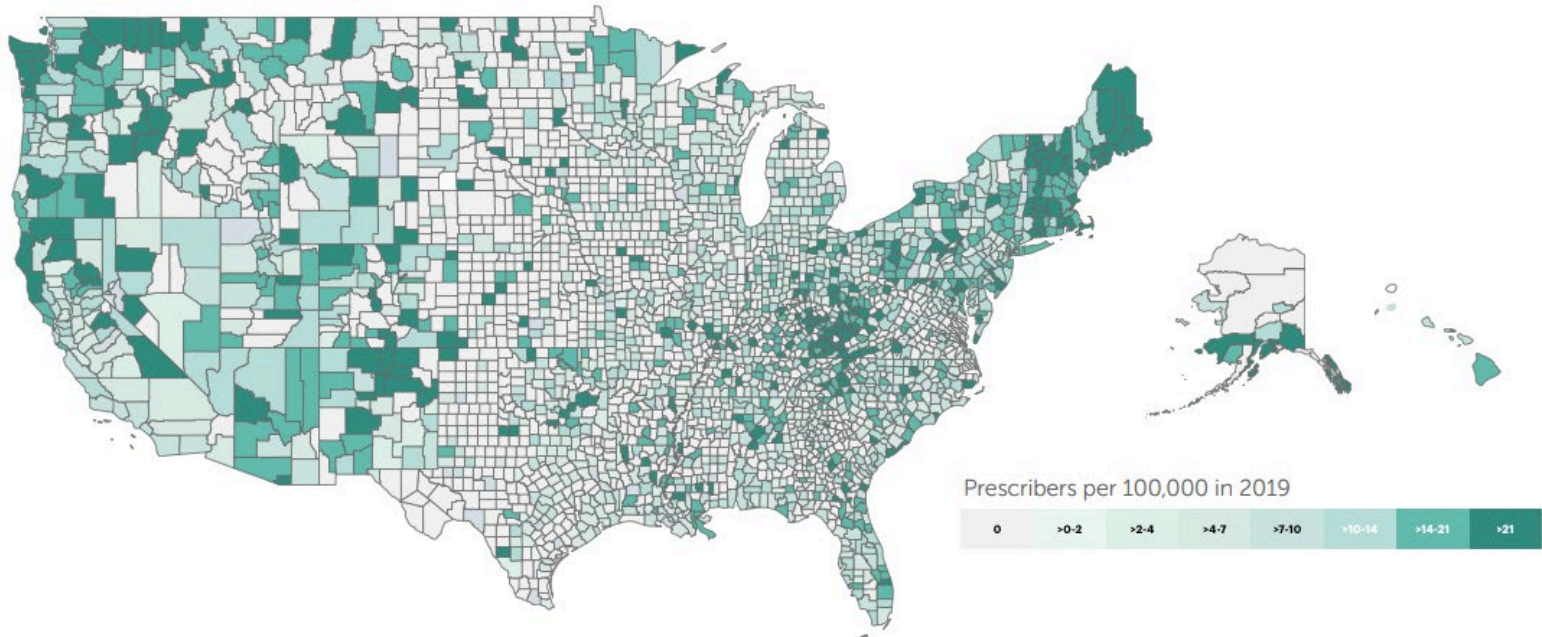
74,000 (5.7%)
are **waivered** to prescribe buprenorphine.

Only 43,700 (3.4%)
of the total provider population **publicly disclose**
that they can prescribe buprenorphine.

Buprenorphine Access Is Still Inadequate

County-Level Waivered Prescriber Supply¹⁵

- The median buprenorphine capacity by county is 4 prescribers per 100,000 people.
- Thirty-nine percent (1,228) of counties do not have a waived buprenorphine prescriber, creating an access challenge for any of these counties' 18 million residents.
 - Two-thirds (11.9 million) of these individuals live in rural areas.
 - One-third (6.1 million) of these individuals live in urban and suburban areas.



Impact of COVID-19 on the Opioid Crisis

- Increased rate of opioid OD death
- Ability to provide direct services and psychosocial support impeded
- Litigation against opioid industry slowed

OUD Increases COVID Risks

- Increased susceptibility to infection
 - Opioid-induced immunosuppression
 - Psychosocial factors (homelessness, treatment settings)
- Increased risk for complications
 - Opioid-induced immunosuppression
 - Respiratory depression from opioids
 - Other medical problems

OUD Increases COVID Risks

- Addictive disorder increases risk for COVID, with opioid use disorder followed by tobacco use disorder, having highest risk.
- Addictive disorder increases risk for death from COVID, with greatest risk in Black patients with OUD.

Source: Wang, Q.Q., Kaelber, D.C., Xu, R. et al. COVID-19 risk and outcomes in patients with substance use disorders: analyses from electronic health records in the United States. Mol Psychiatry (2020).

Treatment System Changes

- Feds relax Methadone rules on take-home doses and allow home deliveries.
- Buprenorphine home inductions
- Expansion of tele-medicine treatment
- Naloxone home deliveries

High-dimensional characterization of post-acute sequelae of COVID-19

<https://doi.org/10.1038/s41586-021-03553-9>

Ziyad Al-Aly^{1,2,3,4,5}✉, Yan Xie^{1,2,6} & Benjamin Bowe^{1,2,6}

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The acute clinical manifestations of COVID-19 are well characterized^{1,2}; however, its post-acute sequelae have not been comprehensively described. Here, we use the national healthcare databases of the US Department of Veterans Affairs to systematically and comprehensively identify 6-month incident sequelae including diagnoses, medication use, and laboratory abnormalities in 30-day survivors of COVID-19. We show that beyond the first 30 days of illness, people with COVID-19 exhibit higher risk of death and health resource utilization. Our high dimensional approach identifies incident sequelae in the respiratory system and several others including nervous system and neurocognitive disorders, mental health disorders, metabolic disorders, cardiovascular disorders, gastrointestinal disorders, malaise, fatigue, musculoskeletal pain, and anemia. We show increased incident use of several therapeutics including pain medications (opioids and non-opioids), antidepressants, anxiolytics, antihypertensives, and oral hypoglycemics and evidence of laboratory abnormalities in multiple organ systems. Analysis of an array of pre-specified outcomes reveals a risk gradient that increased across severity of the acute COVID-19 infection (non-hospitalized, hospitalized, admitted to intensive care). The findings show that beyond the acute illness, substantial burden of health loss – spanning pulmonary and several extrapulmonary organ systems – is experienced by COVID-19 survivors. The results provide a roadmap to inform health system planning and development of multidisciplinary care strategies to reduce chronic health loss among COVID-19 survivors.

Can We Learn From COVID-19?

Summary

- The U.S. is in the midst of a severe epidemic of opioid addiction and overdose deaths, which worsened during Covid.
- To bring the epidemic to an end:
 - We must prevent new cases of opioid addiction
 - We must improve access to treatment for people already addicted

Summary

- Social determinants are NOT a root cause of the opioid addiction epidemic.
- Social determinants of health impact opioid related morbidity and mortality.
- Addressing social determinants of health may improve outcomes in individuals suffering from OUD