



ReFocus2019

March 10–13
The Cosmopolitan Las Vegas
Las Vegas, NV

**Change²: Adapting to the
Accelerated Pace and
New Dynamics**

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The Past, Present, and Future of Opioid-Related Mortality

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USMM

Probability rates



Probability of dying in
a motor vehicle crash

1 in 103



Probability of dying of
an opioid overdose

1 in 96

<https://www.npr.org/2019/01/14/684695273/report-americans-are-now-more-likely-to-die-of-an-opioid-overdose-than-on-the-ro>

Opiates vs opioids – there is a difference

Opiate

- Natural substance derived from opium poppy plant
- Shared chemical and structural characteristics
- Provide pain relief and depress the central nervous system
- Subset of opioids.

Semi-synthetic opiates

- Man-made substances made from compounds found in the opium poppy.
- Includes hydrocodone, hydromorphone, oxycodone, and oxymorphone.

Opioid

- All drugs — synthetic, semi-synthetic, or naturally occurring — that act on the opioid receptor.

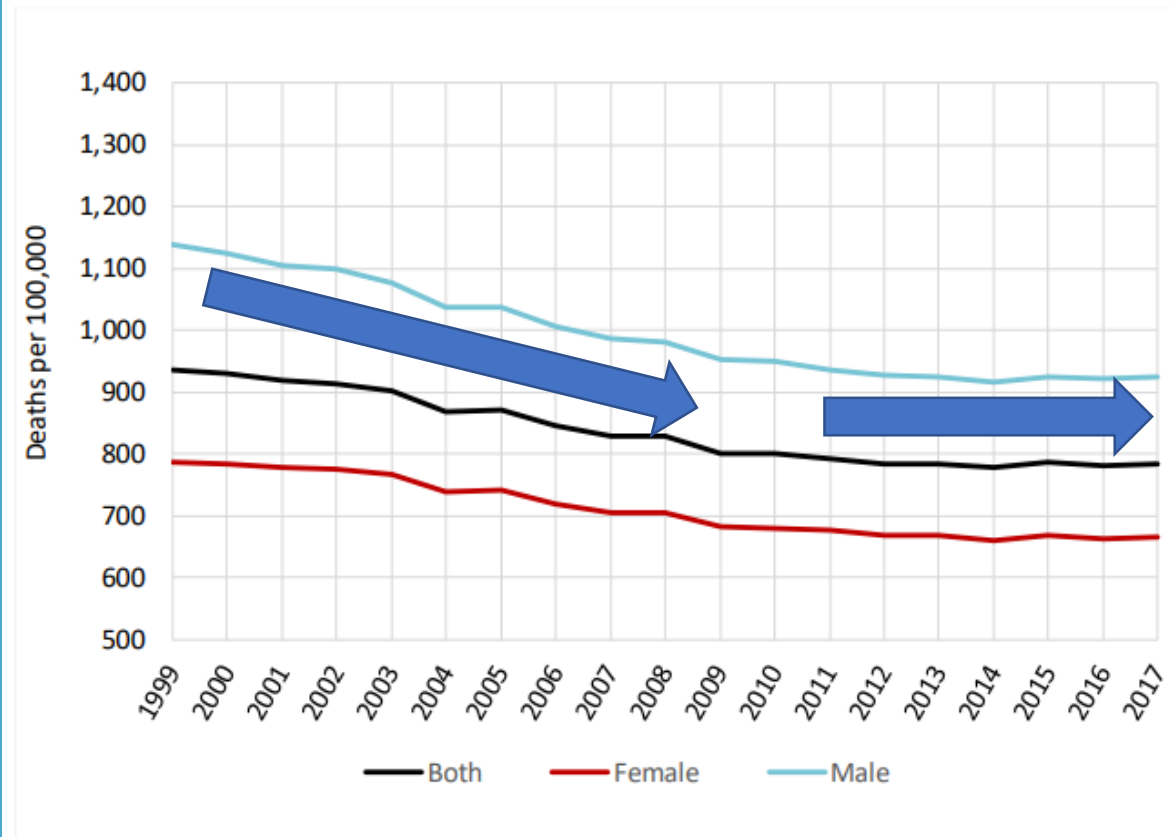
Broad term includes

- Synthetic (e.g. fentanyl), semi-synthetic (e.g. oxycodone), and naturally occurring (e.g. morphine) substances as well as antagonists (e.g. naloxone)
- Synthetic compounds such as fentanyl and tramadol, act on the opioid receptor, but do not share structural similarity with naturally-occurring and semi-synthetic opiates

History of Total US Population Mortality

4.1 Total Population Analysis

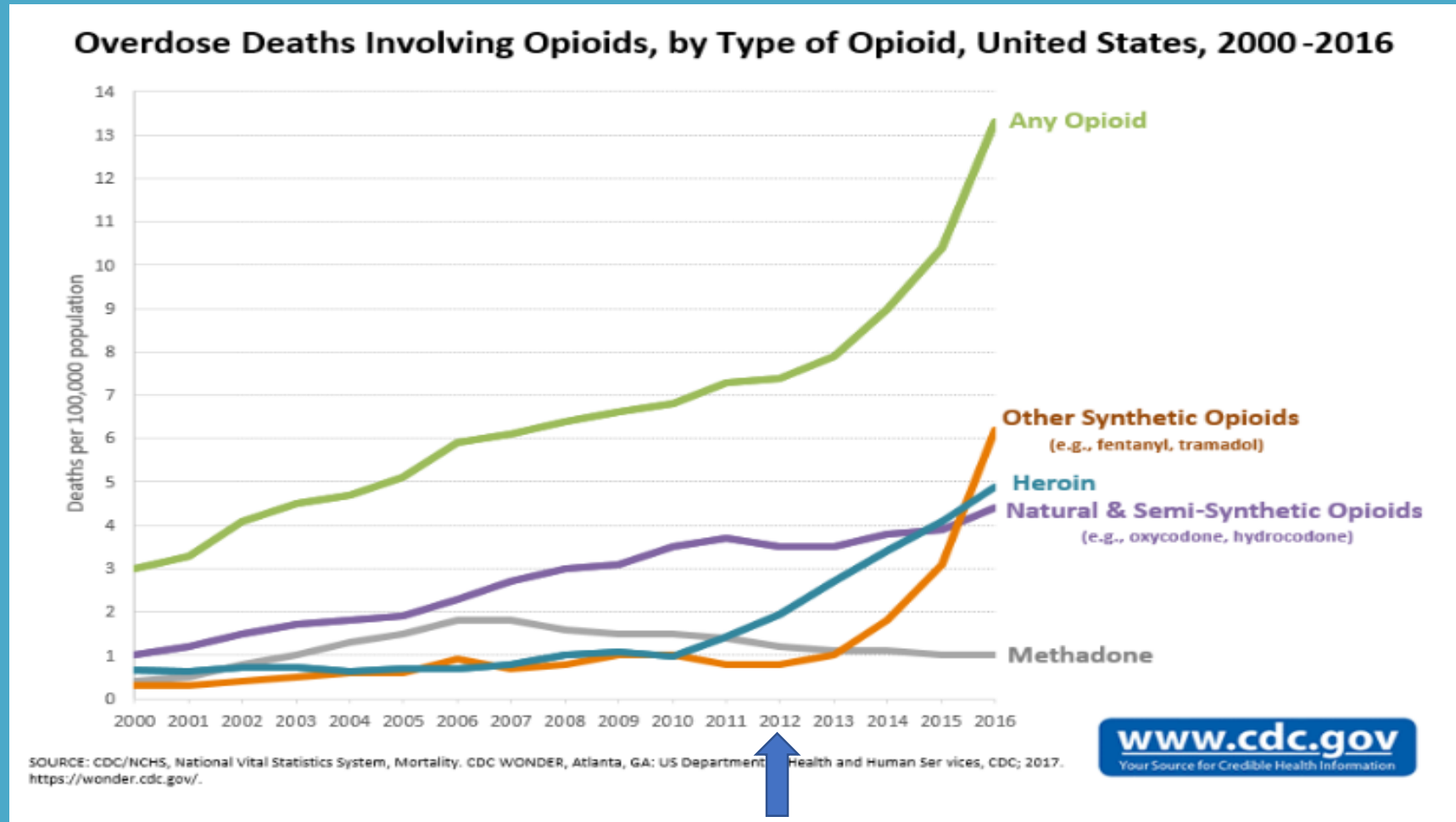
AGE-ADJUSTED MORTALITY 1999-2017



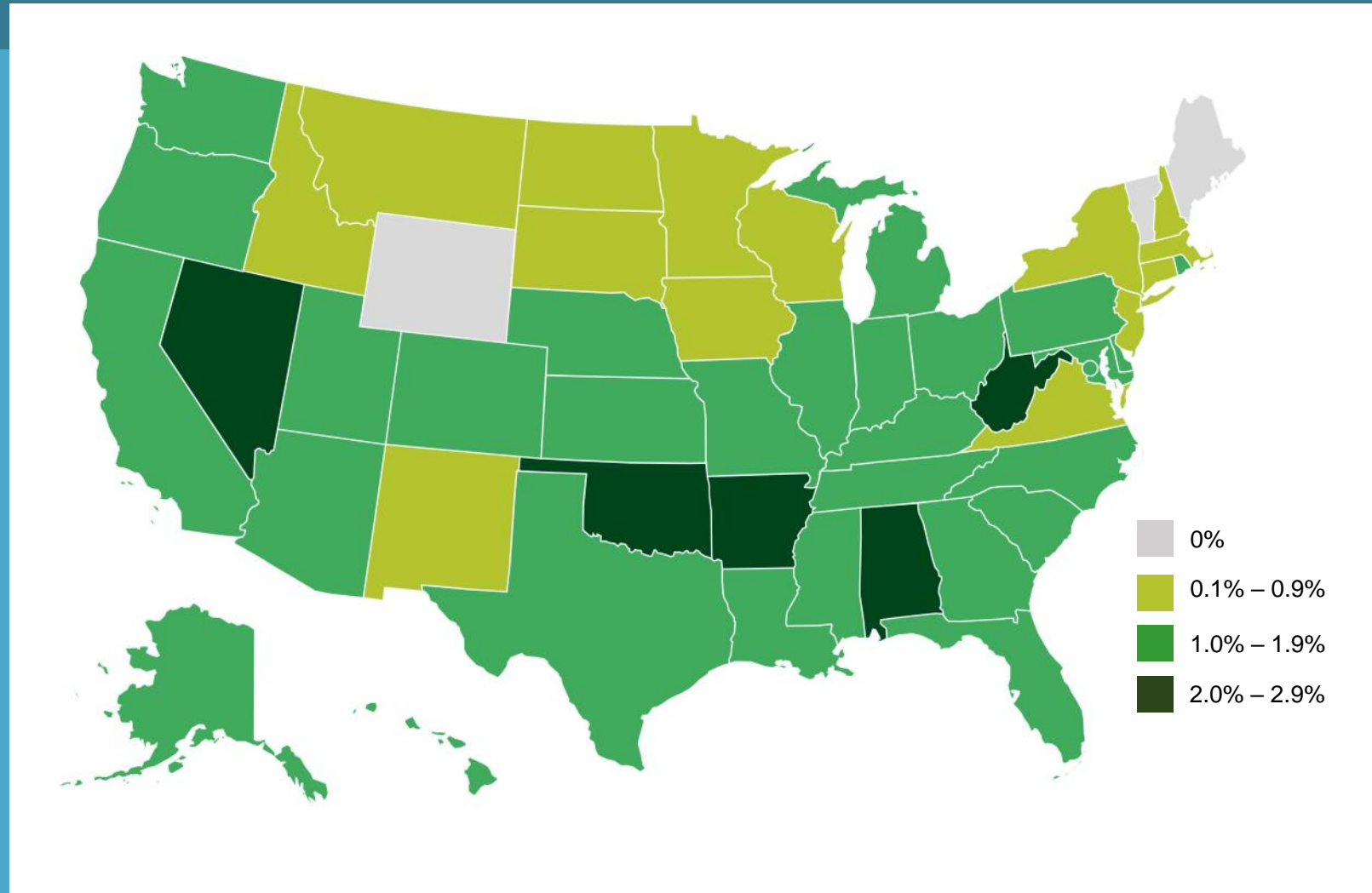
	Annual Improvement		
	1999-2017	2012-2017	2016-2017
All Ages			
Both	1.0%	0.0%	-0.4%
Female	0.9%	0.1%	-0.4%
Male	1.1%	0.0%	-0.4%
Age Group*			
< 1	1.4%	1.1%	2.8%
1 - 4	1.9%	1.6%	4.3%
5 - 14	1.7%	-1.4%	-1.2%
15 - 24	0.4%	-2.2%	1.1%
25 - 34	-1.5%	-4.7%	-3.0%
35 - 44	0.1%	-2.7%	-1.6%
45 - 54	0.2%	0.2%	1.0%
55 - 64	0.7%	-0.7%	-0.2%
65 - 74	1.7%	0.1%	-0.1%
75 - 84	1.4%	0.9%	0.0%
85+	0.8%	0.2%	-1.4%

*includes both genders

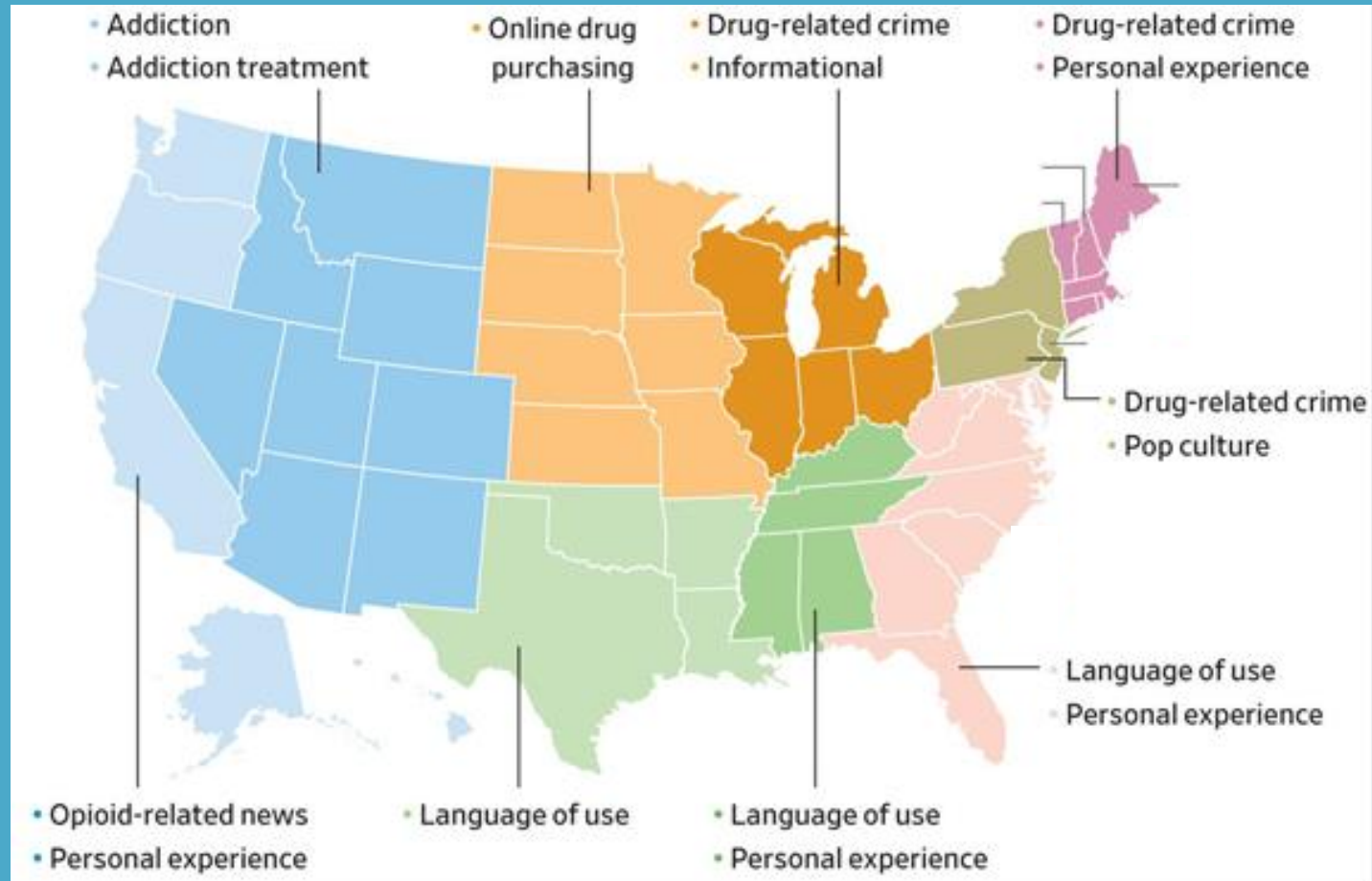
Opioid Mortality Trend in the US, 2000-2016



Expanded opioid positivity by state



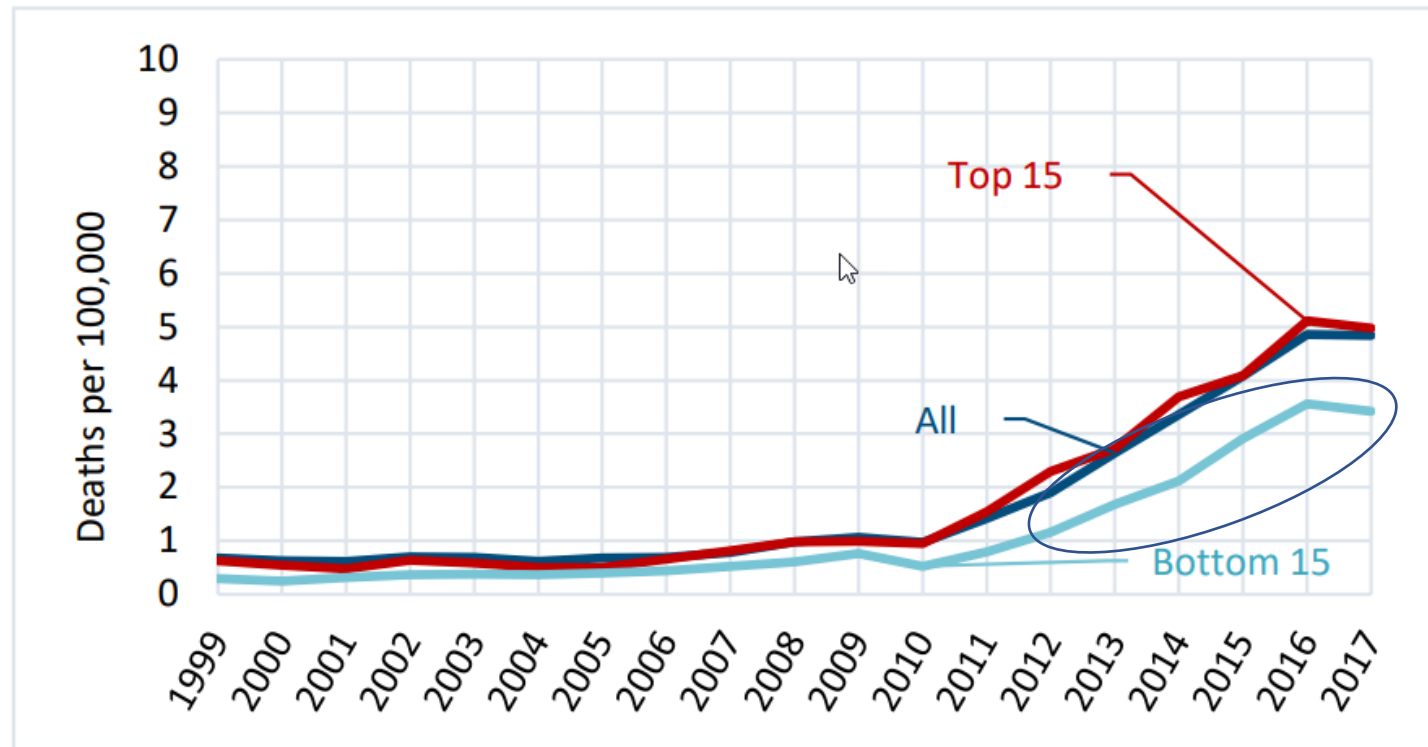
Twitter predictions?



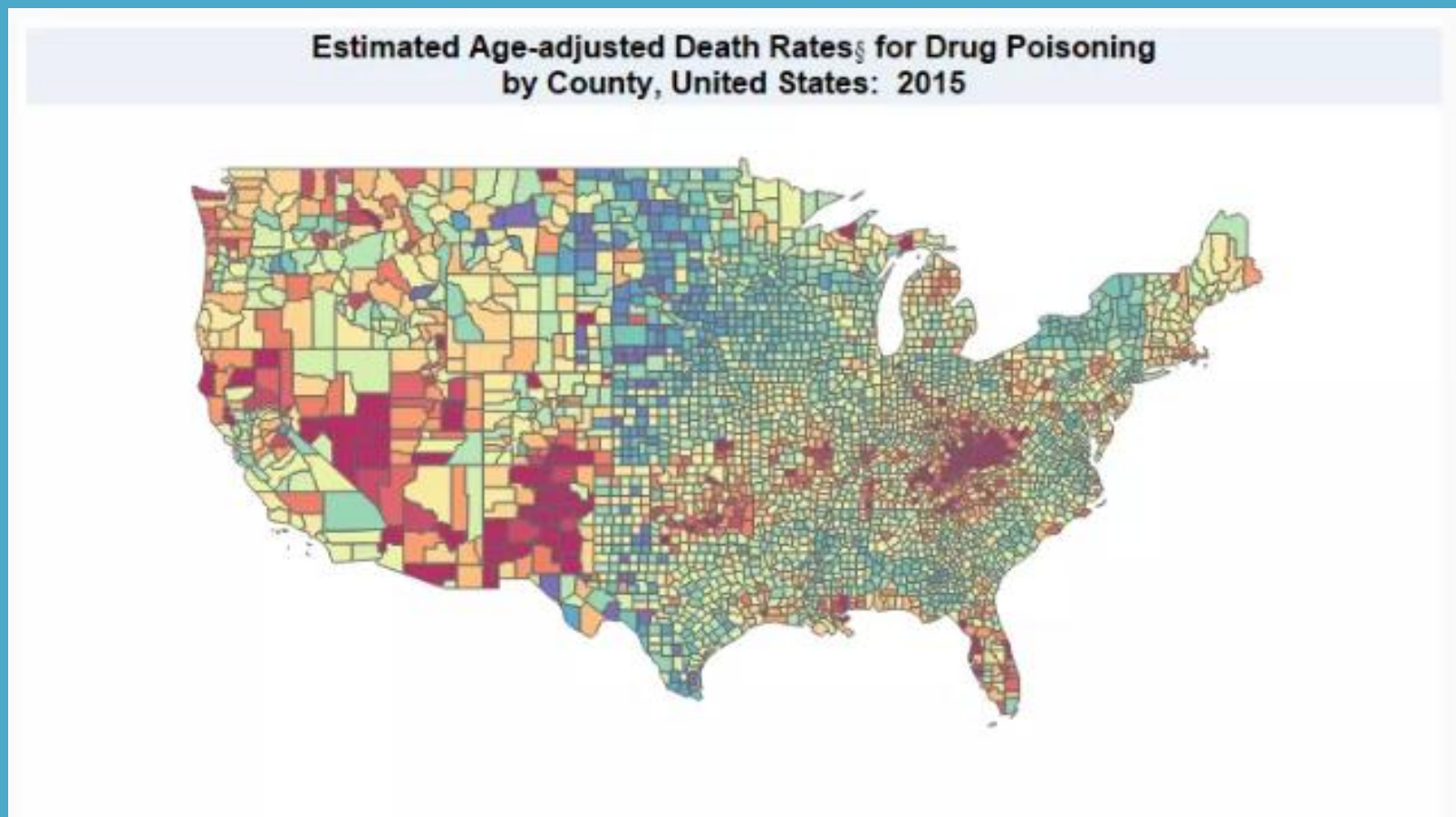
Variations in mortality by opioid type and income

6.5.4 Opioid by Type and Income Analysis

HEROIN – AGE-ADJUSTED MORTALITY 1999-2017



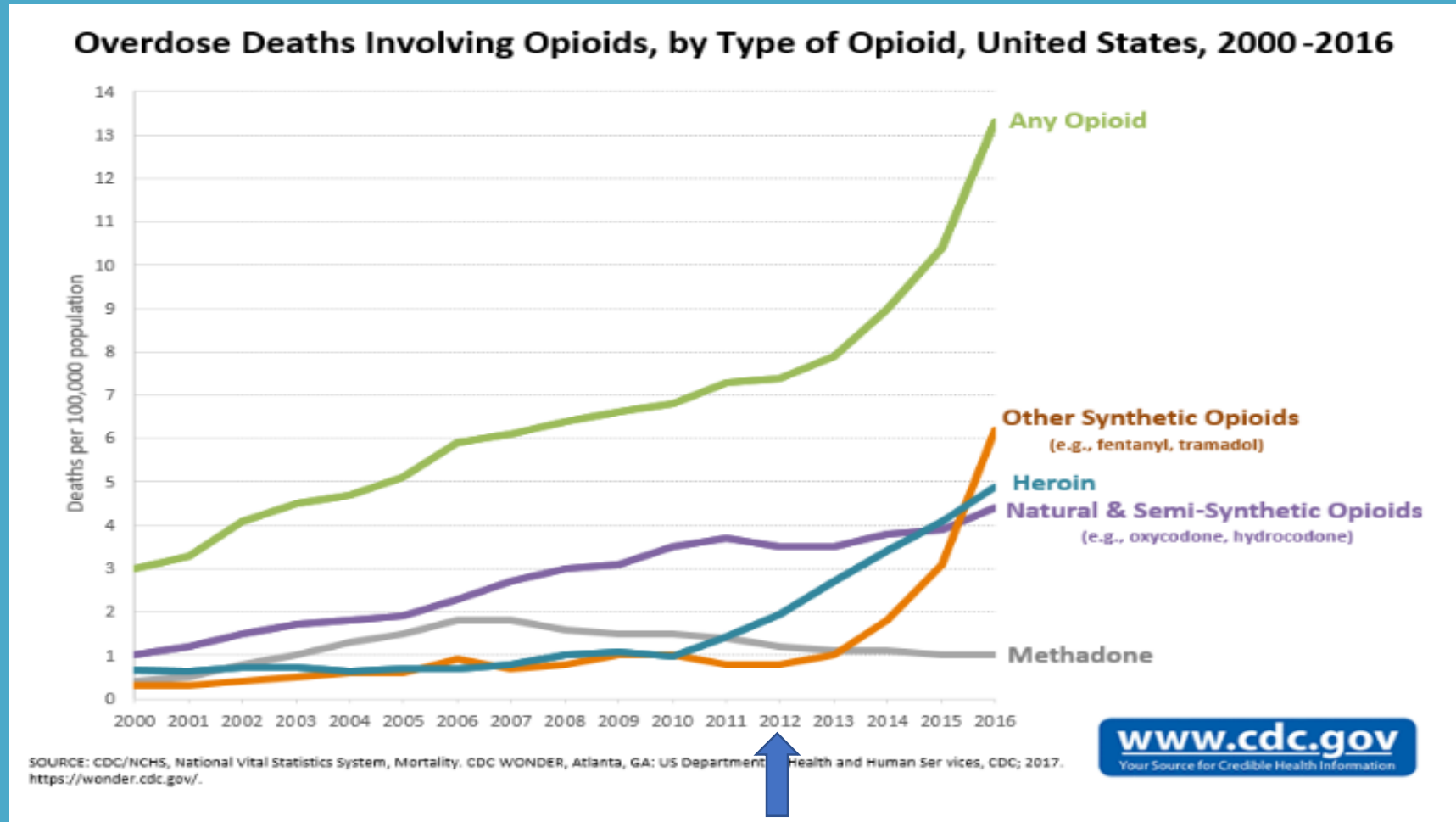
Variations in mortality by opioid type and income



<https://www.brookings.edu/research/pinpointing-opioid-in-most-impacted-communities/#cancel>

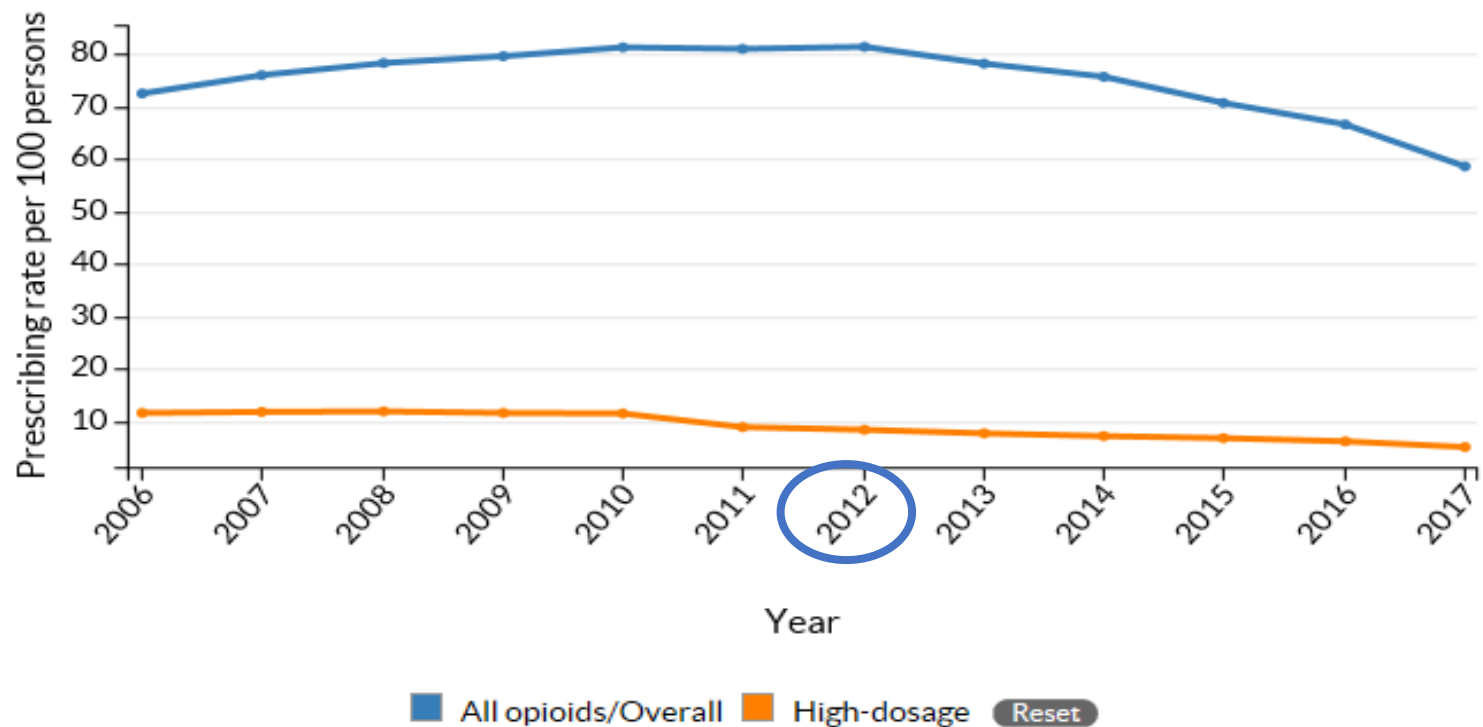
Source Data: CDC / NCHS

Opioid Mortality Trend in the US, 2000-2016



Opioid Prescription Trends

Trends in Annual Opioid Prescribing Rates by Overall and High-Dosage Prescriptions



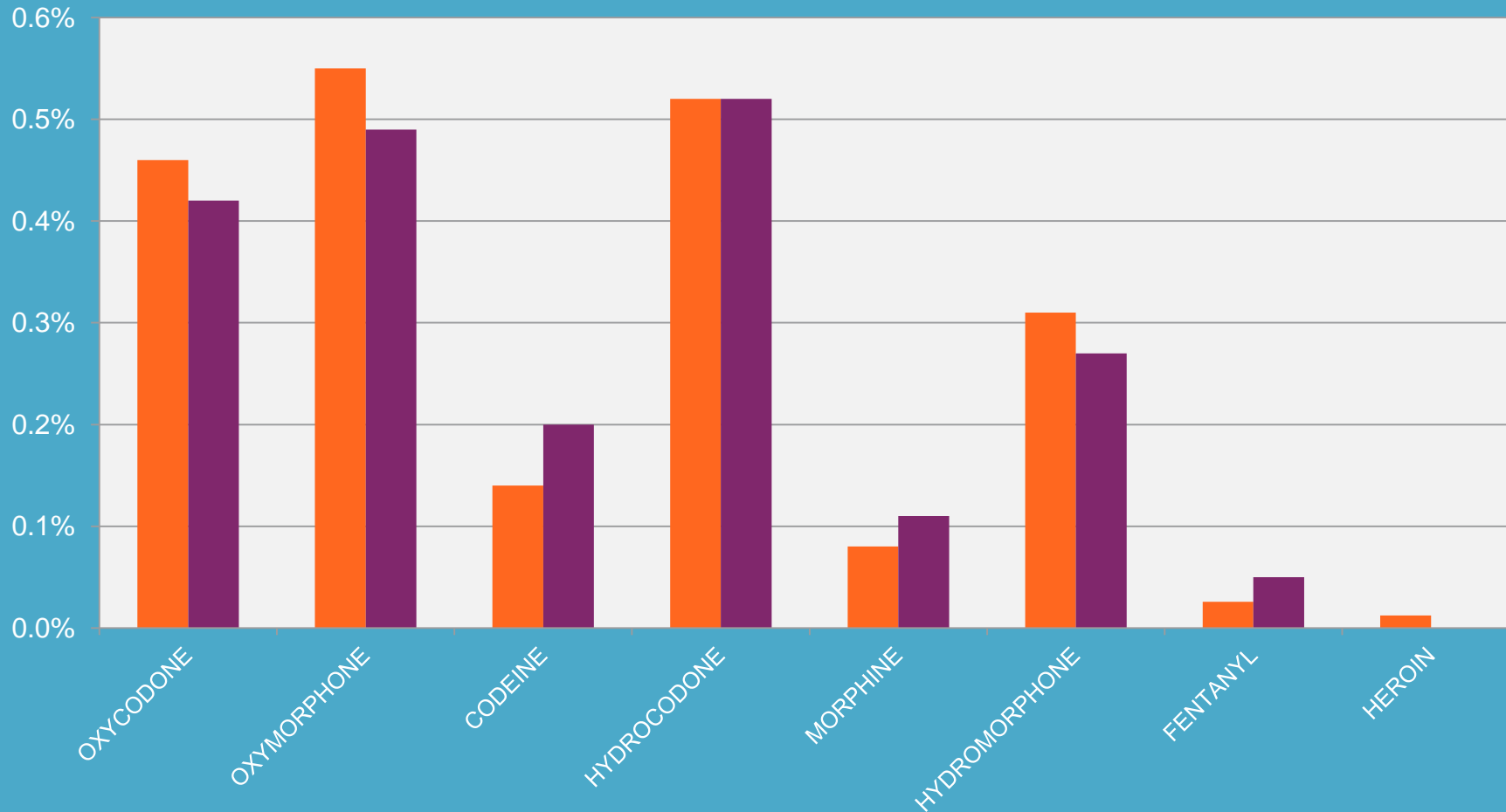
Source: IQVIA® Transactional Data Warehouse

Gender positivity

Expanded opioid

Male

Female

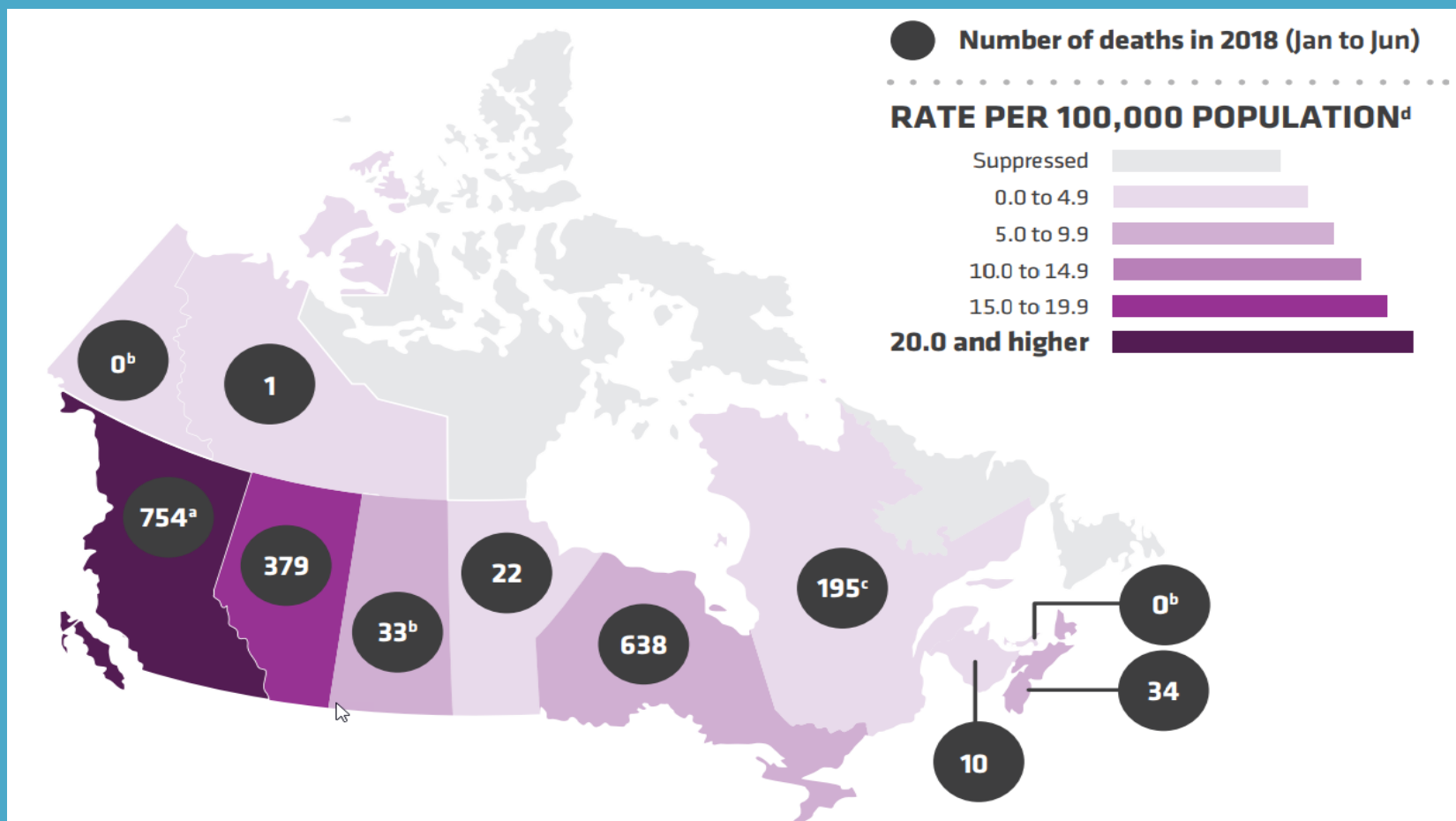


Expanded opiate panel

- Current opiate panel
 - Codeine
 - Morphine
 - Heroin*
- Opiate screen
 - 300 ng/mL cutoff
 - Will identify morphine, codeine, hydrocodone, hydromorphone
- Oxycodone screen
 - 100 ng/mL cutoff
 - Will identify oxycodone or oxymorphone
- Fentanyl
 - Norfentanyl



Opioid related deaths in Canada



<https://www.canada.ca/en/health-canada/services/publications/healthy-living/infographic-opioid-related-harms-december-2018.html>

US Department of Health and Human Services Opioid Strategy



1

Better
addiction
prevention,
treatment,
and recovery
services



2

Better data



3

Better pain
management



4

Better
targeting of
overdose
reversing
drugs



5

Better
research

How to best identify

- Tobacco use
- Age (higher age=increased positivity)
- Policy size (smaller policies=increased positivity)
- Opioid positivity in state of residence
- Mix of chemistry analytes