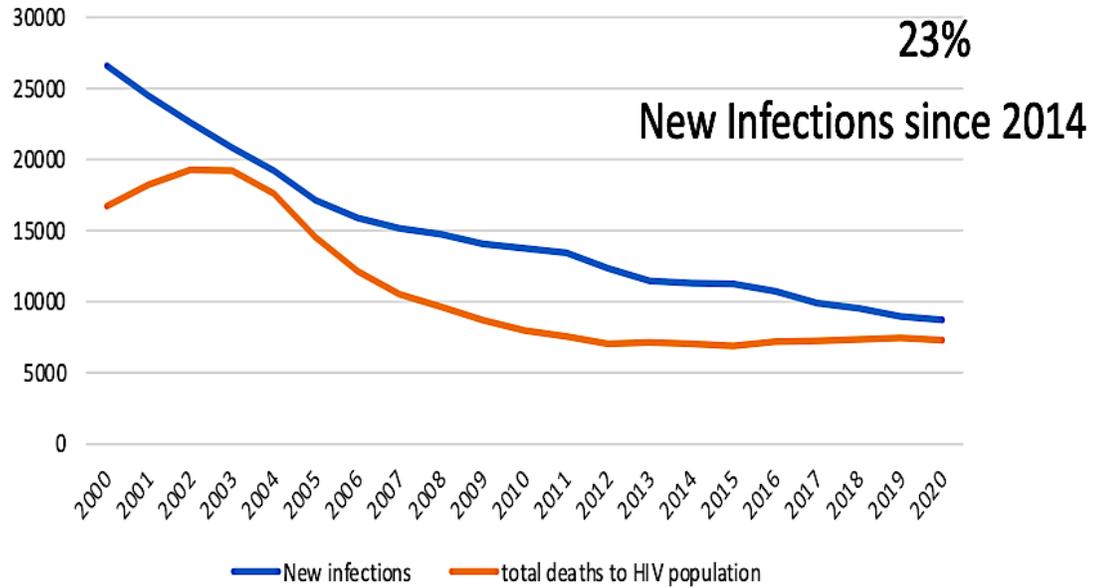


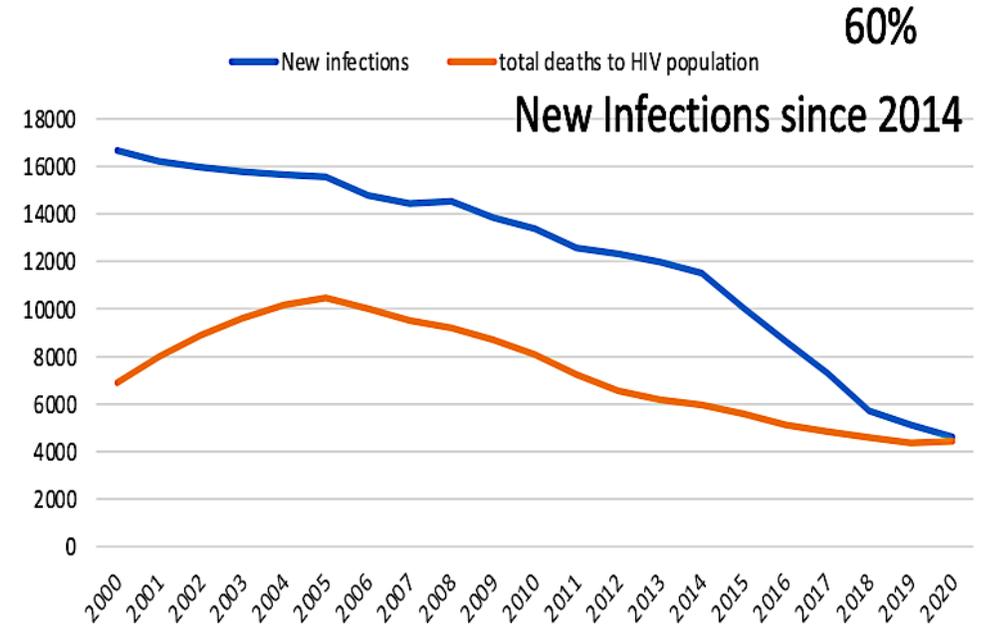
What are we still missing in the COVID-19 response battling pandemics around the globe

- What I learned from being a military doctor for 29 years and a public civil subsequent 11 years and battling pandemics around the globe
- Plans are great but you must adapt and continually change based in data
- Tools are great but the key to changing the outcomes and impact of pand infectious diseases requires
 - clear goals
 - measurable outcomes that are tracked in real time
- Use data in real time to constantly addressing implementation gaps
- Implementation science is core to improving program implementation
- Behavioral science research is core to understanding structural barriers
- Listening, planning and funding peer outreach and community leadership

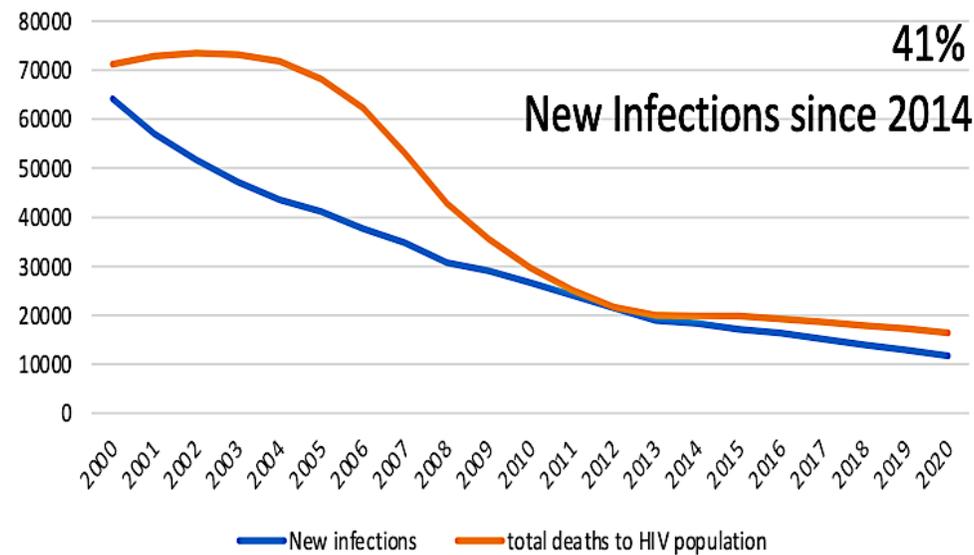
Botswana



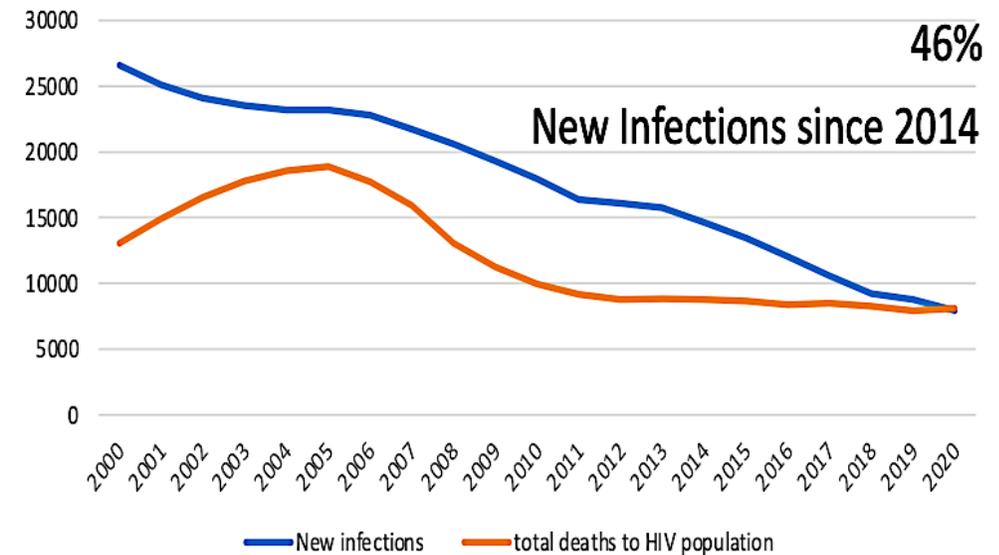
Eswatini



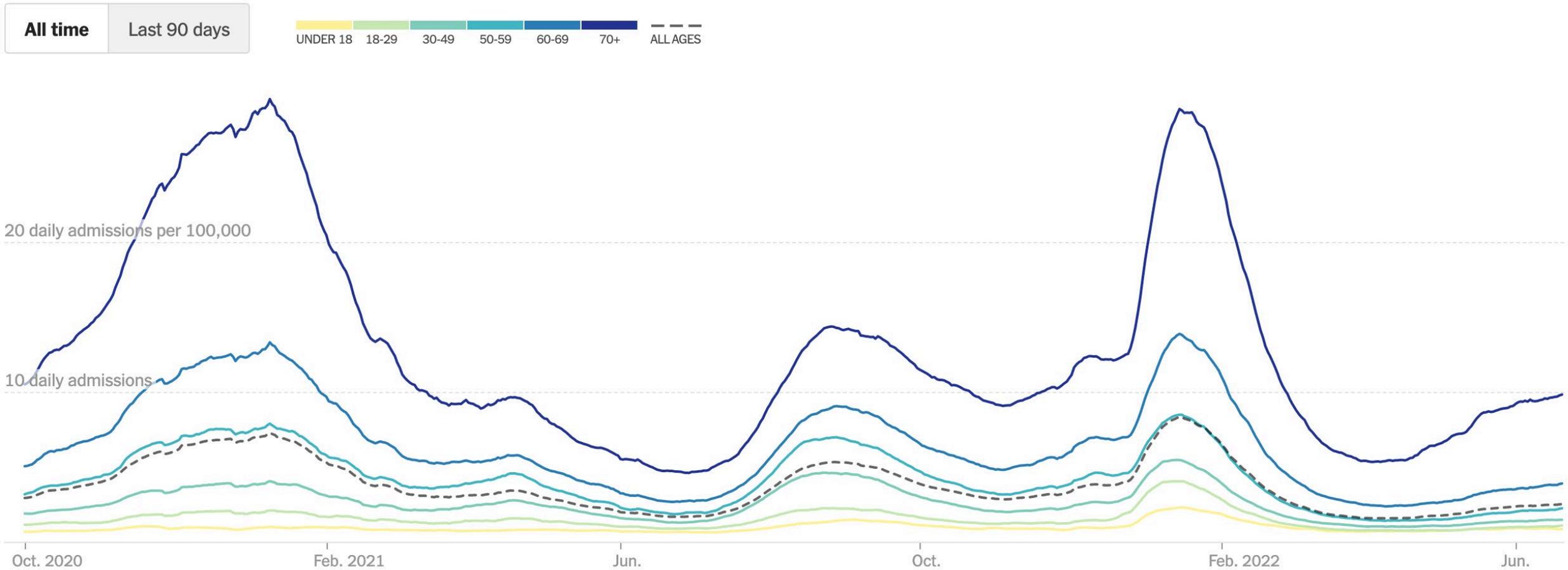
Ethiopia



Lesotho



Moving from magical thinking to reality : using current tools to save lives : first we need to survive then we can thrive



[About this data](#)



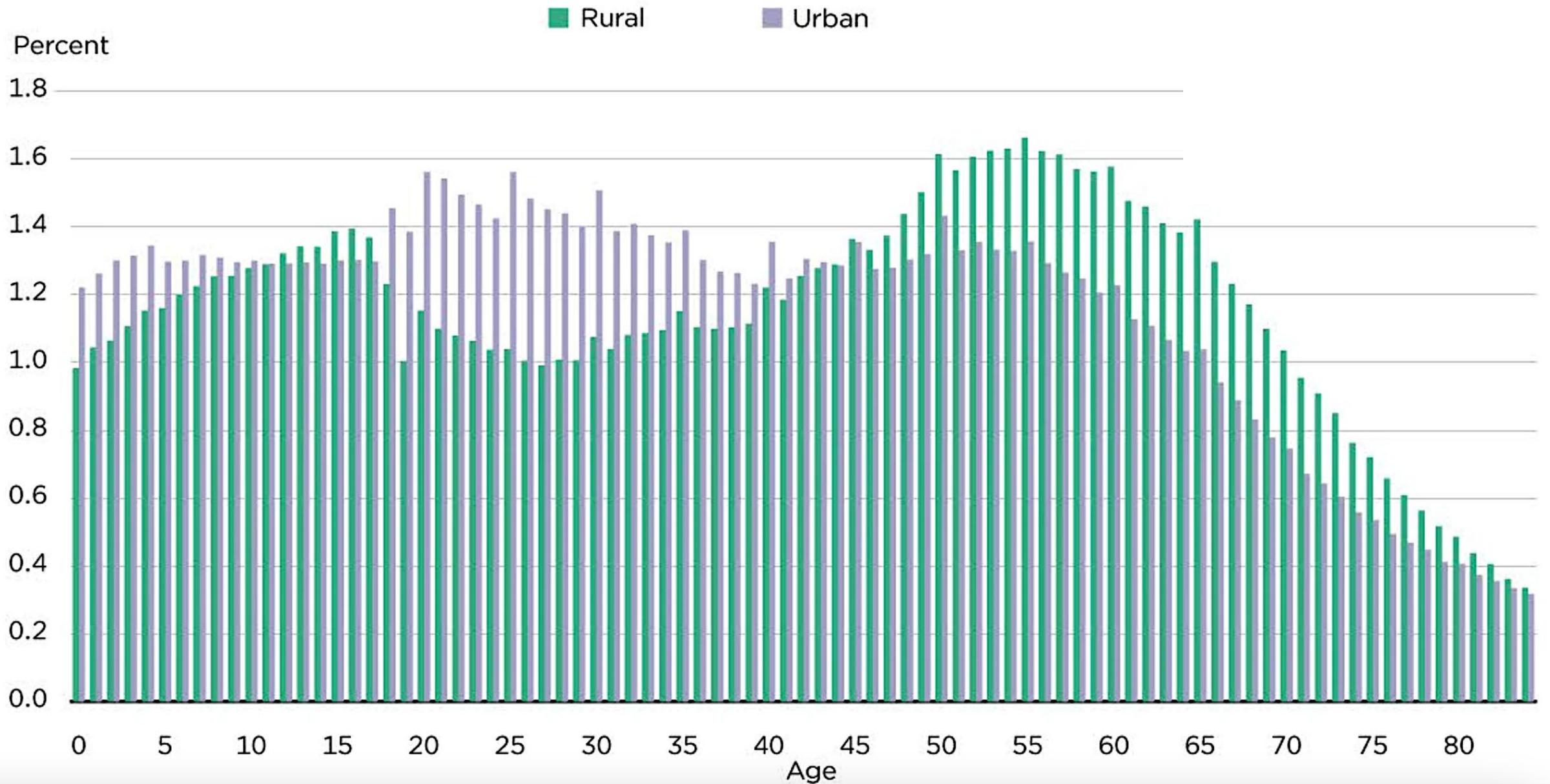
Deborah Birx, MD

Simple conclusions do not address the complex issues America that have led to higher hospitalizations and deaths COVID19

RURAL AMERICA

- Is older
- Poorer
- Higher comorbidities
- Less access to primary care
- Less access to subspeciality care
- Less access to advanced highly technical care
- Death rates have been higher for all causes across the south for a decade

Relative Age Distribution of the Rural and Urban Population: 2012-2016



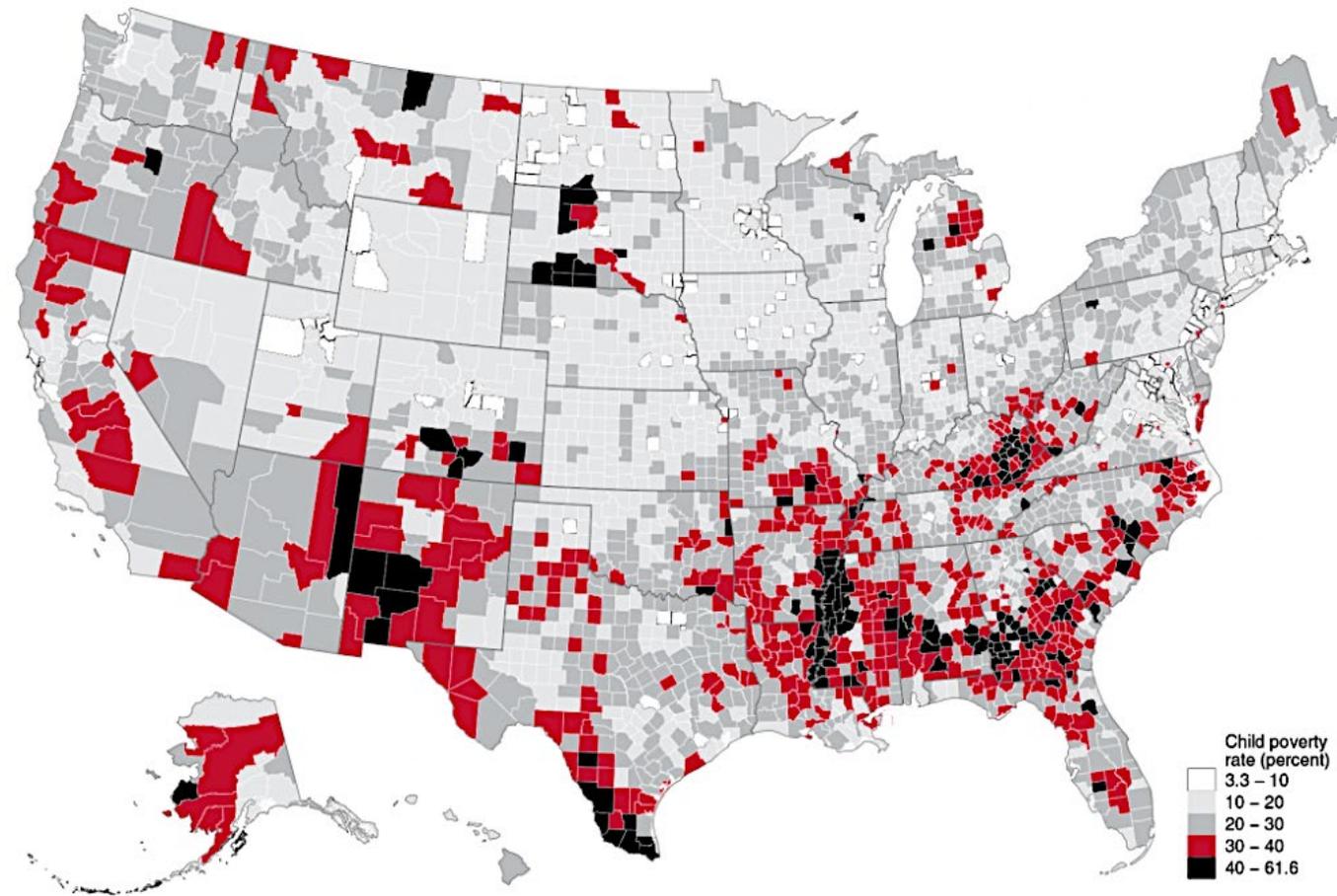
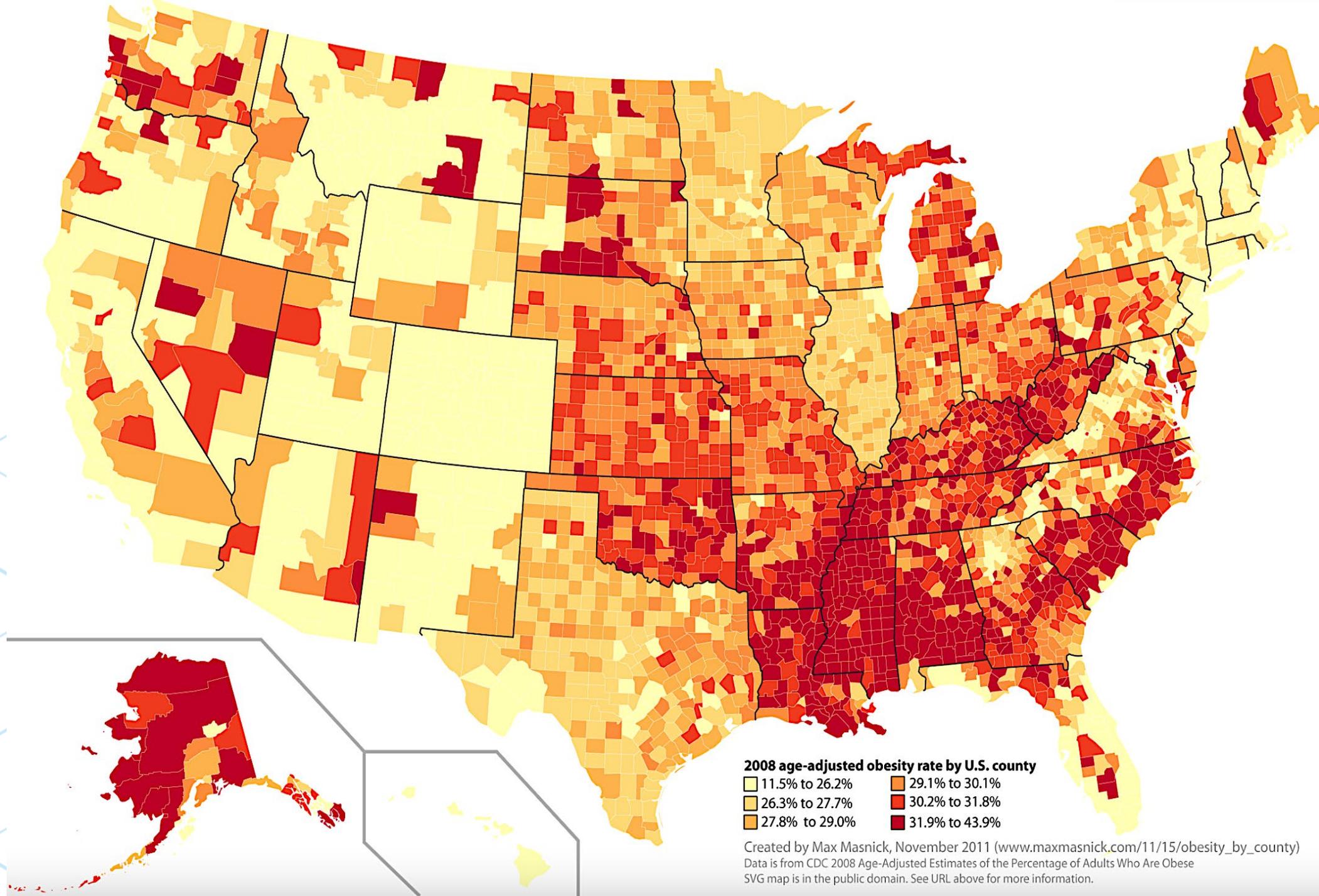


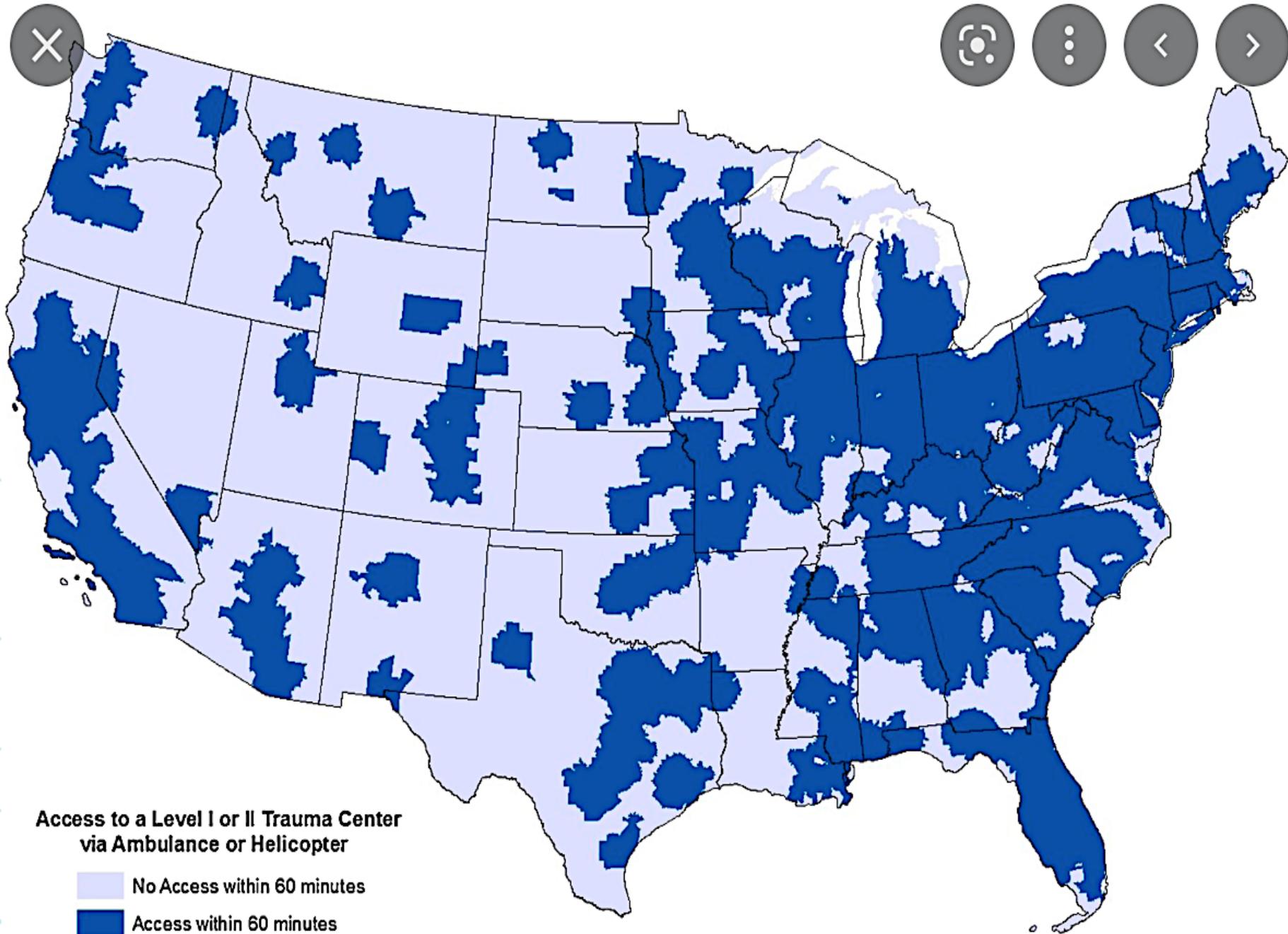
Figure 3. Nearly all counties in the South and Southwest and many counties in the West and Appalachian region had child poverty rates of 20% or higher in 2015.

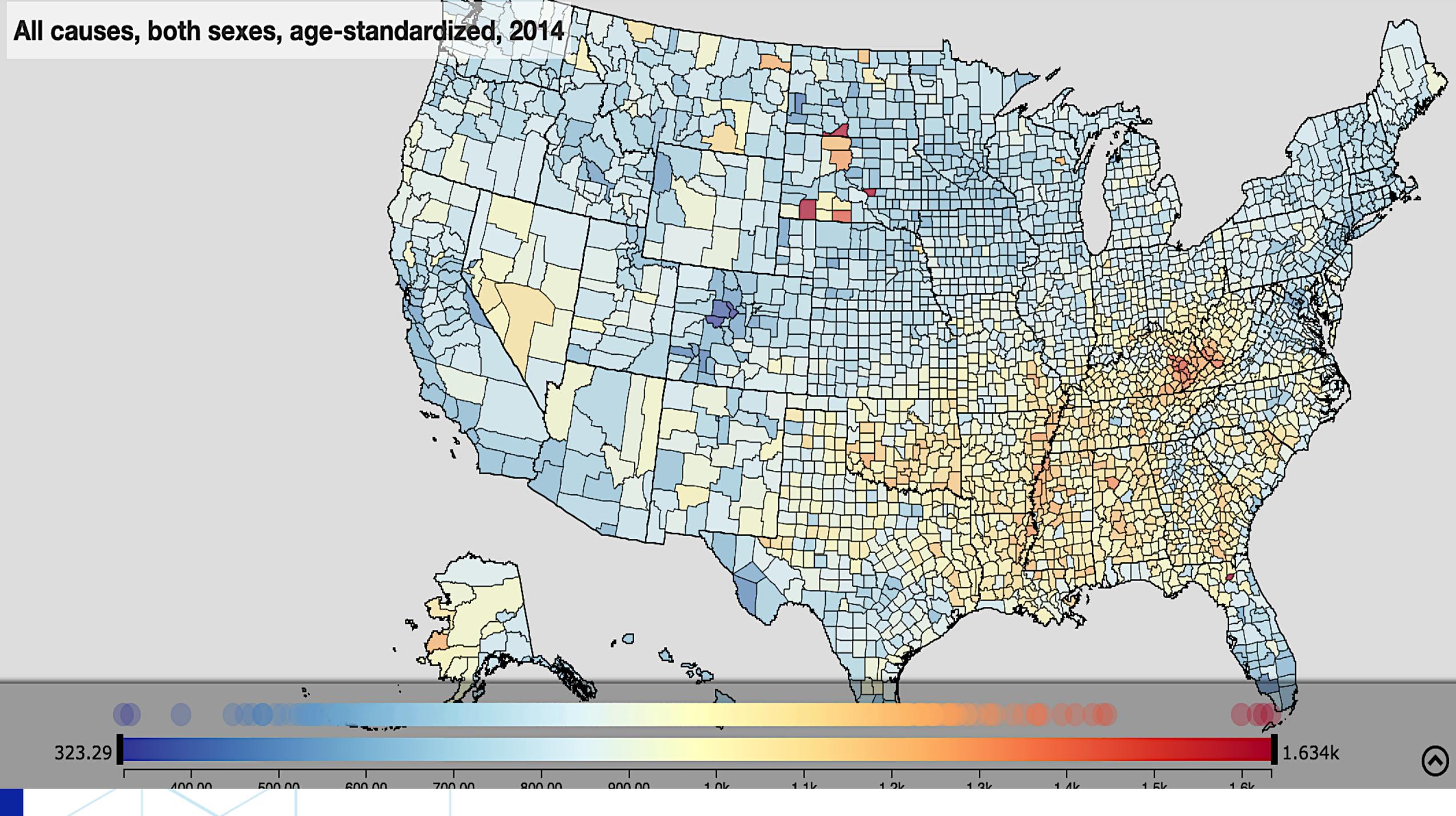
Source: Estimates by the committee from United States Population Estimates, 2016 Vintage, U.S. Census Bureau. Data as of July 1, 2015. 2015 county poverty rates from Census Small Area Income and Poverty Estimates program data.

Note: Map shows official poverty measure child poverty rates for 2015.



Created by Max Masnick, November 2011 (www.maxmasnick.com/11/15/obesity_by_county)
Data is from CDC 2008 Age-Adjusted Estimates of the Percentage of Adults Who Are Obese
SVG map is in the public domain. See URL above for more information.





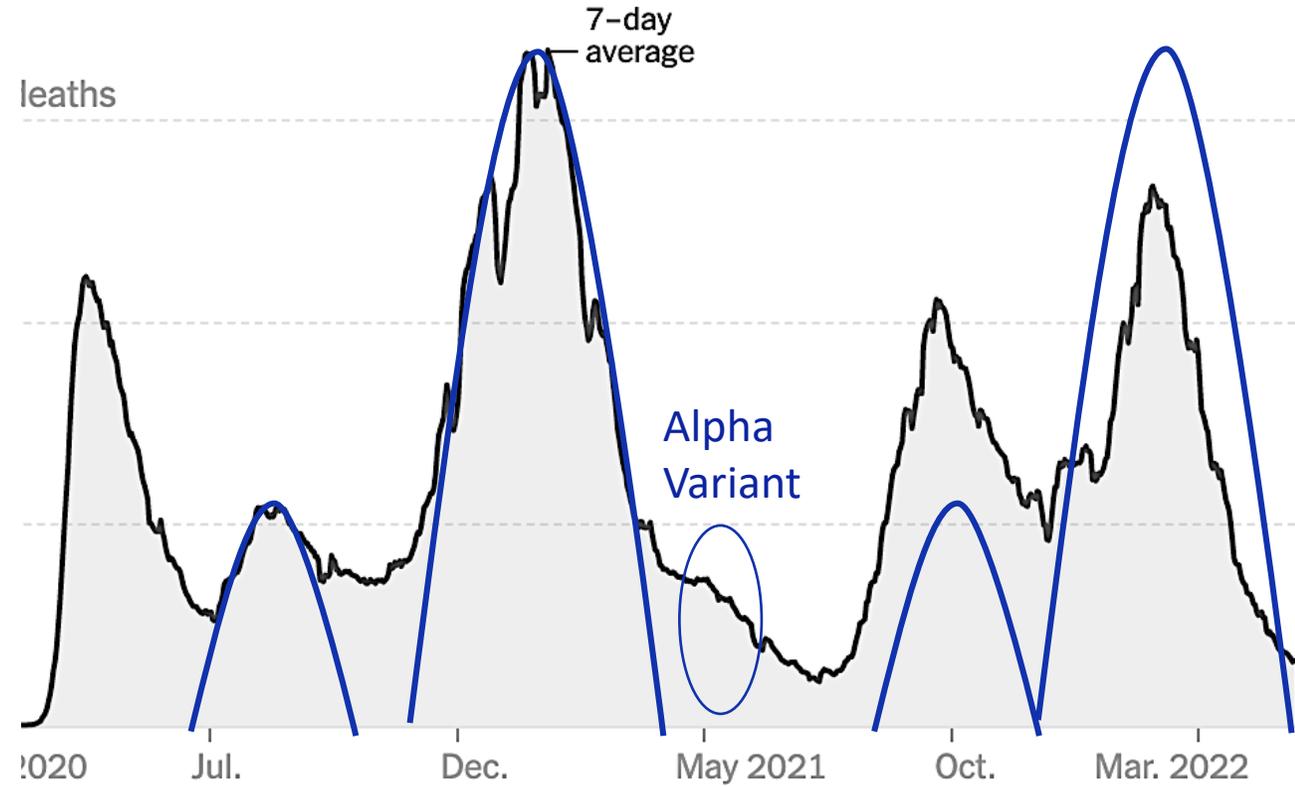
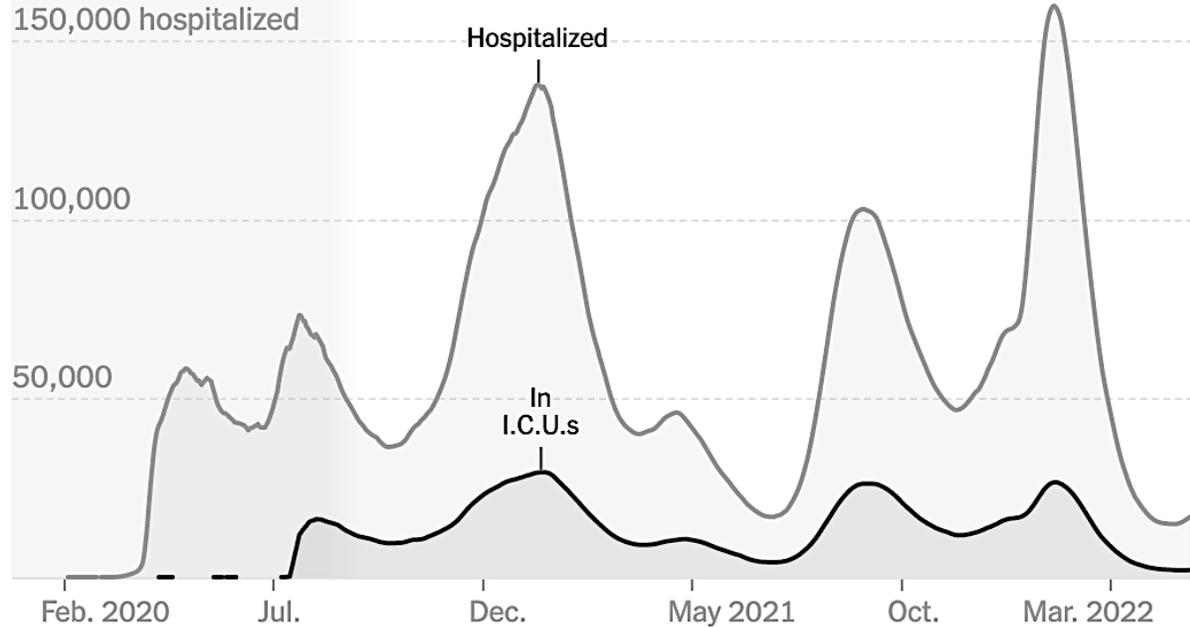
Hospitalizations and death with each surge

Summer surge of 2021 was 40% more deadly and winter surge was 30% less deadly

New reported deaths by day

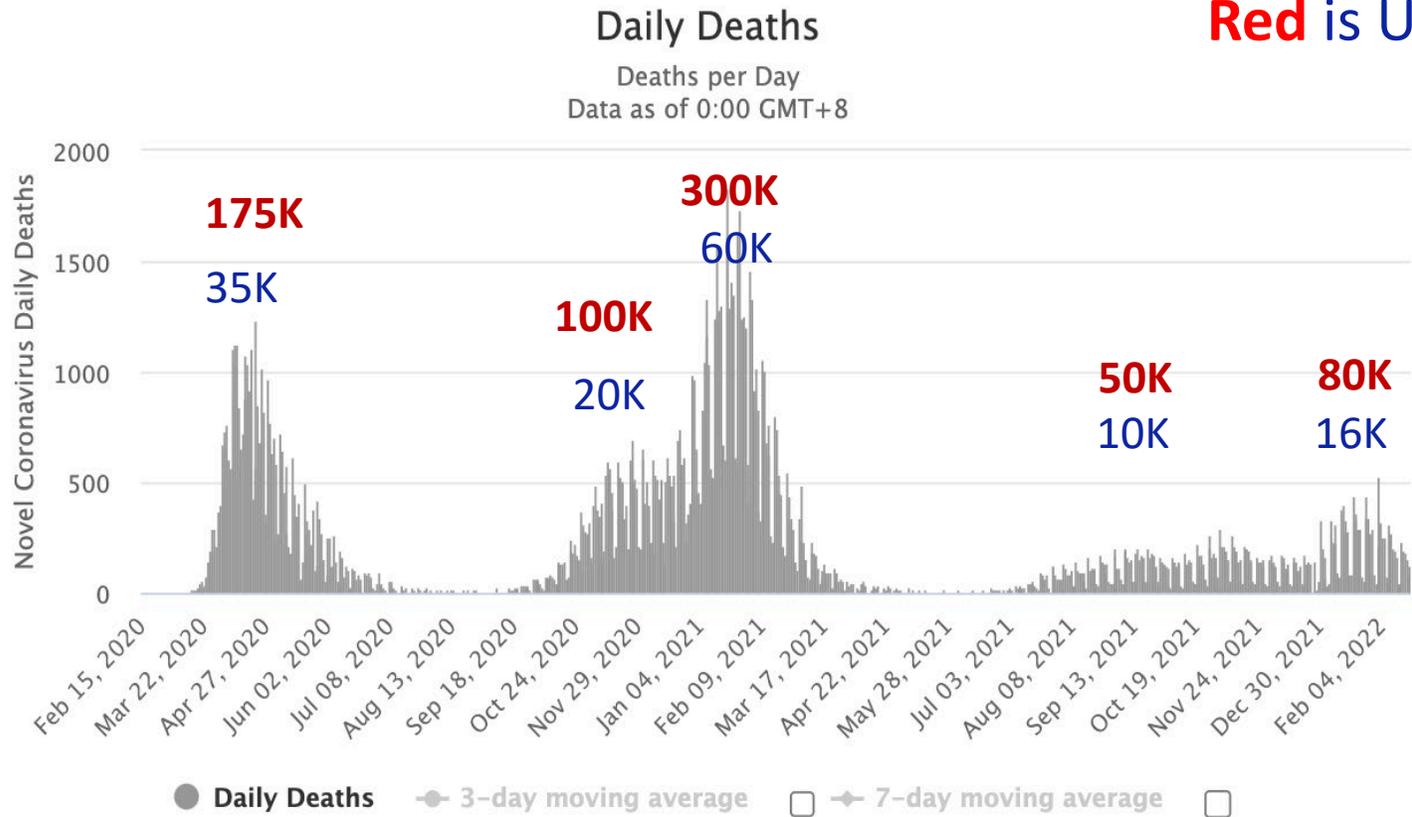
Covid patients in hospitals and I.C.U.s

Early data may be incomplete.

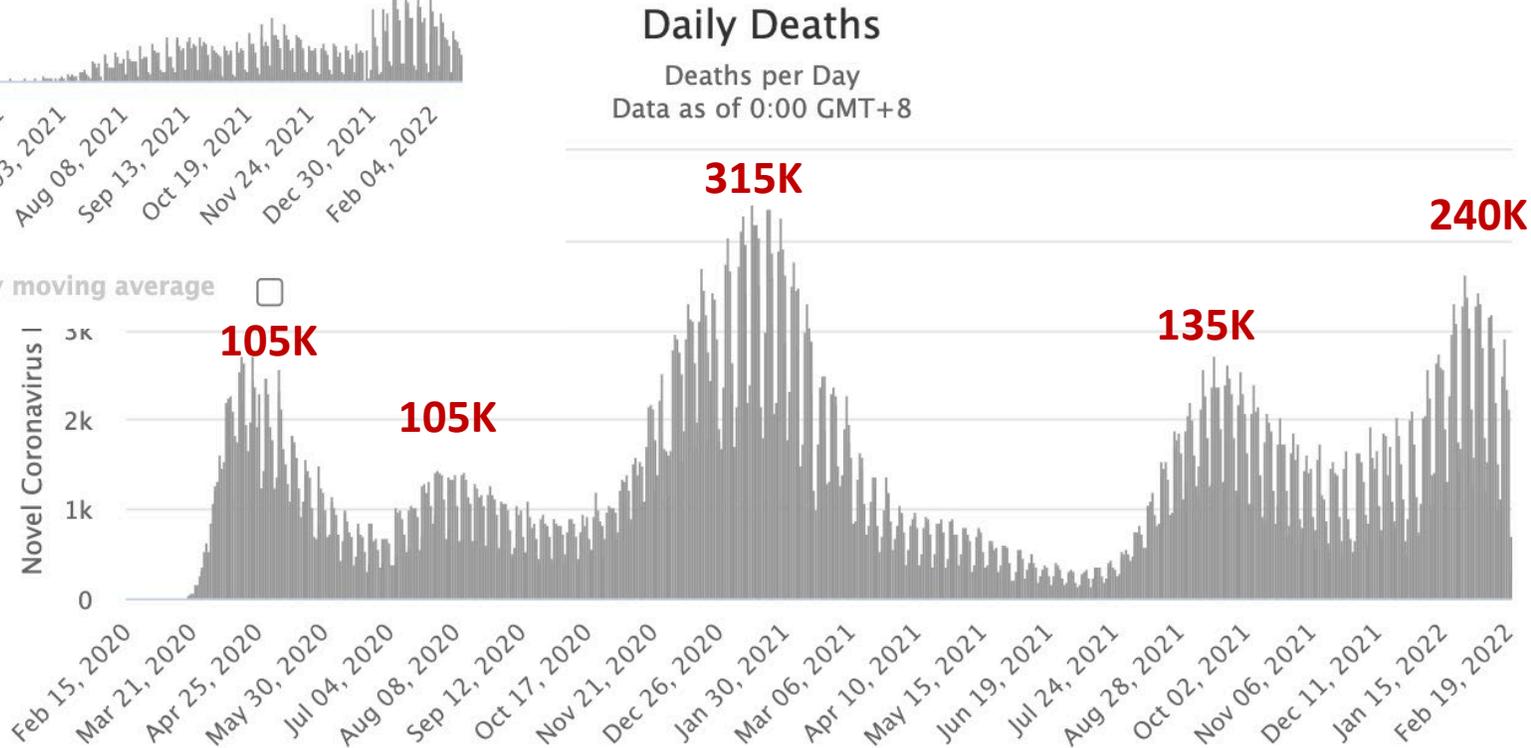


Daily New Deaths in the United Kingdom

Blue are the actual number of deaths in the UK
Red is UK corrected to US population size



United States



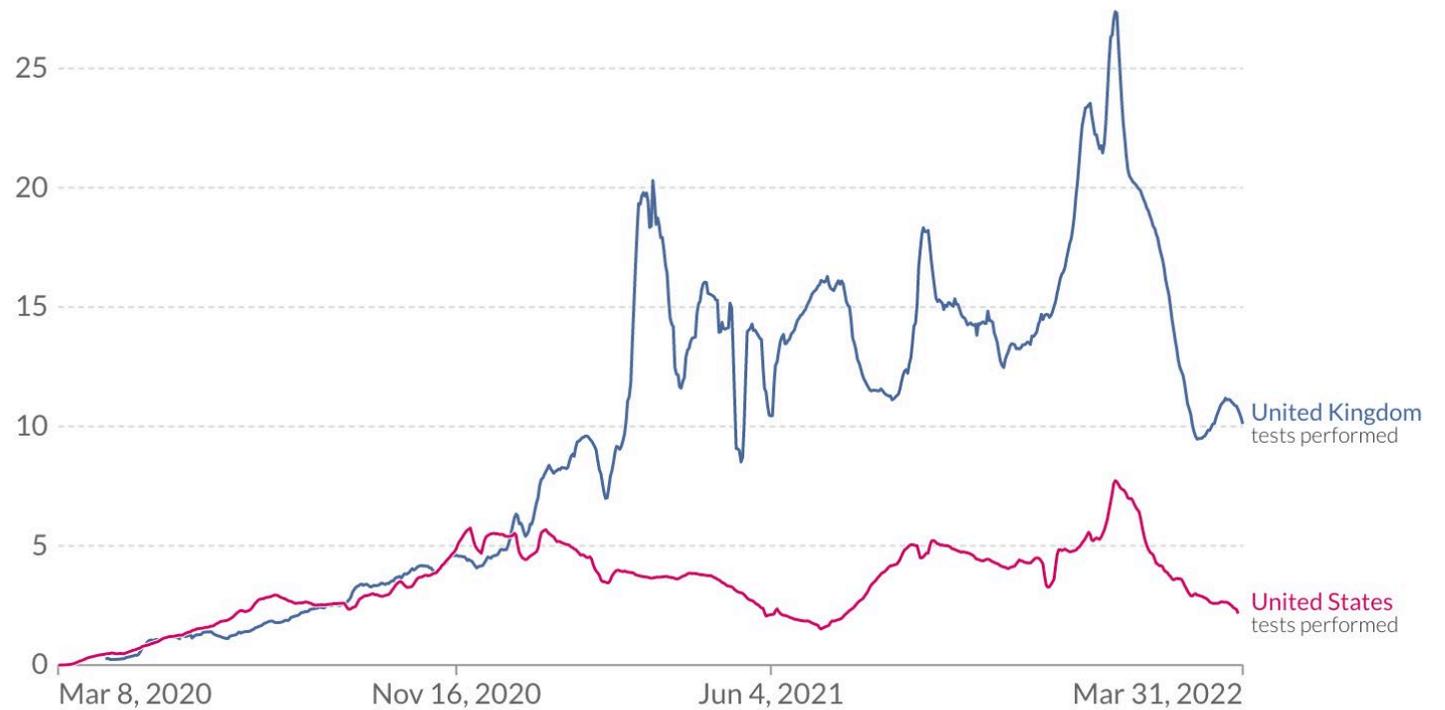
Inadequate testing
– the United States
remain behind in
testing compared
to the UK

Daily COVID-19 tests per thousand people

The figures are given as a rolling 7-day average. Comparisons across countries are affected by differences in testing policies and reporting methods.

Our World
in Data

+ Add country



Source: Official data collated by Our World in Data – Last updated 3 April 2022, 17:20 (London time)

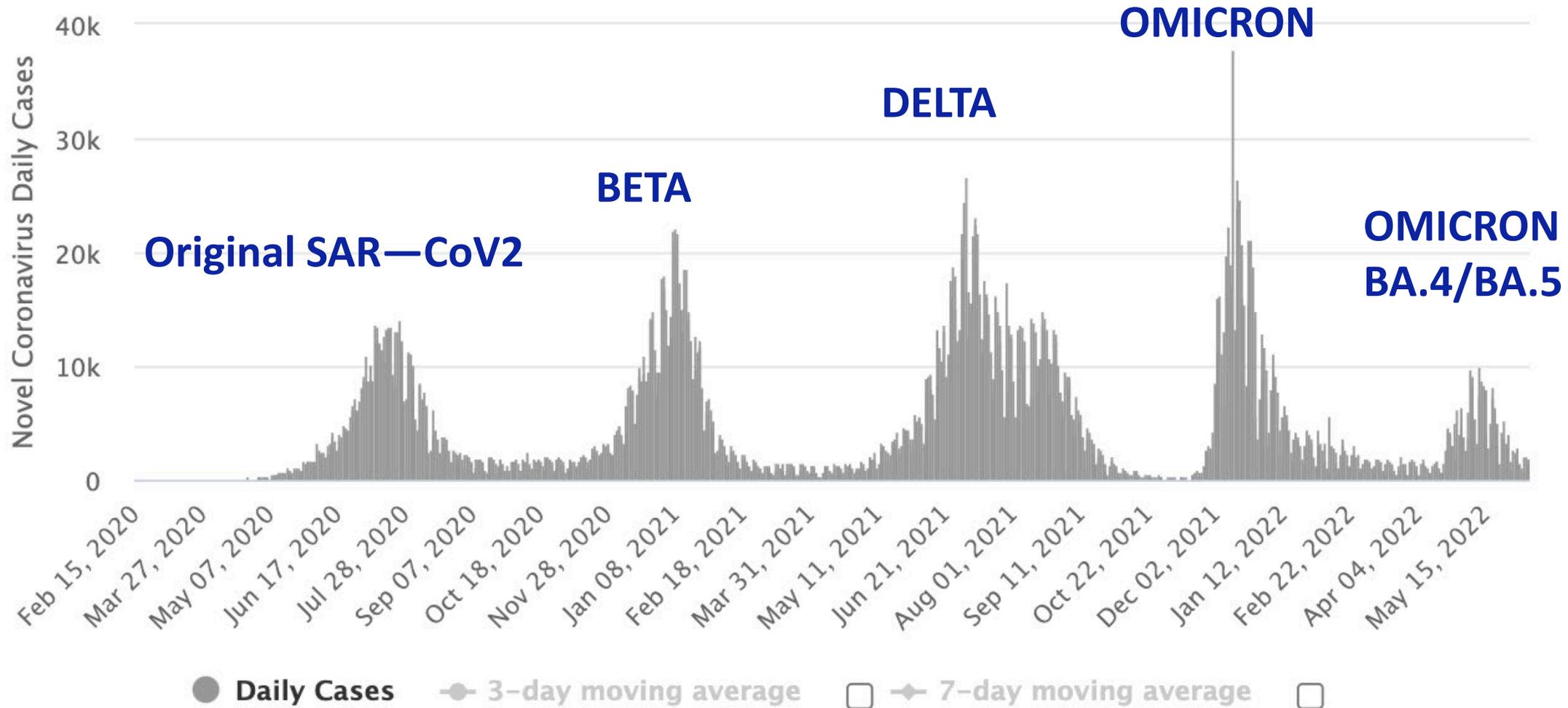
OurWorldInData.org/coronavirus • CC BY

▶ Mar 8, 2020 ○ Mar 31, 2022

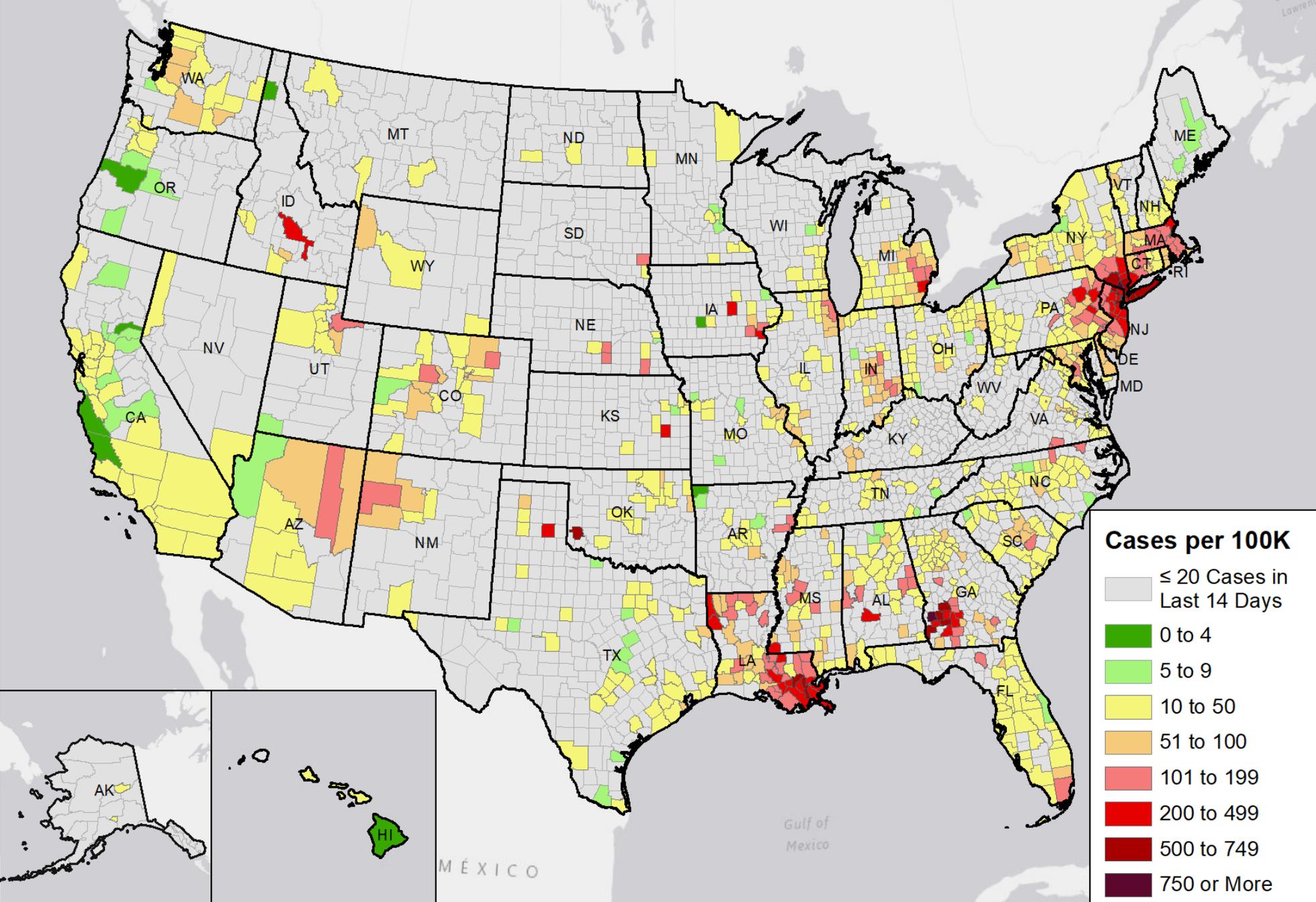
Daily New Cases in South Africa

Daily New Cases

Cases per Day
Data as of 0:00 GMT+0

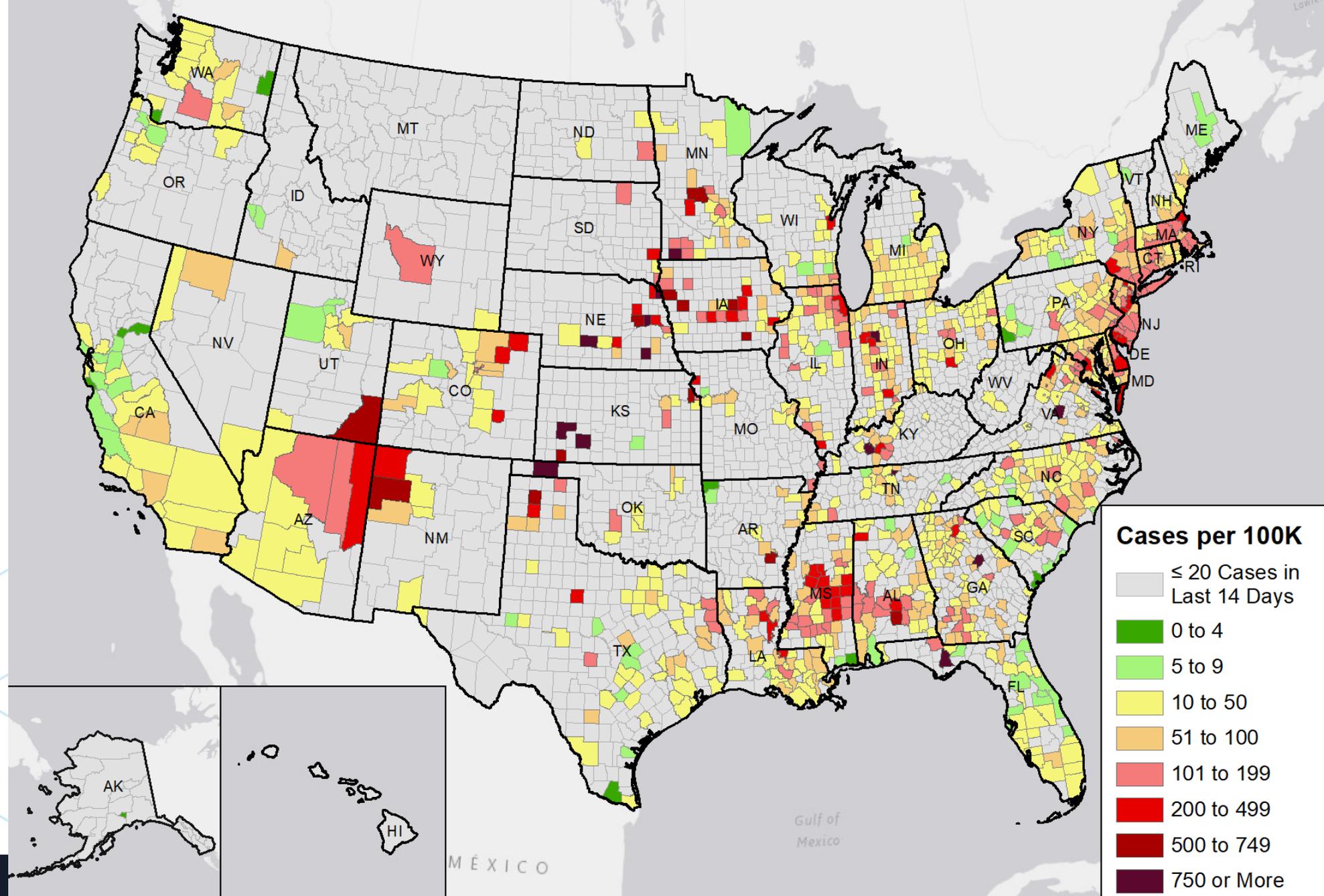


April 2020



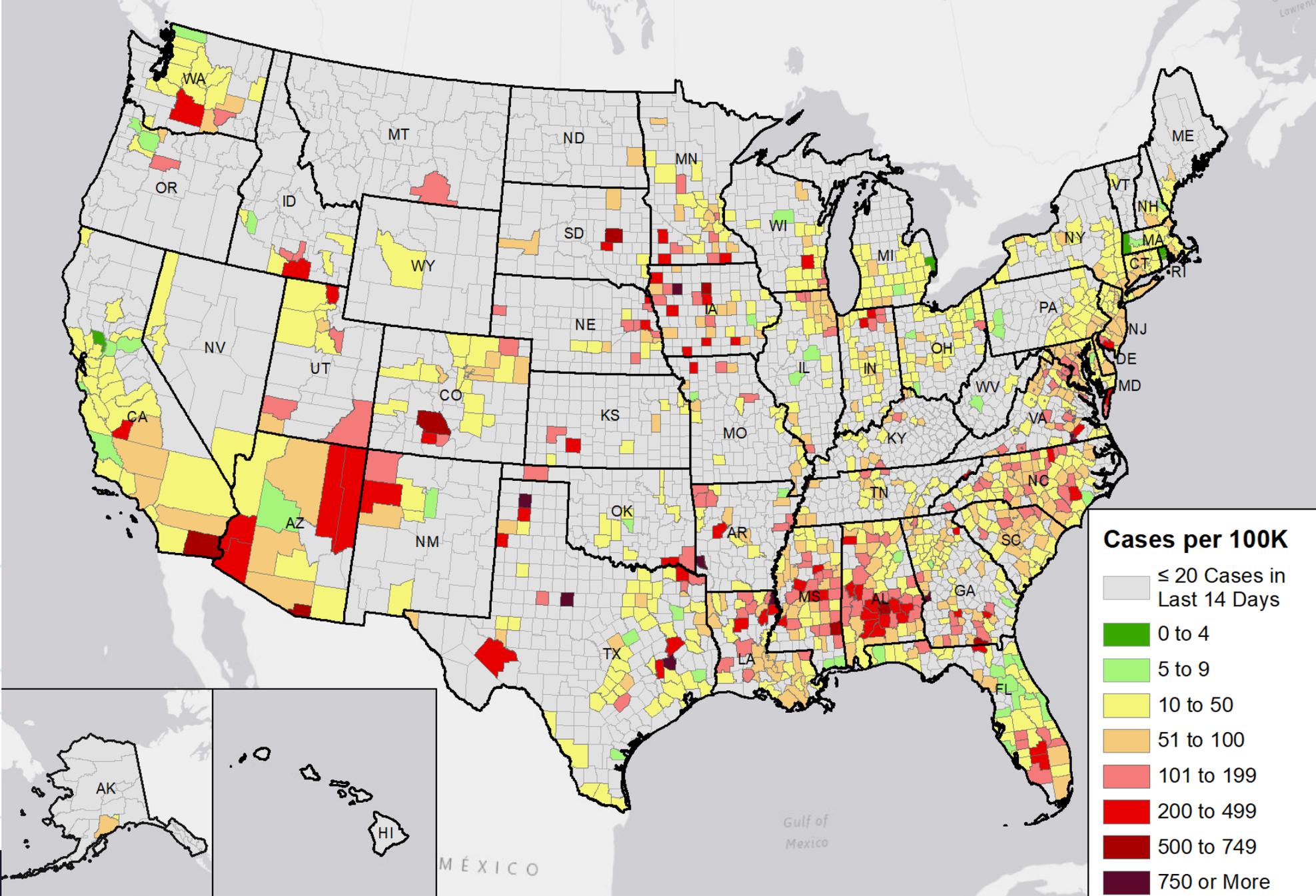
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May 2020



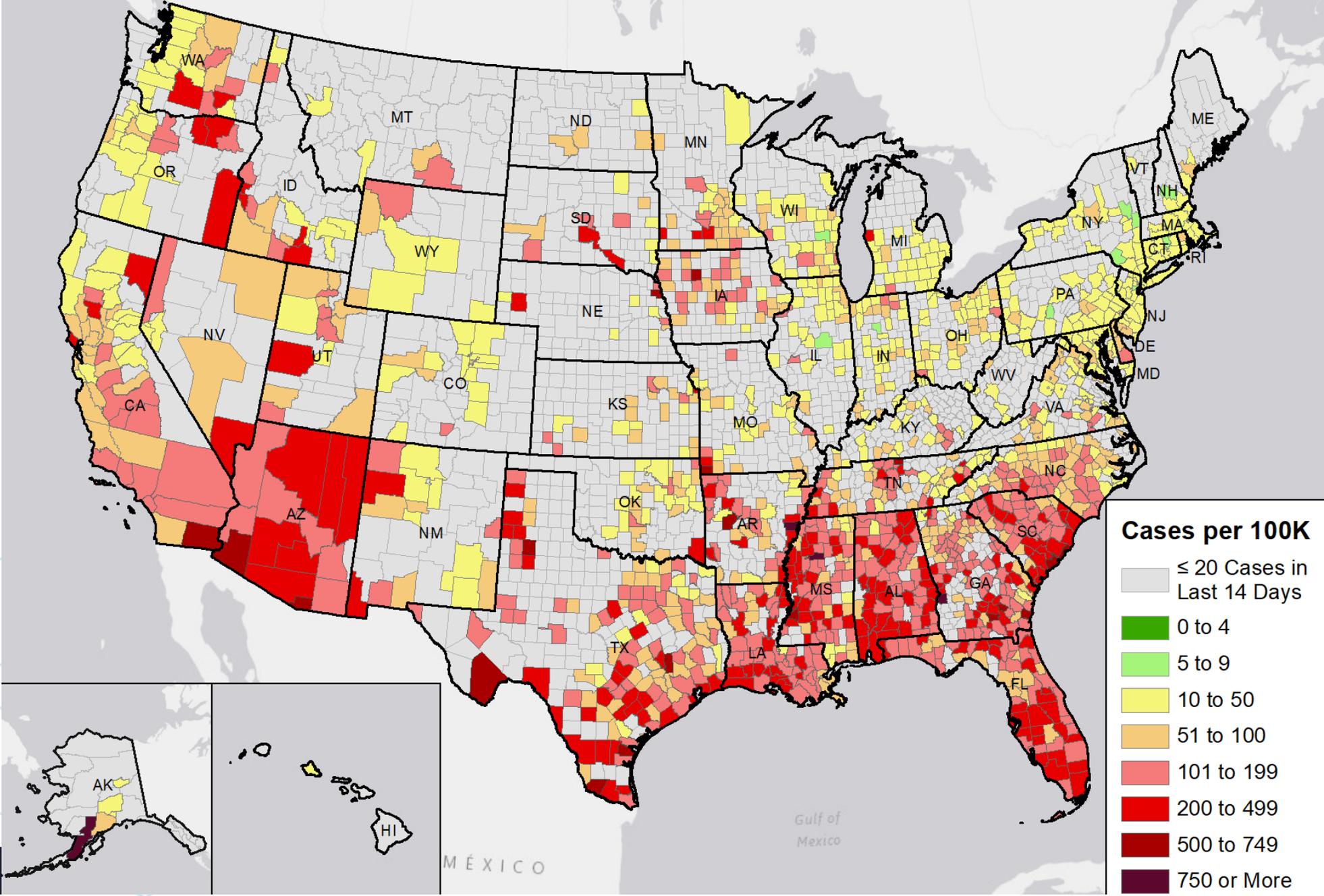
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June 2020



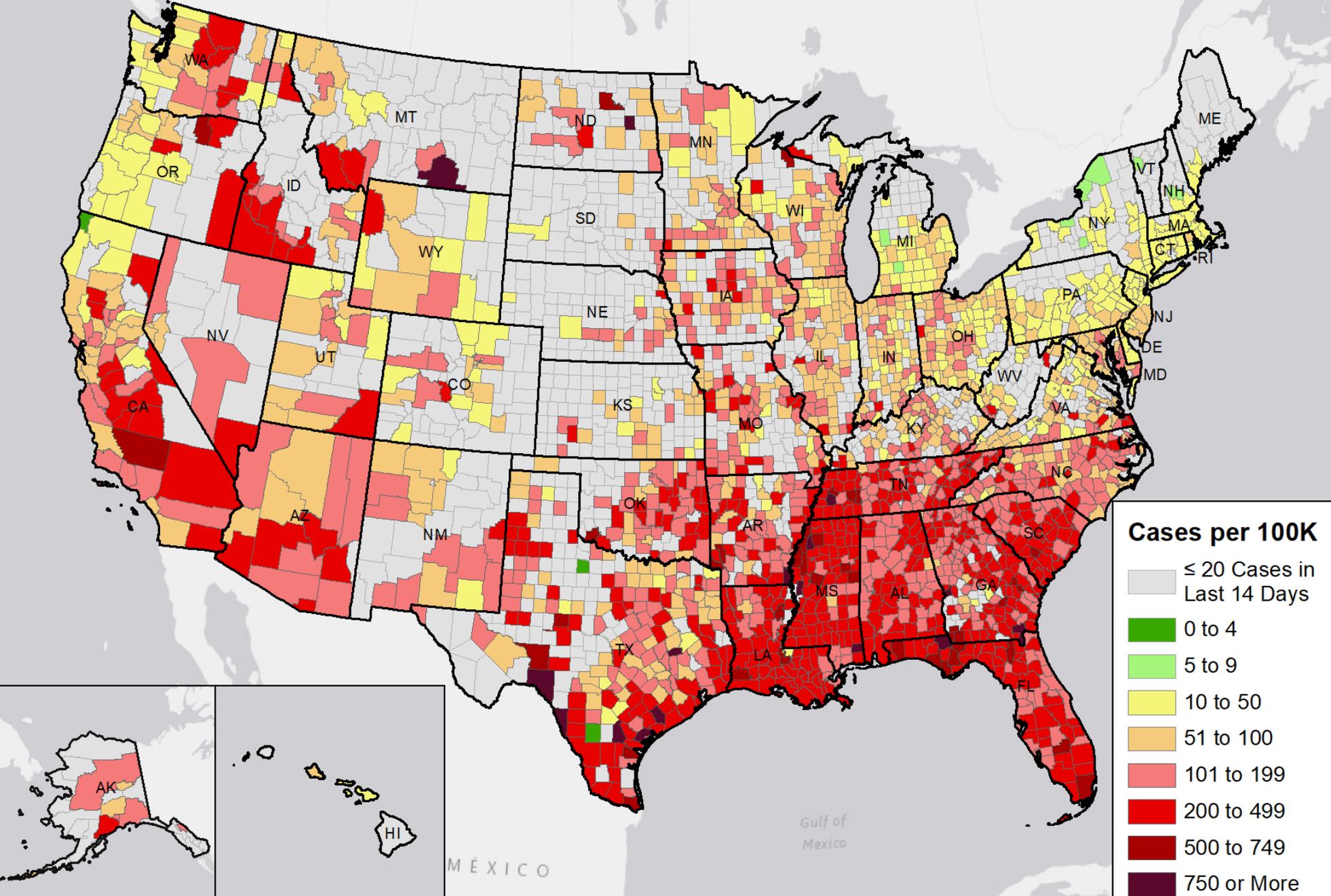
Deborah Birx, MD

July 2020



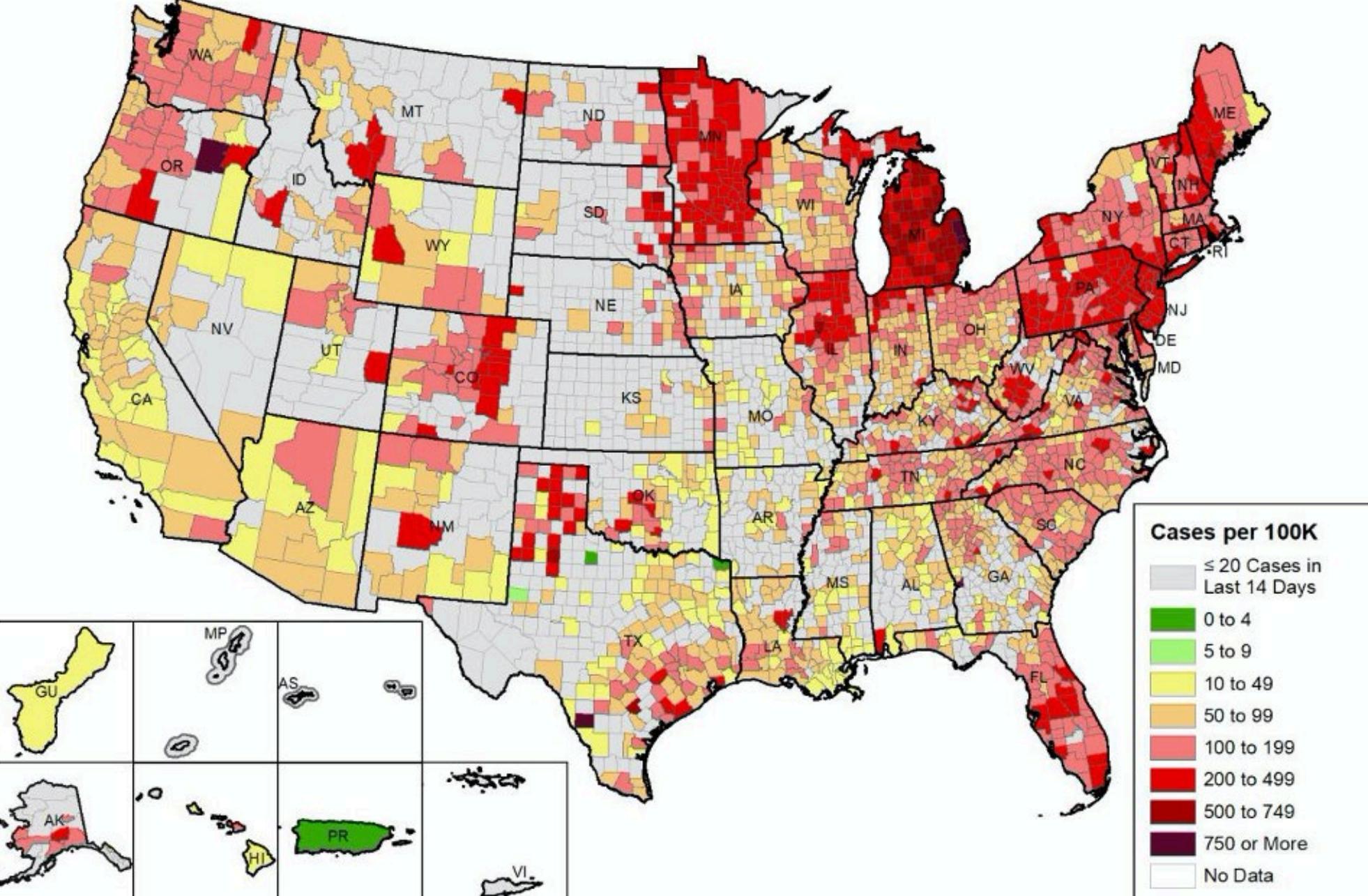
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August 2020



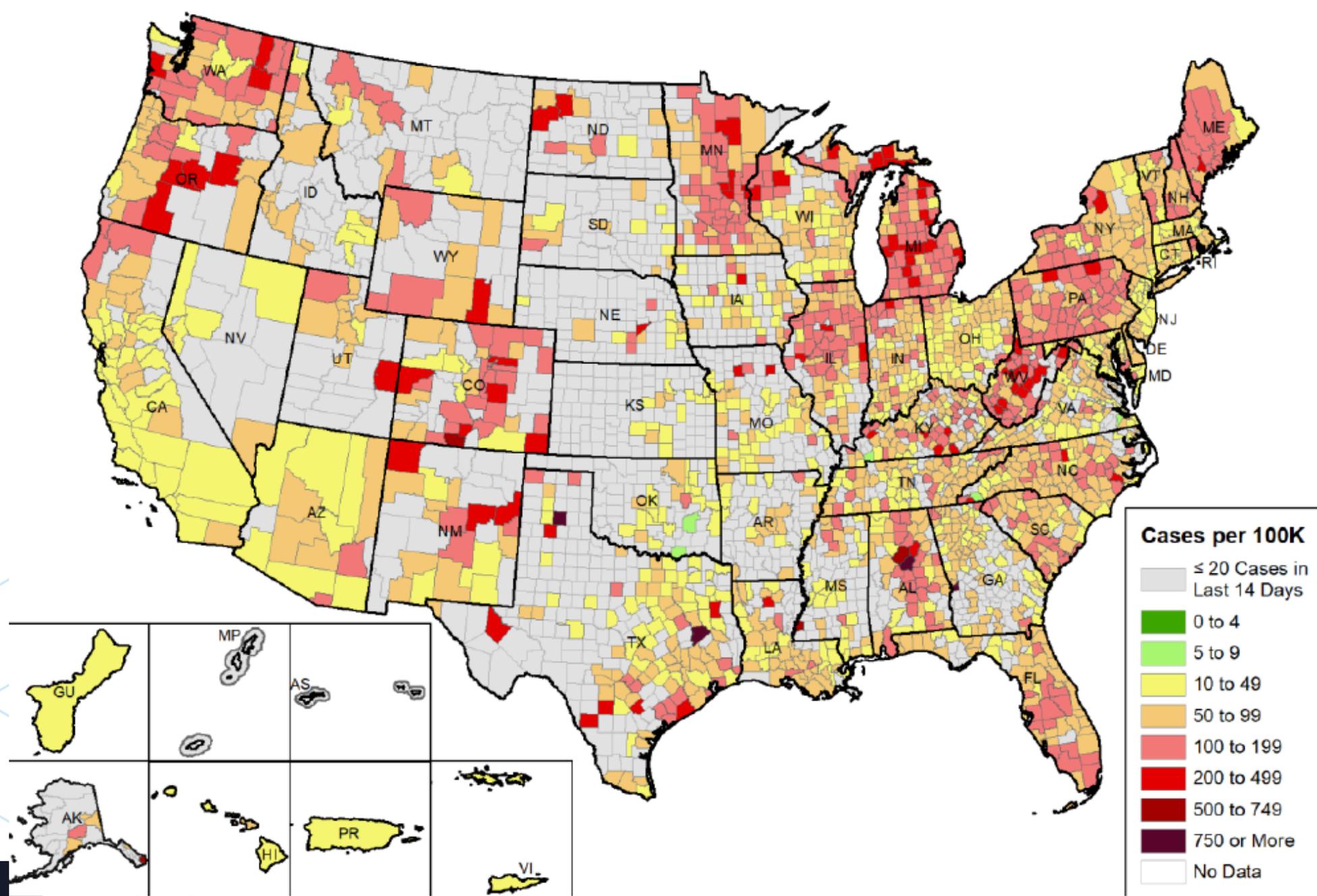
Deborah Birx, MD

April 2021



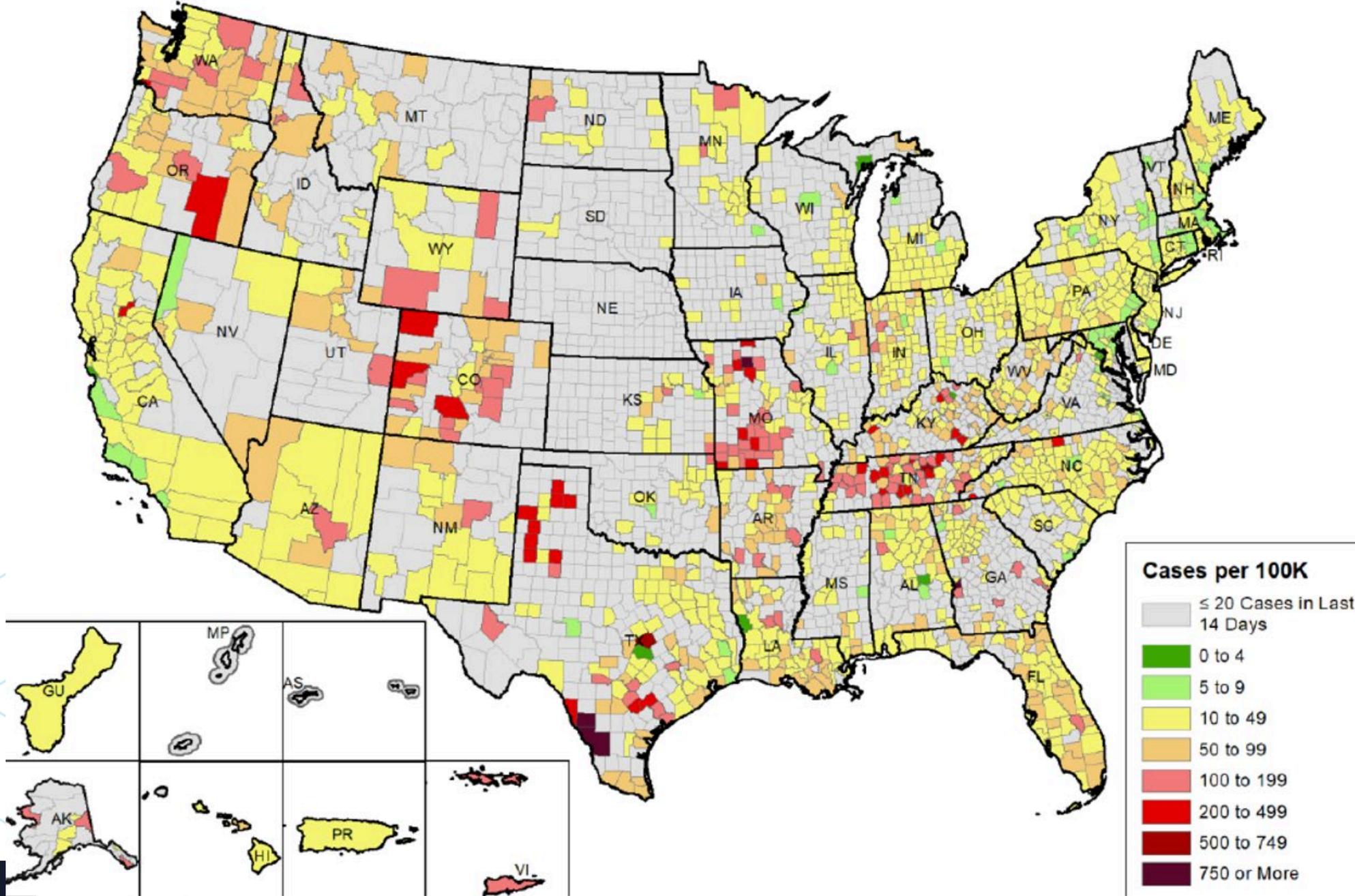
Deborah Birx, MD

May 2021



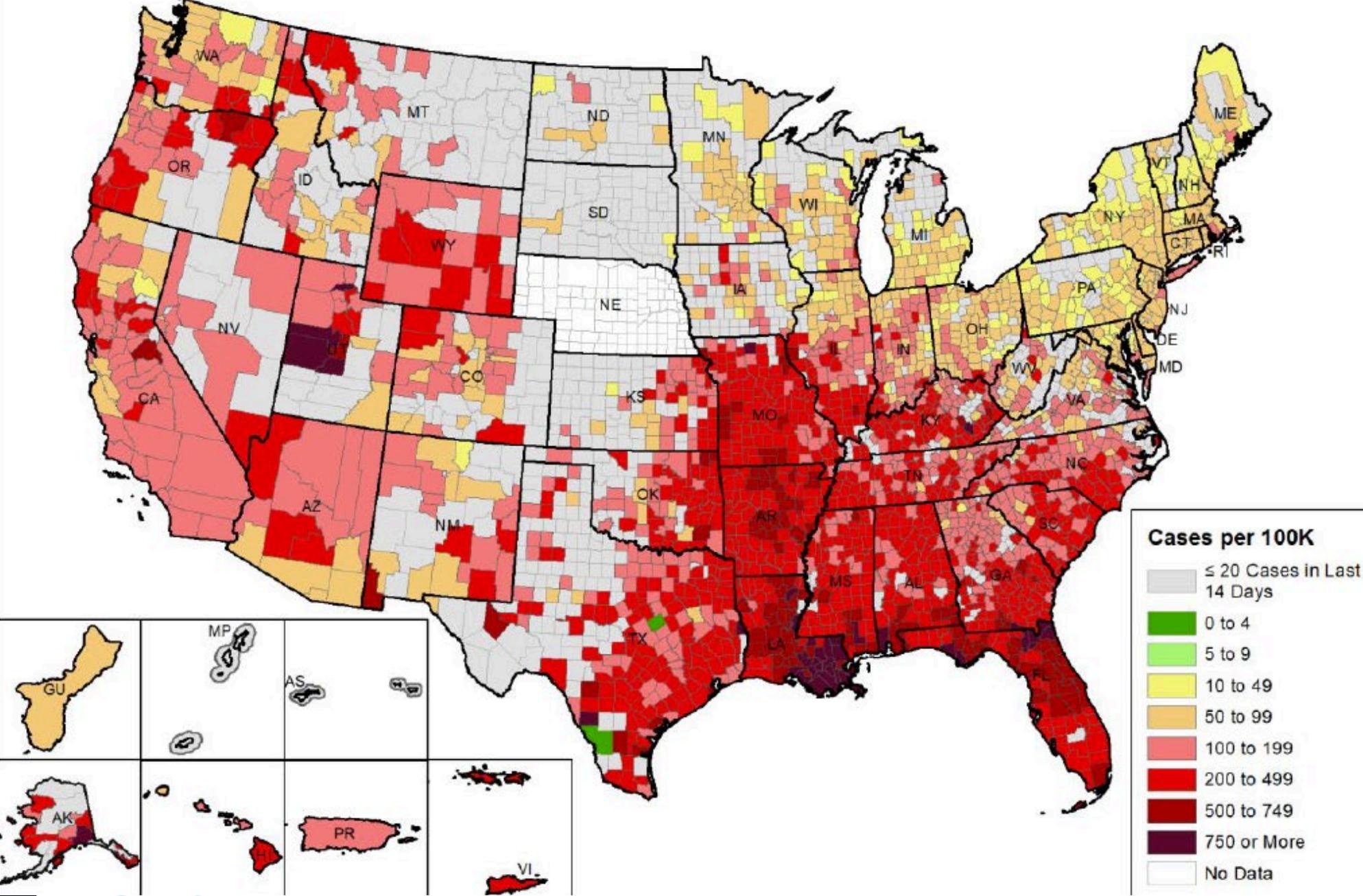
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June 2021



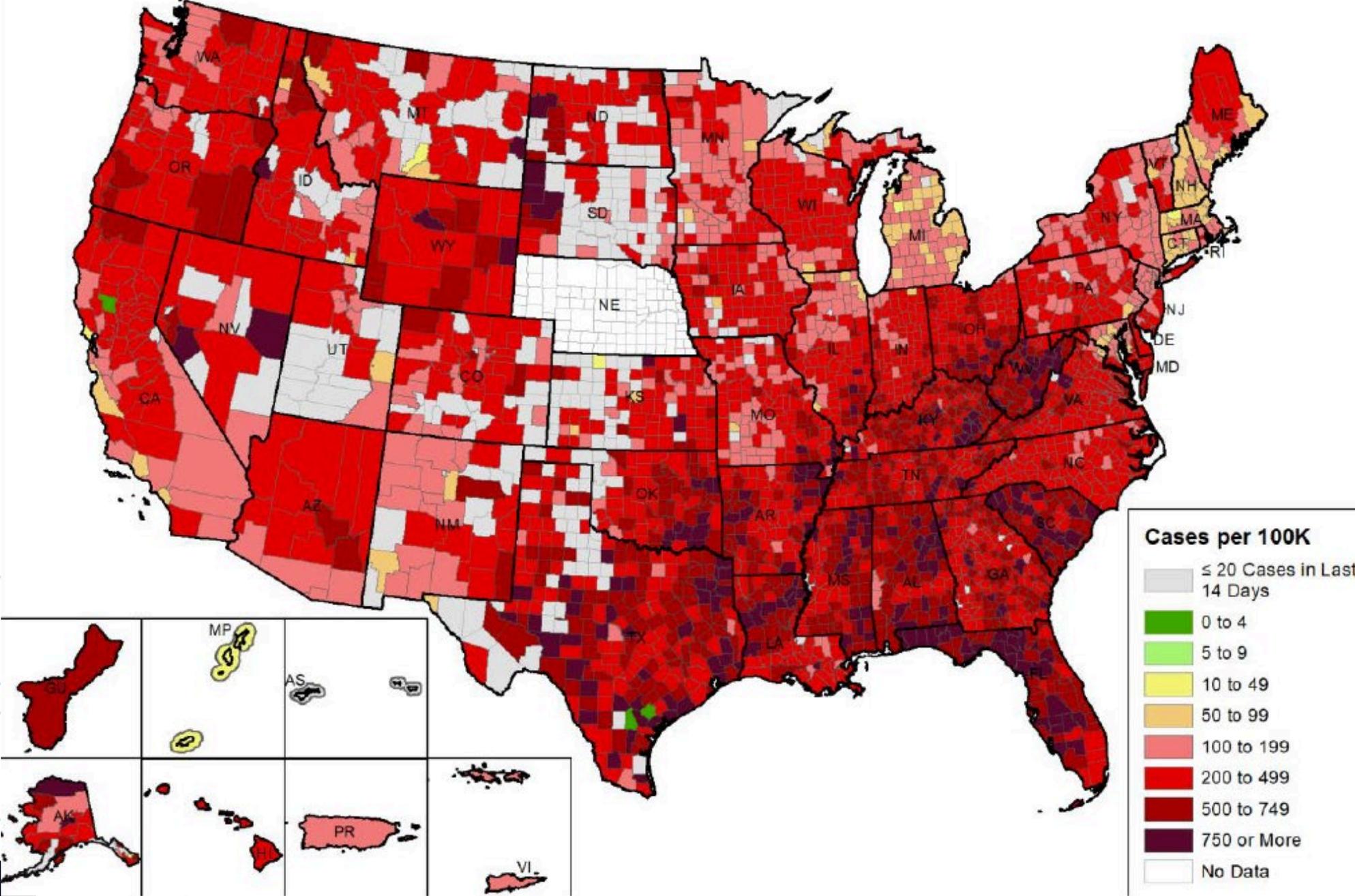
Deborah Birx, MD

July 2021



Deborah Birx, MD

August 2021

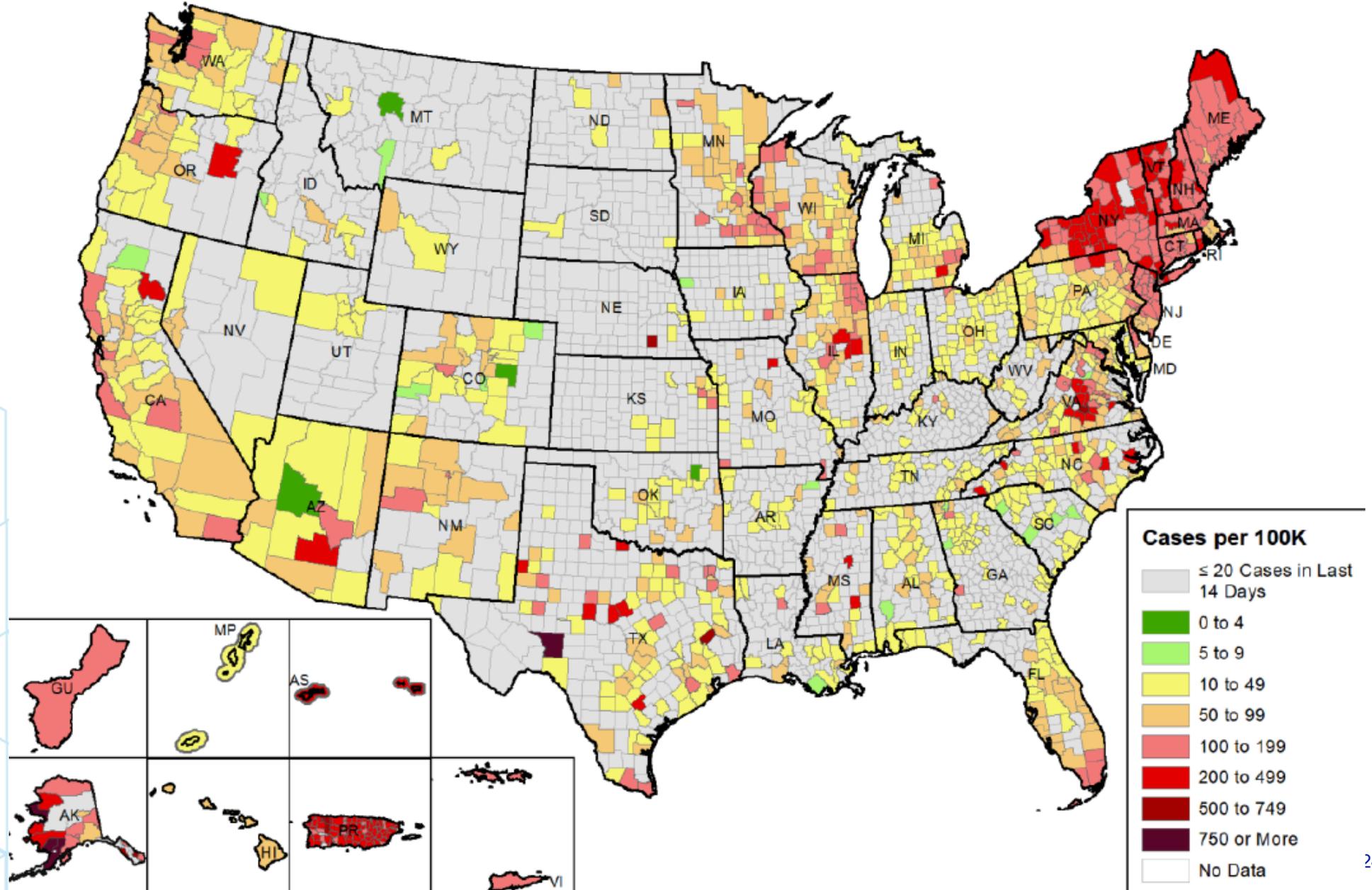


Deborah Birx, MD

Date: 4/19/2022
Source: CDC Aggregate
County Data, CDC State-
Reported Data (Territories)

Cases per 100K by County in the Week 12APR2022-18APR2022

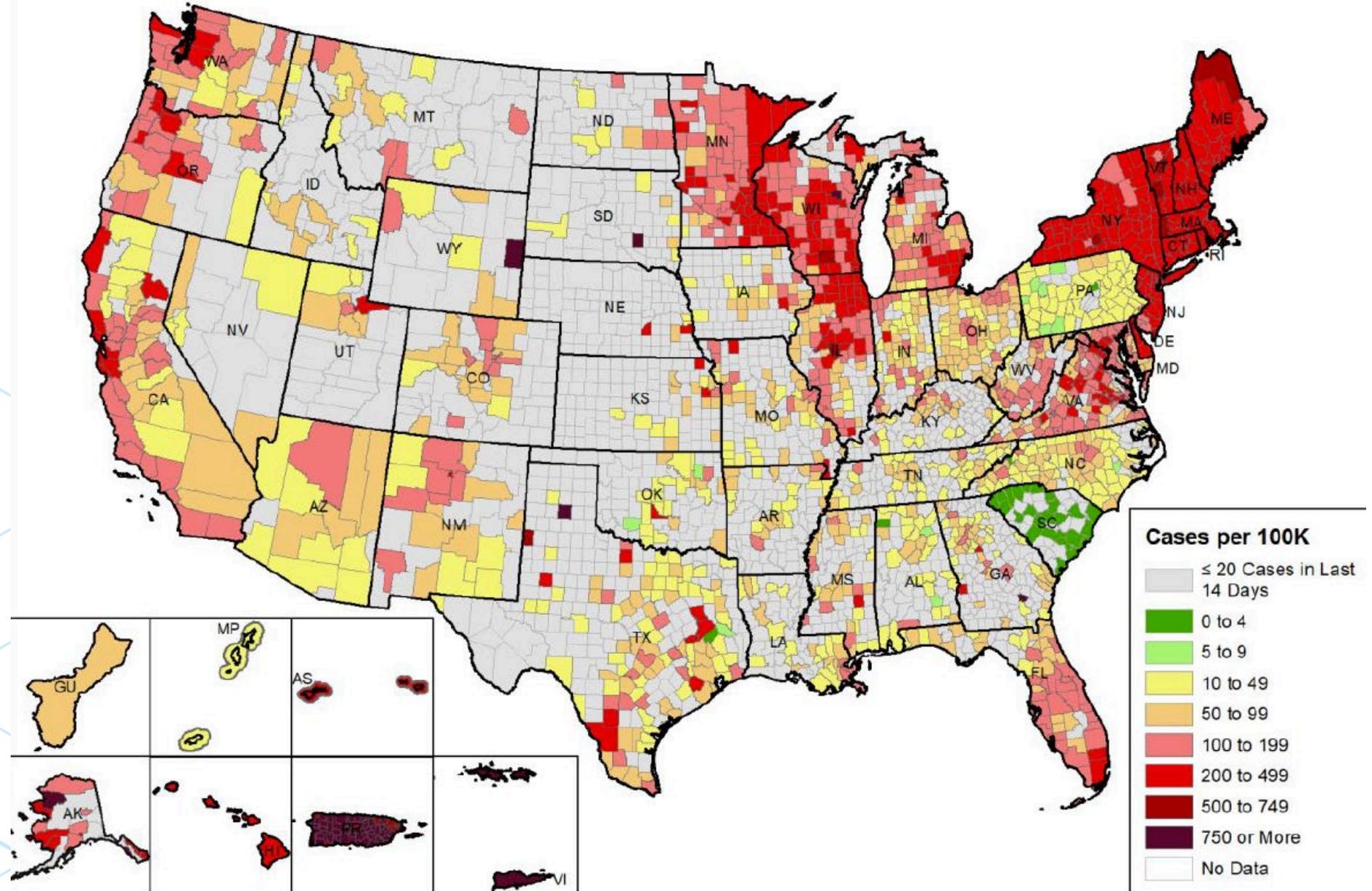
April 2022



Date: 5/11/2022
Source: CDC Aggregate
County Data, CDC State-
Reported Data (Territories)

Cases per 100K by County in the Week 04MAY2022-10MAY2022

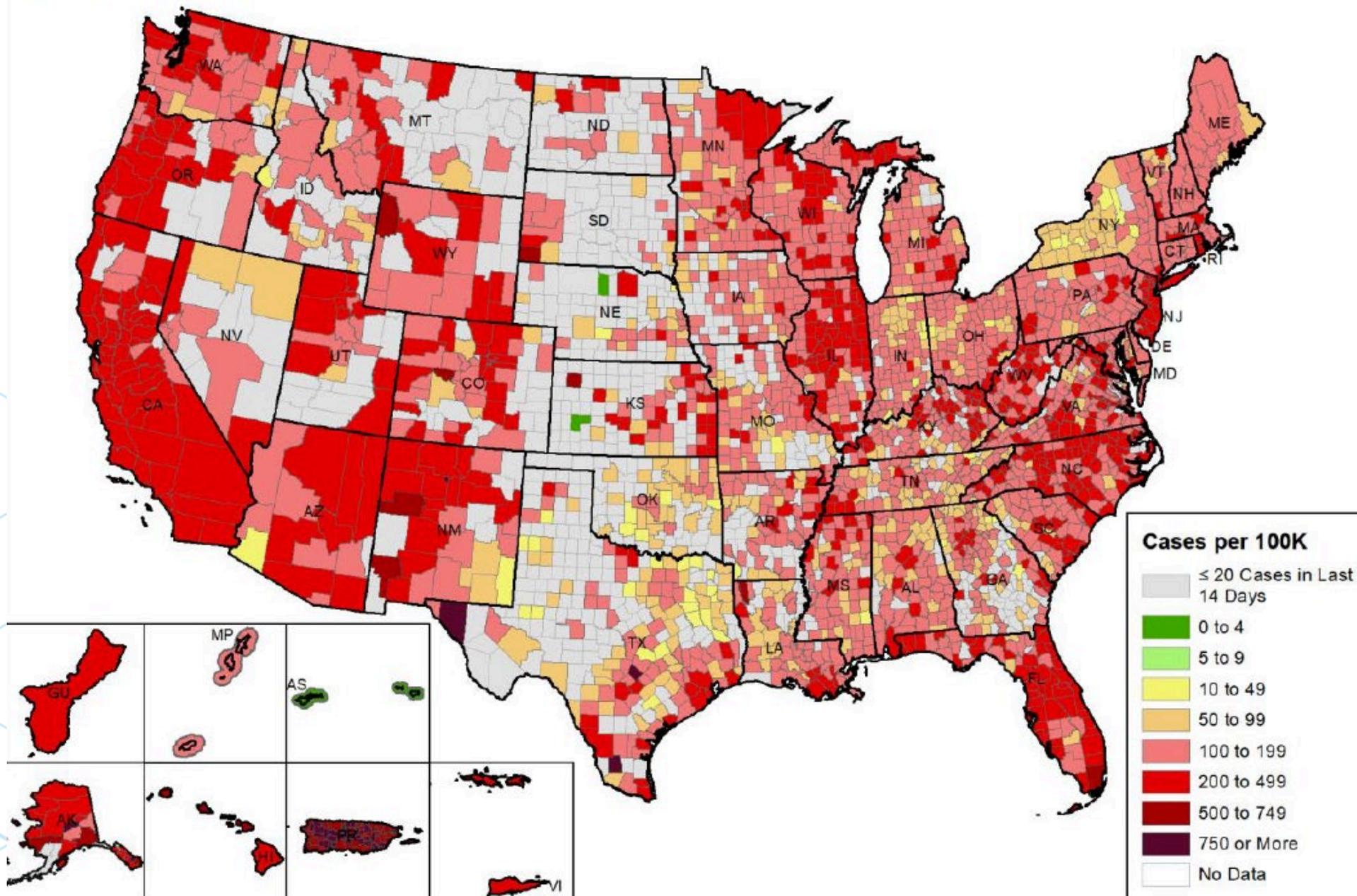
May 2022



Date: 6/14/2022
Source: CDC Aggregate
County Data, CDC State-
Reported Data (Territories)

Cases per 100K by County in the Week 07JUN2022-13JUN2022

June 2022



- The coronavirus continues to move in a predictable geographic pattern increased indoor activities
- Herd Immunity CANNOT be obtained or sustained with the current vaccines
- Vaccines with boosters are protective against most severe disease and declining antibody levels month by month results in poor protection against and thus clear ability to transmit to others despite vaccinated and waning protection against severe infection
- Key Questions that remain to be answered
- **Does vaccination protect significantly**
 - Against long COVID in both children and adults?
 - Against the inflammatory syndromes in children and adults?
 - Against the brain findings such as shrinking of brain matter?
 - Against the later cardiovascular abnormalities?

We have the tools to ensure Americans can survive : we are not using them : and death needs to be seen as a programmatic failure, gaps addressed and s

Right

- Comprehensive partnerships with private sector to accelerate testing, PPE, Treatments, Vaccines
- Development of comprehensive data streams to drive equity across the country
- Long term funding of the NIH and research on protein stabilization and antigen antibody interactions
- EUA process
- OWS
- Telehealth
- Domestic production of N95 – model for reshoring
- Rapid development of tests, therapeutics and first generation vaccines and Monoclonal Ab, and therapeutics

Wrong in 2020, 2021 and 2022

- Unclear command and control, accountability and on the ground pandemic experience
- No long term state experience or embedding in states by CDC
- Inability of CDC to support program implementation
- Pandemic surveillance based on symptoms not definitive laboratory diagnosis
- Inadequate geographic representation to ensure rural and urban sampling
- Lack of behavioral research into the structural drivers of vaccine hesitancy among adult Americans don't say you are following the science when you don't do the science or gather the evidence
- Poor communication of the evidence base to support guidance
- Poor communication about COVID vaccines effectiveness
- Lack of consistent communication on the state of the pandemic
- Unwillingness to learn across political parties and countries
- Lack of consistent health care access in rural America
- Lack of culturally appropriate support to Tribal Nations
- Pandemic response by polling
- Persistent magical thinking rather than data driven decision making
- Slogans do not make a program we are still not using our tools effectively

Summary of the USA & the Immediate Way Forward

- **Mitigation should be linked to the level of COVID spread in the community**
- Mitigation will need to be individualized based on level of risk to severe disease and long term consequences of even mild infections
- Nursing homes will need to create environments that build confidence and provide layered protection for those most vulnerable
- With actively circulating virus in your community : **vaccination and boosting won't be enough** to ensure you are infected with evolving variants (most will be protected from serious disease) but **increased layer protection is needed during surges, masking indoors, minimizing unmasked indoor gatherings with those still vulnerable to severe disease, proactive testing** with isolation away from vulnerable family members, and ensuring 21st century technology to enhance the purity of indoor air to protect the vulnerable adults, using proactive data – **like COVID 19 serology to access risk to severe disease**

How Does It End? It doesn't end but we control the impact

First we need to survive and then we can thrive

- When we use all the tools we have to deal with the recurrent surges –our control over the virus is possible
- Using available technology strategically and temporally in a surge : **better use to the data we have, testing, masking, better and safer indoor air, active use of current serology with immediate access to antivirals and Evushield, more durable vaccines**
- **We know who is at risk for severe disease, hospitalization and deaths**
- We need a **clear strategy of how to comprehensively protect this group at home, in LTCF, and work** —will require at first increase in cases a combination of integrated data driven alerts, testing, masking, limiting exposure to all untested individuals and twice weekly testing of vulnerable individuals with rapid access to antivirals, monoclonal Ab, and long-term depo monoclonal antibodies, early alerts through data
- We need a **definitive titer for protection from infection and protection from severe disease** so everyone can track their titer to determine timing of boosters — everyone's peak is different and until we do when can use our **current serologic tools in a common sense manner to understand who is at significant risk and needs additional layered protection**
- We need an **intranasal vaccine** that produces high IgA titers in the nose if you want to protect against infection
- We need a **more immunogenic vaccine** for the elderly and immune compromised