Geographic Variation in Opioid Mortality in the United States by Race/Ethnicity, 1999–2016 Identifying epidemic hotspots

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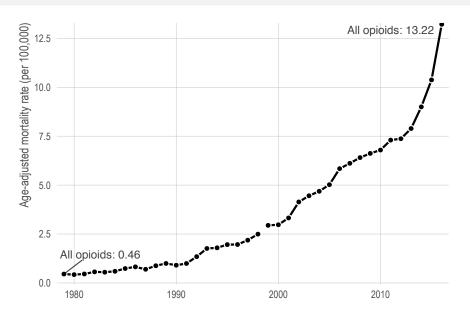
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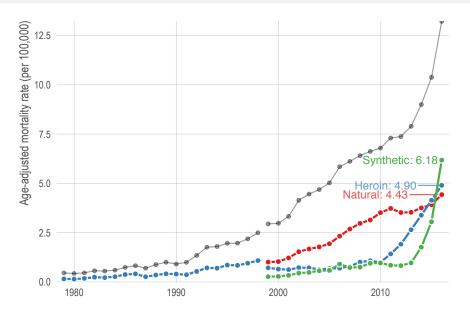


Almost 30x increase since 1980

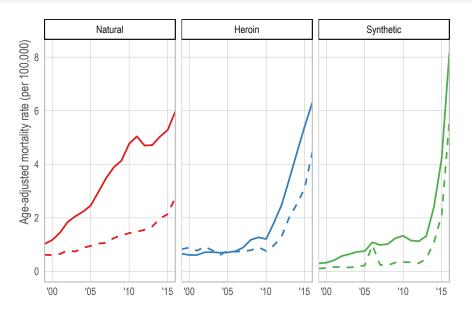


Variation in the opioid epidemic

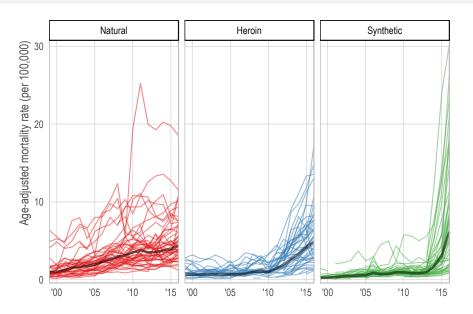
Variation by opioid type



Variation by race/ethnicity



Variation by state



Aims of the paper

- 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 level of mortality and current rate of increase
- Identify "epidemic hotspots" areas with high mortality and current rapid increases

Data / Methods

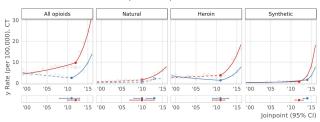
- Multiple cause of death data from NCHS
- 2 Calculate age-standardized rates by state, race/ethnicity, and opioid type
 - Non-Hispanic Black and White populations
 - Natural (prescription); heroin; and synthetic (e.g. fentanyl) opioids
- Joinpoint regression to identify significant changes

Results

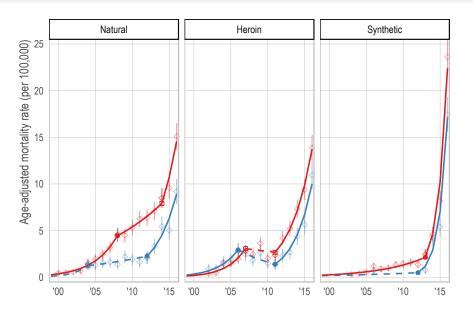
Results explorer: https://tiny.cc/epc2018



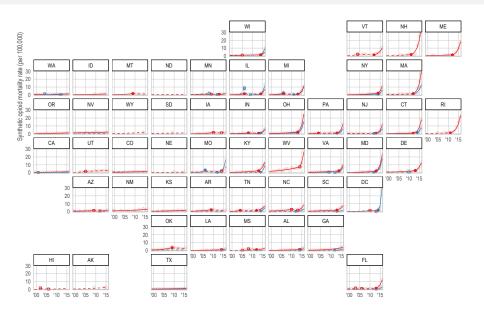
State-specific Joinpoint Results



Example Results: Maryland

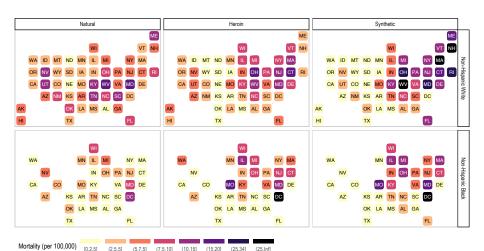


Example Results: Synthetic Opioids

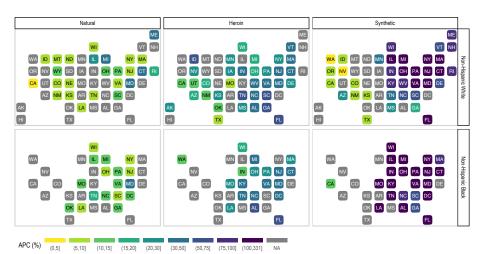


Results: Current Epidemic

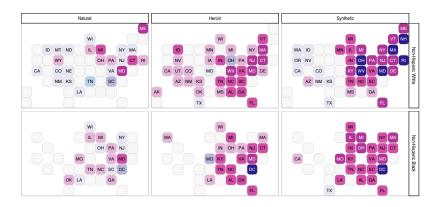
Current Level of Mortality



Current Rates of Increase



Epidemic Hotspots





Results

- No decreases in opioid mortality over whole time period
- Where there were increases, it is just as bad (or worse) for the black population
- Increases are driven by heroin and synthetic opioids in eastern states
 - Heroin deaths increased 30-34% per year for both populations
 - \bullet Synthetic opioids increased 70% per year for whites and 150% for blacks
- Synthetic opioids are doubling in 12 states for whites and 18 for blacks
- Strong geographical clustering of epidemic hotspots

Conclusions

- Not just one epidemic
- Huge variation by race and geography
- Interventions must be local and tailored to region, race/ethnicity, and opioid type
- Supply-side interventions need to be balanced with harm reduction interventions
- Surveillance of illicit markets needs to be dramatically improved

Thank you

Code and interactive results explorer:

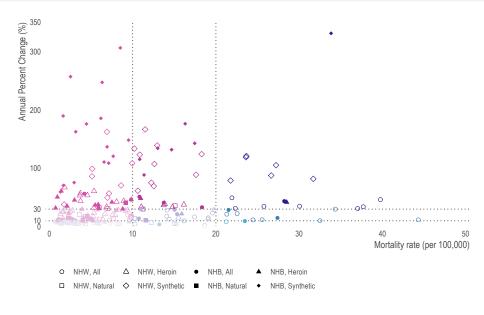
https://tiny.cc/epc2018

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Epidemic Hotspots



Average Annual Percent Change

