

COVID-19: The Rural Story

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Presentation to Washington University in St. Louis

COVID Social Determinants of Health Working Group

April 26, 2021

IOWA

Department of
Health Management
and Policy



Why Rural in Discussion of Social Determinants?

Rural people are classified by federal agencies as an underserved population

Circumstances in rural include specific social determinants: overcrowded and inadequate housing, transportation to services, low-income populations, racial and ethnic diversity

Quick Overview of Methods

Categories of counties:
metropolitan,
micropolitan, noncore

Sources of data




How we portray the
data

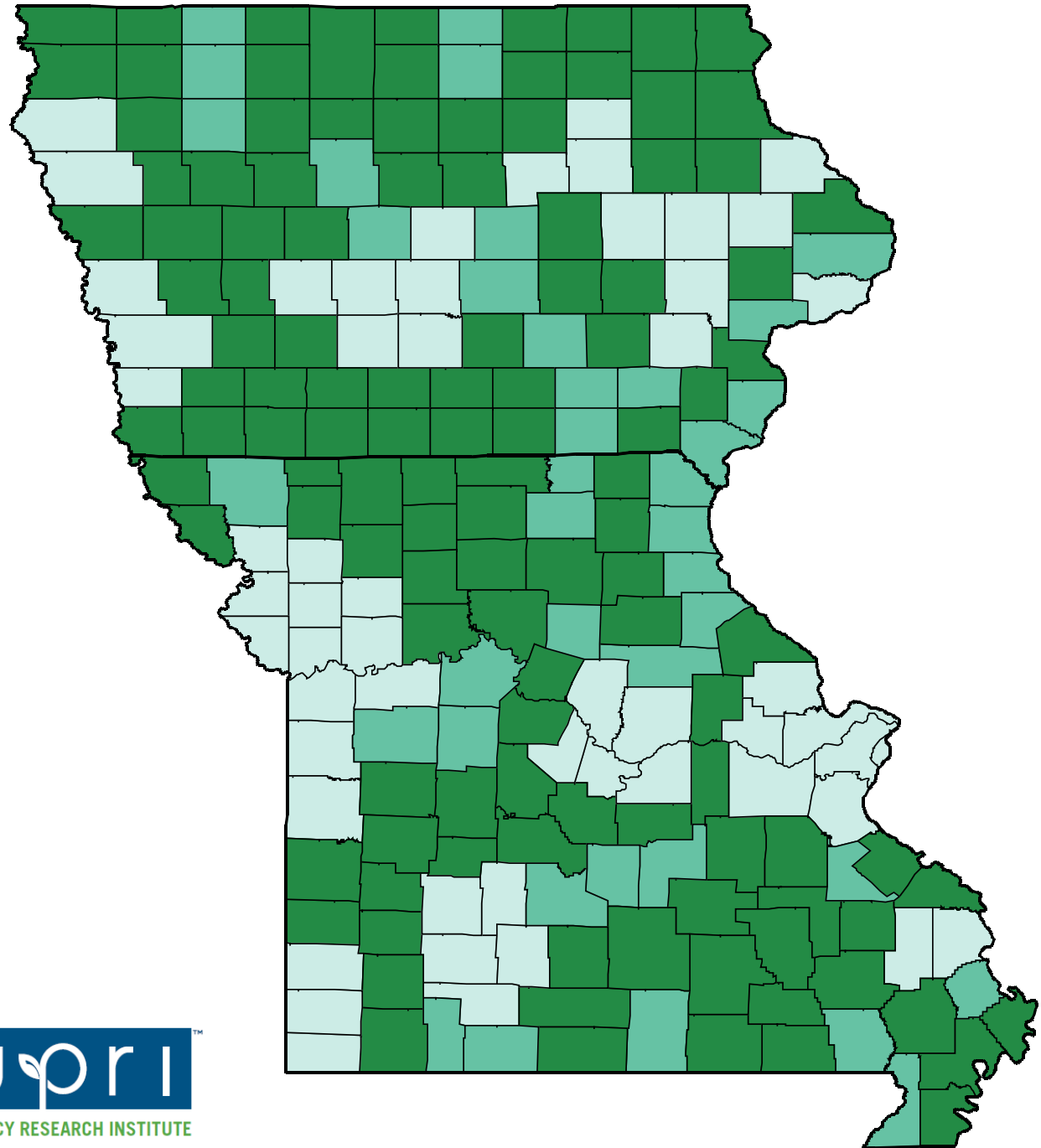


Iowa and Missouri

Metropolitan, Micropolitan, and Noncore Counties

Counties are classified using Urban Influence Codes (UIC) which are based on urban core populations and affiliations of nonurban counties.

-  Counties in a metropolitan area of 50,000 residents or more.
-  Counties in a micropolitan area of 10,000 – 50,000 residents.
-  Counties in a noncore area.



Data Sources

COVID-19 Incidence and Mortality

Johns Hopkins University COVID-19 Data Repository

Population Characteristics

2018 American Community Survey 5-year estimates

Hospital Characteristics

2018 Annual Survey of the American Hospital Association

CMS Hospital Cost Reports

Pharmacy Types and Locations

National Council of Prescription Drug Programs – January 2021

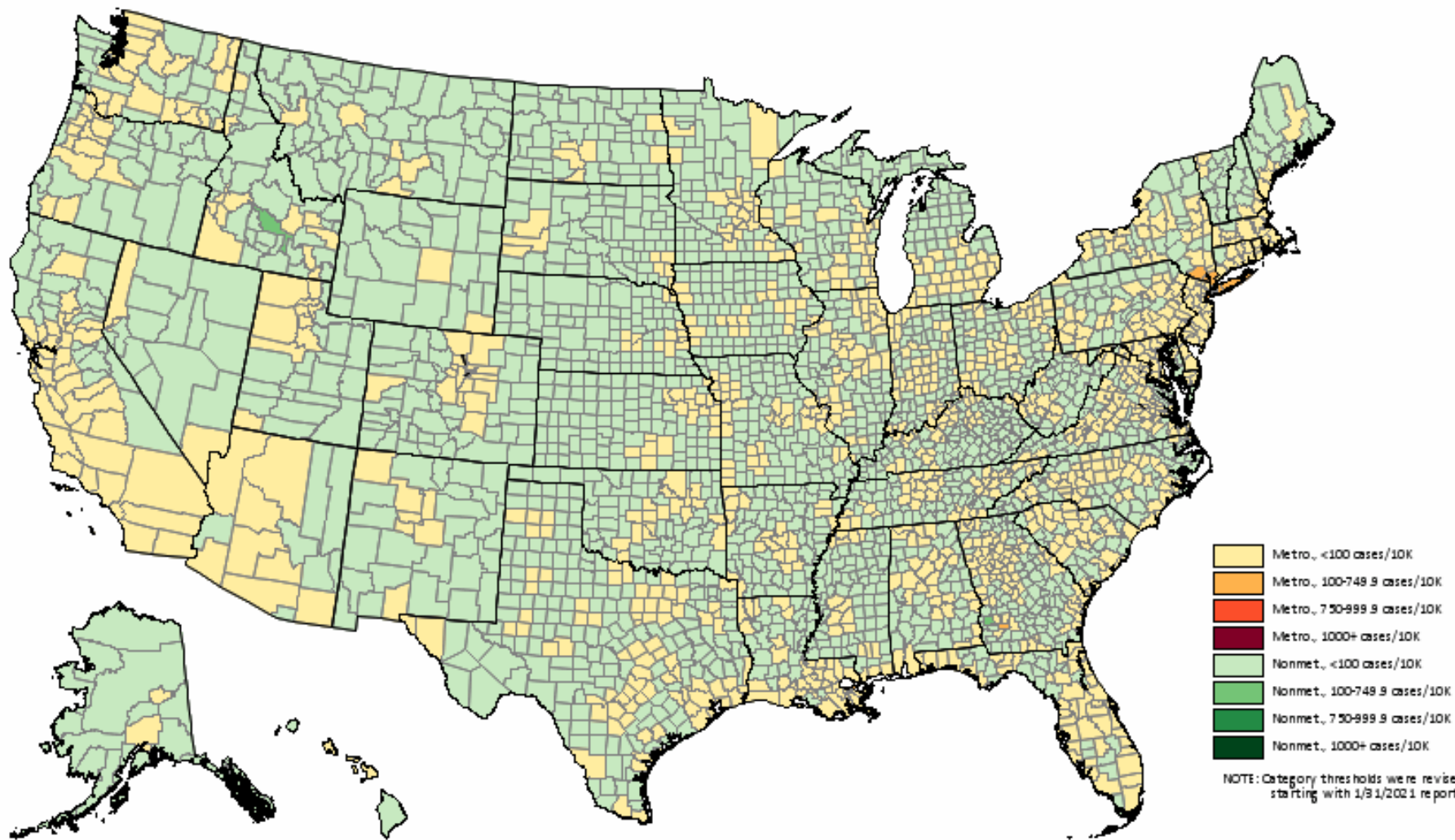


Counties with COVID-19 Cases

April 7, 2020

Metro cases: 391,471 Nonmetro cases: 15,226

*Metro rate: 14.14 Nonmetro rate: 3.30



* Confirmed cases / 10,000 population based on 2018 ACS 5-yr estimates.
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University of Iowa, College of Public Health

Data source: Johns Hopkins University CSSE COVID-19 Data
<https://github.com/CSSEGISandData/COVID-19>

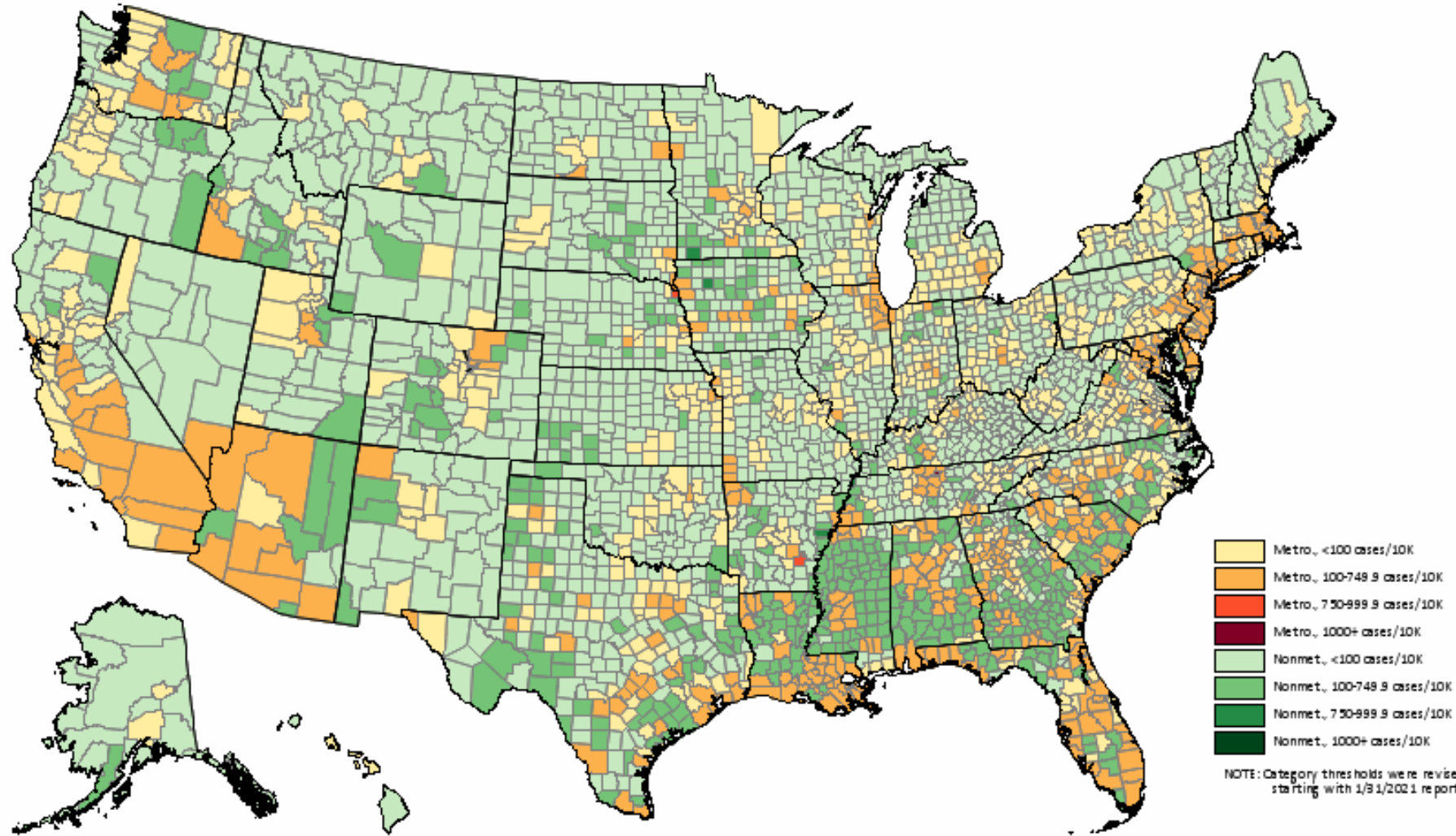


Counties with COVID-19 Cases

July 21, 2020

Metro cases: 3,498,571 Nonmetro cases: 358,124

*Metro rate: 126.38 Nonmetro rate: 77.71



* Confirmed cases / 10,000 population based on 2018 ACS 5-yr estimates.
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Data source: Johns Hopkins University CSSE COVID-19 Data
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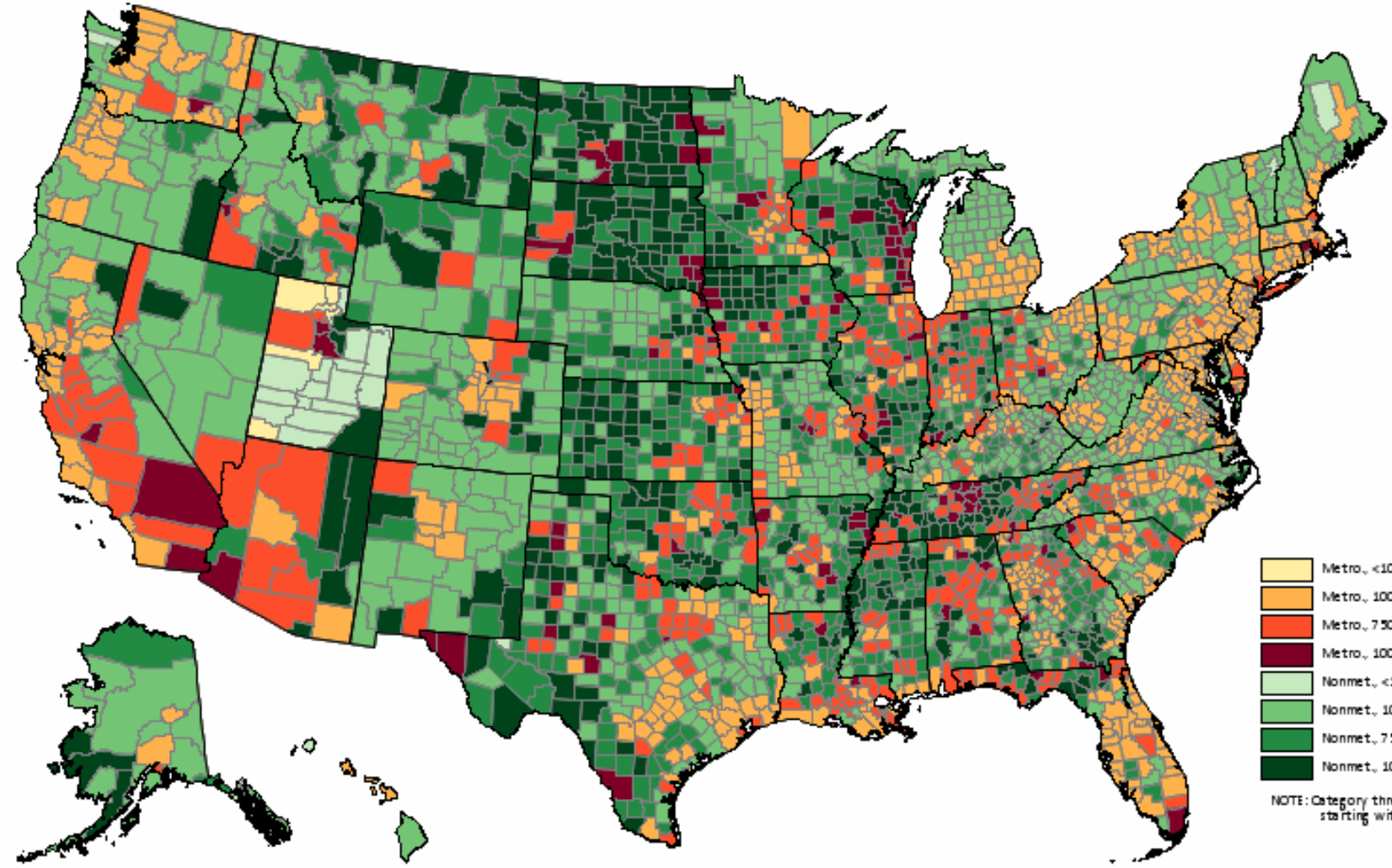


Counties with COVID-19 Cases

January 15, 2021

Metro cases: 19,763,585 Nonmetro cases: 3,462,213

*Metro rate: 713.95 Nonmetro rate: 751.31



- Metro, <100 cases/10K
- Metro, 100-749.9 cases/10K
- Metro, 750-999.9 cases/10K
- Metro, 1000+ cases/10K
- Nonmet, <100 cases/10K
- Nonmet, 100-749.9 cases/10K
- Nonmet, 750-999.9 cases/10K
- Nonmet, 1000+ cases/10K

NOTE: Category thresholds were revised starting with 1/8/2021 report.



* Confirmed cases / 10,000 population based on 2018 ACS 5-yr estimates.
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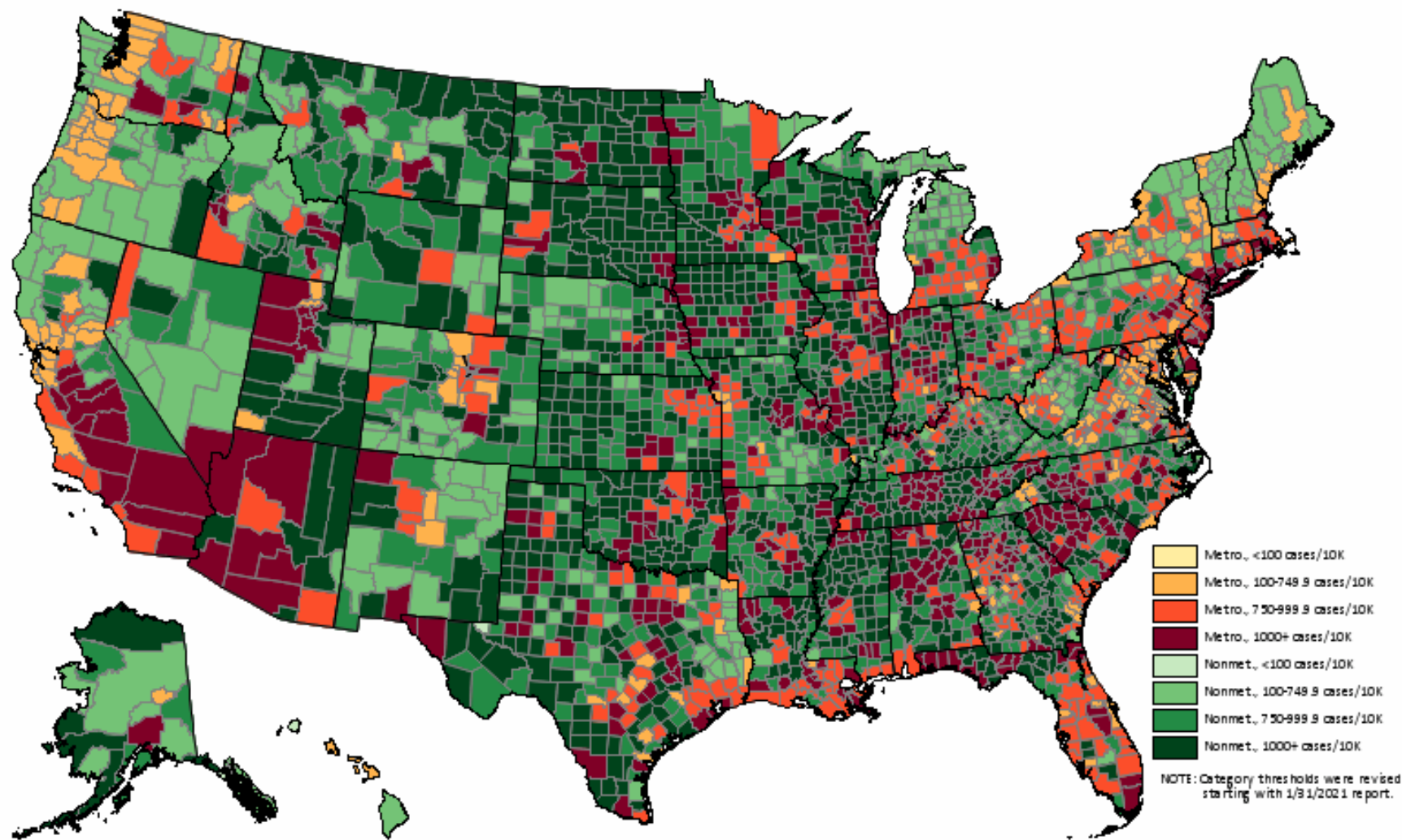


Counties with COVID-19 Cases

April 20, 2021

Metro cases: 26,972,924 Nonmetro cases: 4,468,745

*Metro rate: 974.38 Nonmetro rate: 969.73



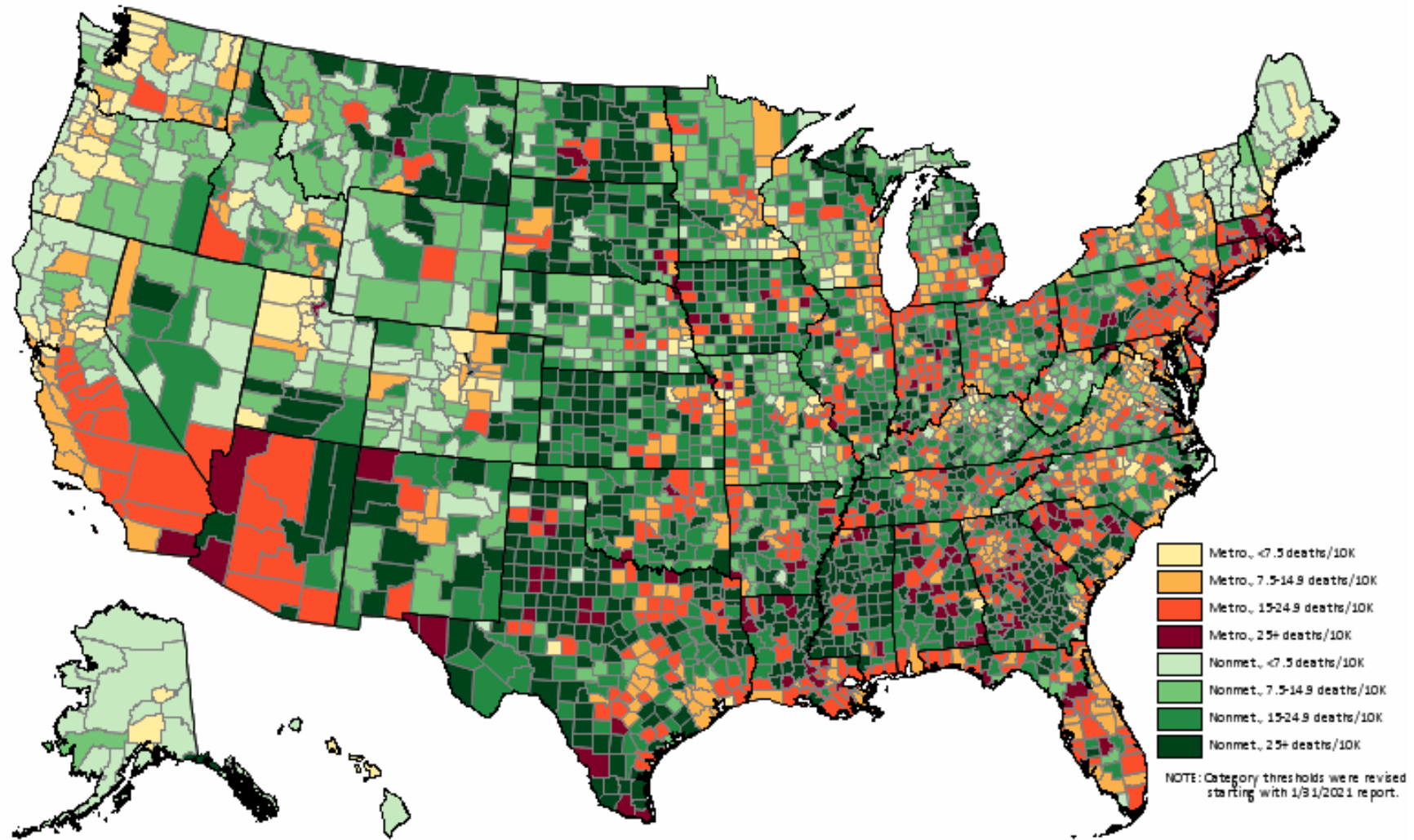


Counties with COVID-19 Deaths

April 20, 2021

Metro deaths: 472,645 Nonmetro deaths: 88,668

*Metro rate: 17.07 Nonmetro rate: 19.24



* Deaths / 10,000 population based on 2018 ACS 5-yr estimates.
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Data source: Johns Hopkins University CSSE COVID-19 Data
<https://github.com/CSSEGISandData/COVID-19>

Learning from Experience: Critical Questions to Ask and Answer

How did (and does) the virus spread in rural places?

What has been (and is) the impact on populations and providers, including effects on persons based on personal characteristics?

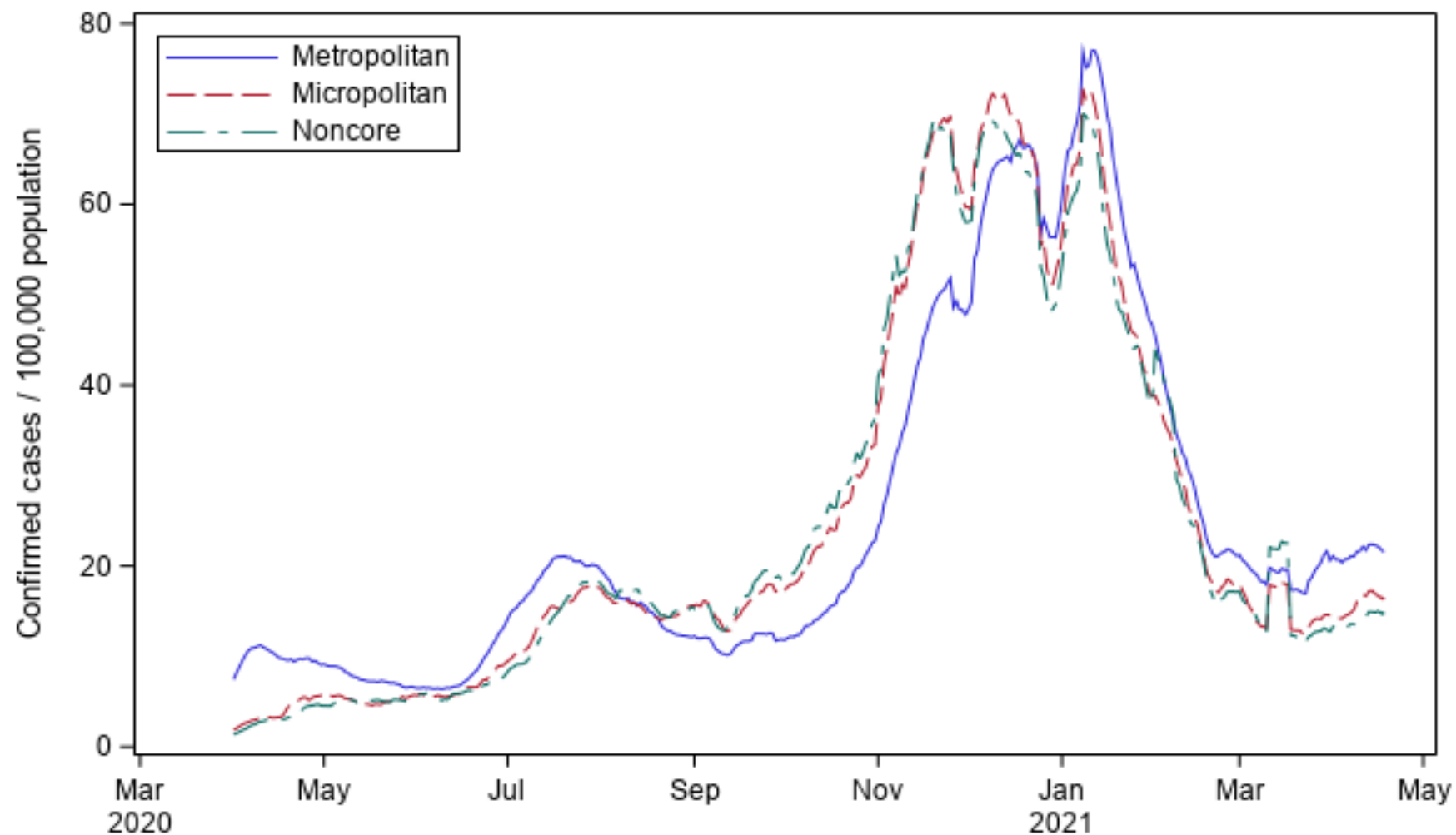
How are rural places bringing the virus under control – vaccination roll out?

What should we learn from the experience of dealing with the pandemic in rural communities?

Spread of the Virus in Rural Counties

COVID-19 Incidence Rates: 7-day moving average

4/1/2020 - 4/18/2021



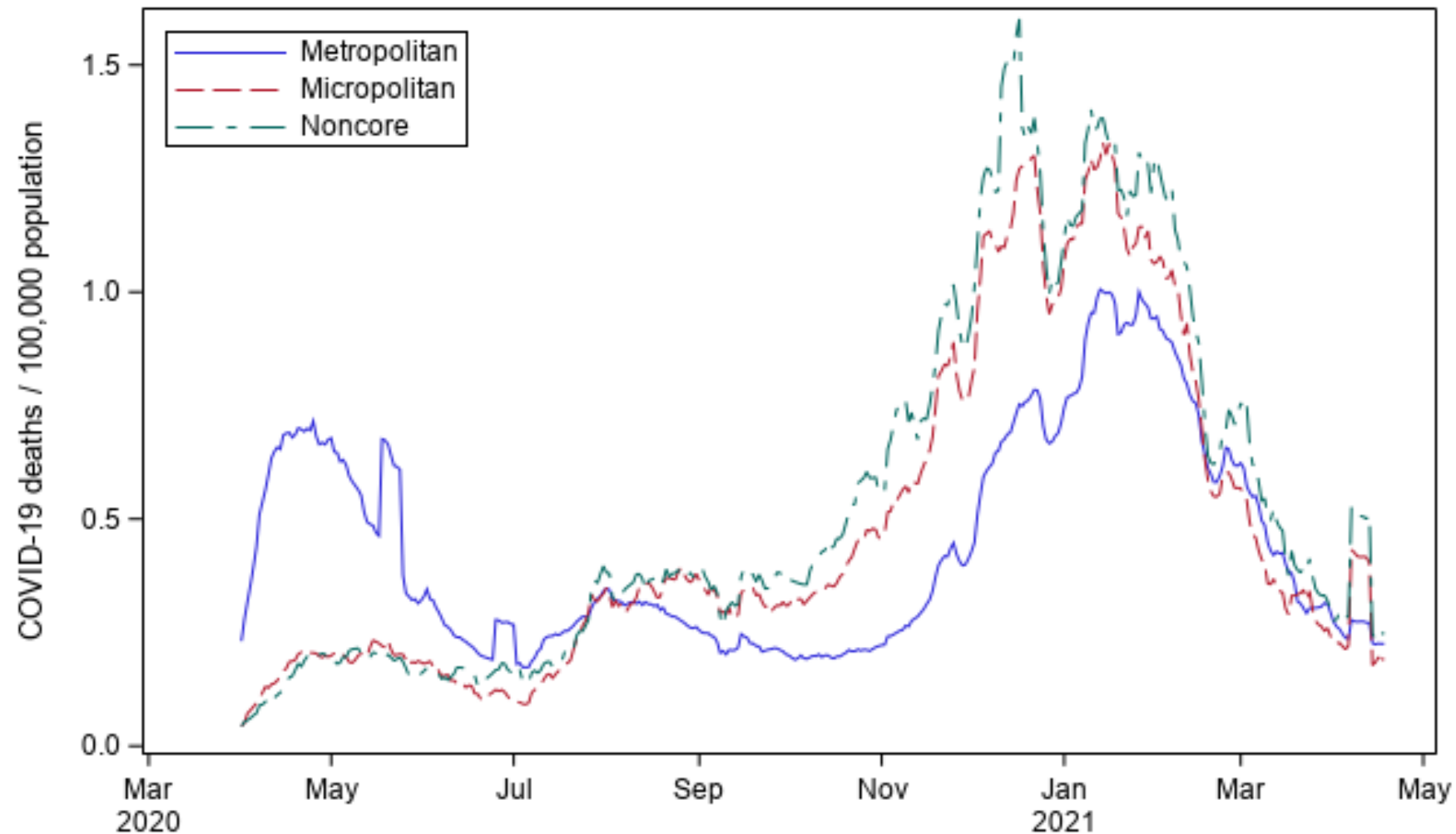
Case counts from Johns Hopkins University CSSE COVID-19 Data
<https://github.com/CSSEGISandData/COVID-19>
Population based on 2018 ACS 5-yr estimates.

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COVID-19 Mortality Rates: 7-day moving average

4/1/2020 - 4/18/2021



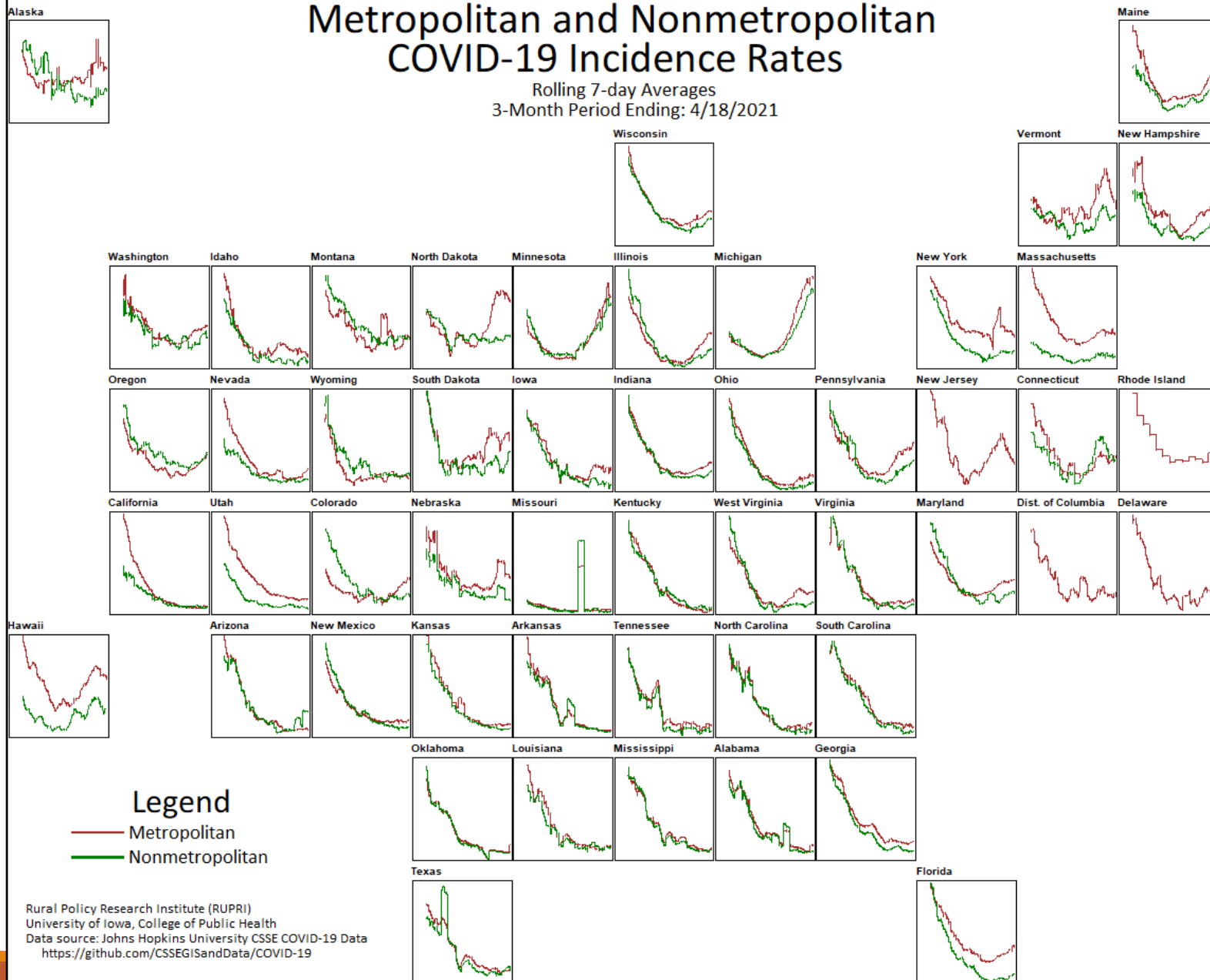
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Metropolitan and Nonmetropolitan COVID-19 Incidence Rates

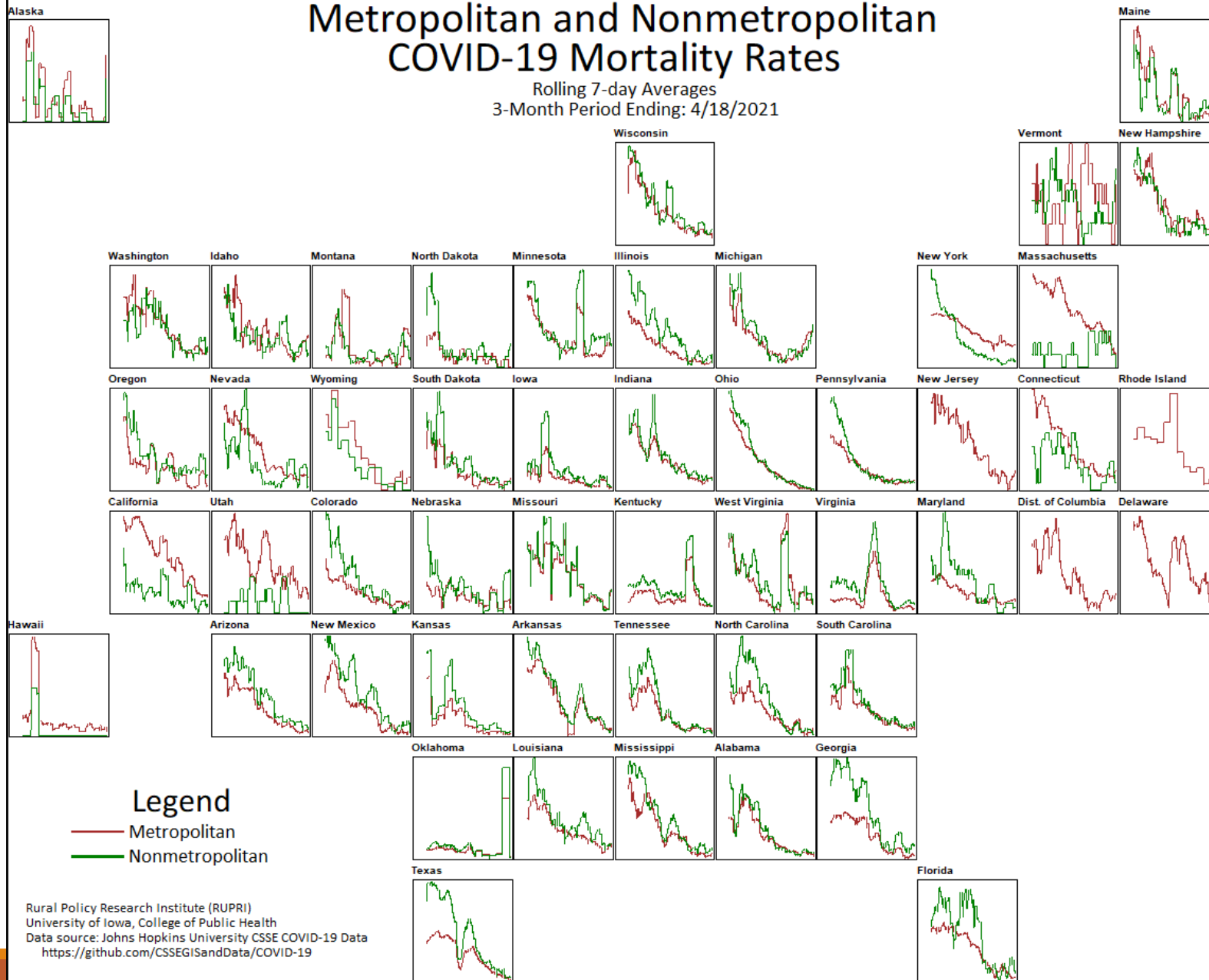
Rolling 7-day Averages
3-Month Period Ending: 4/18/2021





Metropolitan and Nonmetropolitan COVID-19 Mortality Rates

Rolling 7-day Averages
3-Month Period Ending: 4/18/2021



Current Snapshot







Note: On April 17, Missouri removed 11,454 double-counted cases. Because of the way Johns-Hopkins implemented this data change, Missouri data for the most recent week may not show the true picture. The report on the following page is from the two-week period that ended the day before this data change.

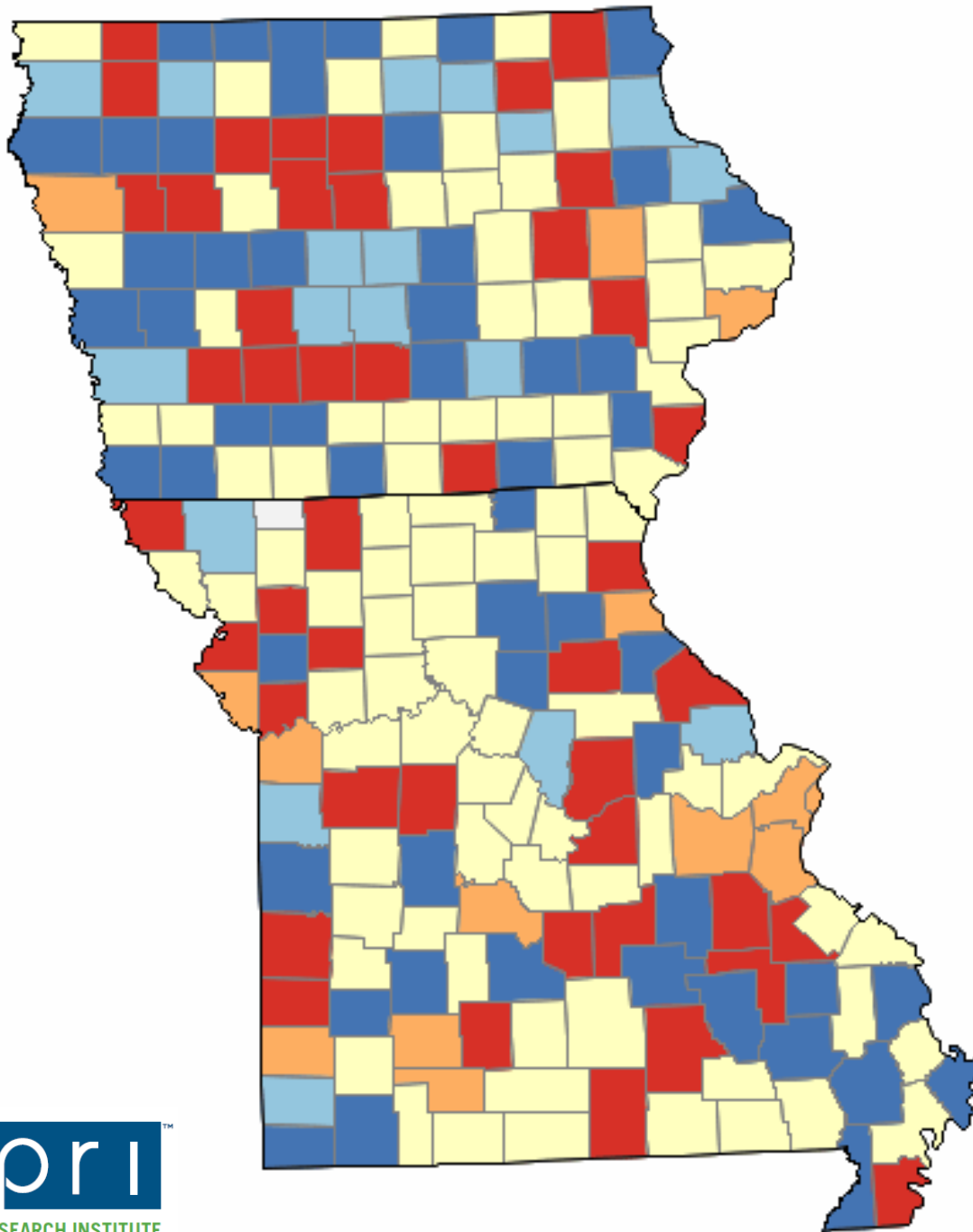




Iowa and Missouri

All County Confirmed COVID-19 Cases
Week-to-Week Count Changes:
4/3/2021 – 4/16/2021

-  No cases reported
-  Decrease, notable
-  Decrease, not notable
-  No change
-  Increase, not notable
-  Increase, notable



Impact on Providers

Initial financial impacts from diverting to handle surge

Financial impact eased with CARES Act and later with return of elective procedures

Do not know the ultimate fall out from that

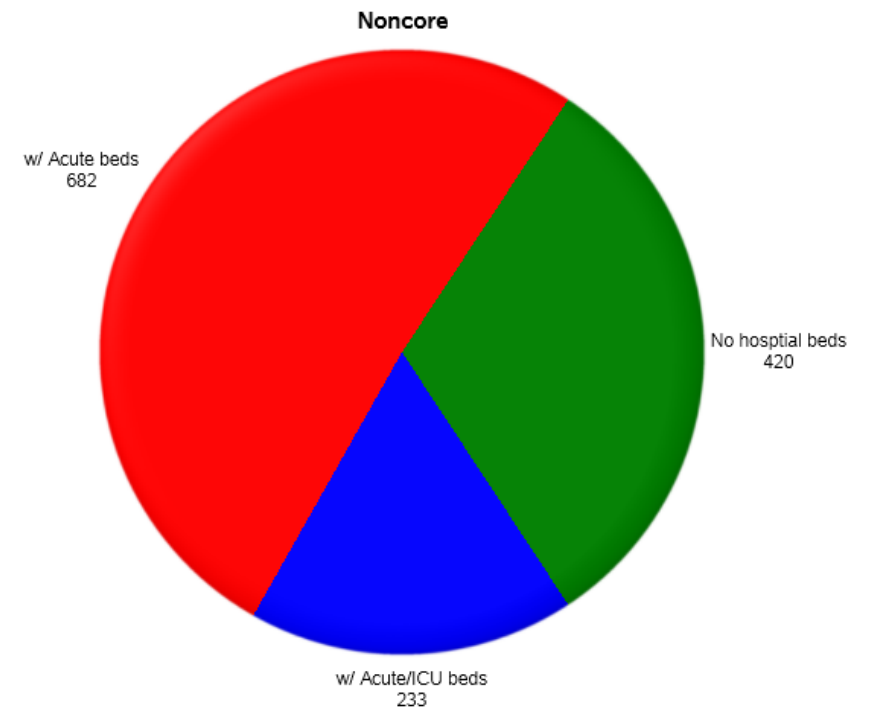
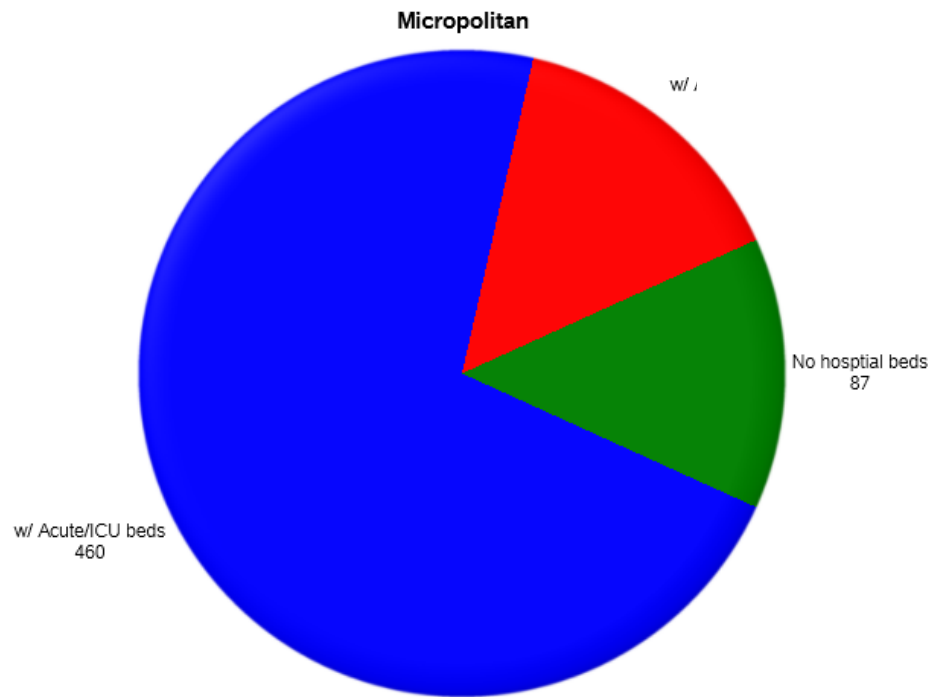
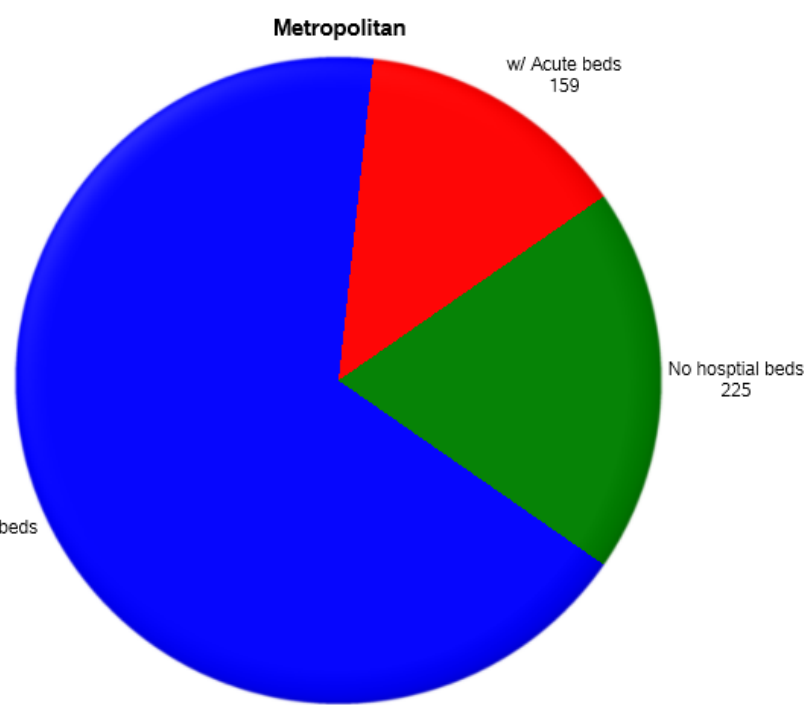
Illustrate the challenge in rural with following slides from 2020 on hospital bed availability in rural counties

COVID-19 and hospital beds

- 1) Proportion of county types with acute care beds and ICU beds.
- 2) Refresher on the three "surges" we've seen
- 3) Cases/bed at each of the three surges, and "today"

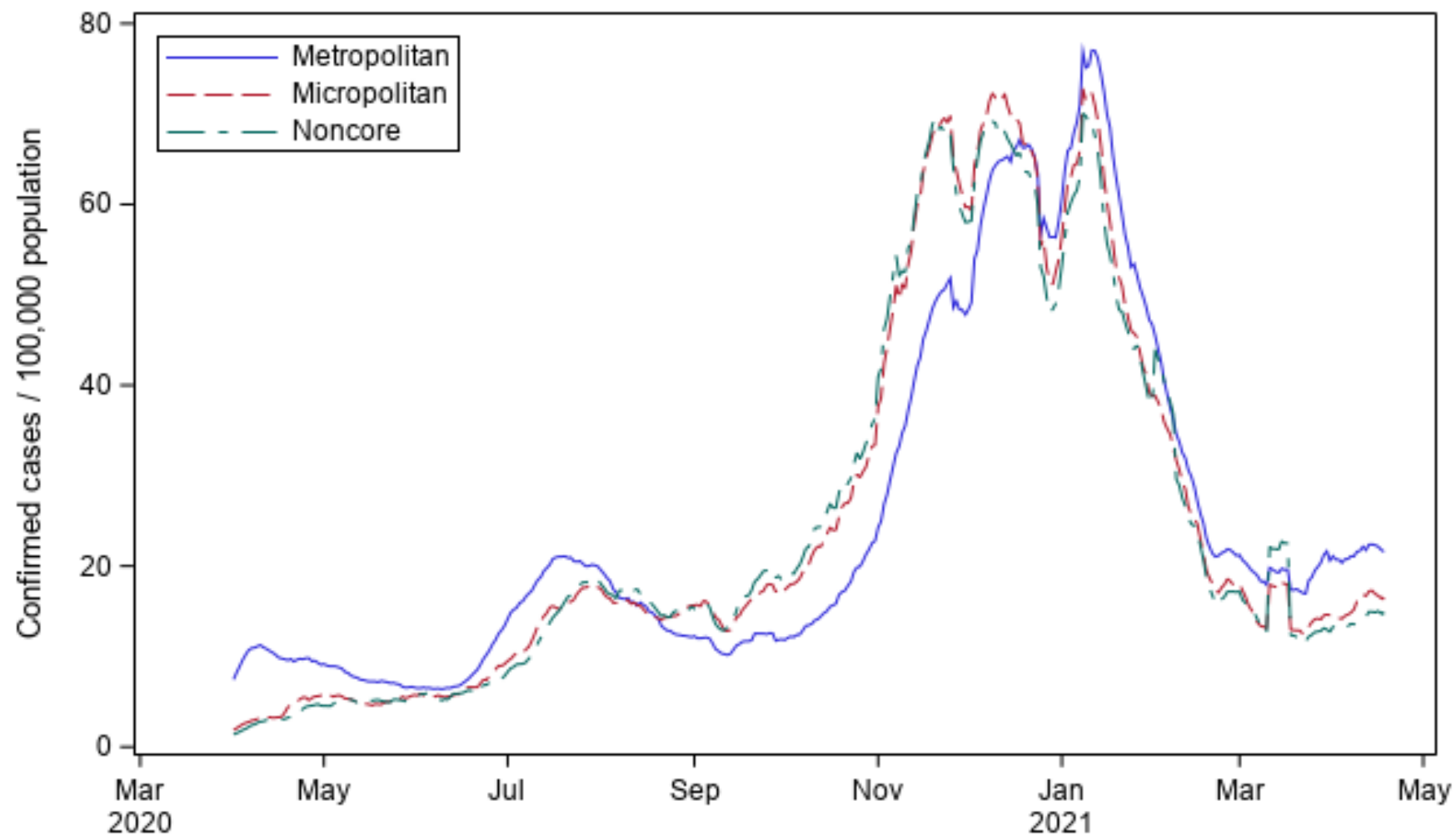


U.S. Counties and Hospital Beds



COVID-19 Incidence Rates: 7-day moving average

4/1/2020 - 4/18/2021



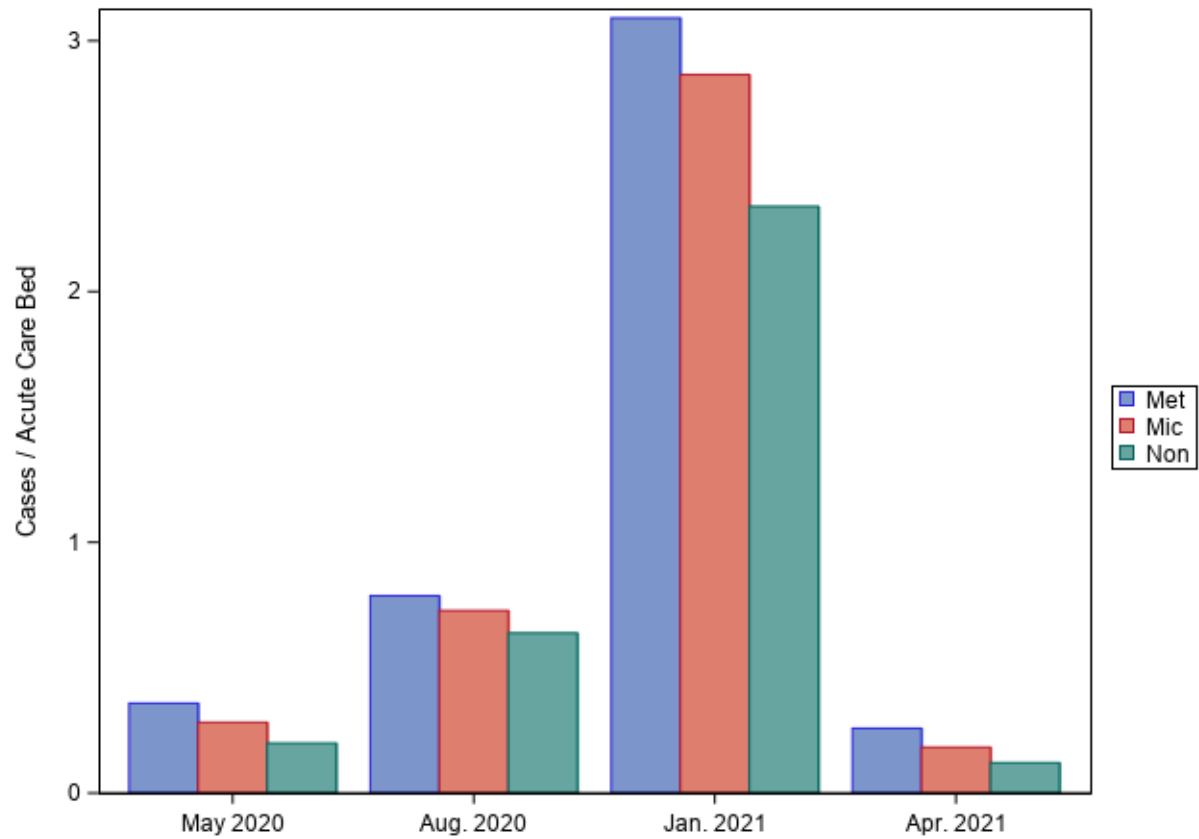
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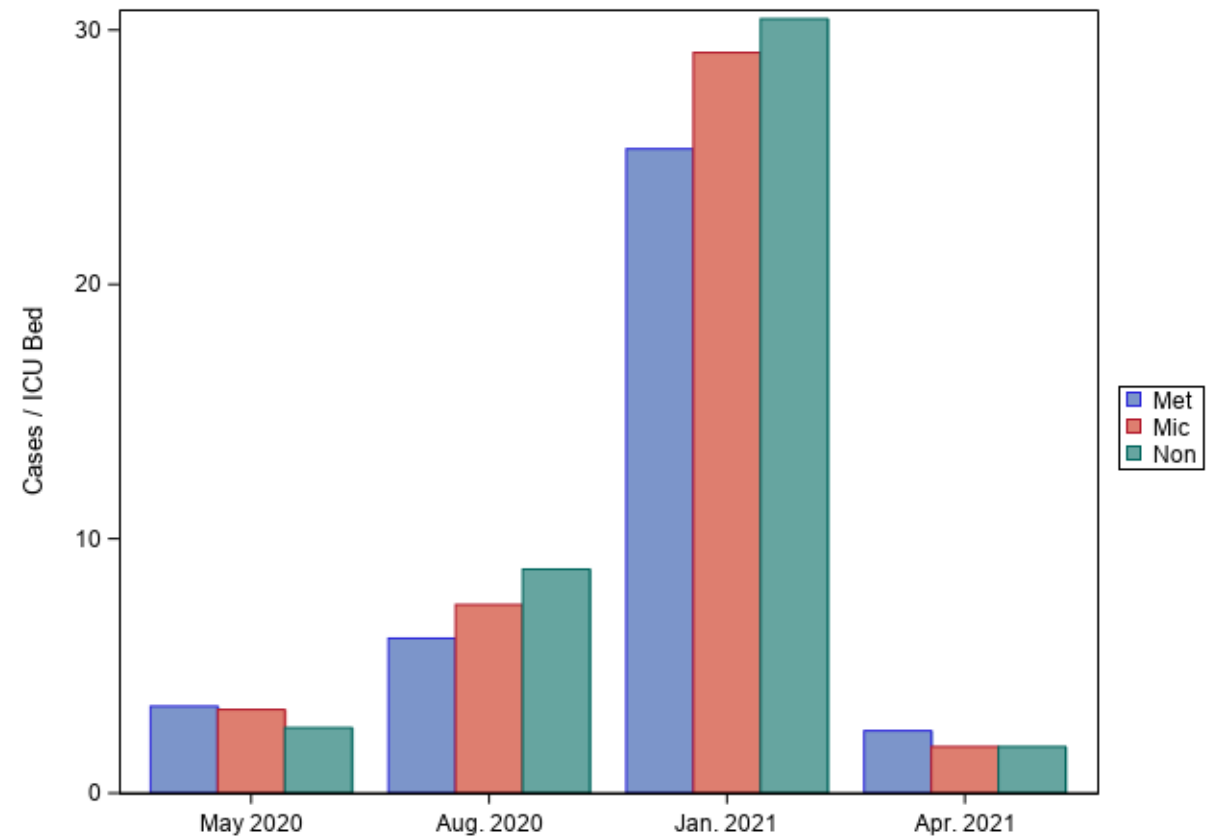




Cases/Acute Bed Rates, by Geography



Cases/ICU Bed Rates, by Geography



Impact on Rural Populations: Where We Saw Particular Hot Spots

Skilled nursing facilities

Populations working in meat processing plants

Counties with interstate truck stops

Places with outbreaks because of particular circumstances (Sturgis motorcycle rally)



Impact on Population Groups: An Early Analysis

County Characteristics at 'Peak' Periods - Counties with Lowest Rates and Highest Rates

Noncore Counties

Population Characteristic / Quintile	April 2020		July 2020		Dec. 2020	
	Lowest	Highest	Lowest	Highest	Lowest	Highest
Percent White	94.3%	80.7%	95.2%	72.5%	92.5%	92.2%
Percent Black or African American	0.6%	8.4%	0.5%	15.5%	0.7%	1.3%
Percent Hispanic	3.3%	2.8%	2.5%	3.7%	3.3%	3.1%
Percent people in group quarters	2.0%	1.9%	2.0%	2.1%	2.0%	1.8%
Median household income	\$48,110	\$41,108	\$48,500	\$39,233	\$48,827	\$42,689
Percent uninsured	9.3%	11.4%	8.9%	12.7%	10.2%	10.3%

Micropolitan Counties

Population Characteristic / Quintile	April 2020		July 2020		Dec. 2020	
	Lowest	Highest	Lowest	Highest	Lowest	Highest
Percent White	92.1%	86.0%	94.0%	75.8%	91.1%	91.0%
Percent Black or African American	1.2%	3.6%	1.0%	12.7%	1.1%	2.2%
Percent Hispanic	3.7%	4.1%	2.4%	6.5%	5.5%	4.2%
Percent people in group quarters	2.1%	2.6%	2.4%	2.4%	1.9%	1.9%
Median household income	\$48,567	\$46,738	\$51,386	\$42,005	\$50,247	\$47,175
Percent uninsured	8.5%	11.1%	6.7%	13.1%	8.3%	9.9%

Metropolitan Counties

Population Characteristic / Quintile	April 2020		July 2020		Dec. 2020	
	Lowest	Highest	Lowest	Highest	Lowest	Highest
Percent White	91.9%	74.0%	90.9%	74.6%	81.6%	87.9%
Percent Black or African American	1.5%	11.8%	2.4%	16.7%	6.8%	4.0%
Percent Hispanic	3.7%	5.9%	4.3%	6.0%	6.3%	3.9%
Percent people in group quarters	1.6%	2.0%	2.3%	1.7%	1.7%	1.9%
Median household income	\$54,506	\$61,518	\$59,285	\$50,681	\$58,526	\$52,112
Percent uninsured	8.1%	7.7%	5.9%	11.5%	7.8%	9.0%

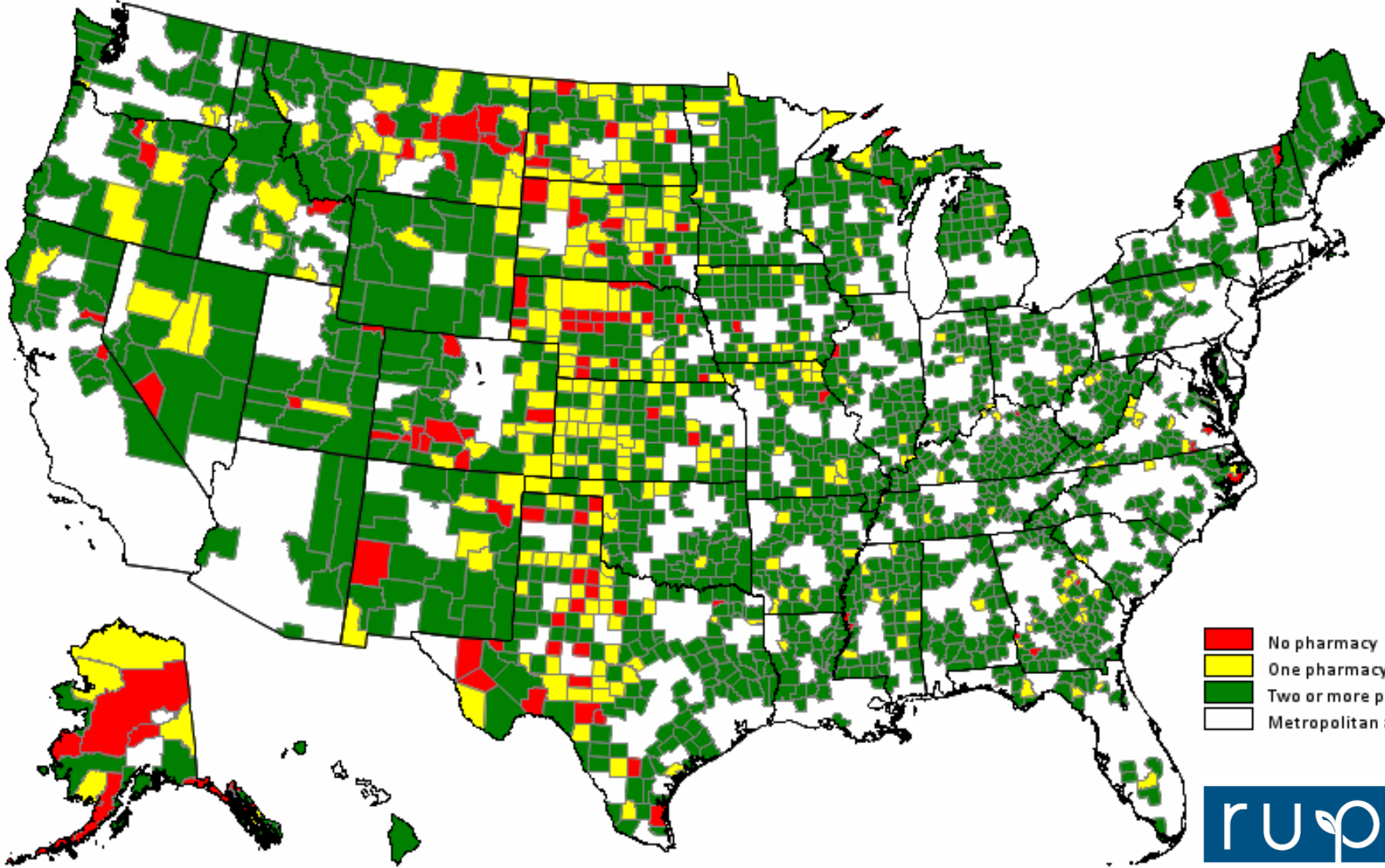
Getting the Pandemic Under Control: Vaccines to the Rural Population



Very mixed picture across states and over time
Contribution from RUPRI related to effective use of pharmacies as an outlet – data on next slide(s)

Nonmetropolitan County Pharmacy Availability

All Retail Pharmacies*



- No pharmacy
- One pharmacy
- Two or more pharmacies
- Metropolitan area

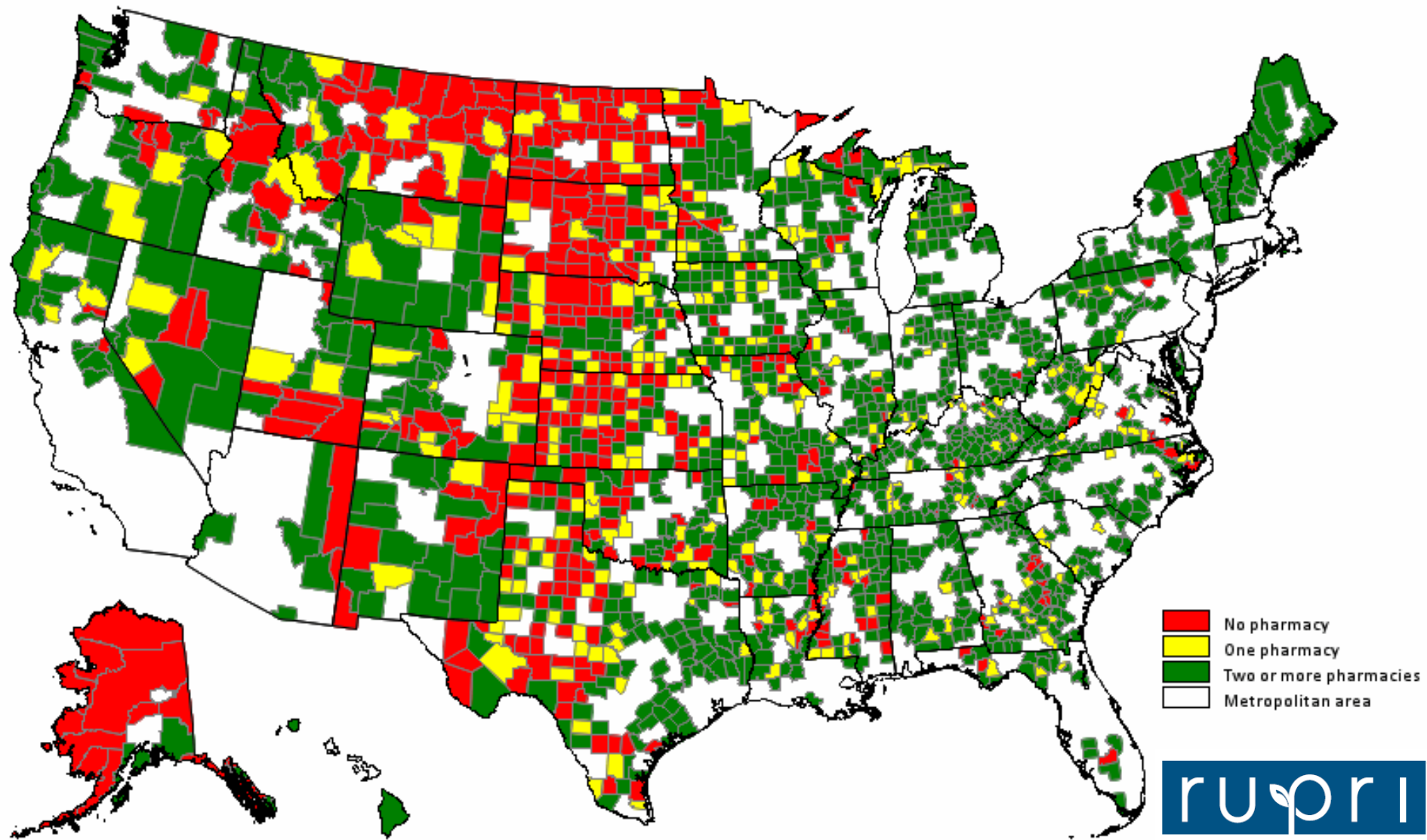


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*Includes independent, chain, franchise, and government pharmacies that provide pharmaceutical medications.
Data source: National Council of Prescription Drug Programs 1/2021

Nonmetropolitan County Pharmacy Availability

'Partner' Chain/Franchise Pharmacies*



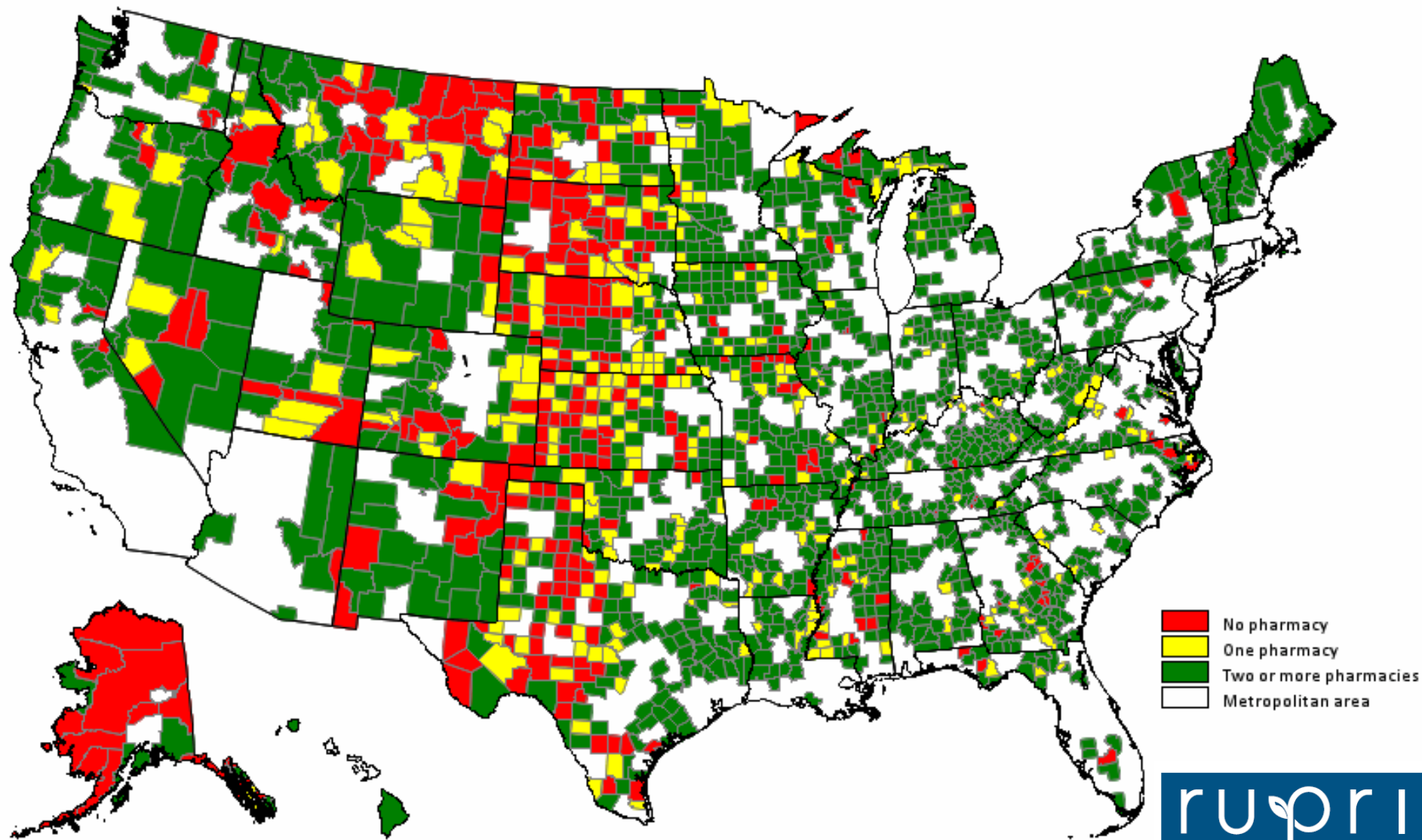
*Includes independent, chain, franchise, and government pharmacies that provide pharmaceutical medications.

Includes only pharmacies affiliated with HHS 'partner' chains/networks.

Data source: National Council of Prescription Drug Programs 1/2021

Nonmetropolitan County Pharmacy Availability

'Partner' or Other Pharmacies with Immunization Service*



*Includes independent, chain, franchise, and government pharmacies that provide pharmaceutical medications.

Includes pharmacies affiliated with HHS 'partners', or other pharmacies that provide immunizations.

Data source: National Council of Prescription Drug Programs 1/2021



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Learning From Our Experience With the Pandemic

How health care providers responded

How a pandemic spreads in rural

Importance of thinking beyond single sites, communities

Importance of thinking of rural people and places differently

For further information

The RUPRI Center for Rural Health Policy Analysis

<http://cph.uiowa.edu/rupri>

The RUPRI Health Panel

<http://www.rupri.org>

Rural Telehealth Research Center

<http://ruraltelehealth.org/>

The Rural Health Value Program

<http://www.ruralhealthvalue.org>

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