

Geographic Variation in Opioid Mortality by Race/Ethnicity, 1999–2016

Identifying epidemic hotspots

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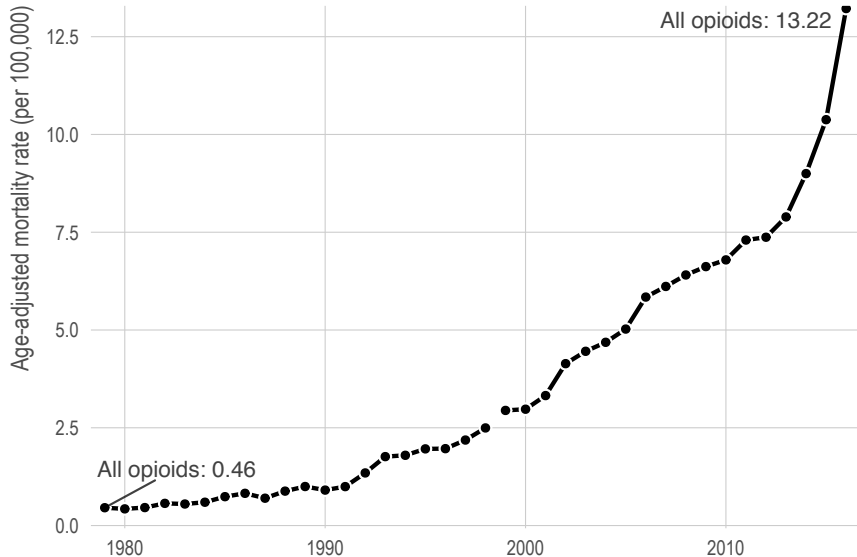
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Harvard TH Chan School of Public Health

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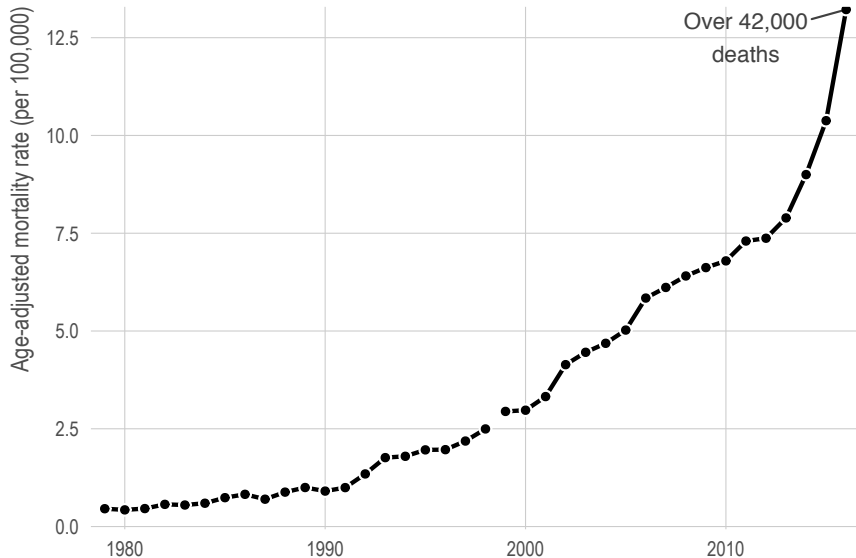
³Heinz College
Carnegie Mellon University

PAA 2018: Denver, CO

Almost 30x increase since 1980

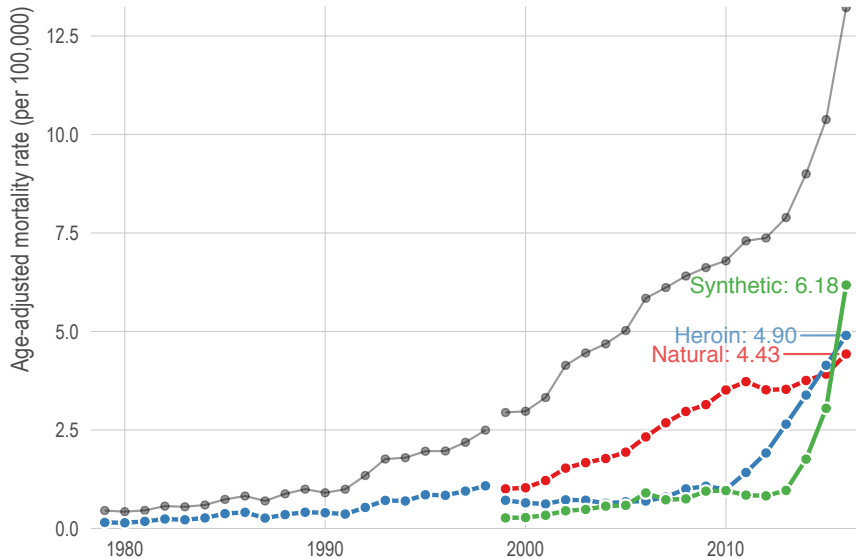


More than deaths by car accidents or guns

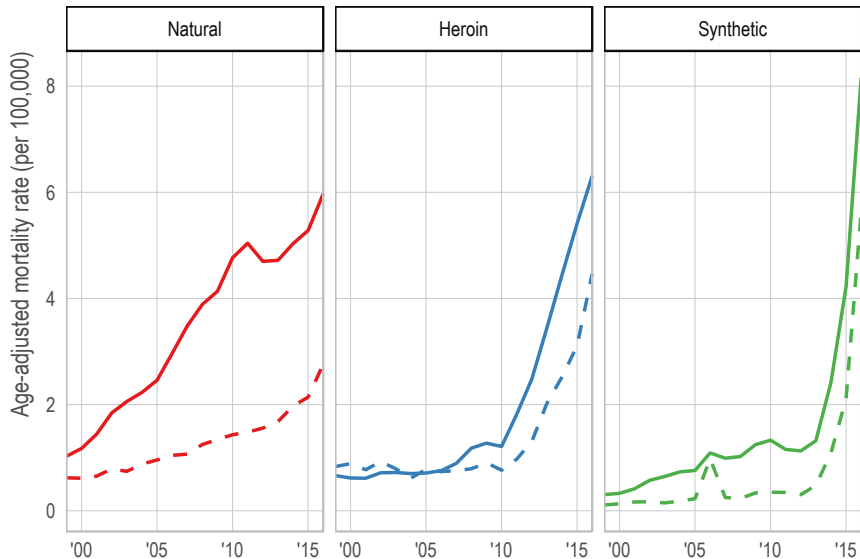


Variation in the opioid epidemic

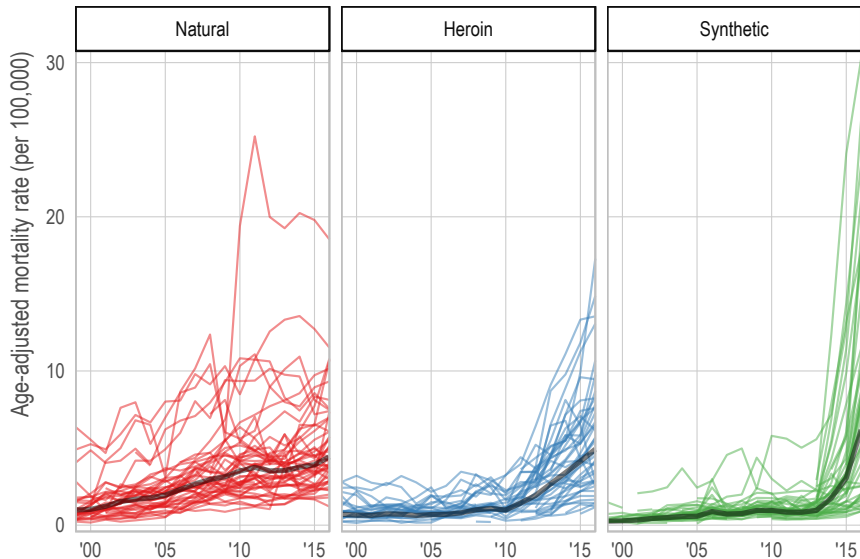
Variation by opioid type



Variation by race/ethnicity



Variation by state



Aims of the paper

- 1 Systematically describe the opioid epidemic across geography (state), race/ethnicity, and opioid type.

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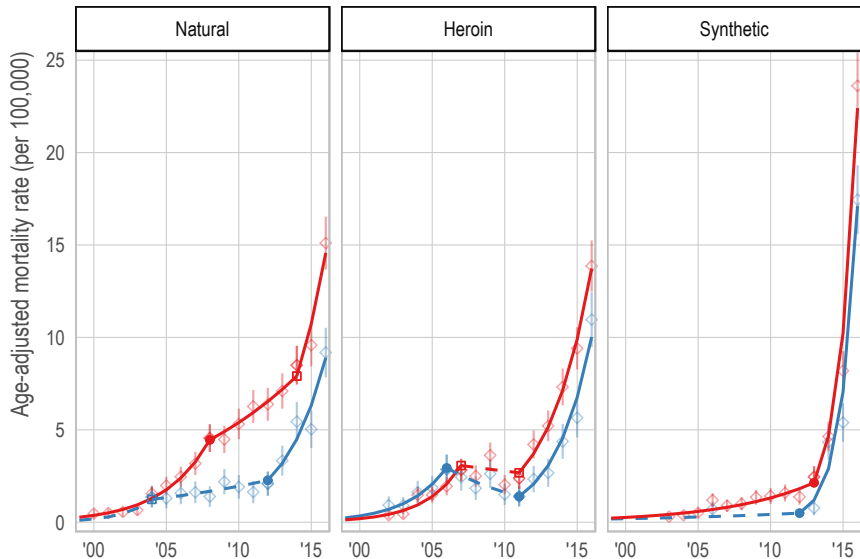
- ① Systematically describe the opioid epidemic across geography (state), race/ethnicity, and opioid type.
 - The epidemic over time (1999–2016)
 - The *current* epidemic in terms of both mortality rate and rate of increase
- ② Identify “epidemic hotspots” — areas with high mortality and rapid increases

- 1 Multiple cause of death data from NCHS

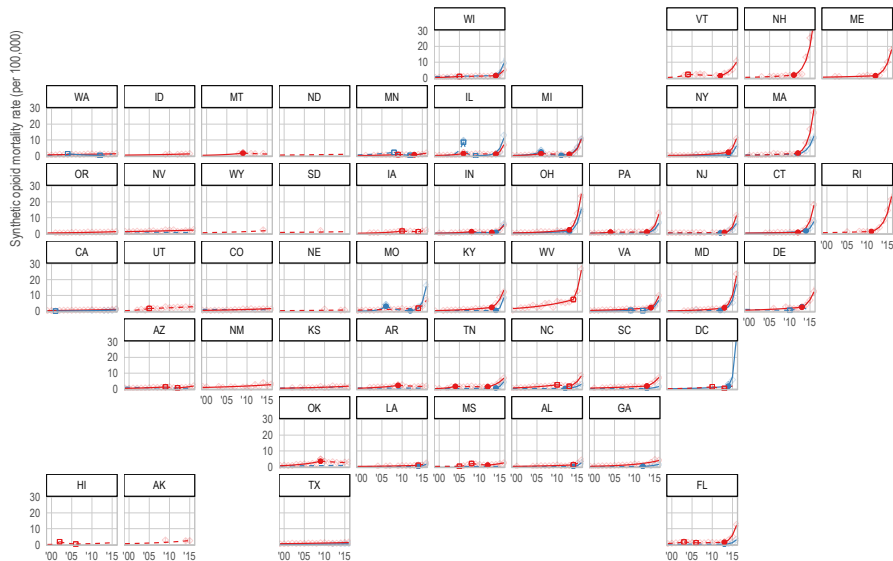
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- ③ Joinpoint regression

Example Results: Maryland

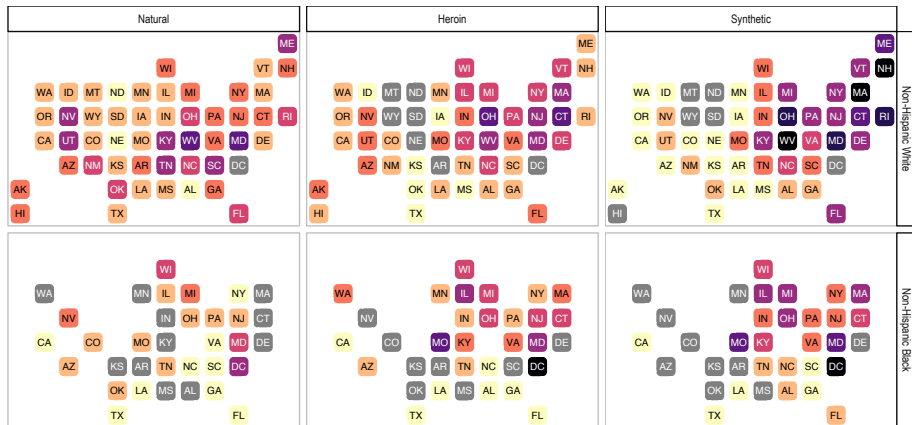


Example Results: Synthetic Opioids



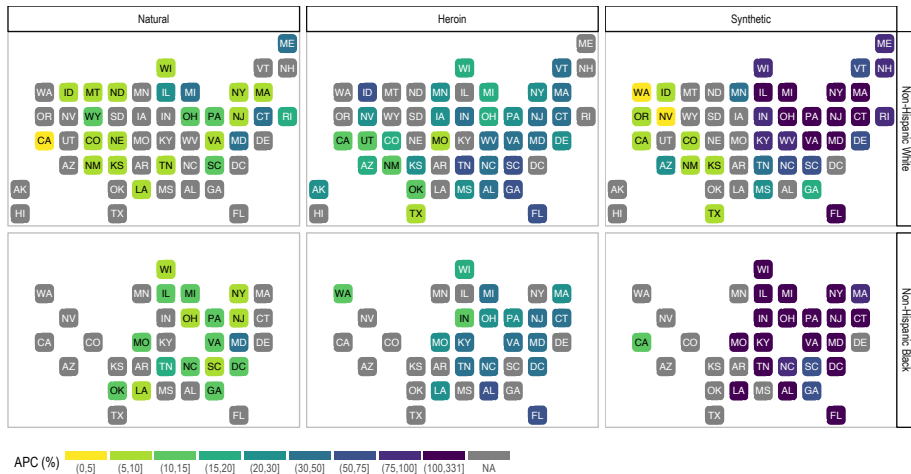
Results: Current Epidemic

Current Mortality

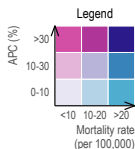
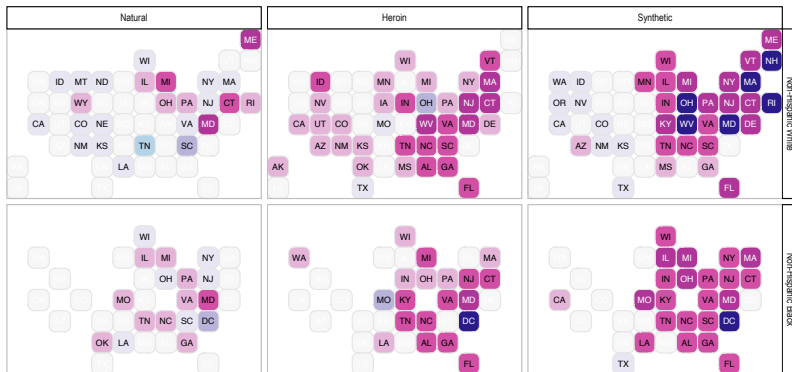


Mortality (per 100,000) [0,2.5] (2.5,5] (5,7.5] (7.5,10] (10,15] (15,20] (20,25] (25,34] NA

Current Trajectory



Epidemic Hotspots



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- Strong geographical clustering of epidemic hotspots

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 - Types of drugs
 - Cost and availability

Thank you

Code and interactive results explorer:

`https://tiny.cc/paa2018`

mathewkiang.com | : mkiang | : @mathewkiang

Epidemic Hotspots



Average Annual Percent Change

