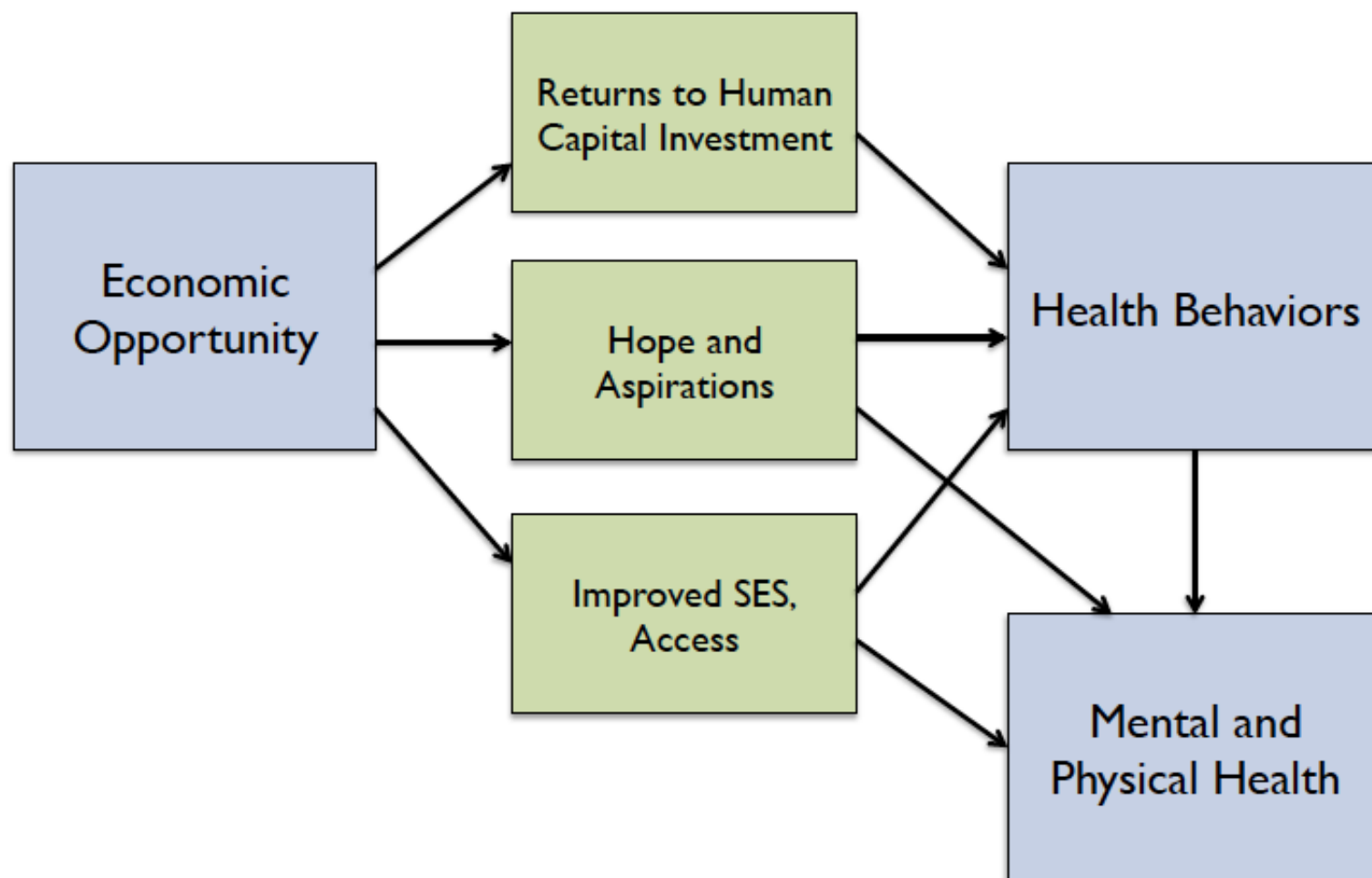


Opioid Crisis and Labor Markets: The Impact of Declining Manufacturing Employment

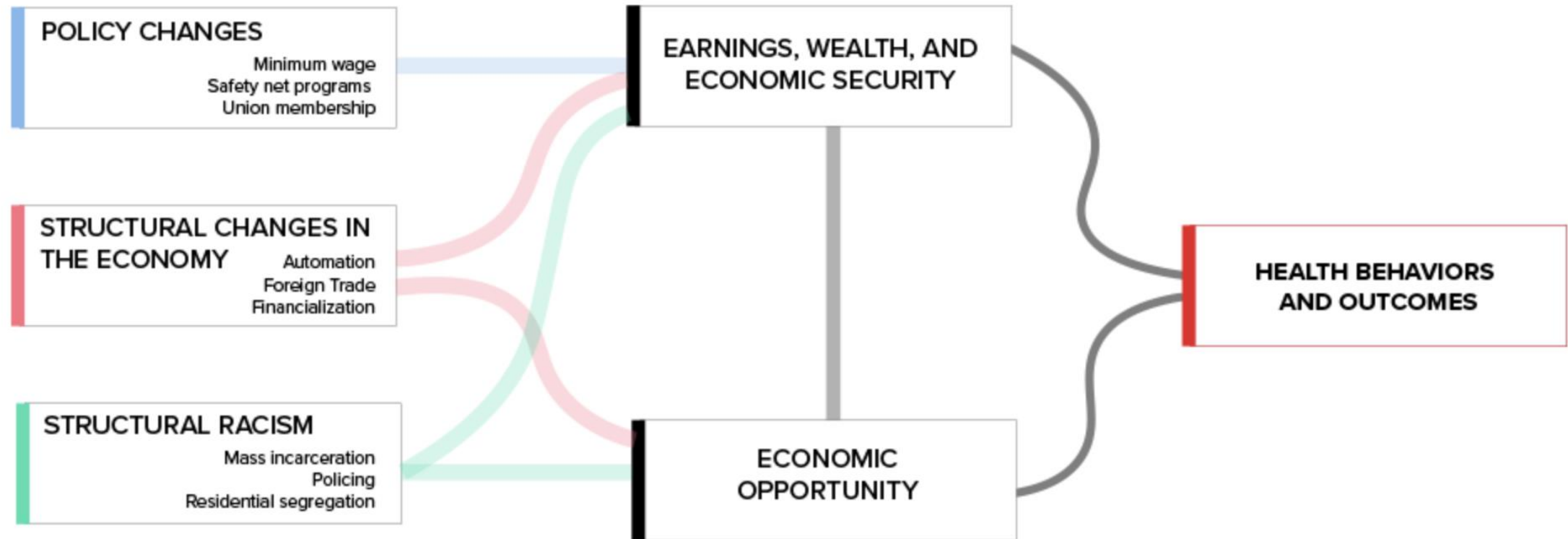
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Opportunity & Health: Pathways



OpportunityforHealth.org

Opportunity & Health: The Bigger Picture



The Scale of Deindustrialization

U.S. Economy undergone massive restructuring

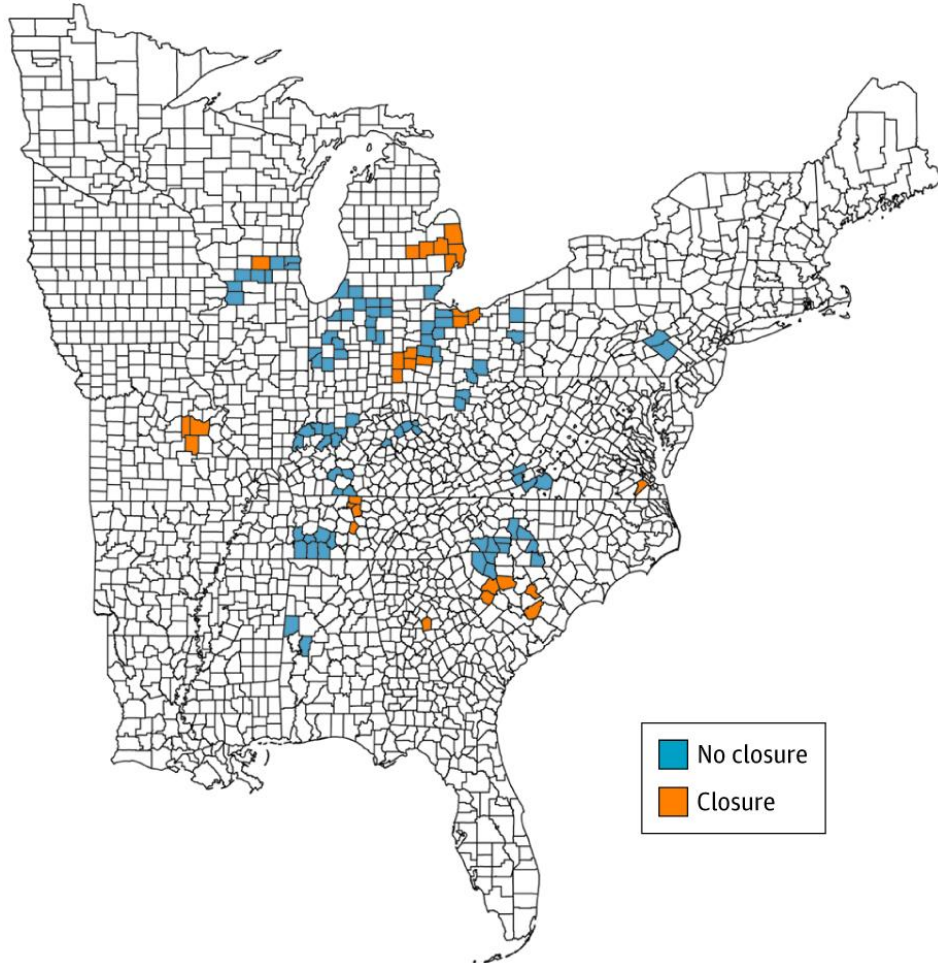
Share of workers employed in goods producing industries fell from 25% to 10% over four decades 1980-2020

Result of multiple factors, including:

- Increase in foreign trade competition (from China, Mexico);
- Increase in automation via industrial robots

What is the impact of deindustrialization on population health? On opioid overdose deaths?

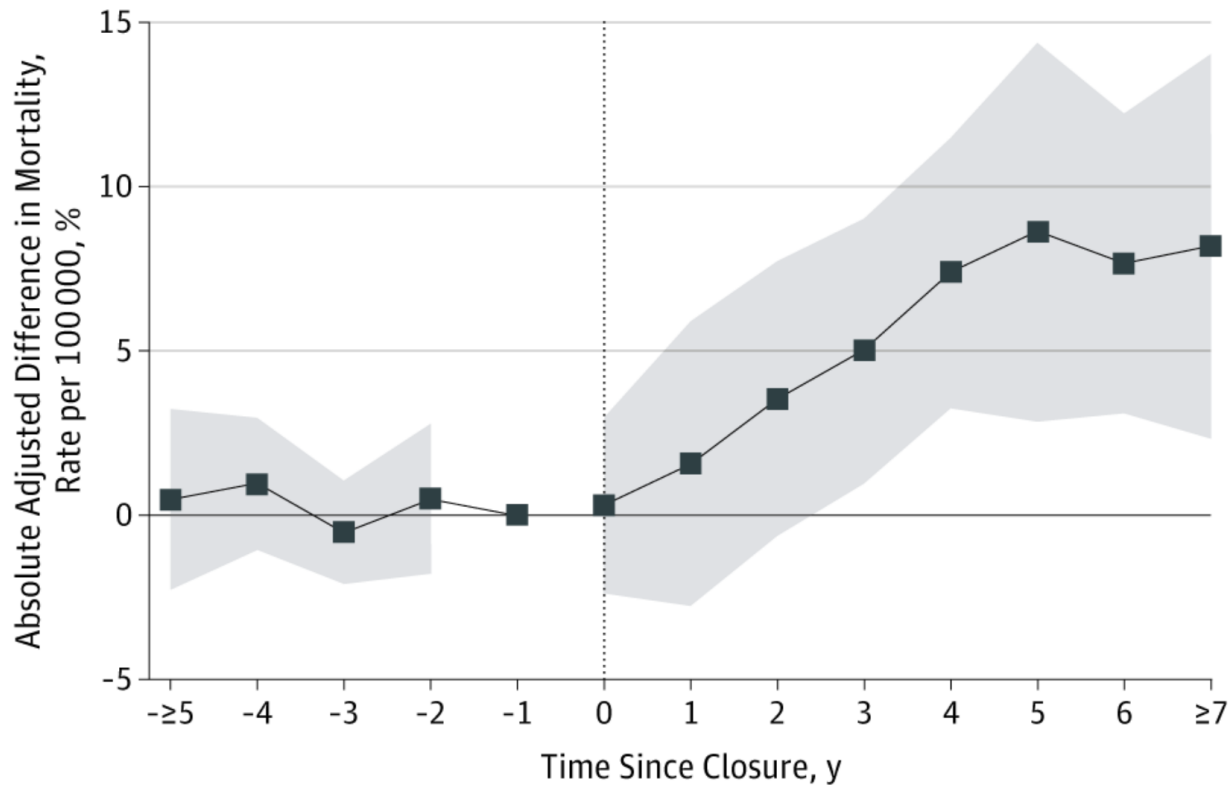
Study 1: Auto Assembly Plant Closures



- Examined 113 Counties with at least 1 operational plant in 1999
- Estimate impact of plant closing on opioid overdose mortality (1999 to 2016) – compared to counties where plant remained open

Study 1: Auto Assembly Plant Closures

B Difference-in-differences estimates



- 5-years after plant closing, +8.6 opioid deaths per 100k
- 85% relative increase in overdose deaths
- Largest increase for white men of working age

Study 2: Automation and Industrial Robots



- Fourfold increase in number of industrial robots between 1993 and 2007
- Led to loss of 400,000-750,000 jobs in manufacturing and service sectors

Spatial Variation in Automation

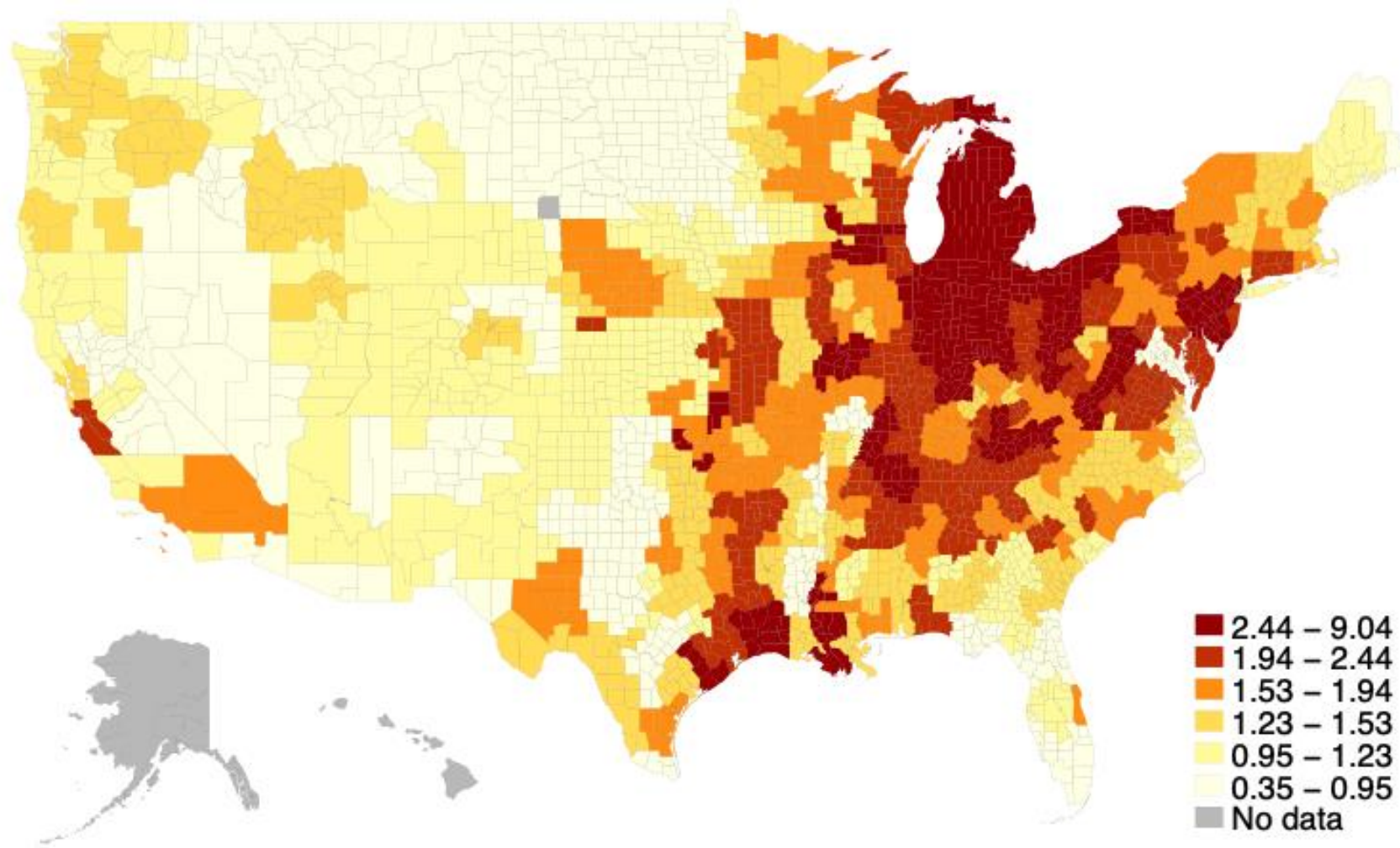
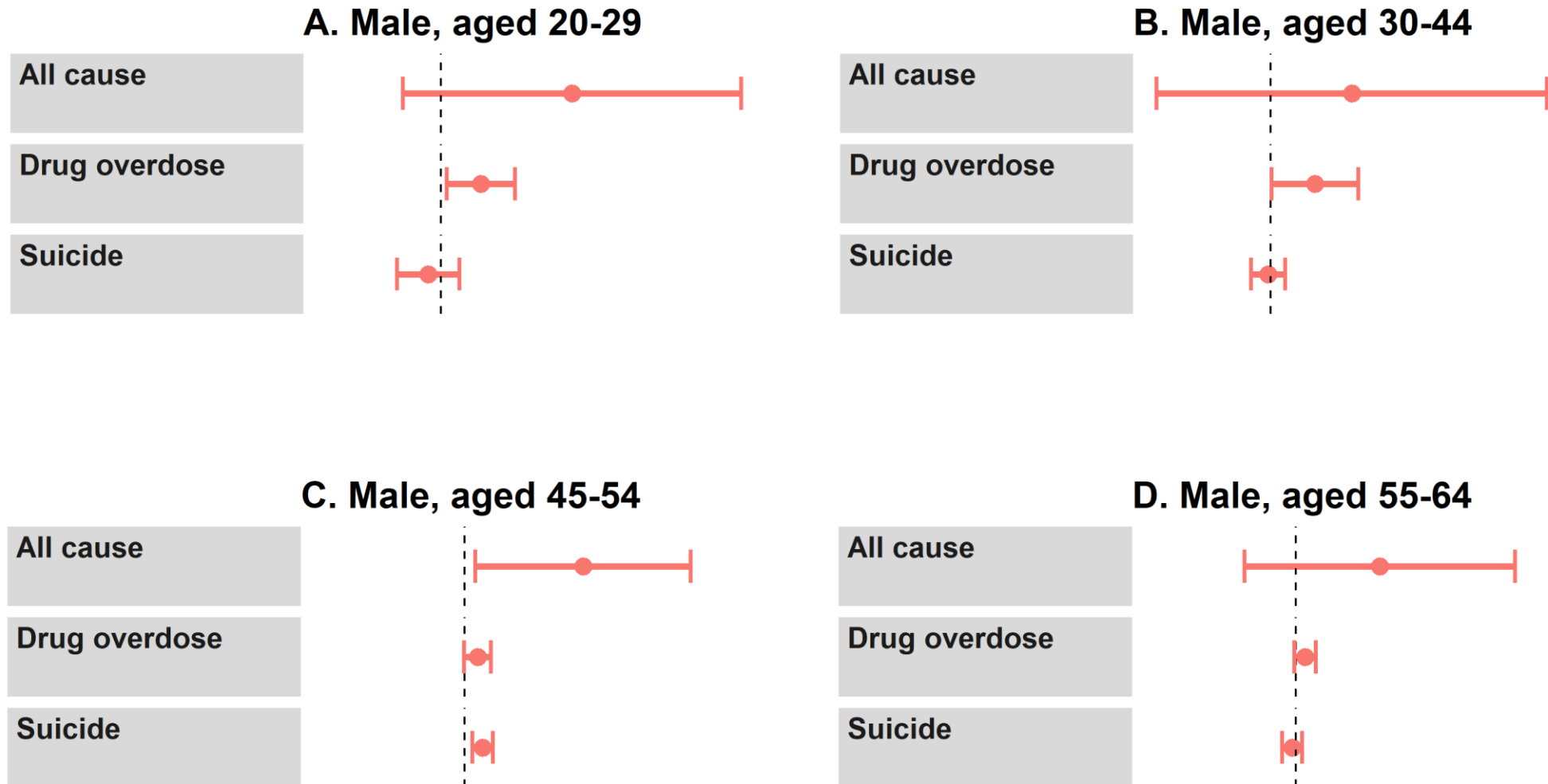


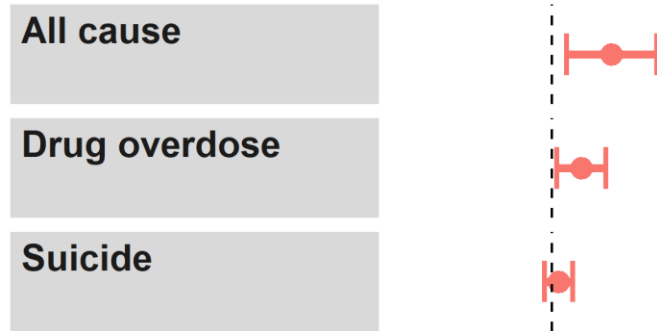
Figure maps commuting-zone-level exposure to automation, as measured by change in the number of industrial robots per 1,000 workers, 1993–2007. Map shows county borders. Data were obtained from Acemoglu and Restrepo (2020). Mean delta of 2.03; Median 1.53

Automation & Mortality: Males

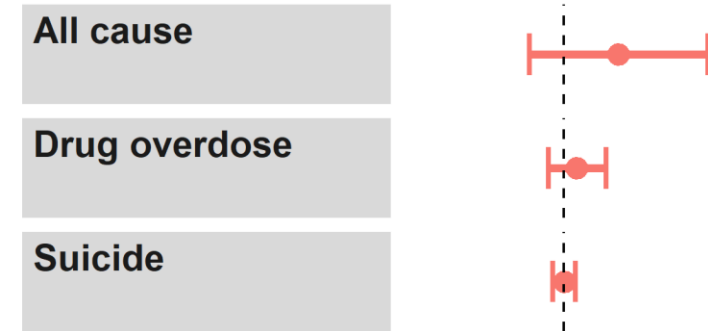


Automation & Mortality: Females

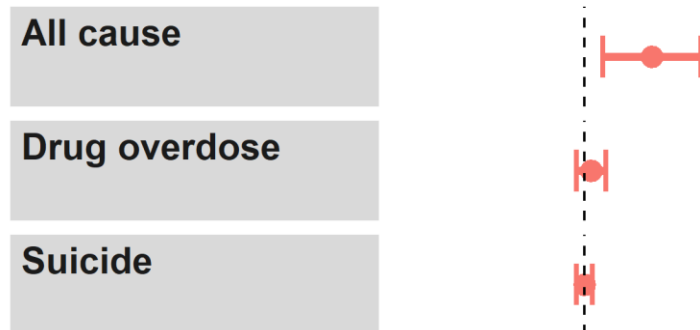
A. Female, aged 20-29



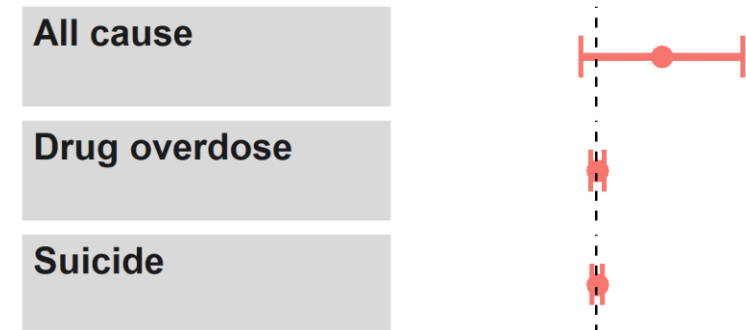
B. Female, aged 30-44



C. Female, aged 45-54



D. Female, aged 55-64



Variation Across Contexts?

A. Safety Net Policies

- Effect of automation on drug overdose + suicide mortality greater in states with less generous Medicaid programs;
- Unemployment Insurance (UI) generosity also mitigates effect on suicide mortality.

B. Labor Market Policies

- Effect of automation on suicide mortality lower in states with higher minimum wage.
- Effect of automation on drug overdose mortality higher in “right-to-work” states.

C. Prescription Opioid Supply

- Effect of automation on drug overdose mortality higher in areas with relatively more prescription opioids per capita.

Key Takeaways

Decline of manufacturing employment increased mortality, particularly for working age men

- Mainly 'deaths of despair' from opioid overdose, suicide, alcohol

Safety net programs and labor market policies may blunt impact; as may efforts to reduce supply + accessibility of opioids

Economic opportunity is a critical determinant of population health

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