

The Prescription Opioid and Heroin Crisis: *An Epidemic of Addiction*

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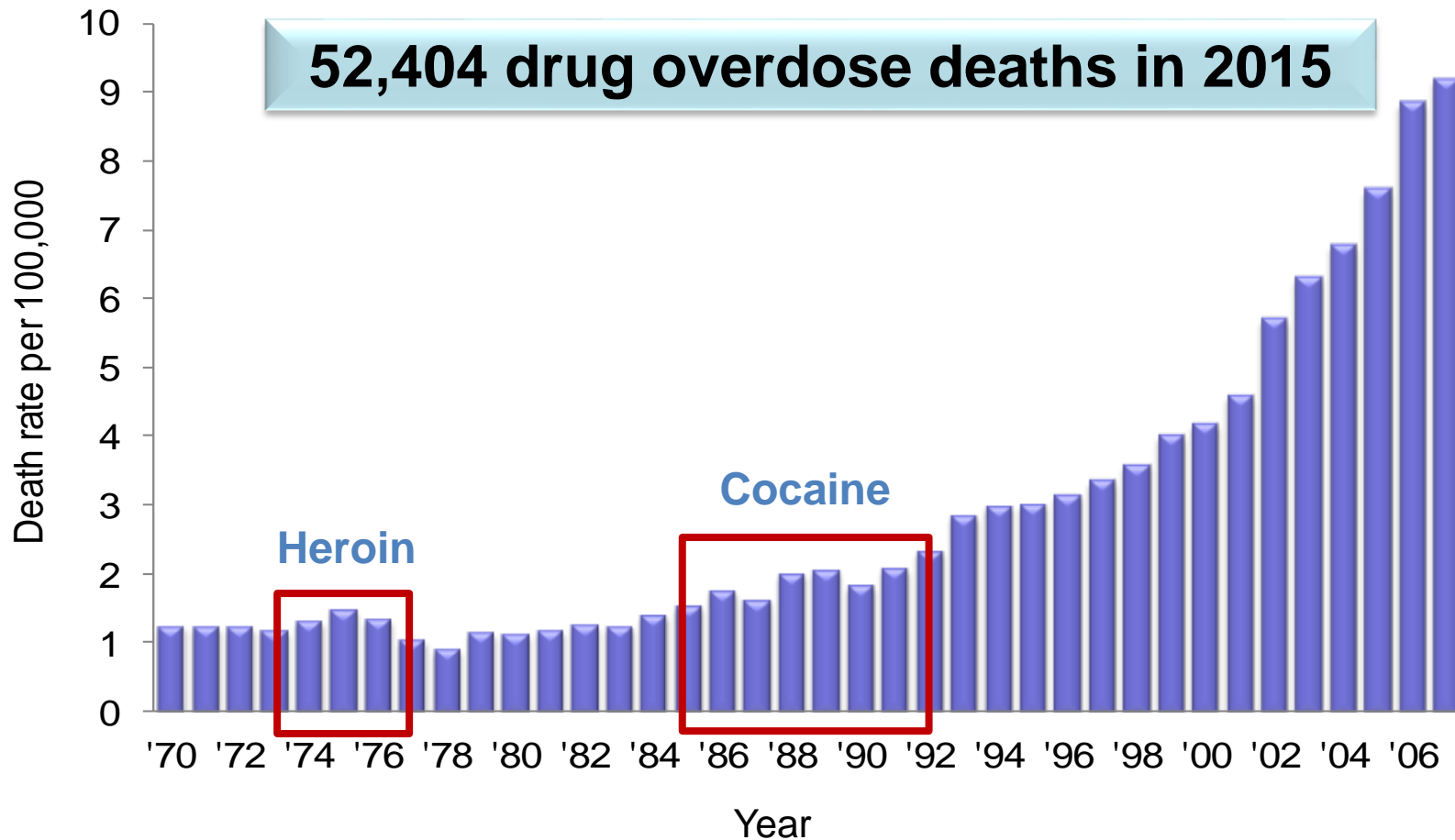
Conflict of Interests

I have no relevant financial relationships to disclose.

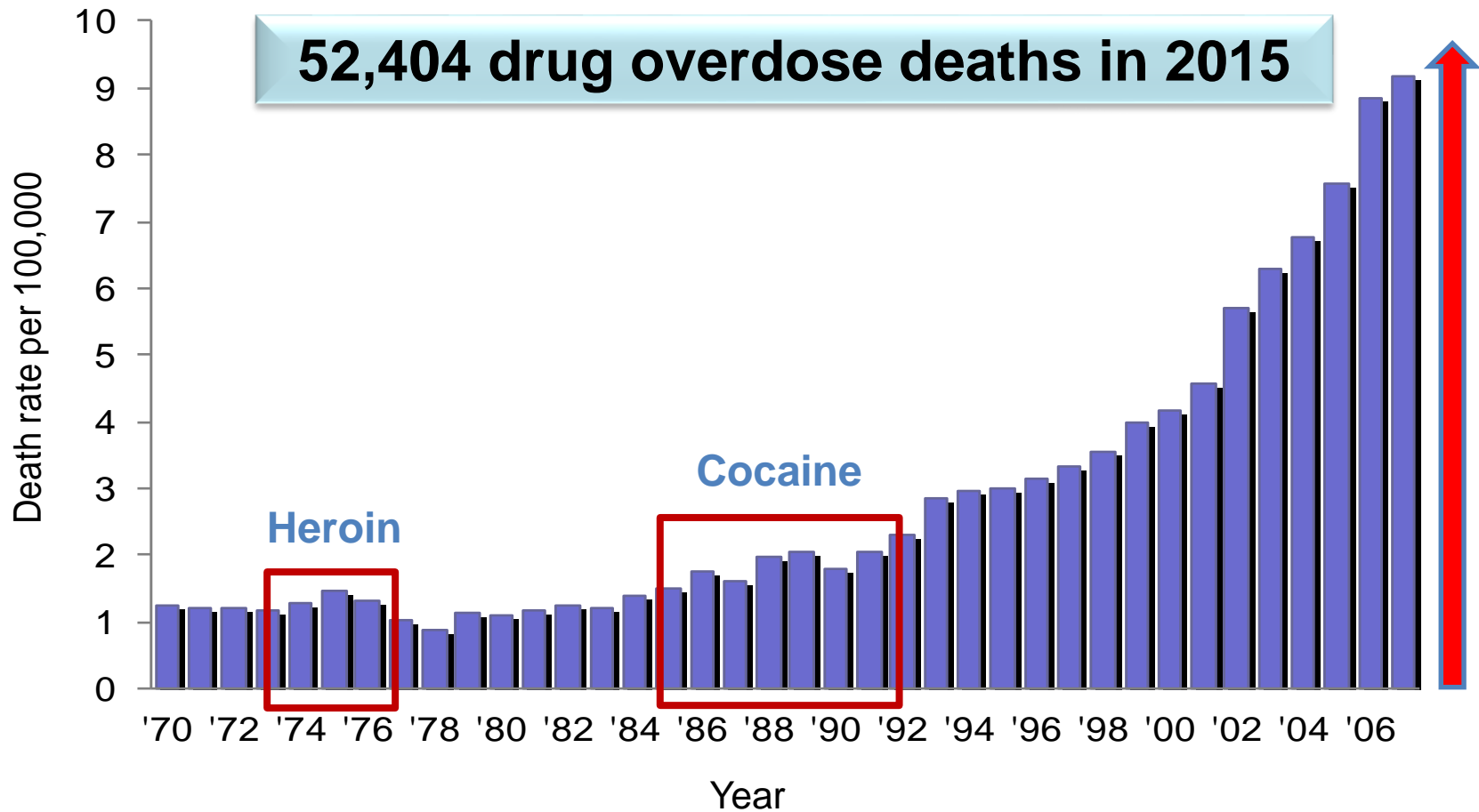
Opium



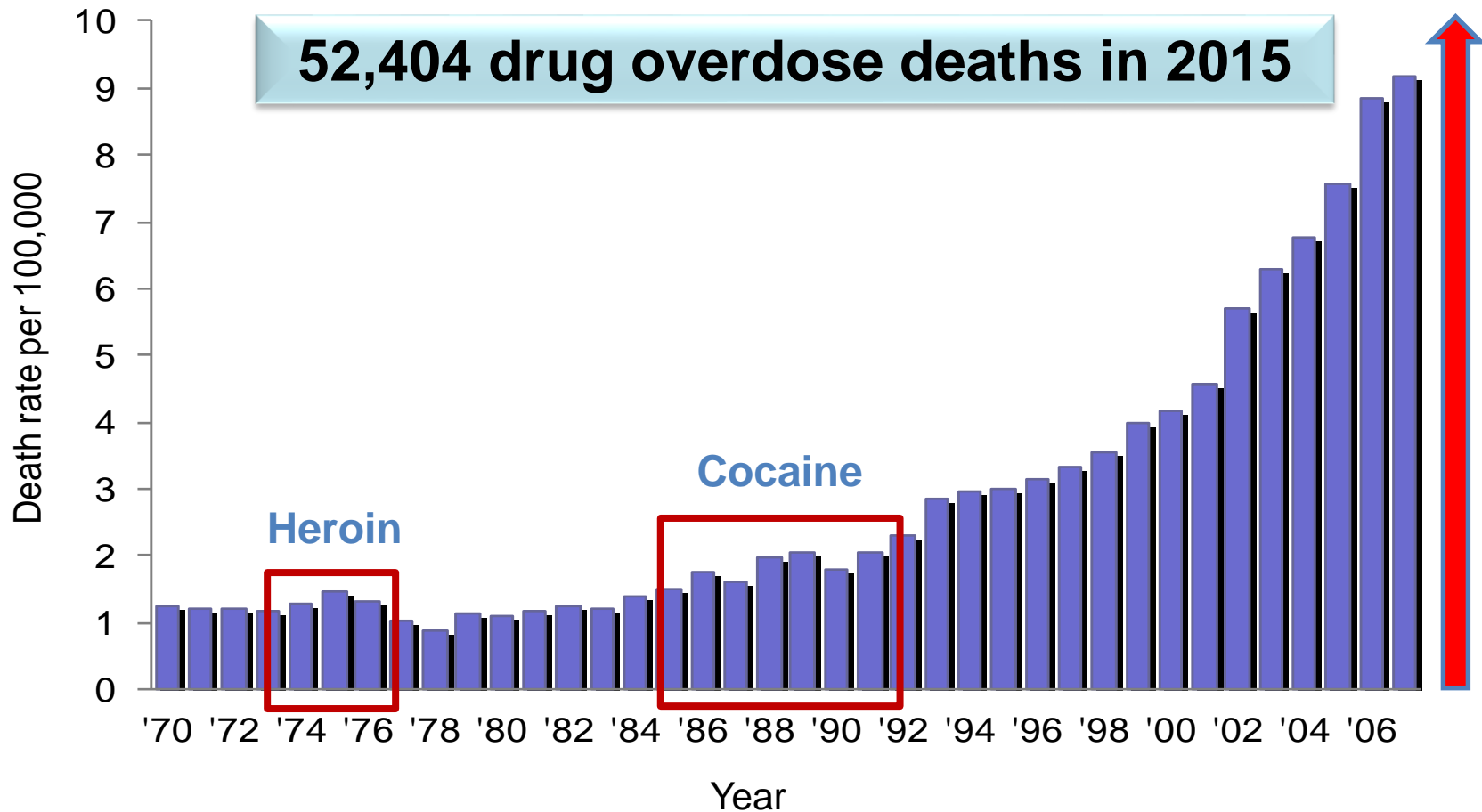
Unintentional Drug Overdose Deaths United States, 1970–2007



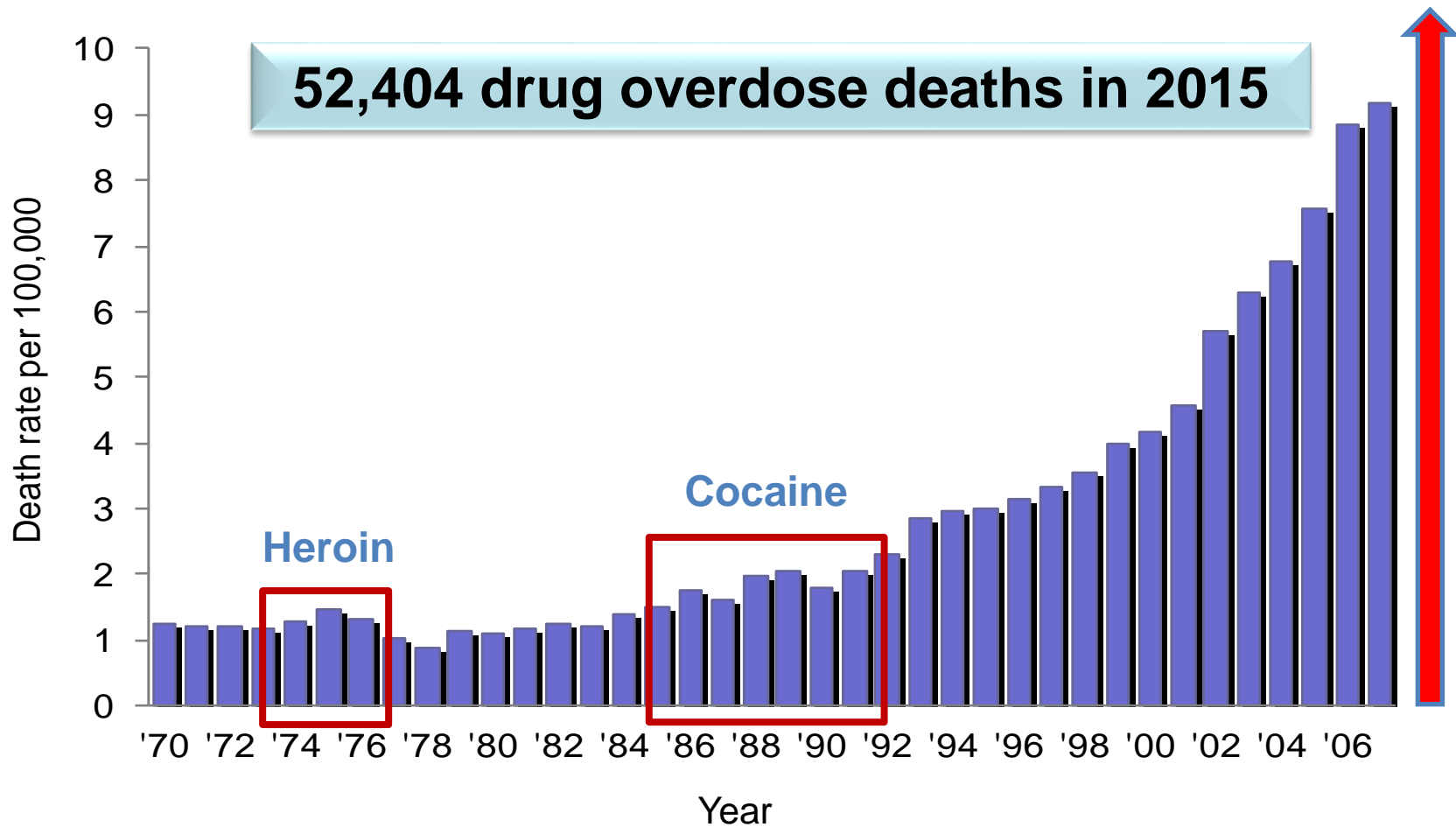
Unintentional Drug Overdose Deaths United States, 1970–2007



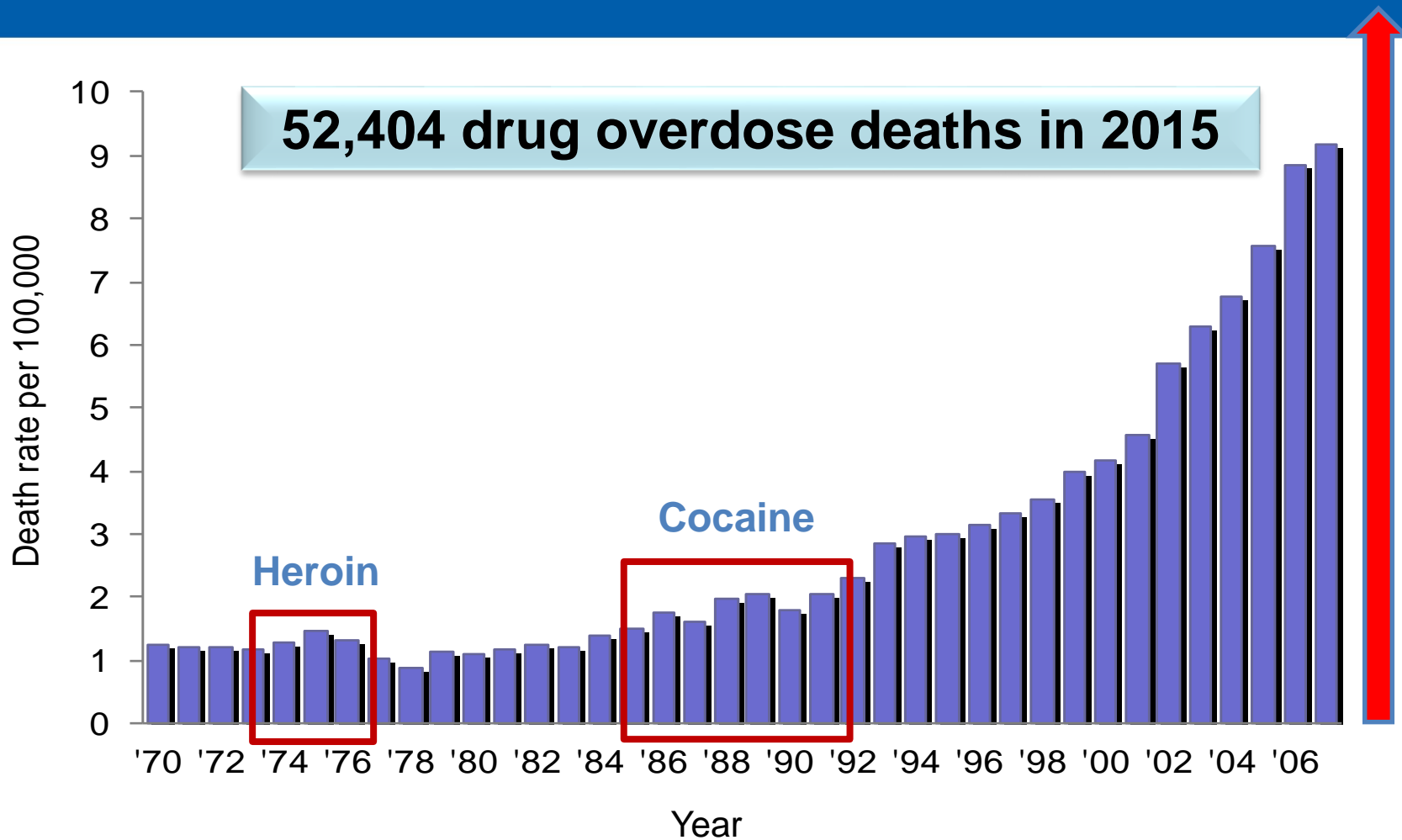
Unintentional Drug Overdose Deaths United States, 1970–2007



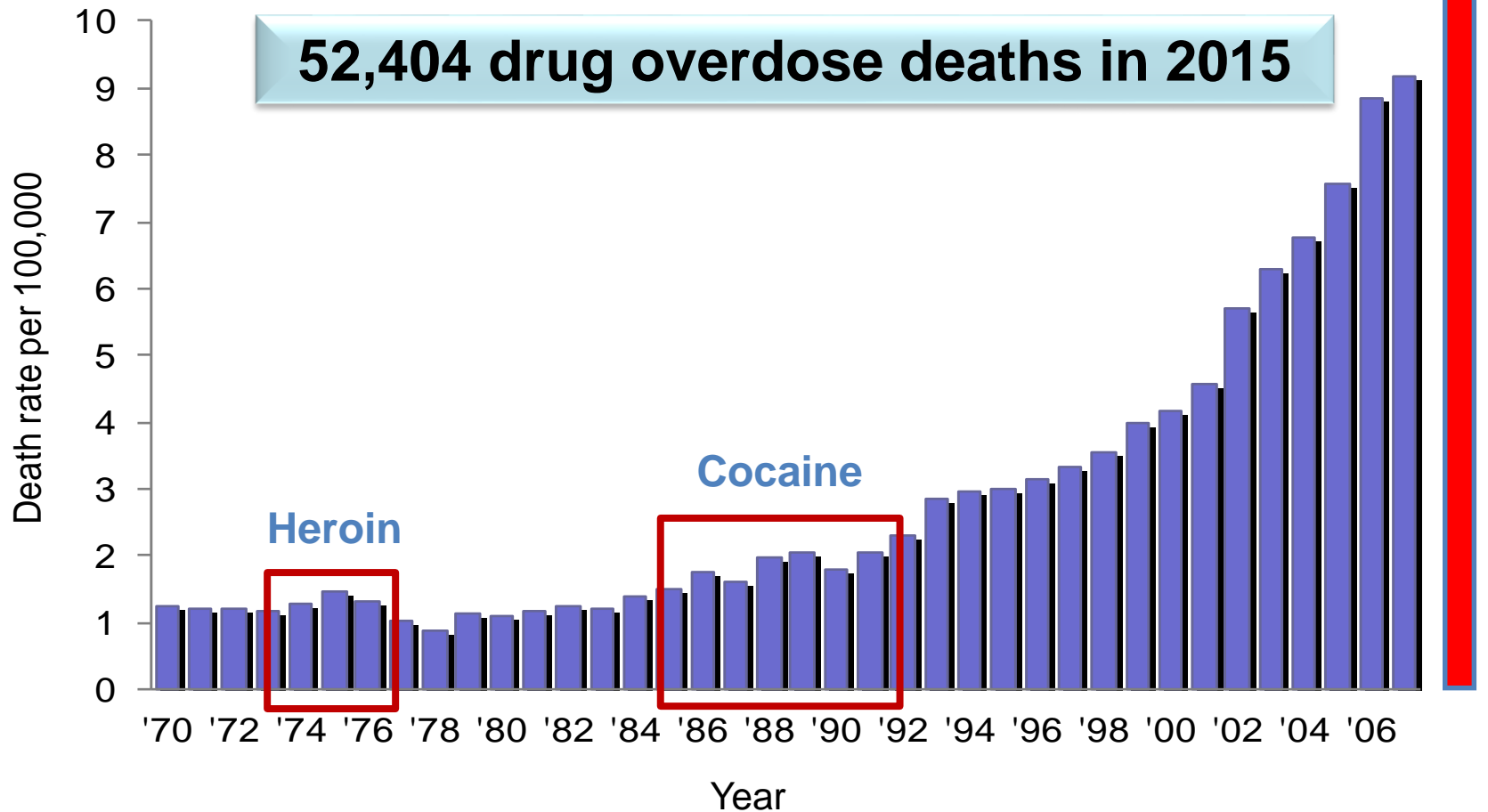
Unintentional Drug Overdose Deaths United States, 1970–2007



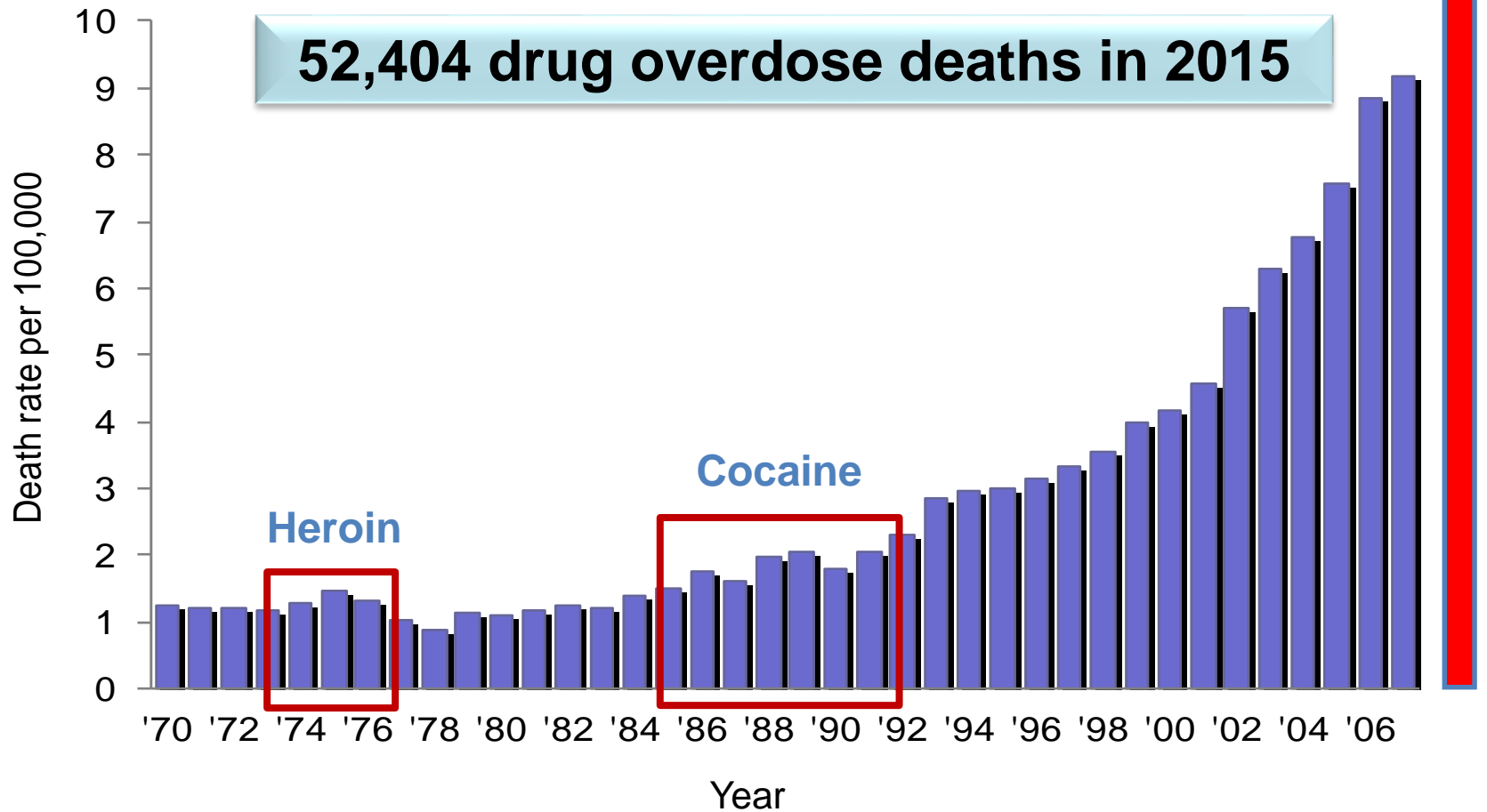
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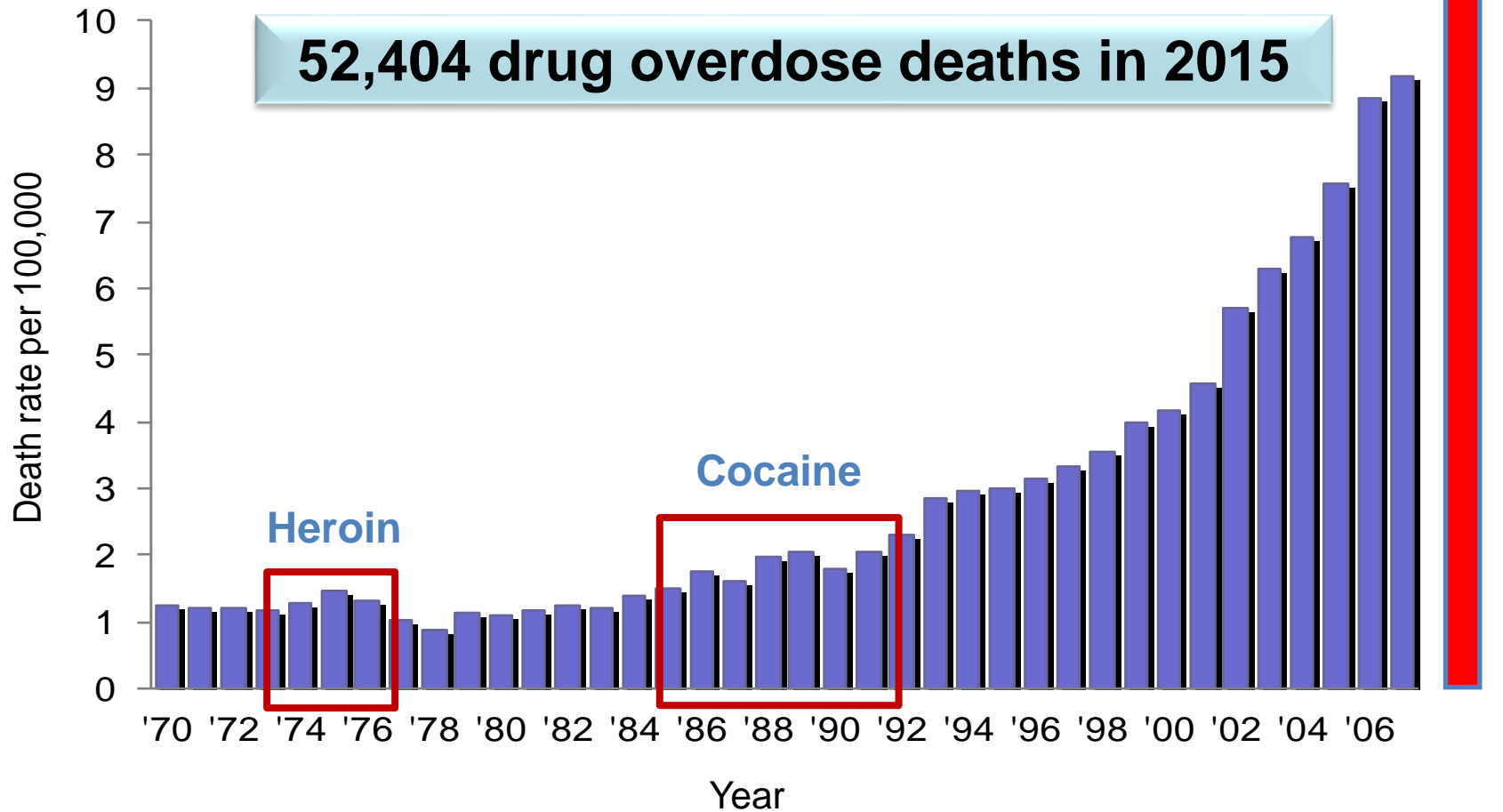
Unintentional Drug Overdose Deaths United States, 1970–2007



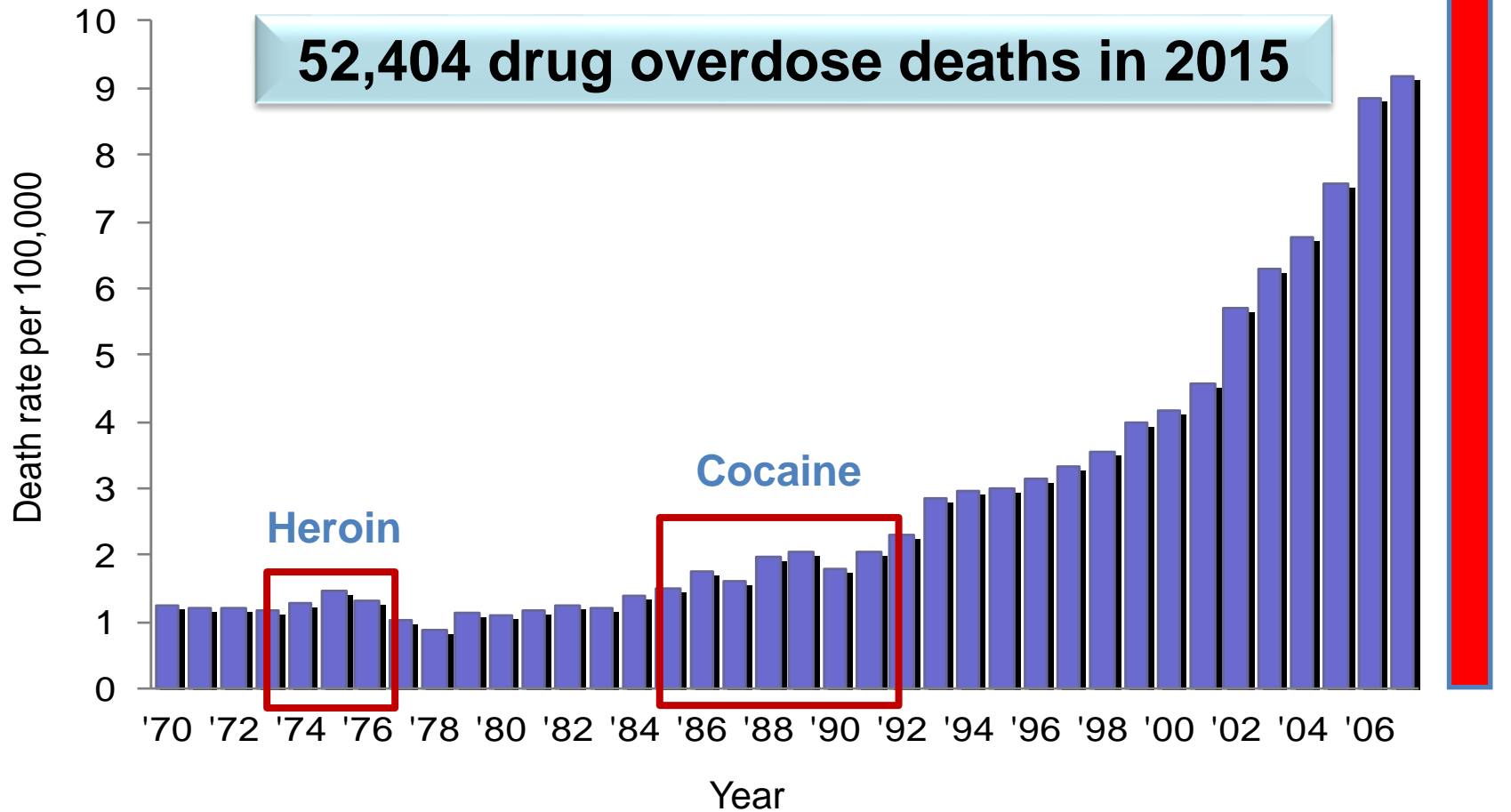
Unintentional Drug Overdose Deaths United States, 1970–2007



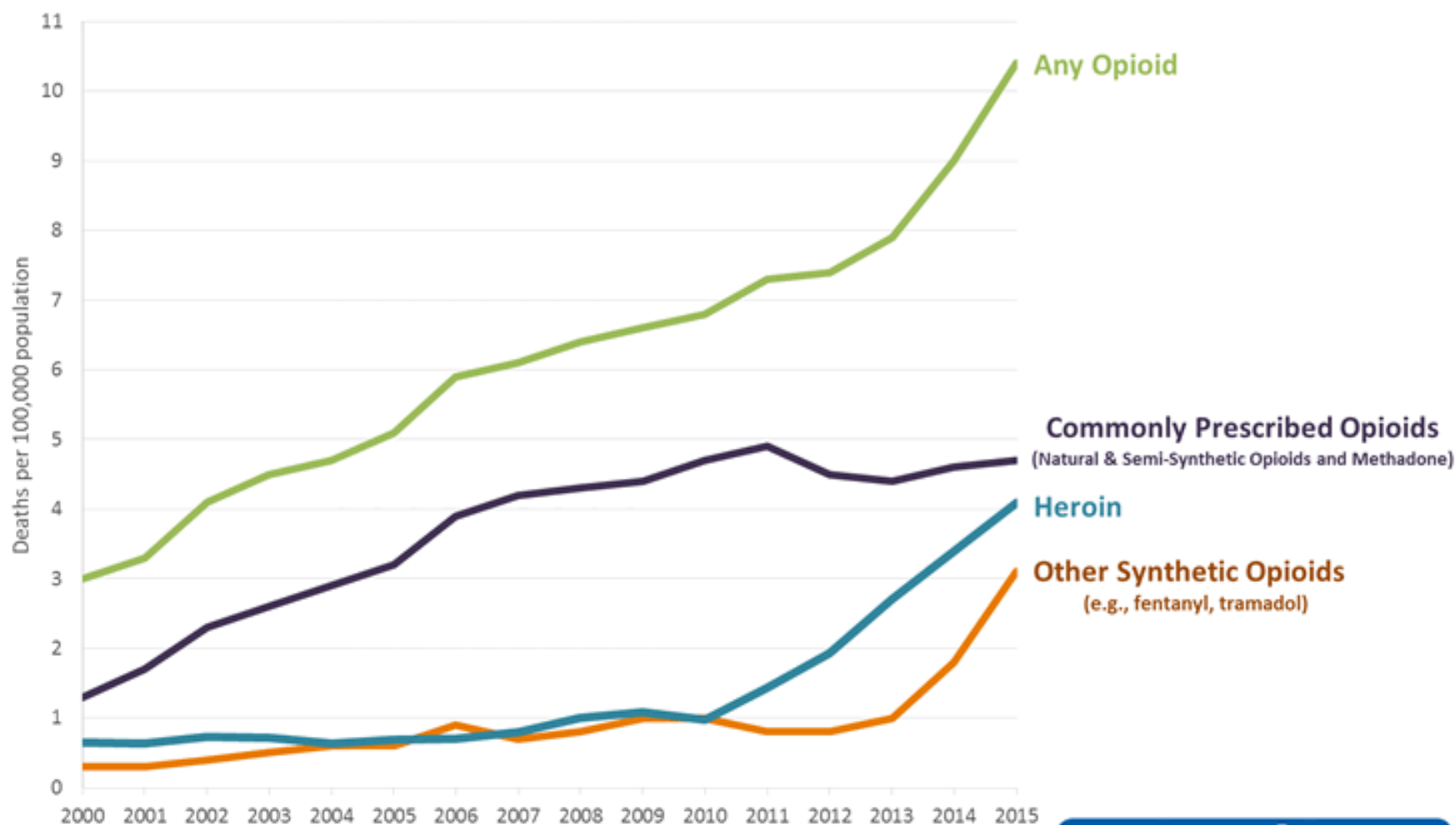
Unintentional Drug Overdose Deaths United States, 1970–2007



Unintentional Drug Overdose Deaths United States, 1970–2007



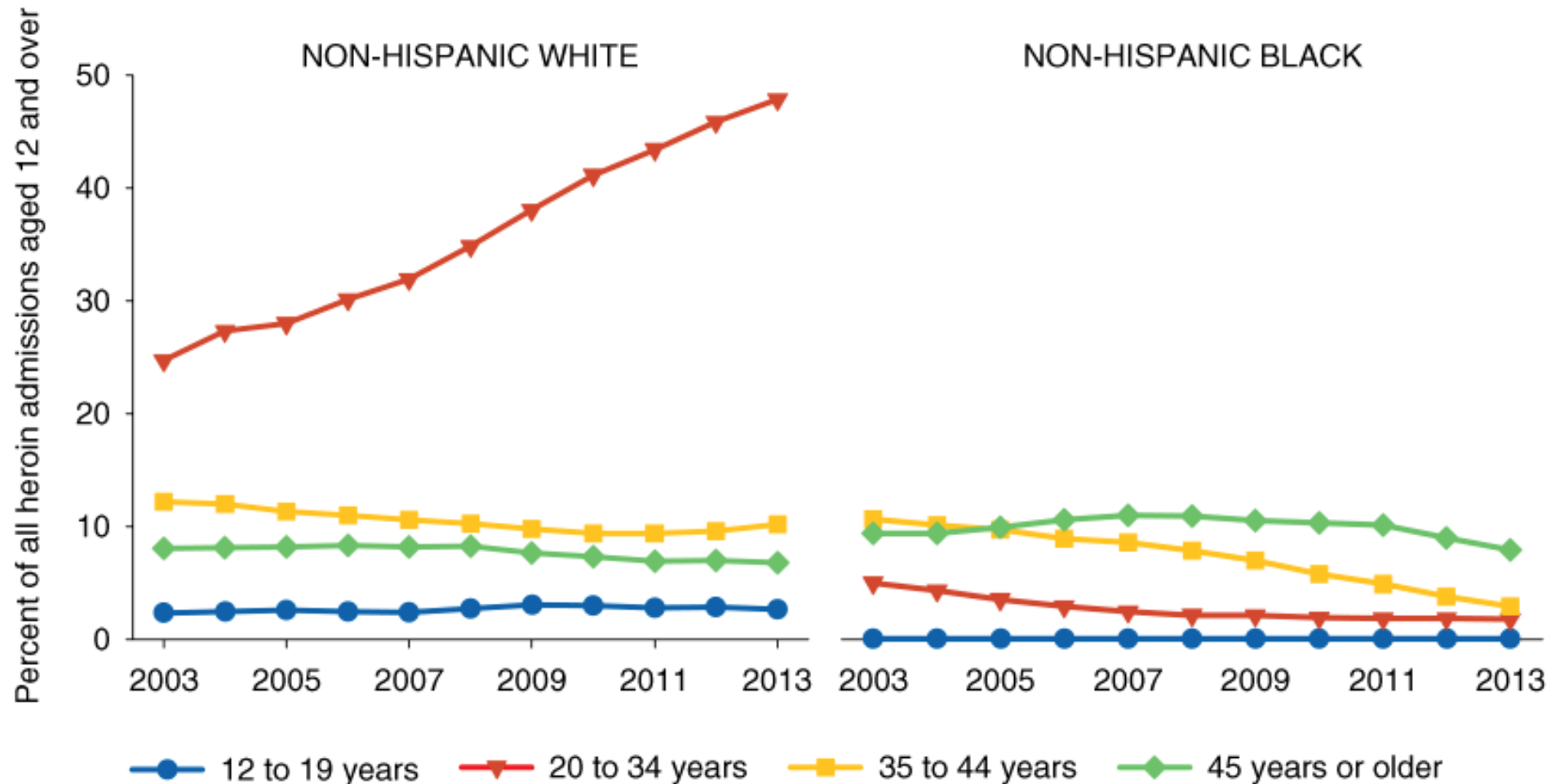
Overdose Deaths Involving Opioids, United States, 2000-2015



SOURCE: CDC/NCHS, National Vital Statistics System, Mortality. CDC WONDER, Atlanta, GA: US Department of Health and Human Services, CDC; 2016. <https://wonder.cdc.gov/>.

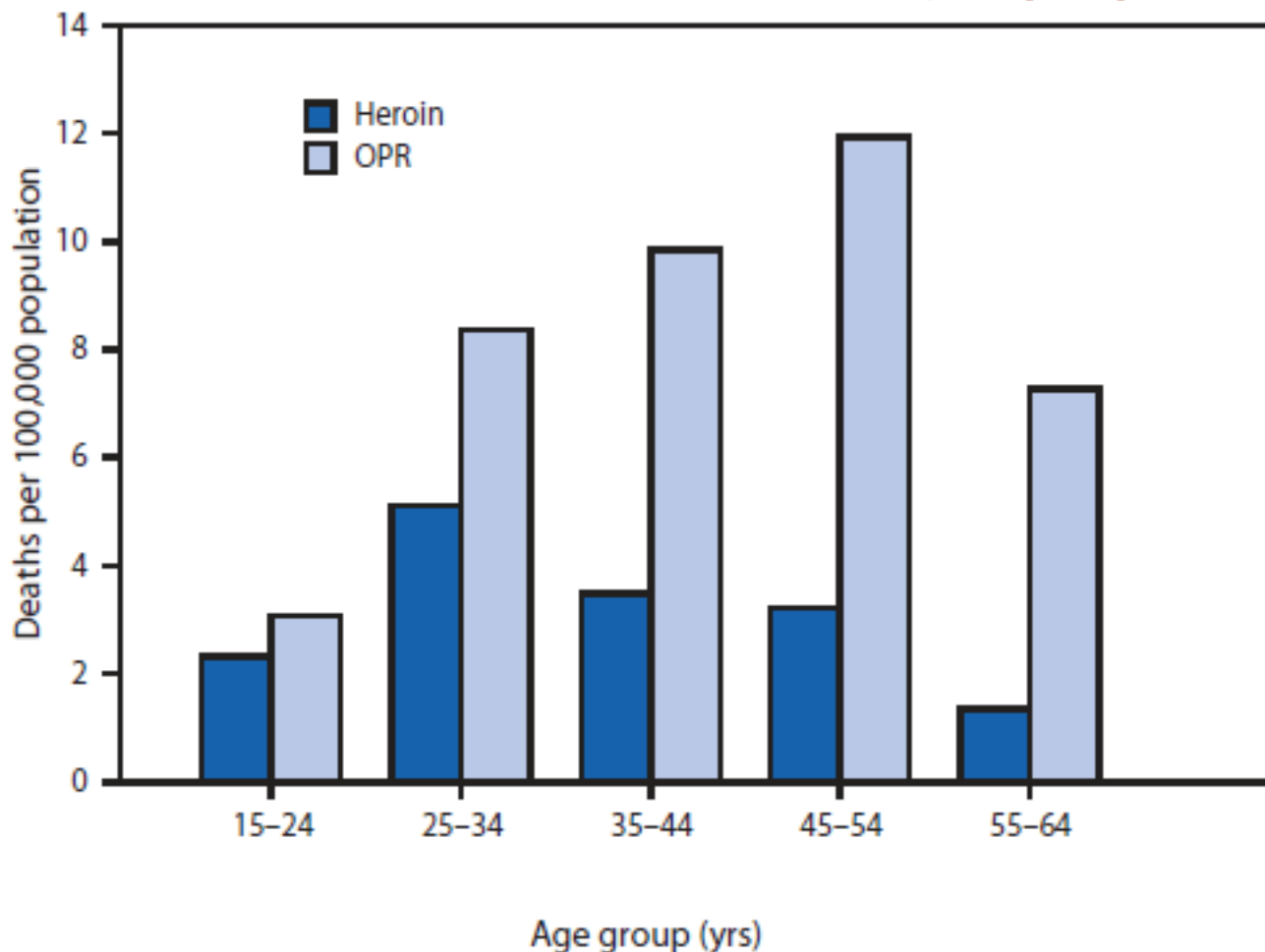
www.cdc.gov
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Heroin treatment admissions : 2003-2013



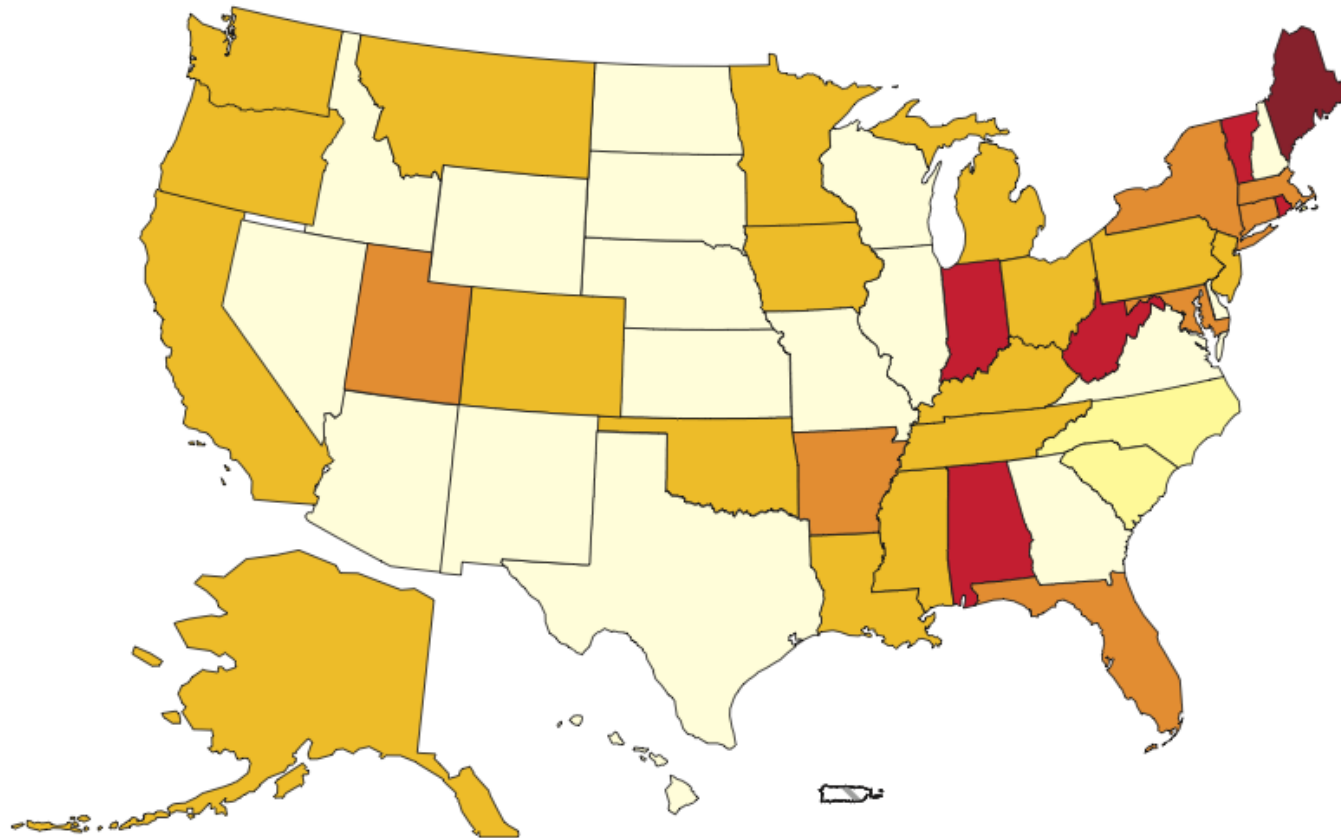
SOURCE: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS). Data received through 01.23.15.

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

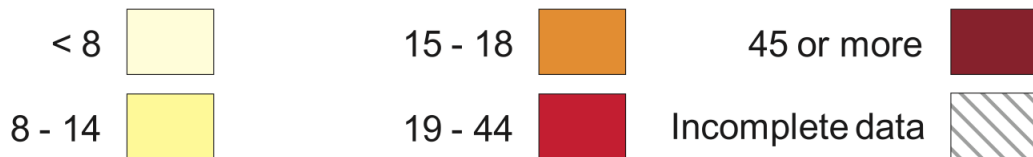


SOURCE: CDC. *Increases in Heroin Overdose Deaths — 28 States, 2010 to 2012*
MMWR. 2014, 63:849-854

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

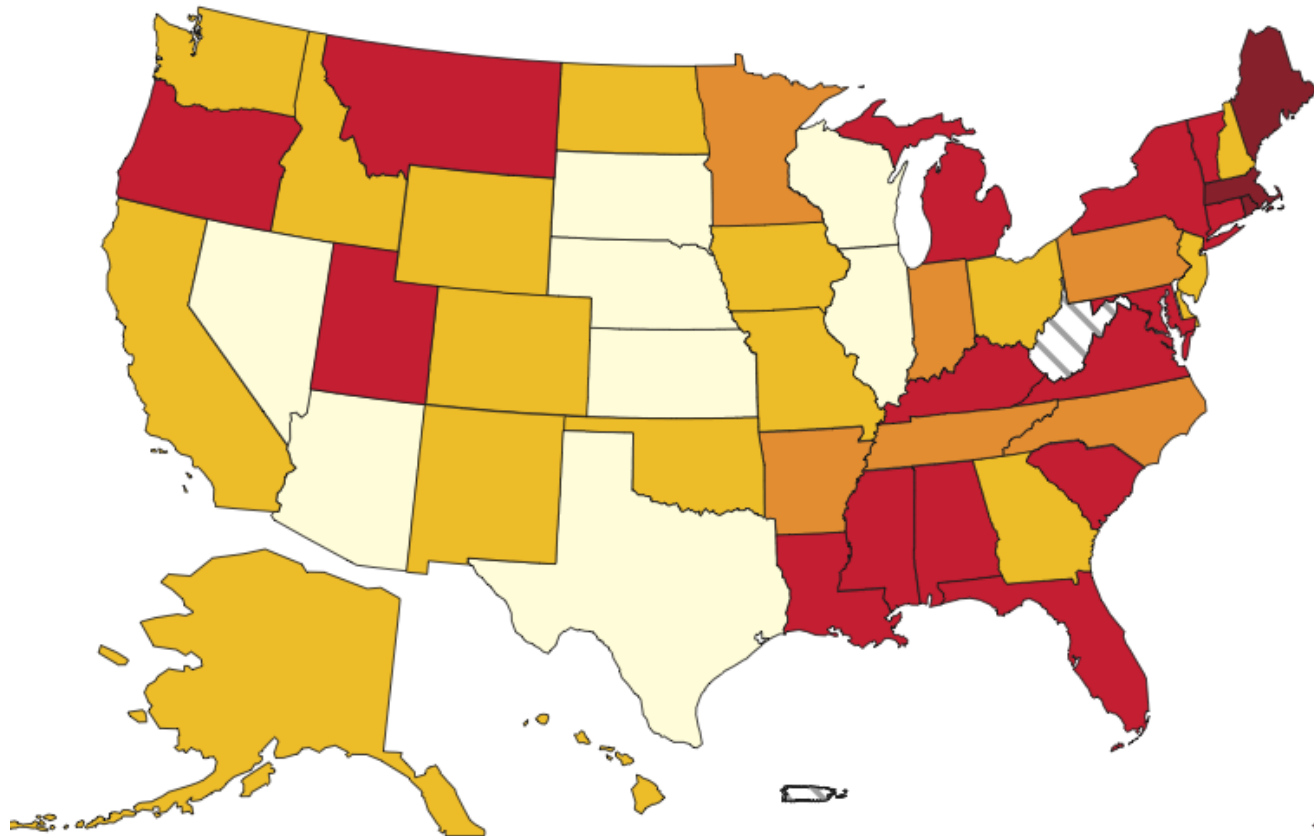


1999
(range 1 - 50)

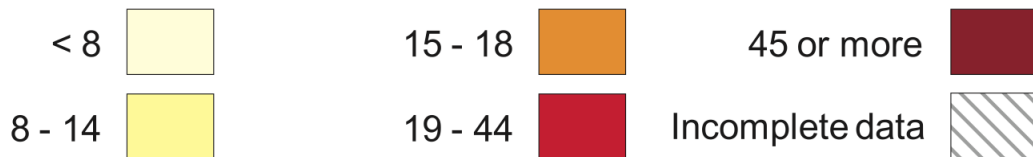


SOURCE: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS). Data received through 11.03.10.

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

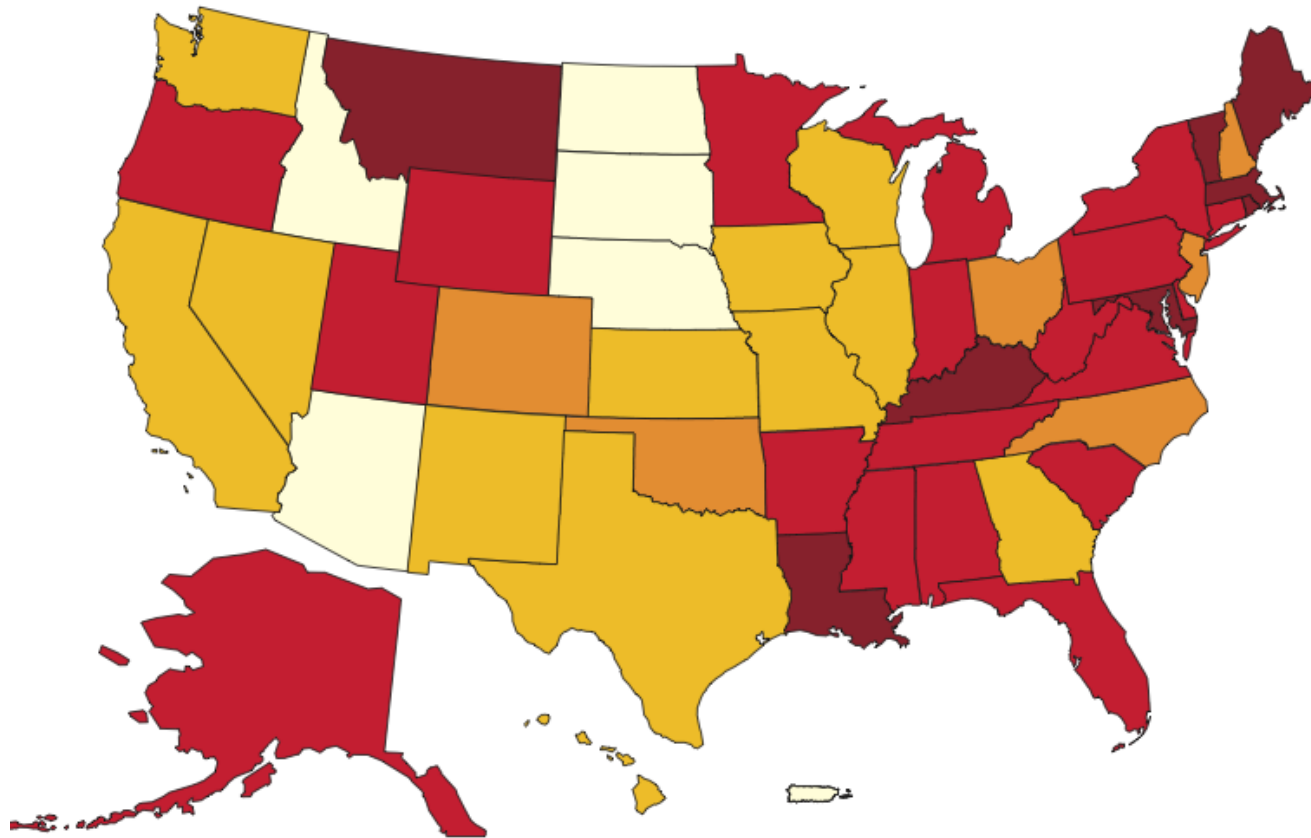


2001
(range 1 – 71)



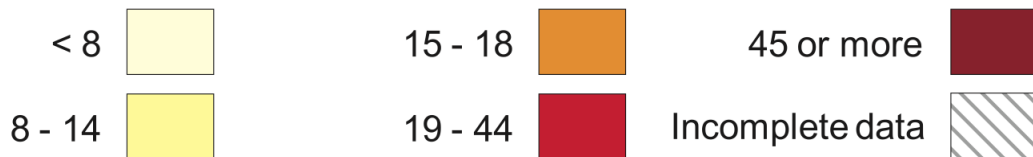
SOURCE: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS). Data received through 11.03.10.

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



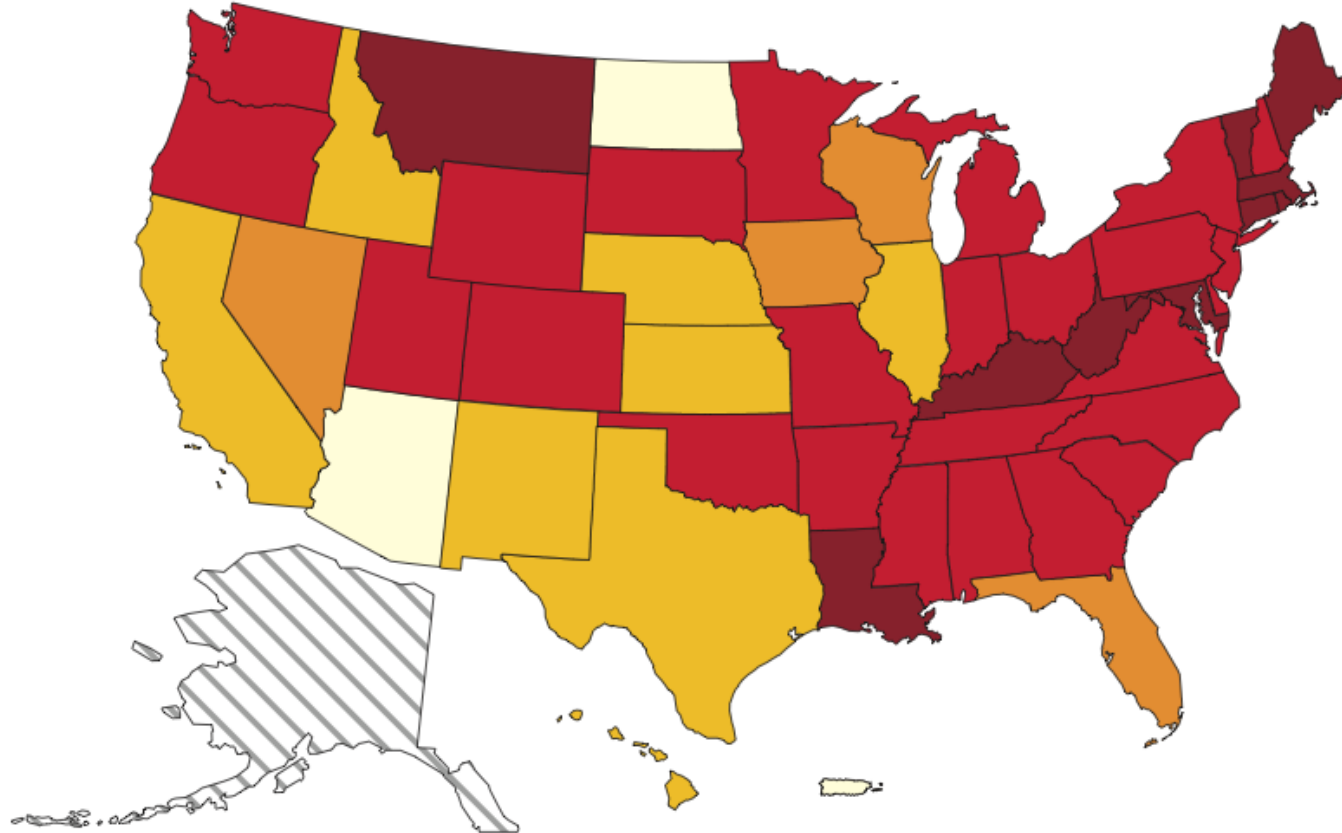
2003

(range 2 – 139)



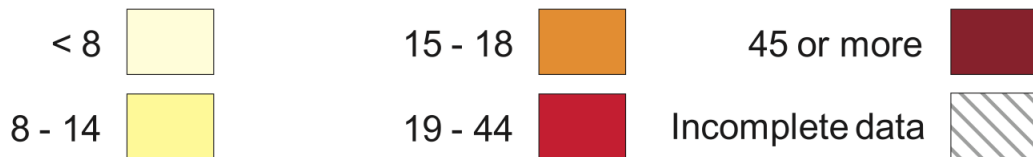
SOURCE: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS). Data received through 11.03.10.

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



2005

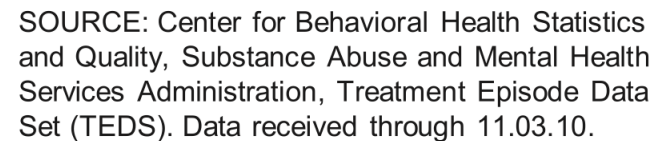
(range 0 – 214)



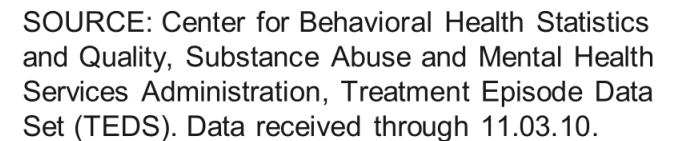
SOURCE: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS). Data received through 11.03.10.

The map displays the distribution of the elderly population across the United States. States with the highest percentages (dark red) include New York, Pennsylvania, Maryland, Delaware, New Jersey, Connecticut, Rhode Island, Massachusetts, Vermont, New Hampshire, Maine, New Brunswick, and Vermont. States with moderate to high percentages (red) include Washington, Oregon, California, Nevada, Arizona, Texas, Oklahoma, Kansas, Nebraska, Minnesota, Wisconsin, Illinois, Indiana, Ohio, Kentucky, Tennessee, North Carolina, South Carolina, Virginia, West Virginia, and Florida. States with moderate percentages (orange) include Montana, Wyoming, Colorado, New Mexico, Idaho, Utah, and Hawaii. States with low percentages (light yellow) include North Dakota, South Dakota, and Nebraska. States with diagonal hatching include Alaska, Georgia, and West Virginia.

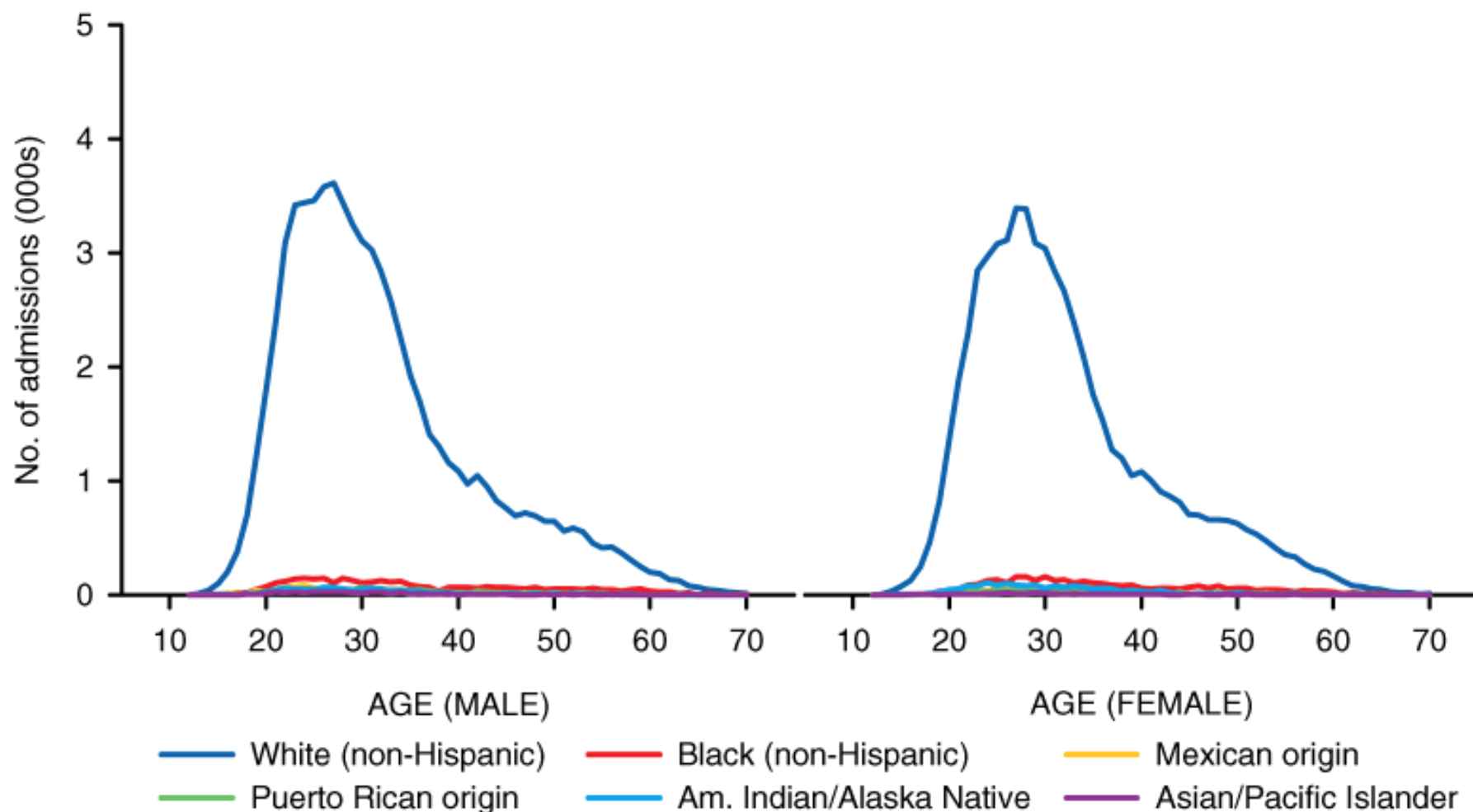
(range 1 – 340)



(range 1 – 379)

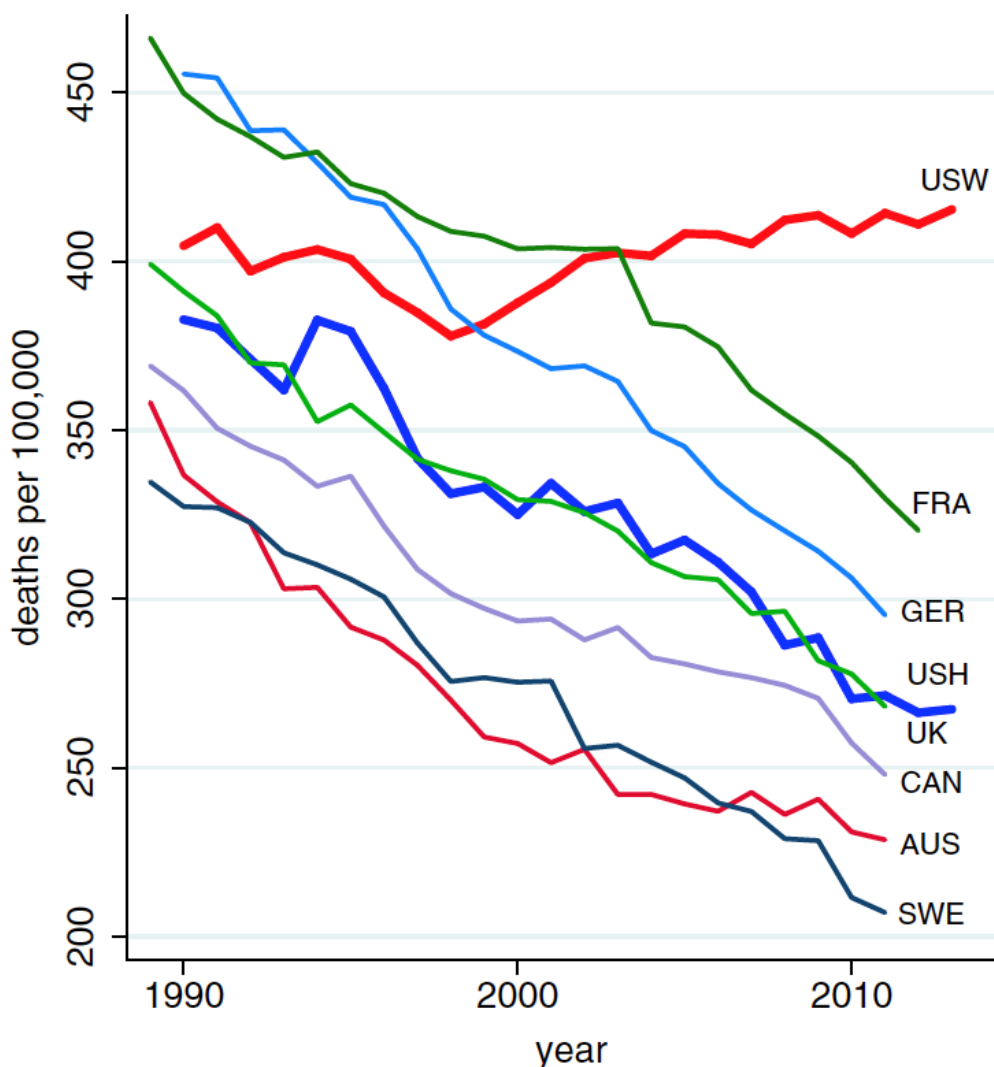


Non-heroin opioid treatment admissions: 2013



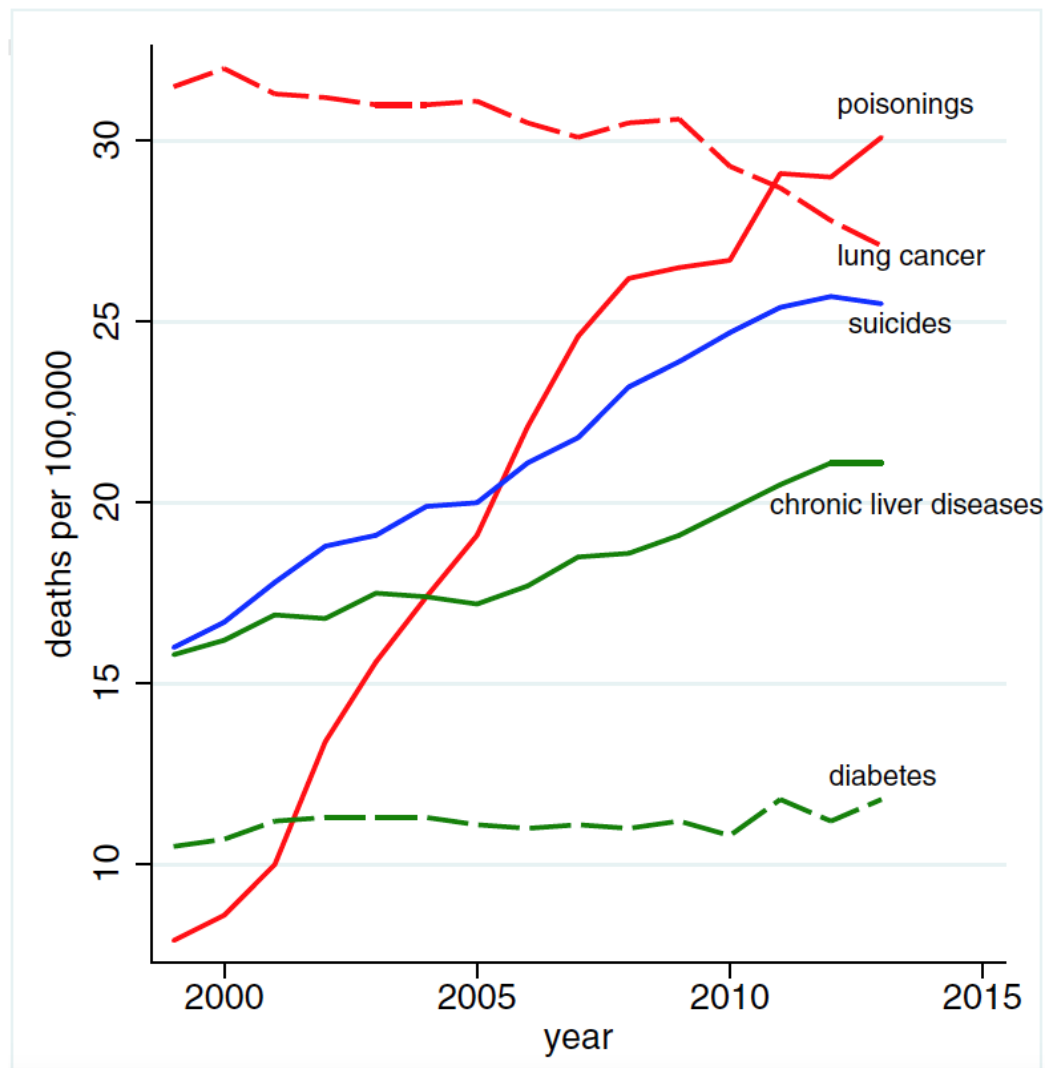
SOURCE: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS). Data received through 01.23.15.

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



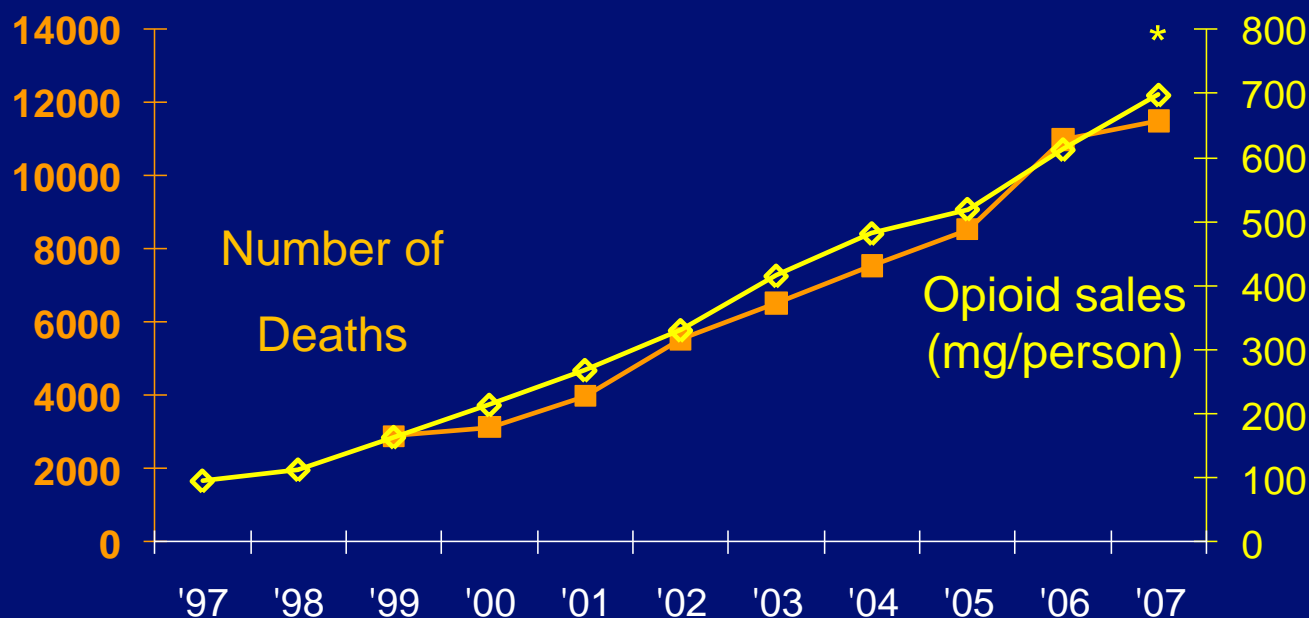
France (FRA), Germany (GER), the United Kingdom (UK), Canada (CAN), Australia (AUS), and Sweden (SWE).

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).

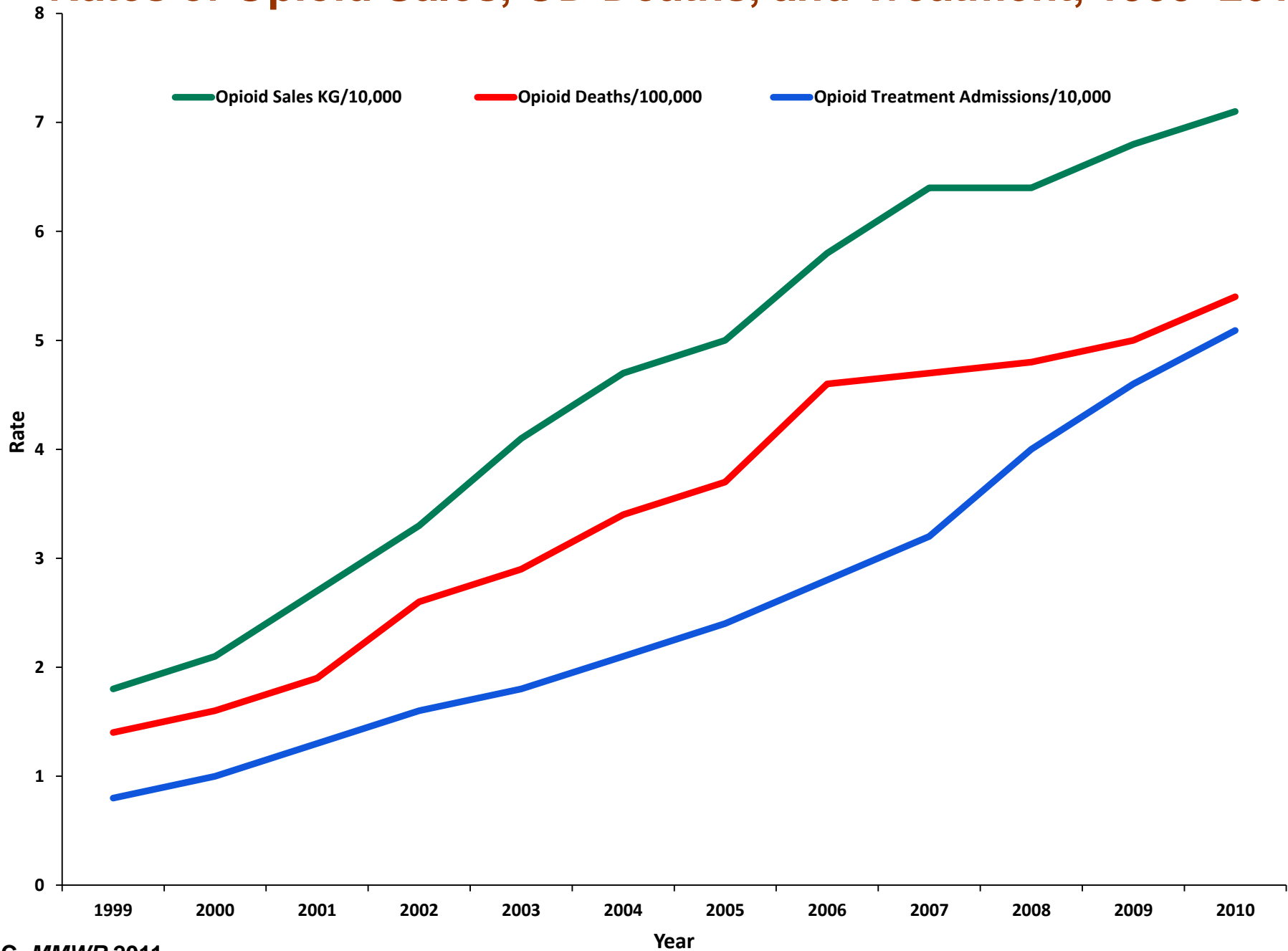
Unintentional overdose deaths involving opioid analgesics parallel per capita sales of opioid analgesics in morphine equivalents by year, U.S., 1997-2007



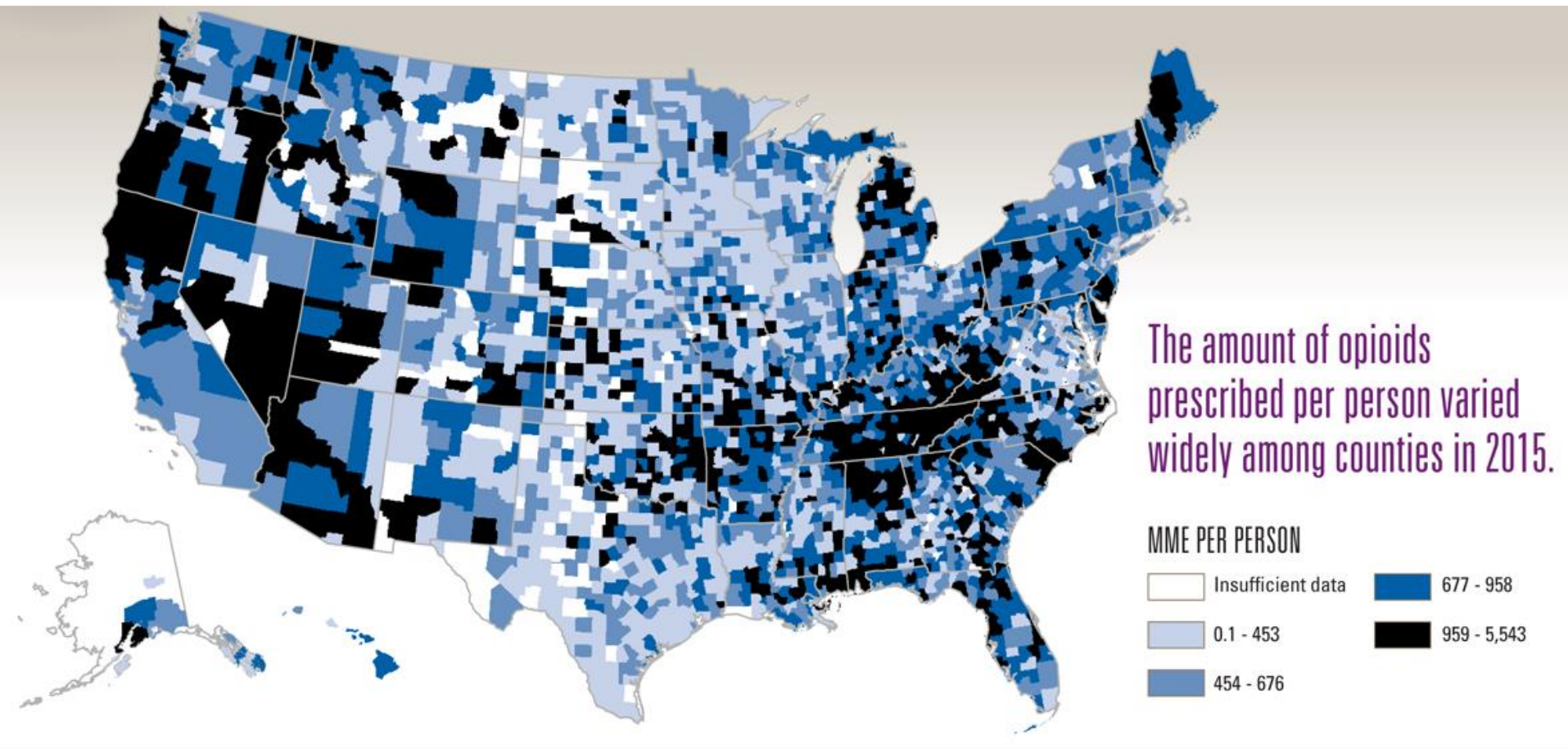
Source: National Vital Statistics System, multiple cause of death dataset, and DEA ARCOS

* 2007 opioid sales figure is preliminary.

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

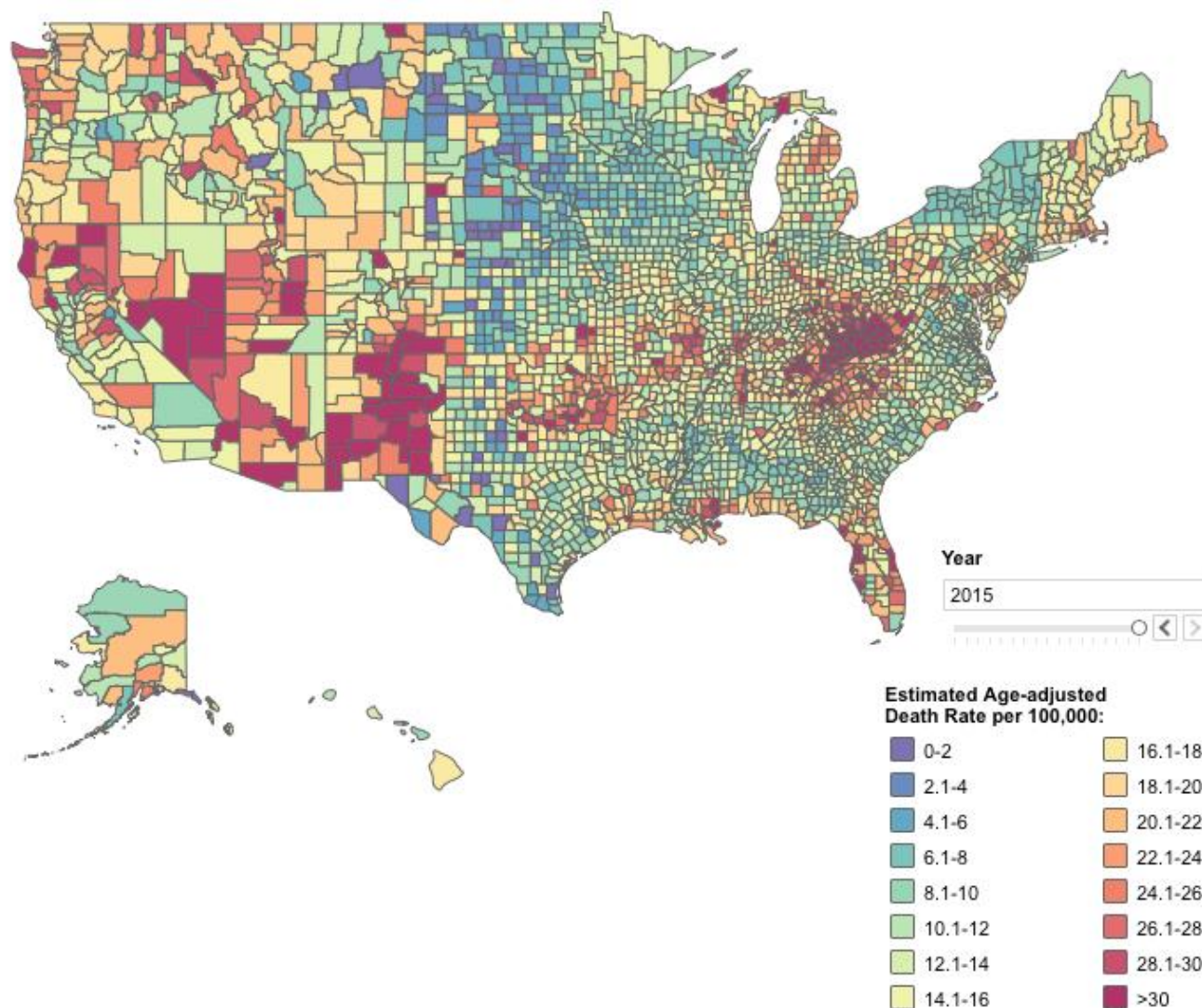


Opioid Prescribing by Morphine Mg Equivalents by County 2015

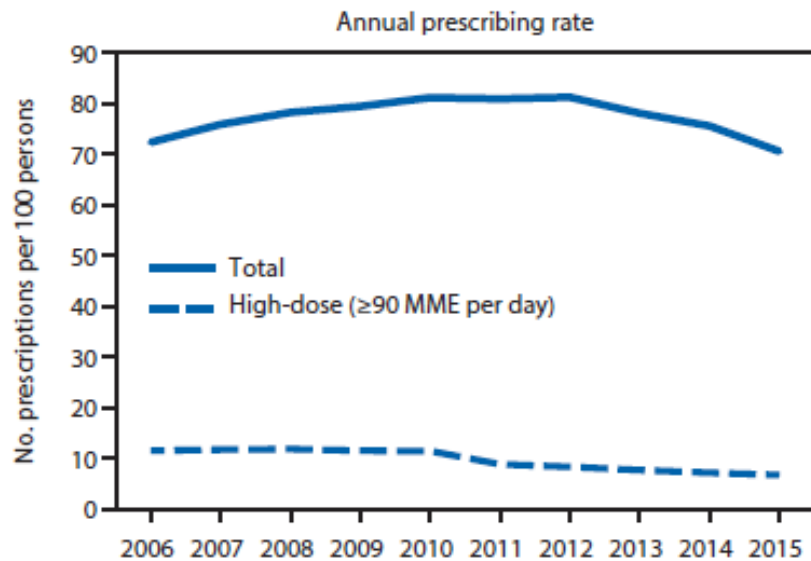


Source: MMWR / July 7, 2017 / Vol. 66 / No. 26 US Department of Health and Human Services/Centers for Disease Control and Prevention

Estimated Age-adjusted Death Rates for Drug Poisoning by County, United States: 2015

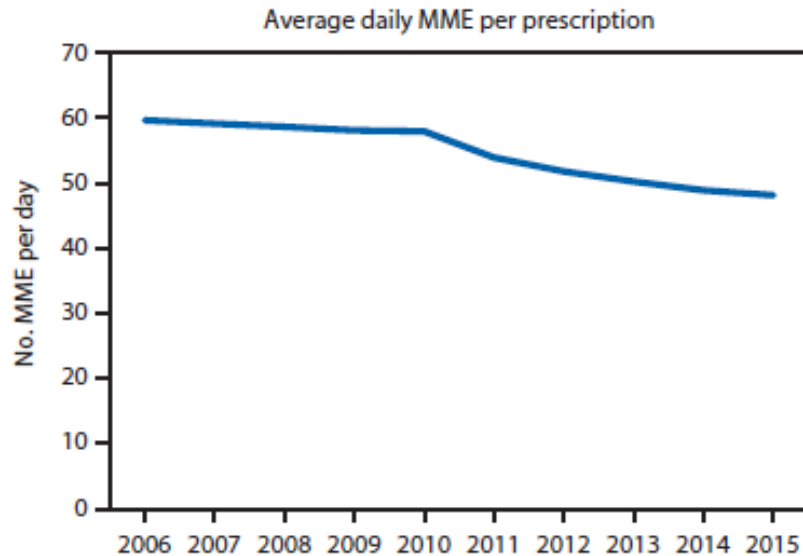


Source: Rossen LM, Bastian B, Warner M, Khan D, and Chong Y. Drug poisoning mortality: United States, 1999–2015. National Center for Health Statistics. 2017.



Opioid prescribing in the U.S. peaked ~ 2011

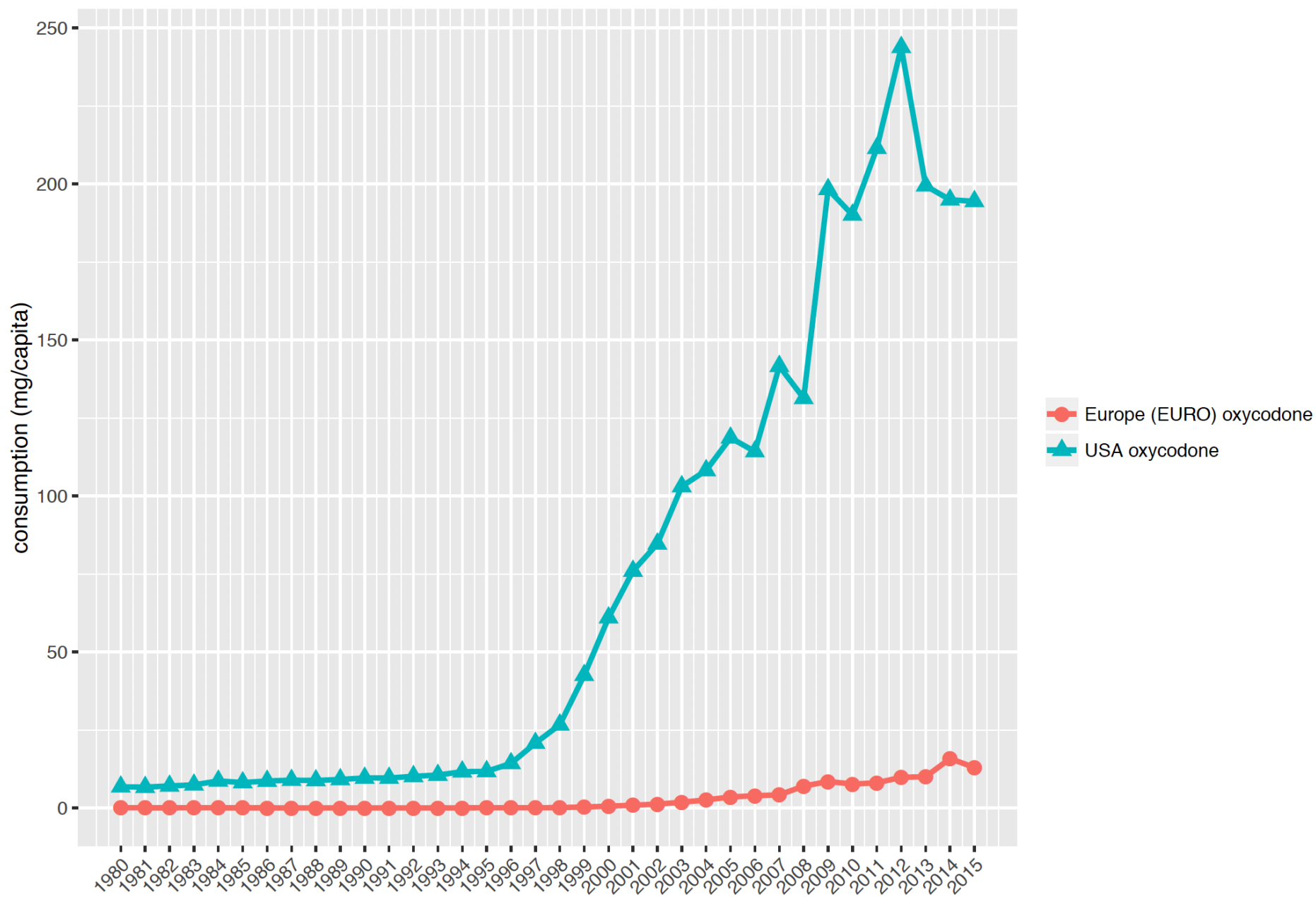
Prescribing has declined slightly since 2011



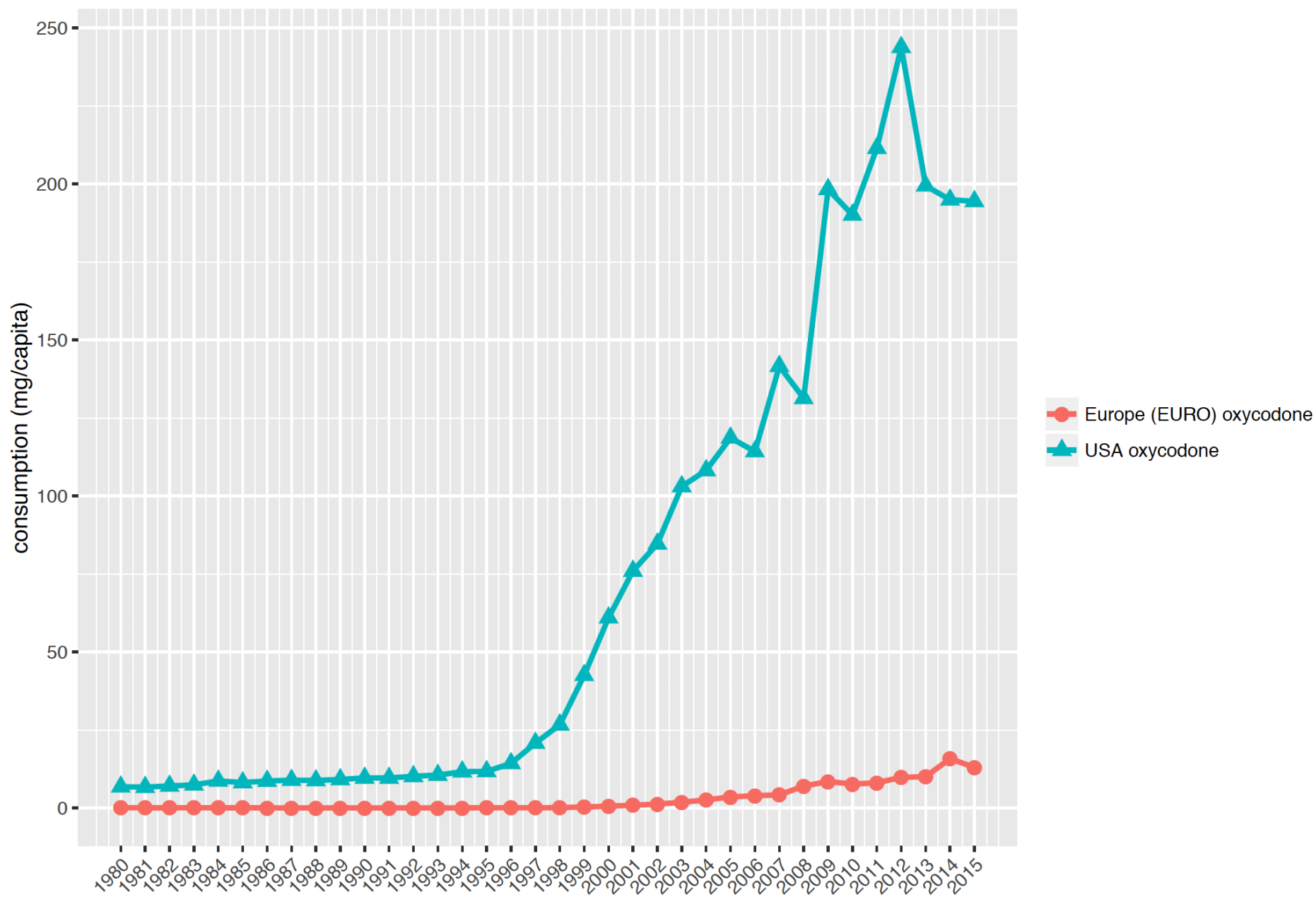
Prescribing levels in 2015 were 3 times higher than 1999

Source: Guy GP Jr., Zhang K, Bohm MK, et al. Vital Signs: Changes in Opioid Prescribing in the United States, 2006–2015. MMWR Morb Mortal Wkly Rep 2017;66:697–704.

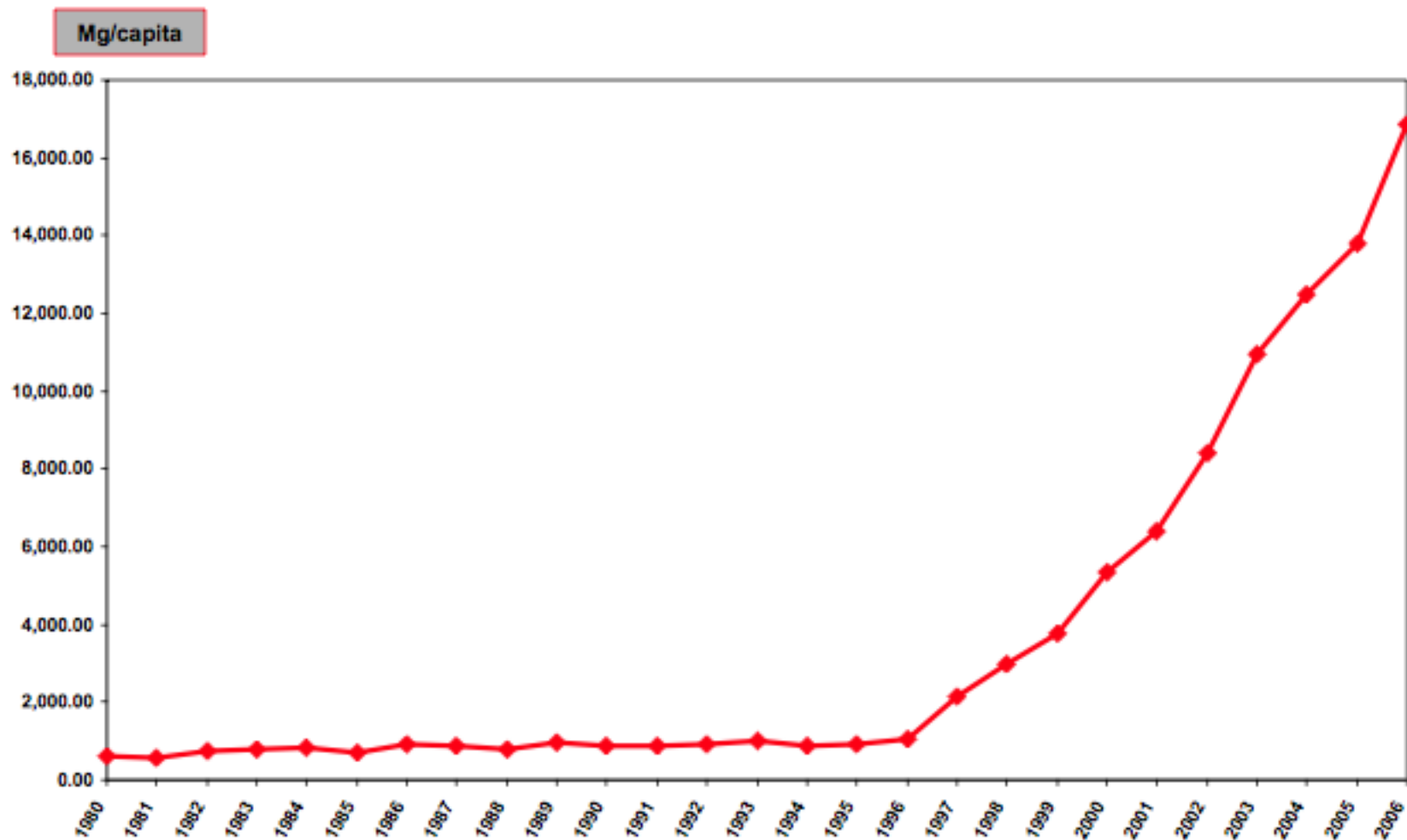
USA oxycodone consumption (mg/capita) 1980–2015



USA oxycodone consumption (mg/capita) 1980–2015

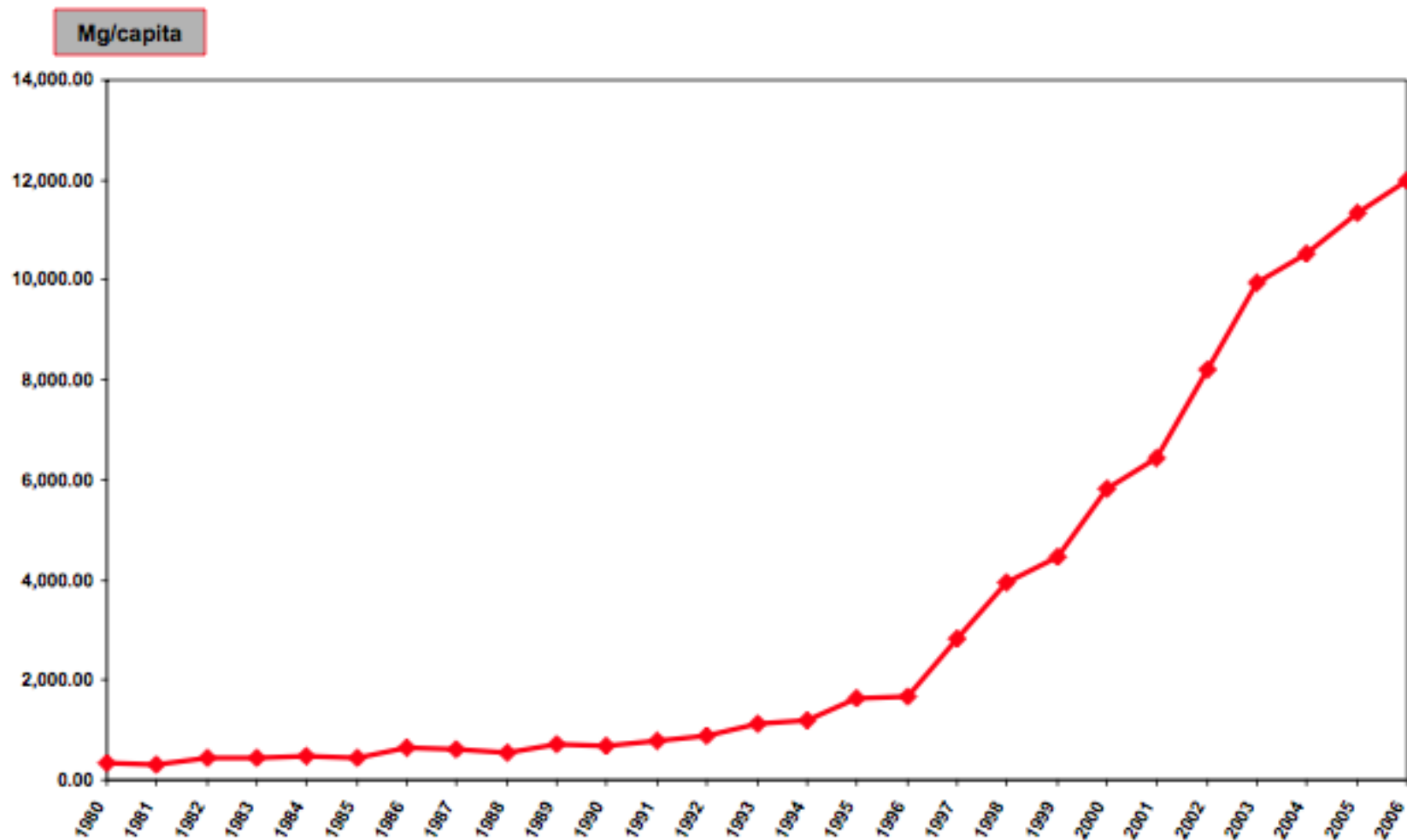


New York Consumption of Oxycodone 1980 - 2006



Sources: U.S. Dept of Justice, Drug Enforcement Administration, Office of Diversion Control

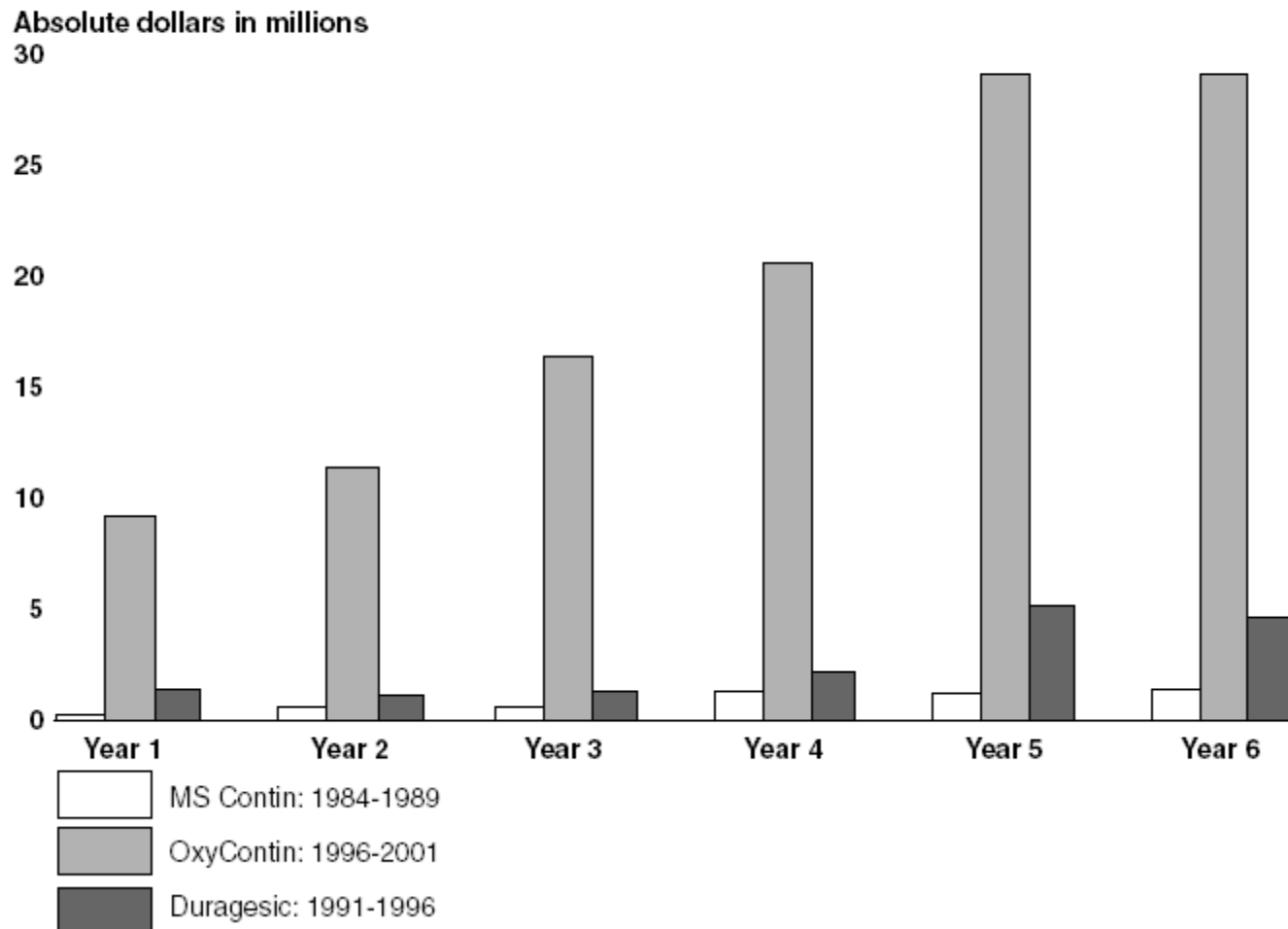
New York Consumption of Hydrocodone 1980 - 2006



Sources: U.S. Dept of Justice, Drug Enforcement Administration, Office of Diversion Control

Dollars Spent Marketing OxyContin (1996-2001)

Figure 1: Promotional Spending for Three Opioid Analgesics in First 6 Years of Sales



Source: United States General Accounting Office: Dec. 2003, "OxyContin Abuse and Diversion and Efforts to Address the Problem."

Industry-funded “educational” messages

- Physicians are needlessly allowing patients to suffer because of “opiophobia.”
- Opioid addiction is rare in pain patients.
- Opioids can be easily discontinued.
- Opioids are safe and effective for chronic pain.

Industry-funded organizations campaigned for greater use of opioids

- Pain Patient Groups
- Professional Societies
- The Joint Commission
- The Federation of State Medical Boards



“The risk of addiction is much less than 1%”

Porter J, Jick H. *Addiction rare in patients treated with narcotics*. N Engl J Med. 1980 Jan 10;302(2):123

Cited 824 times (Google Scholar)

N Engl J Med. 1980 Jan 10;302(2):123.

ADDICTION RARE IN PATIENTS TREATED WITH NARCOTICS

To the Editor: Recently, we examined our current files to determine the incidence of narcotic addiction in 39,946 hospitalized medical patients¹ who were monitored consecutively. Although there were 11,882 patients who received at least one narcotic preparation, there were only four cases of reasonably well documented addiction in patients who had no history of addiction. The addiction was considered major in only one instance. The drugs implicated were meperidine in two patients,² Percodan in one, and hydromorphone in one. We conclude that despite widespread use of narcotic drugs in hospitals, the development of addiction is rare in medical patients with no history of addiction.

JANE PORTER

HERSHEL JICK, M.D.

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Waltham, MA 02154

Boston University Medical Center

1. Jick H, Miettinen OS, Shapiro S, Lewis GP, Siskind Y, Slone D. Comprehensive drug surveillance. JAMA. 1970; 213:1455-60.
2. Miller RR, Jick H. Clinical effects of meperidine in hospitalized medical patients. J Clin Pharmacol. 1978; 18:180-8.

Long-term Opioid Treatment of Nonmalignant Pain

A Believer Loses His Faith

(REPRINTED) ARCH INTERN MED/VOL 170 (NO. 16), SEP 13, 2010
1422

WWW.ARCHINTERNMED.COM

Annals of Internal Medicine

EDITORIAL

Chronic Noncancer Pain Management and Opioid Overdose: Time to Change Prescribing Practices

BMJ

Facing up to the prescription opioid crisis

Deaths resulting from prescription opioids tripled in the United States between 1999 and 2007 and are also increasing in many other countries, including the United Kingdom. **Irfan A Dhalla**, **Navindra Persaud**, and **David N Juurlink** describe how this situation developed and propose several ways to reduce morbidity and mortality from opioids

BMJ 2011;343:d5142 doi: 10.1136/bmj.d5142

Annals of Internal Medicine

IDEAS AND OPINIONS

Long-Term Opioid Therapy Reconsidered

Michael Von Korff, ScD; Andrew Kolodny, MD; Richard A. Devo, MD, MPH; and Roger Chou, MD



The NEW ENGLAND JOURNAL of MEDICINE

A Flood of Opioids, a Rising Tide of Deaths

Susan Okie, M.D.

Viewpoint

EXPAND

Patient Satisfaction, Prescription Drug Abuse, and Potential Unintended Consequences

Aleksandra Zgierska, MD, PhD; Michael Miller, MD; David Rabago, MD

JAMA[®]

The Journal of the American Medical Association

The Effectiveness and Risks of Long-Term Opioid Therapy for Chronic Pain: A Systematic Review for a National Institutes of Health Pathways to Prevention Workshop

Roger Chou, MD; Judith A. Turner, PhD; Emily B. Devine, PharmD, PhD, MBA; Ryan N. Hansen, PharmD, PhD; Sean D. Sullivan, PhD; Ian Blazina, MPH; Tracy Dana, MLS; Christina Bougatsos, MPH; and Richard A. Deyo, MD, MPH

Background: Increases in prescriptions of opioid medications for chronic pain have been accompanied by increases in opioid overdoses, abuse, and other harms and uncertainty about long-term effectiveness.

Purpose: To evaluate evidence on the effectiveness and harms of long-term (>3 months) opioid therapy for chronic pain in adults.

Data Sources: MEDLINE, the Cochrane Central Register of Controlled Trials, the Cochrane Database of Systematic Reviews, PsycINFO, and CINAHL (January 2008 through August 2014); relevant studies from a prior review; reference lists; and ClinicalTrials.gov.

Study Selection: Randomized trials and observational studies that involved adults with chronic pain who were prescribed long-term opioid therapy and that evaluated opioid therapy versus placebo, no opioid, or nonopioid therapy; different opioid dosing strategies; or risk mitigation strategies.

Data Extraction: Dual extraction and quality assessment.

Data Synthesis: No study of opioid therapy versus no opioid therapy evaluated long-term (>1 year) outcomes related to pain, function, quality of life, opioid abuse, or addiction. Good- and

fair-quality observational studies suggest that opioid therapy for chronic pain is associated with increased risk for overdose, opioid abuse, fractures, myocardial infarction, and markers of sexual dysfunction, although there are few studies for each of these outcomes; for some harms, higher doses are associated with increased risk. Evidence on the effectiveness and harms of different opioid dosing and risk mitigation strategies is limited.

Limitations: Non-English-language articles were excluded, meta-analysis could not be done, and publication bias could not be assessed. No placebo-controlled trials met inclusion criteria, evidence was lacking for many comparisons and outcomes, and observational studies were limited in their ability to address potential confounding.

Conclusion: Evidence is insufficient to determine the effectiveness of long-term opioid therapy for improving chronic pain and function. Evidence supports a dose-dependent risk for serious harms.

Primary Funding Source: Agency for Healthcare Research and Quality.

Ann Intern Med. 2015;162:276-286. doi:10.7326/M14-2559 www.annals.org
For author affiliations, see end of text.

This article was published online first at www.annals.org on 13 January 2015.



CDC Opioid Guideline (2016)

“Nonpharmacologic therapy and nonopioid pharmacologic therapy are preferred for chronic pain.”

CDC Opioid Guideline (2016)

- Developed without input from experts with ties to opioid makers
- Rejected use of so-called risk assessment tools
- Defined $\geq 50\text{mg}$ ME as high dose and $\geq 90\text{mg}$ ME to be avoided.
- For acute pain: “Three days or less will often be sufficient.”

VA/DOD Guideline (2017)

“We recommend **against** initiation of long-term opioid therapy for chronic pain”

“Risks for overdose and death significantly increase at a range of **20- 50 mg** morphine equivalent daily dose”

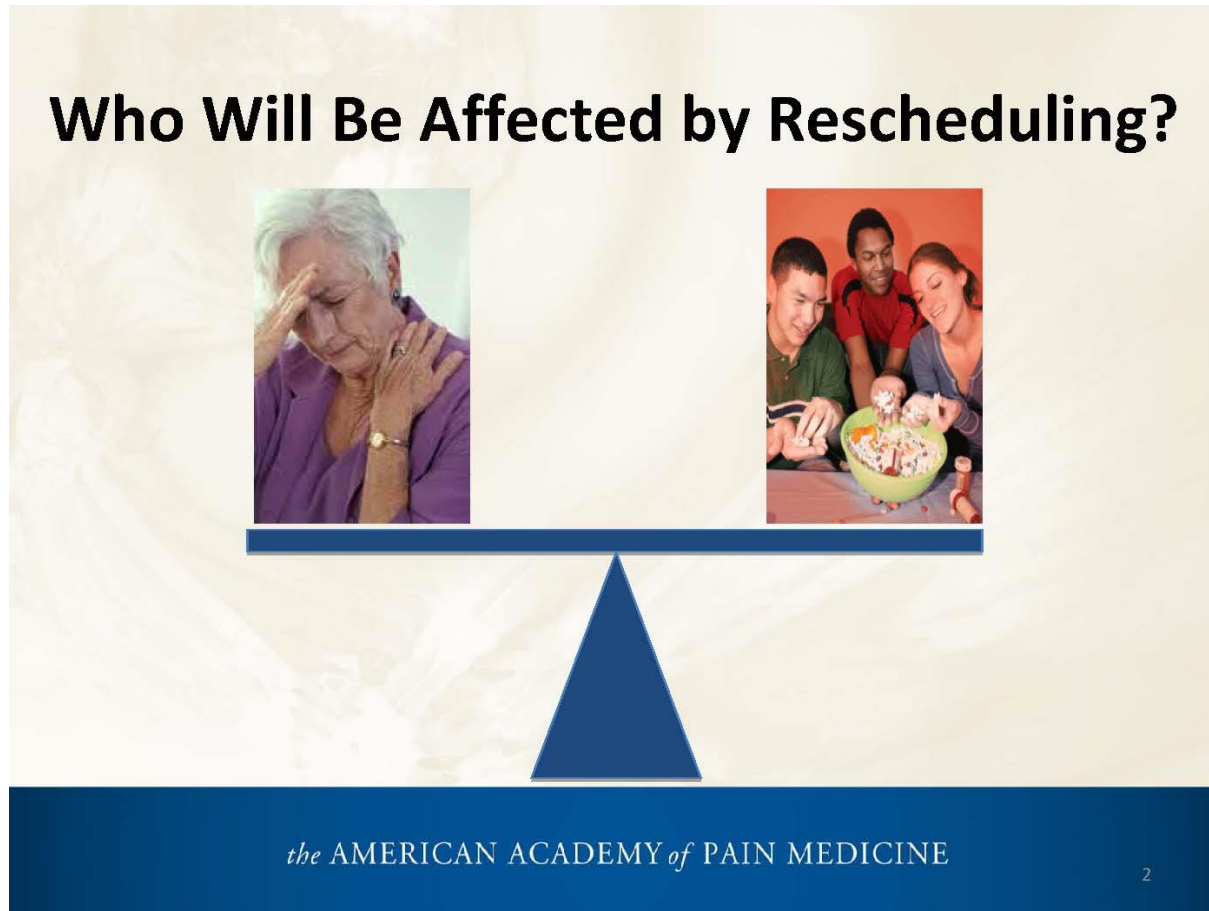
“We recommend **against** opioid doses over 90 mg morphine equivalent daily dose for treating chronic pain”

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.

How the opioid lobby frames the problem:



This is a false dichotomy
Opioid harms are not limited to so-called “drug abusers”

35% met DSM V criteria for an opioid use disorder¹

Pain Patients



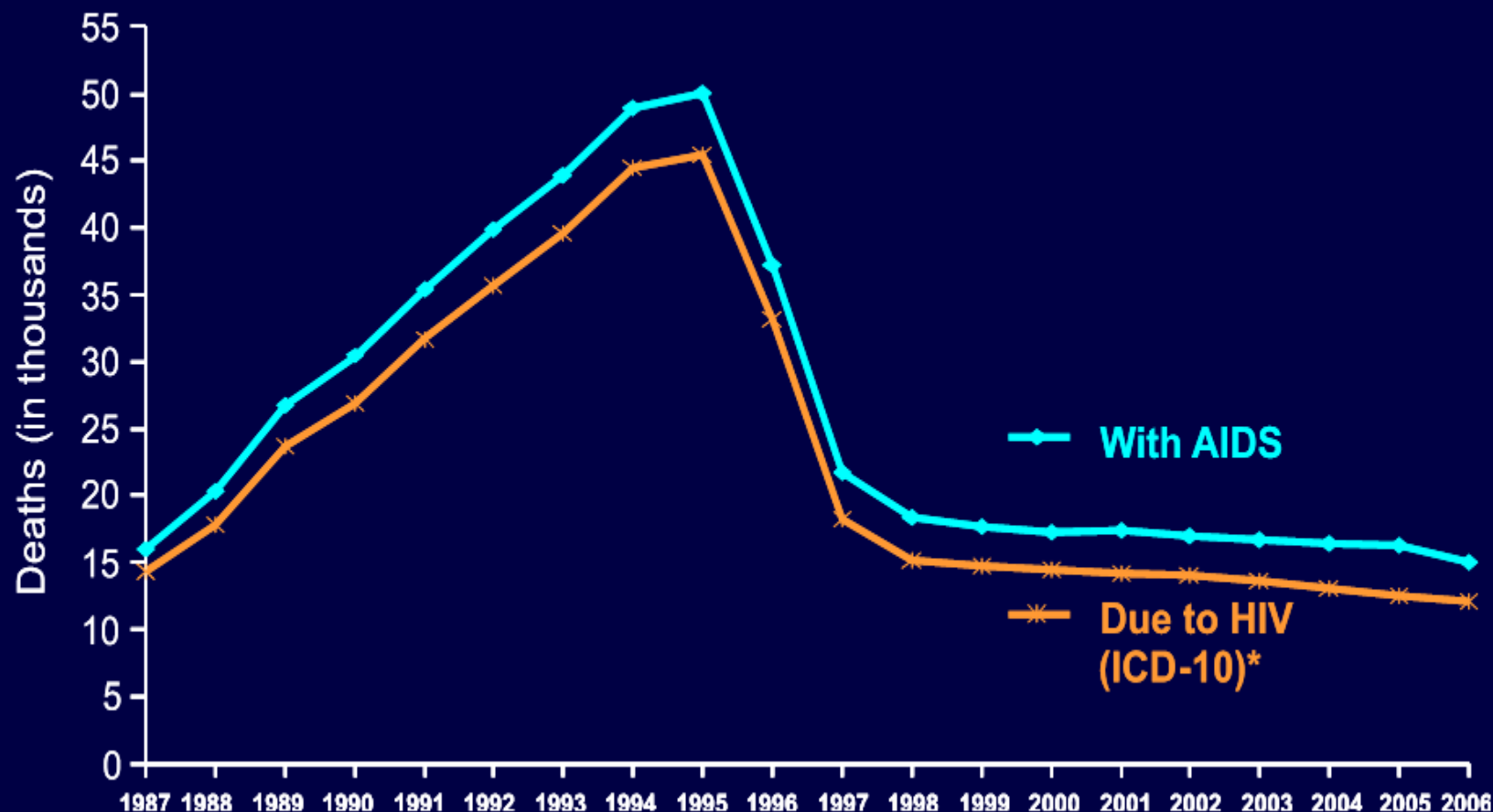
“Drug Abusers”

92% of opioid OD decedents were prescribed opioids for chronic pain.²

1. Boscarino JA, Rukstalis MR, Hoffman SN, et al. Prevalence of prescription opioid-use disorder among chronic pain patients: comparison of the DSM-5 vs. DSM-4 diagnostic criteria. J Addict Dis. 2011;30:185-194.

2. Johnson EM, Lanier WA, Merrill RM, et al. Unintentional Prescription Opioid-Related Overdose Deaths: Description of Decedents by Next of Kin or Best Contact, Utah, 2008-2009. J Gen Intern Med. 2012 Oct 16.

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.



Buprenorphine Experience in France

- Introduced in the mid 90s
- 79% decline in OD deaths in 6 years
- Use of mono product (not formulated with naloxone) associated with diversion and injection use

Summary

- The U.S. is in the midst of a severe epidemic of opioid addiction
- To bring the epidemic to an end:
 - We must prevent new cases of opioid addiction
 - We must ensure access to treatment for people already addicted