Health Insurance and Hospital Supply: Evidence from 1950s Coal Country

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Views here are the authors' and do not reflect the Federal Reserve System or the U.S. Department of the Treasury.
Can Both Health Insurance and Hospitals Improve Health Outcomes and Access to Health Care?

- **Contribution**: Health insurance with and without complementary hospitals
- **Interventions**: United Mine Workers of America (UMWA) health care programs
  - 1950 – Subsidized hospital care insurance (demand side)
  - 1956 – New chain of hospitals in Appalachia (supply side)
- **Data**: Appalachian county-year data (1946-1965)
  - Hospital birth rates, infant mortality; hospital beds, employees, admissions
    (Vital Statistics, American Hospital Association, County/City Data Book)

Data sources: Martha Bailey et al (2016), Martin Gaynor and Amy Finkelstein (NIH P30-AG012810), Heidi Williams (NIH P30-AG012810), ICPSR, James Ziliak

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Mining Union Provided Hospital Insurance and Hospitals in 1950s Appalachia

(1) 1950: Hospital Insurance
Map: 1950 County Mining Employment to Population 14+

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(2) 1956: Union Hospitals

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Identification – Two DIDs/Event Studies

**DID 1: Insurance Only (1950)**
Continuous Treatment: 1950 County Mining Employment to Pop 14+

**DID 2: Insurance + Hospitals (1956)**
Binary Treatment: County Indicator for Union Hospital
Local average treatment effect (LATE) for hospitals in high insurance counties

Assumptions: Parallel trends in outcomes in absence of treatment
Controls: County fixed effects, year fixed effects, county population, fertility rates, Hill-Burton hospital beds and date of approval

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Results DID 1: Insurance Only

Hospital Birth Rates Rose
3% (average county)
23% (average high coal county)

Infant Mortality Fell
-2% (average county)
-12% (average high coal county)

No statistically significant evidence of changes in hospital beds or overall mortality rates

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Results DID 2: Insurance + Hospitals

Hospital Beds Rose by 80% (and stayed that way)

Hospital Employees Rose 150% (but began to fall later)

No statistically significant evidence of further increases in hospital birth rates or declines in infant mortality

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What Did We Learn?

• Studied complementary insurance and hospital programs (uncommon in US)
• Results suggest pre-existing hospitals did not adequately meet demand
• Bed crowd-out rates lower than federal “hospital only” program (Hill-Burton) (30% vs. 70% Chung et al 2017)
• Role for complementary effects of hospitals in areas with large insured population

Questions? Want to know more?
erin.e.troland@frb.gov and/or roll the dice to chat during happy hour (e.g. lots more fun history to discuss about the context/UMWA...)

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