



Thank you for joining us today!

Social Determinants of Health: Challenges and Opportunities in Rural America

- Please Note:**
- All attendees are muted
  - Today's session will be recorded

Funded by the Federal Office of Rural Health Policy, Health Resources and Services Administration.

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This site can be used to find:

- Abstracts of both current and completed research projects,
- Publications resulting from those projects, and
- Information about the research centers and individual researchers.

**RuralHealthResearch.org**



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## About Dr. Probst

Dr. Probst is a Distinguished Professor Emerita at the Arnold School of Public Health of the University of South Carolina, with a research and policy focus on rural health and health disparities. She was a founding faculty member for the Rural and Minority Health Research Center (formerly, the South Carolina Rural Health Research Center), established in 2000, where she currently serves as research faculty. Dr. Probst is a member of the National Rural Health Association (NRHA) Health Equity Council and serves on Board of Directors of the South Carolina Office of Rural Health. The NRHA has recognized her work with its Distinguished Researcher and Volunteer of the Year awards. Dr. Probst completed her BA at Duke University, her MS at Purdue University, and her PhD at the University of South Carolina.



### Dr. Jan Probst

Rural and Minority  
Health Research Center  
[ruralhealthresearch.org/researchers/  
janice-c-probst#publications](https://ruralhealthresearch.org/researchers/janice-c-probst#publications)

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# Social determinants of health: challenges and opportunities in rural America

Jan Probst, PhD

Rural & Minority Health Research Center

December 15, 2020



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## Overview

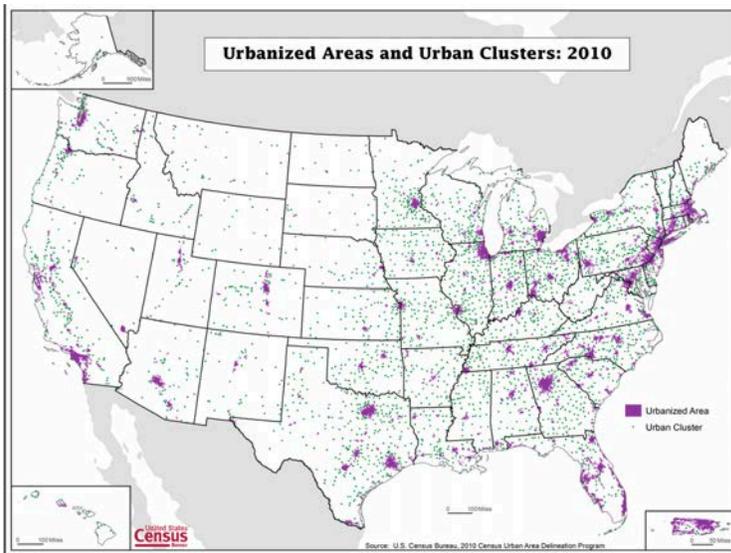
- Defining our terms
- Rural disparities
- Planning a way forward

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## Defining: what does “rural” mean?

- Rural areas are defined by population and distance:
  - Smaller populations
  - Greater distances

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<https://gis-portal.data.census.gov/arcgis/apps/MapSeries/index.html?appid=7a41374f6b03456e9d138cb014711e01>

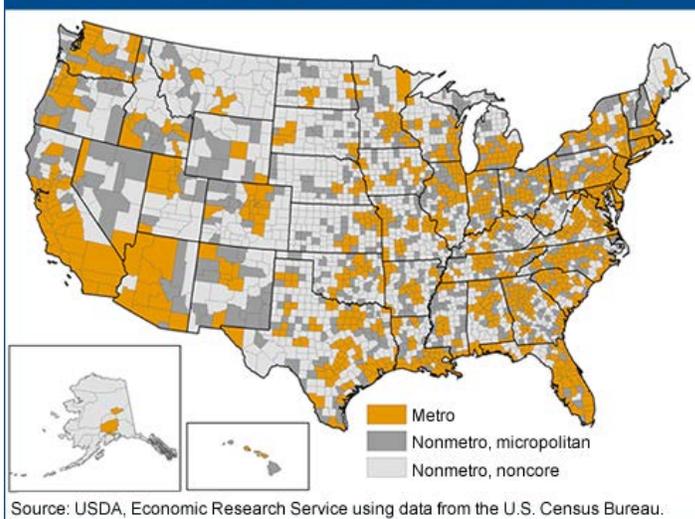
## Definitions: the rural US

- Census tract definitions are more granular
- ...but have no one in charge

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Metro, nonmetro micropolitan, and nonmetro noncore counties, 2013



<https://gis-portal.data.census.gov/arcgis/apps/MapSeries/index.html?appid=7a41374f6b03456e9d138cb014711e01>

## Definitions: the rural US

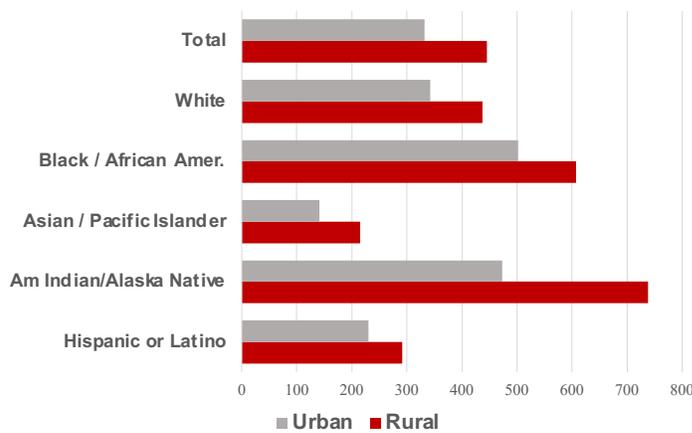
- County-level definitions are based on an urban area of  $\geq 50,000$  people
- County-level definitions omit 54% of Census-defined rural people

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# Rural disparities in health & outcomes

Age adjusted death rates, adults aged 25-64 years, 2017, by county of residence and race/ethnicity



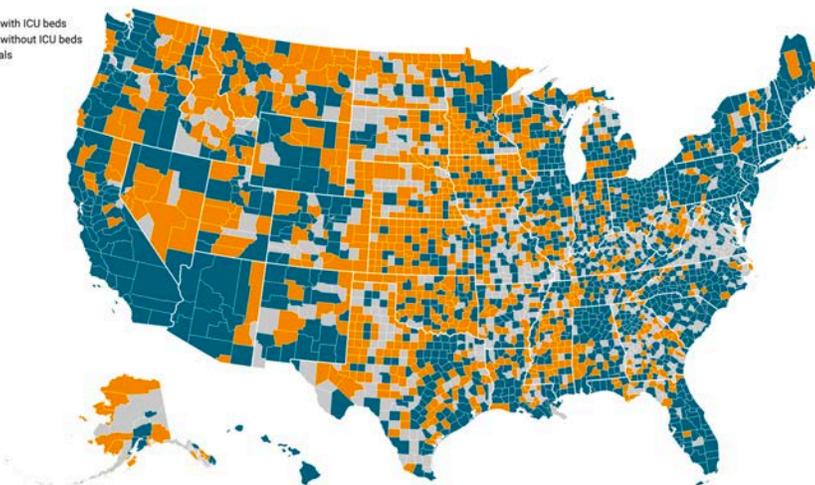
Research documents higher age-adjusted death rates for children, working age adults, and older adults in rural than in urban counties



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# Rural health care infrastructure gaps

■ Hospitals with ICU beds  
■ Hospitals without ICU beds  
■ No hospitals



Notes: This analysis includes the most recent reports, from FY 2018 and 2019. Some hospitals may have closed since then. Some hospitals may have made errors in their reporting, and in several cases KHN has manually adjusted the data. In some cases, beds in small satellite hospitals are reported in the main hospital's filing. Hospitals for veterans run by the Department of Defense are not included in this analysis.



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## **“Social Determinants of Health”**

- CDC definition: *“the conditions in which people are born, grow, live, work and age as well as the complex, interrelated social structures and economic systems that shape these conditions.”*
- WHO definition: *“the social, physical and economic conditions that impact upon health”*
- **Excluded:** biological factors, such as BrCa gene

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## **Picking apart these words**

- Social:
  - Society has created these conditions
  - These conditions can be changed
- Determinants:
  - Horrible word.
  - Influences, challenges ... let's find a better term

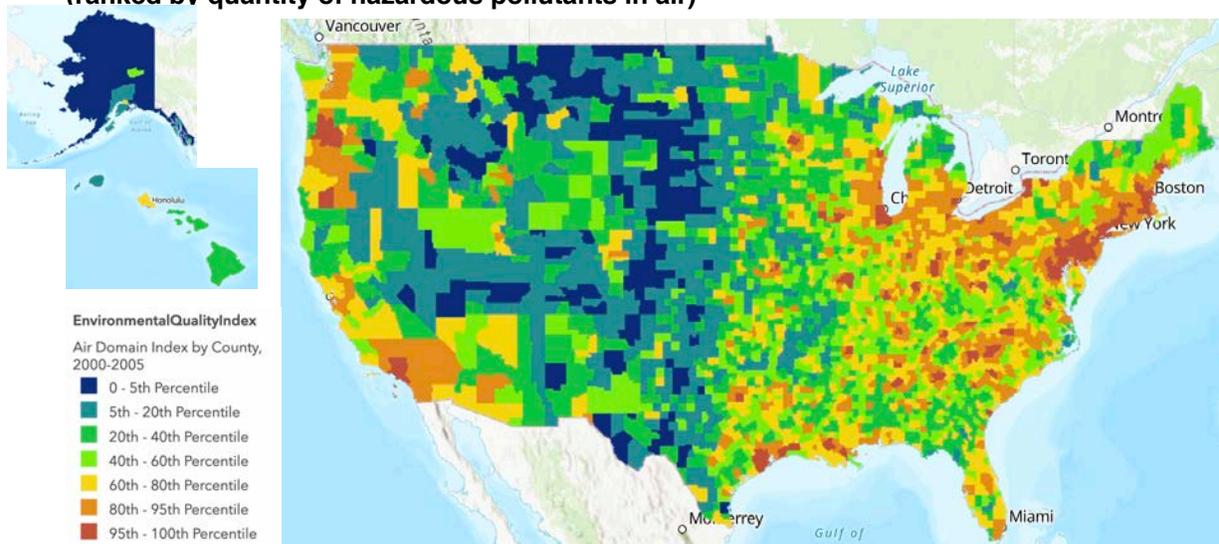
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## Physical: Air quality

(ranked by quantity of hazardous pollutants in air)



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## Physical: Motor Vehicle Crash Fatalities, 2018

- Rural areas contain about 19% of the US population, but generate:
  - **30%** of vehicle miles travelled (VMT)
  - **45%** of all traffic fatalities
  - VMT death rates **twice as high as urban**: 1.68 per million VMT versus 0.68 per million VMT
- Simple answers? Nope.
  - Crashes with alcohol involvement: 29% for both
  - Observed seat belt use: 90.1% rural, 89.4% urban

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## Physical: built environment

More than 20 percent of fatalities nationwide occur at intersections and more than 80 percent of rural intersection fatalities are at unsignalized intersections.

In Iowa, intersection crashes account for 30 percent of severe crashes, with 40 percent of those crashes occurring in rural areas (Iowa DOT 2013).

A list of general resources developed in Iowa to reduce rural intersection crashes is found [here](#).

### Summary of Rural Intersection Countermeasures



*It's not just seat belt use*

<https://ctre.iastate.edu/research-synthesis/intersections/>

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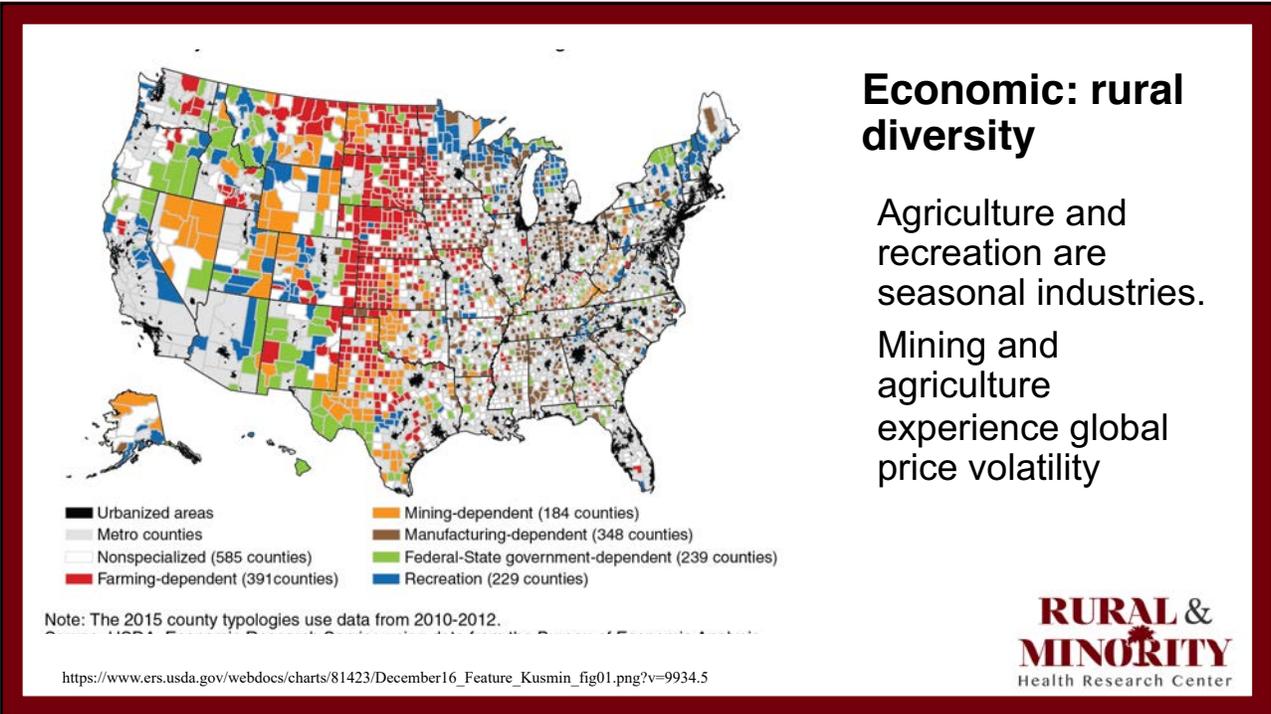
## Economic considerations

- Nature of the rural economy: the jobs it supports
- Occupational hazards

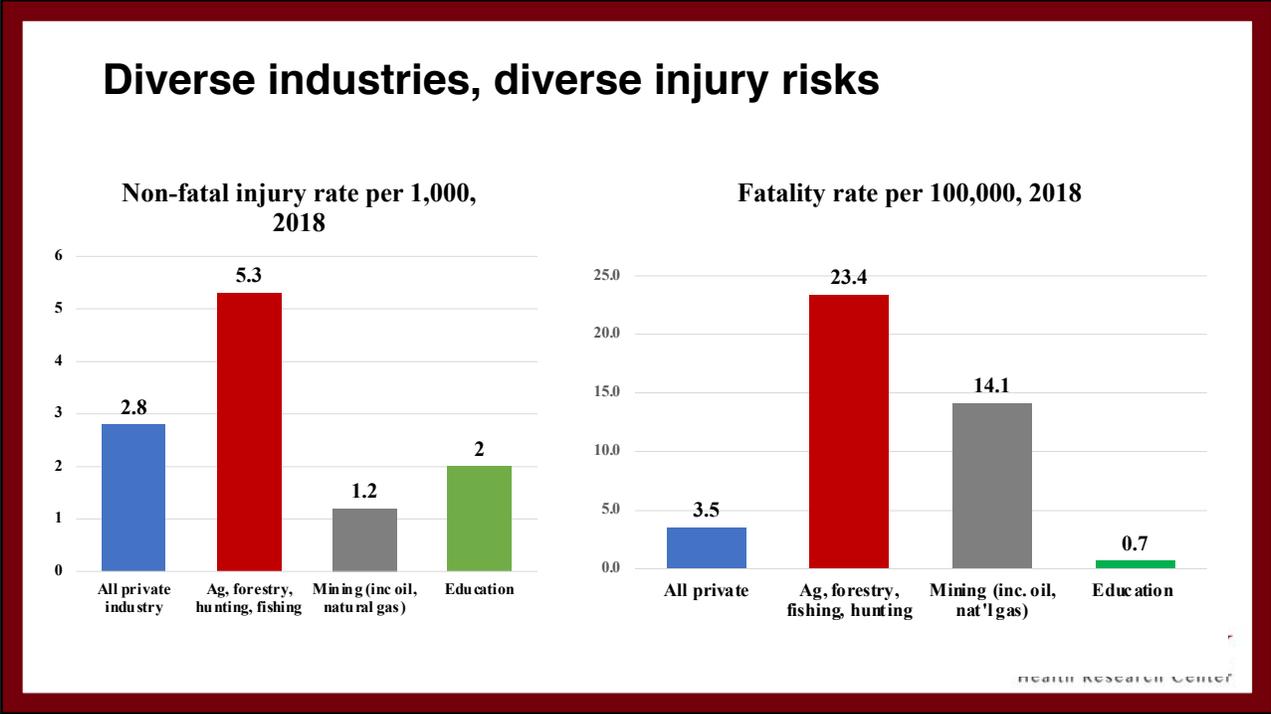
supports  
stability  
seasonal  
hazards  
occupational  
volatility  
community  
economy  
undercuts  
rural  
economic  
poverty  
investment  
disability  
jobs

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## Notice anything?

Roll over protection structures (roll bars) were optional from 1967 – 1985

Required from 1985 on

**Regulatory action can reduce risks**

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## Social conditions

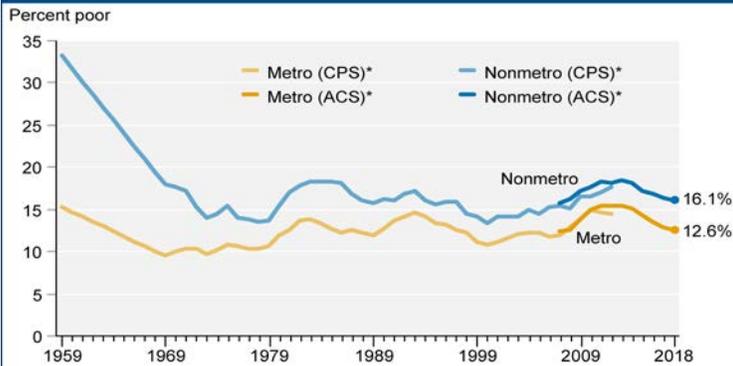
- Poverty and its many intersections
  - Food insecurity
- Education
- Race/ethnicity

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# Poverty

Poverty rates by metro/nonmetro residence, 1959-2018



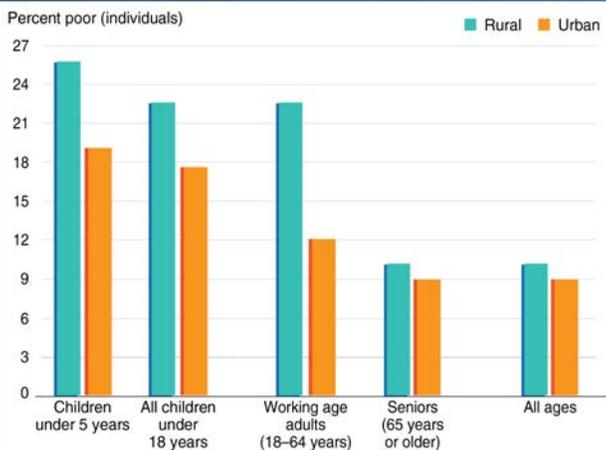
Note: Metro status of some counties changed in 1984, 1994, 2004, 2014, and 2018.  
 \*CPS poverty status is based on family income in prior year and ACS poverty status is based on family income in the past 12 months.  
 Source: USDA, Economic Research Service using data from the U.S. Census Bureau's Current Population Survey (CPS) 1960-2013 and annual American Community Survey (ACS) estimates for 2007-18.

Rural has been poorer for a long time



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Poverty rates in rural and urban areas by age group, 2017



Notes: Rural (nonmetro) status determined by the 2013 metropolitan area designations from the Office of Management and Budget. Federal poverty thresholds vary by household composition. For a family of two adults and one child, the poverty line in 2017 was an annual income of \$19,730.  
 Source: USDA, Economic Research Service using data from the U.S. Census Bureau, 2017 American Community Survey.

## Households with children are vulnerable

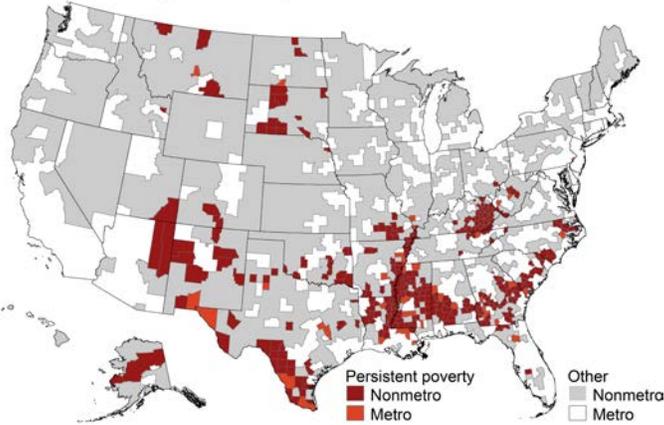
Among households with children in 2016, 30% of rural v 25% of urban reported economic hardship

(Crouch et al, *JRH*, 2019)



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Persistent poverty counties, 2015 edition



Persistent poverty counties are those where 20 percent or more of county residents were poor, measured by the 1980, 1990, 2000 censuses, and the 2007-11 American Community Survey. Note that county boundaries are drawn for the persistent poverty counties only. Source: USDA, Economic Research Service using data from U.S. Census Bureau.

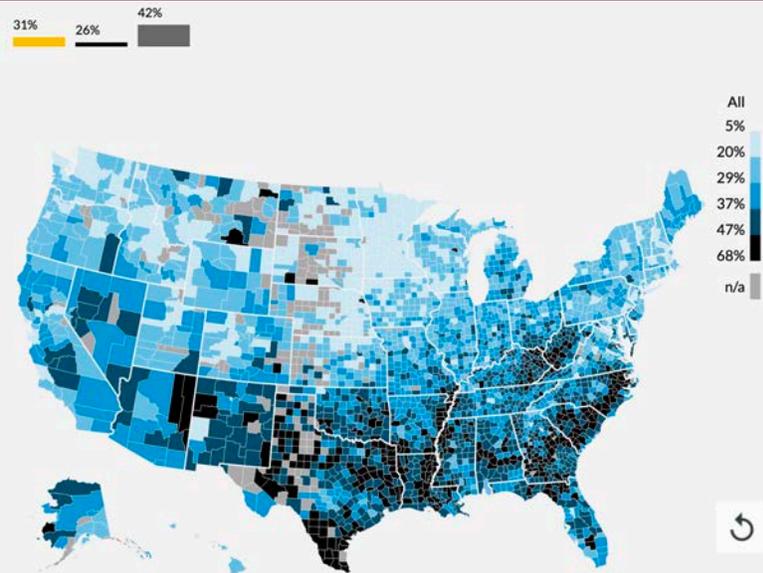
**Persistent poverty, high rates of poverty that persist for > 20 years,**

is almost exclusively a rural phenomenon:

**86% of persistent poverty counties are rural (301/351)**



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**Households with any debt in collections, 2018**

National: 31%; median amount \$1,639

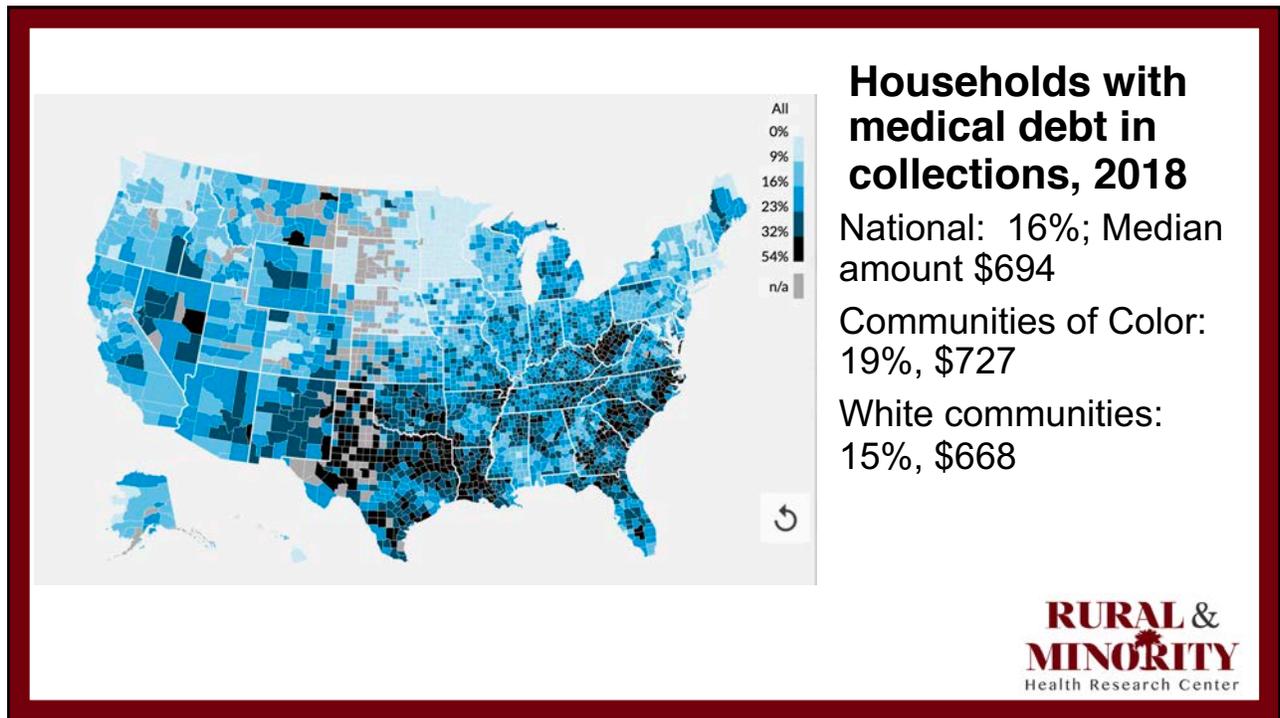
Communities of Color: 42%; \$1,643

White communities: 26%; \$1,614

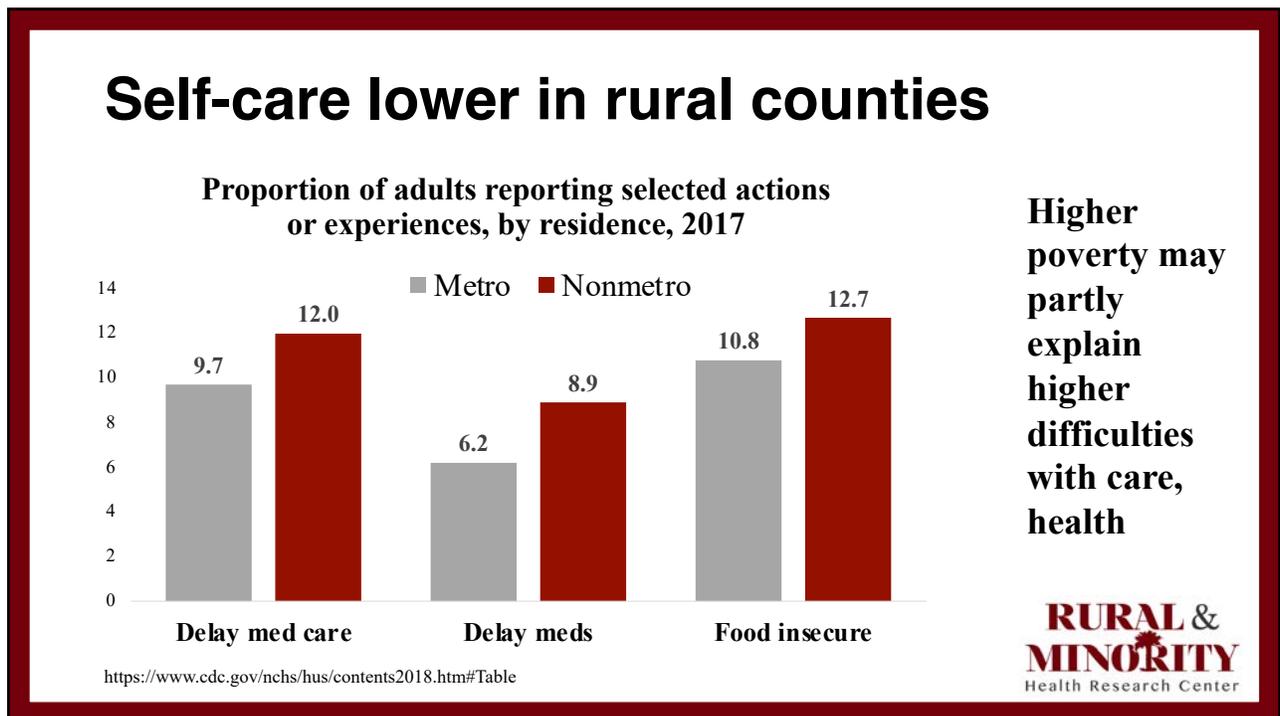
[https://apps.urban.org/features/debt-interactive-map/?type=overall&variable=pct\\_debt\\_collections](https://apps.urban.org/features/debt-interactive-map/?type=overall&variable=pct_debt_collections)



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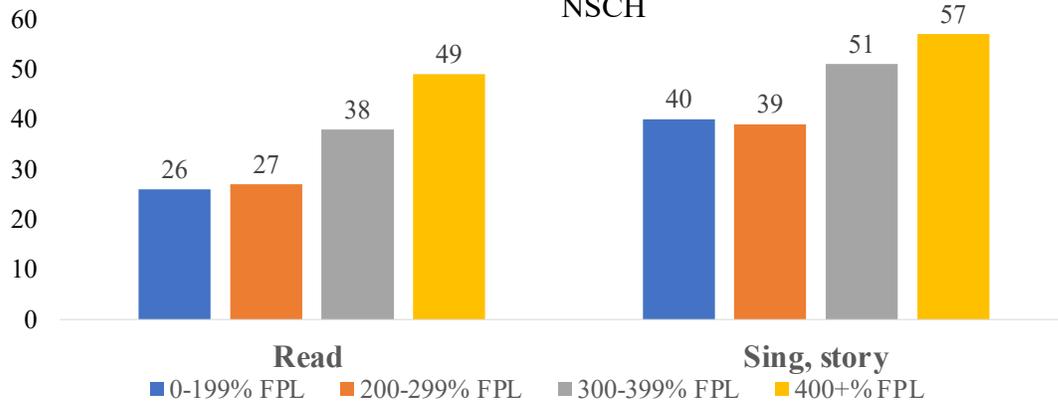


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# Poverty affects parenting

Percent of parents/guardians who report reading or singing/story telling to their child, children ages 0 – 5, by income, 2017-2018

NSCH

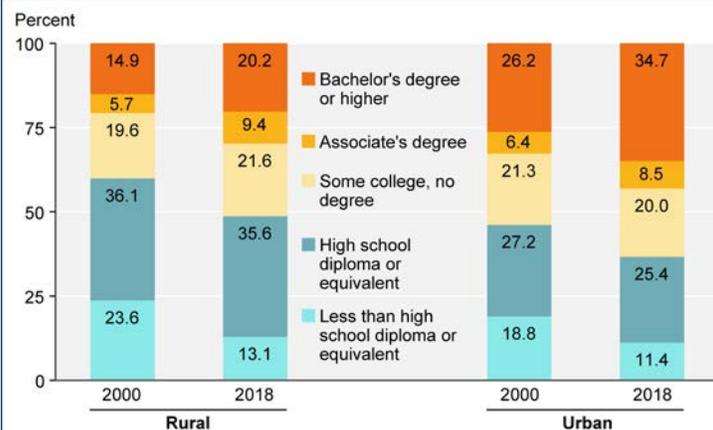


Thanks Elizabeth Crouch for this data analysis; Nov 10, 2020

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## Educational attainment in rural and urban areas, 2000 and 2018



Note: Educational attainment for adults 25 and older. Urban and rural status is determined by Office of Management and Budget's 2015 metropolitan area definitions. Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census, Census 2000 and 2018 American Community Survey.

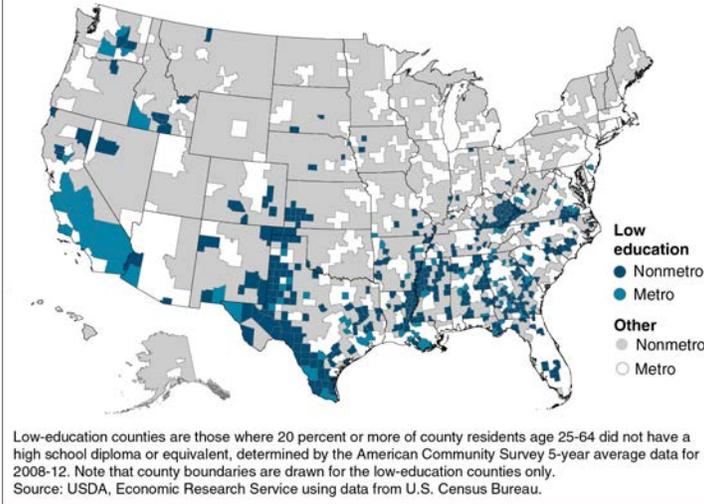
## Education is a key correlate of multiple outcomes

Lower educational attainment in rural counties is a complex combination of both local education systems and outmigration

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Low-education counties, 2015 edition



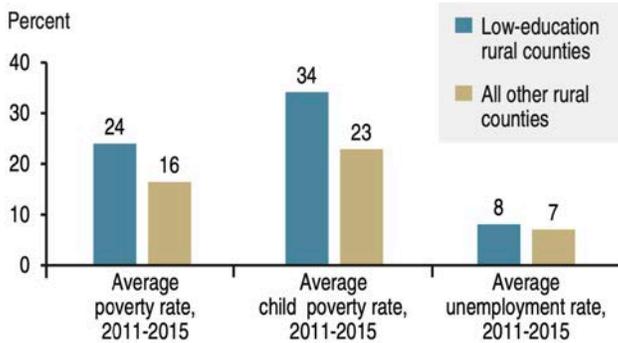
## Low education rural counties

Education has implications for health literacy, as well as for financial outcomes



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### Economic outcomes for low-education rural counties and all other rural counties, 2011-15



Source: USDA, Economic Research Service using data from the U.S. Census Bureau, 2011-2015 American Community Survey and Bureau of Economic Analysis' Regional Economic Information System. Note: 2013 metropolitan area definitions from the Office of Management and Budget apply.

## Poverty higher in low-education counties

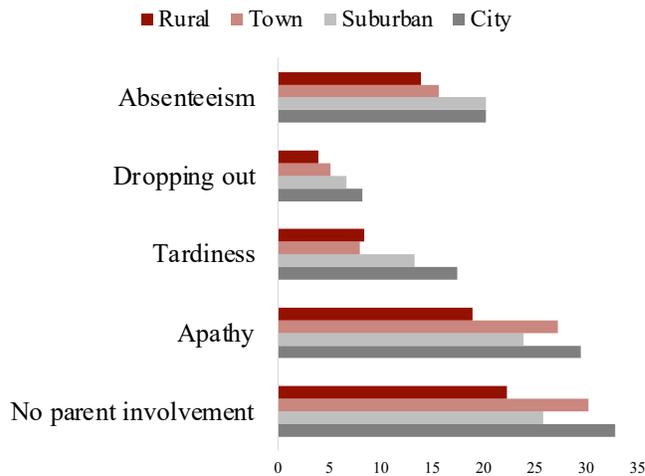
Low education definition:  $\geq 20\%$  of adults age 25-64 lack high school diploma: (467 counties)

**79% of low education counties are rural (369)**



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**Percent of teachers reporting selected student problems, 2011-2012**  
**NCES**



**Students aren't a problem, but...**

Average educator salaries (2015 data)

- Urban: \$73,357
- Suburban: \$74,153
- Rural: \$69,797



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**"The past is never dead. It's not even past."\***

\*Faulkner, *Requiem for a Nun*

Probst, Glover, Kirksey *J Racial Ethnic Health Disparities*, 2018. Modification of McMichaels, *Am J Epid* 1999.



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## All SDOH are entangled with race and racial discrimination

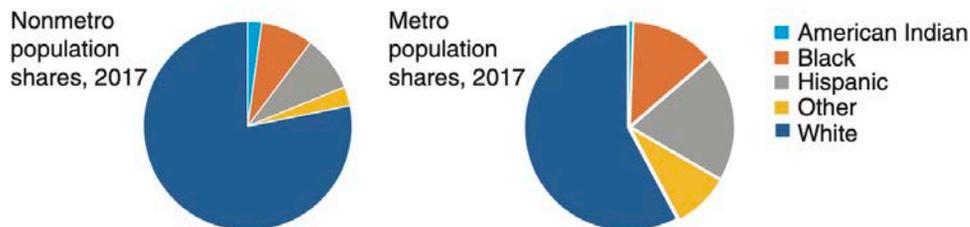
- Definition: race is a social construct
- Historically in the US, race has been used to create categories of person
- Persons classified as “non-white” are more exposed to racial discrimination and bias, across multiple economic and social sectors, than white individuals

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## Rural America: less diverse than urban overall, but ...

Racial/ethnic minorities make up 22 percent of the nonmetro population compared with 42 percent in metro areas



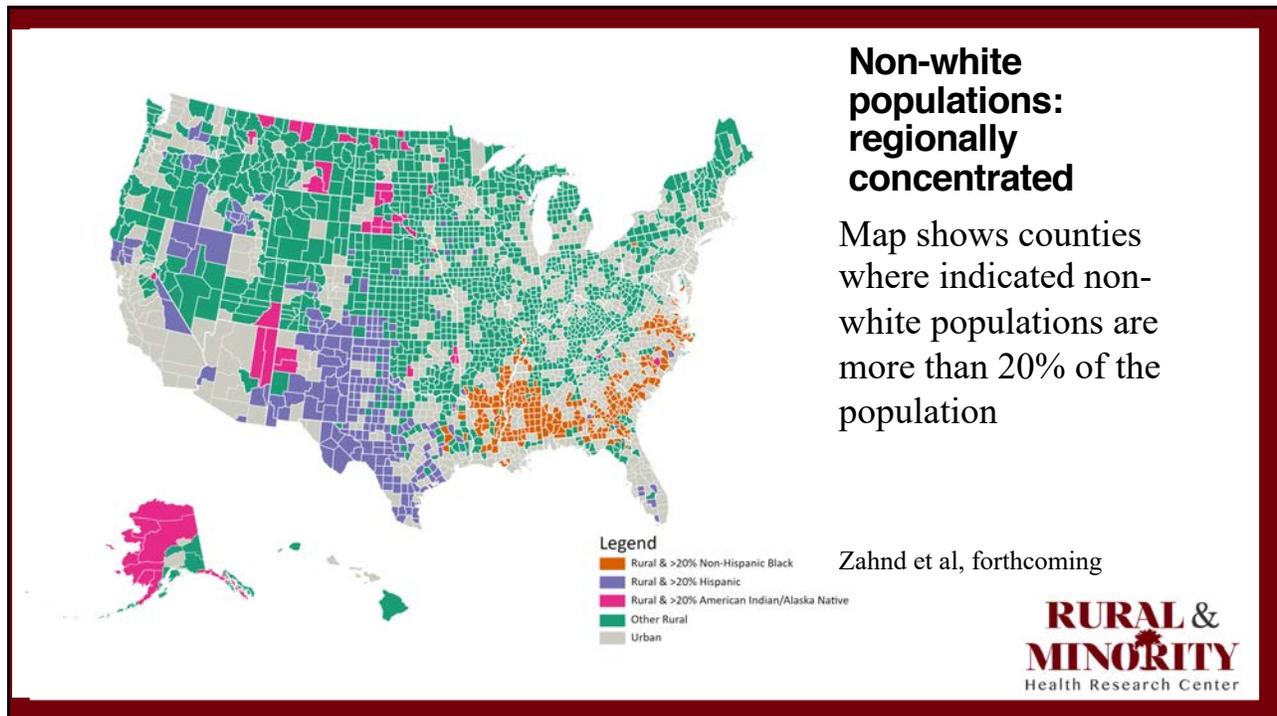
Note: Statistics for Whites, Blacks, and American Indians include only non-Hispanic residents. Residents included in the Hispanic category may be of any race. Groups with relatively few nonmetro residents (Asians, Pacific Islanders, and those reporting multiple races) are combined into a single category (Other).

Source: USDA, Economic Research Service using data from U.S. Census Bureau, Population Estimates Program.

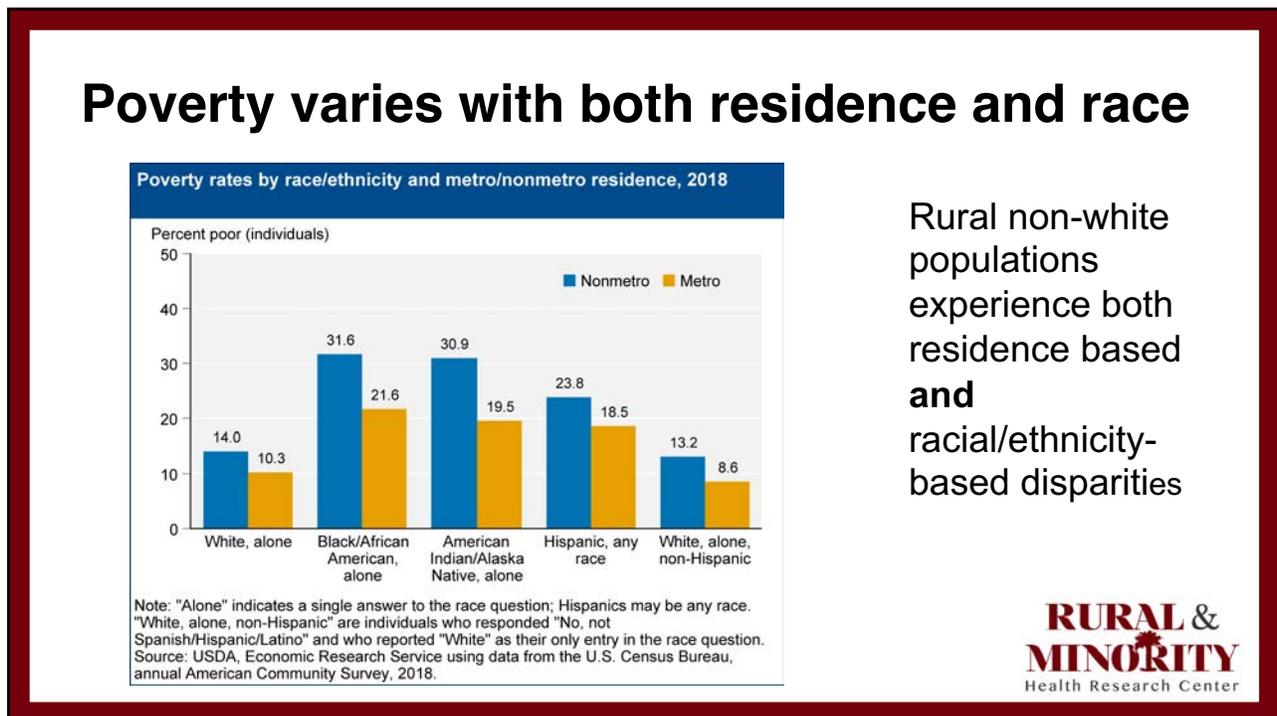
Source: USDS, Rural America at a Glance, 2018 edition

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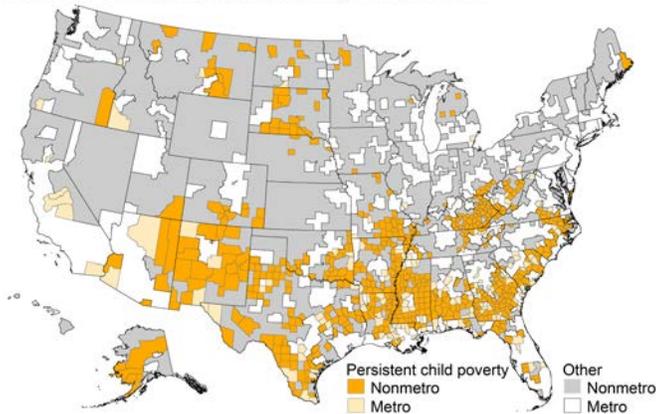
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# Persistent child poverty rates

Persistent child poverty counties, 2015 edition



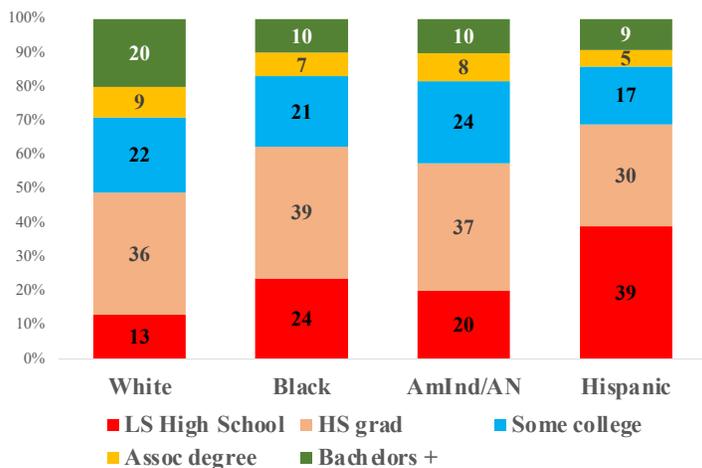
Persistent child poverty rural counties are disproportionately those with relatively high non-white populations

Persistent child poverty counties are those where 20 percent or more of county related children under 18 were poor, measured in the 1980, 1990, 2000 censuses, and the 2007-11 American Community Survey. Note that county boundaries are drawn for the persistent child poverty counties only. Source: USDA, Economic Research Service using data from U.S. Census Bureau.

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# Educational attainment of rural adults aged 25 years and older, by race/ethnicity, 2015



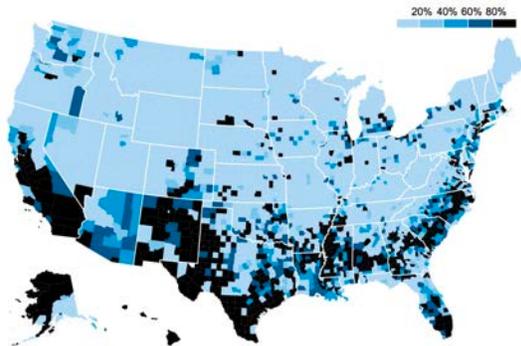
Rural non-white adults are less likely to have continued their education after high school

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# Education: segregated public schools

Share of black kids attending majority-nonwhite schools (2011-12)



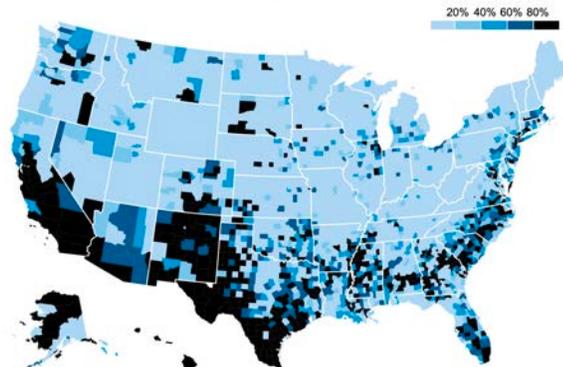
Source: U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD), Public Elementary/Secondary School Universe Survey Data, 2011-12. Notes: Race shares do not add to 100%.



Embed this map (Click the box, Ctrl + C to Copy): <iframe src="https://apps.ur

URBAN INSTITUTE

Share of Latino kids attending majority-nonwhite schools (2011-12)



Source: U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD), Public Elementary/Secondary School Universe Survey Data, 2011-12. Notes: Race shares do not add to 100%.

<https://www.urban.org/urban-wire/americas-public-schools-remain-highly-segregated>

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# Transitioning

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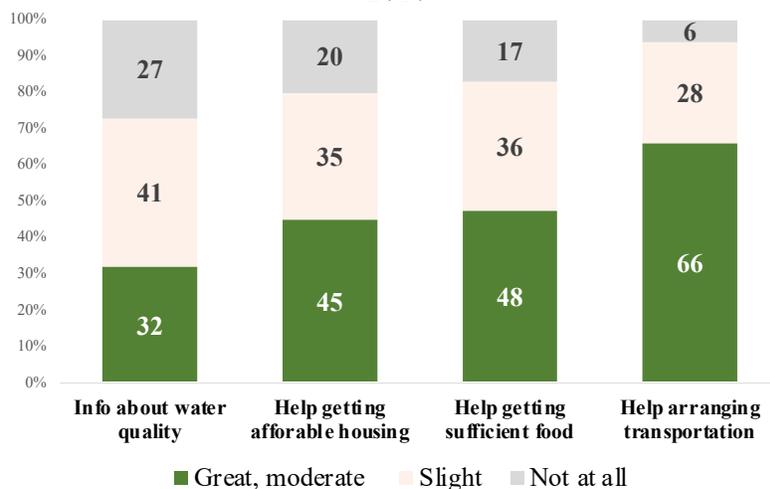
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## Moving to action

- Clinician responsibilities:
  - Recognize SDOH
  - Appropriately consider SDOH when interacting with patient, prescribing
- Clinician and community responsibilities
  - Identify SDOH disparities
  - Address SDOH disparities

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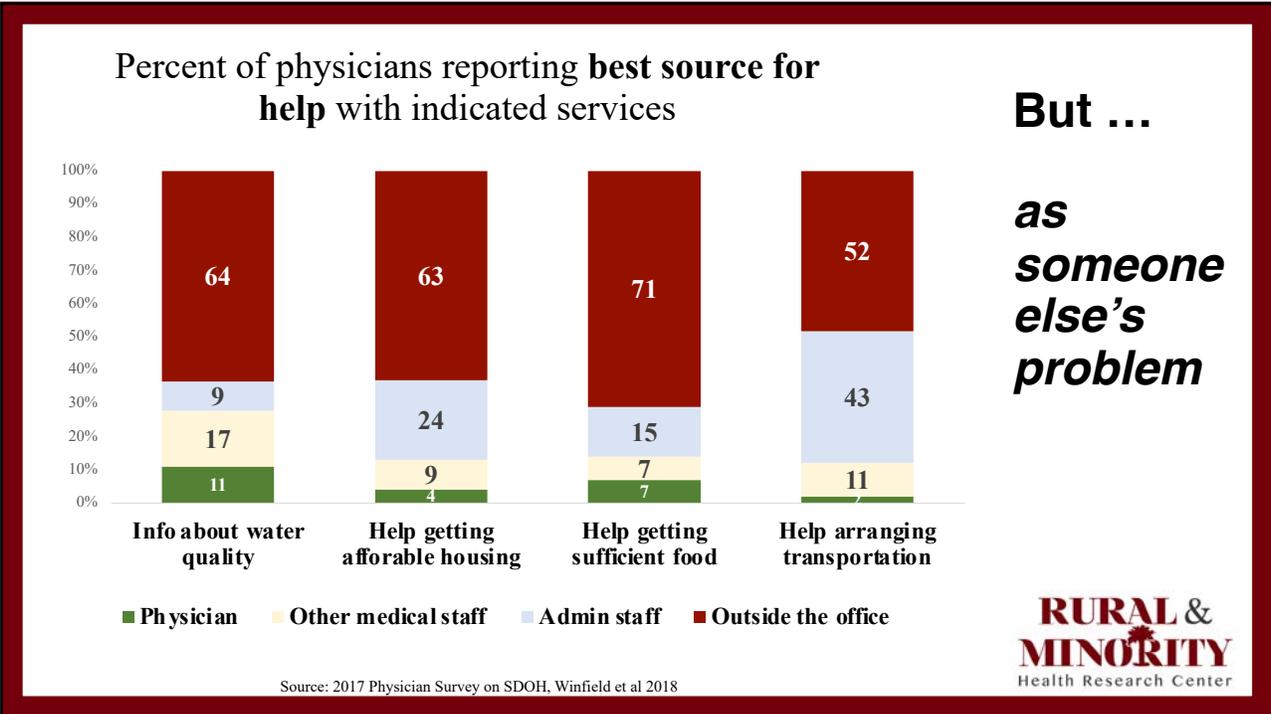
Percent of physicians reporting that specified types of assistance would benefit their patients, 2017



**Physicians recognize SDOH needs**

Source: 2017 Physician Survey on SDOH, Winfield et al 2018

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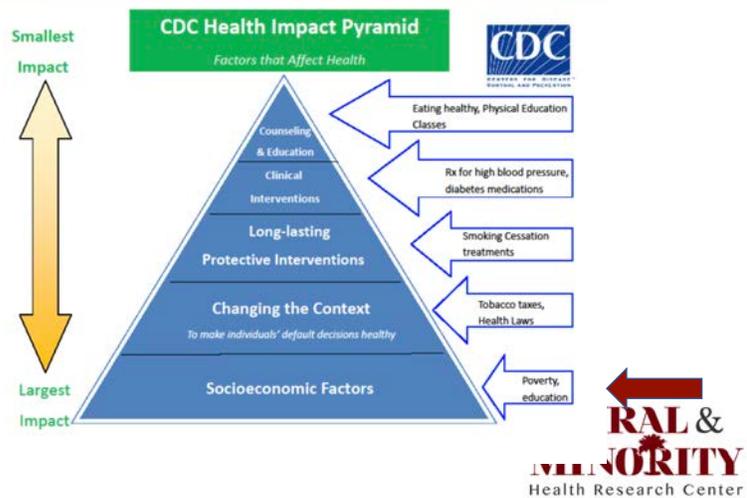
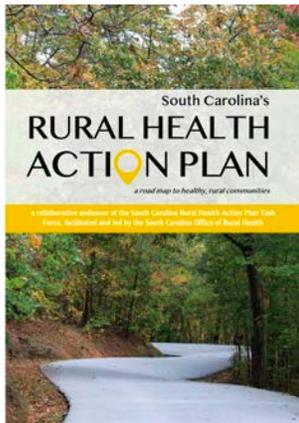
**But ...**  
*as someone else's problem*

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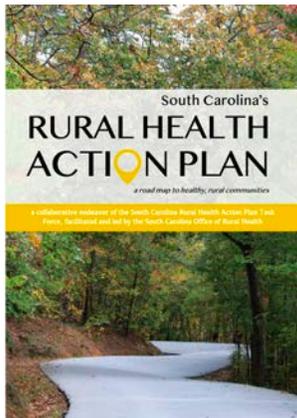
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# Find a convener and go for it: SC RHAP



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# Broad involvement



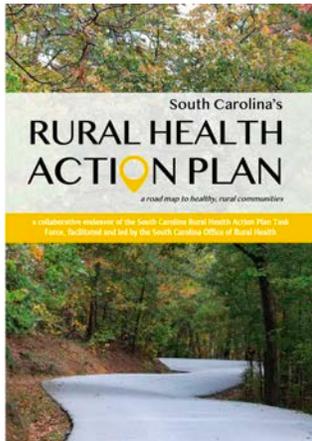
- |  |   |  |   |
|--|---|--|---|
| <b>Amy Martin, DrPH</b><br>MUSC, College of Dental Medicine  | <b>Deidra Singleton</b><br>SC Department of Health and Human Services | <b>Larhene Woodard</b><br>SC Primary Health Care Association             | <b>SC Department of Alcohol and Other Drug Abuse Services</b>                     |
| <b>Ben Washington</b><br>SC Commission for Minority Affairs  | <b>Doug Taylor</b><br>SC Campaign to Prevent Teen Pregnancy           | <b>Lisa Mullerwell</b><br>The Duke Endowment                             | <b>Sarah Pinnas</b><br>SC Association for Community Economic Development          |
| <b>Keith France</b><br>Let's Smart Move More SC              | <b>Fred Layla</b><br>Readers' Human Services Alliance                 | <b>Lisa Davis</b><br>SC Department of Health and Environmental Control   | <b>Sue Williams</b><br>The Children's Trust of SC                                 |
| <b>William Anderson, MD*</b><br>USC School of Medicine       | <b>George Johnson*</b><br>SC Office of Rural Health Board Chairperson | <b>Lynia Henrick</b><br>LogiOnCare                                       | <b>Susan Bowling*</b><br>Rural and Company  |
| <b>Ronnie Ammons</b><br>SC Rural Infrastructure Authority    | <b>Graben Adams, PhD*</b><br>SC Office of Rural Health                | <b>Mark Jordan*</b><br>SC Department of Health and Environmental Control | <b>Teresa Arnold</b><br>AARP  |
| <b>Carlin Milnes*</b><br>Spartanburg County Hospital         | <b>Javel Place</b><br>USC Arnold School of Public Health              | <b>Michelle Cardwell</b><br>USDA Rural Development                       | <b>Therrian Kirby</b><br>SC Hospital Association                                  |
| <b>Carman Wilson</b><br>Alliance for a Healthier SC          | <b>Joe Probst, PhD*</b><br>SC Rural Health Research Center            | <b>Michelle Mays*</b><br>SC Community Loan Fund                          | <b>Tim Kowalski, DO</b><br>Edward Via College of Osteopathic Medicine-Spartanburg |
| <b>Chris Oandine, MD</b><br>Aiken Area Medical Center        | <b>Jill Gains, PhD</b><br>Fairfield County School District            | <b>Nate Patterson, DrPH</b><br>Health Care Policy Analyst                | <b>Tricia Richardson</b><br>SC Thrive   |
| <b>Chris Stead</b><br>Fullerton Foundation                   | <b>Julie Smithwick</b><br>PISOH                                       | <b>Pat Littlejohn</b><br>SC Center for Fathers and Families              | <b>Virginia Berry White*</b><br>Family Solutions of the Low Country               |
| <b>Christina Barnes-Young</b><br>Tri-County Community MHC    | <b>Karen Nichols</b><br>Upper Midlands Rural Health Network           | <b>Paul Schumacher</b><br>McLeod Health                                  | <b>Walt Tobin, PhD</b><br>Orangeburg Calhoun Technical College                    |
| <b>Darrell Byrd McPherson</b><br>Durham County First Steps   | <b>Kathy Schwaninger</b><br>Palmetto Care Connections                 | <b>Rick Foster, MD</b><br>Alliance for a Healthier SC                    | <b>*steering committee</b>  |
| <b>David Condon</b><br>SC Free Clinic Association            | <b>Kent Whitten</b><br>Greenville Health System-Oconee EMS            | <b>Ryan Burroughs</b><br>SC General Assembly                             |   |
| <b>David Gurr, MD</b><br>SC Area Health Education Consortium | <b>Kristen Wing</b><br>Spartanburg Area Office of Rural Health        | <b>Sandy Kammermann</b><br>John A. Martin Primary Health Care Center     |   |
| <b>David Porter</b><br>Aiken County Resident                 |   | <b>Sara Goldsby</b>  |   |

**50-member task force: industry, education, providers, politics**



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## Focus on SDOH



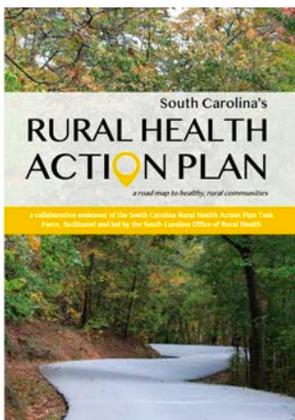
### Community members:

- Local school district, tech college heads
- SC Association for Community Economic Development
- SC Rural Infrastructure Authority
- USDA Rural Development
- SC Community Loan Fund



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## Meeting for a year to set goals



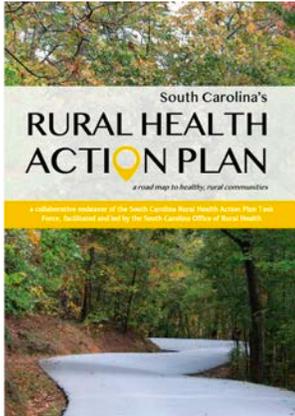
### 15 recommendations across 5 areas

- Community assets, leadership and engagement
- Economic development
- Education
- Housing
- Health care access



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## Rural Forward SC: Funded follow-up and feedback (2019)



- Health care access
- Community assets, leadership and engagement
- Economic development
- Education
- Housing

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## Wrap-up

- The prevalence of adverse SDOH conditions varies regionally and within states, but is generally higher in rural areas
- Finding solutions to problems with multi-sector roots will require extraordinary levels of cooperation and commitment.

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## Disclosures

- The presenter has no conflicts to disclose
- This presentation has been approved by Sam the rural health advoCATE.



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## Thanks!

- Our web site:
  - [rhr.sph.sc.edu](http://rhr.sph.sc.edu)
- Core funding from:
  - Federal Office of Rural Health Policy, Health Resources & Services Administration, USDHHS
- Contact:
  - [jprobst@sc.edu](mailto:jprobst@sc.edu)

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## Rural Ethnic/Racial Disparities: Adverse Health Outcomes

Rural minority group populations often experience dual disparities in health. This recap summarizes adverse health outcomes across these populations including premature death, age-adjusted mortality, disability status, and obesity rates.

[ruralhealthresearch.org/recaps/11](http://ruralhealthresearch.org/recaps/11)



## Rural Ethnic/Racial Disparities: Social and Systemic Inequities

This resource examines social and systemic inequities that influence disparities in health among minority group populations. Rural non-white populations experience both residence-based and racial/ethnicity-based health disparities.

[ruralhealthresearch.org/recaps/12](http://ruralhealthresearch.org/recaps/12)

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[ruralhealthresearch.org](http://ruralhealthresearch.org)

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