Rural Hospital Response to COVID-19

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Collaborative work: project team listed at end of presentation
About the NC Rural Health Research Program

- Based at The Cecil G. Sheps Center for Health Services Research, University of North Carolina
- Major funder: Federal Office of Rural Health Policy (HRSA/HHS)
  - Conduct research to advise “the Secretary on health issues within these communities, including the effects of Medicare and Medicaid on rural citizens’ access to care, the viability of rural hospitals, and the availability of physicians and other health professionals” (§711 SSA)
This talk in one slide

- Last year saw the highest number of rural hospital closures in at least 20 years
- Lots of headwinds suggest rates may get worse: rate has abated last 12 months, but is that a respite until we emerge from the pandemic?
The Rural Context
Economics of Rural America

- Slower economic recovery

Nonmetro employment back to 2001 levels in 2015, still far below levels prior to the Great Recession

Employment index (2001=100)

- Older, less insured, lower income...

- Widespread population loss

2/3 of rural areas lost pop 2010-2016

Evidence of recent reversal?

Nonmetro population loss is now widespread in the eastern United States


Source: Rural Health Snapshot (2017). NC RHRP.
Economics of Rural America

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  - Employment index (2001=100)

- Widespread population loss
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  - Evidence of recent reversal?
  - Nonmetro population loss is now widespread in the eastern United States

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<th>POPULATION CHARACTERISTICS</th>
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<th>Rural (Non-Metropolitan)</th>
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<tr>
<td></td>
<td>All Non-Metro</td>
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<td>Counties (% in 2015)²</td>
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Source: Rural Health Snapshot (2017). NC RHRP.

**Economics of Rural America**

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Source: *Rural Health Snapshot* (2017). NC RHRP.

Rural mortality falling more slowly than urban

Gap = 6%

Gap = 18%

Source: CDC WONDER / Compressed Mortality File
COVID-19 hit rural late but hard

Figure 3
Weekly New COVID-19 Cases by County Type (per 100,000 adults, ages 20 and up)

Urban
- Large metro areas, 1 million or more population
- Small metro areas, less than 1 million

Rural
- Micropolitan, rural with urban centers of 10,000 to 49,999
- Towns, rural with urban centers 2,500 to 9,999
- Villages and open country, rural with no centers above 2,499
COVID-19 Mortality is Higher in Rural Areas

Death rate as of Jun 1 is 28% higher in nonmetro vs. central cities

Data from The New York Times, based on reports from state and local health agencies.
Focus on Hospitals and Closures
The rural-urban hospital profitability gap is largest in the South.

Figure 1. 2018 Median Total Margins for CAHs, ORHs and Urban Hospitals by Census Region
The operating reality of rural hospitals

- **Low volumes**: more vulnerable to variation (loss of one doc)
- **Payer mix**: greater proportion of Medicare, Medicaid, and self-pay
- **Market structure**: competitors are larger, more complex, and far
- **Population served**: smaller numbers and more who are older, sicker, lower income, unemployed, un- and -underinsured
- **Service mix**: lower complexity, primarily outpatient
- **Workforce**: recruitment and retention; impacts service mix and profitability (e.g. surgery)
- **Technology**: lower access to capital => less IT (e.g. EHR); broadband
THE FIVE HORSEMEN OF RURAL HOSPITAL CLOSURES

Profitability
No margin, no mission

Practice
Care delivery – e.g. inpatient vs. outpatient

Policy
Federal, state, local, and non-government

Payment
Public, uninsured (vs private); APMs, ACOs

Population
Older, lower income, net declines
Closures concentrated in the South
Closures 2019-2021

COVID/Provider Relief Fund(s)

2019
J F M A M J J A S O N D

2020
J F M A M J J A S O N D

2021
J F M A M J J A S O N D
Impact of closures on community

- Not much evidence that hospital closures lead to poorer health outcomes
  - Small sample / power problems?
  - OIG: surveys revealed few reported access problems post-closure
  - Literature suggests some access decrease, but magnitude mixed
  - Joynt et al (2015) found no effect, but mostly urban hospitals
  - Providers leave
  - Some work on outcomes coming(?)

- Economic cost:
  - Often one of top two employers
  - Magnet effects – hospital close, other clinics close?
  - Losing the only hospital in a county implies a decrease of about $1300 (today’s dollars) in per capita income (Holmes et al 2006)
Equity Issues in Rural Hospital Closures

- Among all rural hospitals, those serving more Black populations are more likely to be distressed.

- Among financially distressed rural hospitals, those serving markets serving more Black and/or Hispanic populations are more likely to close.

- Among rural hospitals that close, those serving markets serving more Black populations are more likely to cease all healthcare services.

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Role of Medicaid expansion?

- Often the first question re: rural hospital closures
- Evidence tends to lean that (non-)expansion plays a role

The Map Evidence:
- States that did not expand seem to have more closures
- Hospitals in the South have had weaker finances for years

Can leverage pre-expansion trends:
- 2005-2013: 37/73 (51%) closures were in expansion states
- 2014-2021: 38/108 (35%) closures were in expansion states
Sample policy solutions
approaches

- Federal: rural emergency hospital
  - Allow small hospitals to convert to a new provider type: REH
  - Big idea: allows a "step down" for a town that would lose its hospital
  - Most hospitals will need TA, capital to rebuild, community engagement

- State: emergency stabilization fund (e.g. LA, NC)
  - Address the vacuum left post-closure: telehealth, provider recruitment

- More from Keith!
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