

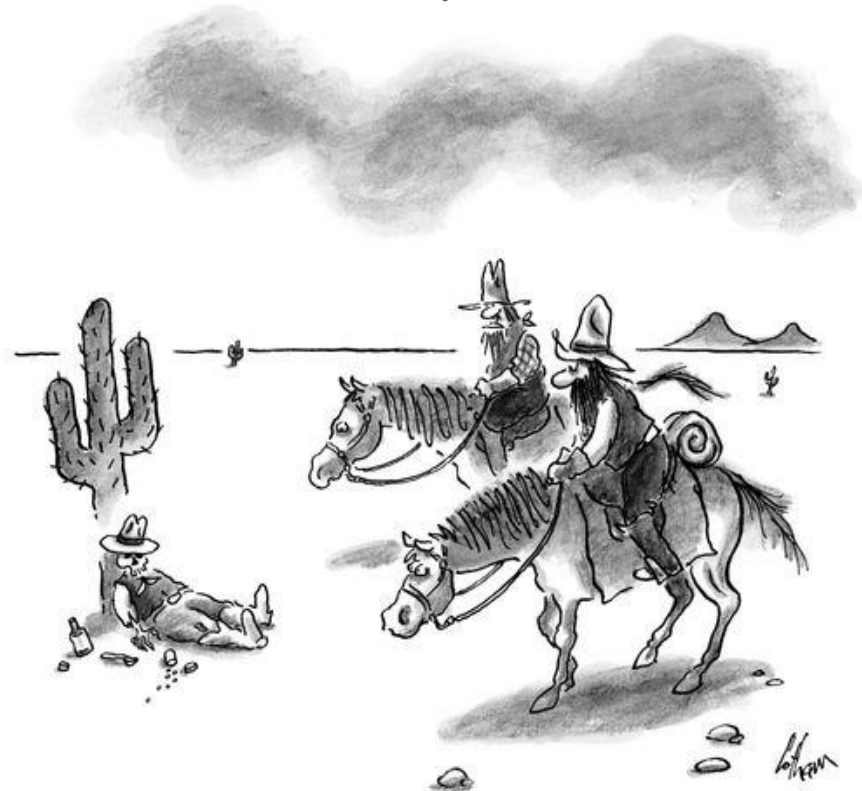
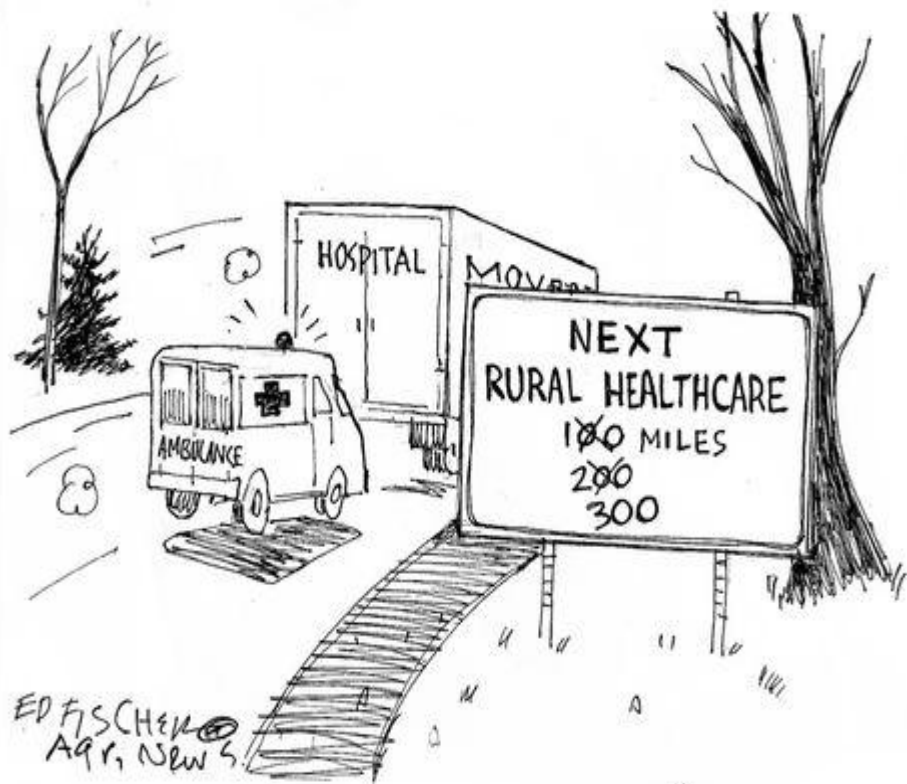
# Rural Healthcare Disparities

HADM 6100 - Introduction to US Healthcare System

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## The curious case of Rural healthcare: What do you see??



*"It's a great country—just don't get sick."*

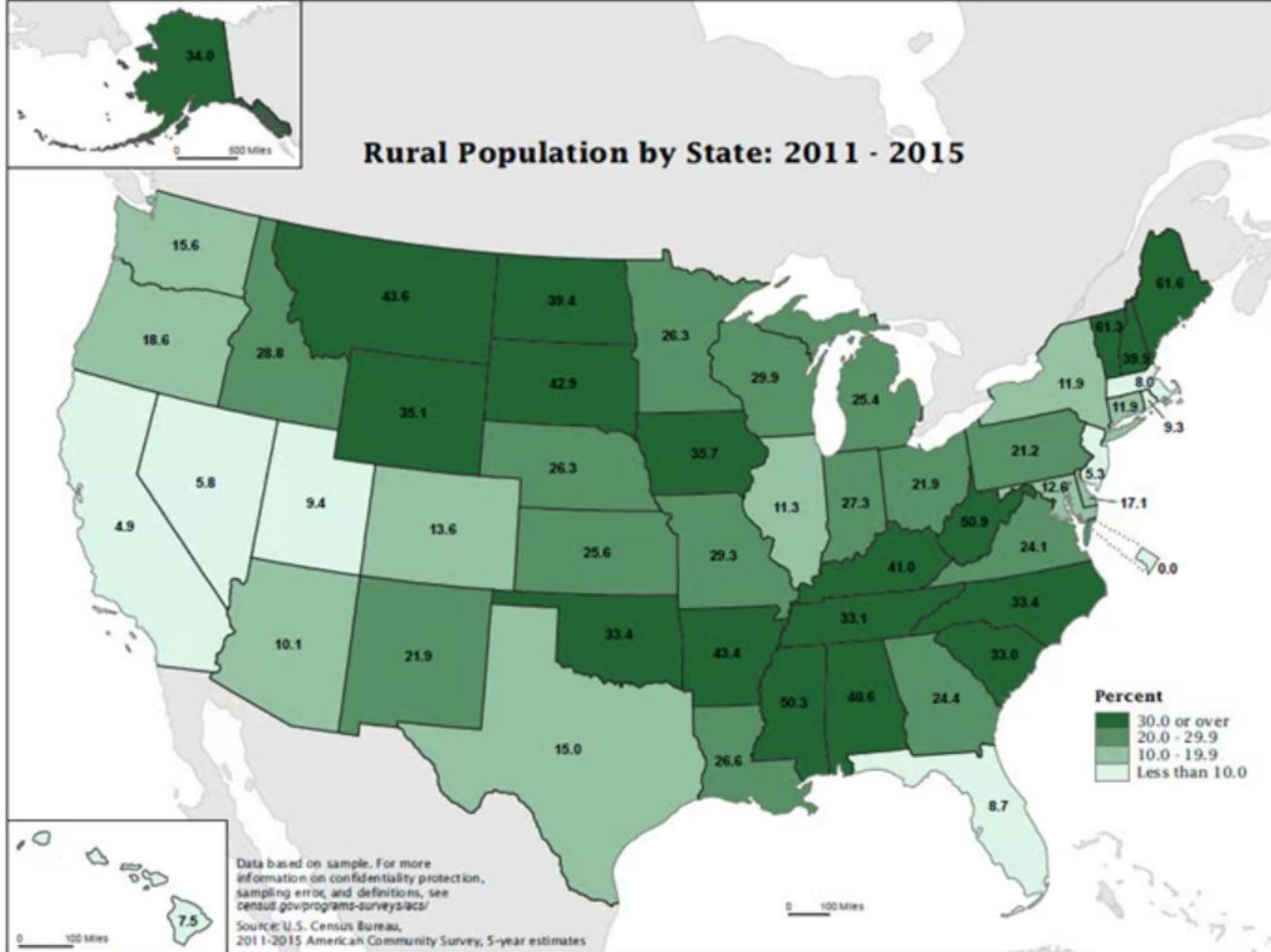


## Characteristics of Rural Areas in the United States

15-20% (more than 46 million Americans) live in rural areas

Rural areas:

- Sparsely populated
- Low housing density
- Distant from urban centers (geographic isolation)



(Fields, 2022)

## Distinguishing between Rural and Urban

### Rural vs Urban

- Population thresholds
- Density
- Distance
- Land use

### US Census:

- Strictly based on measures of population size and density
- Categories
  - Urbanized areas
  - Urbanized clusters
  - Rural areas





# Healthcare Disparities: Urban vs Rural

## North Carolina

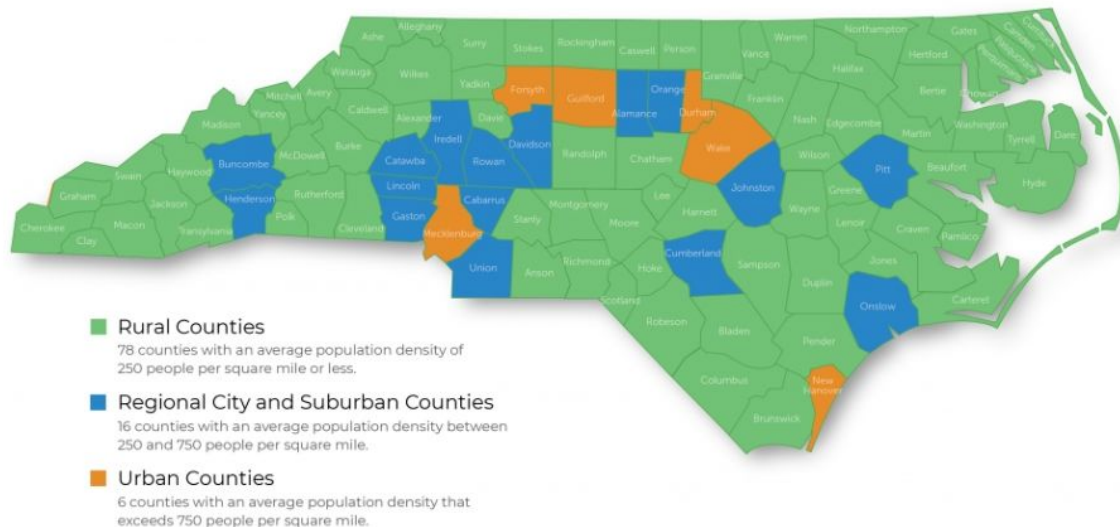
40% of the states population

- 2nd largest in the US

78 counties

- 250 people per square mile

## NORTH CAROLINA COUNTIES

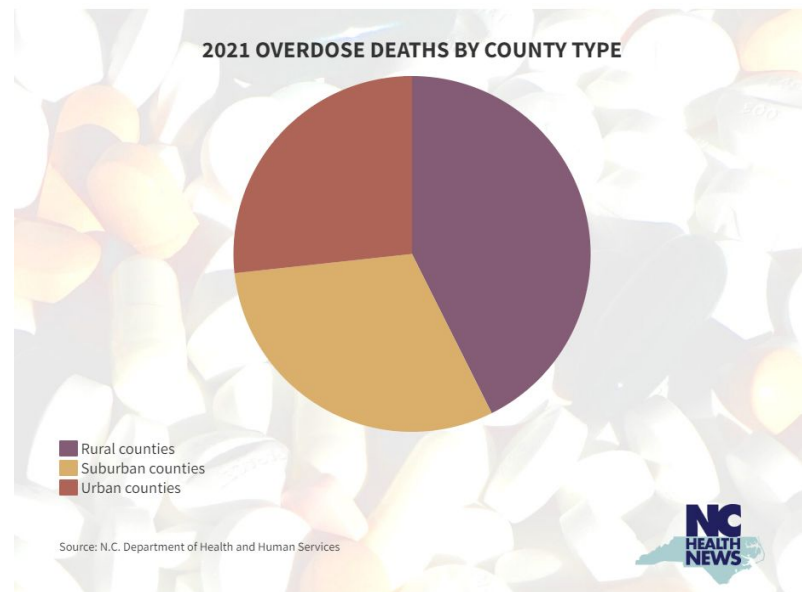
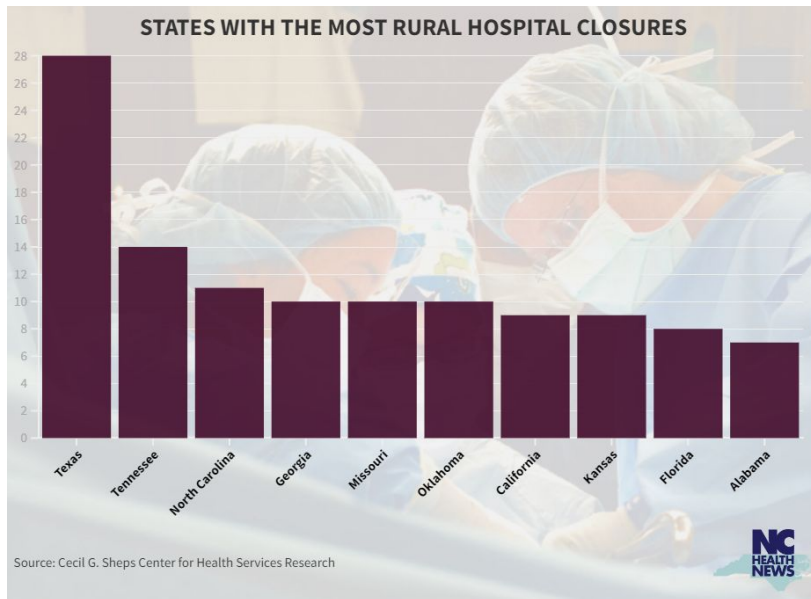


Densities calculated by the Rural Center based on the 2020 U.S. Census.

(Baxley, 2023)

## Health Disparities/Challenges in North Carolina: Urban vs Rural

1. Fewer residents with health insurance
2. Higher percentage of drug overdoses
3. Hospital closures
4. Lack of providers



(Baxley, 2023)



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## Rural vs. Urban Communities: Key Differences in Healthcare

- Mortality rates higher than urban counterparts
  - Unintentional injury deaths
  - Overdoses
  - Chronic conditions
- Older and sicker populations
- Inadequate access to healthcare
- Healthcare staffing shortages



# Rural Health Disparities: Overview/Consequences



## Rural Health Disparities Consequences

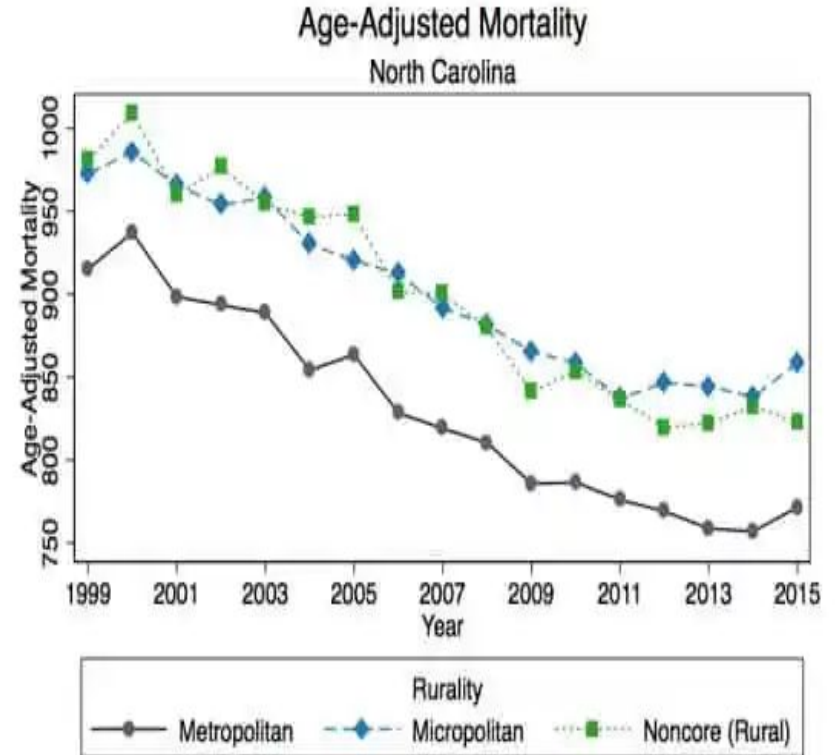
- **Definition of Health Disparity:** *preventable differences in the burden, disease, injury, violence, or in opportunities to achieve optimal health experienced by socially disadvantaged racial, ethnic, and other population groups and communities."*
- **Examples of Health Disparities:**
  - Chronic diseases: **respiratory**, **heart**, brain, **cancer**, **diabetes**, arthritis, **obesity**, Crohn's, asthma, stroke.
  - Injuries/Death: **unintentional**, **suicide**, first degree murder, assault, **overdose**



Prevalent to Rural Areas

## Mortality Rates Quick Facts: Rural NC

- Infant Mortality rate: **7.4** (Black IMR is **2.5%** higher than White)
- **13** maternity wards have closed since 2019
- **60%** of rural residents are uninsured
- **138** rural hospitals have closed since 2010
- 4 rural counties have **NO DENTISTS**
- **25%** of the total number of practicing dentists in NC work in rural areas
- 2 rural counties have **NO PHYSICIANS**
- **7%** of rural residents live in a food desert



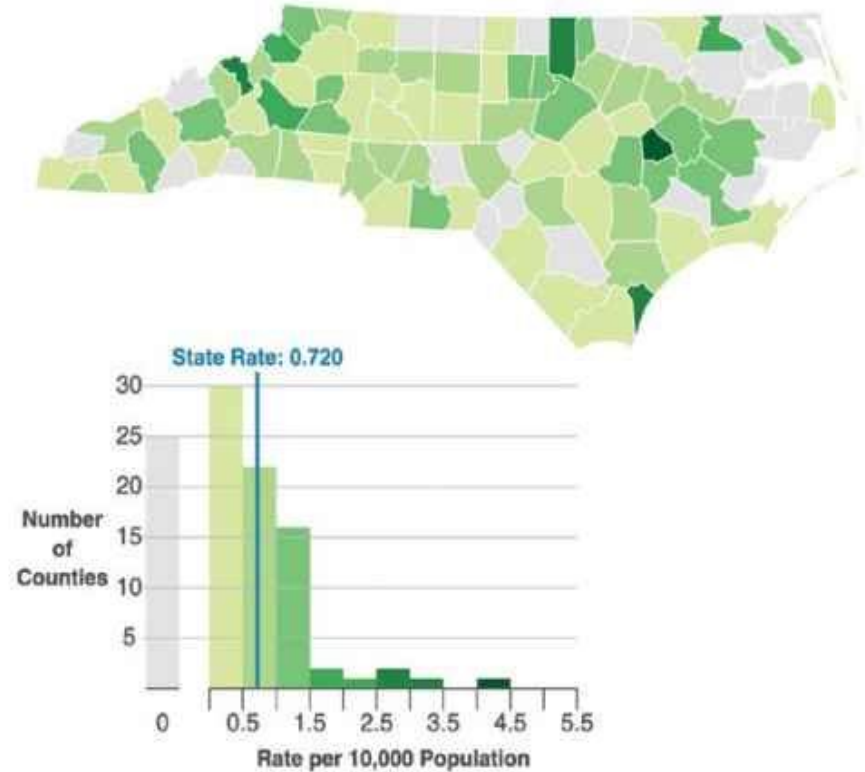
Source: NC Rural Health Research Program calculations from CDC Wonder. 2006 Urbanization.



## Behavioral Health Quick Facts: Rural NC

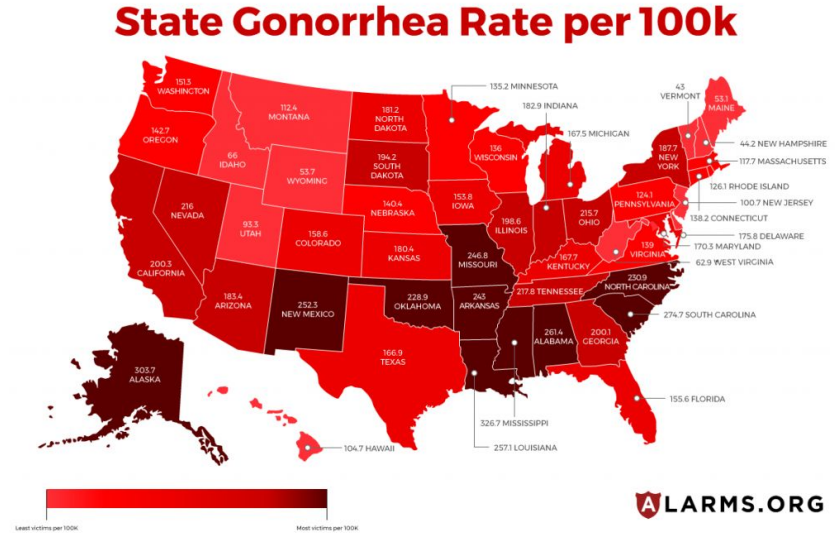
- 30 counties have **NO LICENSED PSYCHOLOGIST**
- NC ranks **10th** in suicide rates, **35th** in untreated depression in youth, **34th** in untreated mental illness in adults
- Rural youth are **twice** as likely to commit suicide compared to their urban counterparts

Psychological Associates per 10,000 Population by County, North Carolina, 2020



## Sexual Health Quick Facts: Rural NC

- NC ranks **20th** in teen pregnancy, and **37th** in positive HIV diagnosis
- **6.7% increase** in Gonorrhea diagnosis (eastern rural NC)
- **10.5% increase** in Syphilis diagnosis (southern rural NC)
- High HPV cancer rates in rural NC (rural teens have a **15% lower chance** of receiving the HPV vaccine)



# Rural Health Disparities: Contributing Factors





# Contributing Factors

Rural risk factors for health disparities include:

- Geographic isolation
  - Fewer transportation options
  - Healthcare personnel shortages
- Lower socioeconomic status
  - Limited job opportunities
  - Higher poverty
  - Health insurance gap
- Higher rates of health risk behaviors





# Contributing Factors

Geographic Causes: Rural areas are far from healthcare facilities

- Lack of transportation - isolation, emergency situations
- Healthcare personnel shortage - struggle to attract & retain HCWs.

PCP: Patient ratio = 40/100,000 in rural areas

VS 53/100,000 in urban areas.



# Contributing Factors

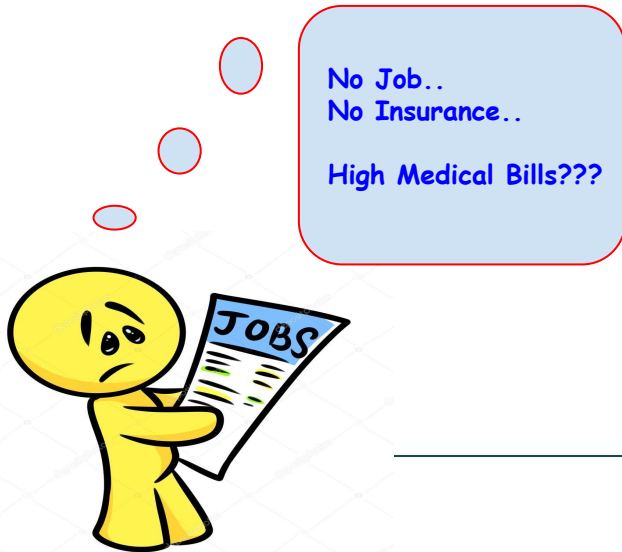
## Socioeconomic Causes:

1. High poverty rates - limited financial resources, access to nutritious food, safe housing & social determinants of health that can negatively impact health.
  - US Census Bureau the national poverty rate in 2020 was **11.4%**.
  - NC's poverty rate was approx 13.6% - slightly above the national average.
  - E.g. In Robeson & Halifax - poverty rates >25% in past recent years.

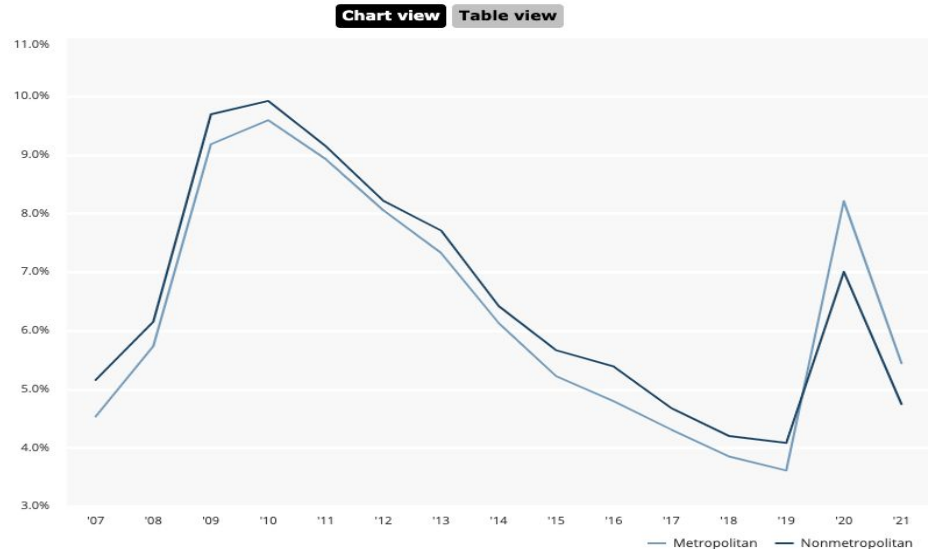


# Contributing Factors

2. Unemployment & Underemployment - this can limit access to employer - sponsored health insurance & increase financial strain on individuals & families.
- Counties in NC's Appalachian region - McDowell County, have experienced high unemployment & underemployment rates.



Unemployment Rate in Metro and Nonmetro Counties, 2007-2021



Source: USDA Economic Research Service, 2007-2021.



# Contributing Factors

## 3. Health Insurance Gap

- Low income rural areas - High uninsured or underinsured individuals
- Limiting their ability to access healthcare services.
- Low medicaid expansion - like in NC - we haven't expanded yet!

**NO HEALTH INSURANCE?**

Don't let medical costs beat you up



## Contributing Factors

- Higher rates of health risk behaviors due to limited health education

Increased Smoking  
Increased alcohol use

low physical activity  
poor dietary habits

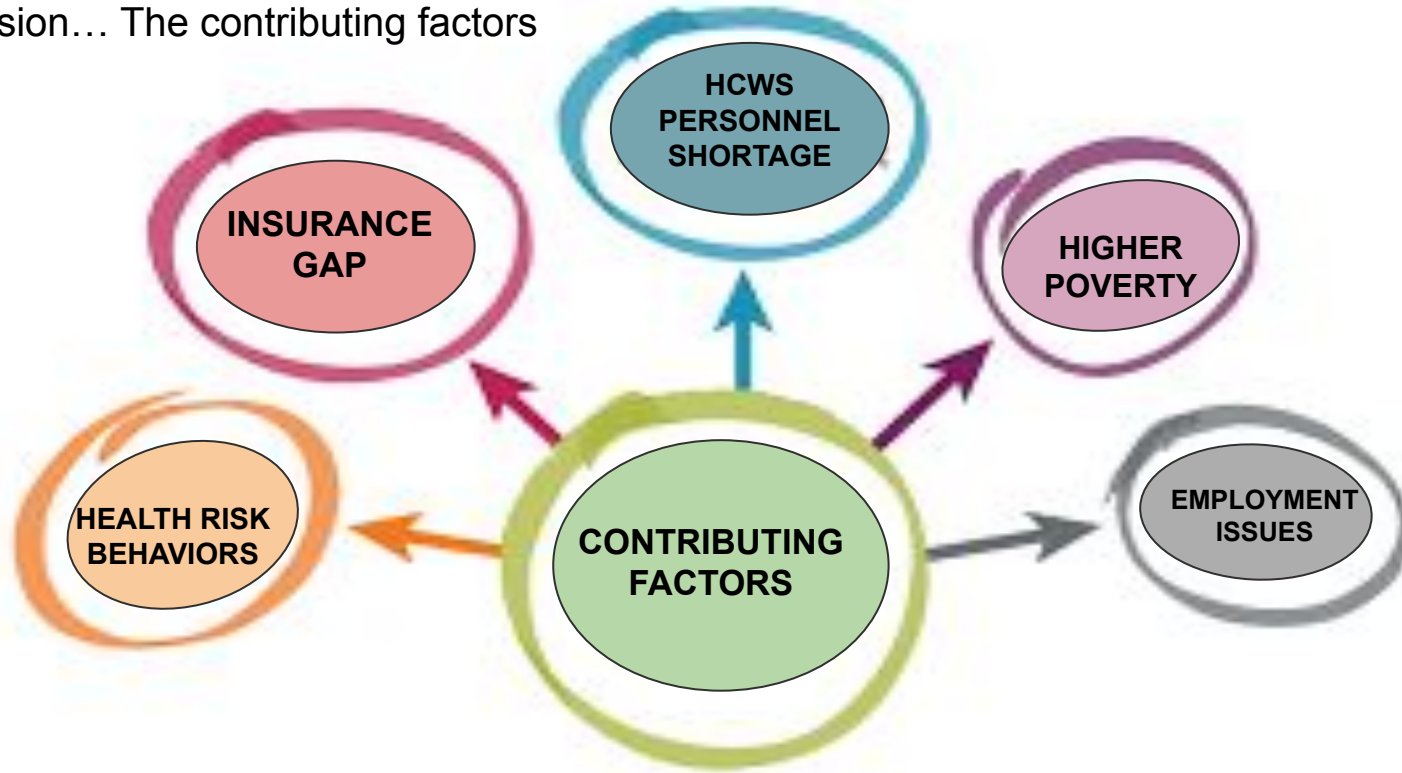
- In 2019, rural parts of NC had higher rates of smoking & obesity compared to urban areas.

- Adult smoking rate in NC rural area was **21.4%** vs 16.8% in urban area.





In Conclusion... The contributing factors



# Rural Health Disparities: Solutions & Interventions



# Telemedicine and Telehealth Programs

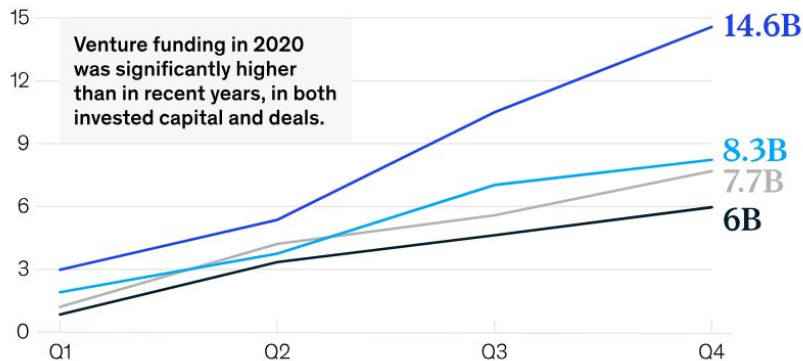
It's expansion since the early 2000s, but adoption surged during COVID-19 in 2020

**Investment in Digital health & the health revenues of telehealth players almost doubled coupled to 2019**

Total venture funding for digital health companies, by year

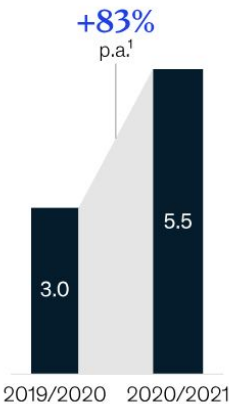
\$ billion

— 2017 — 2018 — 2019 — 2020



Total annual revenues

\$ billion



<sup>1</sup> p.a., per annum.

Source: Adriana Krasniansky et al., "H1 2021 Digital Health Funding: Another Blockbuster Year...In Six Months," Rock Health, July 2021, rockhealth.com; McKinsey virtual health vendor database



# Telemedicine and Telehealth Programs

## Challenge:

Lack of **broadband internet access** in rural areas

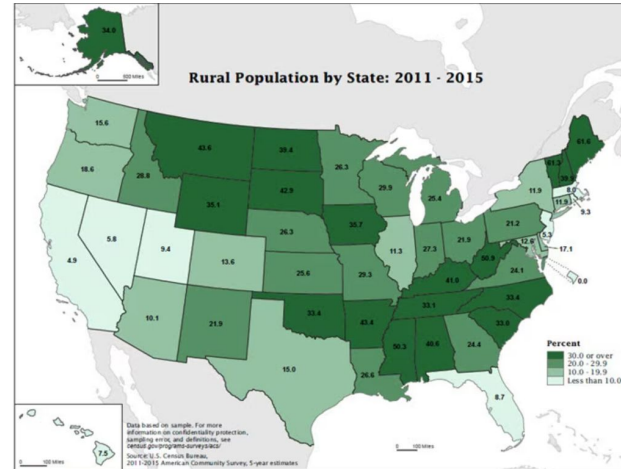
*"FCC reported that over 14 M rural Americans lacked access to broadband"*

## Solution for replicability:

- Federal funding of **\$7.1 billion** allocated in the ARPA for expanding rural broadband access
- Leveraging **satellite and wireless technologies**
- More **programs** designed to support sub-acute, moderate and chronic conditions via a tele-health medium



As of 2020, more than 4,000 certified RHCs were operational across the U.S., offering vital primary care services to millions in underserved areas



# Rural Health Clinics (RHCs)

## Challenge:

**Recruiting** and **retaining** healthcare providers in rural settings (due to isolation and limited professional opportunities)

## Solution for replicability:

**Incentive programs** - loan forgiveness, scholarship initiatives

Increased **reimbursement rates**

Collaborative **partnerships with medical schools** to create a sustainable pipeline of rural healthcare professionals





# Community Health Workers (CHWs)

Trusted local residents who provide healthcare education, outreach, and navigation services within rural communities

## Challenge:

**Funding** and **sustainability** issues in resource-constrained rural communities

## Solution for Replicability:

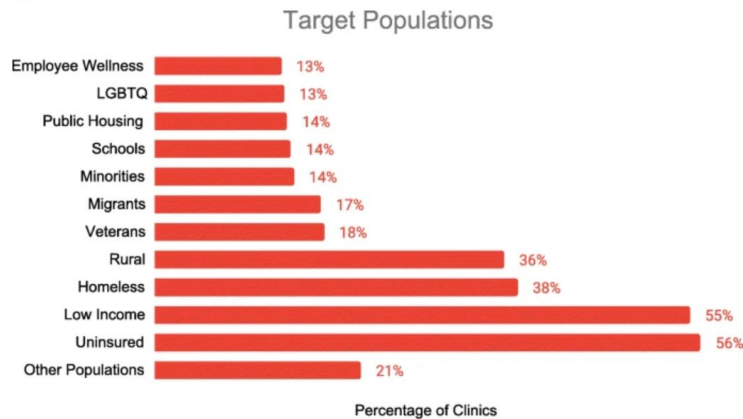
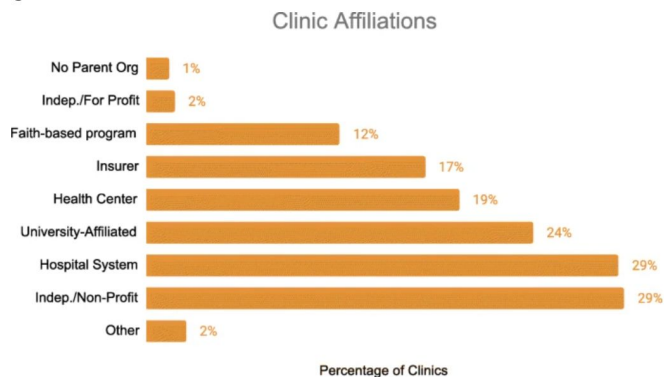
- Leverage federal and state grants, private donations  
Medicaid reimbursement
- Community engagement
- Local buy-in is crucial for long-term sustainability



# Mobile Clinics

Healthcare facilities on wheels, equipped with medical staff and equipment, delivering services directly to rural communities

In 2019, mobile clinics provided care to > 5 M patients through approx 8.7 million visits, offering services like vaccinations and preventive care



Mobile Health Clinics Affiliations. 286 clinics report on the affiliations or parent organizations.

\*Clinics may designate multiple affiliations



# Mobile Clinics

## Challenge:

Maintaining **funding and resources** for mobile clinics for **long term**

## Solution for Replicability:

Diversifying funding sources

Including public and private partnerships, grants

Integrating telehealth for certain services

Conducting regular assessments of community needs ensures services remain relevant



# Loan Forgiveness Programs

Loan Forgiveness Programs **incentivize healthcare professionals** to serve in rural areas in exchange for student loan forgiveness.

(NHSC) reported in 2019 that NHSC clinicians served nearly 13.7 million patients, with 84% of them in rural or underserved areas

**Challenge:** Ensuring **equitable distribution of healthcare providers** across rural regions

**Solution for Replicability:**

**Prioritizing** loan forgiveness in **medically underserved areas** can help address regional disparities in provider distribution



## Rural Health Disparities Conclusion

Approximately **1 / 5** of the US population resides in rural areas

### Rural Americans:

- Older and sicker population
- High mortality rates
- Financial instability

### Multiple solutions:

- Need appropriate funding
- More resources

### Key Issues:

- Healthcare personnel shortages
- Underfunding of health care facilities/programs
- Lack of healthcare insurance
  - High poverty rates
- Geographic barriers
- Lack of transportation
- Less employment opportunities

## Discussion Questions

Let's do this!

<https://playfactile.com/lnifhnlj7t/play>

I hope you all are in  
your groups.





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