



# Responding to the Prescription Opioid and Heroin Crisis: *An Epidemic of Addiction*

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Heller School for Social Policy and Management  
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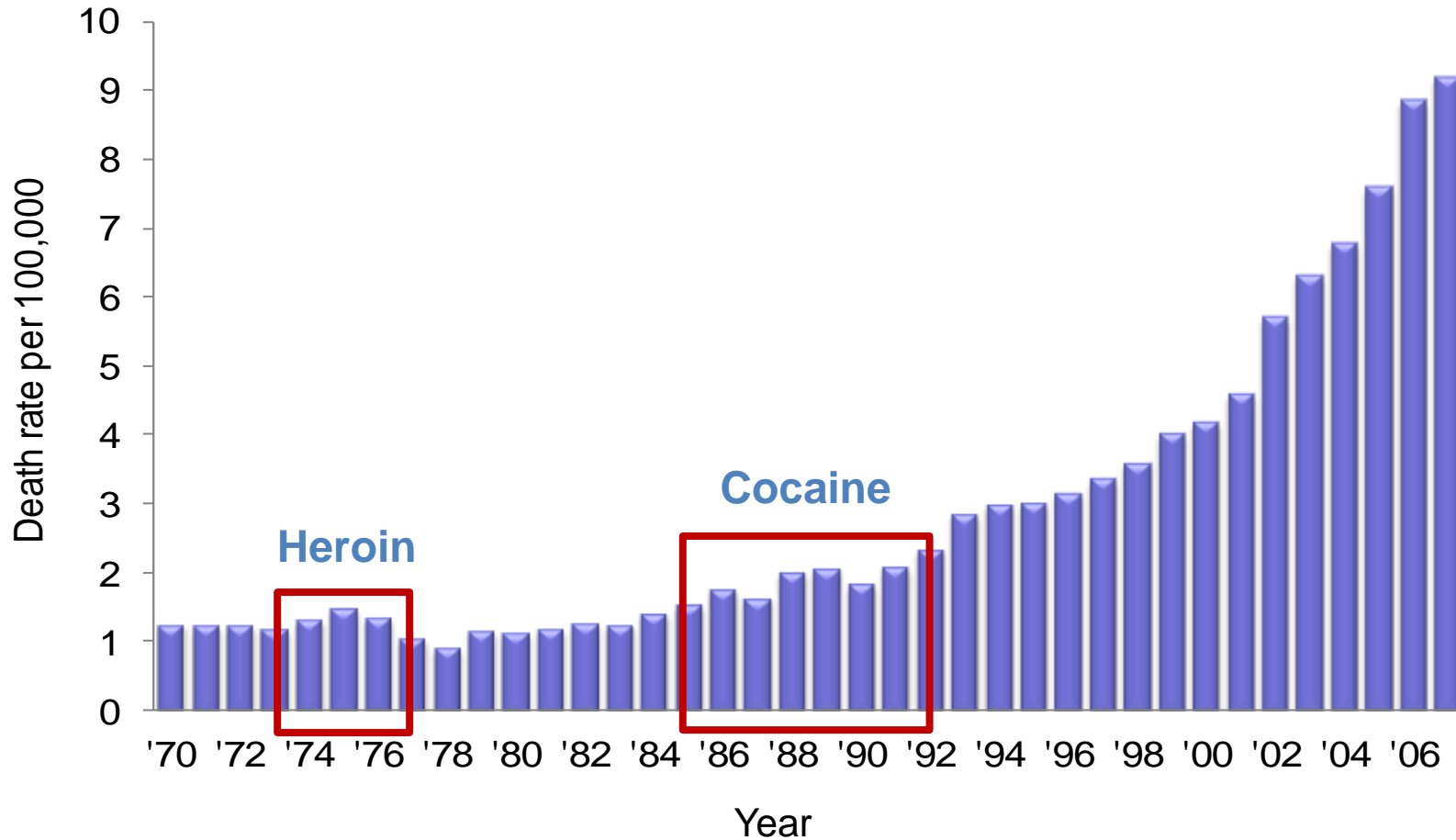
# Conflict of Interests

*I have no relevant financial relationships to disclose.*

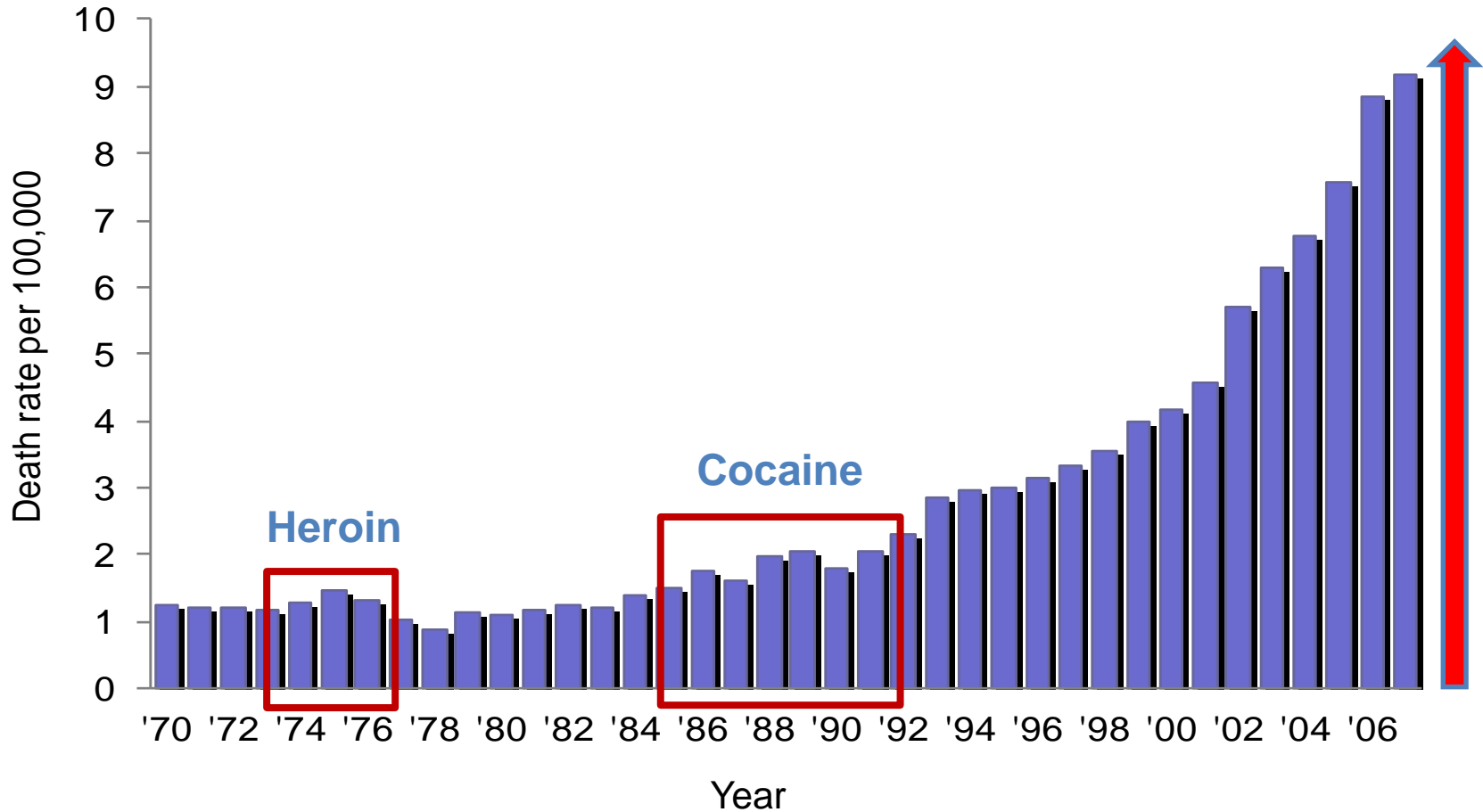
# Opium



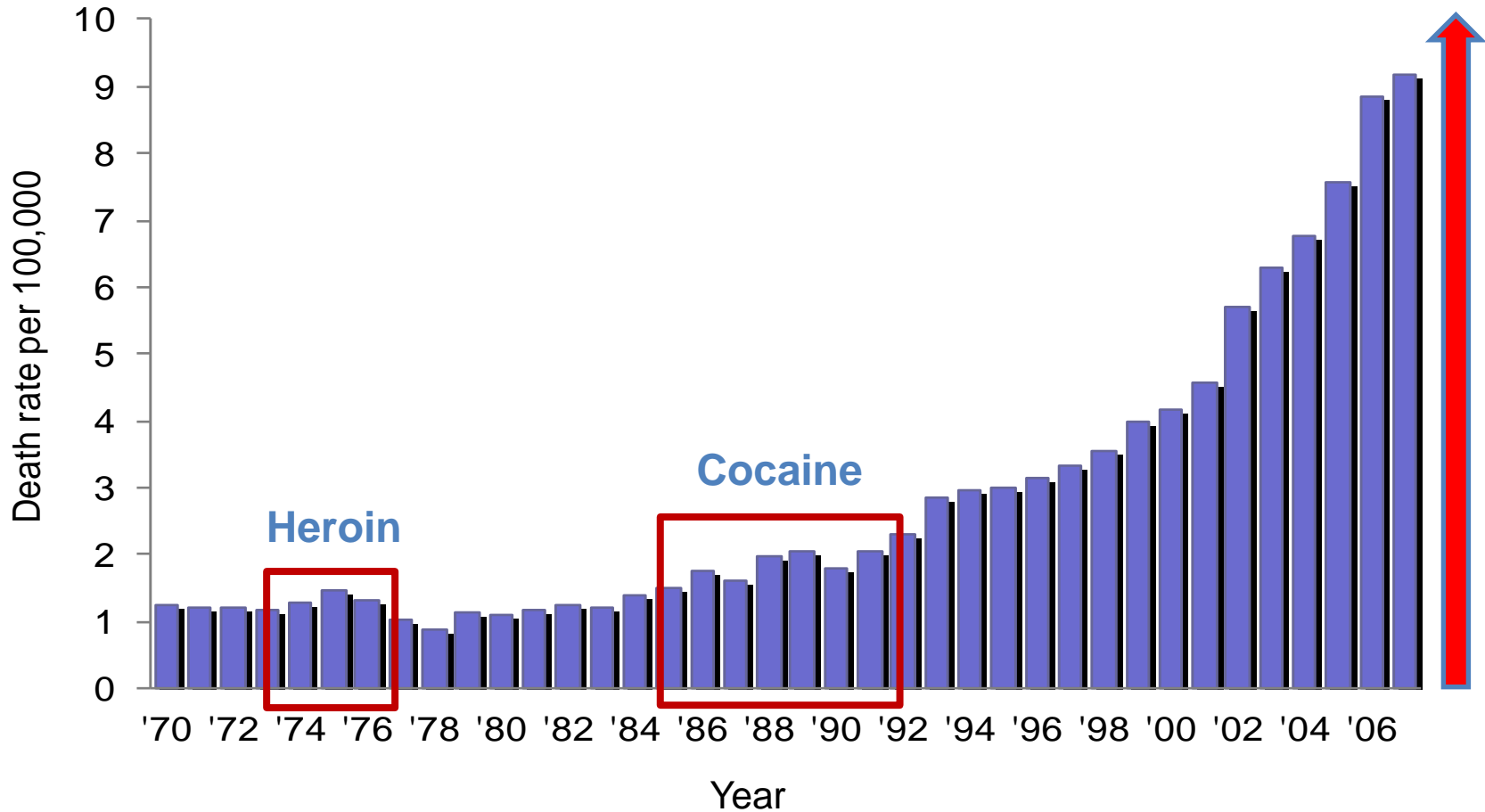
# Unintentional Drug Overdose Deaths United States, 1970–2007



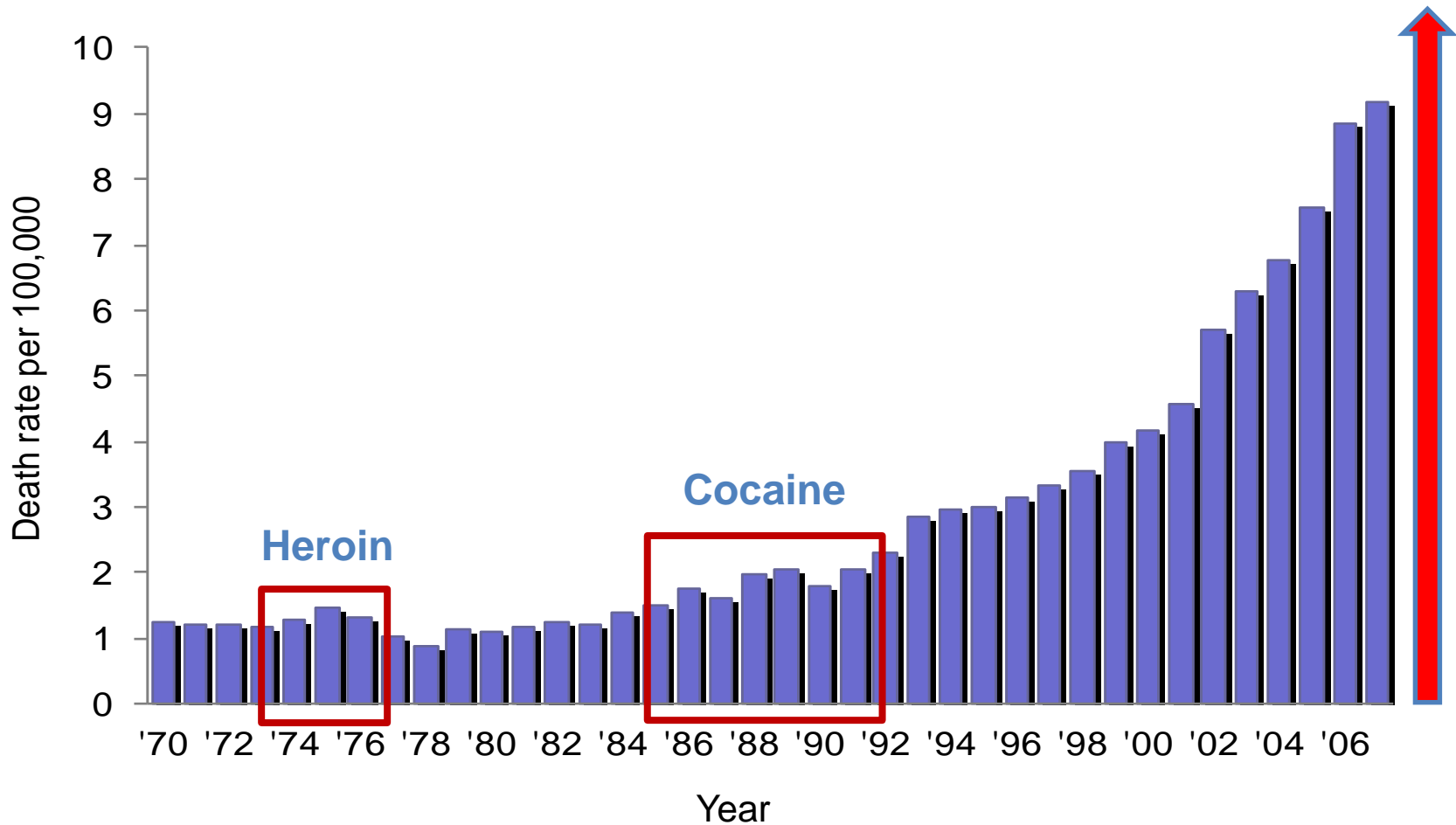
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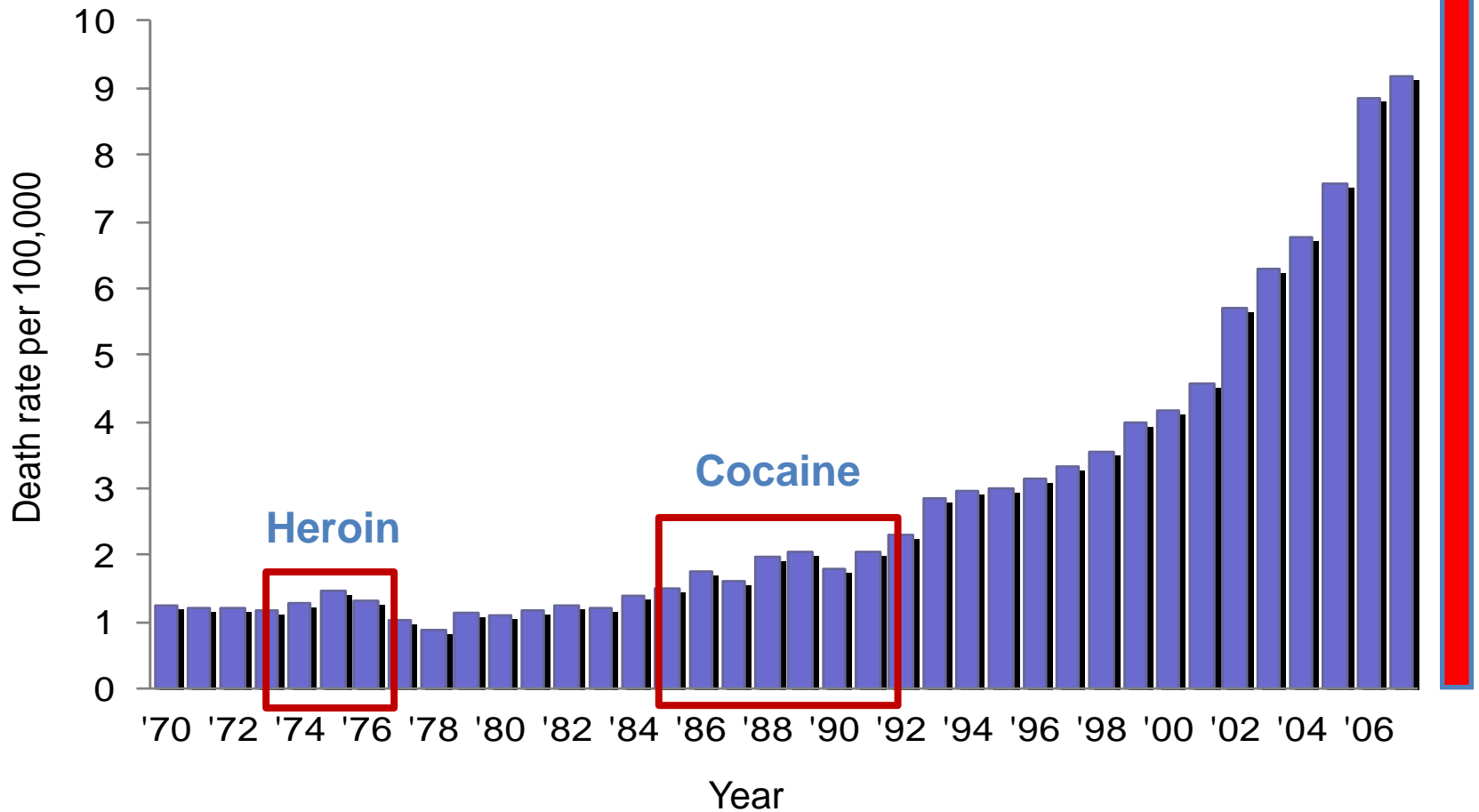
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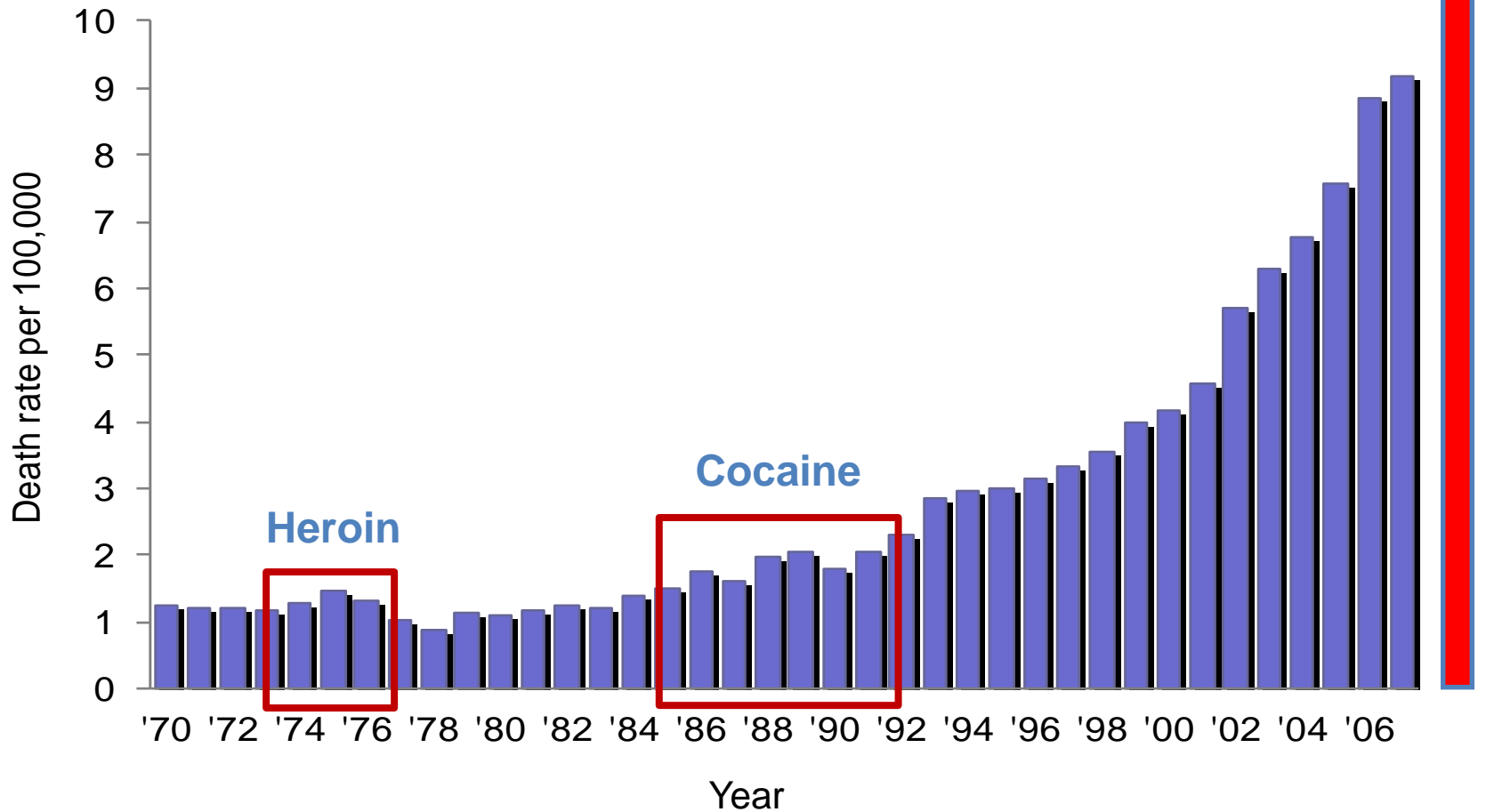


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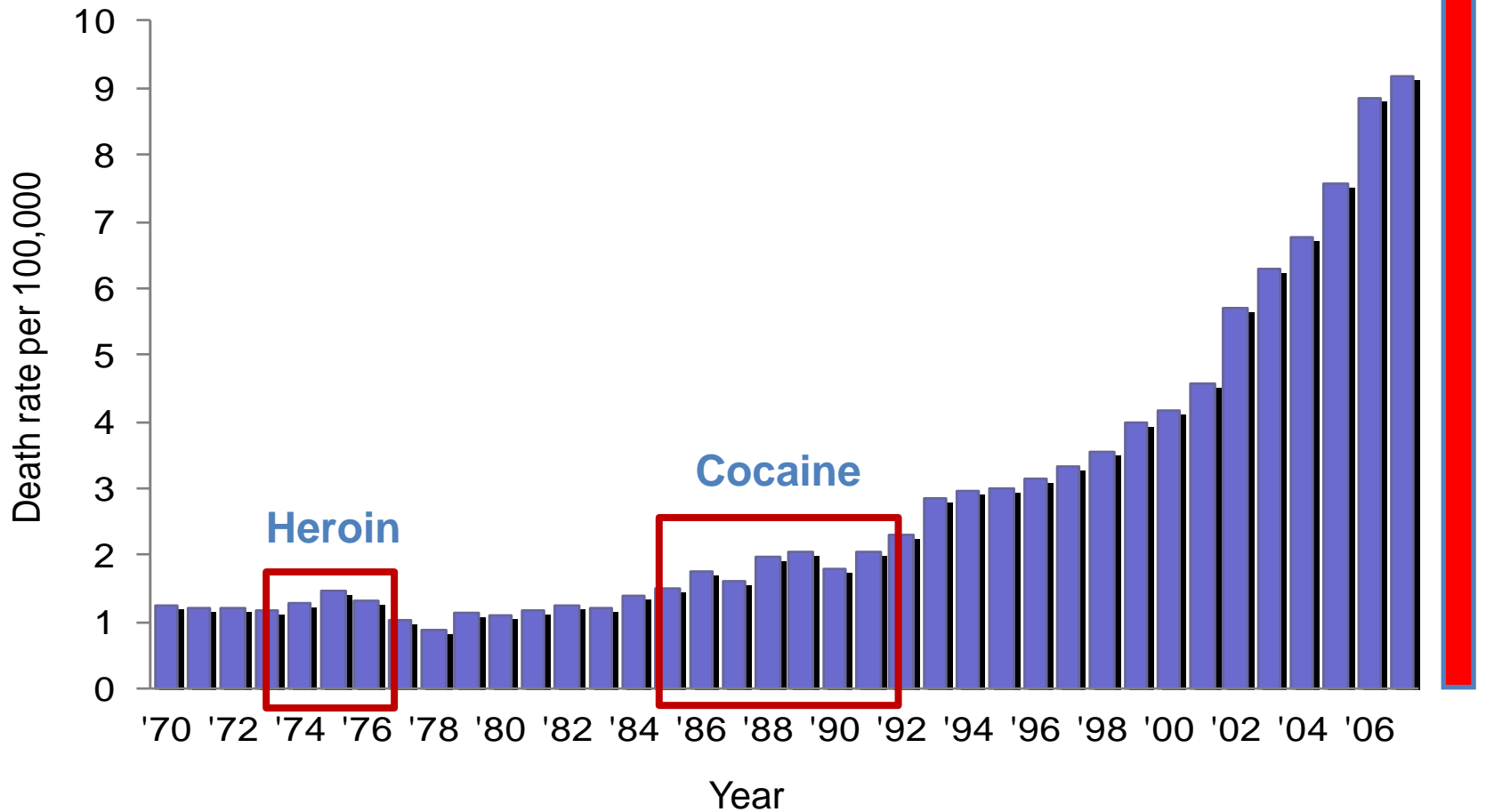




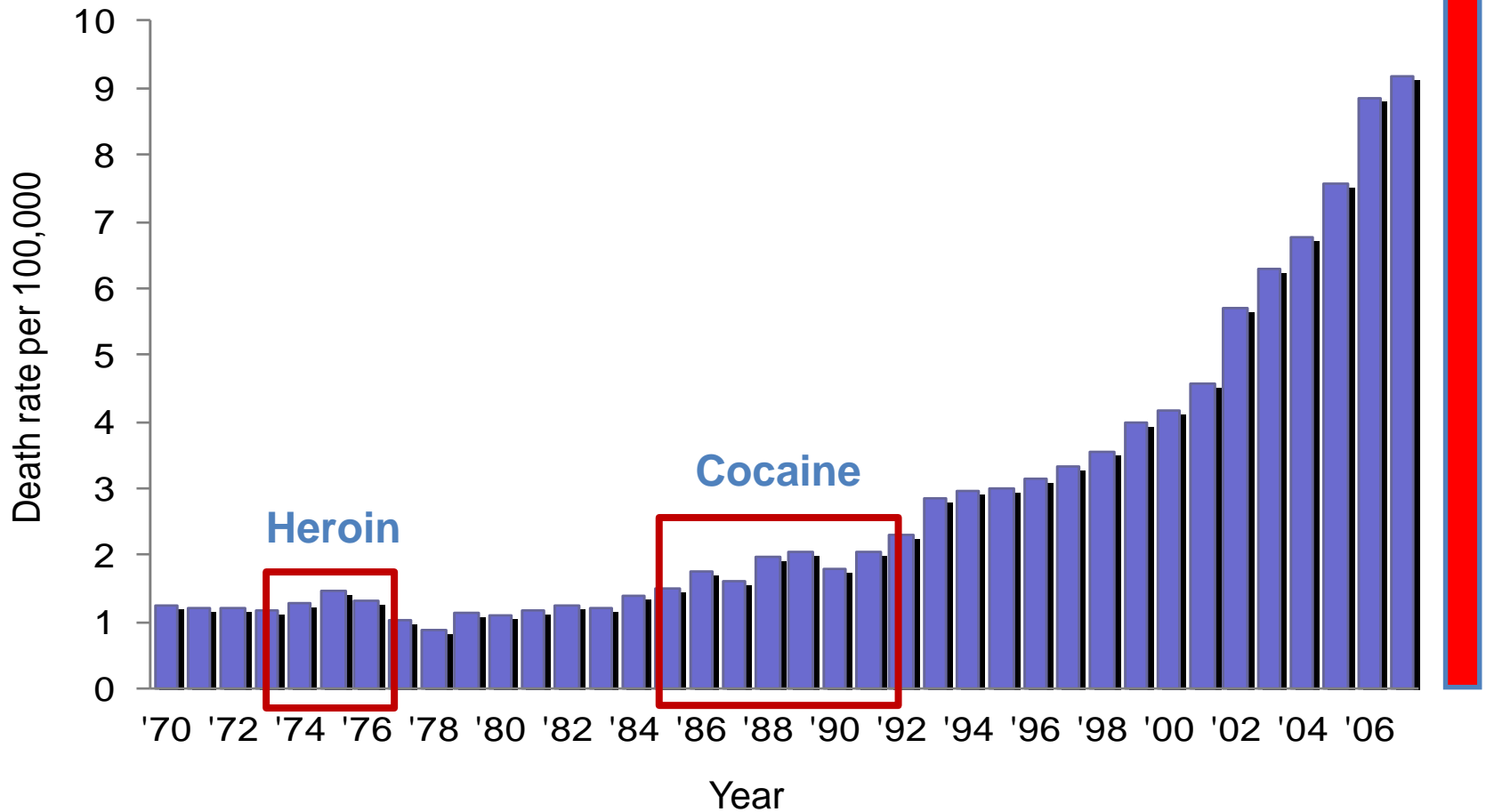
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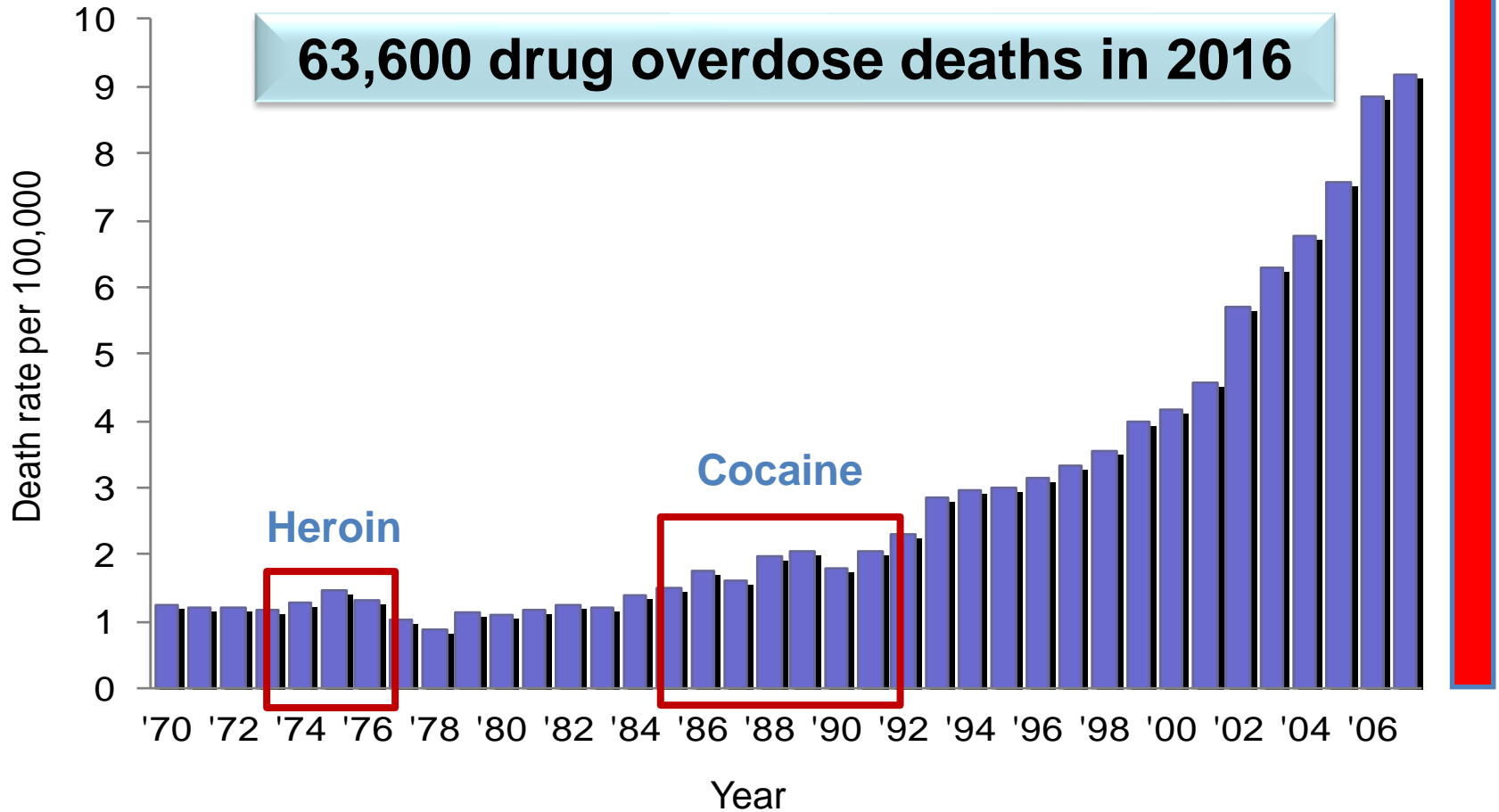
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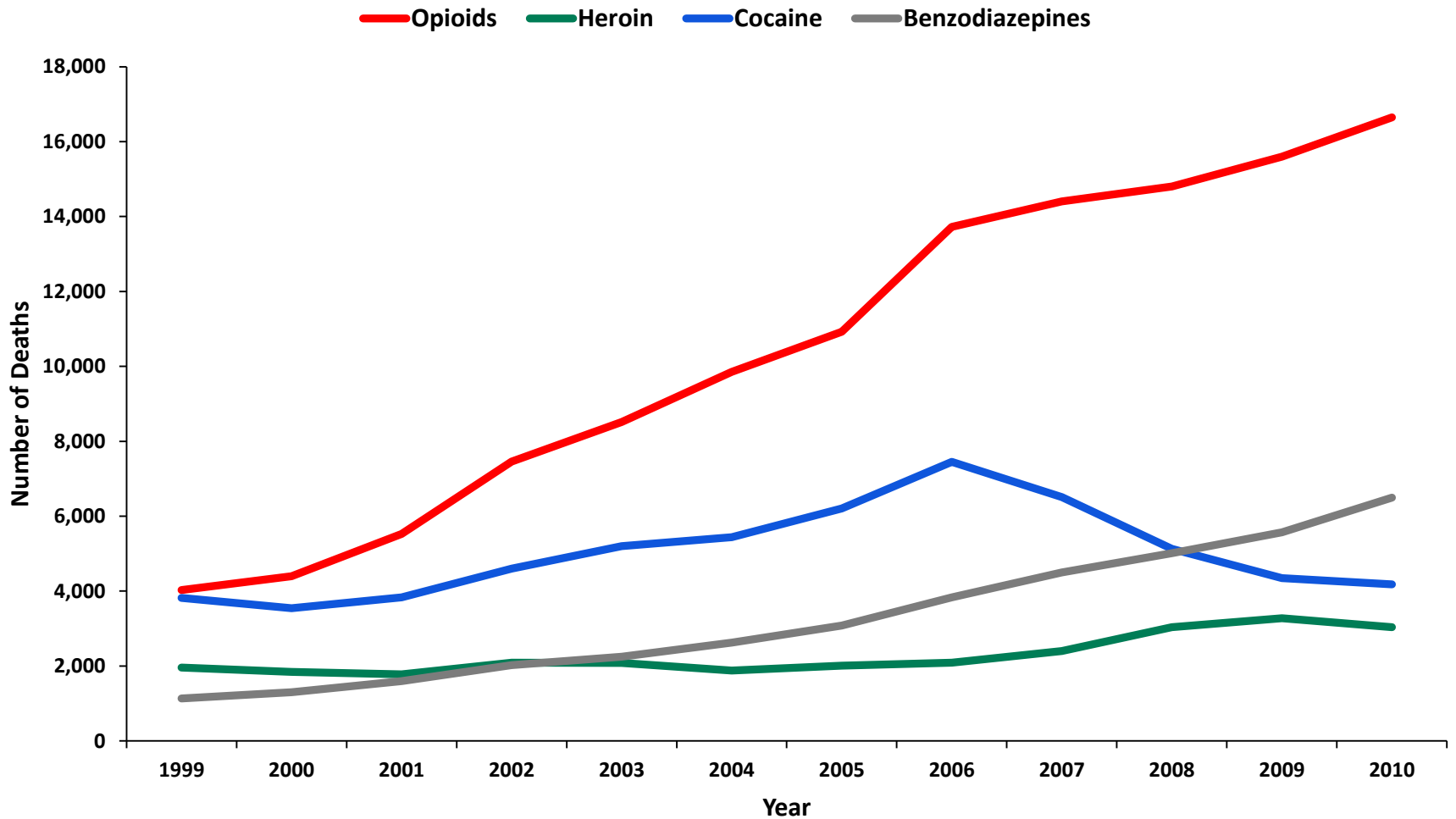
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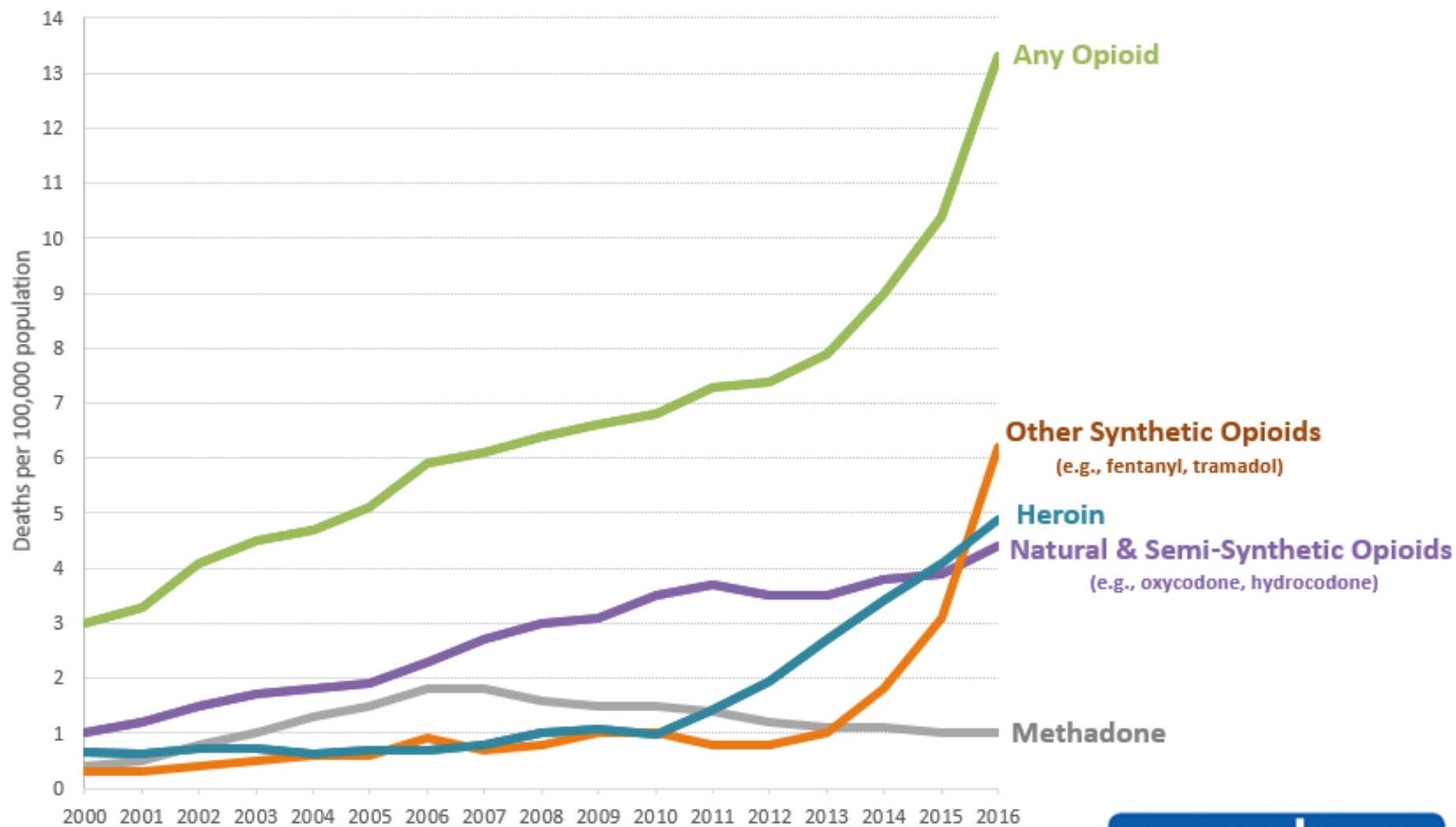
# Unintentional Drug Overdose Deaths United States, 1970–2007



# Drug Overdose Deaths by Major Drug Type, United States, 1999–2010



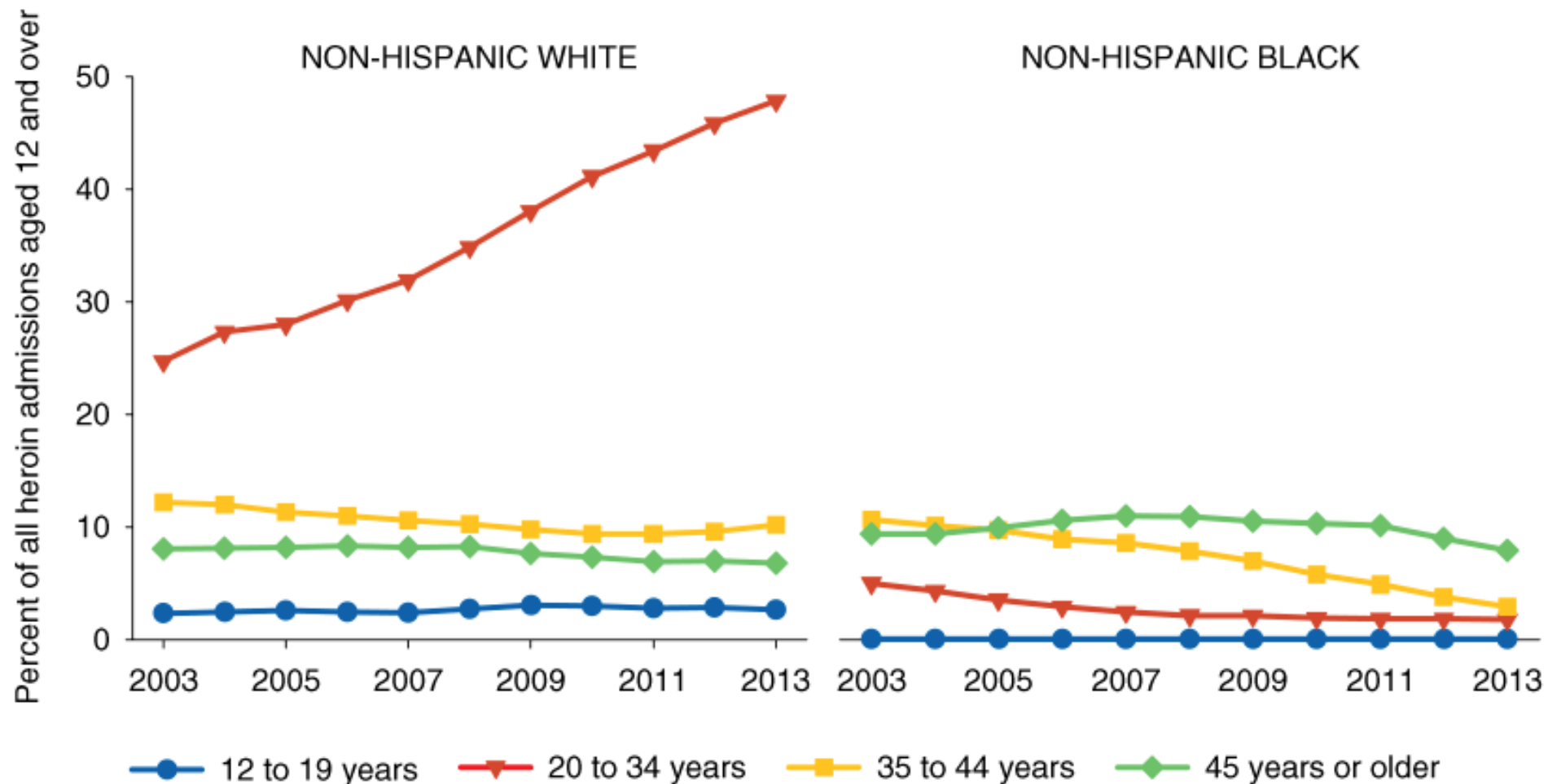
## Overdose Deaths Involving Opioids, by Type of Opioid, United States, 2000-2016



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/>.

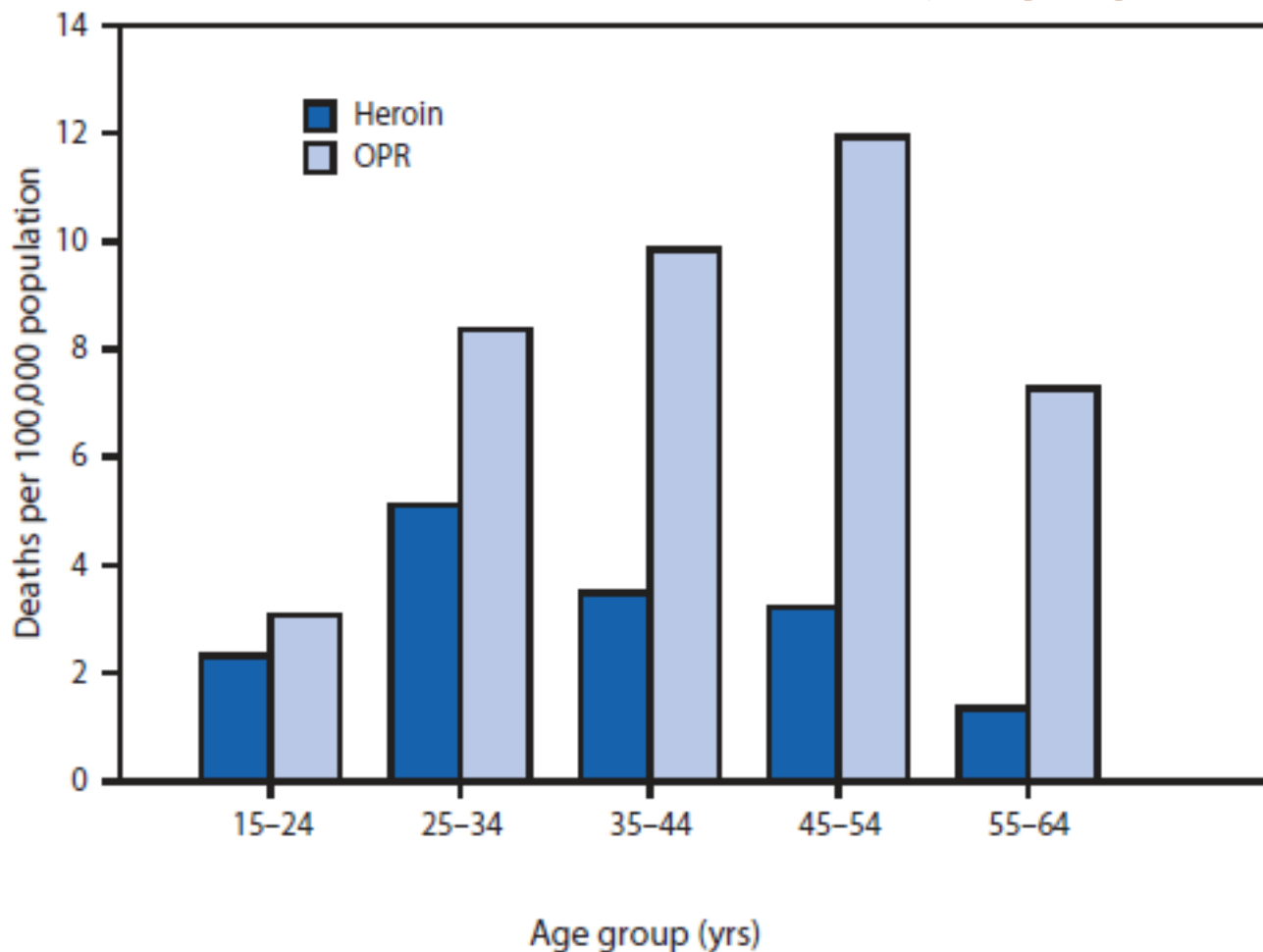
[www.cdc.gov](http://www.cdc.gov)  
Your Source for Credible Health Information

# 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

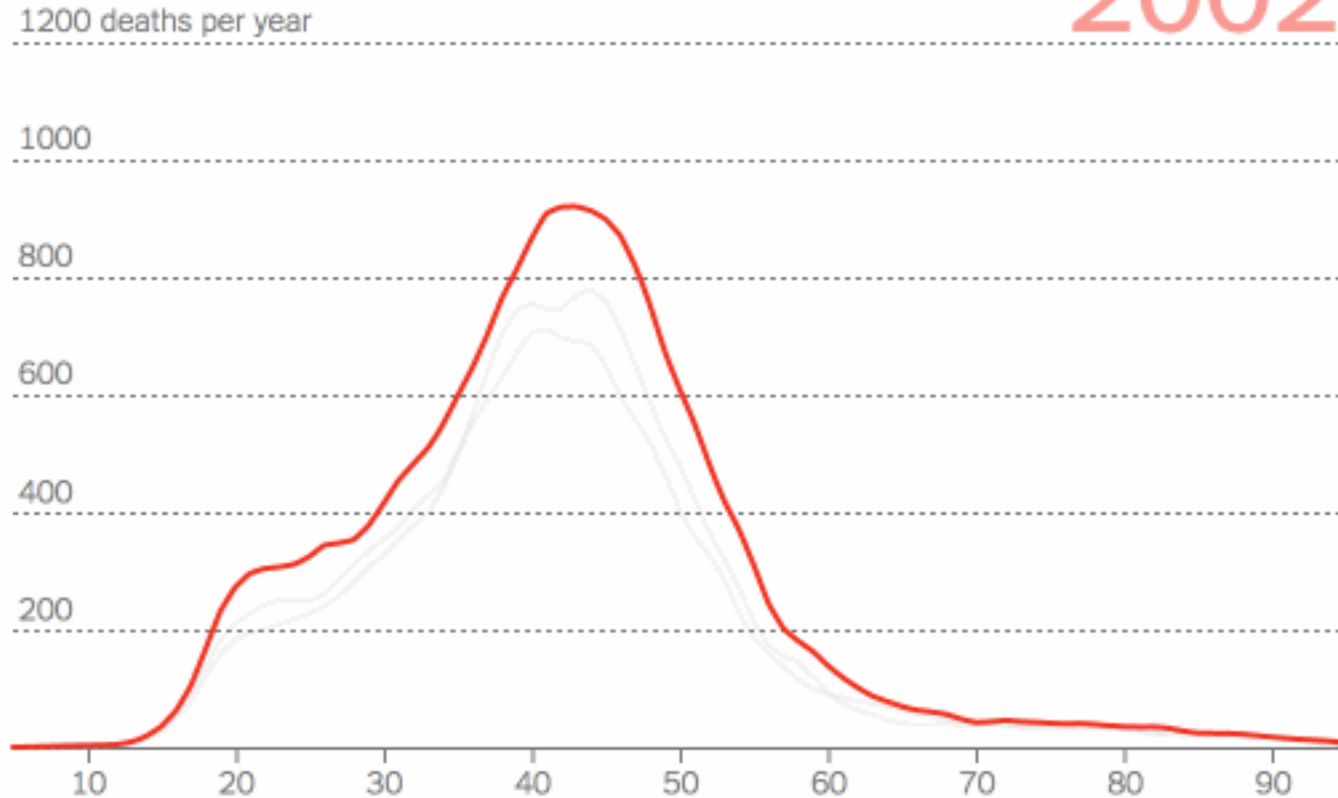


SOURCE: CDC. *Increases in Heroin Overdose Deaths — 28 States, 2010 to 2012*  
MMWR. 2014, 63:849-854



## Distribution of drug deaths by age

2002



Source: J. Katz. NYT Short Answers to Hard Questions About the Opioid Crisis August 10, 2017

# 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)**

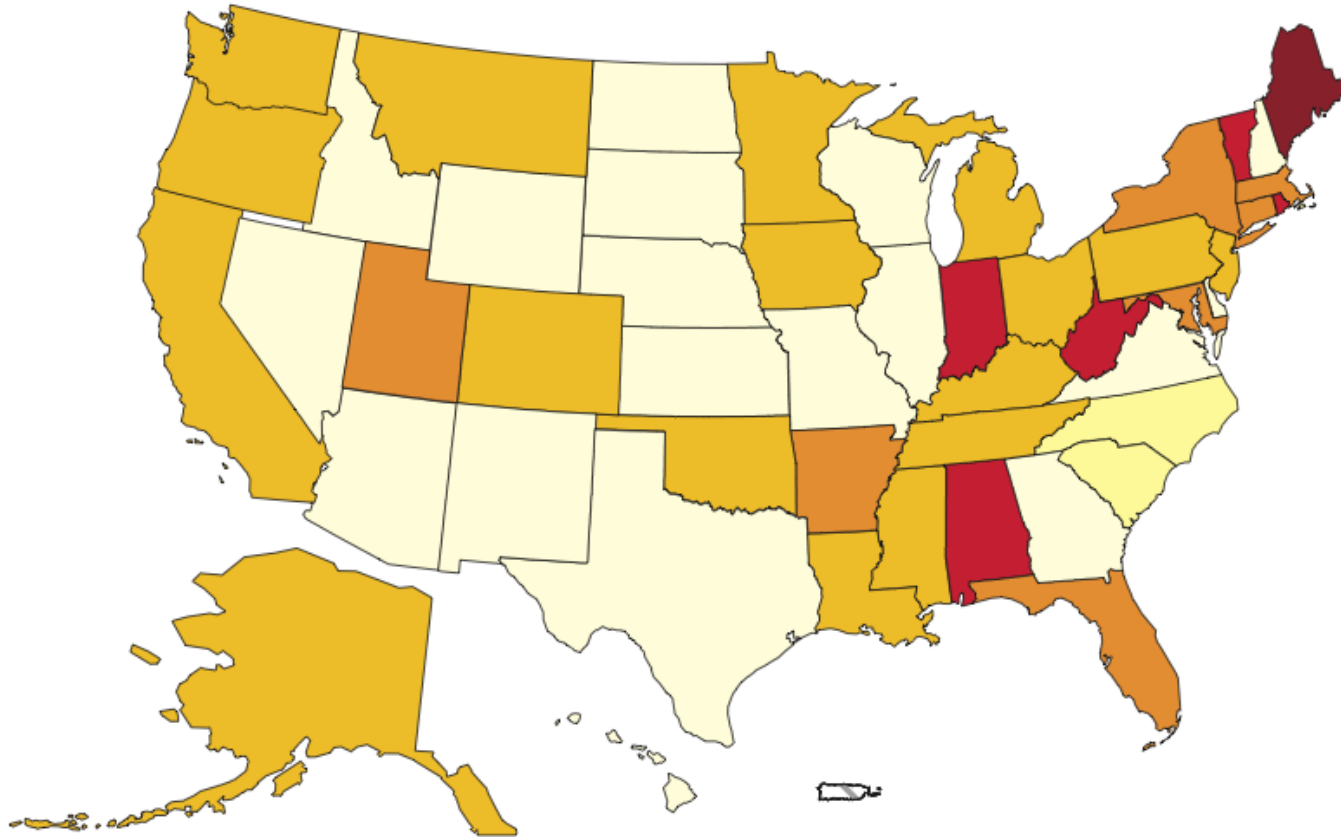
# **In one year, drug overdoses killed more Americans than the entire Vietnam War did**

Dramatic Increases in Maternal Opioid Use and Neonatal Abstinence Syndrome

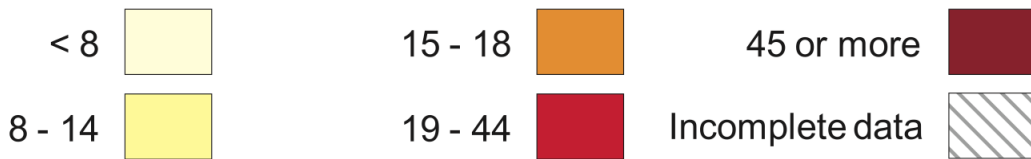
**Children of the Opioid Epidemic Are Flooding Foster Homes. America Is Turning a Blind Eye.**

**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)

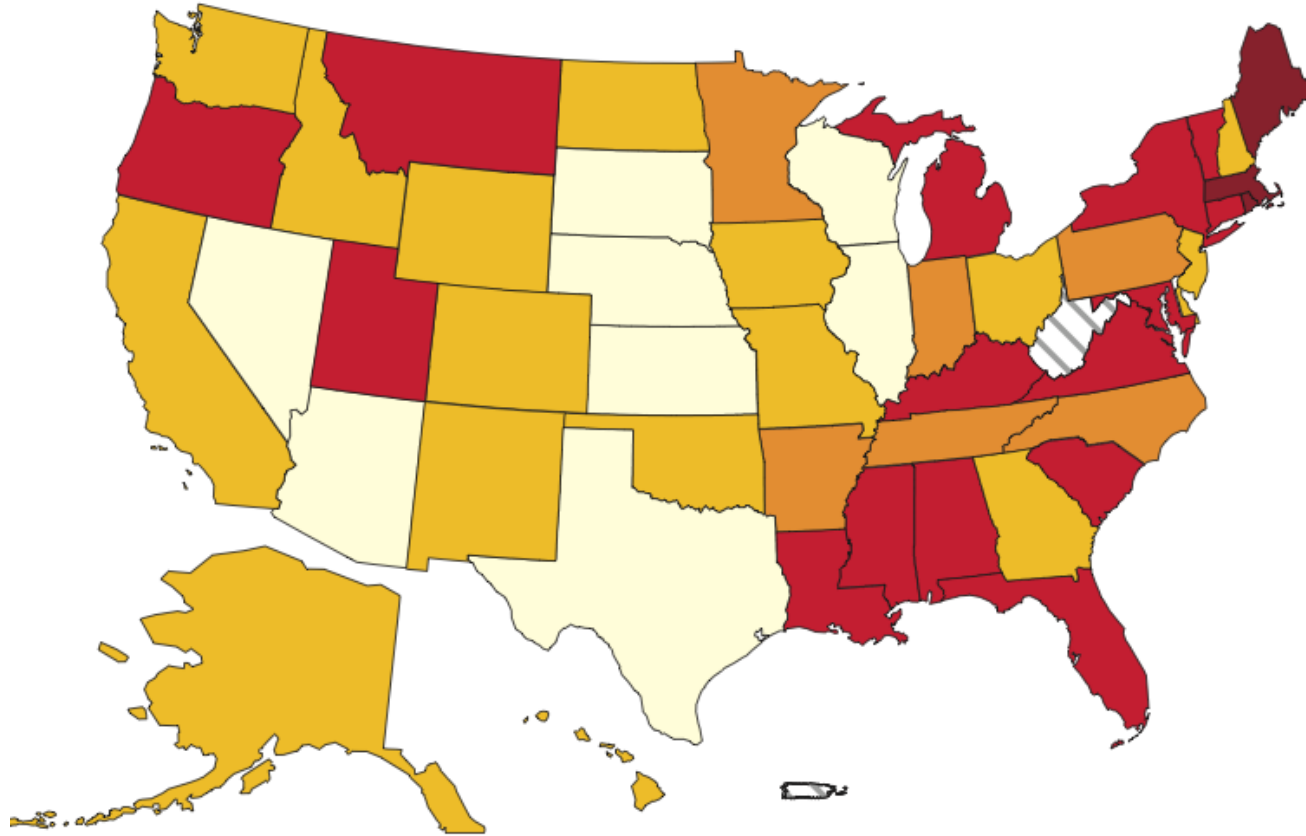


**1999**  
(range 1 - 50)



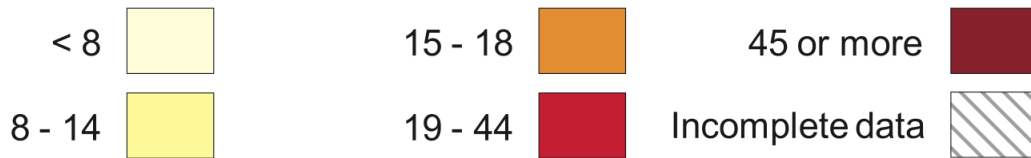
SOURCE: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS). Data received through 11.03.10.

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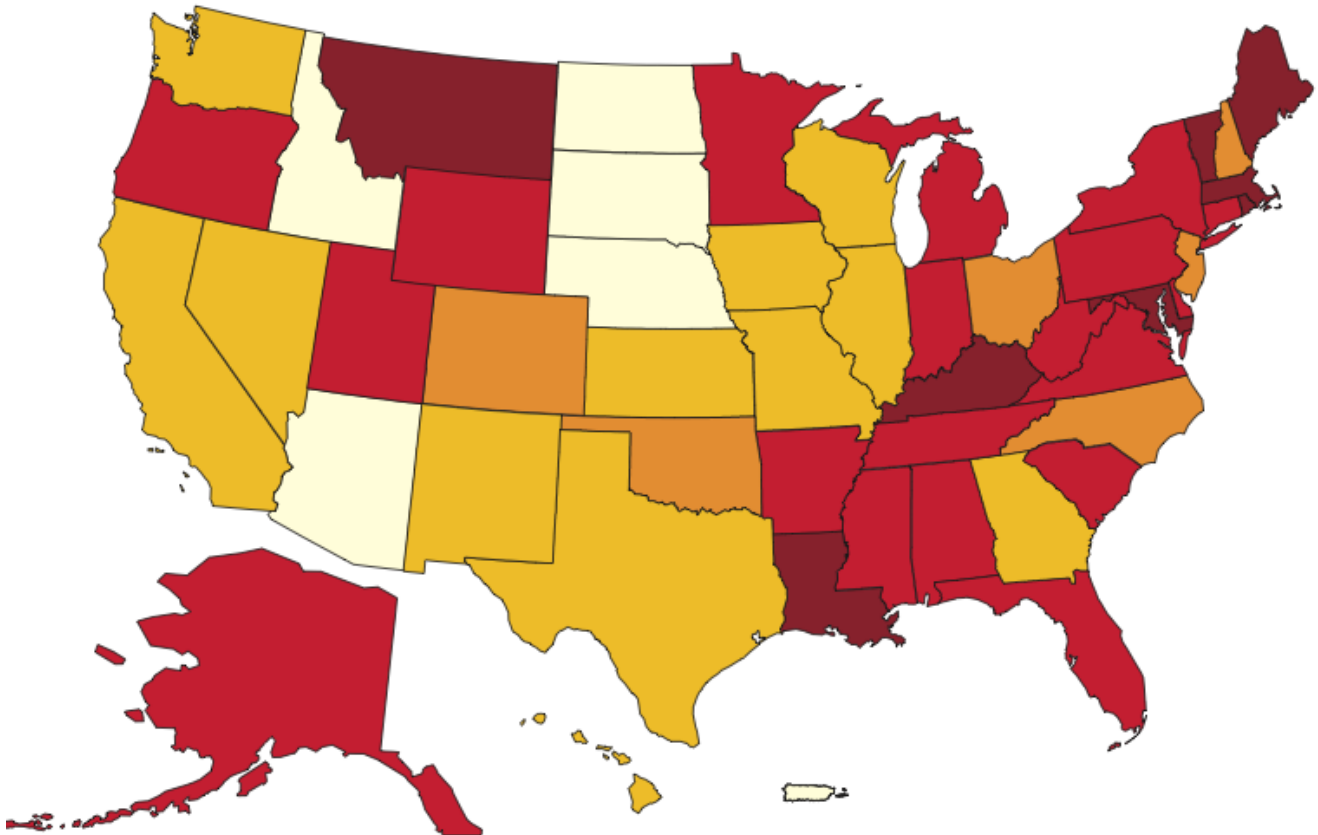
**2001**

(range 1 – 71)



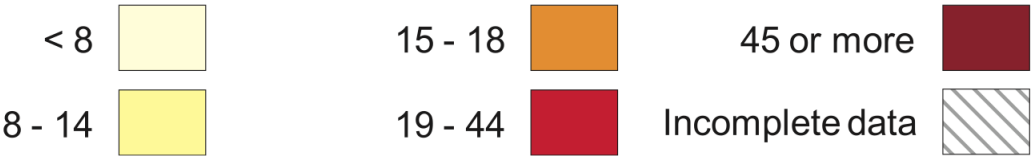
SOURCE: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS). Data received through 11.03.10.

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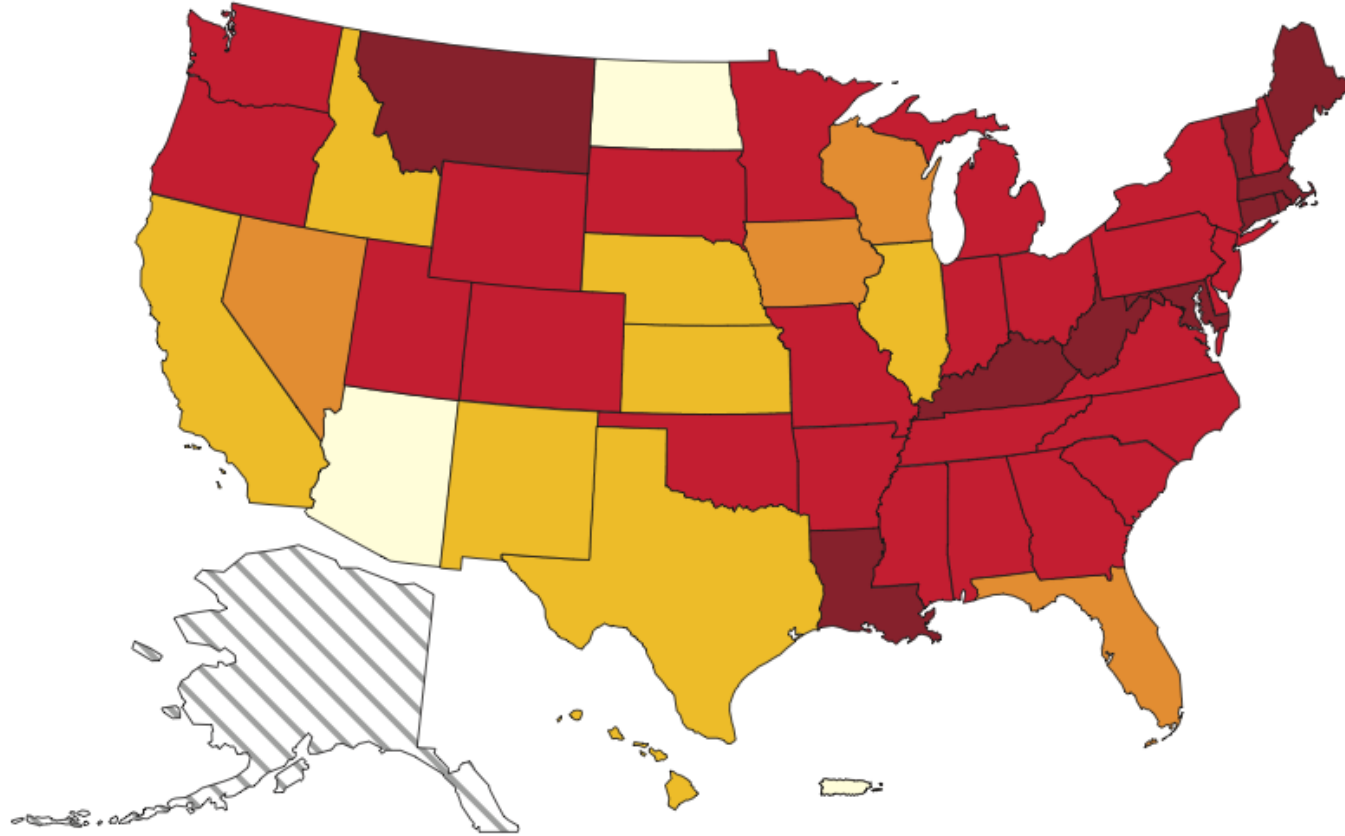
**2003**

(range 2 – 139)



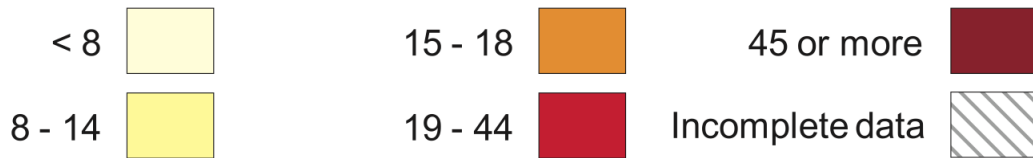
SOURCE: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS). Data received through 11.03.10.

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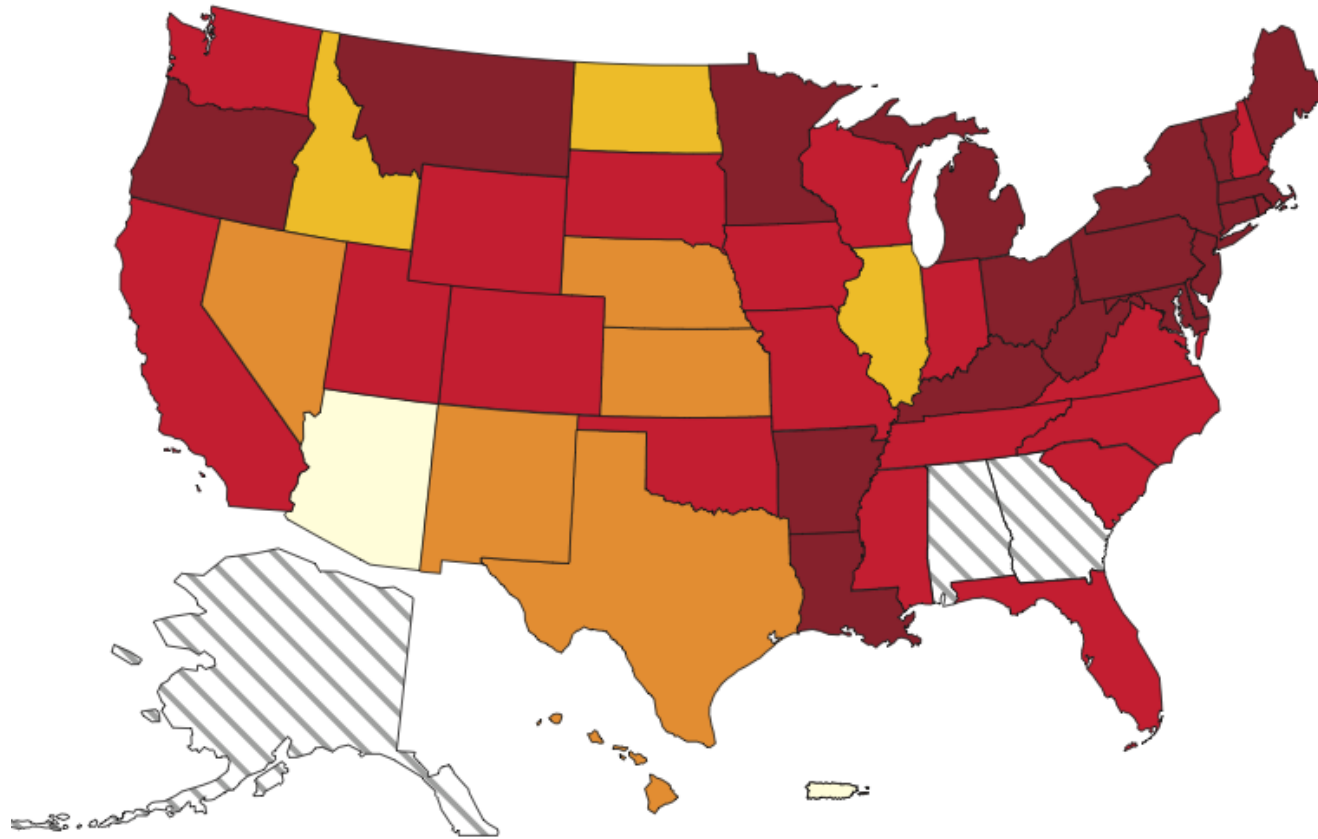
**2005**

(range 0 – 214)

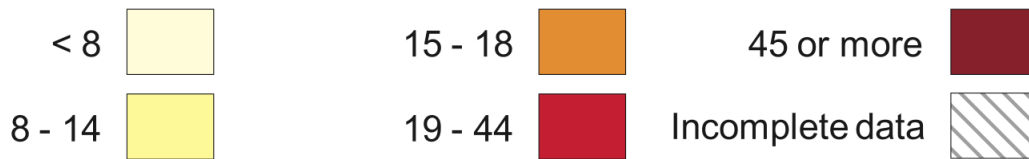


SOURCE: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS). Data received through 11.03.10.

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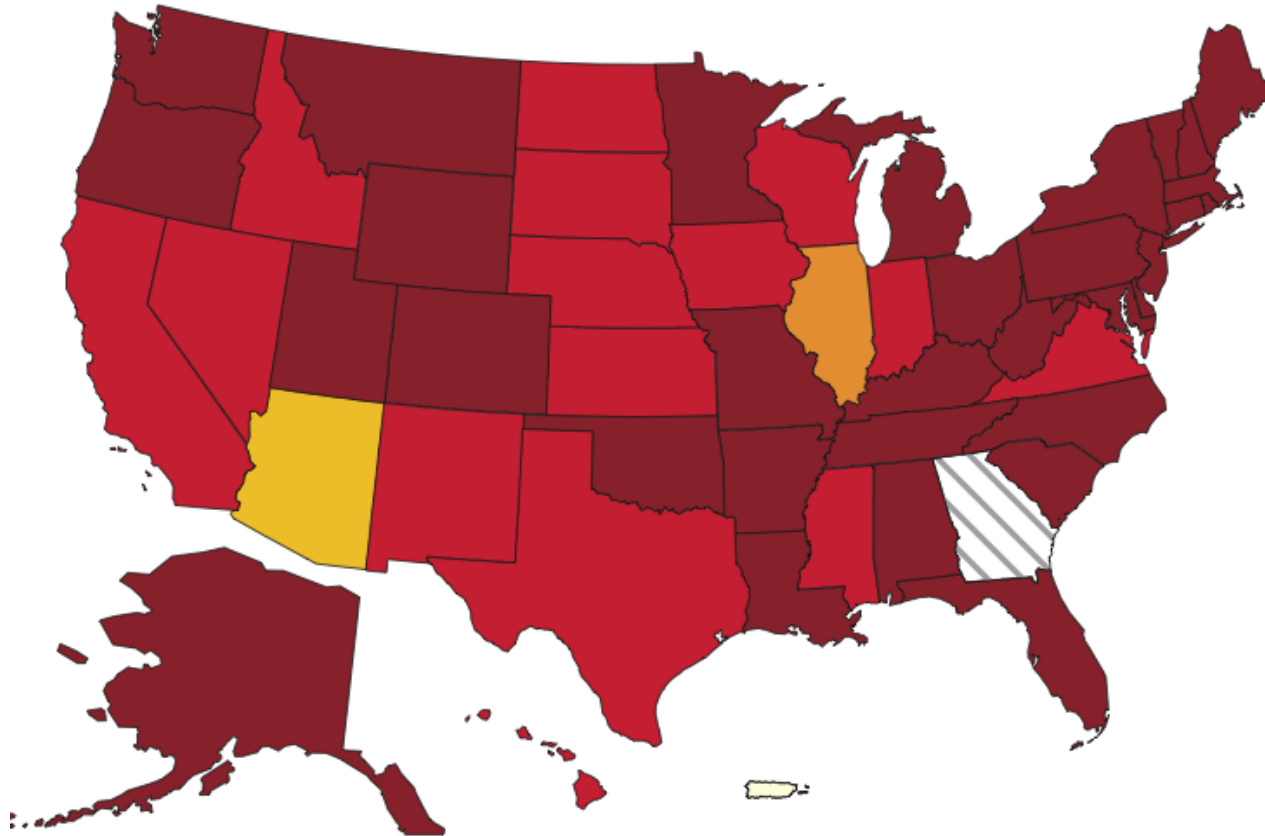
**2007**  
(range 1 – 340)



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.

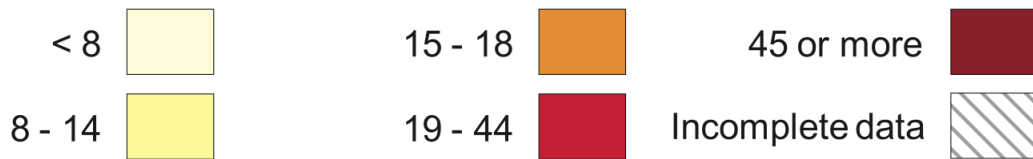


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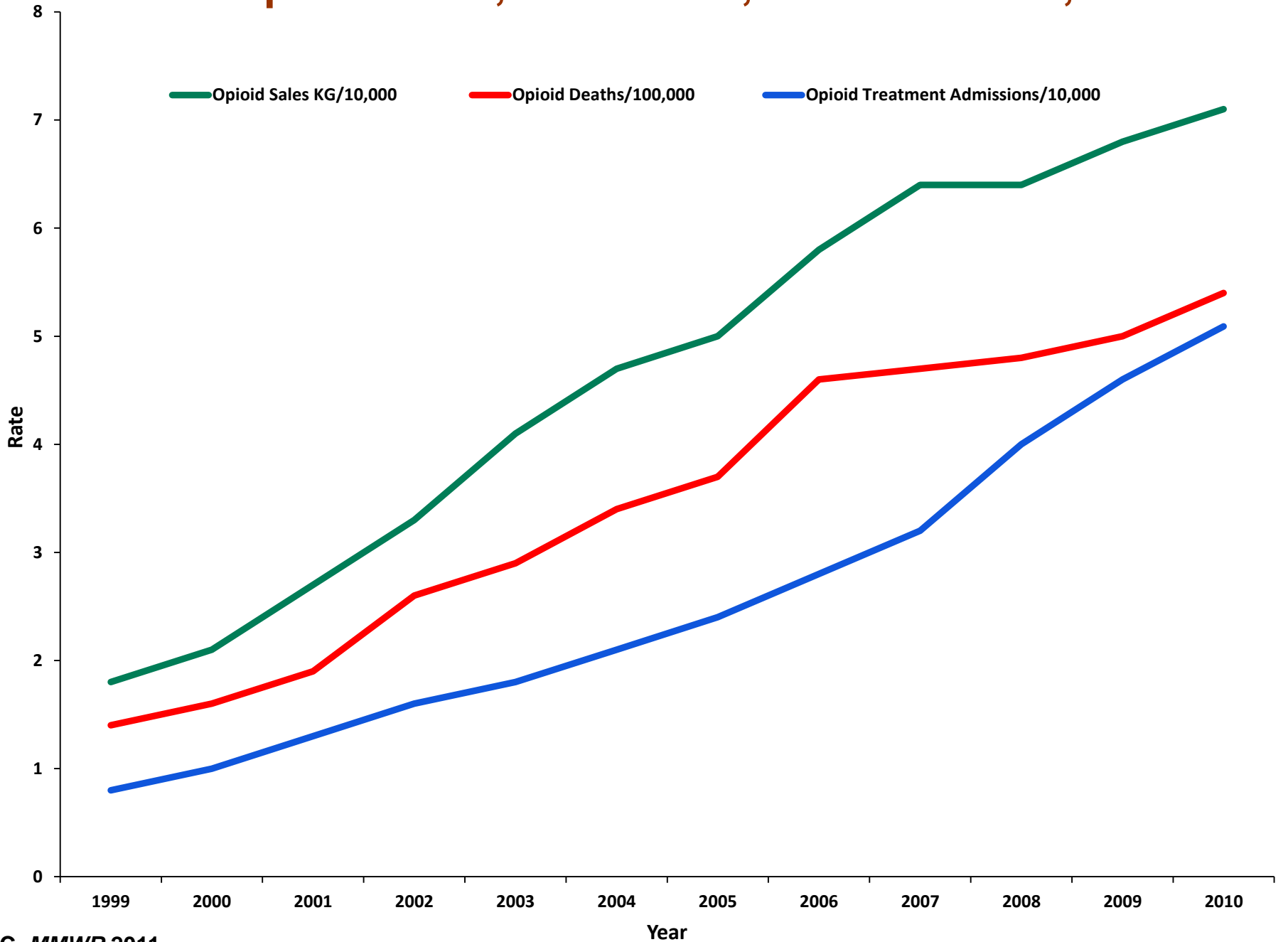
**2009**

(range 1 – 379)



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.

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



# Pro-painkiller lobby shapes policy amid drug epidemic

Matthew Perrone and Ben Wieder, Associated Press and Center for Public Integrity

Over the past decade, drug companies and opioid-friendly groups spent more than

**\$880 million**

on lobbying and political contributions.  
That's more than:

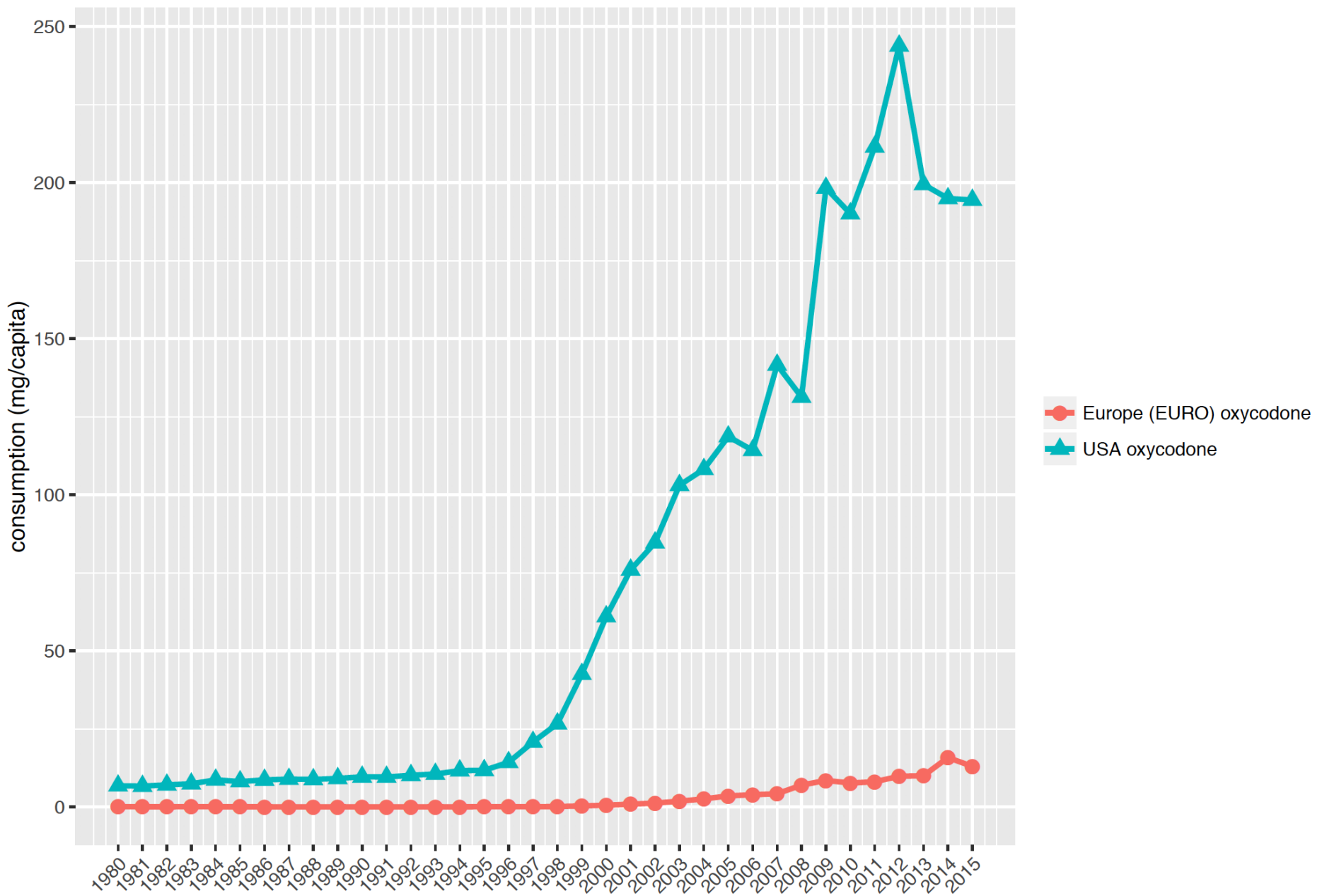
<b>8 times</b> the gun lobby's spending	<b>200 times</b> the spending of groups advocating stricter opioid prescription rules
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## POLITICAL SPENDING

Opioid manufacturers and their allies have contributed roughly \$80 million to state and federal candidates and have spent about \$746 million on state and federal lobbying since 2006. How the spending breaks down:

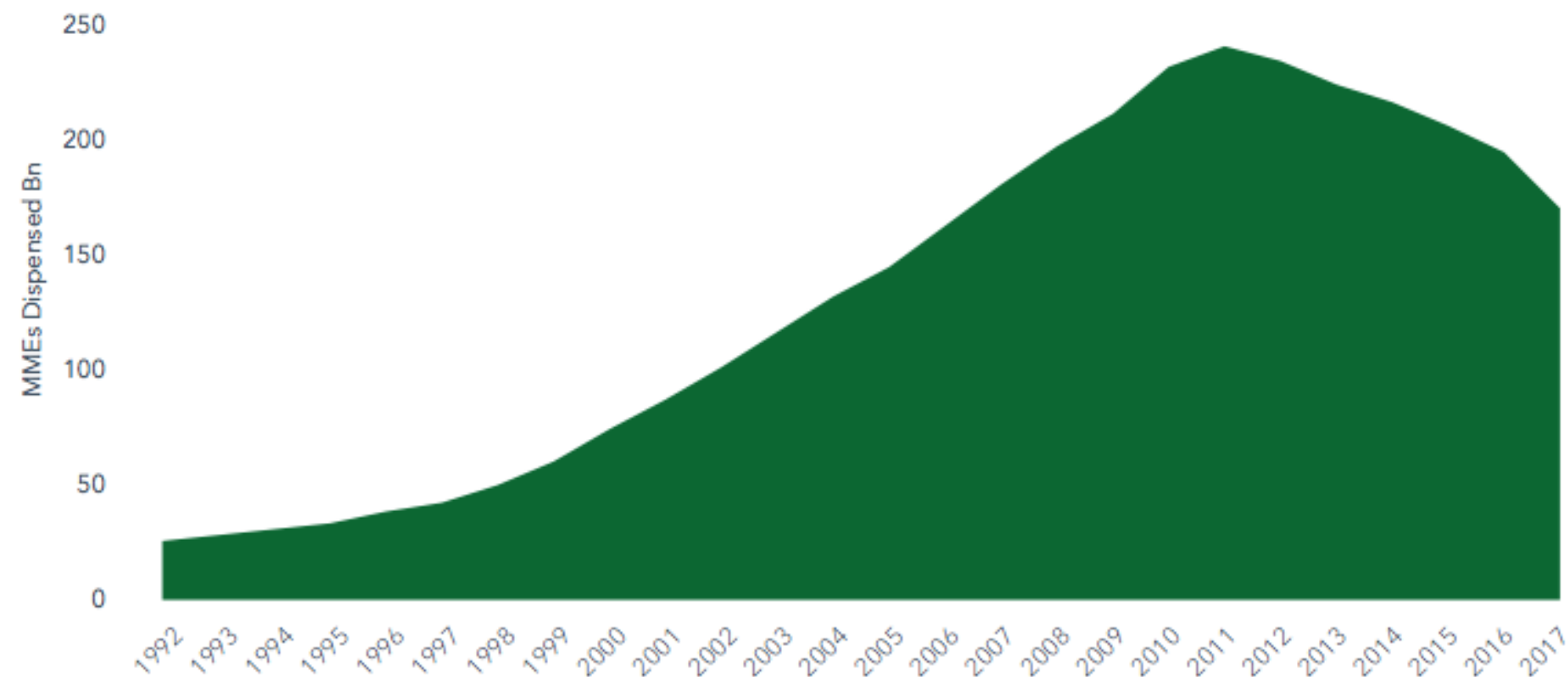
to State	to Federal	for State/Federal candidates	
<b>\$109 mil.</b>	<b>\$716 mil.</b>	<b>45%</b> Dems	<b>54%</b> Reps

# USA oxycodone consumption (mg/capita) 1980–2015



# Prescription opioid volume peaked in 2011 at 240 billion milligrams of morphine equivalents and have declined by 29% to 171 billion

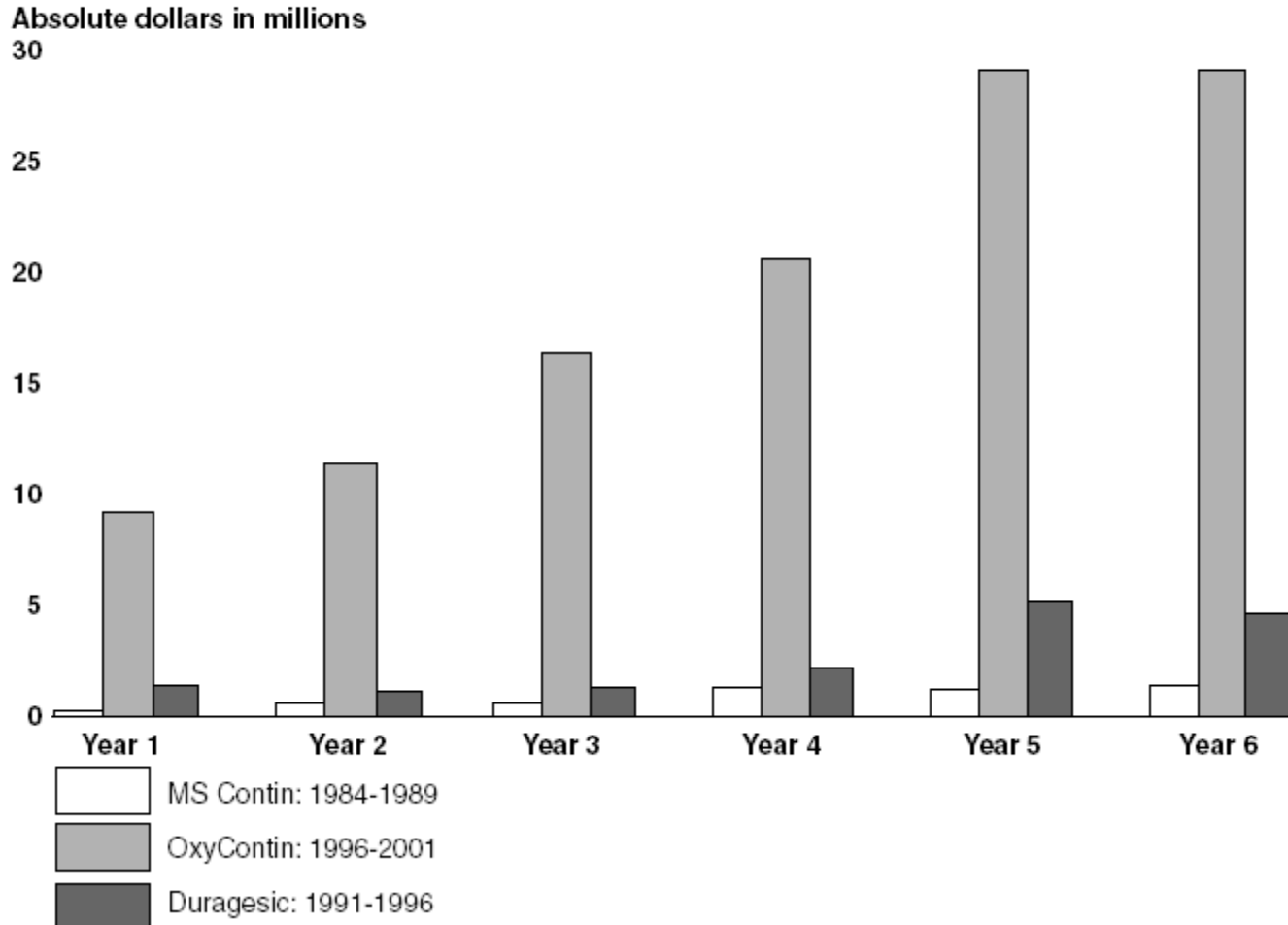
Chart 16: Narcotic Analgesic Dispensed Volume in Morphine Milligram Equivalents (MME) Bn



Source: IQVIA "SMART - Launch Edition", Dec 2017

# 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 patients<sup>1</sup> 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,<sup>2</sup> 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.  
Boston Collaborative Drug  
Surveillance Program  
Boston University Medical Center

Waltham, MA 02154

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.

# 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](http://www.annals.org)  
For author affiliations, see end of text.

This article was published online first at [www.annals.org](http://www.annals.org) on 13 January 2015.

# Effect of a Single Dose of Oral Opioid and Nonopioid Analgesics on Acute Extremity Pain in the Emergency Department: A Randomized Clinical Trial

Andrew K. Chang, MD, MS; Polly E. Bijur, PhD; David Esses, MD; Douglas P. Barnaby, MD, MS; Jesse Baer, MD

## Key Points

**Question** Do any of 4 oral combination analgesics (3 with different opioids and 1 opioid-free) provide more effective reduction of moderate to severe acute extremity pain in the emergency department (ED)?

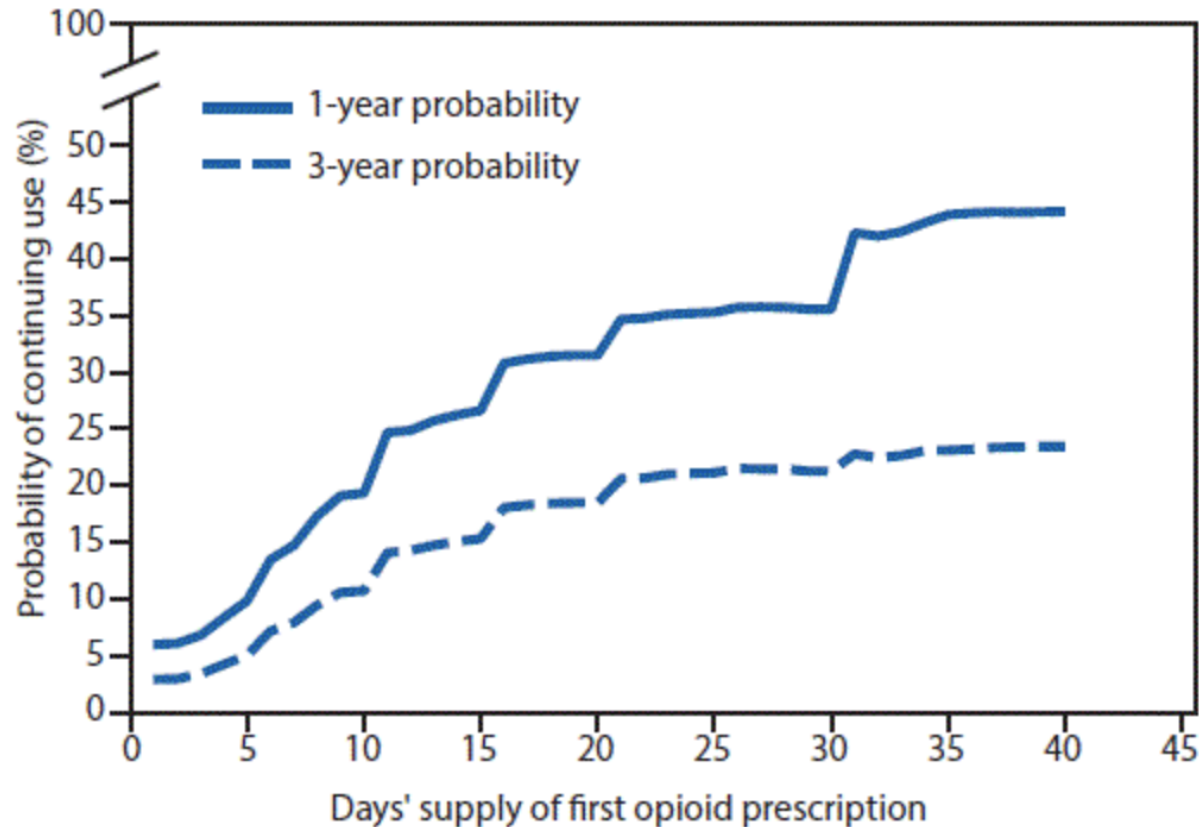
**Findings** In this randomized clinical trial of 411 ED patients with acute extremity pain (mean score, 8.7 on the 11-point numerical rating scale), there was no significant difference in pain reduction at 2 hours. Mean pain scores decreased by 4.3 with ibuprofen and acetaminophen (paracetamol); 4.4 with oxycodone and acetaminophen; 3.5 with hydrocodone and acetaminophen; and 3.9 with codeine and acetaminophen.

**Meaning** For adult ED patients with acute extremity pain, there were no clinically important differences in pain reduction at 2 hours with ibuprofen and acetaminophen or 3 different opioid and acetaminophen combination analgesics.

**Table 2. Numerical Rating Scale (NRS) Pain Scores and Decline in Pain Scores by Treatment Group**

	NRS Pain Score, Mean (95% CI) <sup>a</sup>				P Value <sup>f</sup>
	Ibuprofen and Acetaminophen <sup>b</sup>	Oxycodone and Acetaminophen <sup>c</sup>	Hydrocodone and Acetaminophen <sup>d</sup>	Codeine and Acetaminophen <sup>e</sup>	
No. of patients <sup>g</sup>	101	104	103	103	
Primary end point: decline in score to 2 h	4.3 (3.6 to 4.9)	4.4 (3.7 to 5.0)	3.5 (2.9 to 4.2)	3.9 (3.2 to 4.5)	.053
Baseline score	8.9 (8.5 to 9.2)	8.7 (8.3 to 9.0)	8.6 (8.3 to 9.0)	8.6 (8.2 to 8.9)	.47
Score at 1 h	5.9 (5.3 to 6.6)	5.5 (4.9 to 6.2)	6.2 (5.6 to 6.9)	5.9 (5.2 to 6.5)	.25
Score at 2 h	4.6 (3.9 to 5.3)	4.3 (3.6 to 5.0)	5.1 (4.5 to 5.8)	4.7 (4.0 to 5.4)	.13
Decline in score to 1 h	2.9 (2.4 to 3.5)	3.1 (2.6 to 3.7)	2.4 (1.8 to 3.0)	2.7 (2.1 to 3.3)	.13

# One- and 3-year probabilities of continued opioid use among opioid-naïve patients, by number of days' supply\* of the first opioid prescription — United States, 2006–2015



\* Days' supply of the first prescription is expressed in days (1–40) in 1-day increments.

Source: Shah A, Hayes CJ, Martin BC. Characteristics of Initial Prescription Episodes and Likelihood of Long-Term Opioid Use — United States, 2006–2015. *MMWR Morb Mortal Wkly Rep* 2017;66:265–269.


# 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:

**Who Will Be Affected by Rescheduling?**

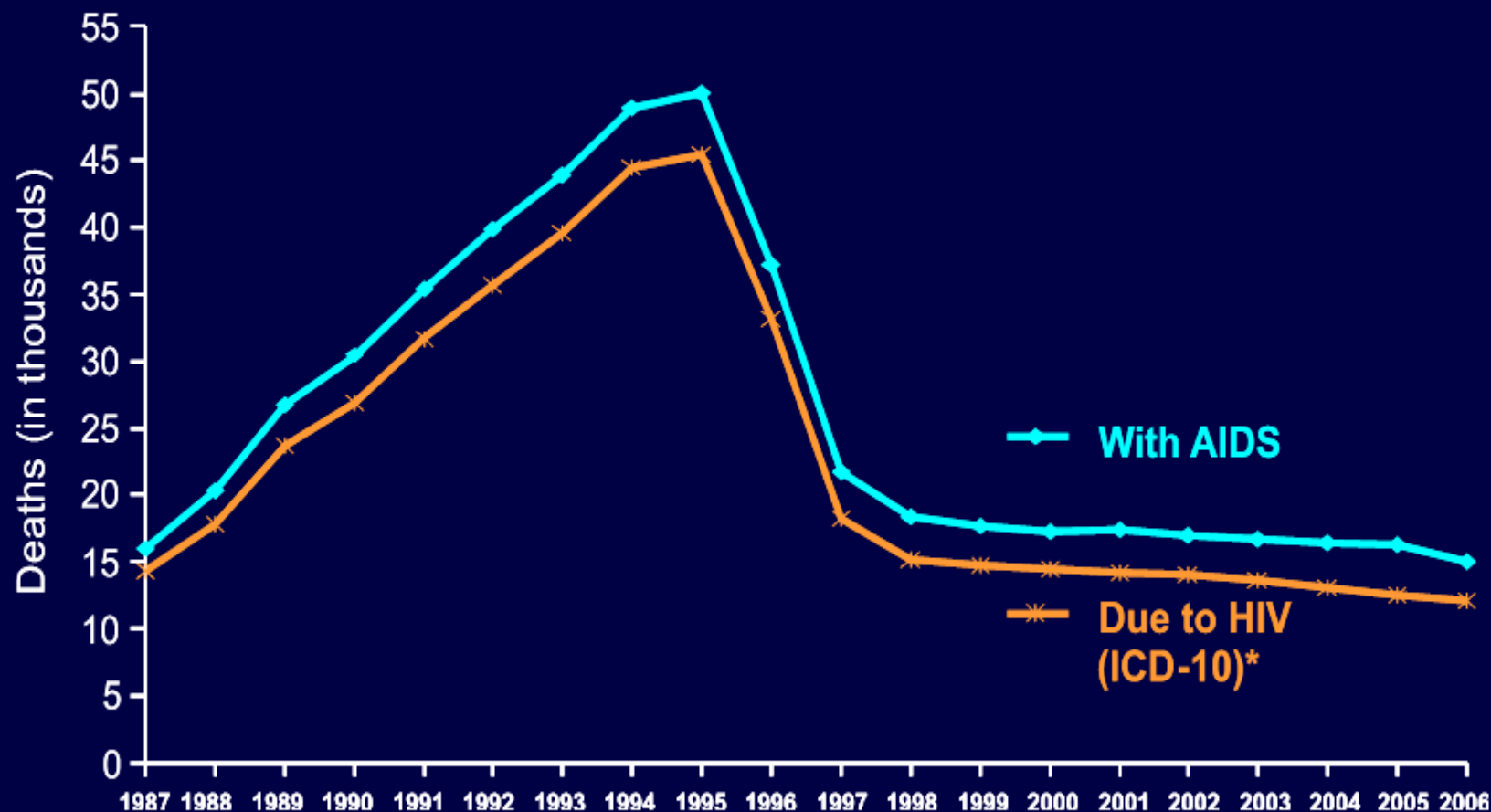


The image depicts a balance scale with a blue triangular base. On the left pan, an elderly woman with white hair, wearing a purple top, is shown with her hand to her forehead, appearing distressed or in pain. On the right pan, a family of three (a man, a woman, and a child) is shown smiling and looking at a bowl of colorful pills or capsules. The background is a light, textured surface.

*the* AMERICAN ACADEMY *of* PAIN MEDICINE

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# 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



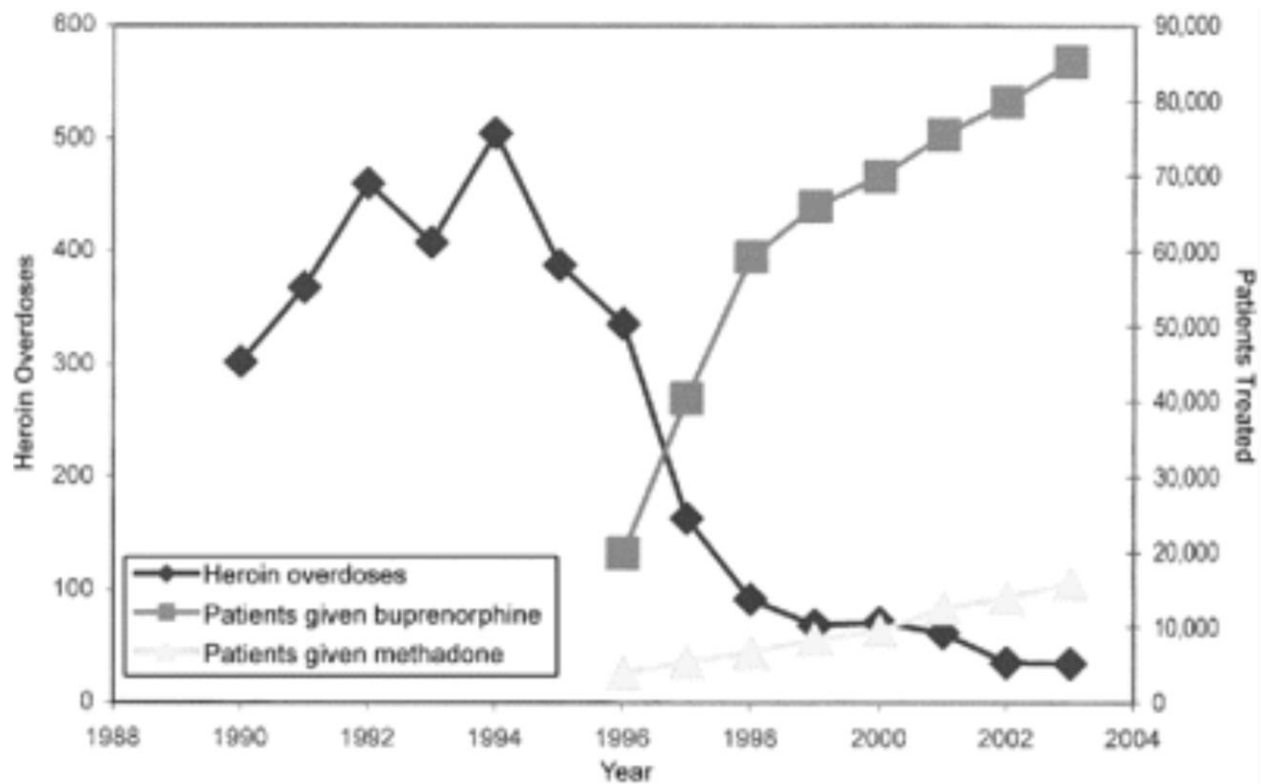
\*For comparison with data for 1999 and later years, data in the bottom (red) line for 1987–1998 were modified to account for ICD-10 rules instead of ICD-9 rules.





# 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



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

# Barriers to Buprenorphine

- Ideological
- Mandatory 8-hour training
- Federally imposed patient caps
- Federally imposed ban on NP and PA prescribing (ban lifted in 2017)
- Limited integration of addiction treatment in primary care

# 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