

# National Conference of State Legislatures

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East Tennessee State University  
Center for Rural Health Research  
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CENTER *for* RURAL  
HEALTH RESEARCH

EAST TENNESSEE STATE UNIVERSITY

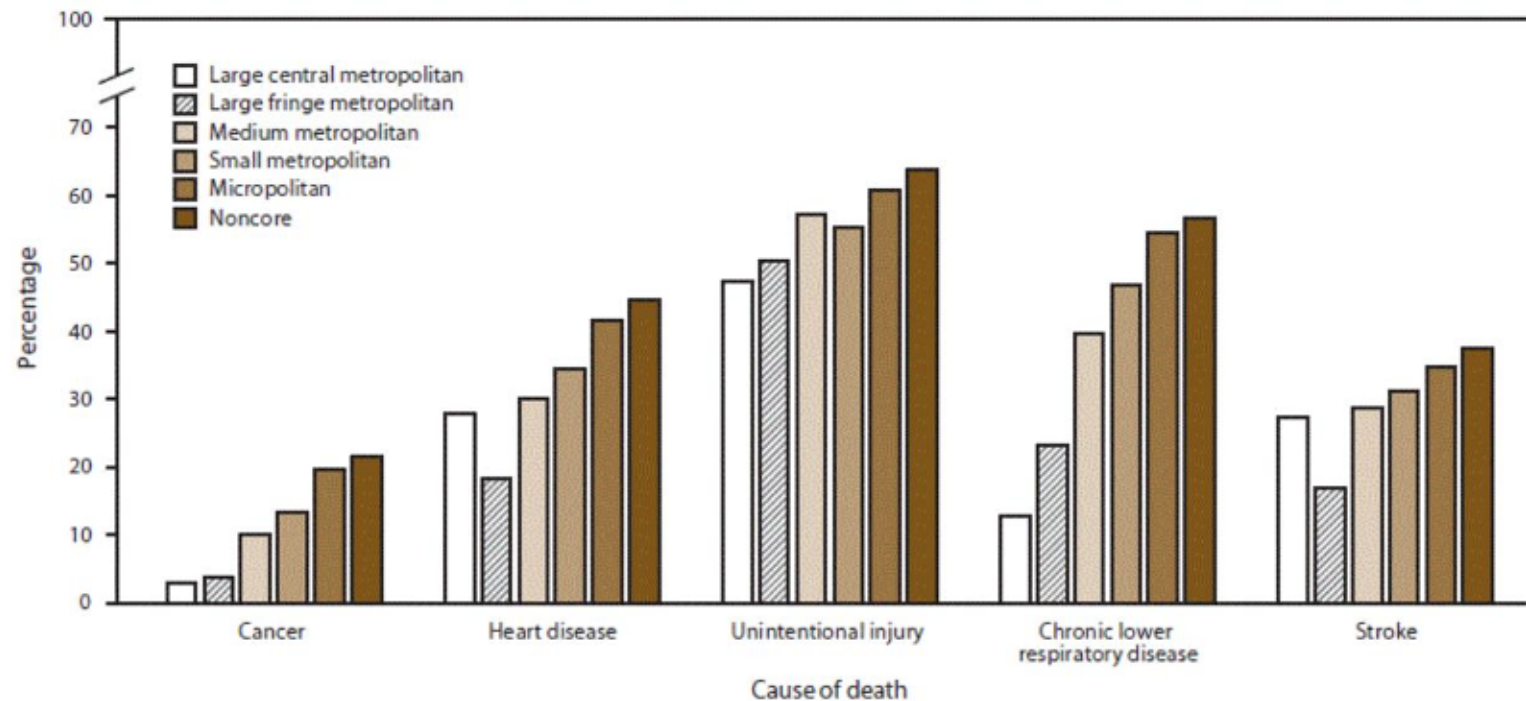
# Agenda

- Rural Health Disparities
  - United States
  - Southeastern States
  - Deaths of Despair
- Impacts of Poverty
  - United States
  - Southeastern States
- Rural Resilience
  - Strengths and Assets



# Rural vs. Urban Differences – Leading Causes

**FIGURE 6. Percentage of deaths that were potentially excess\* among persons aged <80 years from the five leading causes of death, by urban-rural county classification — National Vital Statistics System, United States, 2017**

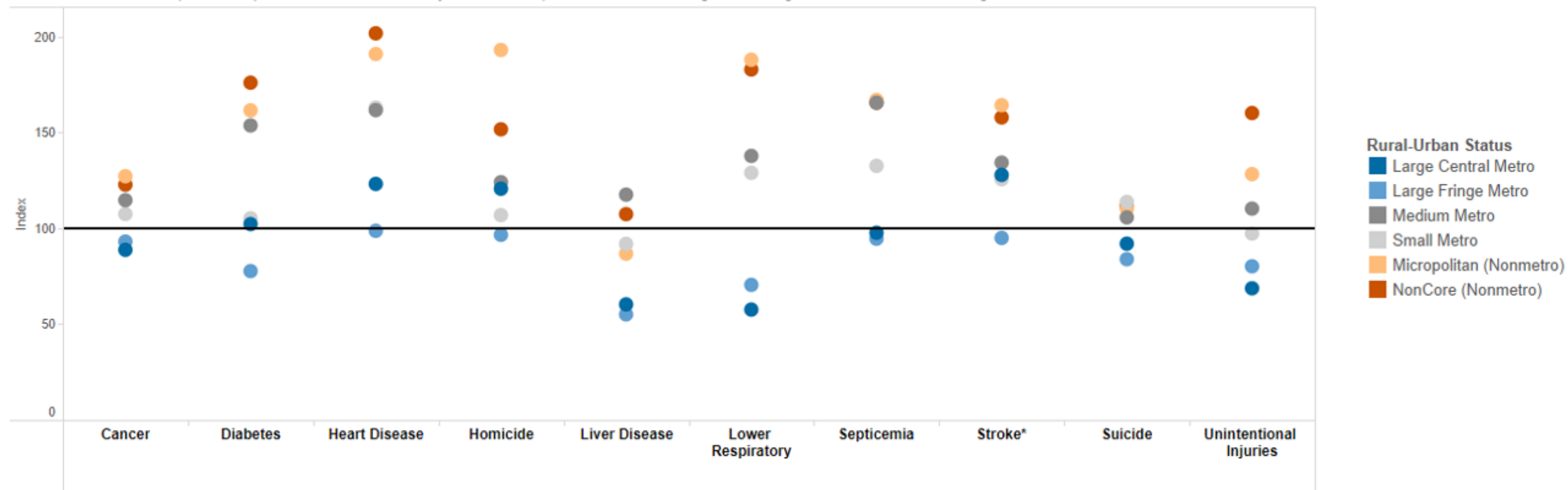


\* Potentially excess deaths are defined as deaths among persons aged <80 years in excess of the number that would be expected if the death rates for each cause in all states were equivalent to those in the benchmark states (i.e., the three states with the lowest rates).

# State Rural Health Inequity Dashboard – Georgia

## Index for Mortality Rates for Top 10 Leading Causes of Death Related to the National Mortality Rate among Females Age 25 to 64, in Georgia, by Rural-Urban Status: United States, 2015 to 2017

An index above the line (index=100) indicates that the mortality rate for that specific rural-urban designation is higher than the national average.



\*This leading cause of death includes all cerebrovascular disease.

NOTES: A missing dot indicates either 1) an unreliable or suppressed rate or 2) identical values between an urban and rural estimate (where more urban cases cover the more rural cases). Suppressed data points occur when there are fewer than 10 deaths within the population sub-group (age, sex, rural-urban status, state). Refer to the single-cause mortality charts to further investigate whether the point is suppressed or of equal value to another estimate. If a cause is not listed on the graph, then all data points for that cause are suppressed. A graph with fewer than 10 causes of death indicates that all points are suppressed for the missing cause(s). Rates are three year average age-adjusted deaths per 100,000 population. Index is calculated as:  $(\text{local mortality rate} / \text{national mortality rate}) * 100$  where the national mortality rate is calculated using age-specific and sex-specific death rates.

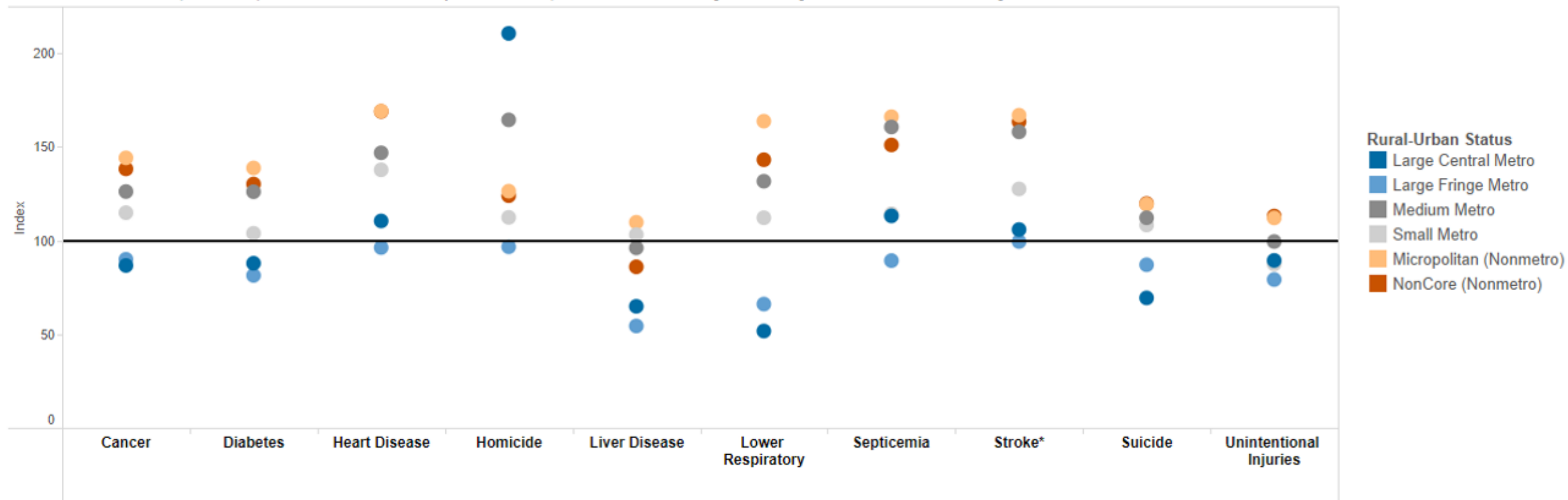
SOURCE: Centers for Disease Control and Prevention, National Center for Health Statistics, Multiple Cause of Death.



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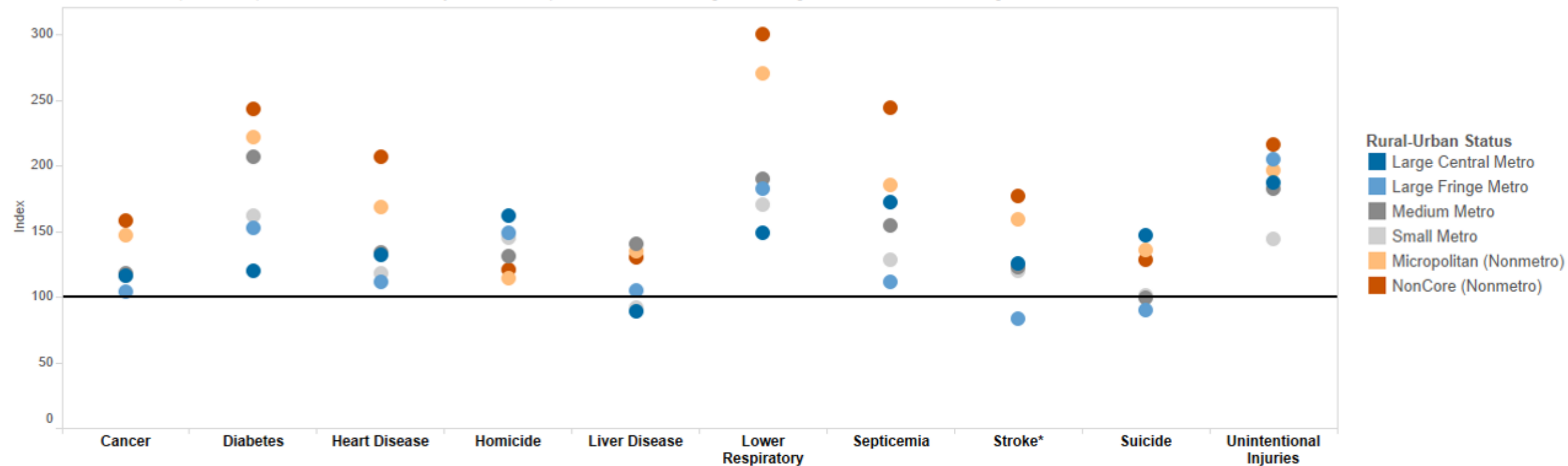
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# State Rural Health Inequity Dashboard – Kentucky

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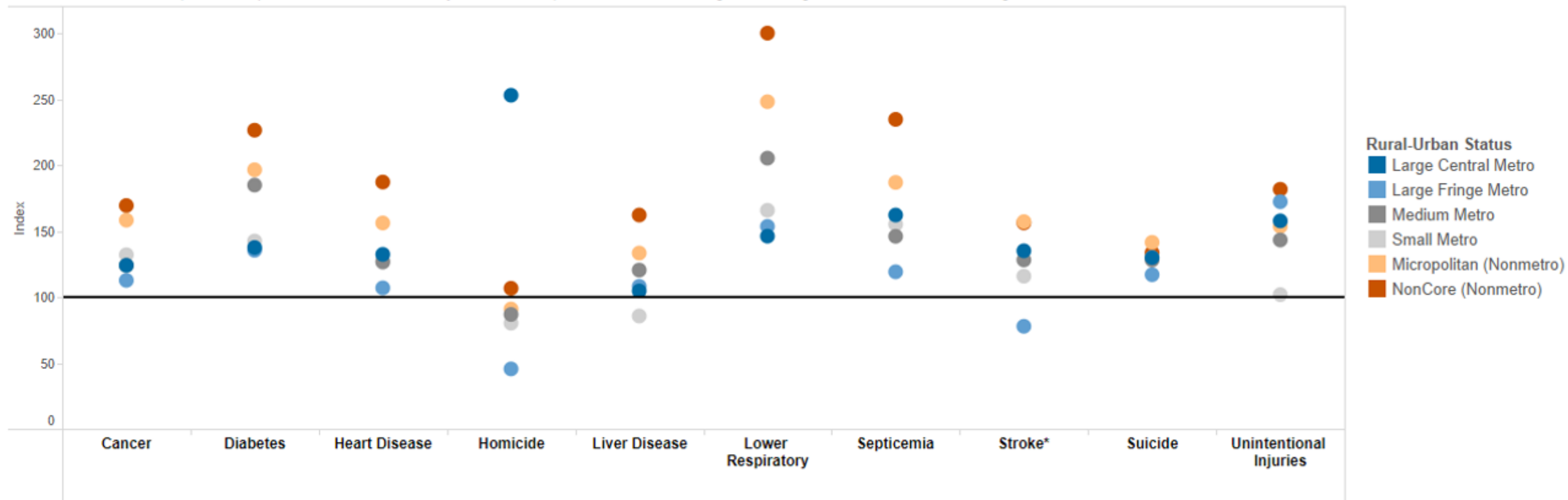
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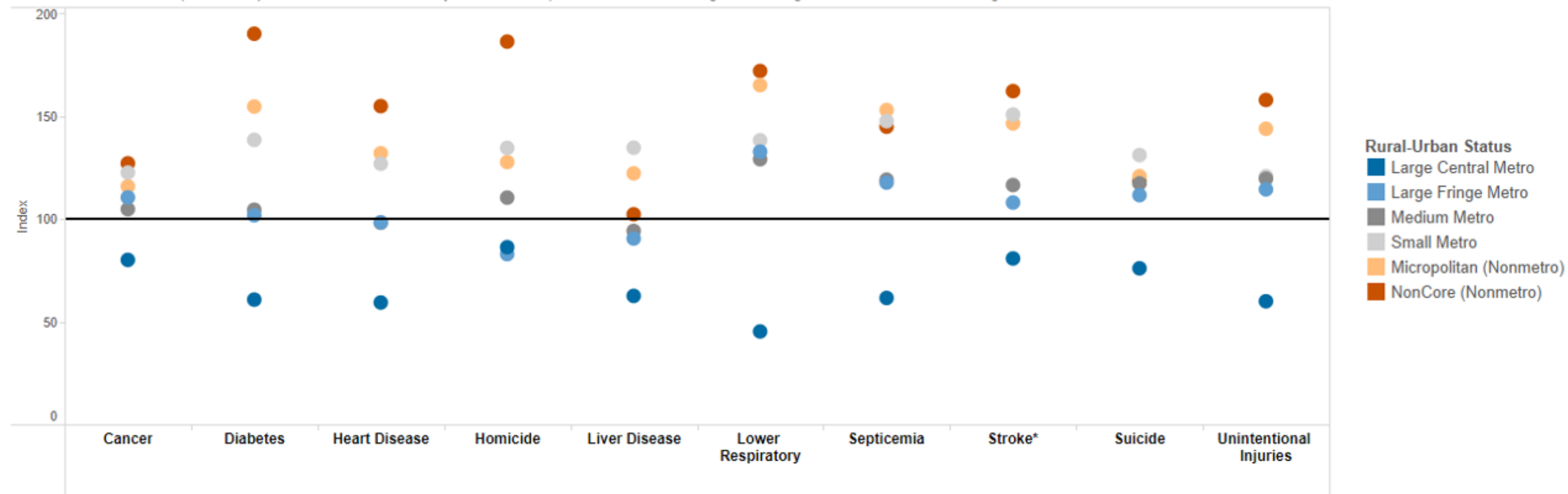
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SOURCE: Centers for Disease Control and Prevention, National Center for Health Statistics, Multiple Cause of Death.

# State Rural Health Inequity Dashboard – North Carolina

## Index for Mortality Rates for Top 10 Leading Causes of Death Related to the National Mortality Rate among Females Age 25 to 64, in North Carolina, by Rural-Urban Status: United States, 2015 to 2017

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\*This leading cause of death includes all cerebrovascular disease.

NOTES: A missing dot indicates either 1) an unreliable or suppressed rate or 2) identical values between an urban and rural estimate (where more urban cases cover the more rural cases). Suppressed data points occur when there are fewer than 10 deaths within the population sub-group (age, sex, rural-urban status, state). Refer to the single-cause mortality charts to further investigate whether the point is suppressed or of equal value to another estimate. If a cause is not listed on the graph, then all data points for that cause are suppressed. A graph with fewer than 10 causes of death indicates that all points are suppressed for the missing cause(s). Rates are three year average age-adjusted deaths per 100,000 population. Index is calculated as:  $(\text{local mortality rate} / \text{national mortality rate}) * 100$  where the national mortality rate is calculated using age-specific and sex-specific death rates.

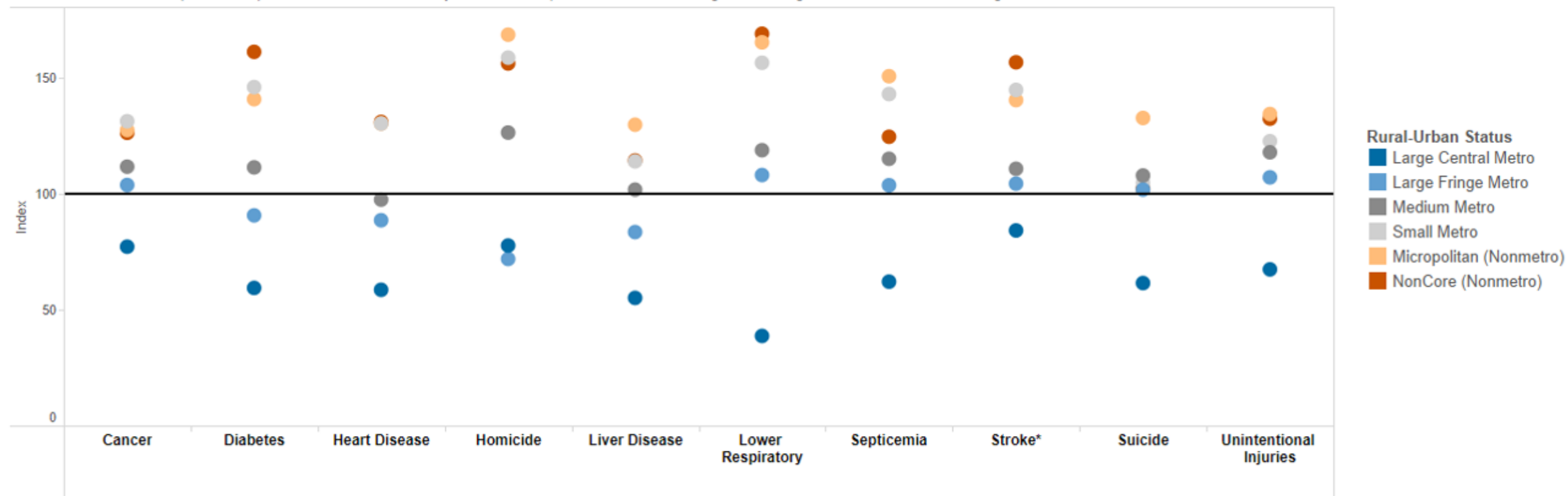
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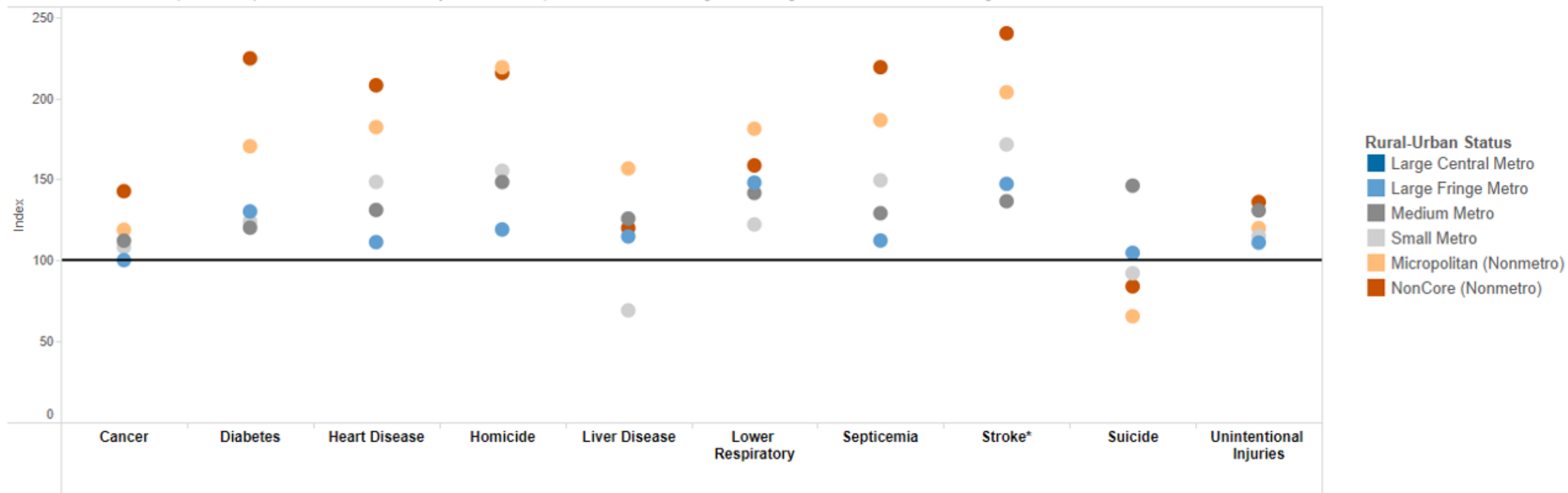
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# State Rural Health Inequity Dashboard – South Carolina

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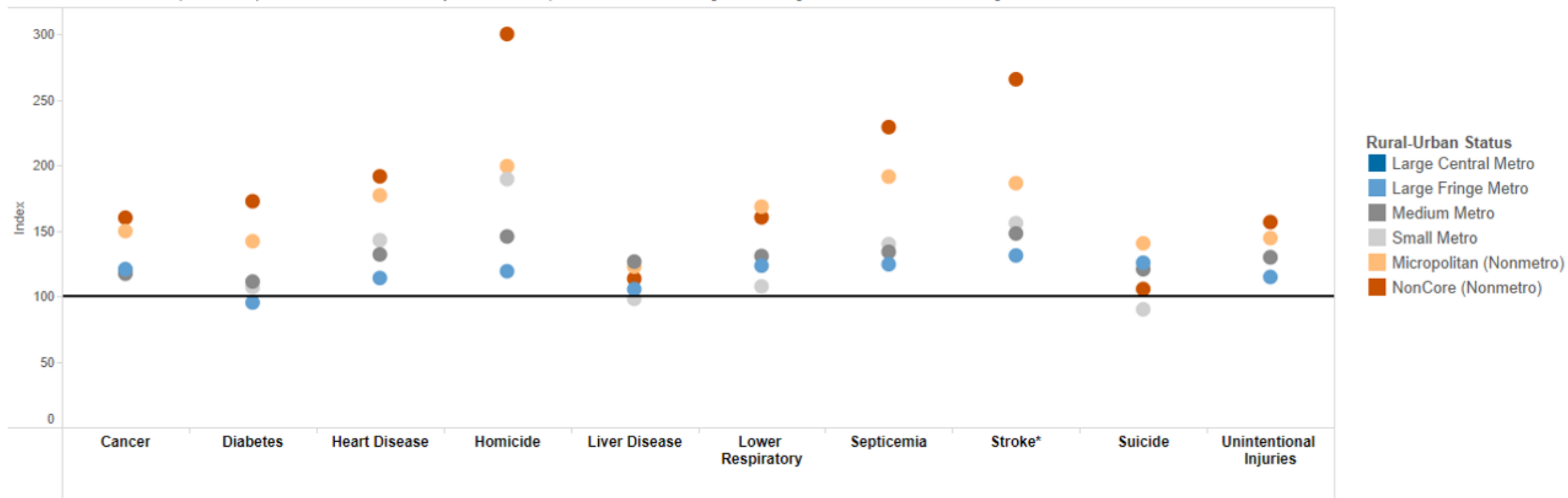
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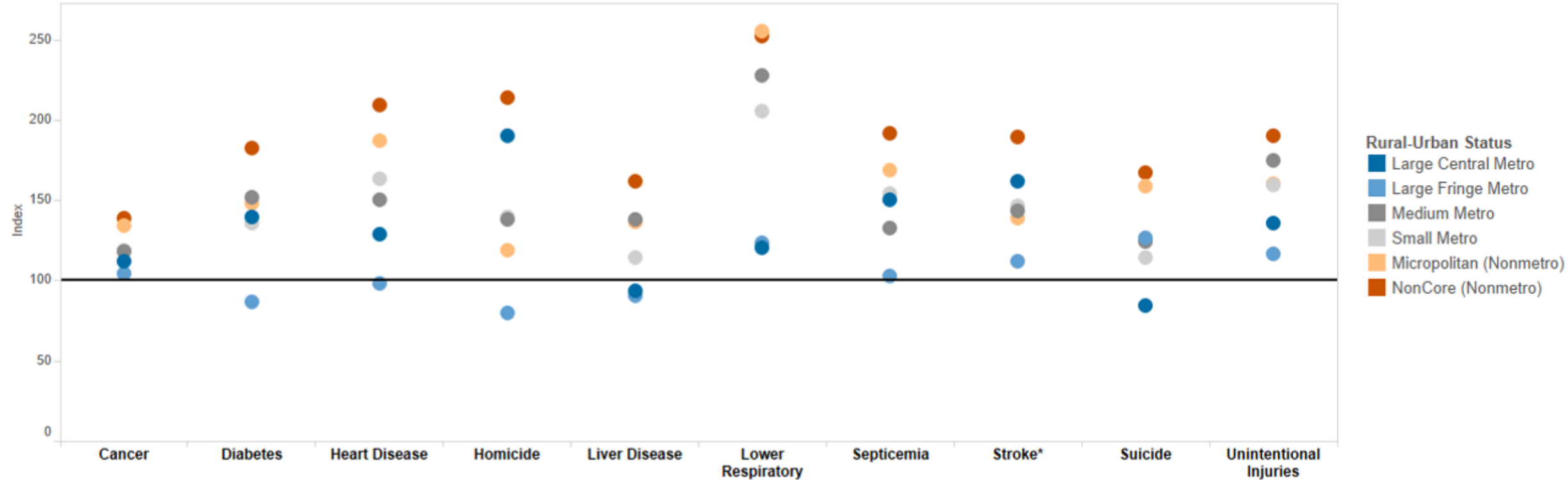
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# State Rural Health Inequity Dashboard – Tennessee

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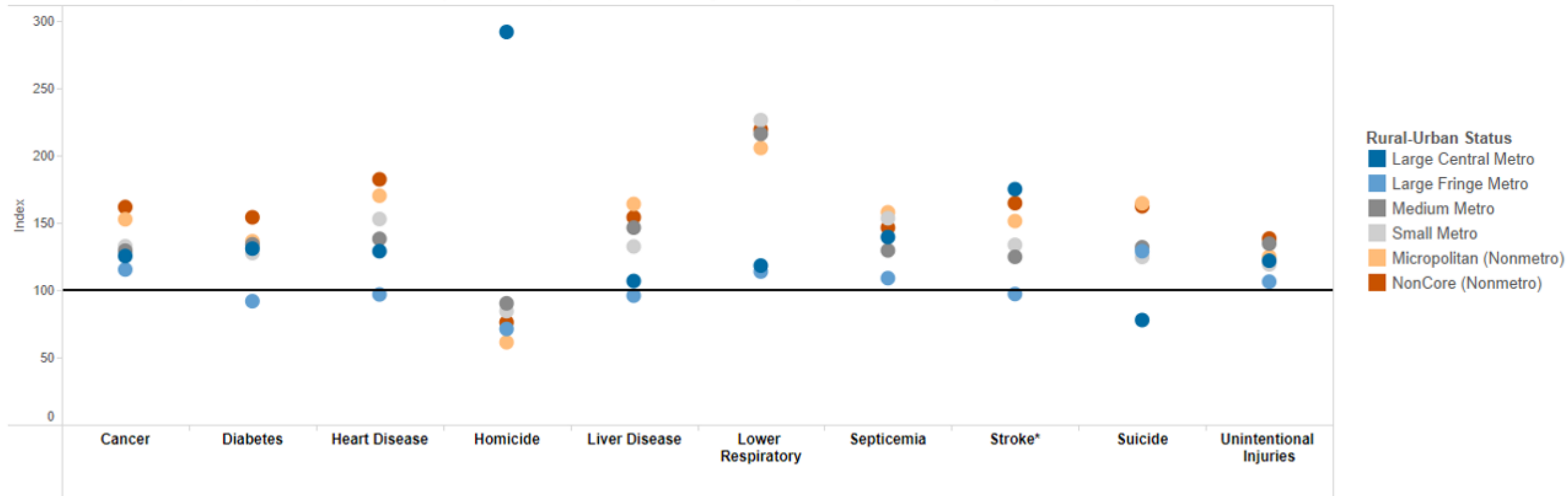
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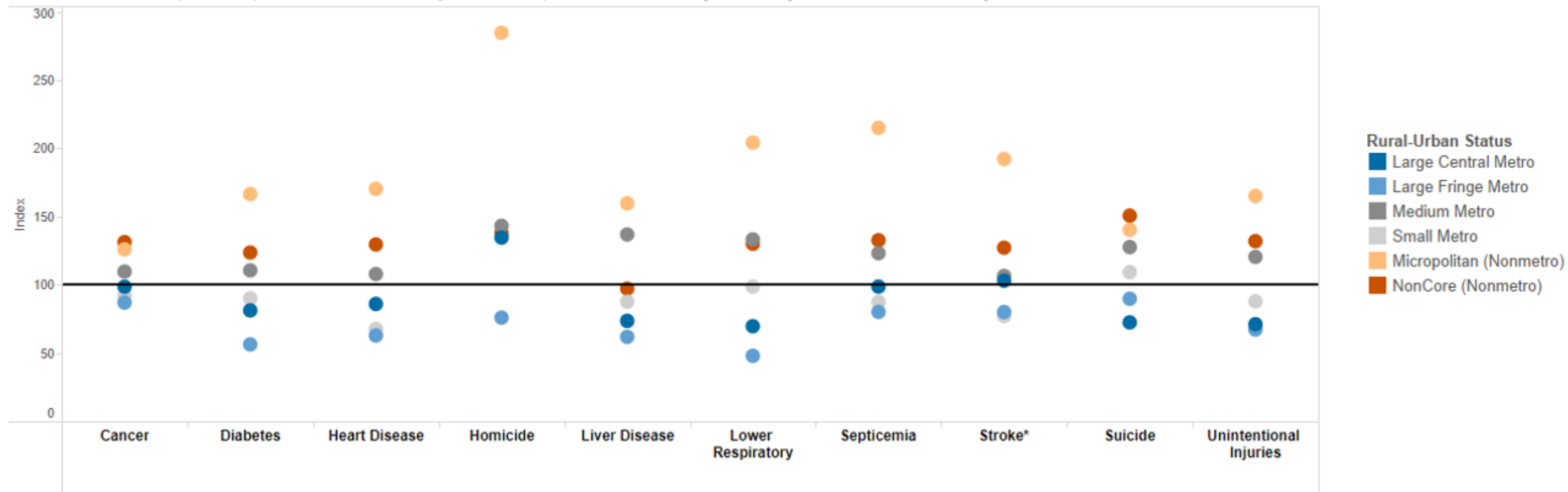
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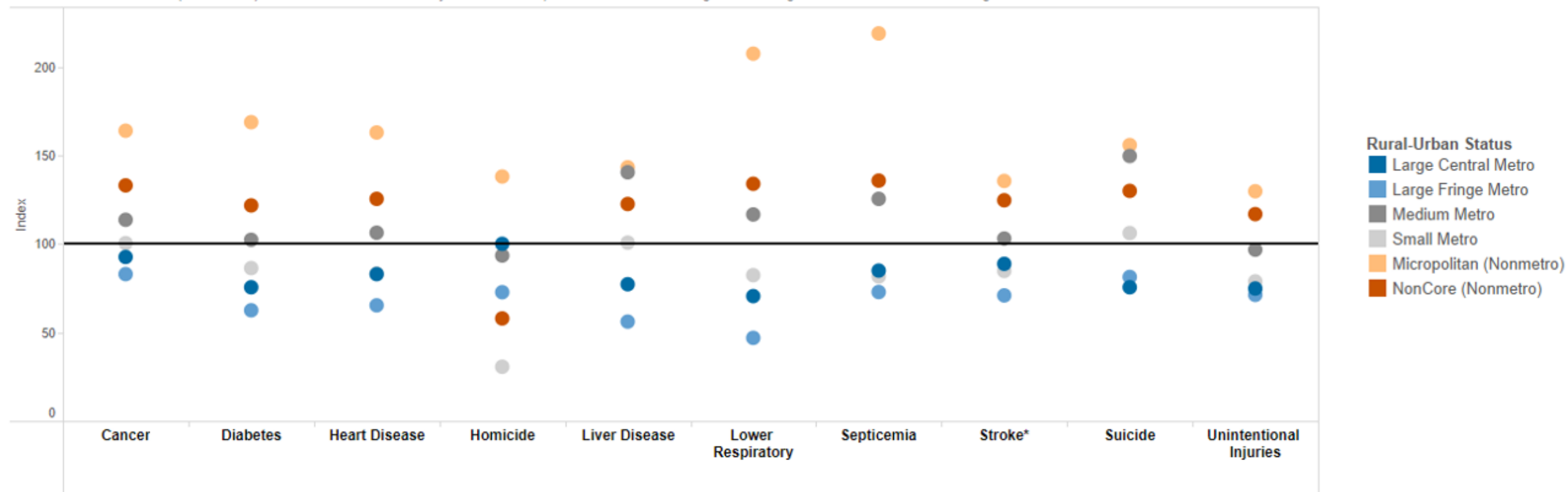
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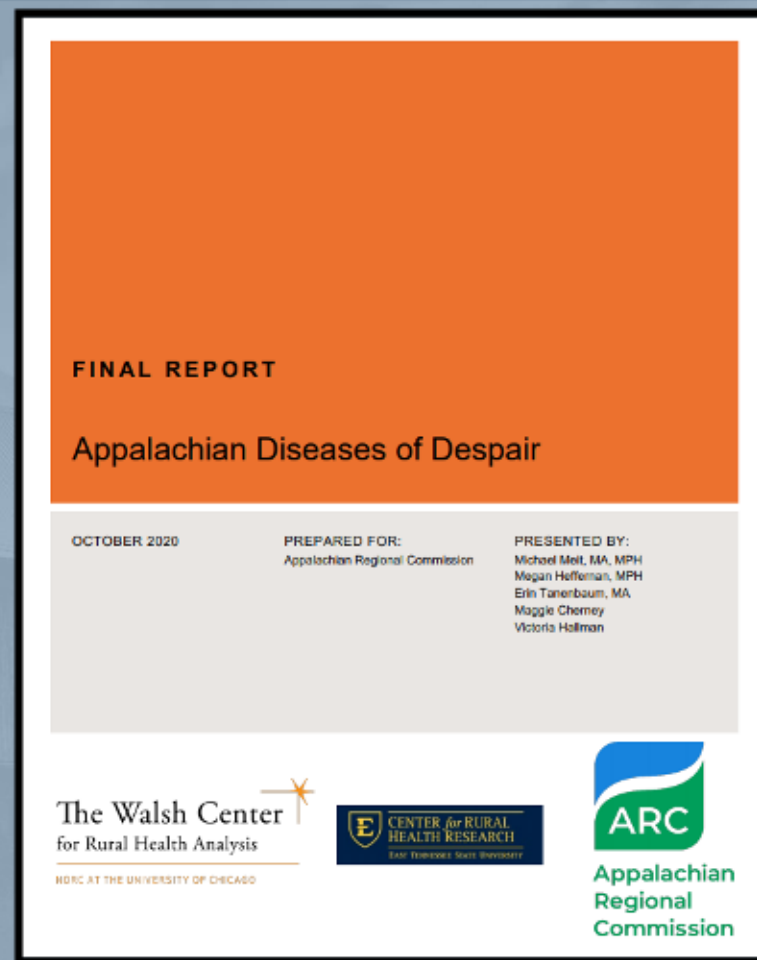
# Deaths of Despair



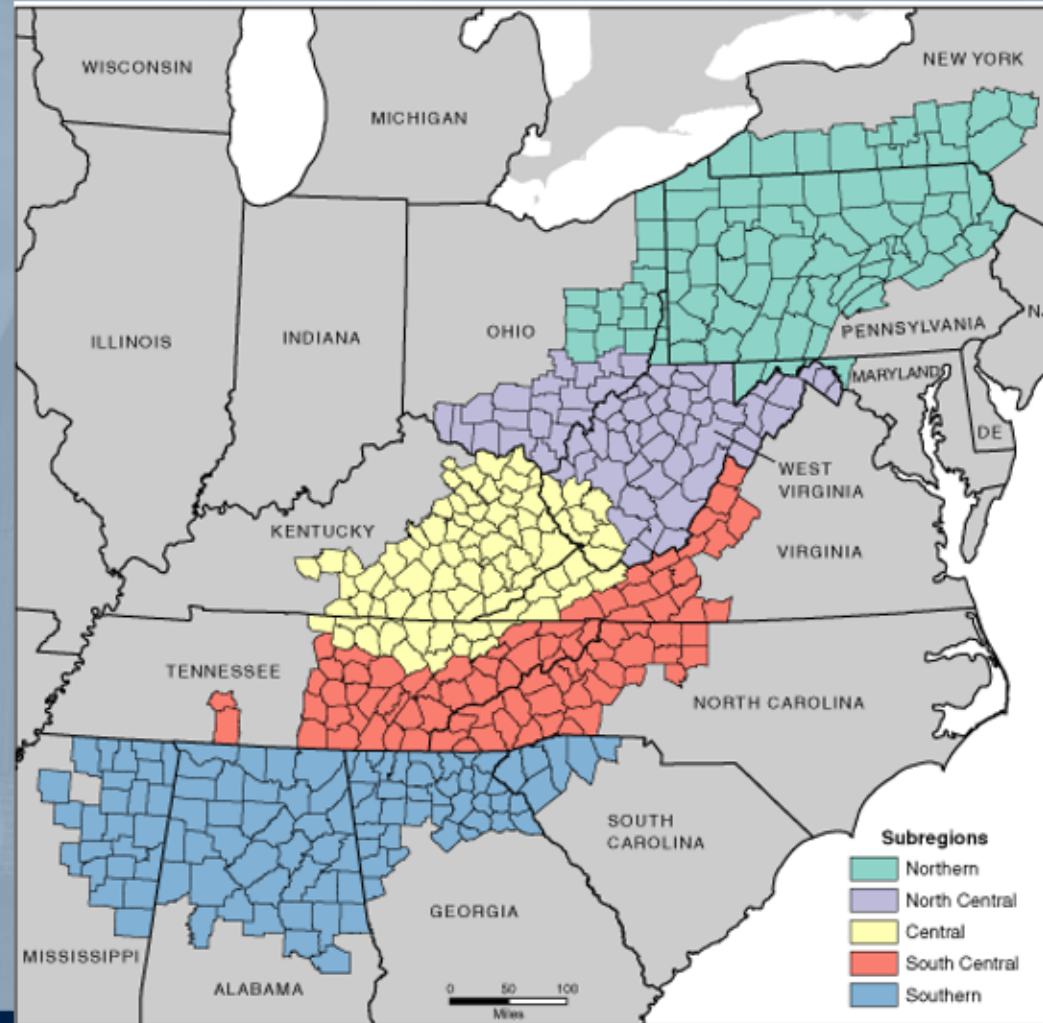
# Appalachian Deaths of Despair

- Update to study conducted in 2017 using 2015 data
- Analysis of 2018 mortality data<sup>1</sup> among individuals ages 15 to 64 for the following causes of death (“diseases of despair”):
  - Overdose (Alcohol poisonings and overdoses of prescription and illegal drugs – accidental and intent-undetermined deaths)
  - Suicide
  - Alcoholic liver disease/cirrhosis

<sup>1</sup>CDC National Center for Health Statistics (NCHS)'s National Vital Statistics System (NVSS), accessed at <http://wonder.cdc.gov/mcd-icd10.html>



# Appalachian Deaths of Despair



Map by: Appalachian Regional Commission, November 2009.



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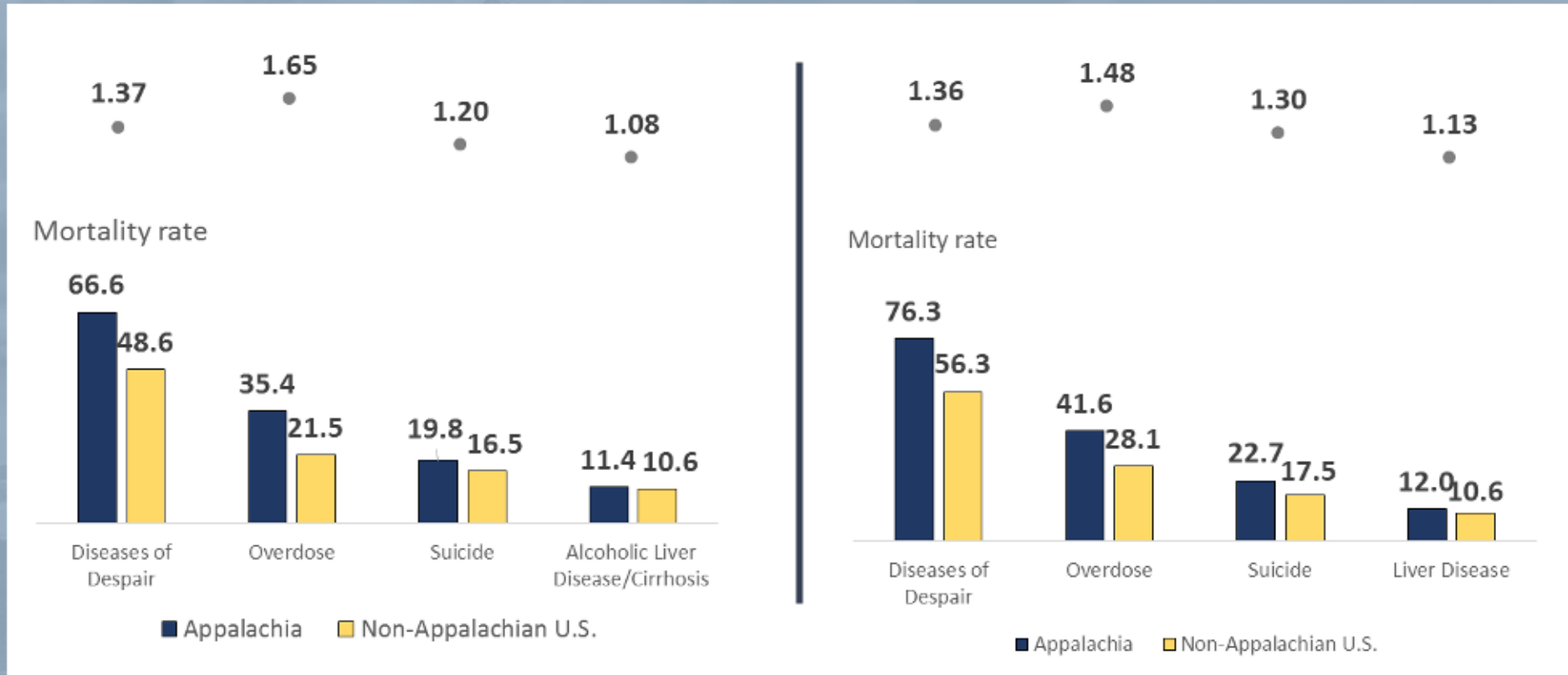
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# Comparisons Between 2015 and 2018

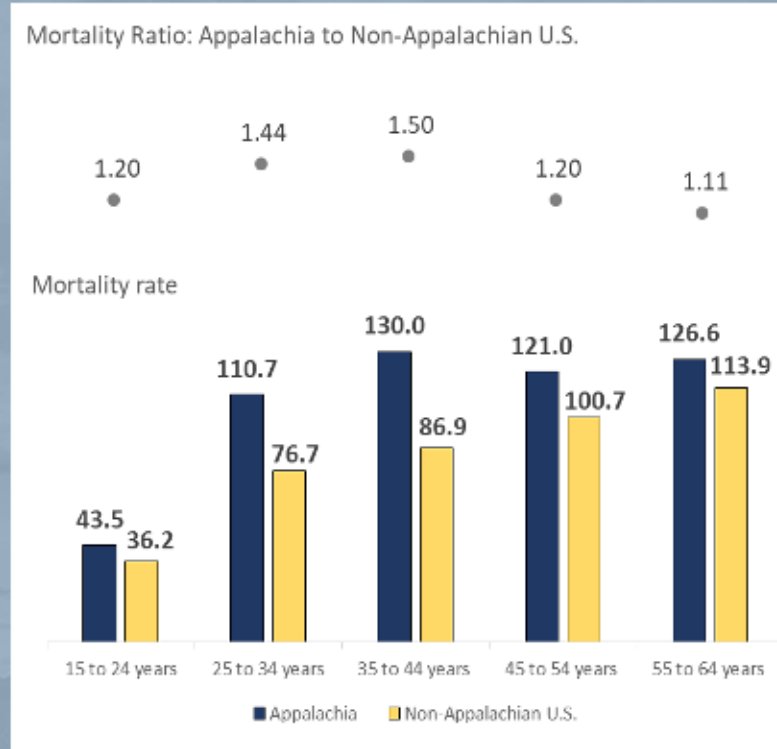
2015

2018

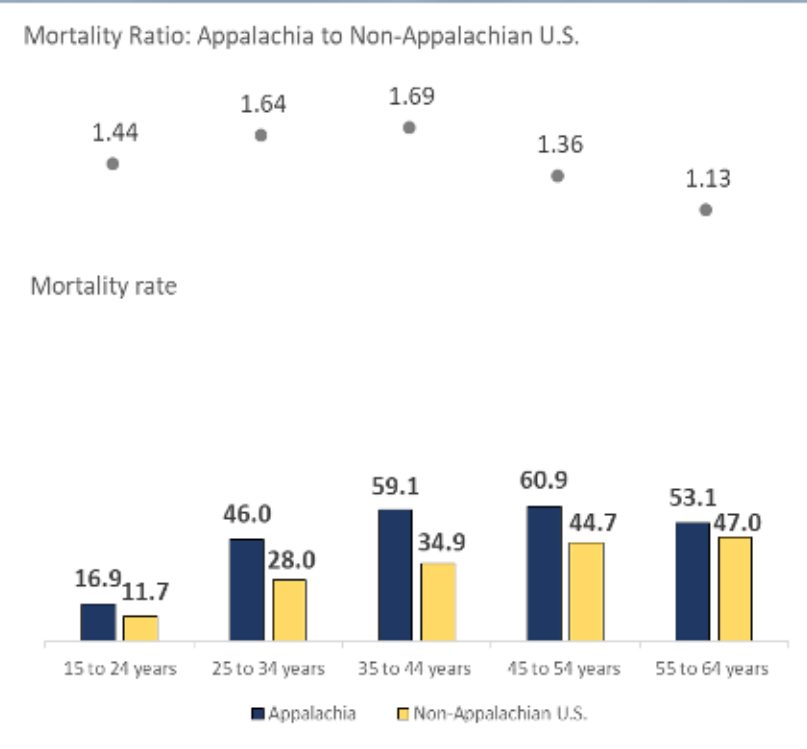


# Appalachian Deaths of Despair

**Diseases of despair mortality rates for males, ages 15–64, by age and region (2018)†\***



**Diseases of despair mortality rates for females, ages 15–64, by age and region (2018)†\***



† Rates are presented as deaths per 100,000 population. Rates are crude mortality rates for each age group.

\* For all age groups, Appalachian rate is significantly different from the non-Appalachian U.S. rate,  $p \leq 0.05$ .

Source: Mortality Rates and Standard Errors provided by Centers for Disease Control and Prevention, National Center for Health Statistics.

Accessed at <http://wonder.cdc.gov/mcd-icd10.html>.

† Rates are presented as deaths per 100,000 population. Rates are age adjusted.

\* For both genders, Appalachian rate is significantly different from the non-Appalachian U.S. rate,  $p \leq 0.05$ .

Source: Mortality Rates and Standard Errors provided by Centers for Disease Control and Prevention, National Center for Health Statistics.

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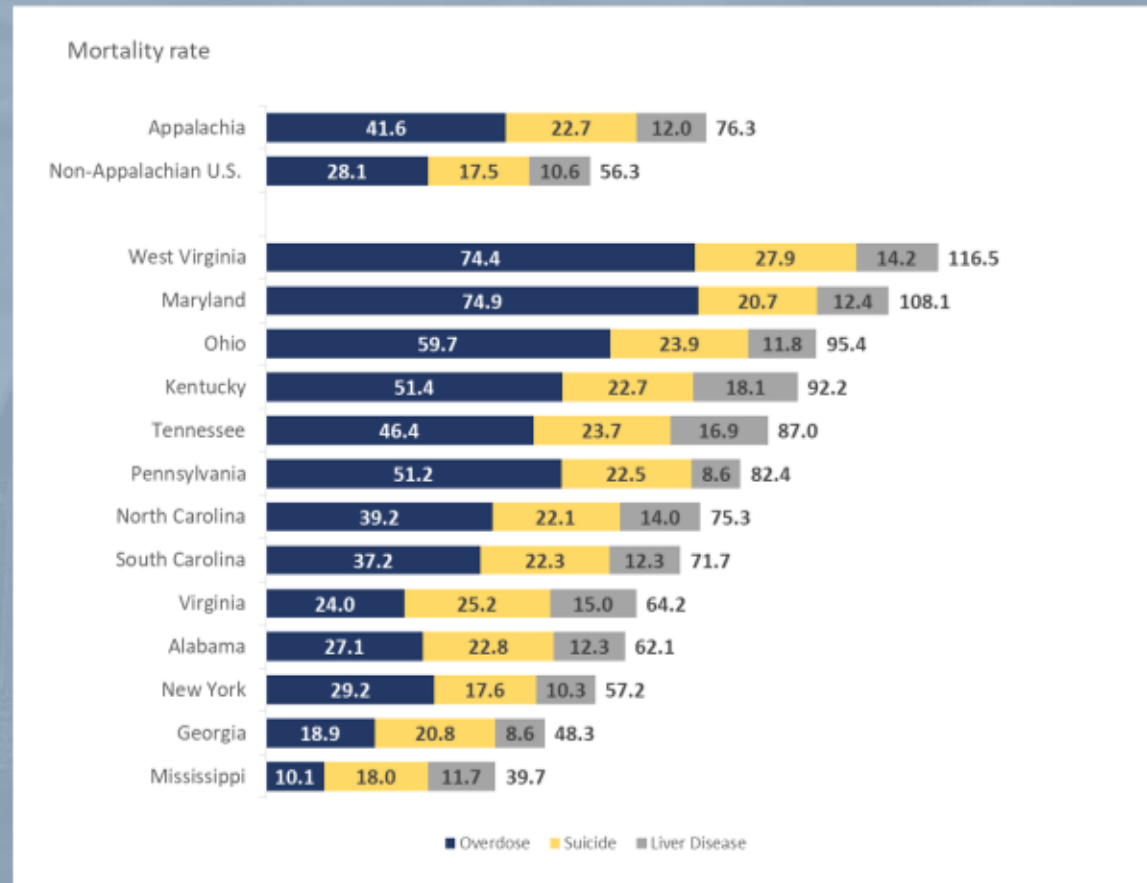
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# Appalachian Deaths of Despair

*Diseases of despair mortality rates, ages 15–64, by state<sup>^</sup> and disease (2018)<sup>‡</sup>*



<sup>^</sup> For states within Appalachia, only the mortality rate for the Appalachian counties is shown.

<sup>‡</sup> Rates are presented as deaths per 100,000 population. Rates are age adjusted. Source: Mortality Rates and Standard Errors provided by Centers for Disease Control and Prevention, National Center for Health Statistics.

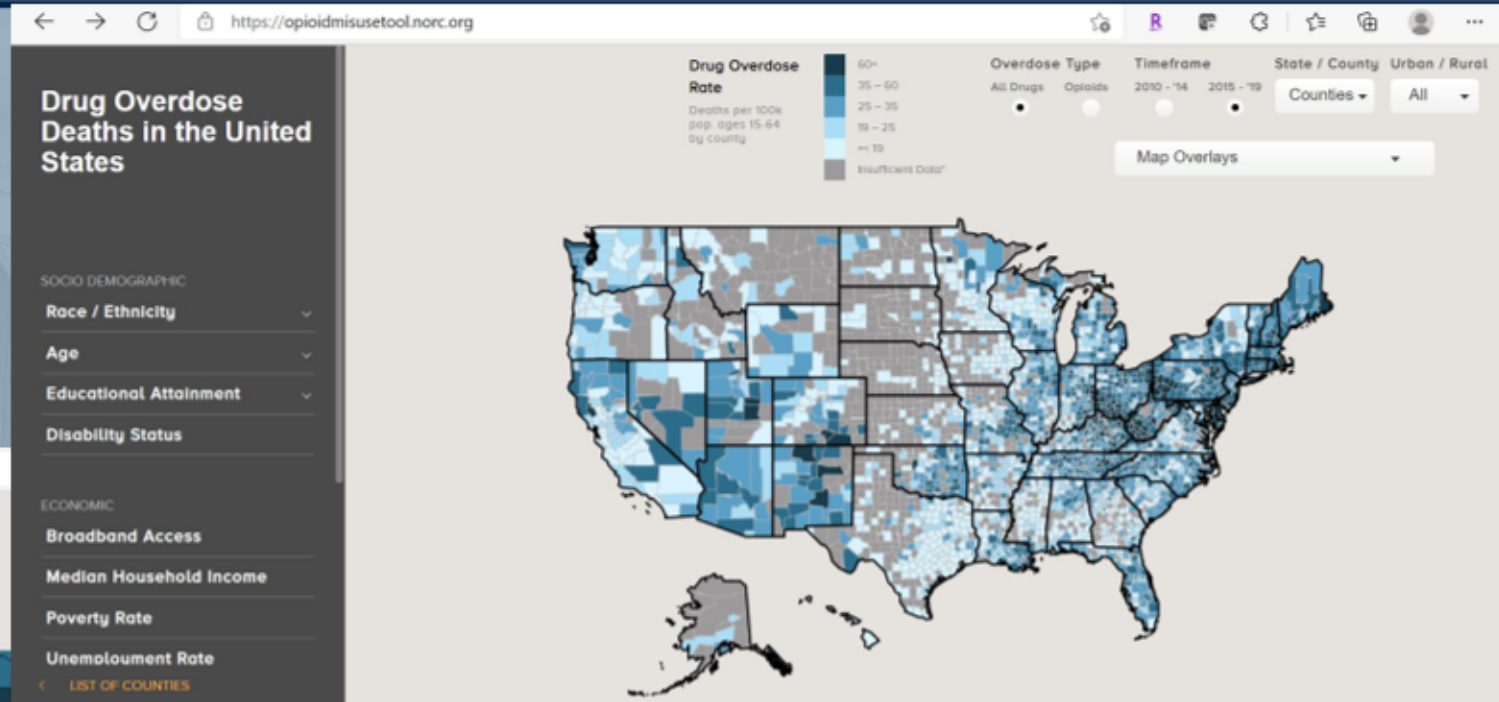
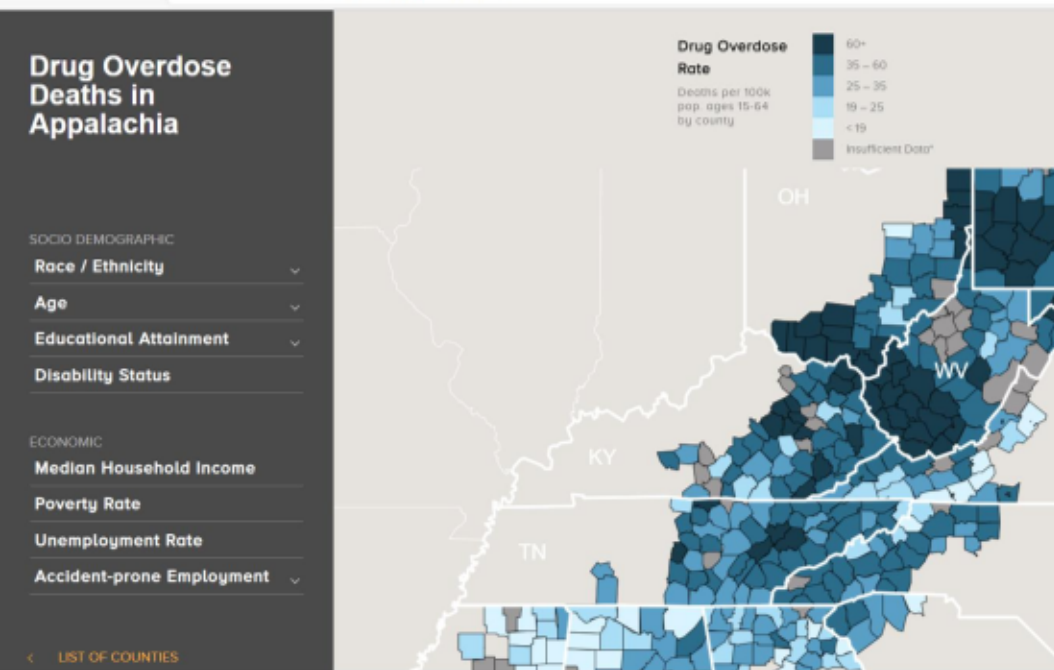
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# Appalachian Overdose Mapping Tool – <https://overdosemappingtool.norc.org> U.S. Overdose Mapping Tool – <https://opioidmisusetool.norc.org>



← → ↻ ⚠ Not secure | overdosemappingtool.norc.org



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# Opioid Misuse Community Assessment Tool

County Profile: 2015-2019

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## Carter County, KY

### Drug Overdose Mortality Rate

66.1

Deaths per 100k population  
(Ages 15-64)

48.5

Kentucky Drug Overdose Mortality Rate

28.7

U.S. Drug Overdose Mortality Rate

[See Behavioral Health Resources](#) >

[See Prosperity Index](#) >

52

Total Deaths

27,159

Population

Rural

Urban / Rural

Choose County Profile Data Time Period

2010-2014

2015-2019

Change from 2010-2014 to 2015-2019

Note: Sociodemographic and economic data are provided to show composition of the total population; they DO NOT reflect the proportions of individuals who died as a result of overdose.

#### SOCIO DEMOGRAPHIC

##### Race / Ethnicity

White (non-Hispanic)

96.6%

84.6%

60.7%

African American (non-Hispanic)

0.5%

8.0%

12.3%

Hispanic or Latino

1.4%

3.7%

18.0%

Asian (non-Hispanic)

0.1%

1.5%

5.5%

Native Hawaiian/Pacific Islander (non-Hispanic)

0.0%

0.1%

0.2%

American Indian/Alaska Native (non-Hispanic)

0.5%

0.2%

0.7%

##### Age

Under 15

18.5%

18.8%

18.7%

15-64

63.2%

65.2%

65.6%

65+

18.3%

16.0%

15.6%

##### Educational Attainment

At least High School Diploma (25+)

79.2%

86.3%

88.0%

Bachelor's Degree or more (25+)

12.6%

24.2%

32.1%

##### Disability Status

% Residents with a disability (18-64)

17.1%

16.0%

10.3%

#### ECONOMIC

Broadband Access (3 or more providers)

69.8%

94.3%

95.3%

Median Household Income

\$34,736

\$50,589

\$62,843

Poverty Rate

25.3%

17.3%

13.4%

Unemployment Rate

5.8%

5.6%

5.3%

##### Injury-prone Employment

Construction

4.0%

4.2%

4.8%

Mining and Natural Resources

1.3%

1.0%

1.3%

Manufacturing

12.9%

13.3%

8.7%

Trade, Transportation, & Utilities

24.7%

21.1%

18.9%



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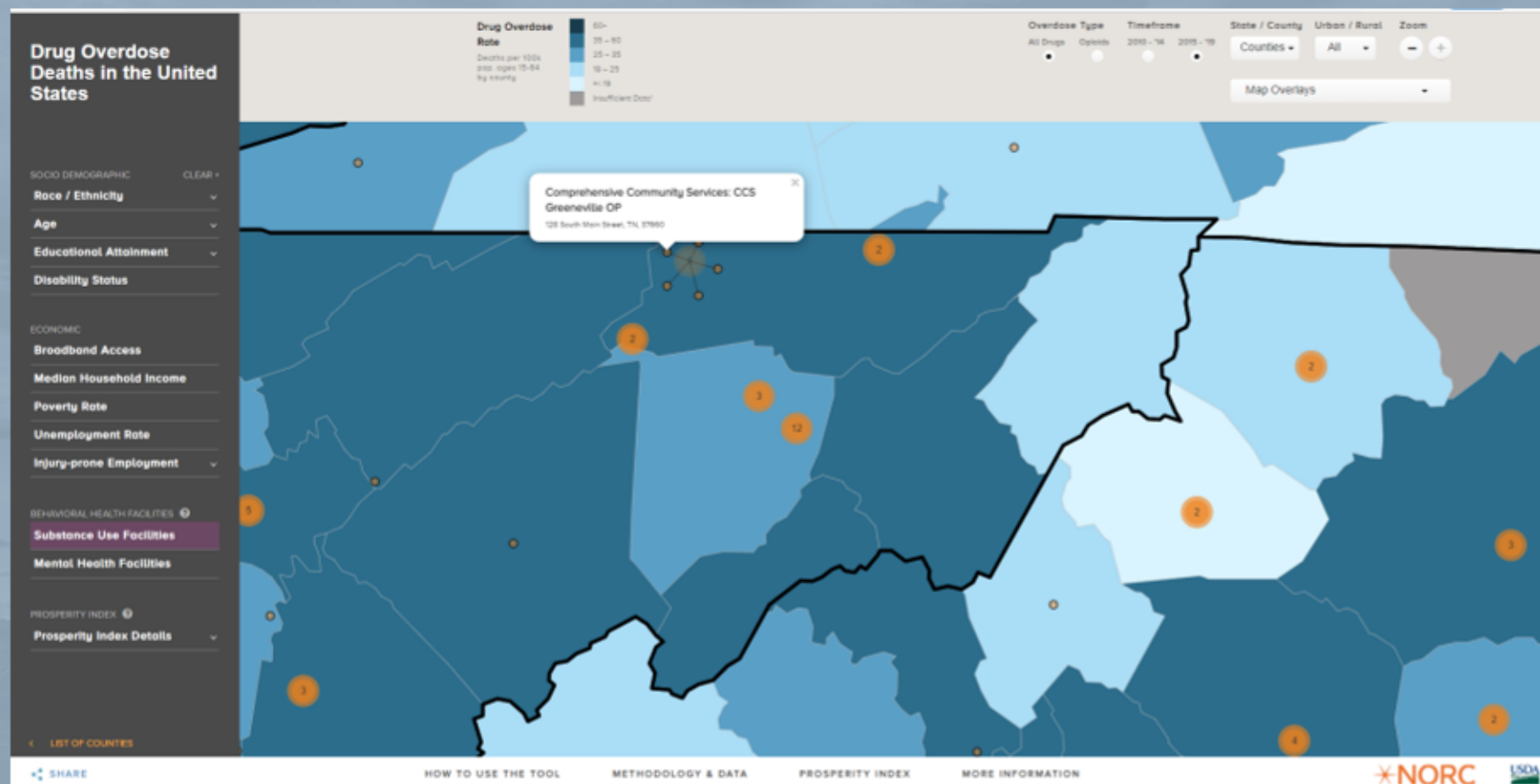
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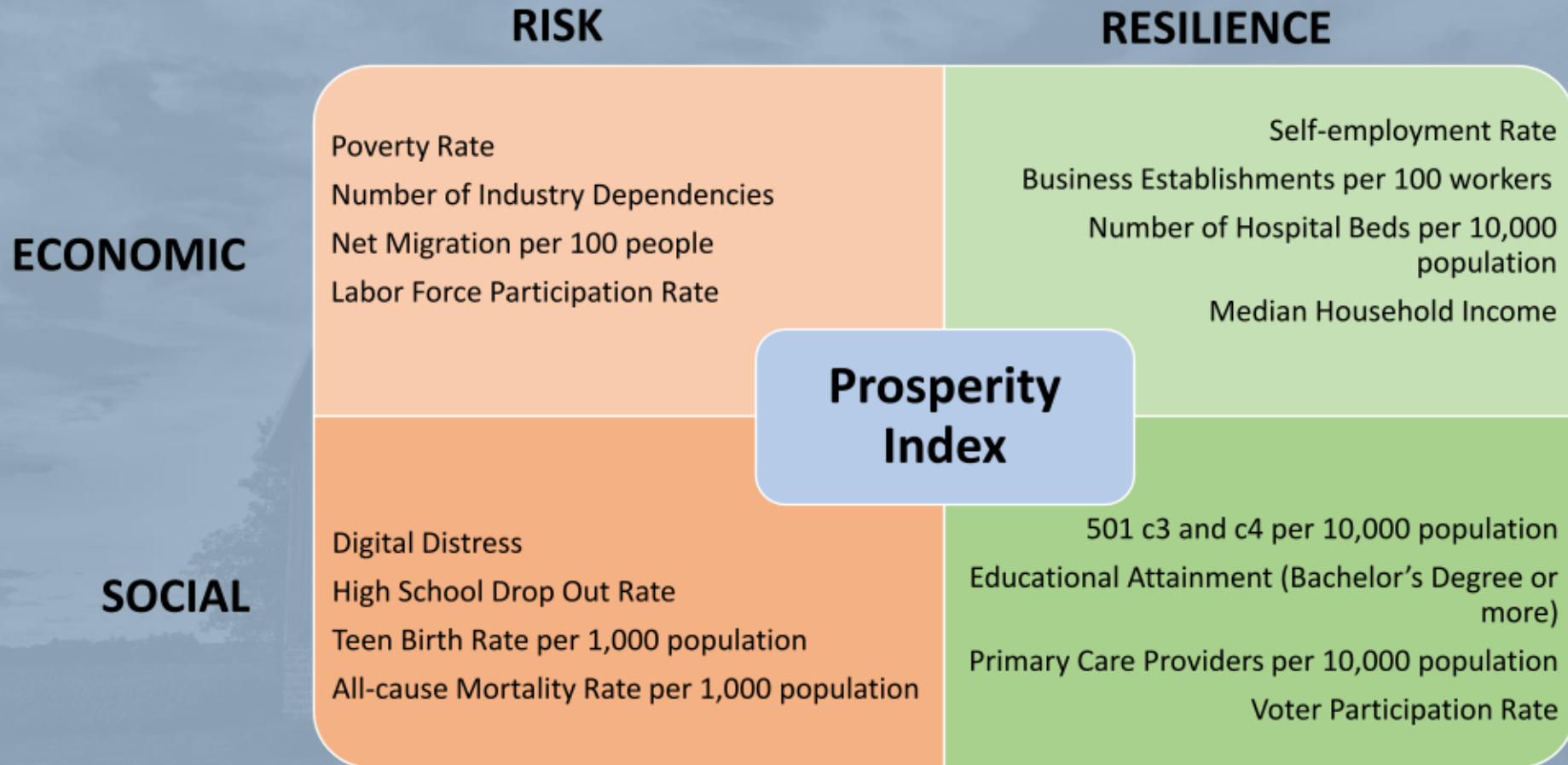


# Opioid Misuse Community Assessment Tool

## Location of Substance Use Facilities



# Prosperity Index



County Profile: 2015-2019

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# Clay County, KY

## Drug Overdose Mortality Rate

**38.2** Deaths per 100k population  
(Ages 15-64)

48.5 Kentucky Drug Overdose Mortality Rate

28.7 U.S. Drug Overdose Mortality Rate

[See Demographics](#) >

[See Behavioral Health Resources](#) >

**27**

Total Deaths

**20,368**

Population

**Rural**

Urban / Rural

Component	Score	Sub-Component	Clay County	Kentucky	United States
Economic - Risk	5	Poverty Rate	36.6%	17.3%	13.4%
		Number of Industry Dependencies	0.0	0.6	0.5
		Net Migration per 100 people	-13.4	2.2	2.5
		Labor Force Participation Rate	47.6%	77.6%	82.1%
Economic - Resilience	5	Self-employment Rate	1.4%	2.9%	3.6%
		Business Establishments per 100 workers	4.4	4.2	5.3
		Number of Hospitals Beds per 10,000 population	24.4	22.9	28.7
		Median Household Income	\$26,840	\$50,589	\$62,843
Social - Risk	5	Digital Distress (1= Low Distress, 2 = Medium Distress, 3 = High Distress)	3.0	2.2	1.8
		High School Drop Out Rate	9.1%	4.3%	3.8%
		Teen Birth Rate per 1,000 population	52.5	35.3	24.1
		All-cause Mortality Rate per 100,000 population	1191.6	984.4	816.5
Social - Resilience	5	501 c3 and c4s per 10,000 population	19.6	25.7	43.7
		Educational Attainment - Bachelor's Degree or more	9.8%	24.2%	32.1%
		Primary Care Providers per 10,000 population	40.8	25.0	21.8
		Voter Participation Rate	41.0%	56.0%	59.4%

**Overall Prosperity Index Score: 5**



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County Profile: 2015-2019

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# Forsyth County, GA

## Drug Overdose Mortality Rate

**18.1** Deaths per 100k population (Ages 15-64)

**19.1** Georgia Drug Overdose Mortality Rate

**28.7** U.S. Drug Overdose Mortality Rate

[See Demographics](#) >

[See Behavioral Health Resources](#) >

**128**

Total Deaths

**228,383**

Population

**Urban**

Urban / Rural

**Overall Prosperity Index Score: 1**

Component	Score	Sub-Component	Forsyth County	Georgia	United States
Economic - Risk	1	Poverty Rate	5.7%	15.1%	13.4%
		Number of Industry Dependencies	0.0	0.4	0.5
		Net Migration per 100 people	54.8	8.7	2.5
		Labor Force Participation Rate	84.3%	81.1%	82.1%
Economic - Resilience	1	Self-employment Rate	5.4%	4.1%	3.6%
		Business Establishments per 100 workers	5.8	4.3	5.3
		Number of Hospitals Beds per 10,000 population	13.7	26.1	28.7
		Median Household Income	\$107,218	\$58,700	\$62,843
Social - Risk	1	Digital Distress (1= Low Distress, 2 = Medium Distress, 3 = High Distress)	1.0	2.1	1.8
		High School Drop Out Rate	2.0%	4.6%	3.8%
		Teen Birth Rate per 1,000 population	4.2	28.6	24.1
		All-cause Mortality Rate per 100,000 population	570.8	872.9	816.5
Social - Resilience	2	501 c3 and c4s per 10,000 population	16.4	28.7	43.7
		Educational Attainment - Bachelor's Degree or more	53.1%	31.3%	32.1%
		Primary Care Providers per 10,000 population	14.5	19.9	21.8
		Voter Participation Rate	76.0%	53.7%	59.4%



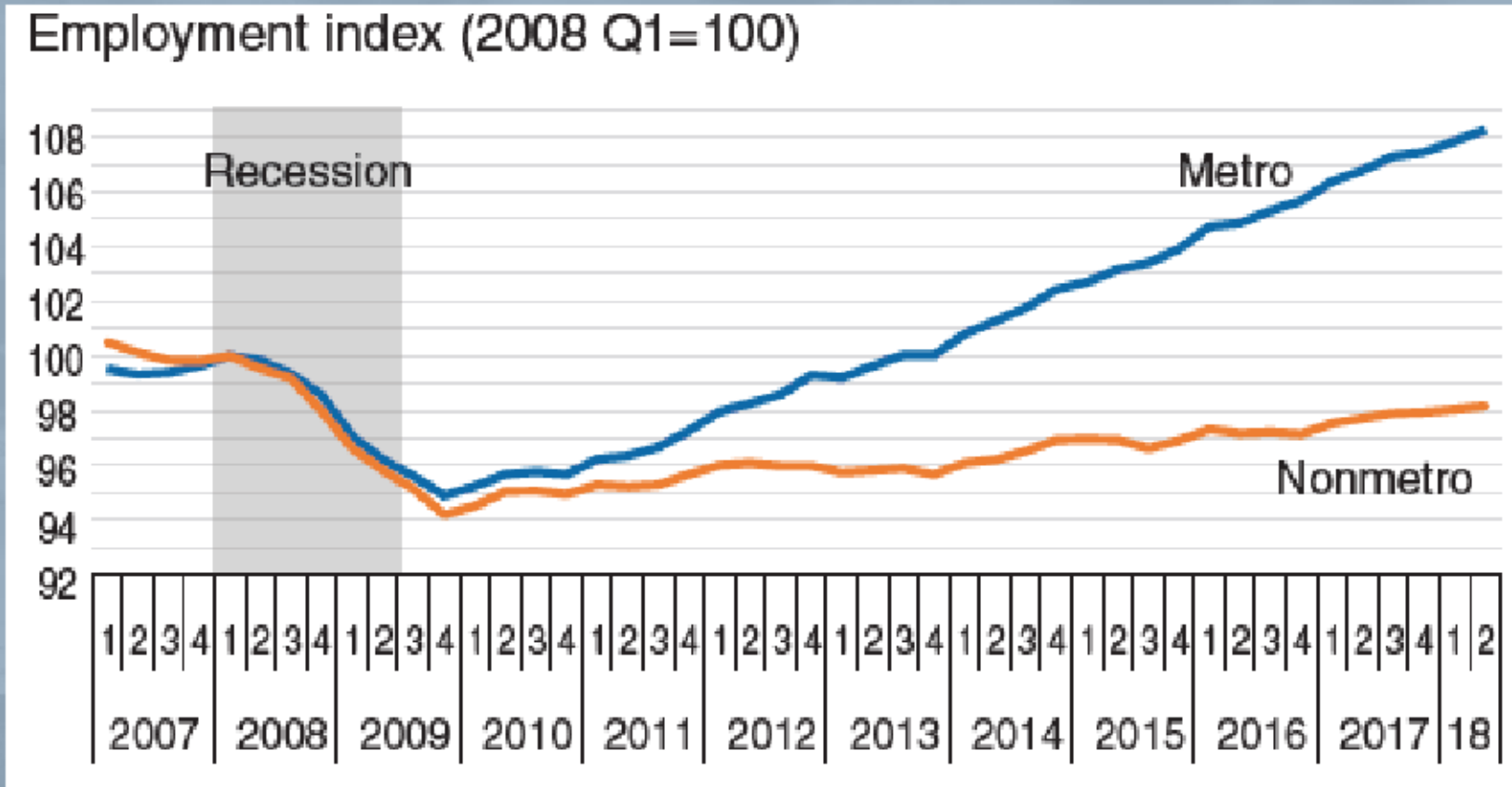




# Impacts of Poverty



# Rural Versus Urban Job Growth Since Recession



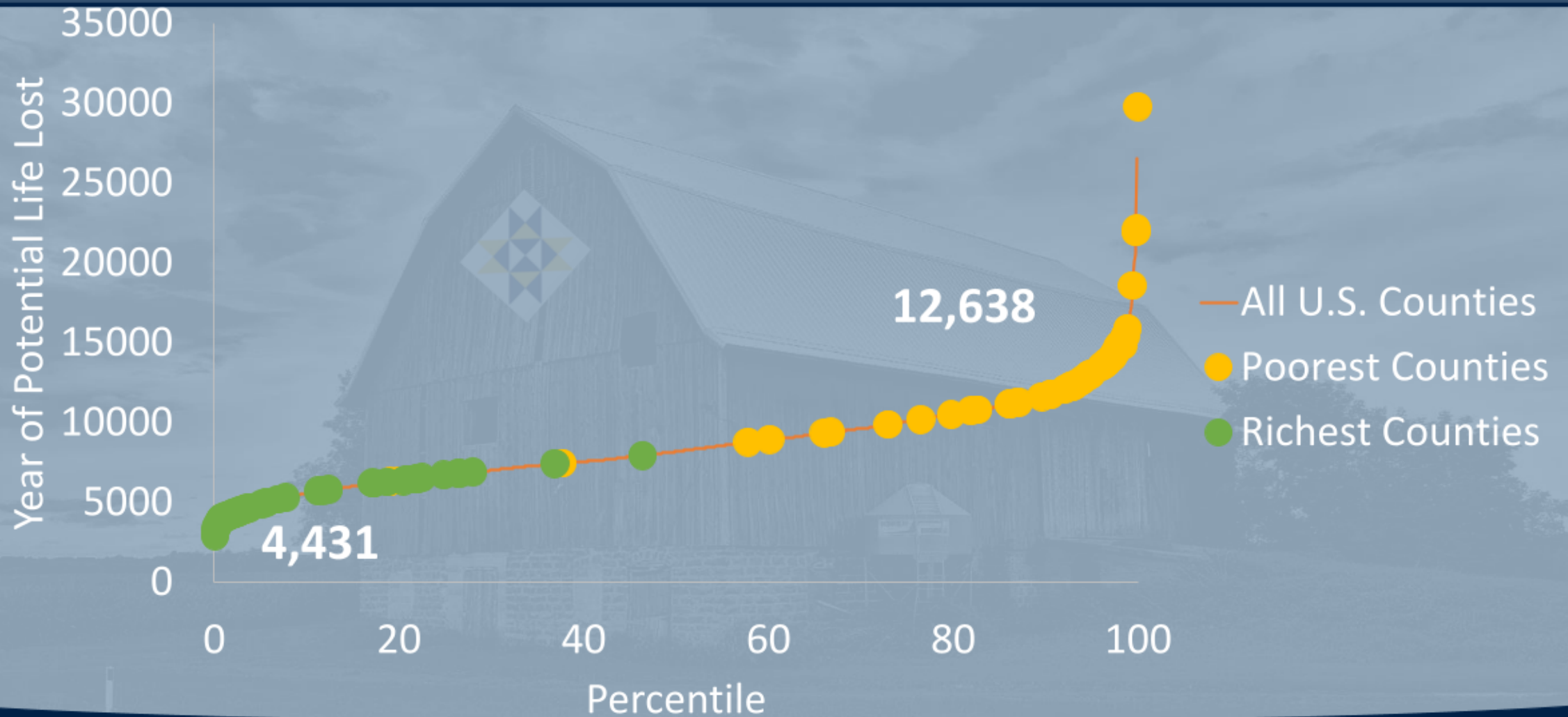
Source: USDA, Economic Research Service using data from the Bureau of Labor Statistics, Local Area Unemployment Statistics (LAUS), seasonally adjusted.



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# Premature Death(YPLL): 2% Wealthiest Counties vs 2% Poorest Counties



Health and Social Conditions of the Poorest Versus Wealthiest Counties in the United States. Egen, et. al.  
American Journal of Public Health 107:130-135 (2017)



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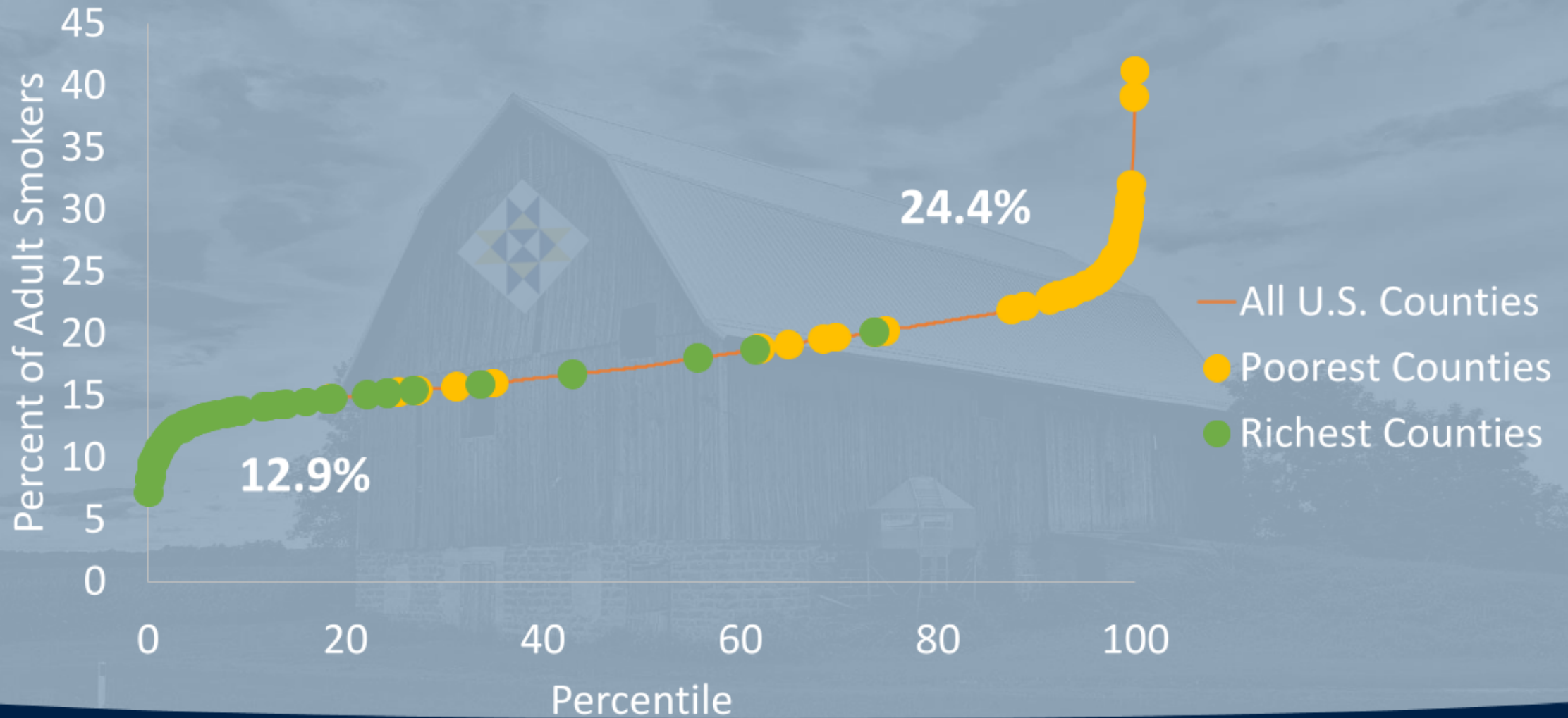
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# Adult Smoking Percentage

## 2% Wealthiest Counties vs 2% Poorest Counties

% Adult Smokers



Health and Social Conditions of the Poorest Versus Wealthiest Counties in the United States. Egen, et. al. American Journal of Public Health 107:130-135 (2017)



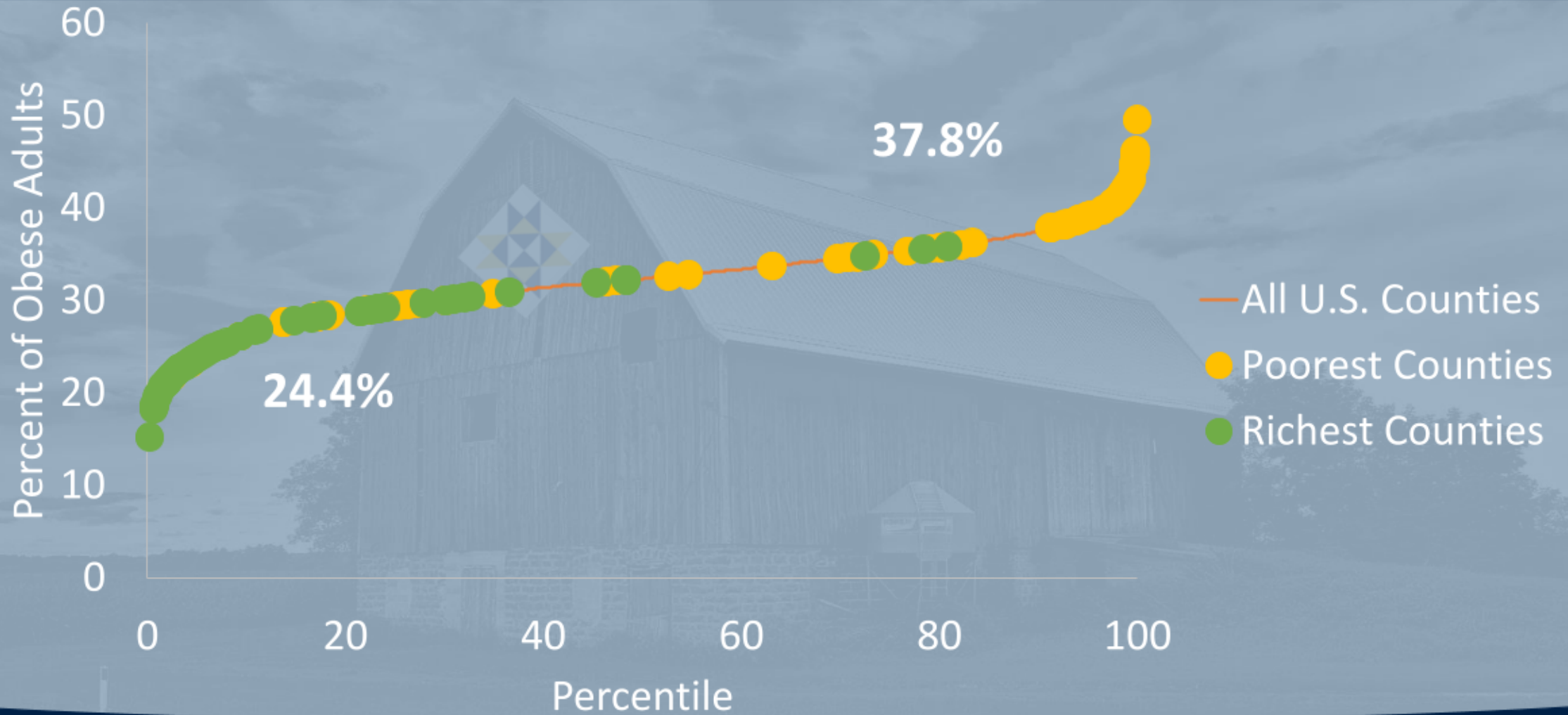
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# Adult Obesity Percentage

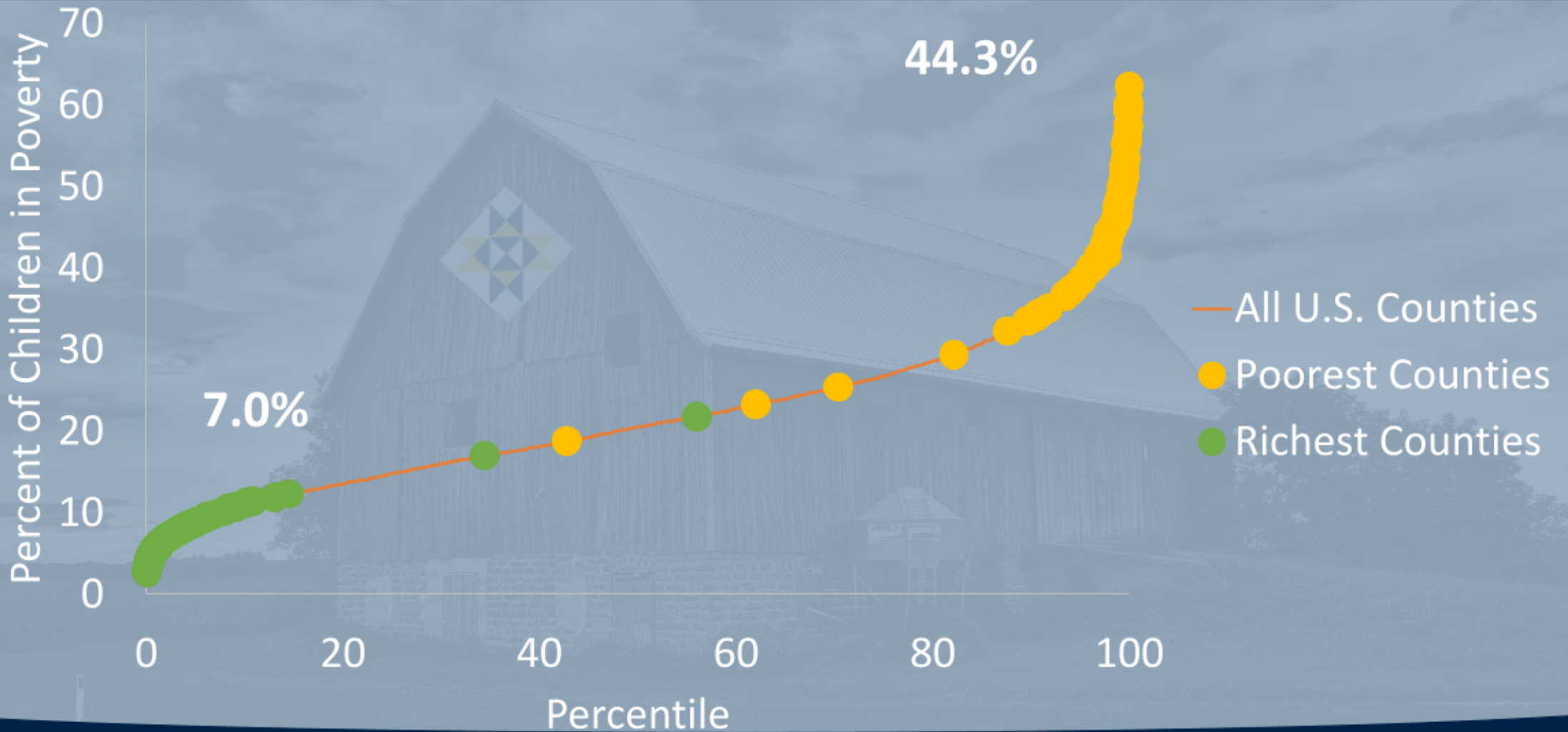
## 2% Wealthiest Counties vs 2% Poorest Counties

% Obese



# Children Living in Poverty Percentage 2% Wealthiest Counties vs 2% Poorest Counties

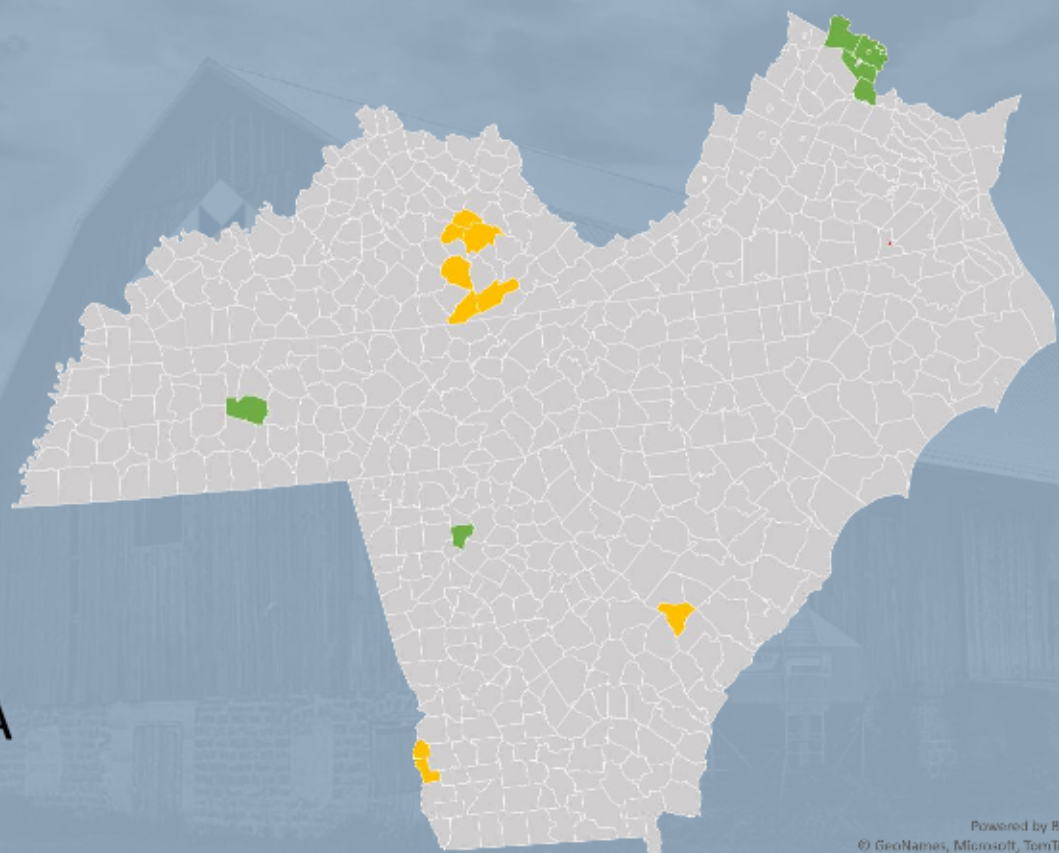
% Children in Poverty



# *Richest & Poorest Counties: Southeastern States*

## **10 Richest Counties:**

Loudoun County, VA  
Falls Church City, VA  
Fairfax County, VA  
Arlington County, VA  
Fairfax City, VA  
Williamson County, TN  
Stafford County, VA  
Forsyth County, GA  
Prince William County, VA  
Alexandria City, VA



## **10 Poorest Counties:**

Breathitt County, KY  
Allendale County, SC  
Emporia City, VA  
Clay County, KY  
Quitman County, GA  
Harlan County, KY  
Bell County, KY  
Lee County, KY  
Wolfe County, KY  
Clay County, GA



American Community Survey, 5-year estimates (2019)  
Based on median household income



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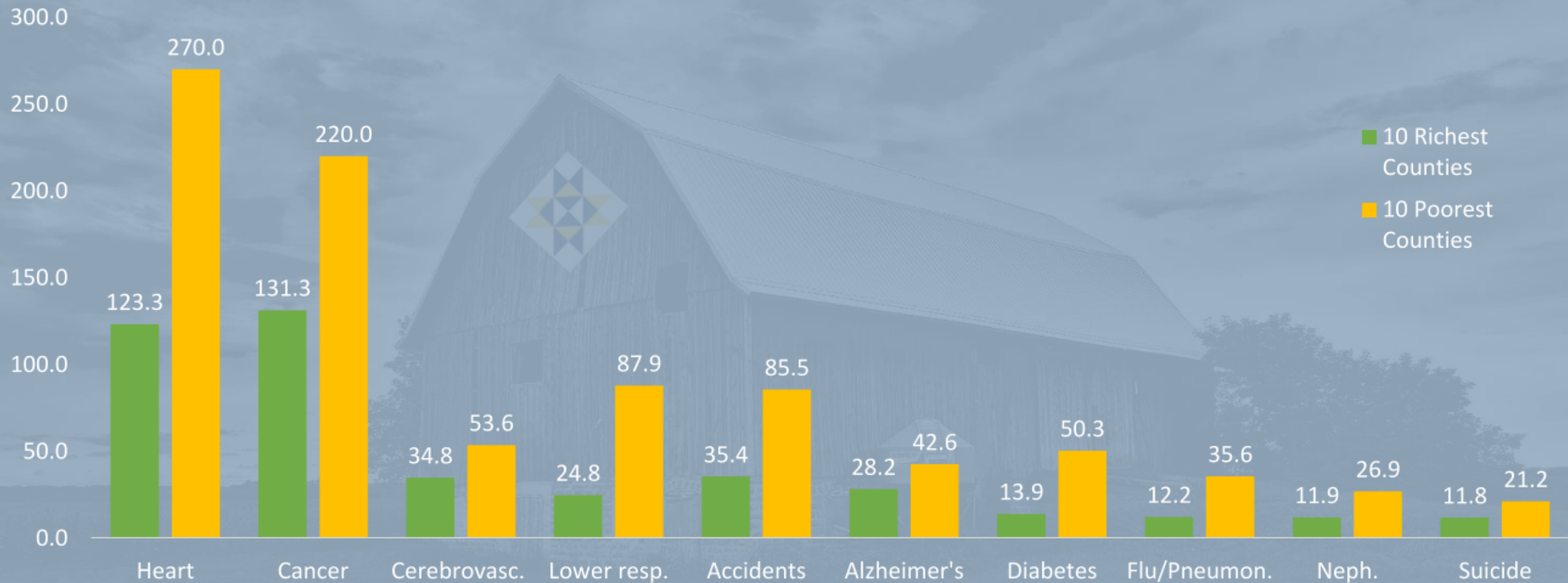


# *Median Household Income: Southeastern States*

Richest 10 Counties			Poorest 10 Counties		
County	State	Median Household Income	County	State	Median Household Income
Loudoun	Virginia	\$142,299	Breathitt	Kentucky	\$27,344
Falls Church City	Virginia	\$127,610	Allendale	South Carolina	\$27,185
Fairfax	Virginia	\$124,831	Emporia City	Virginia	\$27,063
Arlington	Virginia	\$120,071	Clay	Kentucky	\$26,840
Fairfax city	Virginia	\$116,979	Quitman	Georgia	\$26,667
Williamson	Tennessee	\$112,962	Harlan	Kentucky	\$26,478
Stafford	Virginia	\$111,108	Bell	Kentucky	\$26,272
Forsyth	Georgia	\$107,218	Lee	Kentucky	\$25,275
Prince William	Virginia	\$107,132	Wolfe	Kentucky	\$24,623
Alexandria City	Virginia	\$100,939	Clay	Georgia	\$22,325



# Leading Causes of Death: Southeastern States



CDC WONDER, Underlying Cause of Death, 2015-2019

All ages, rates are per 100,000 population

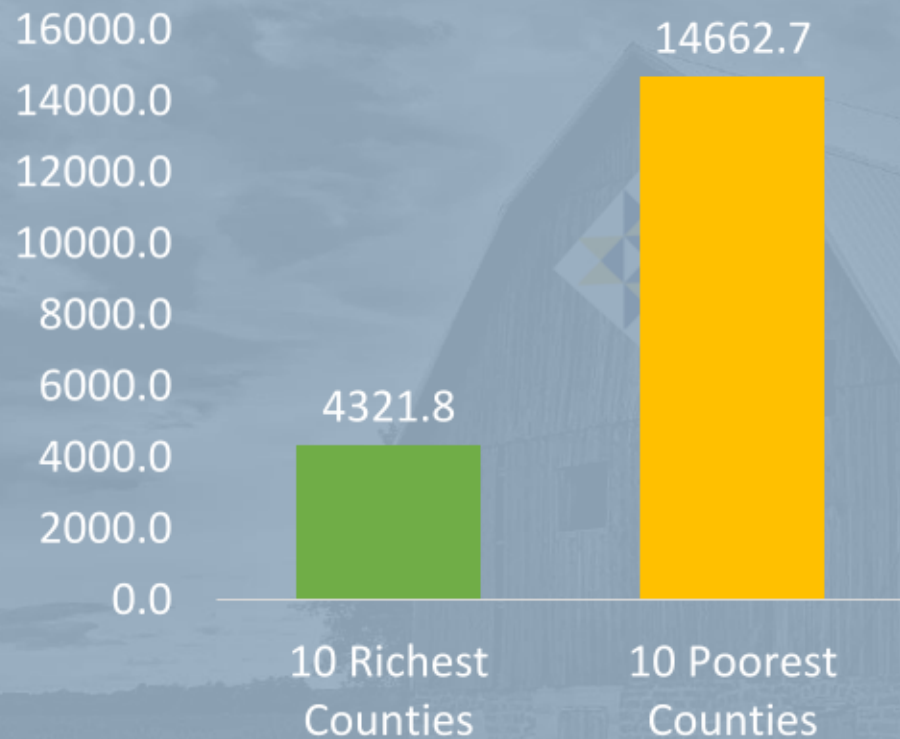
NOTE: for each cause of death, mortality rates for one or more of the counties included were unreliable or suppressed; the 10 highest and lowest income counties with data available are presented.



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# Premature Death (YPLL): Southeastern States

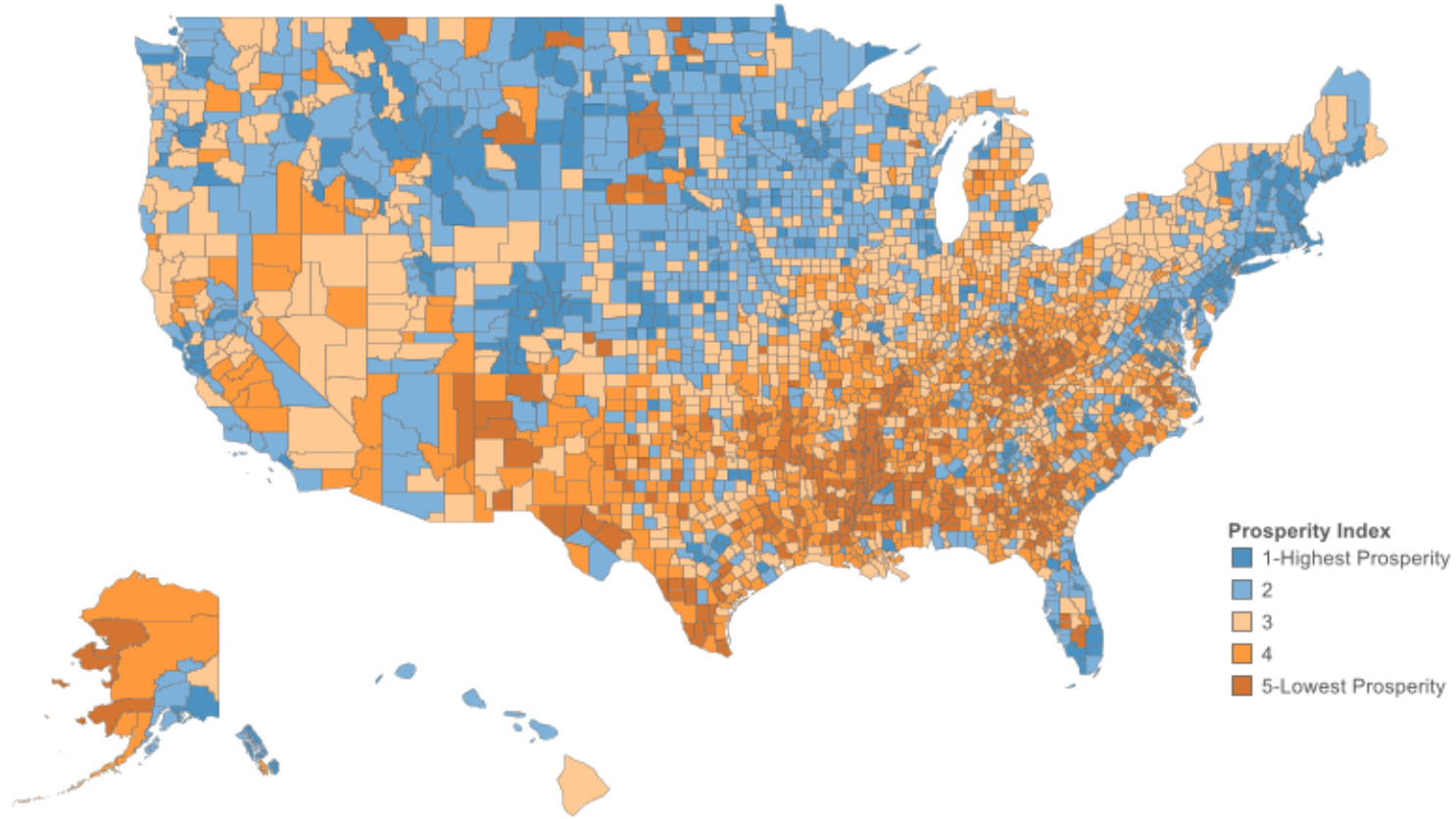


**The YPLL from premature death before age 75 per 100,000 population among the Southeastern States' poorest counties is 3.4 times to that of the richest counties**



# Map of Prosperity Index Scores

## Overall Prosperity Index



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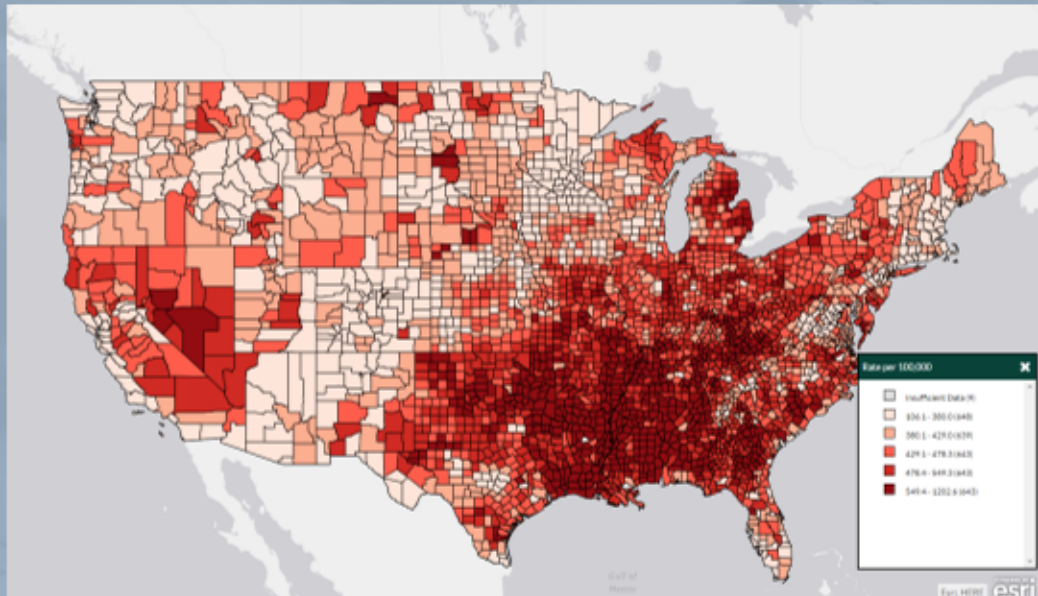
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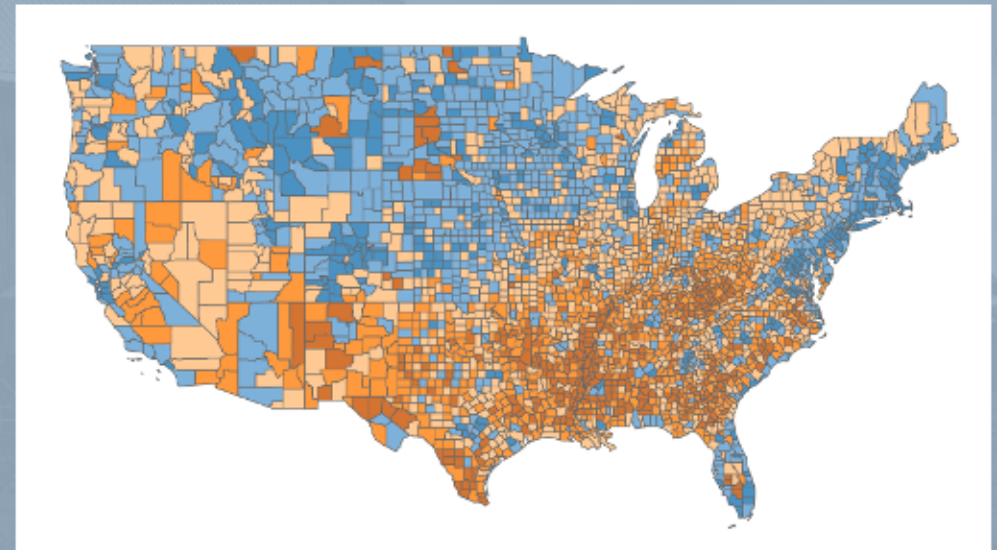
# Prosperity Index vs. Cardiovascular Disease

## Cardiovascular Disease Mortality



Source: CDC Interactive Atlas of Heart Disease and Stroke.

## Prosperity Index



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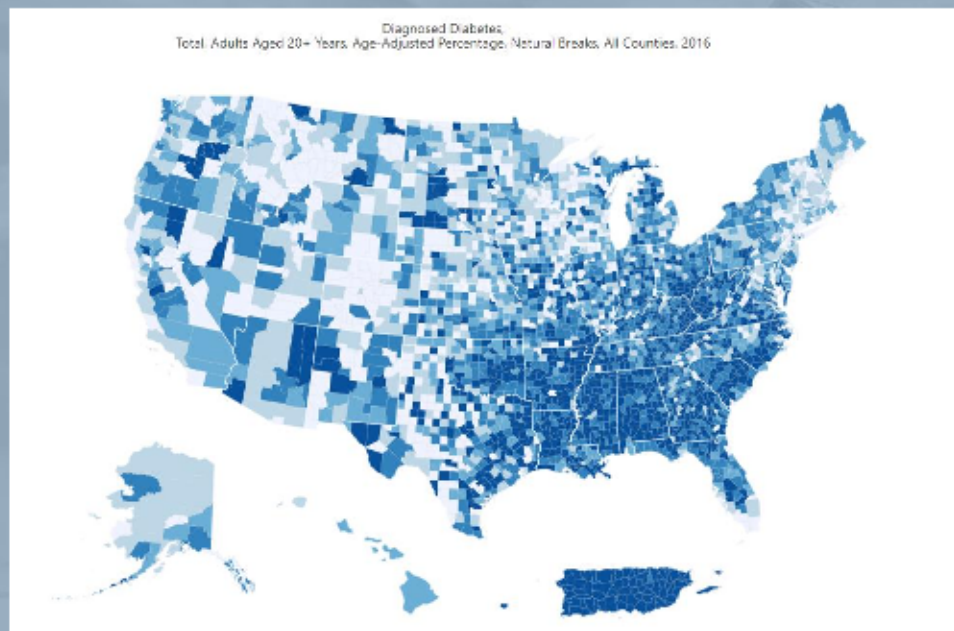


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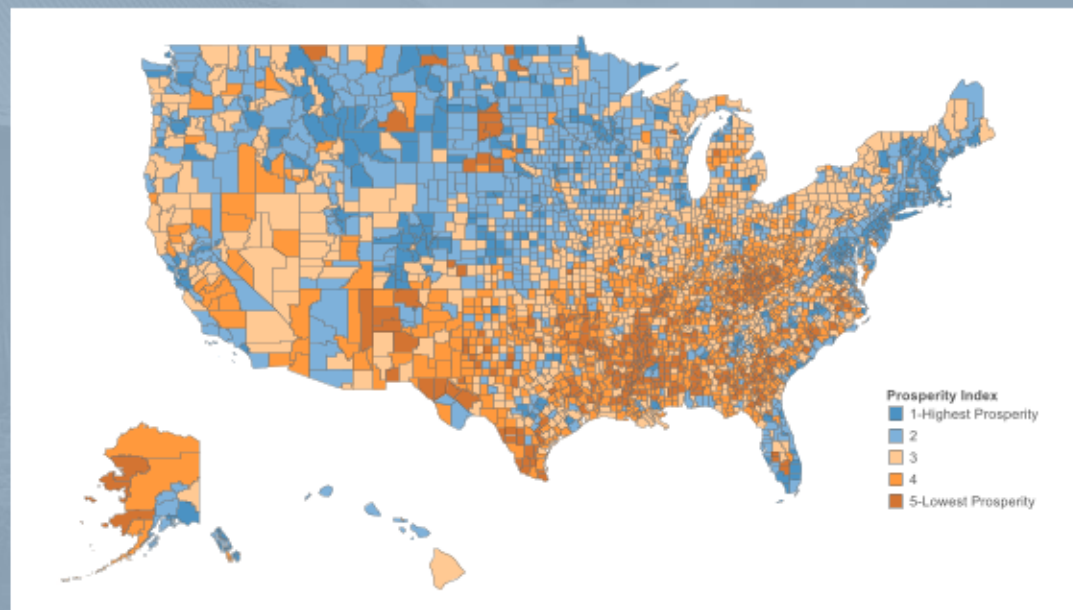
# Prosperity Index vs. Diabetes

## Diabetes Prevalence



Source: CDC Diabetes Atlas.

## Prosperity Index



Prosperity Index  
1-Highest Prosperity  
2  
3  
4  
5-Lowest Prosperity



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# Rural Strengths and Assets



To Your Health

## An addiction crisis along 'the backbone of America'

By Joel Achenbach December 30, 2016

Health & Science

## U.S. life expectancy declines for the first time since 1993

By Lenny Bernstein December 8, 2016

Health & Science

## No longer 'Mayberry': A small Ohio city fights an epidemic of self-destruction

By Joel Achenbach December 29, 2016

National

## Life lessons from a small-town undertaker as white women die younger in America

By Terrence McCoy August 20, 2016

### Orphaned by America's opioid epidemic

After losing their parents to overdoses, three children in West Virginia confront what it means to grow up in the midst of one of the country's biggest public health crises.



Danielle Rindler, Eli Saslow and Bonnie Jo Mount | National | Dec 17, 2016



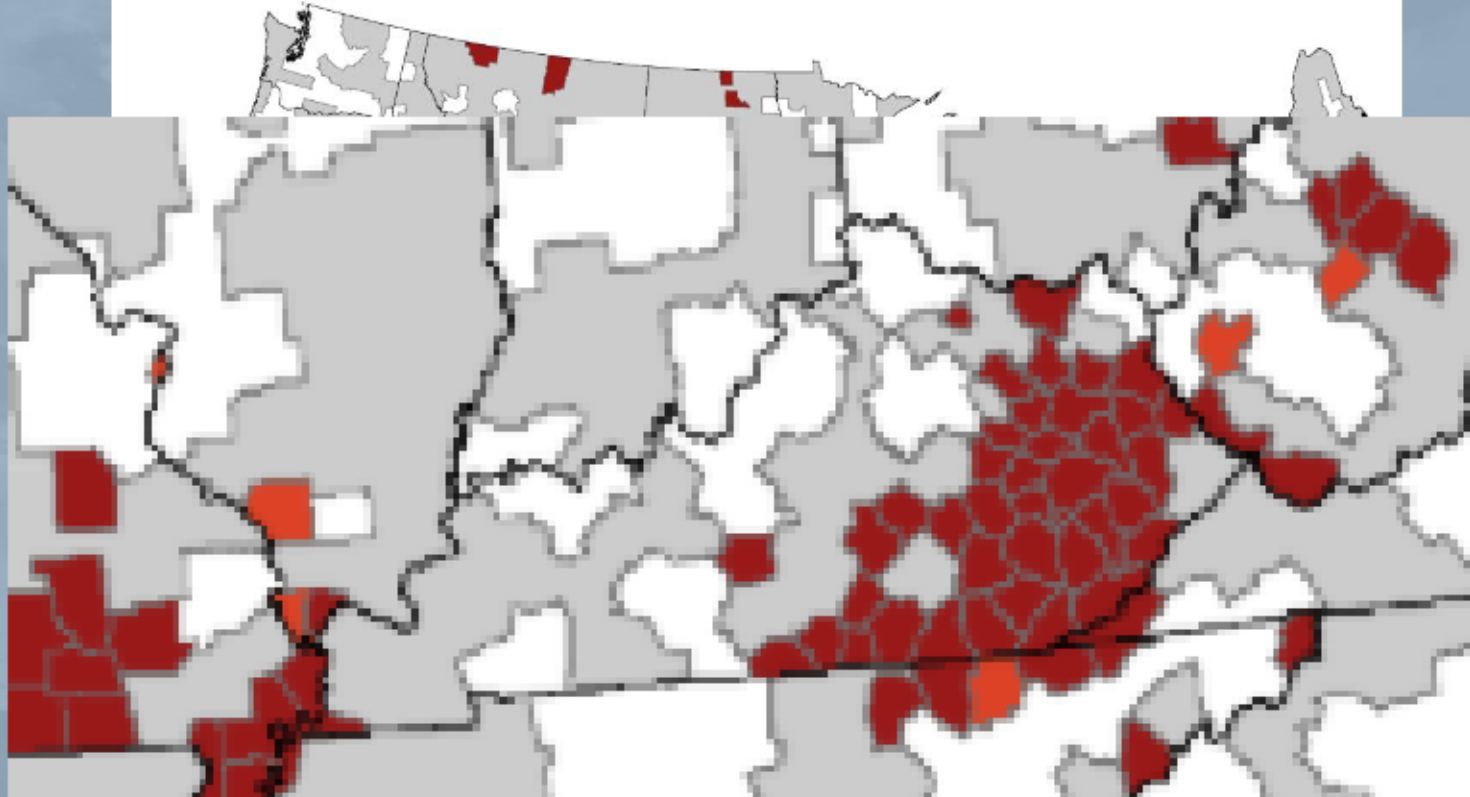
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# Leveraging Strengths & Assets: A Real-World Example

Persistent poverty counties, 2015 edition



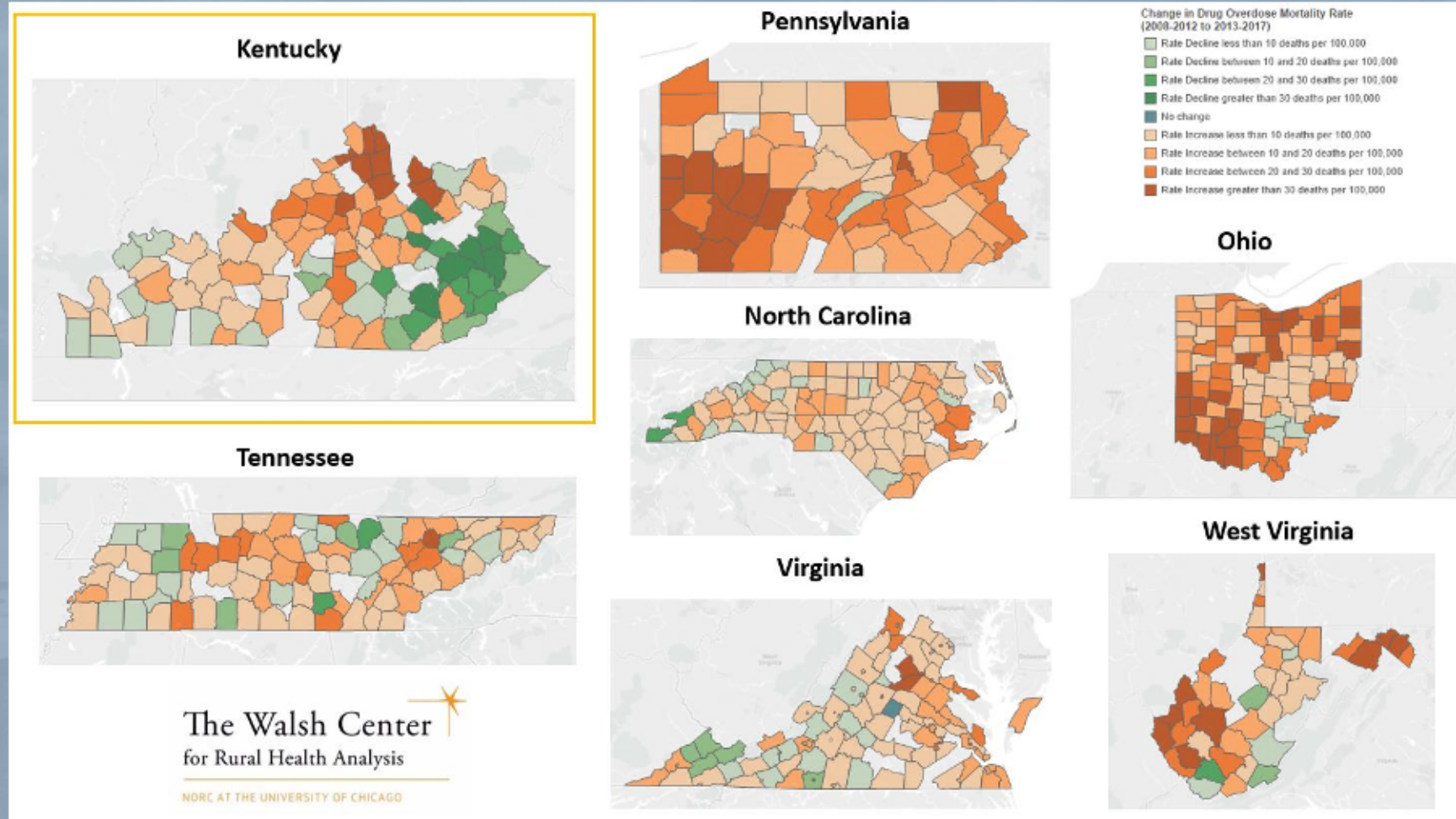
Persistent poverty counties are those where 20 percent or more of county residents were poor, measured by the 1980, 1990, 2000 censuses, and the 2007-11 American Community Survey.

Note that county boundaries are drawn for the persistent poverty counties only.

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



# Leveraging Strengths & Assets: A Real-World Example



# Leveraging Strengths & Assets: A Real-World Example

County	Drug Overdose Mortality Rate (2013-2017) <sup>^</sup>	Decline in Drug Overdose Mortality Rate between 2013-2017 and 2008-2012
Clay County	29.5 deaths per 100,000	-52.2 deaths per 100,000
Johnson County	38.8 deaths per 100,000	-49.7 deaths per 100,000
Floyd County	73.8 deaths per 100,000	-34 deaths per 100,000
Magoffin County	35.6 deaths per 100,000*	-32.8 deaths per 100,000
Breathitt County	46.4 deaths per 100,000	-32 deaths per 100,000
Bath County	44.2 deaths per 100,000*	-30.7 deaths per 100,000
Powell County	70.1 deaths per 100,000	-30.4 deaths per 100,000
Letcher County	46.3 deaths per 100,000	-28.8 deaths per 100,000



# Leveraging Strengths & Assets: A Real-World Example

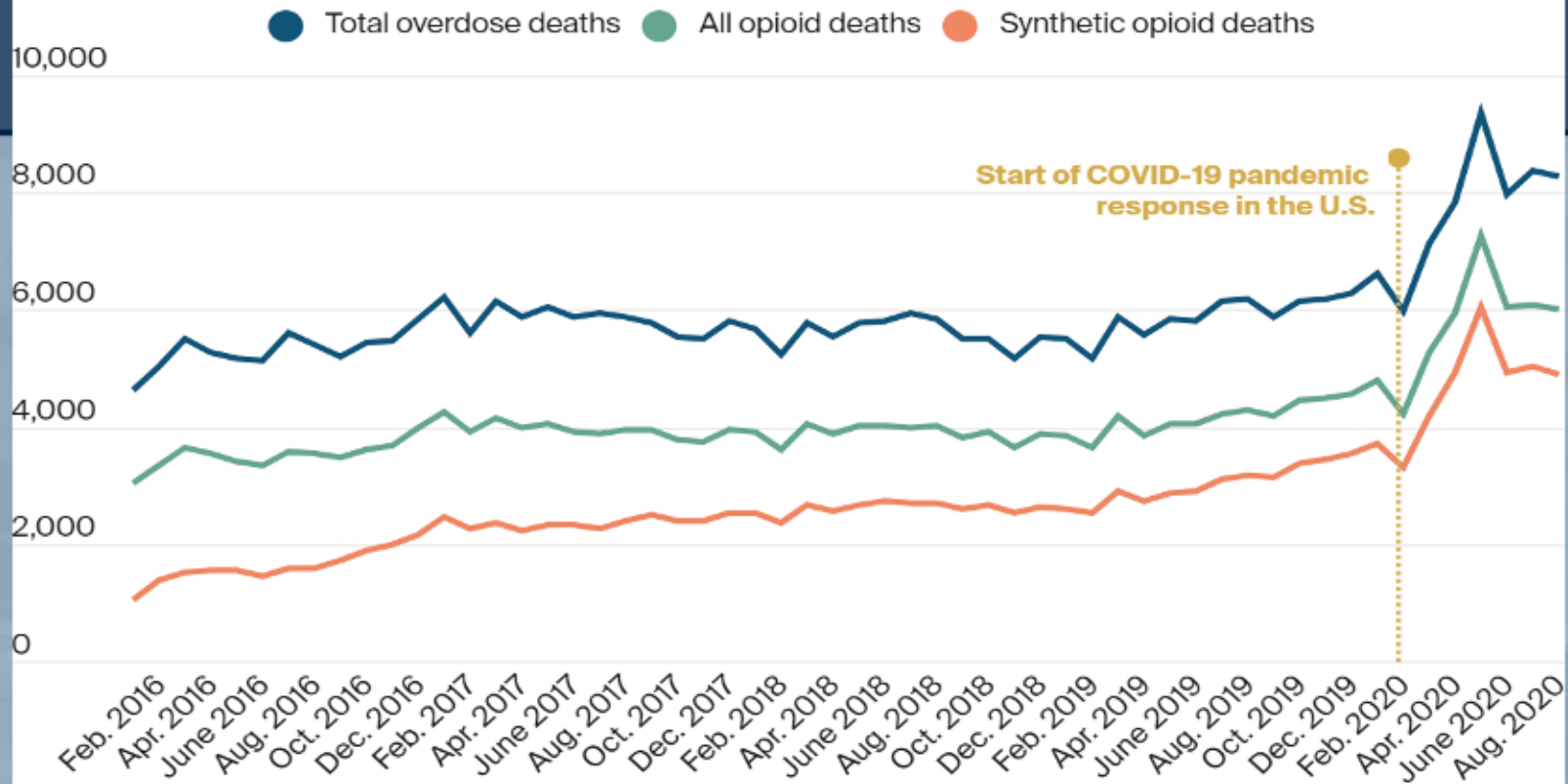
- Themes for why drug overdose mortality is declining in Eastern Kentucky
  - Increased access to treatment
  - Recovery community and initiatives (i.e., recovery housing, second chance employment)
  - Changing approach of the criminal justice system
  - Harm reduction
  - Reduced stigma
  - Partnerships, community coalitions, and longstanding commitment to addressing substance use
  - Primary prevention and education
  - Shifts in drug use patterns (i.e., increasing use of methamphetamine)

**BUT, ground is being lost due to COVID-19**





## Monthly drug overdose deaths



Note: Synthetic opioid deaths exclude those from methadone. Specific drug-class deaths are not mutually exclusive.

Data: Final 2016–2019 monthly totals: CDC WONDER; Estimated 2020 monthly totals: Calculations based on National Vital Statistics System [Provisional Drug Overdose Death Counts](#), CDC WONDER.

Source: Jesse C. Baumgartner and David C. Radley, "The Spike in Drug Overdose Deaths During the COVID-19 Pandemic and Policy Options to Move Forward," *To the Point* (blog), Mar. 25, 2021. <https://doi.org/10.26099/gyf5-3z49>

# How Many Hospitals Might Convert to a Rural Emergency Hospital (REH)?

George H. Pink, PhD; Kristie W. Thompson, MA; H. Ann Howard, BS; G. Mark Holmes, PhD

PLANNING GRANT APP

TENNESSEE OPPORTUNITY PILOT INITIATIVE  
Transforming Tennessee Together

Table 7: State Location of Converters

State	Number
-------	--------

# ARC's INSPIRE Initiative

## The ARC Recovery Ecosystem Model

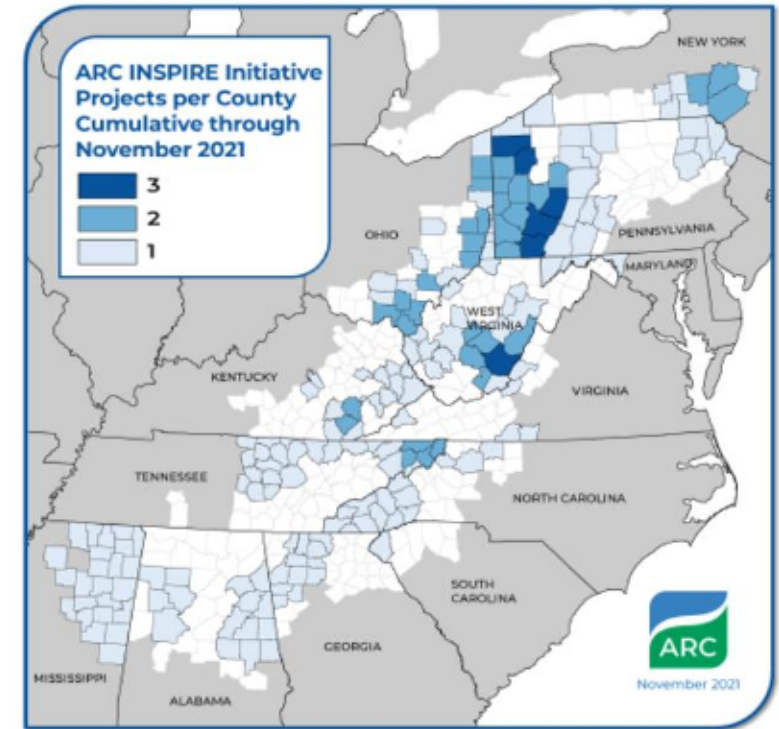


WI	1
WV	1
<b>Total</b>	<b>68</b>

Figure 1

## North Carolina Healthy Opportunities Pilots

# INSPIRE INITIATIVE



LEARN MORE: [arc.gov/SUD](http://arc.gov/SUD)



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