

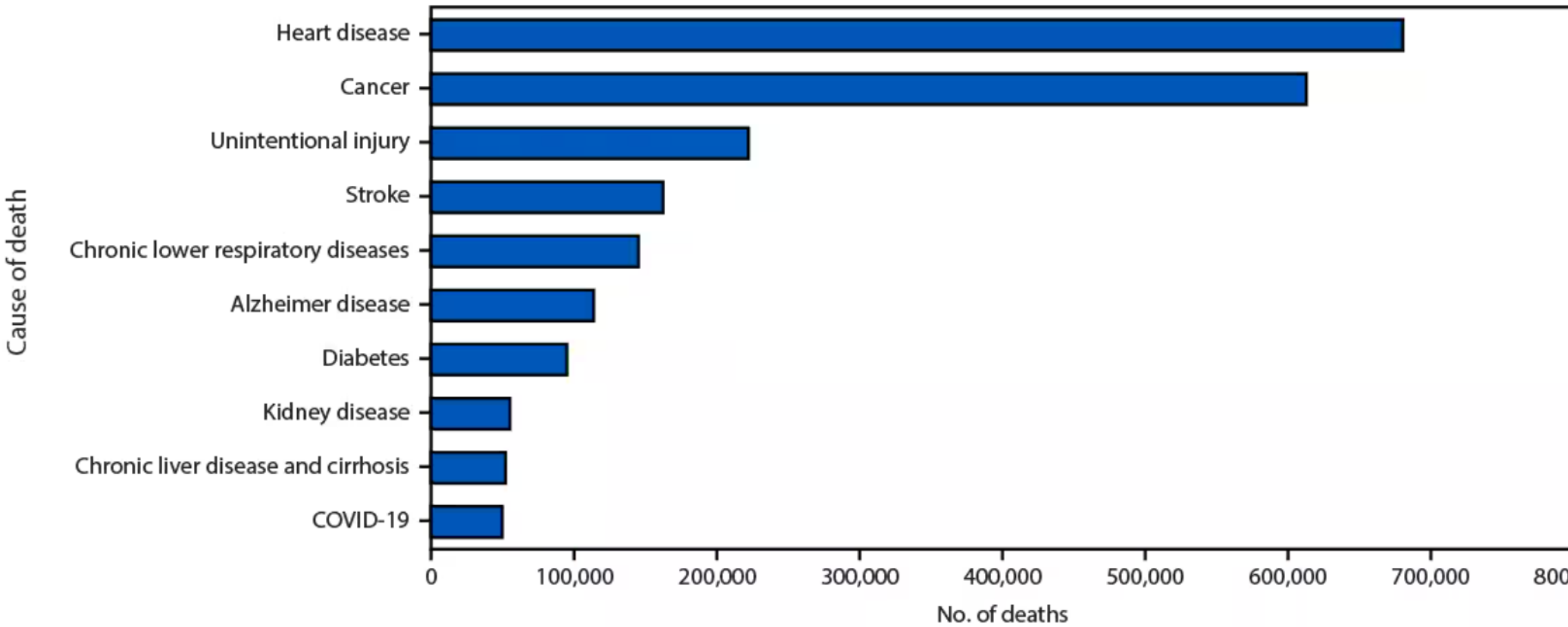
# Transportation & Health

Megan Weil Latshaw, PhD MHS

[mlatshaw@jhu.edu](mailto:mlatshaw@jhu.edu)

Johns Hopkins Bloomberg School of Public Health

**FIGURE 2. Leading underlying causes of death\* — National Vital Statistics System, United States, 2023**



\* National Vital Statistics System provisional data for 2023 are incomplete. Data from December 2023 are less complete because of reporting lags. These data exclude deaths that occurred in the United States among residents of U.S. territories and foreign countries.

# Chronic Disease: Risk factors & causes

- Age
- Family history
- Diet
- Exercise
- Smoking
- Alcohol
- Environmental factors
- Stress
- Sleep



# Chronic Disease: Risk factors & causes

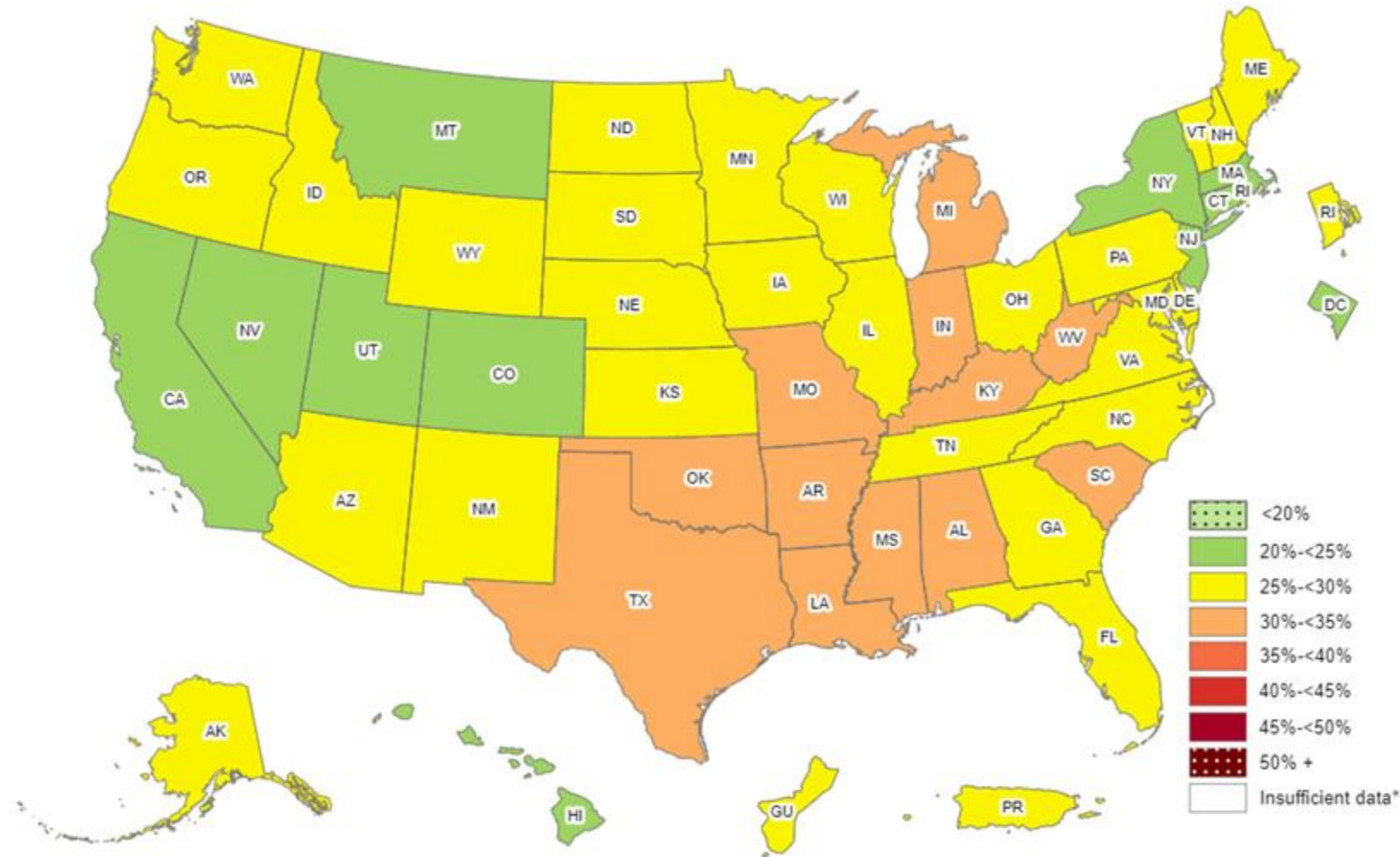
- ~~Age~~
- ~~Family history~~
- Diet ←
- Exercise ←
- Smoking ←
- Alcohol ←
- Environmental factors
- ~~Stress~~
- Sleep ←





# Prevalence<sup>†</sup> of Self-Reported Obesity Among U.S. Adults by State and Territory, BRFSS, 2011

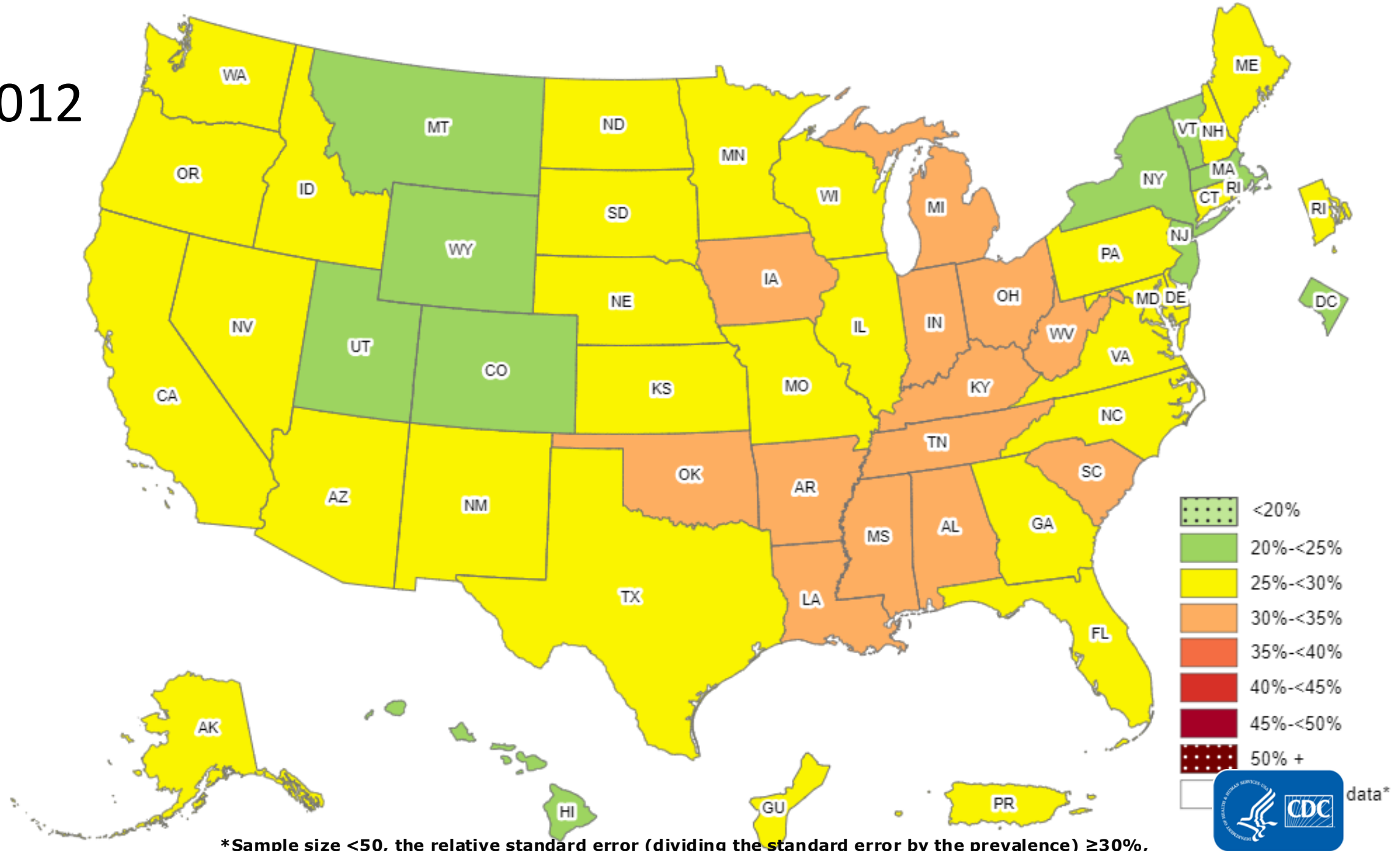
<sup>†</sup> Prevalence estimates reflect BRFSS methodological changes started in 2011. These estimates should not be compared to prevalence estimates before 2011.



\*Sample size <50, the relative standard error (dividing the standard error by the prevalence)  $\geq 30\%$ , or no data in a specific year.



2012



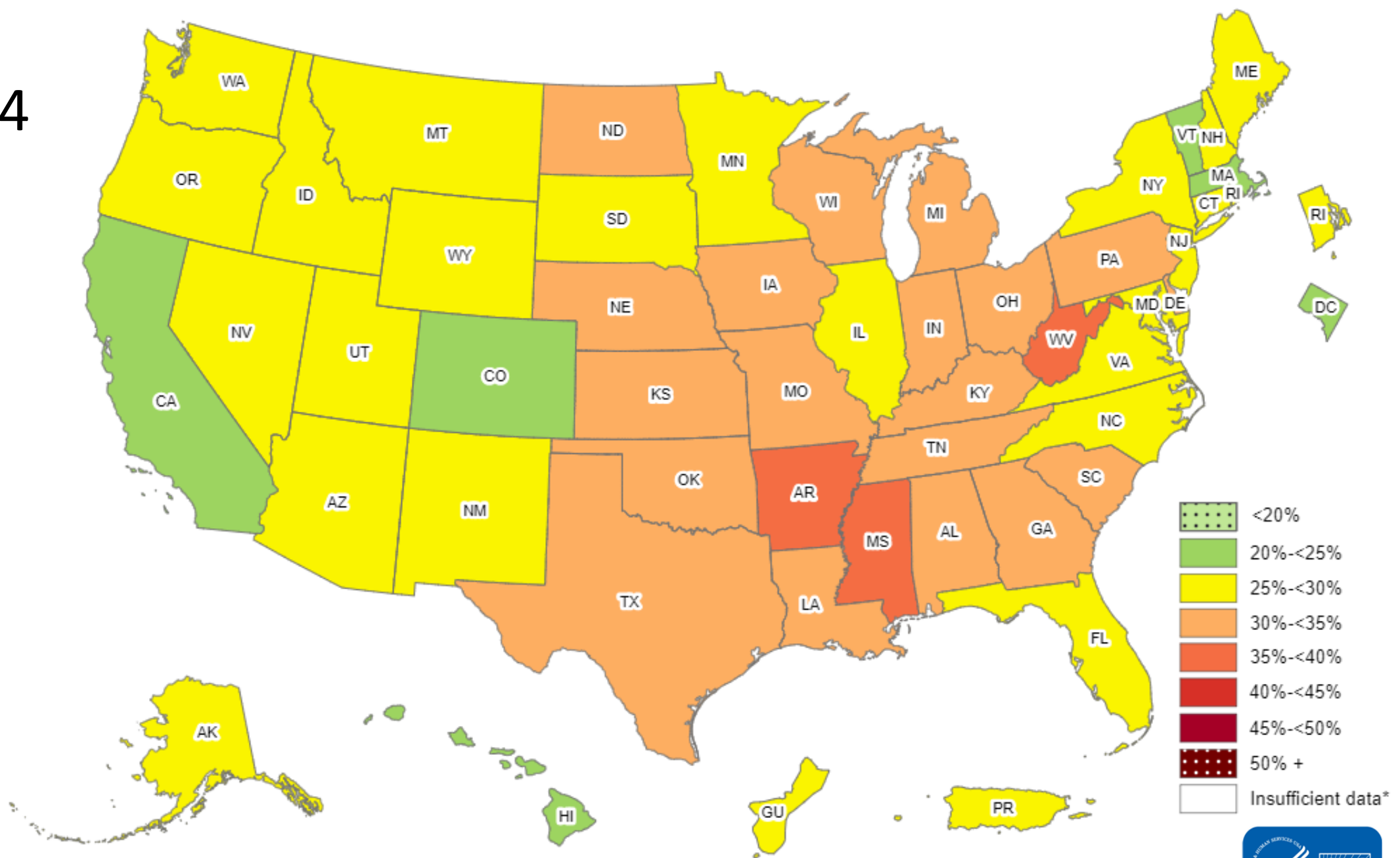
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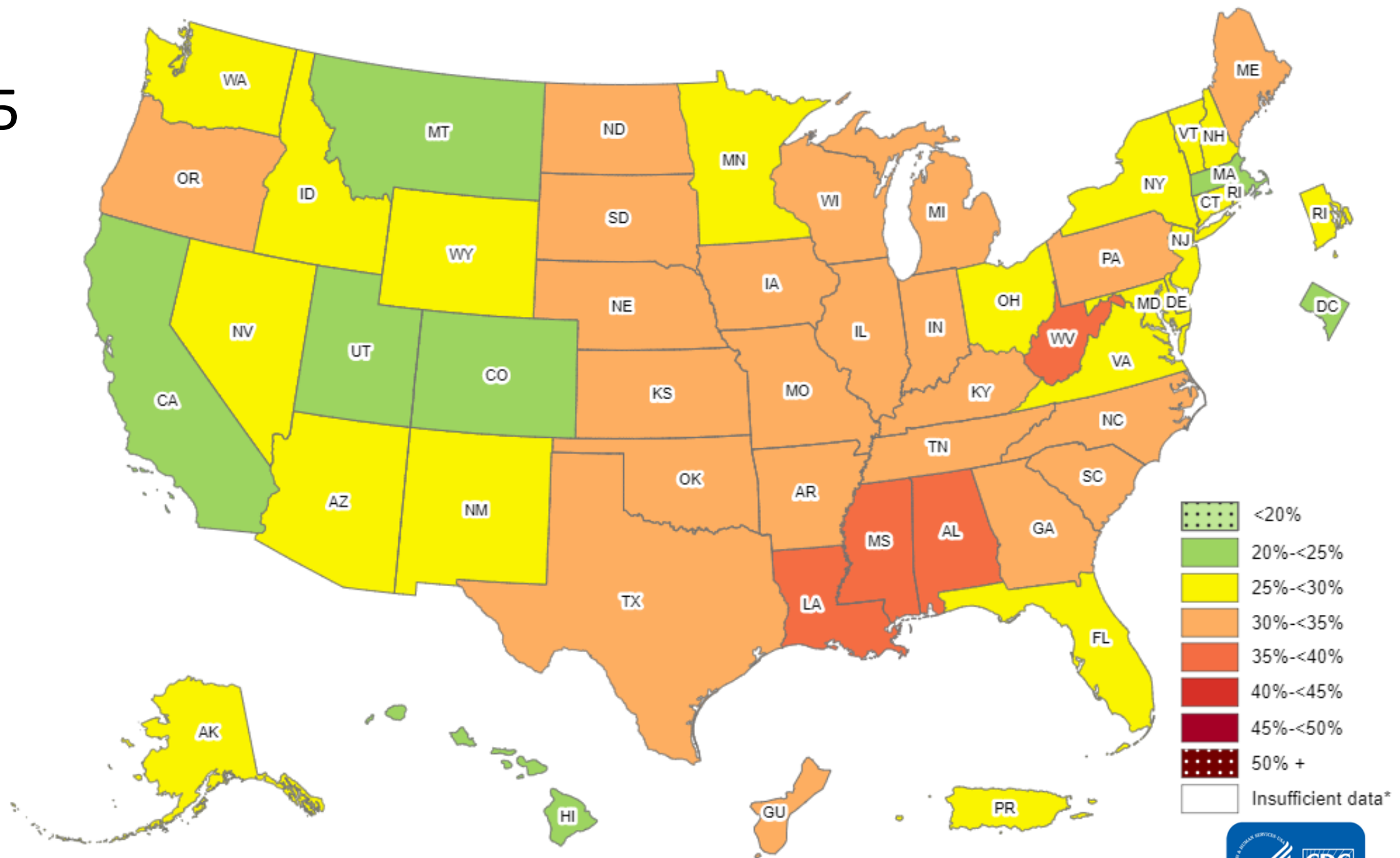
2014



\*Sample size <50, the relative standard error (dividing the standard error by the prevalence)  $\geq 30\%$ , or no data in a specific year.



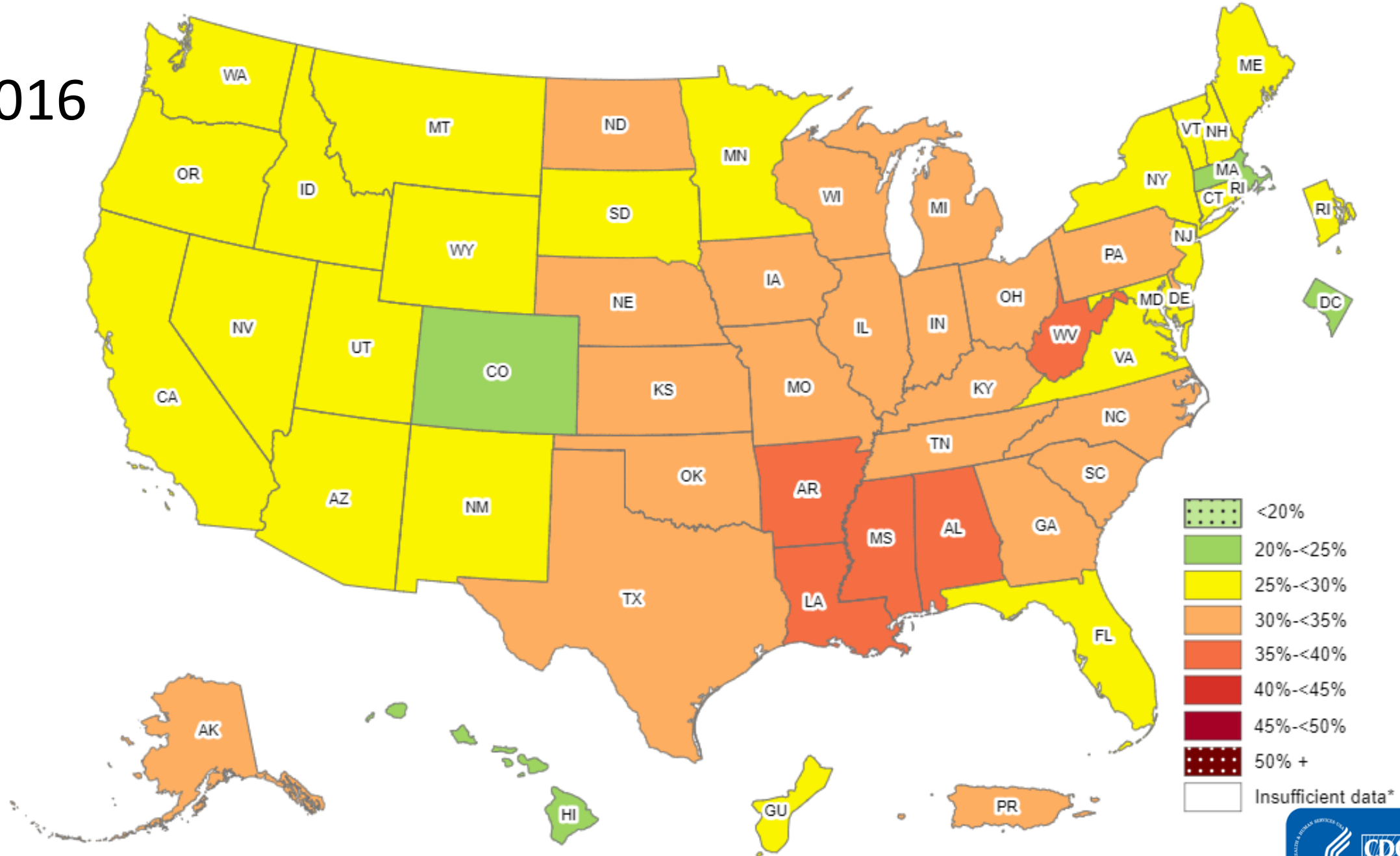
2015



\*Sample size <50, the relative standard error (dividing the standard error by the prevalence)  $\geq 30\%$ , or no data in a specific year.



2016

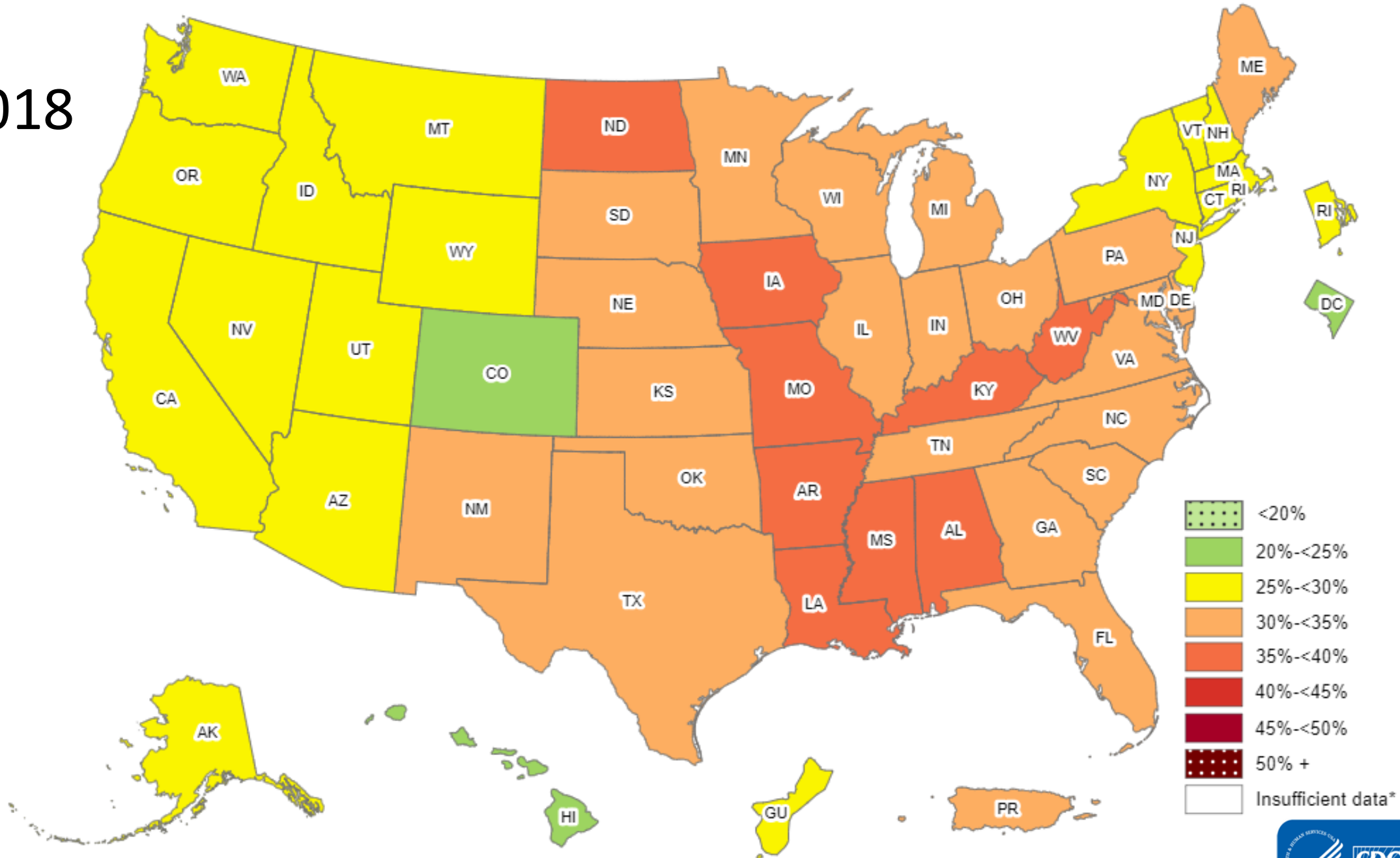


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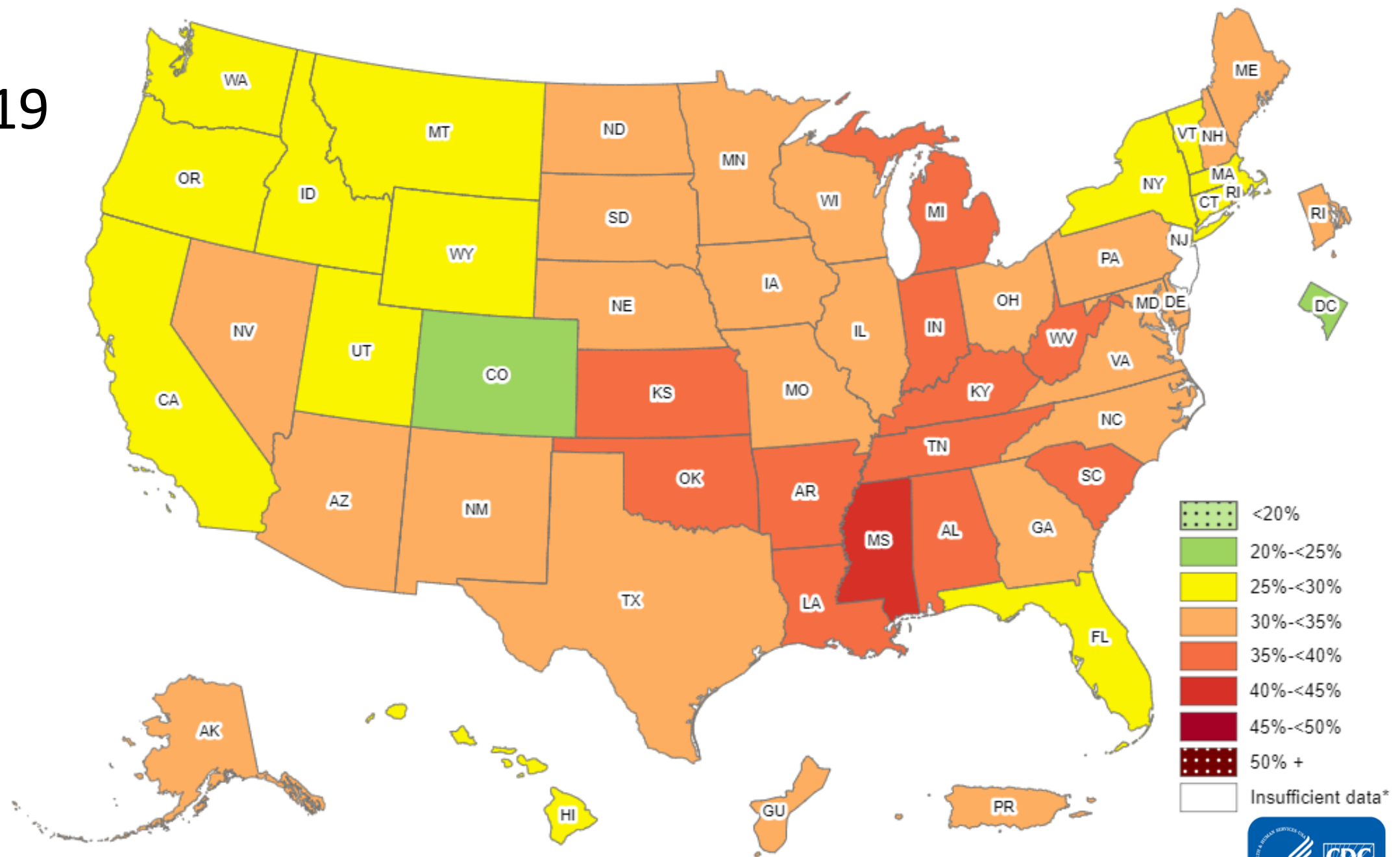
2018



\*Sample size <50, the relative standard error (dividing the standard error by the prevalence)  $\geq 30\%$ , or no data in a specific year.



2019

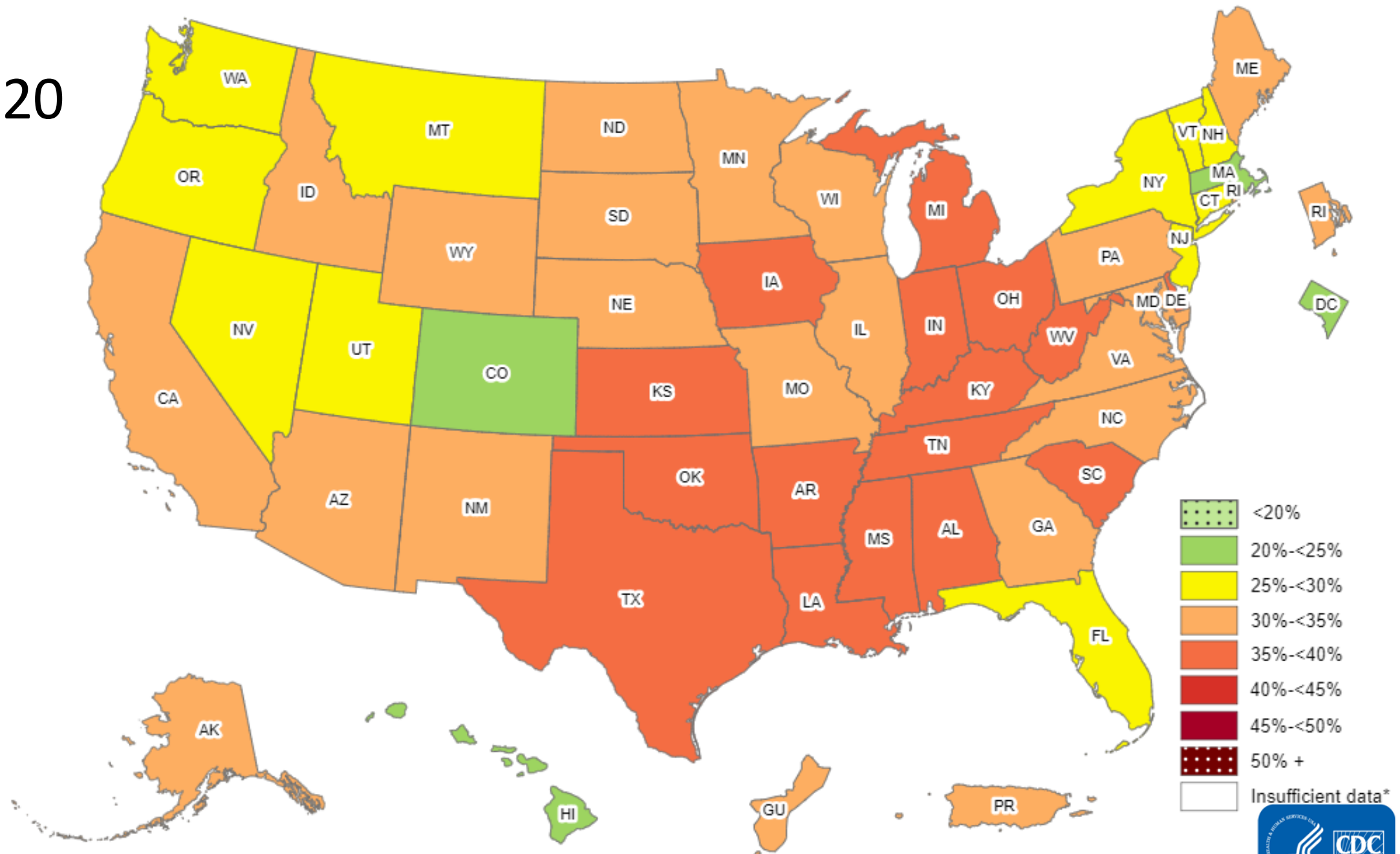


\*Sample size <50, the relative standard error (dividing the standard error by the prevalence)  $\geq 30\%$ , or no data in a specific year.





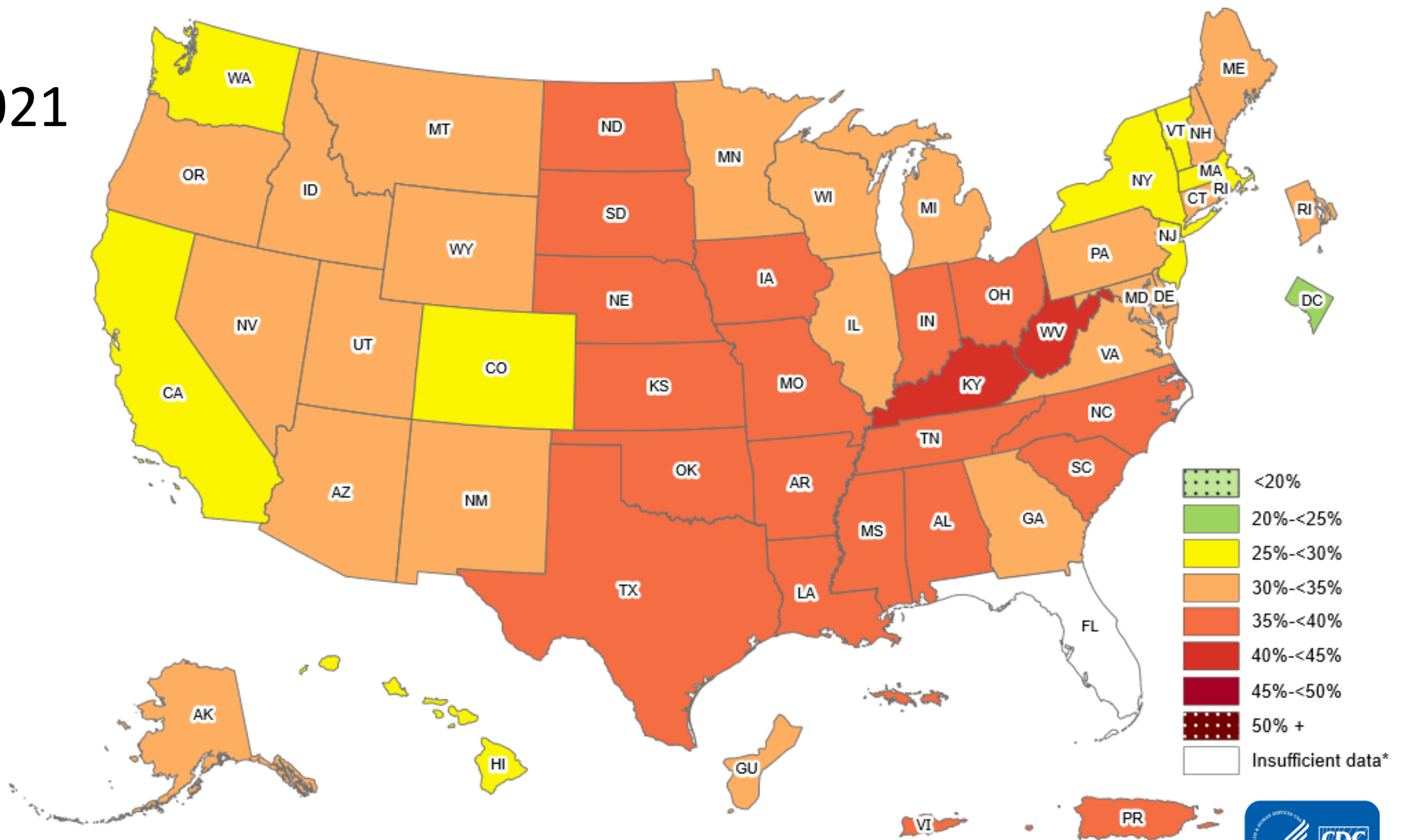
2020



\*Sample size <50, the relative standard error (dividing the standard error by the prevalence)  $\geq 30\%$ , or no data in a specific year.



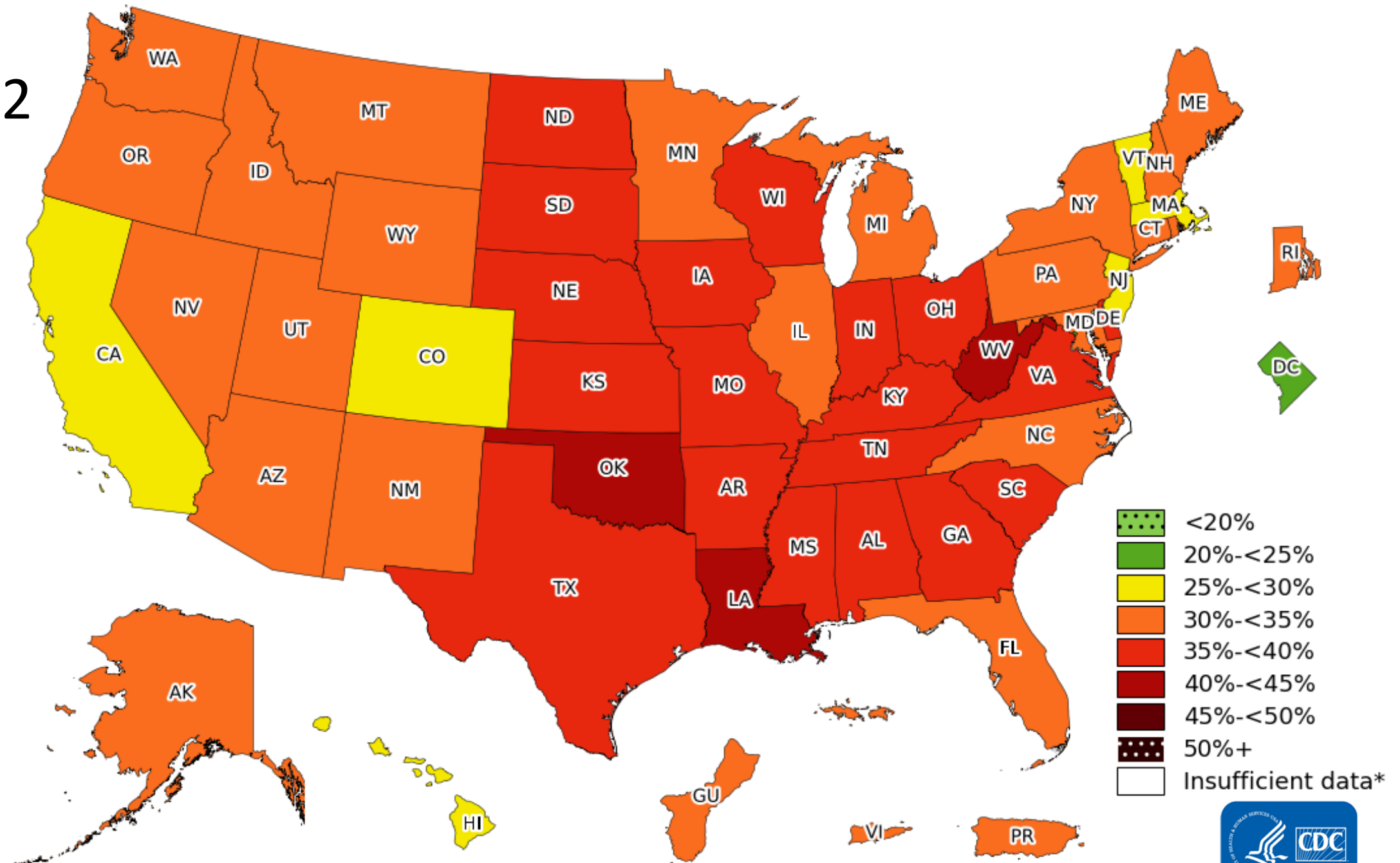
2021



\*Sample size <50, the relative standard error (dividing the standard error by the prevalence)  $\geq 30\%$ , or no data in a specific year.



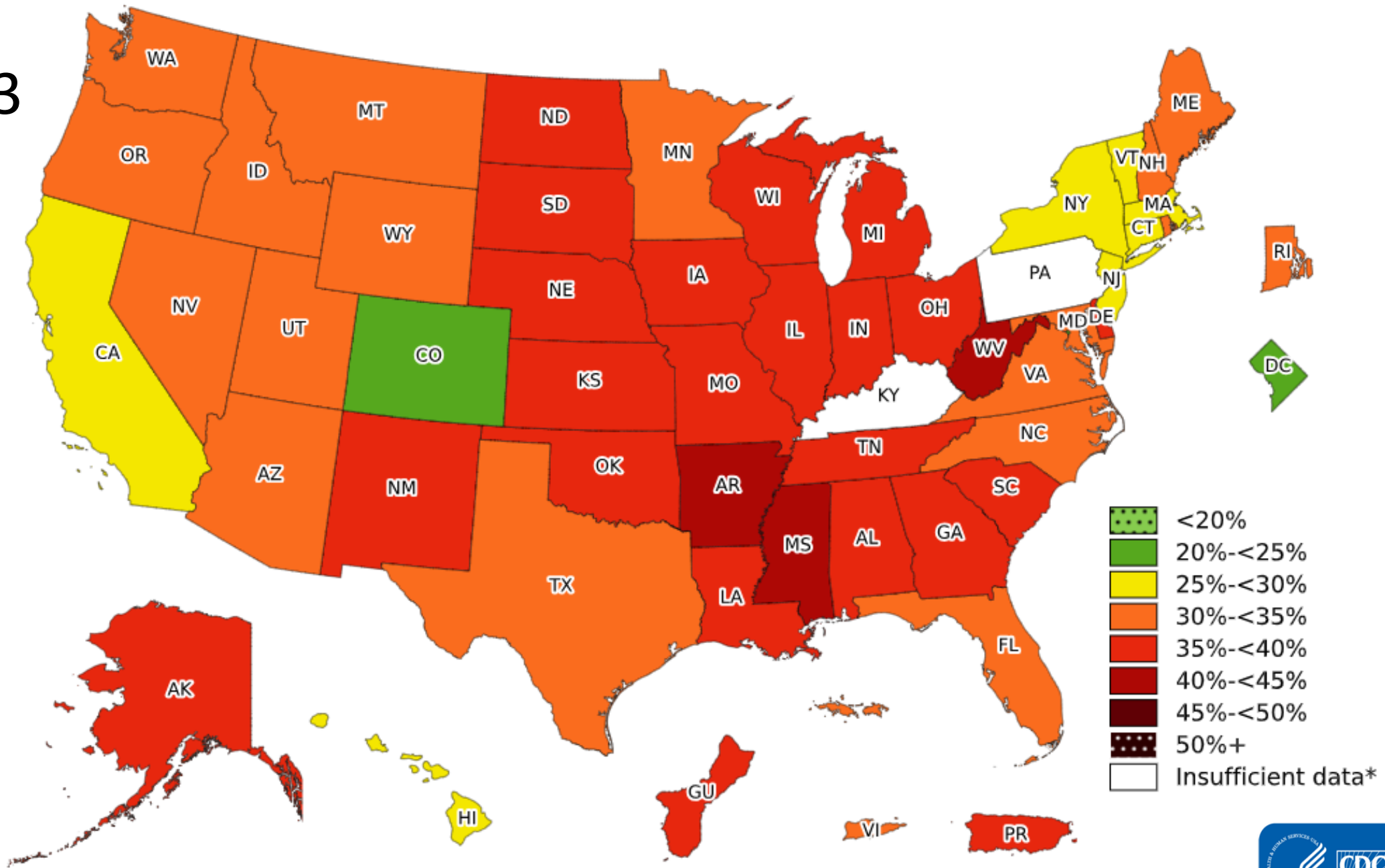
2022



\*Sample size <50, the relative standard error (dividing the standard error by the prevalence)  $\geq 30\%$ , or no data in a specific year.



2023



\*Sample size <50, the relative standard error (dividing the standard error by the prevalence)  $\geq 30\%$ , or no data in a specific year.



# Risk factors & causes

- ~~Age~~
- ~~Family history~~
- Diet ←
- Exercise ←
- Smoking ←
- Alcohol ←
- Environmental factors ★
- ~~Stress~~
- Sleep ←

**How do we change our environment  
to make the healthy choice the easy choice?**







“We’ve built America not for human beings, but for cars.”

Los Angeles Image: <http://www.examiner.com/women-s-health-in-los-angeles/ucla-unearths-new-freeway-health-hazard-asthma-flare-ups>



**THIS ONE  
RUNS ON FAT  
AND SAVES YOU MONEY**



**THIS ONE  
RUNS ON MONEY  
AND MAKES YOU FAT**



*Photo: Carlton Reid via Flickr, Art: Peter Drew*

<http://www.grist.org/article/2010-08-26-when-streets-tell-the-truth-about-people-riding-in-cars-bikes/>

# Transportation & Health



Driving (injuries, air quality & respiratory health)



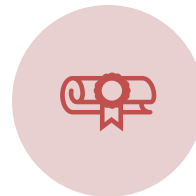
Physical activity (cardiopulmonary health)



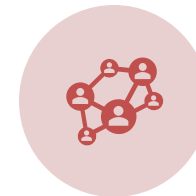
Access to healthy food (nutrition, obesity)



Access to nature (mental health)



Access to health care, jobs, education



Improved social capital (sense of well-being)



# How do Marylanders get around?

- 85-90% commute to work by **car**, either alone or by carpooling
- ~ 10-15% of households **do not own a car** (~250,000 to 375,000)
- ~10-20% work from home or **telecommute** part of the week
- ~ 5-8% use **public transit** regularly
- ~ 2-4% **walk or bike** to work



# % of children who walk or bike to school

- Percent of children 5 to 14 years of age who usually walked or bicycled to school
  - 1969: 48%
  - 2009: 13%
- Percent of children in grades K–8 lived within one mile of school
  - 1969: 41%
  - 2009: 31%









# Annual Motor Vehicle Crashes in Maryland

- ~ 110,000-120,000 **crashes**
- ~ 35,000-40,000 people **injured**
- ~ 500-550 people **die** as a result
- ~ 100-150 **pedestrians and cyclists die**

 Baltimore Sun

## Driver dies, northbound I-95 shut down Tuesday after fiery crash in Harford County

A truck crash on Interstate 95 near Aberdeen killed a driver and set a tractor-trailer on fire, shutting down the highway Tuesday morning.

2 days ago



 The MoCo Show -

## Portion of I-495 Closed Sunday Morning Due to Major Crash/Investigation

Alert Montgomery sent out a 'Severe Traffic Alert' at 8:28am Sunday morning regarding a traffic incident that closes outer loop I-495 from...

4 days ago



 WTOP

## Police identify man killed in 3-vehicle crash in Hillcrest Heights area

A man is dead after a three-vehicle crash in Oxon Hill, Maryland, Saturday evening, police said.

4 days ago





# Transportation & Health



**Driving (injuries, air quality & respiratory health)**



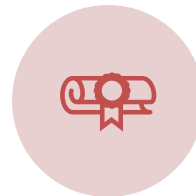
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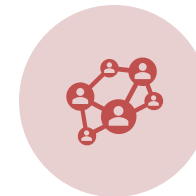
**Access to healthy food (nutrition, obesity)**



**Access to nature (mental health)**



**Access to health care, jobs, education**



**Improved social capital (sense of well-being)**



# Air Pollution & Health



- Aggravates **asthma** symptoms (~600,000 Marylanders)
- Diminishes **lung function** (an additional 200k-400k people)
- Triggers **heart** attacks (~ 29,000 Marylanders each year)
- Causes adverse **birth outcomes** (~8,000 each year)
- Increases risk of **cancer** (~30,000 each year)
- Increases risk of **death** (~54,000 each year)

<https://www.niehs.nih.gov/health/topics/agents/air-pollution>



# Transportation & Health



Driving (injuries, air quality & respiratory health)



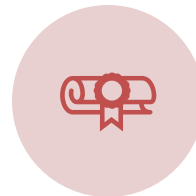
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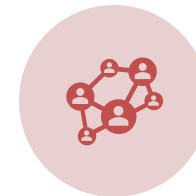
Access to healthy food (nutrition, obesity)



Access to nature (mental health)



Access to health care, jobs, education



Improved social capital (sense of well-being)





# Physical Inactivity & Health

- Can contribute to **heart disease, type 2 diabetes, some cancers, & obesity**
- Associated with an estimated **\$117 billion in health care** costs each year
- Only **1 in 4 US adults**, and **1 in 5 high school students** meet the recommended guidelines
- **21% Maryland adults** report doing no physical activity in the past 30 days

\*<https://www.cdc.gov/chronicdisease/resources/publications/factsheets/physical-activity.htm> and <https://www.americashealthrankings.org/explore/measures/Sedentary/MD>





SELECT DATA

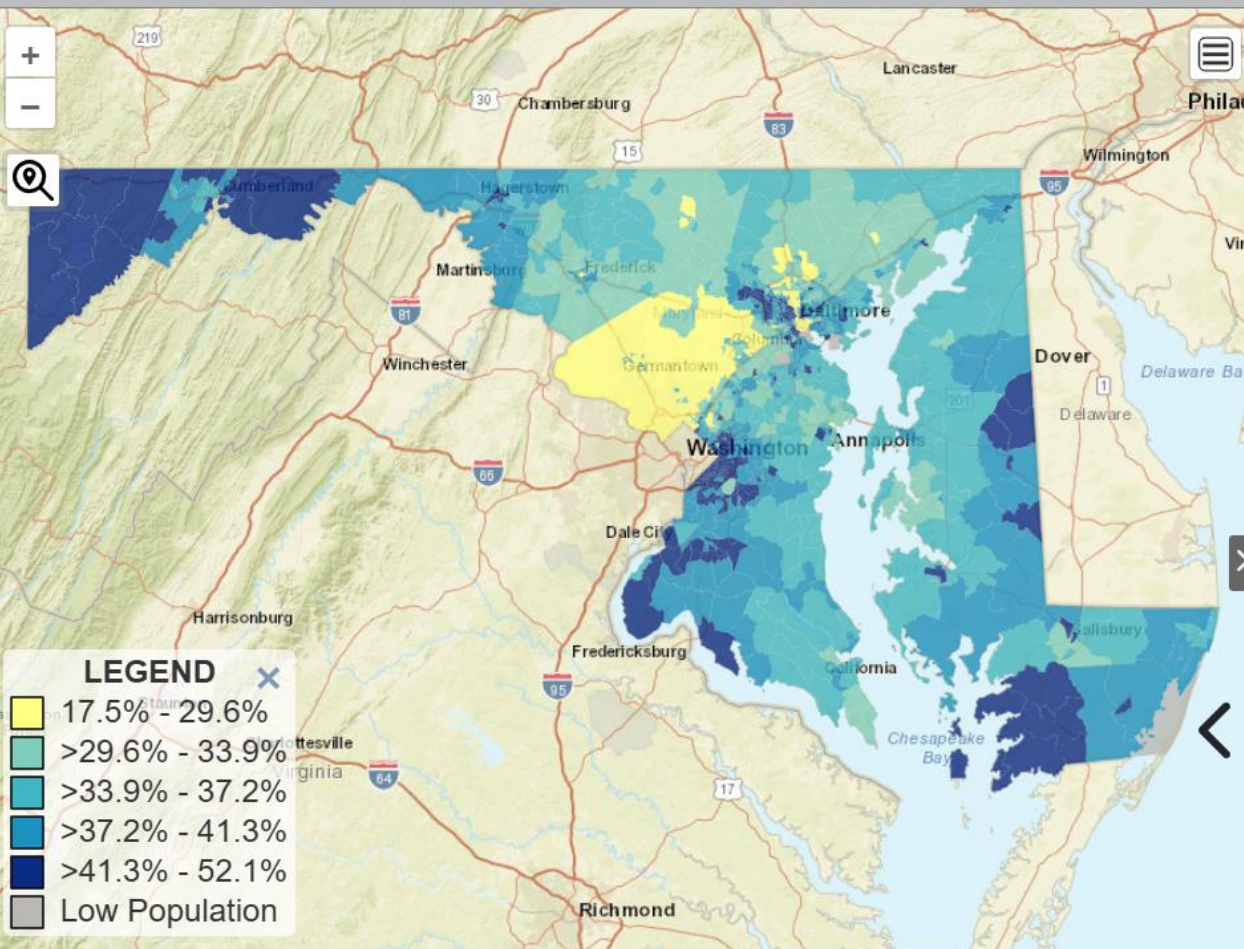


LIFESTYLE RISK FACTORS | OVERWEIGHT & OBESITY | CRUDE PREVALENCE OF OBESITY AMONG ADULTS >=18...

2021



ABOUT DATA



SELECT DATA

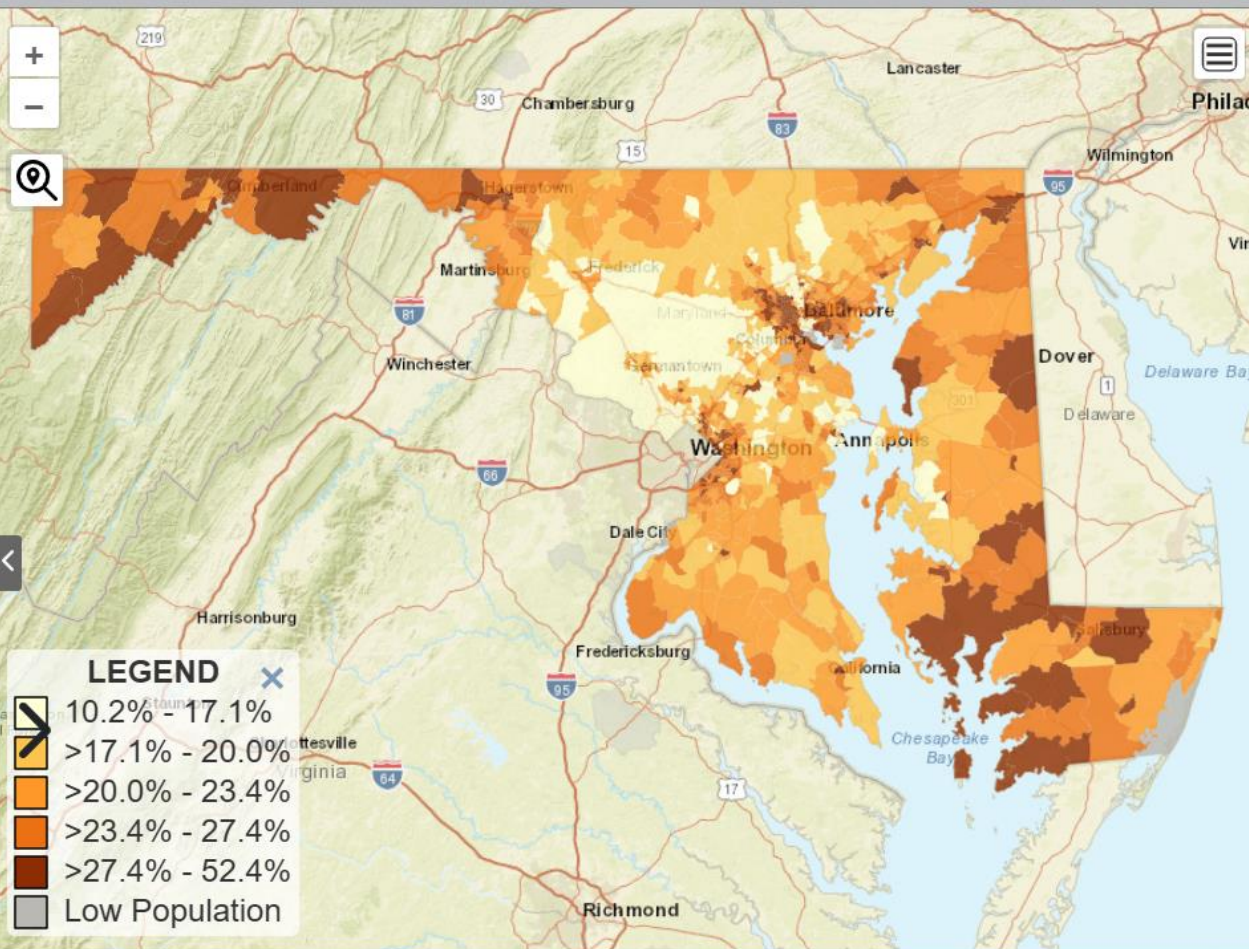


LIFESTYLE RISK FACTORS | PHYSICAL ACTIVITY | CRUDE PREVALENCE OF NO LEISURE-TIME PHYSICAL ACTI...

2021



ABOUT DATA





“If you could package physical activity into a pill, it would be the most effective drug on the market”

-Dr. Ruth Petersen, former  
Director of CDC's Division of  
Nutrition, Physical Activity, and  
Obesity





# Transportation & Health



Driving (injuries, air quality & respiratory health)



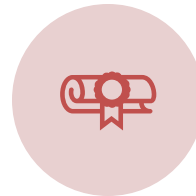
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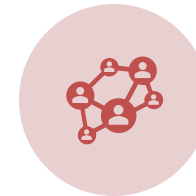
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Access to nature (mental health)

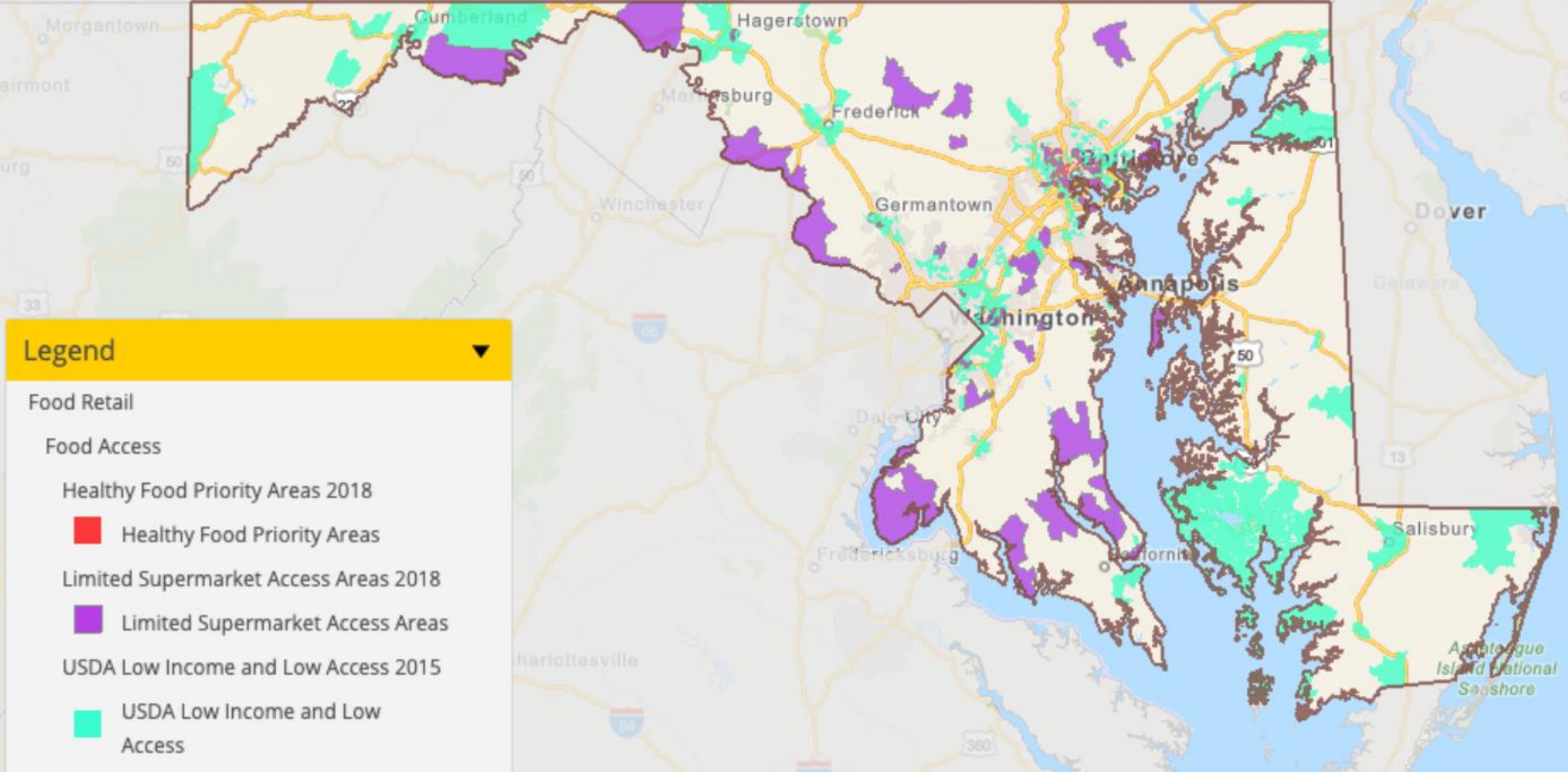


Access to health care, jobs, education



Improved social capital (sense of well-being)





Screenshot of the Maryland Food System Map at <https://countertobacco.org/resources-tools/evidence-summaries/healthy-retail/> (originally from <https://mdfoodsystemmap.org/>); see also 0:57-4:20 of <https://www.youtube.com/watch?v=Cnkinotosfo>

# Transportation & Health



Driving (injuries, air quality & respiratory health)



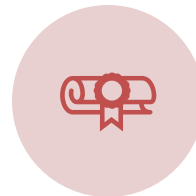
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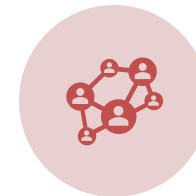
Access to healthy food (nutrition, obesity)



**Access to nature (mental health)**



Access to health care, jobs, education



Improved social capital (sense of well-being)



# Health benefits of nature contact



REDUCED  
STRESS



IMPROVED  
SLEEP



REDUCED  
DEPRESSION  
AND  
ANXIETY



GREATER  
HAPPINESS



REDUCED  
AGGRESSION



REDUCED  
ADHD  
SYMPTOMS



REDUCED  
DIABETES



PROSOCIAL  
BEHAVIOR



LOWER  
BLOOD  
PRESSURE



↓ ASTHMA  
& ALLERGY



BETTER  
GENERAL  
HEALTH



SMOOTHER  
POST-  
SURGICAL  
RECOVERY



BETTER  
BIRTH  
OUTCOMES



IMPROVED  
PAIN  
CONTROL



LESS  
OBESITY



LONGER  
LIFE  
EXPECTANCY



# Transportation & Health



Driving (injuries, air quality & respiratory health)



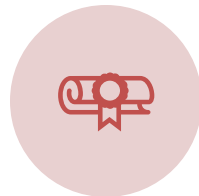
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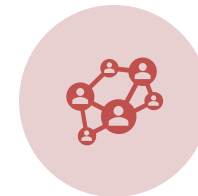
Access to healthy food (nutrition, obesity)



Access to nature (mental health)



**Access to health care, jobs, education**



Improved social capital (sense of well-being)





# Johns Hopkins University data shows Red Line would significantly improve access to jobs in Baltimore

Data: 1 in 3 Baltimoreans do not have a car, 1 in 5 commute on public transit

Share



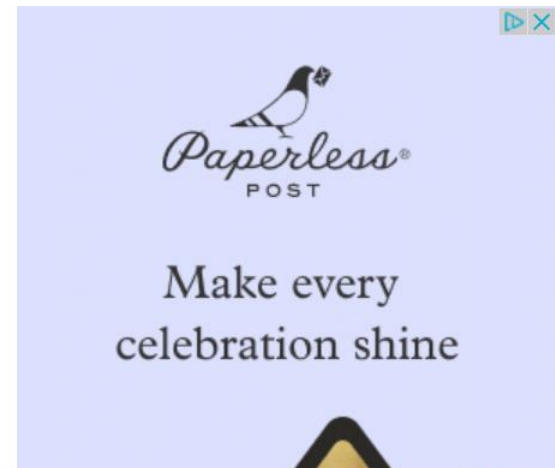
Updated: 6:13 PM EDT Jun 7, 2024

Infinite Scroll Enabled



**Lisa Robinson** f t e

Reporter







Maryland men's basketball upends No. 21 Northwestern, 75-59, to...



Editor's note: Comic strip Dilbert to be discontinued after creator's racist...



Ravens should say goodbye to both John Harbaugh and Lamar Jackson | READER...



MIAA A Conference boys basketball championship | PHOTOS



EDITORIAL

# Baltimore kids need a more reliable way to get to school | COMMENTARY

By Baltimore Sun Editorial Board  
Baltimore Sun • Jun 16, 2021 at 1:33 pm



Expand



An MTA bus is shown on Baltimore Street outside University of Maryland Medical Center. Baltimore City is the only public school system in the state that relies on mass transit to shuttle students (Karl Merton Ferron/Baltimore Sun Staff) (Karl Merton Ferron/The Baltimore Sun)

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She gets it.

**30 Million Seniors Rely on Medicare Advantage for Vital Health Care**

SPONSORED BY BETTER MEDICARE ALLIANCE [Learn More](#)

ADVERTISEMENT

With inflation already so high?

**30 Million Seniors Rely on Medicare Advantage for Vital Health Care**

SPONSORED BY BETTER MEDICARE ALLIANCE [Learn More](#)

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unicef USA

ONE YEAR OF

# Transportation & Health



Driving (injuries, air quality & respiratory health)



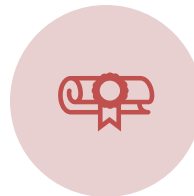
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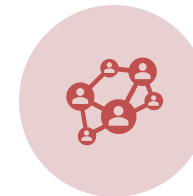
Access to healthy food (nutrition, obesity)



Access to nature (improved health)



Access to health care, jobs, education



**Improved social capital (sense of well-being)**



# How does transportation impact health?



Driving (injuries, air quality & respiratory health)



Physical inactivity (cardiopulmonary health)



Access to healthy food (nutrition, obesity)



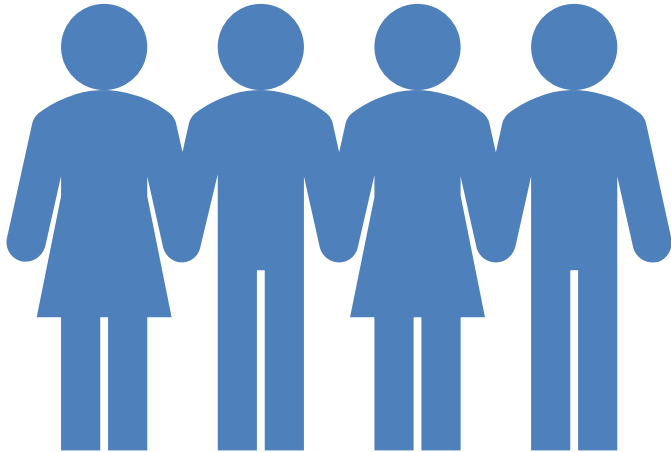
Access to nature (mental health & more)



Improved social capital (sense of well-being)



# Social Capital



- Time & energy available for:
  - Community improvement
  - Social networking
  - Civic engagement
  - Personal recreation, et al.
- Public transit, walking & biking linked to increased social capital
- Which in turn affects mental & physical health





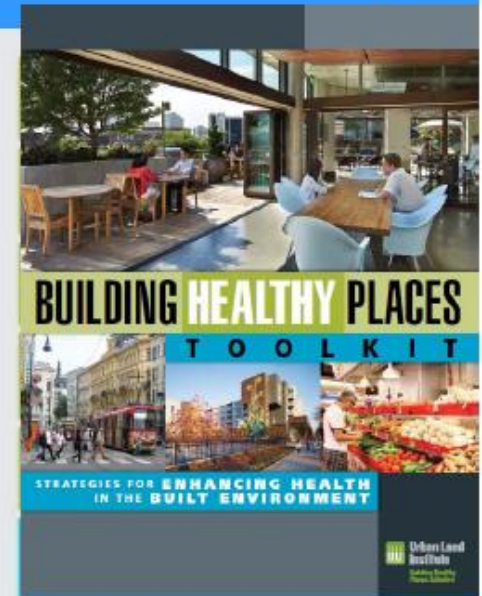
## Healthy Community Design

- Links destinations that promote health via a transportation network that facilitates safe travel
- Makes the healthy choice the easy choice



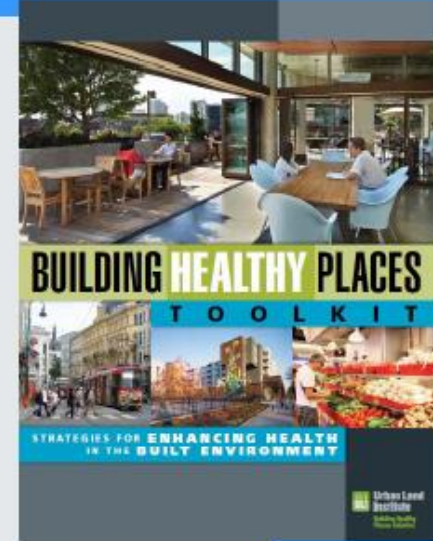
# Evidence-Based Recommendations

- 1 Incorporate a mix of land uses
- 2 Design well-connected street networks at the human scale ★
- 3 Provide sidewalks and enticing, pedestrian-oriented streetscapes ★
- 4 Provide infrastructure to support biking ★
- 5 Design visible, enticing stairs to encourage everyday use
- 6 Install stair prompts and signage
- 7 Provide high-quality spaces for multigenerational play and recreation
- 8 Build play spaces for children



# Evidence-Based Recommendations

- 9 Accommodate a grocery store
- 10 Host a farmers market
- 11 Promote healthy food retail
- 12 Support on-site gardening and farming
- 13 Enhance access to drinking water
- 14 Ban smoking
- 15 Use materials and products that support healthy indoor air quality
- 16 Facilitate proper ventilation and airflow
- 17 Maximize indoor lighting quality
- 18 Minimize noise pollution
- 19 Increase access to nature ★
- 20 Facilitate social engagement ★
- 21 Adopt pet-friendly policies



<http://www.uli.org/toolkit>

# We need to make active transportation easier ...

- Decreases cars
  - Lowers injuries
  - Reduces air pollution
  - Also reduces greenhouse gases
- Increases physical activity
- Increases access to healthy food, nature, jobs and education
- Increases social capital

**All of this improves physical and mental health!**





# Thank you!

**Many thanks to Drs. Brian Schwartz, Dick Jackson & Howie Frumkin, for many of these slides were adapted from lectures given by them.**

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