

Geographic and Ethnic Disparities among U.S.- Mexico Border Residents

Janice C. Probst, PhD

Elizabeth Crouch, PhD

Mary-Katherine McNatt, DrPH, MPH

Myriam Torres, PhD

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ATSU

A.T. Still University
College of Graduate Health Studies

Contributors We thank all our partners!

University partners

At the University of South Carolina:

Elizabeth Crouch, PhD

Rachel Davis, PhD

Jan M. Eberth, PhD

Qian Huang, MA, MPA

Oyeleye Oyesode, MBBS

Collin Perryman, MFHD, MEd

Janice C. Probst, MS, PhD

Erica Sercy, MSPH

Ebony A. Toussaint, PhD, MPH

At the University of North Carolina:

Arrianna Marie Planey, PhD

At the University of Iowa

Whitney Zahnd, PhD

At A.T. Still University:

Mary-Katherine McNatt, DrPH, MPH

State BRFSS Experts

Arizona:

Judy Carbajal Bass, MAS

California:

Julia C. Tomassilli, Ph.D.

Morgan Santoro, MPH

New Mexico:

New Mexico BRFSS Program

Texas:

Cassie Fox, MPH

Tribal Health Experts and Resources

These individuals:

Linda Austin,

Miriam Cardenas

Martin Lopez, Jr.

These organizations:

Tribal Epidemiology Centers

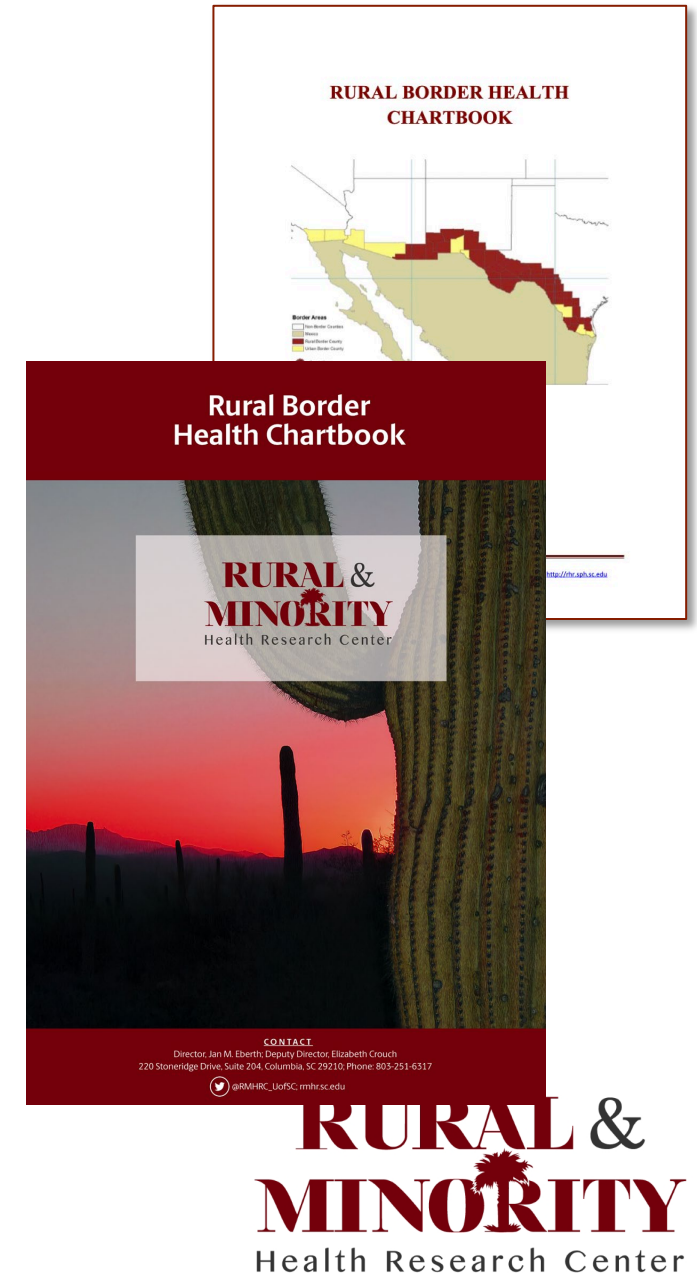
Johns Hopkins Center for American

Indian Health

Indian Health Service

What we'll share today

- What is the “US-Mexico Border” & why should we care
- Information from a new chartbook, funded by FORHP, that shares comparisons between border residents and other residents of the same states on key metrics



The US and Mexico share a 2,000-mile border

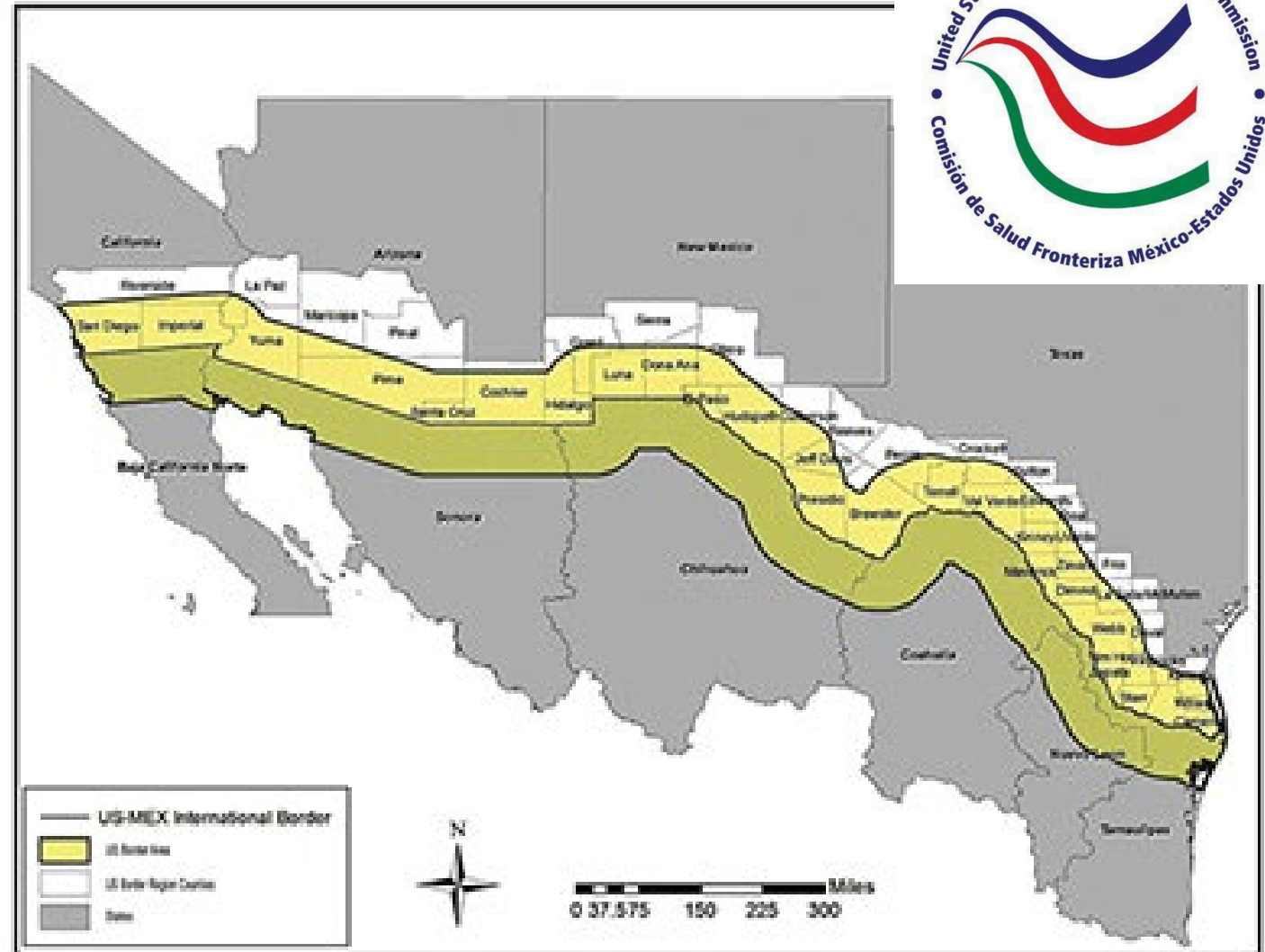
Viewed through the lens of epidemiology, El Paso and Juárez are inseparable.

- Much of the area in the four border states was Mexican territory before it came under US control
 - Hispanic and American Indian identities in the area pre-date the founding of the US
 - Cross-border relationships and travel common
- The two nations share important public health concerns

The US-Mexico Border Health Commission

- La Paz agreement of 1983 defined the US-Mexico Border Area (100 km/62.5 miles around border)
- US-Mexico Border Health Commission was established in 2000 to “*provide international leadership to optimize health and quality of life along the U.S.-Mexico border.*”

Map: <https://www.hhs.gov/about/agencies/oga/about-oga/what-we-do/international-relations-division/americas/border-health-commission/observatory/index.html>



Commission Activities



- Development of “Healthy Border 2020” to set priorities for addressing health problems (published 2015)
- Ongoing monitoring of health issues at the Border and facilitation of cross-national cooperation

But....

Abrupt policy changes in 2017

- Funding for the US-Mexico Border Health Commission eliminated in 2017
 - Functions given to a single liaison officer at the US embassy in Mexico
- NRHA policy brief in 2018 called for refunding the Commission
- Pandemic made the need for cross-border cooperation more evident

Enhancing surveillance with a new Chartbook

- Border Health Commission report, January 2021
 - Focus on prevalence & mortality of selected diseases
 - State-specific findings
- Current chartbook:
 - FORHP funding to NHRA for Chartbook development
 - Rural emphasis
 - Development of race/ethnicity specific estimates on health related behaviors and needs

Border Health Status Report of the 44 U.S. Counties
at the
U.S.- Mexico Border

METHODS (WE'LL BE BRIEF)

Defining the border region

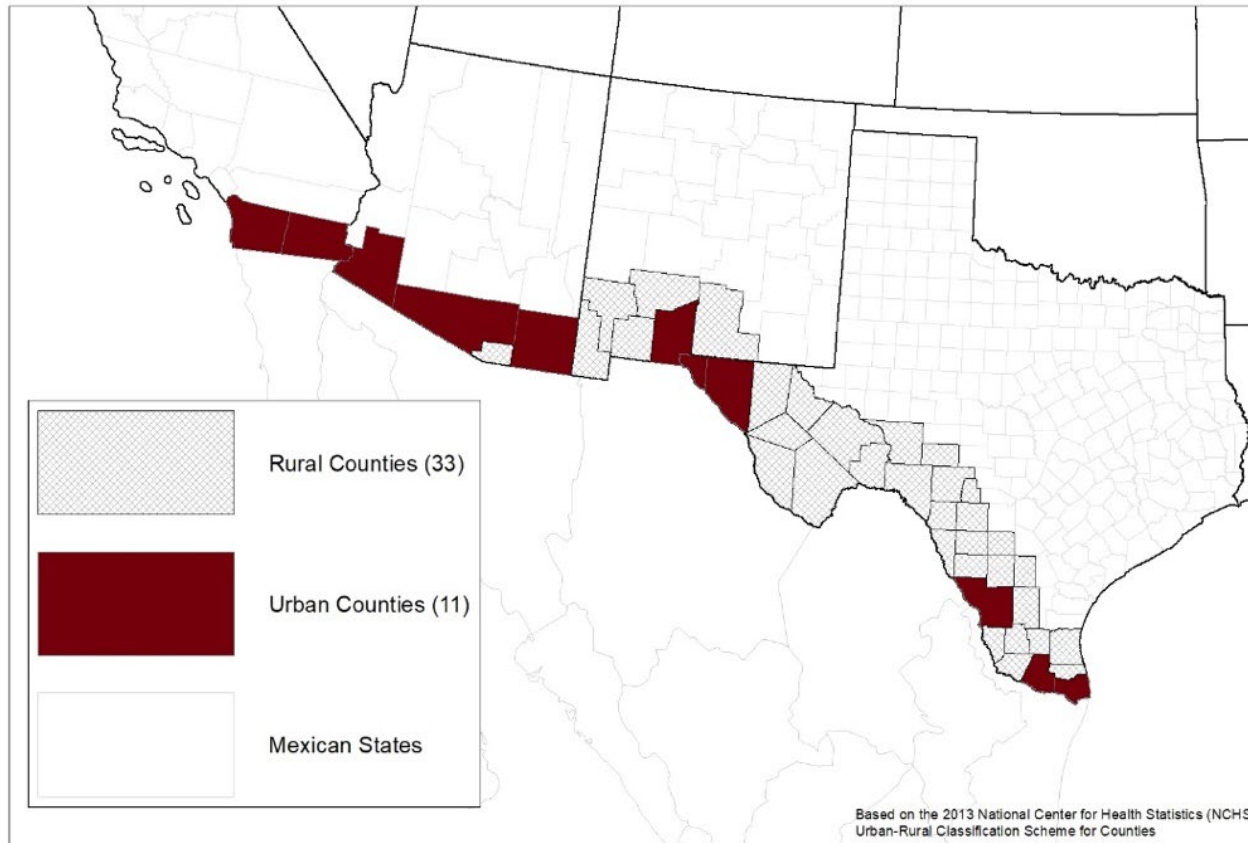
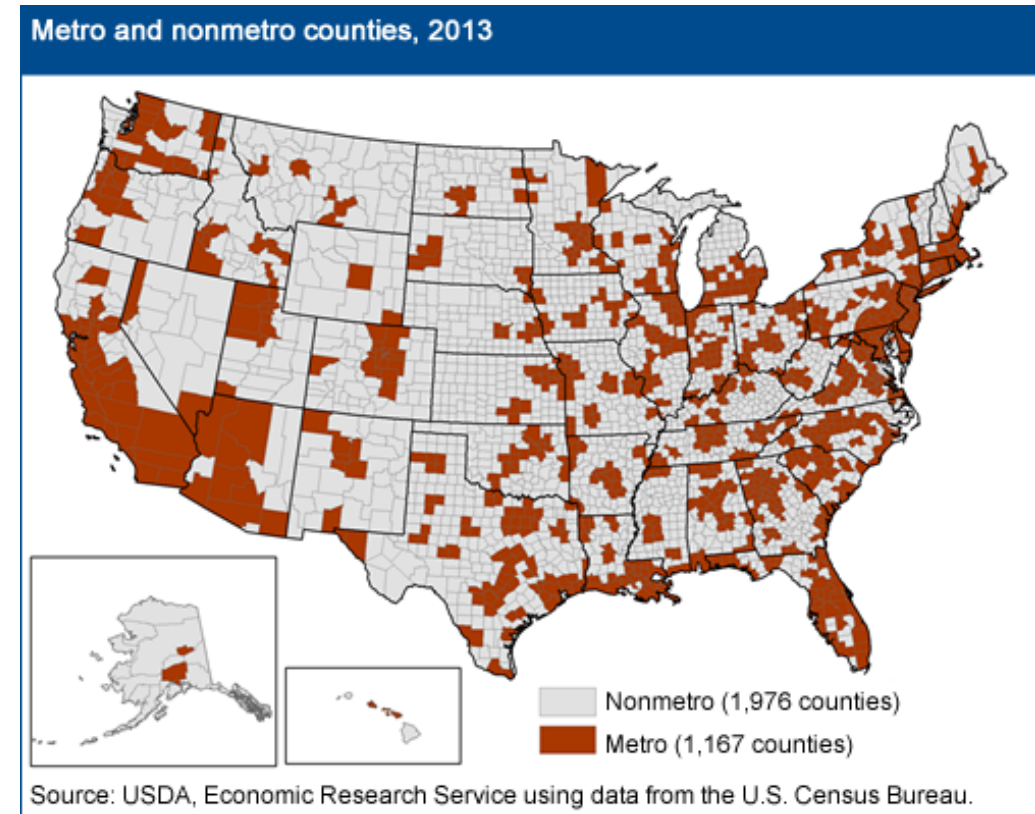


Table 1. List of Border Counties

State	Border County Names	Number of Counties
Arizona	Cochise, Pima, Santa Cruz, and Yuma	4
California	Imperial and San Diego	2
New Mexico	Doña Ana, Grant, Hidalgo, Luna, Otero, and Sierra	6
Texas	Brewster, Brooks, Cameron, Crockett, Culberson, Dimmit, Duval, Edwards, El Paso, Frio, Hidalgo, Hudspeth, Jeff Davis, Jim Hogg, Kenedy, Kinney, La Salle, Maverick, McMullen, Pecos, Presidio, Real, Reeves, Starr, Sutton, Terrell, Uvalde, Val Verde, Webb, Willacy, Zapata, and Zavala	32

DEFINING RURAL

- Rurality: Office of Management and Budget's definition, February 2013
 - Urban = all counties in metropolitan areas, and
 - Rural = all micropolitan and non-core, non-metropolitan counties.
- 75% of border counties are rural (33/44), but they housed only 5.8% of total population of the border region in 2019.



DATA SOURCES

Public Use Data:

- CDC PLACES Tool
- CDC WONDER
- Cecil G. Sheps Center for Health Services Research
- HRSA Area Health Resource File 2019
- Robert Wood Johnson Foundation County Health Rankings
- USDA Food Environment Atlas

Restricted data, obtained for the Chartbook:

- CDC Behavioral Risk Factor Surveillance System (BRFSS) for Arizona, California, New Mexico and Texas
- Tribal BRFSS data

Analytic approach

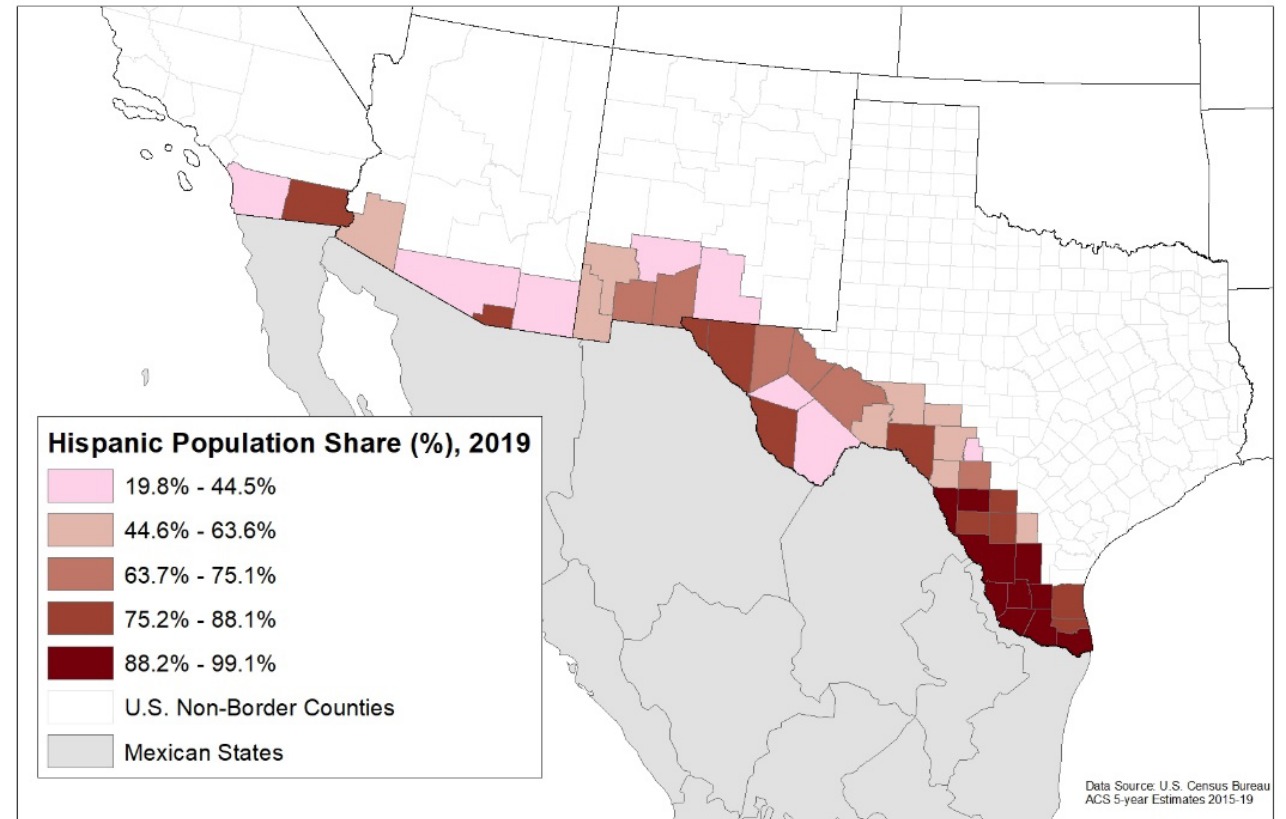
- Principally county-level data
 - Median county value for the outcome or measure.
 - Ensures smaller rural counties are included in the reporting.
- Several BRFSS metrics are person level – will note these in the presentation
 - When we have enough data, we compare outcomes by rural-urban status of the county and by Hispanic or non-Hispanic identification of county residents.

WHO LIVES THERE:

**Demographic Profile
of the US Border Region**

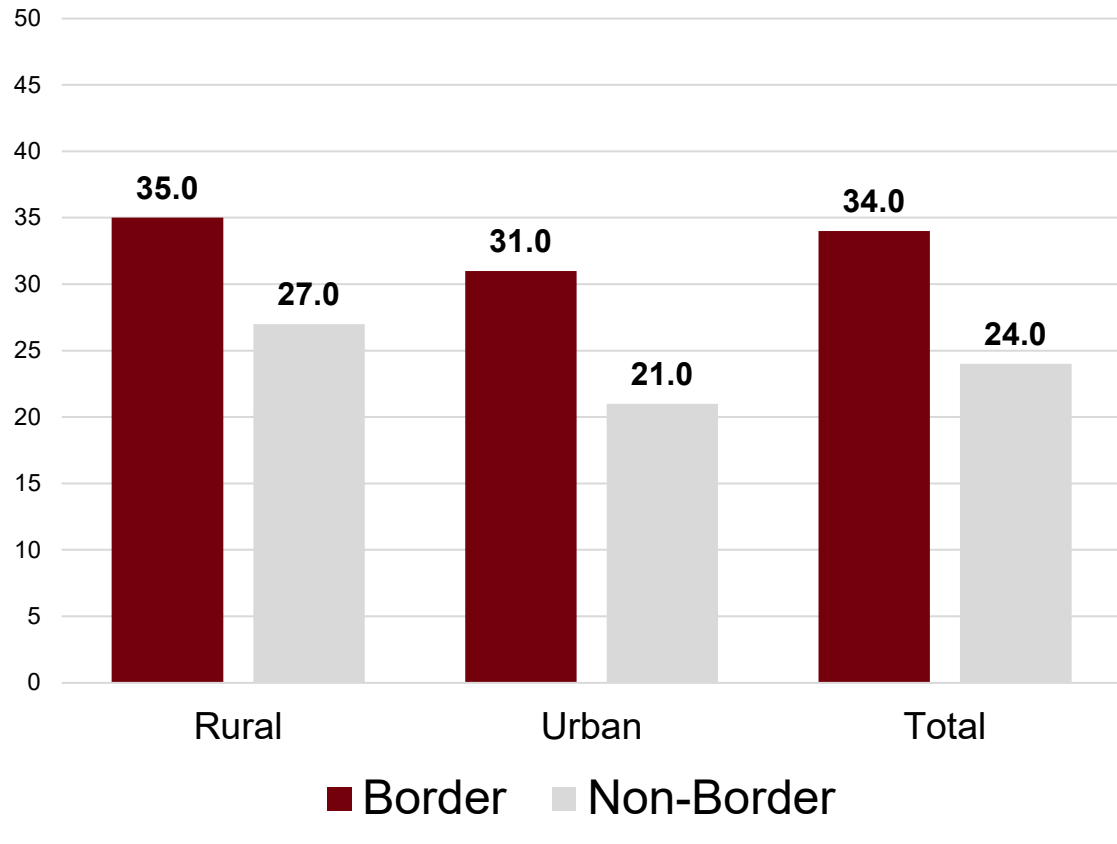
County-Level Population Characteristics

- Persons of Hispanic descent highly represented in the border region



Children in Poverty

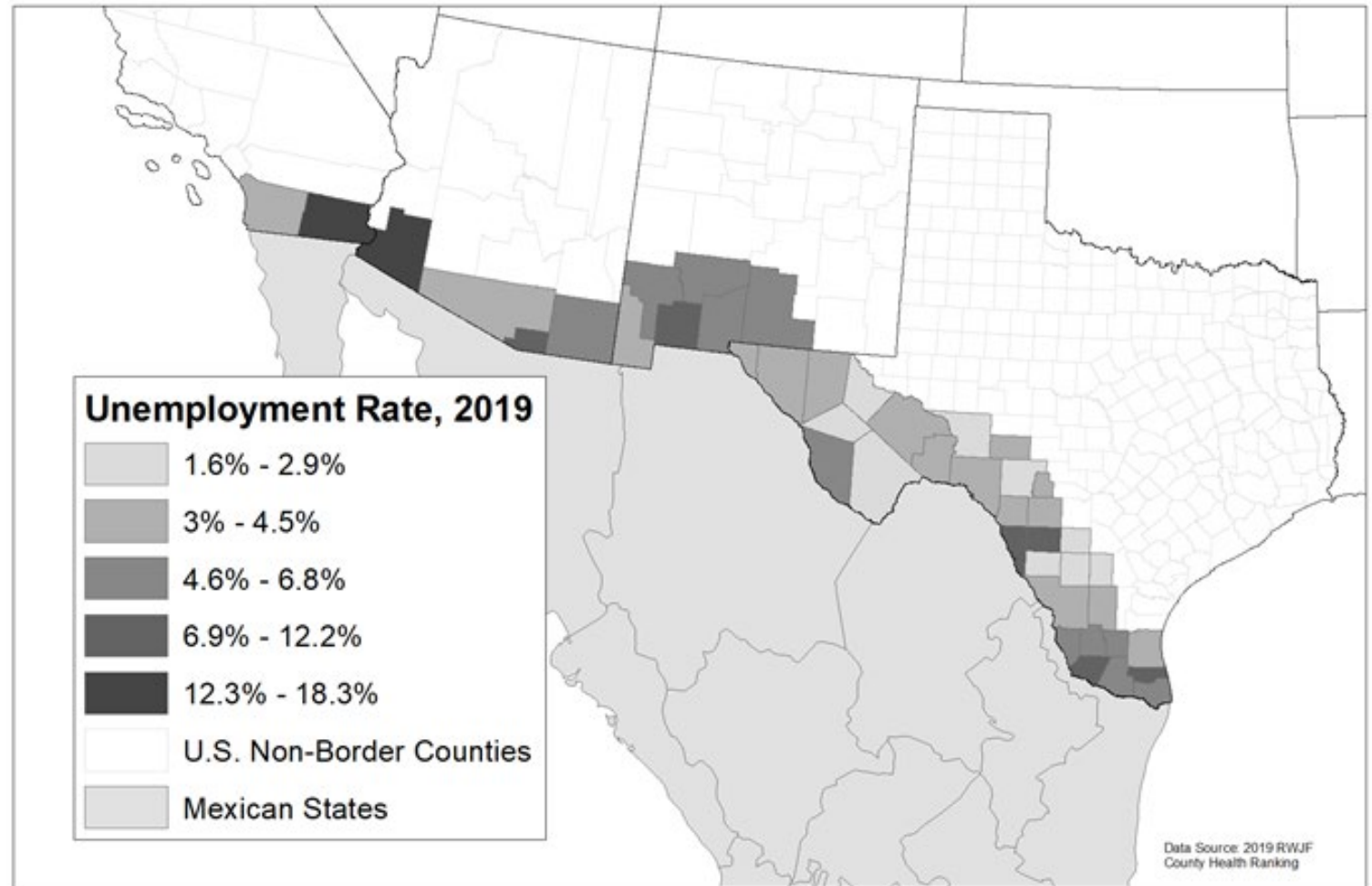
Figure 6. Median County Percent Children Living in Poverty, 2015-2019



- Poverty affects families, but children are particularly at risk
- Poverty is one of the “Adverse Childhood Experiences” (ACEs) affecting growth & development

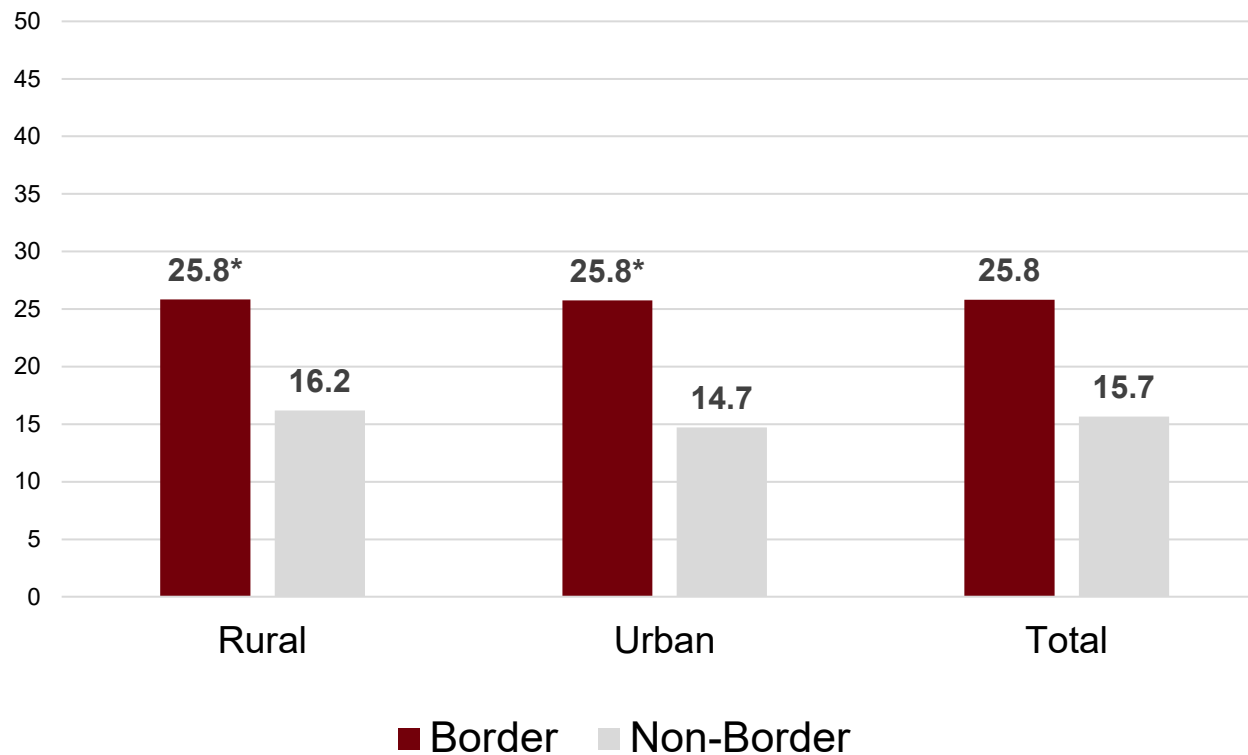
Employment

- Unemployment varied from 1.6% to 18.3% pre-pandemic
- Higher among Border counties (median 6.2%) than others (5.1%)
- Higher in urban than rural border counties



Consequences of poverty

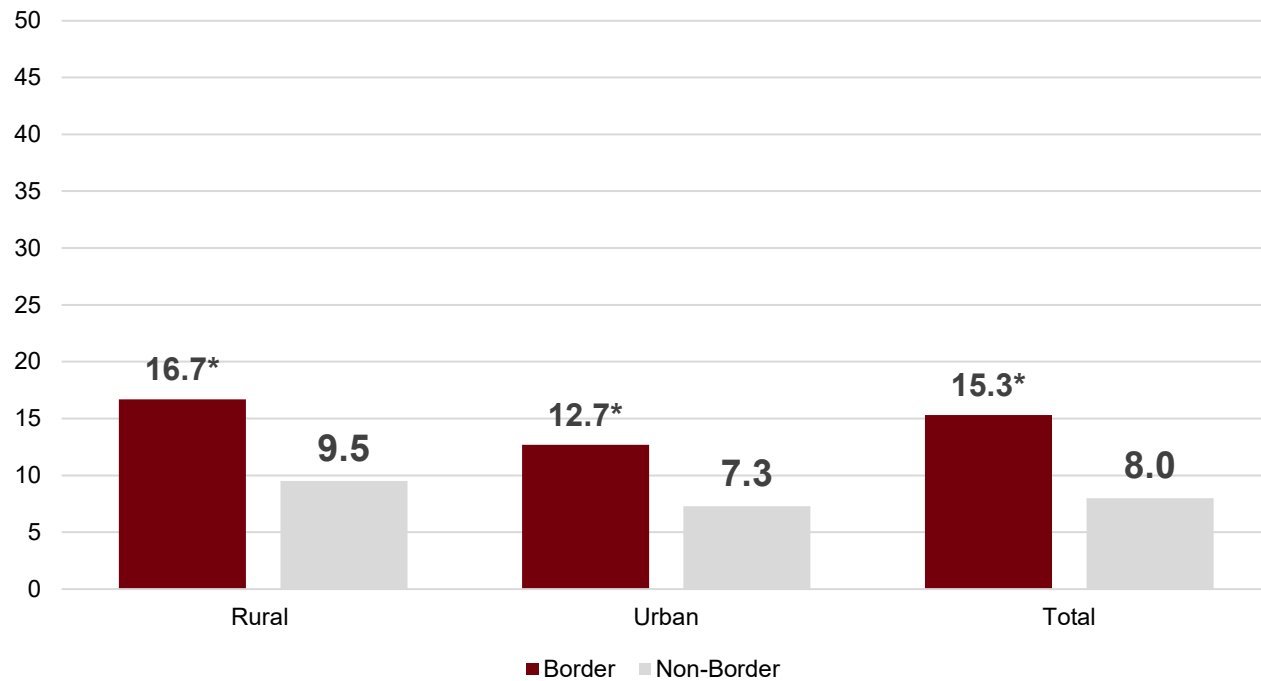
Figure 14. Median Proportion of County Population Receiving SNAP Assistance, 2017



- Roughly a quarter of households in border counties receive Supplemental Nutrition Assistance Program (SNAP)

Low income with poor access to food stores

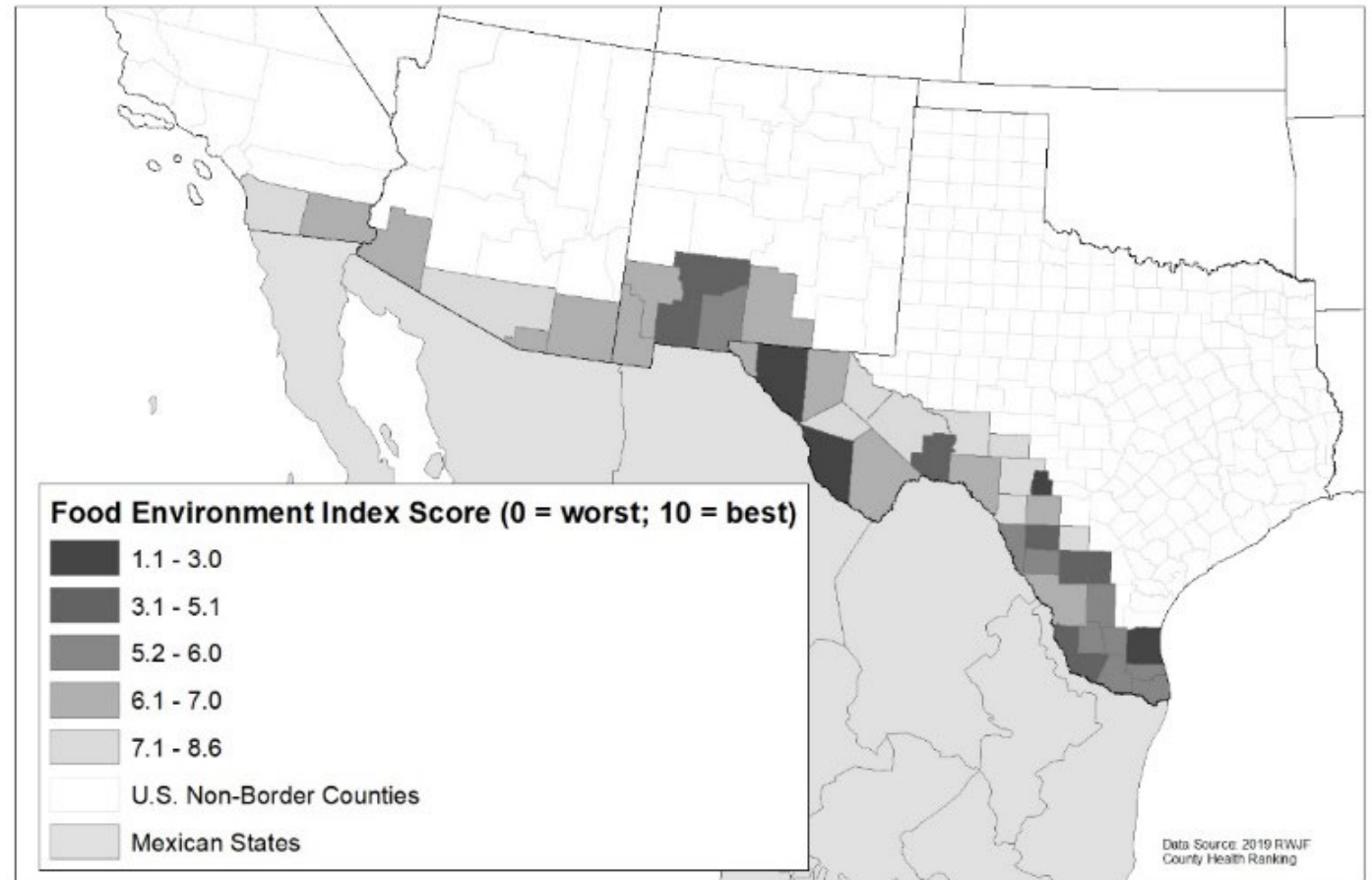
Figure 16. Median Percent County Population Low Income & Low Access to Grocery Stores, 2015



- Border counties, both urban and rural, have a higher proportion of their low-income population facing travel barriers for healthy food

Food environment index:

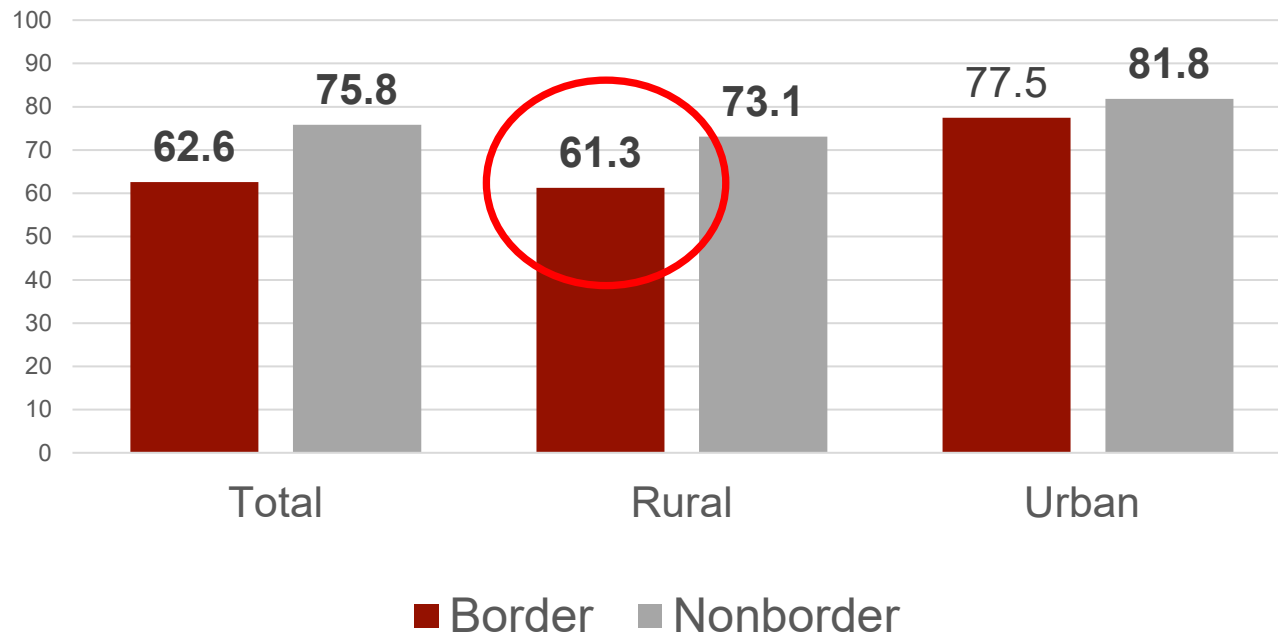
- Food Environment Index combines distance to a store and food insecurity
- The median county score is 6.9 for border & other
- Several border counties fall at the bottom of this scale



ACCESS TO CARE

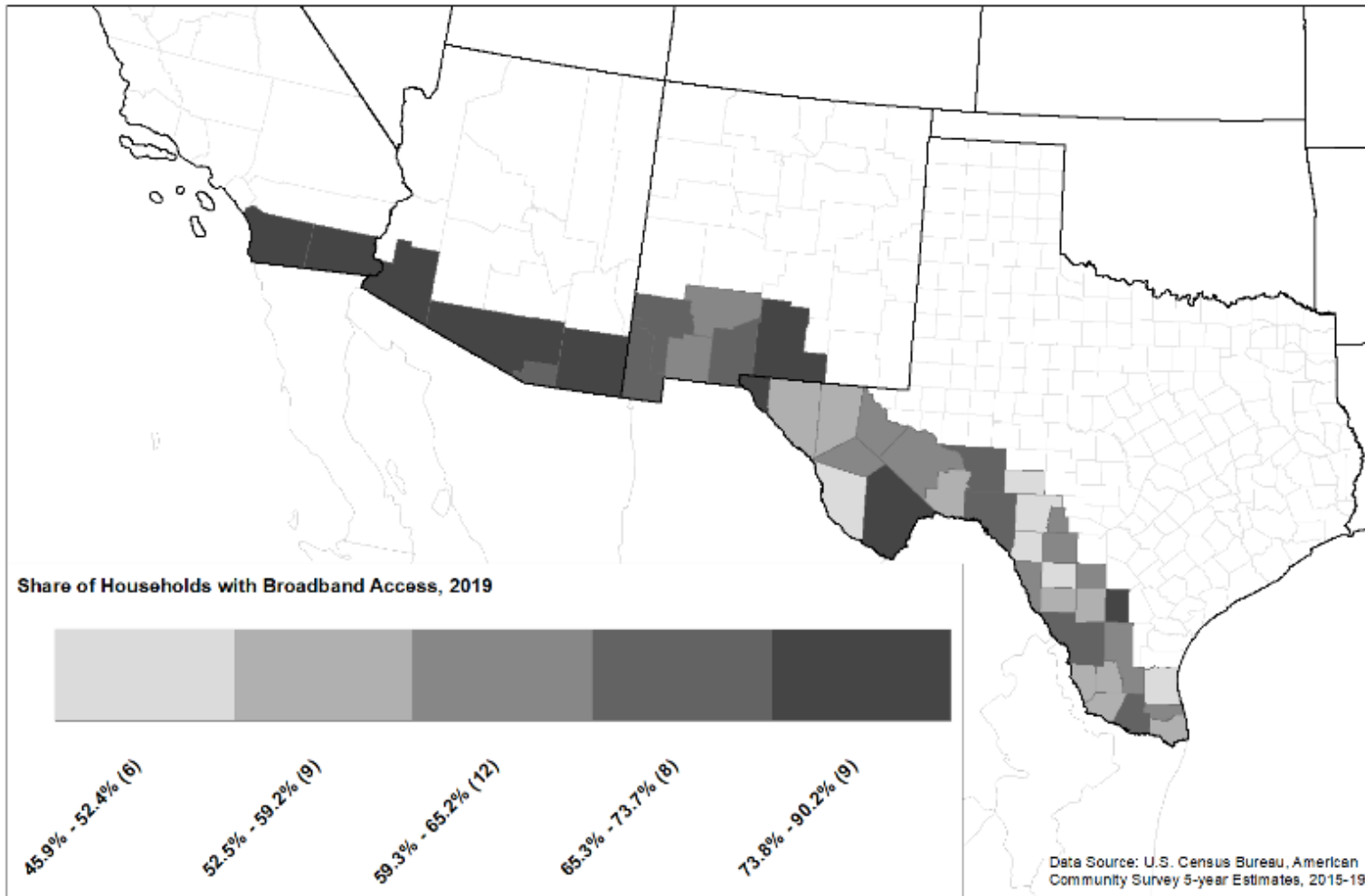
BROADBAND ACCESS

Figure 11. Median county percent of households with broadband access



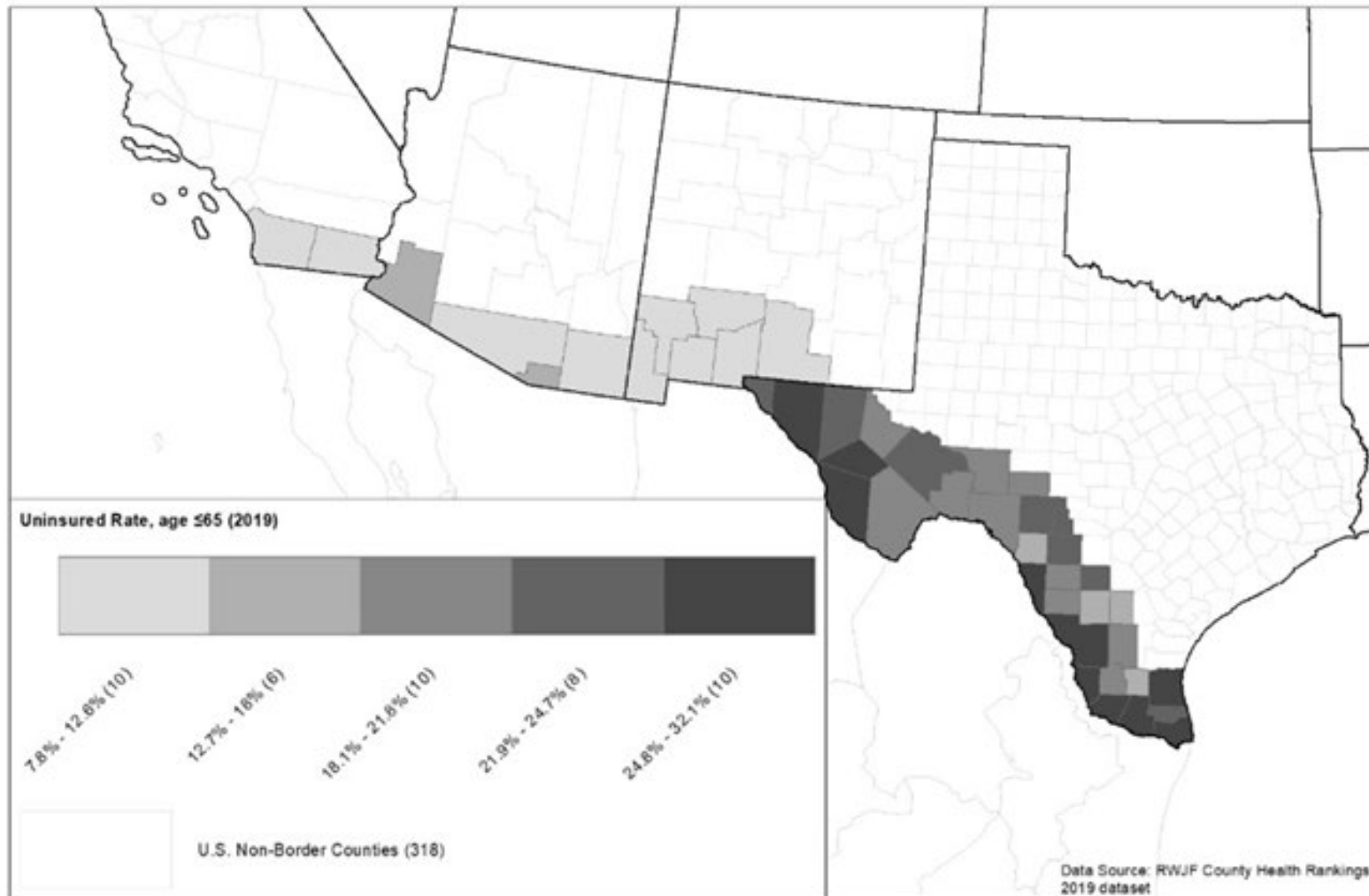
- Telemedicine is important for enhancing rural access to care
- Across rural border counties, the median is 61% of households with access—leaving 39% unserved

BROADBAND ACCESS VARIES BY STATE



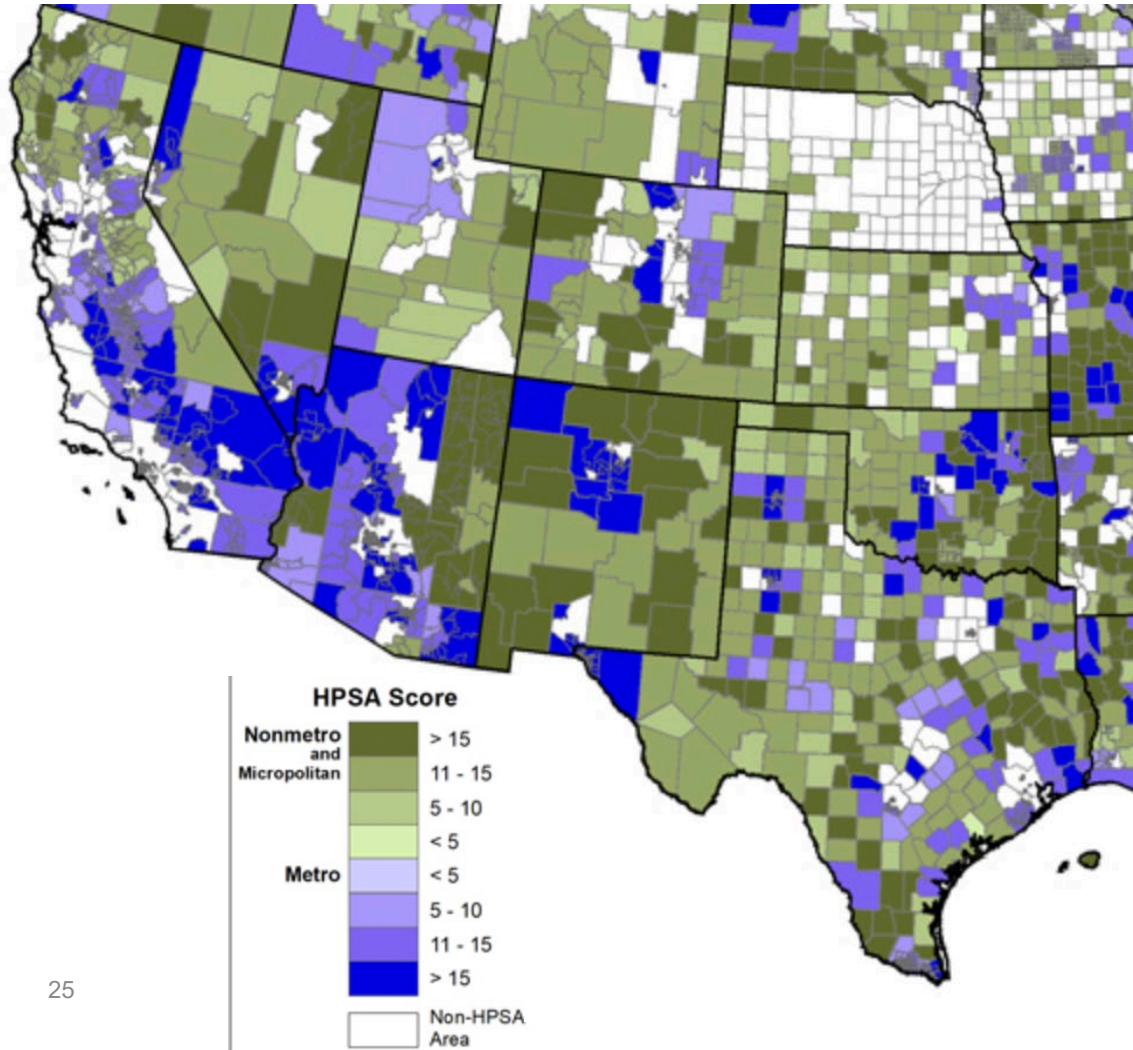
- Lowest band: 45.9% - 52.4% of households have access
- State policies and infrastructure may affect access

LACK OF HEALTH INSURANCE AMONG PERSONS UNDER AGE 65



- Upper band: 24.8% – 32.5% uninsured
- Strong state influence

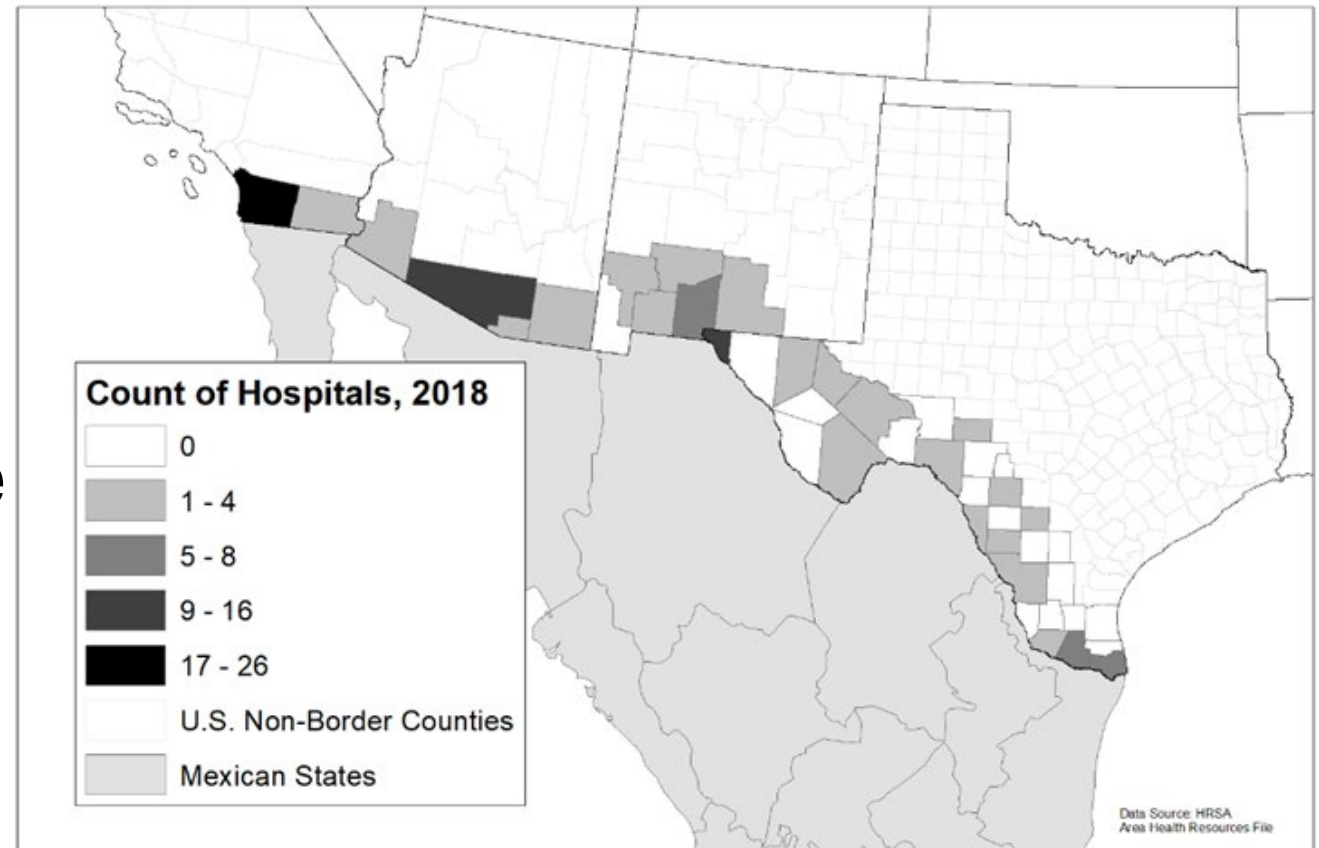
HEALTH PROFESSIONAL SHORTAGE AREAS



- Primary care HPSAs present throughout border states, both at the border & in other areas

HOSPITAL AVAILABILITY

- Multiple border counties do not have any hospital
- 2 hospitals closed between 2021 & 2020, one in a rural county, one in an urban county



Summing up the Border Environment

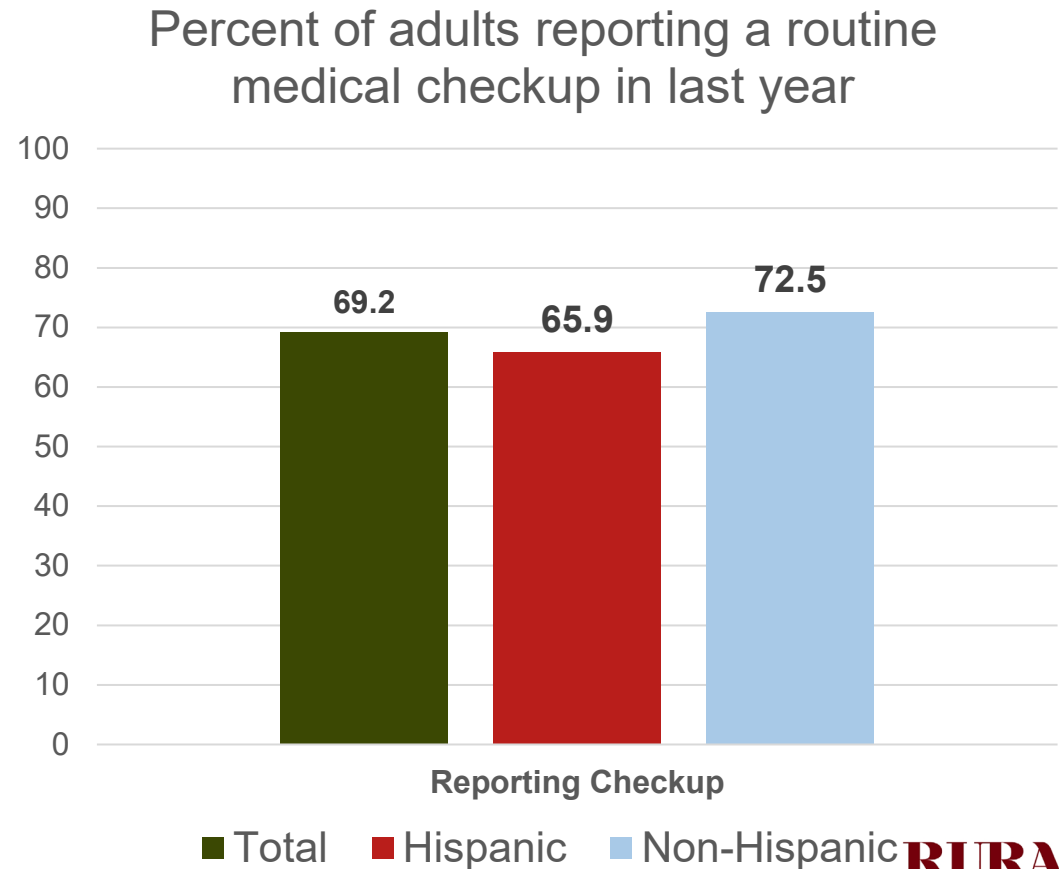
- While some urban areas are economically prosperous and well supplied with health care resources, this does not extend to rural border counties
- So how do folks seek care and try to stay healthy in this environmental context?

WHAT PEOPLE DO: Reported Health Behaviors

Note: Behavior data comes from the Behavioral Risk Factor Surveillance System and is measured over the whole border/non-border population in the 4 states. (Not County-level averages)

Routine medical checkup: Hispanic disparities

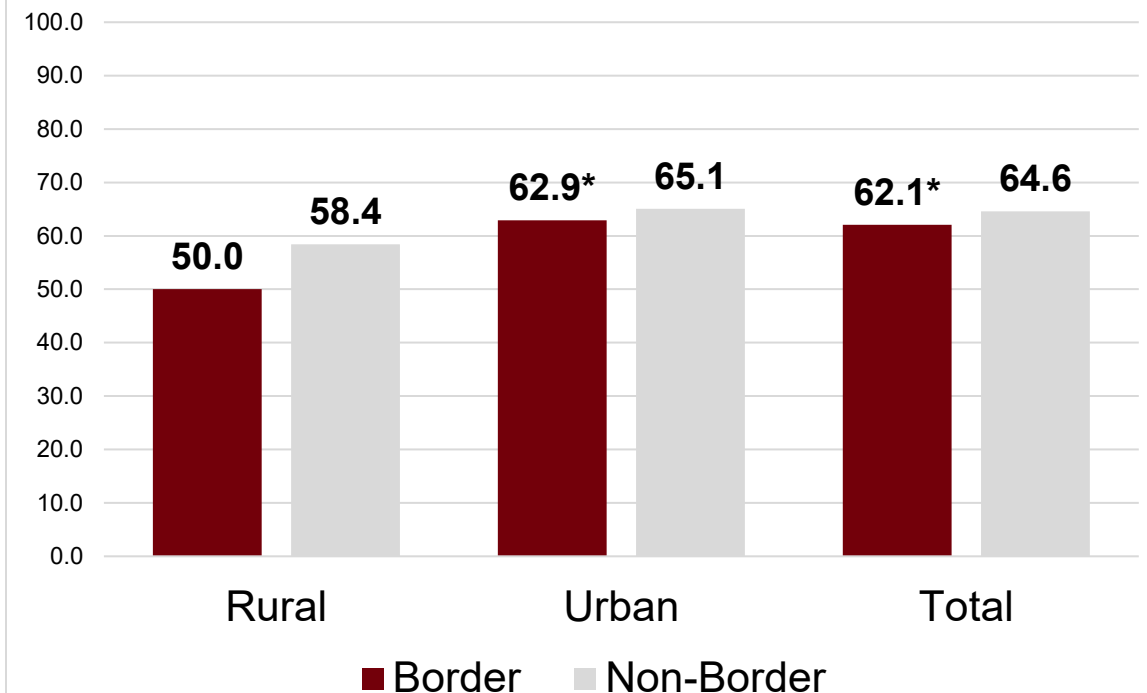
- Across the 4 states, nearly identical proportions of border residents (69.2%) and others (69.7%) reported a checkup in the last year
- But...Hispanic disparities



Routine dental visit

- Border residents being less likely to have seen a dentist than non-border residents
- Rural values not significantly different
- Hispanic border residents less likely than others (54.1% v 70.4%)

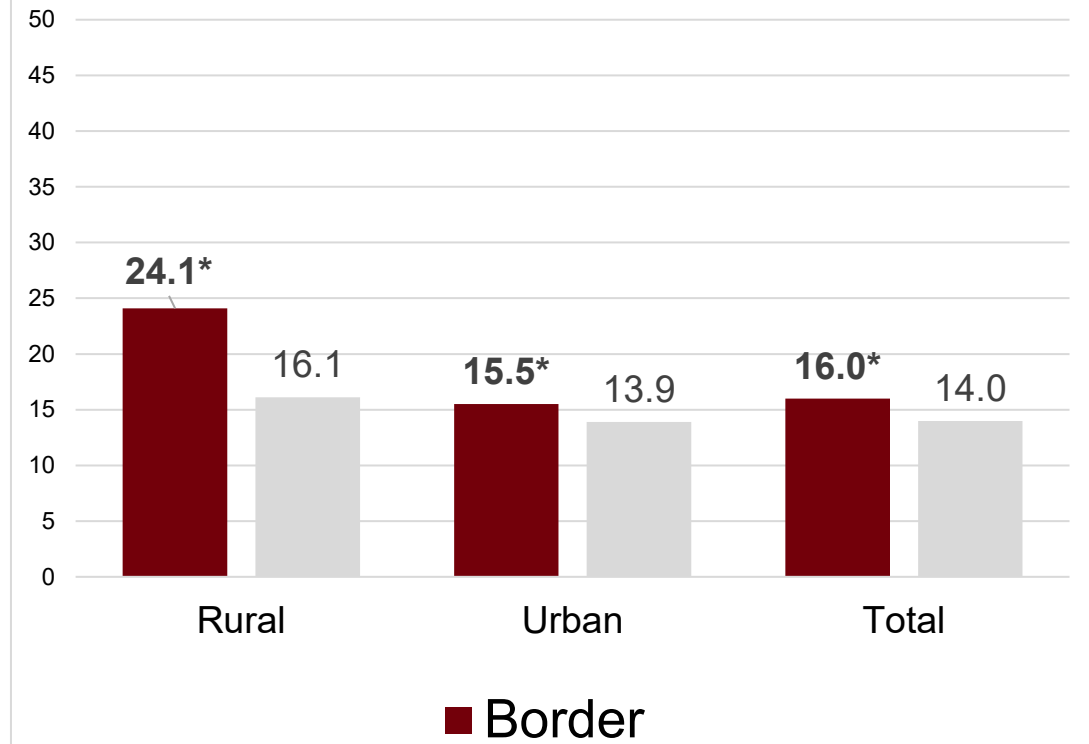
Figure 32. Proportion of Border State Adults Who Reported a Dental Visit During the Past Year (2015-2019)



Delayed care: Rural & Hispanic disparities

- Border residents more likely than others to report delaying care
- Hispanic adults overall more likely to delay care (22.5% v 9.3% other)

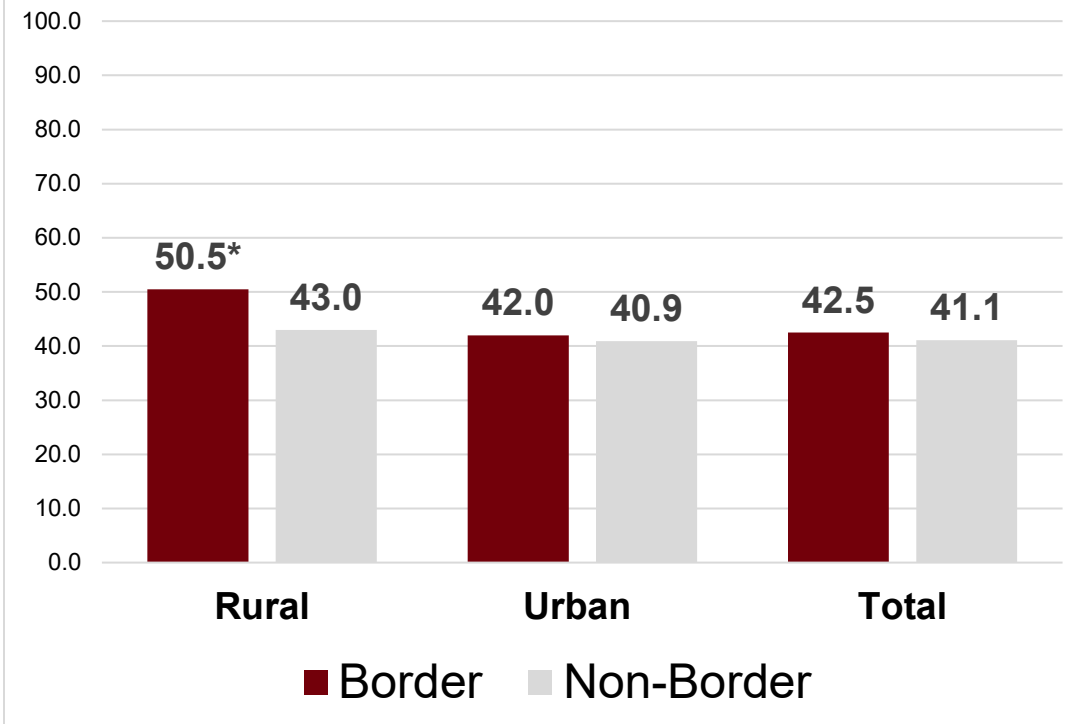
Figure 33. Percent Adults in Border States Who Reported Delaying Healthcare Due to Cost, 2015-2019



Preventive behaviors: flu vaccination

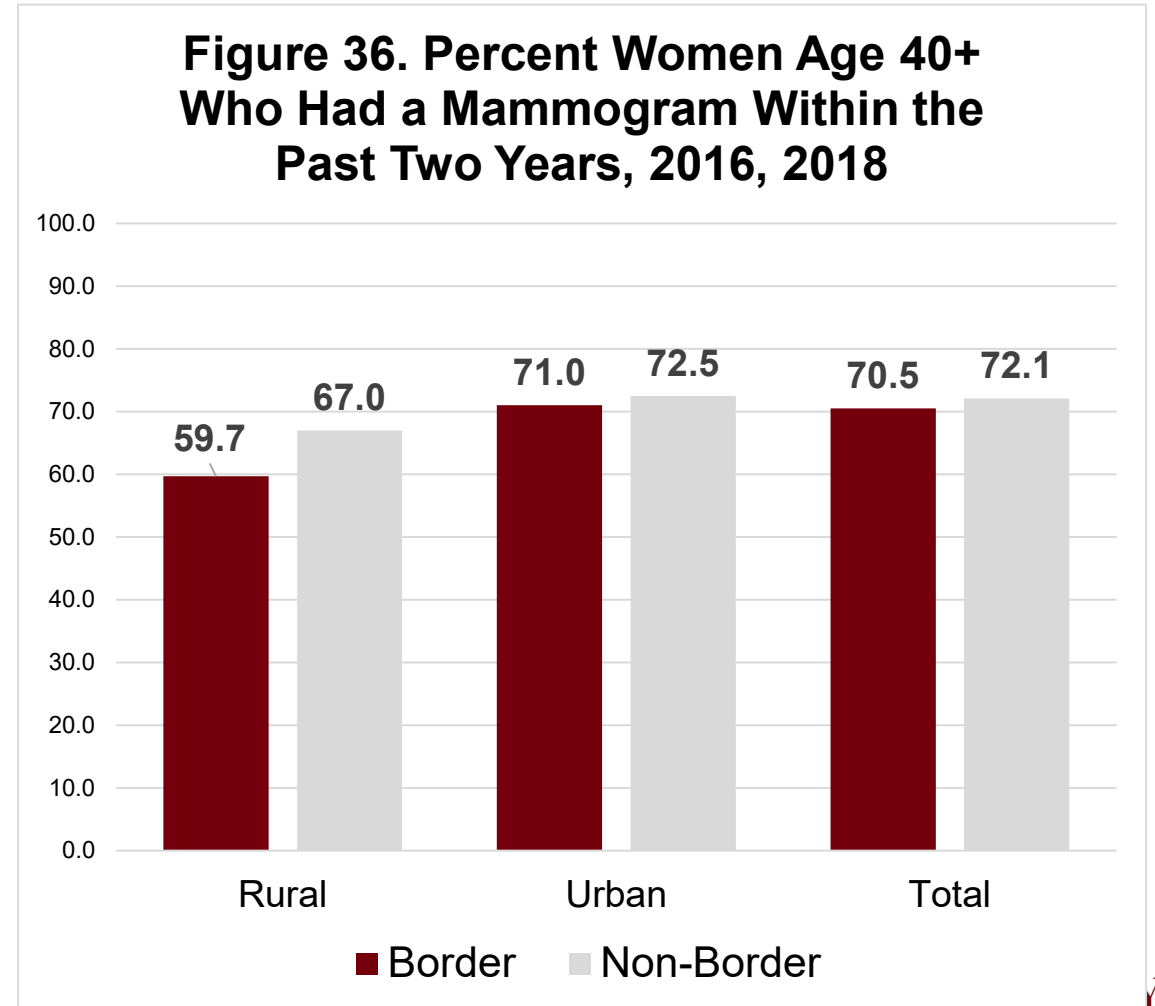
- Rural is doing better, but flu vaccination rates still far below goals
- And rural Hispanics were equally likely to report vaccination (50.6%)

Figure 35. Proportion of adults who reported receiving a flu vaccination during the past year, 2015-2019



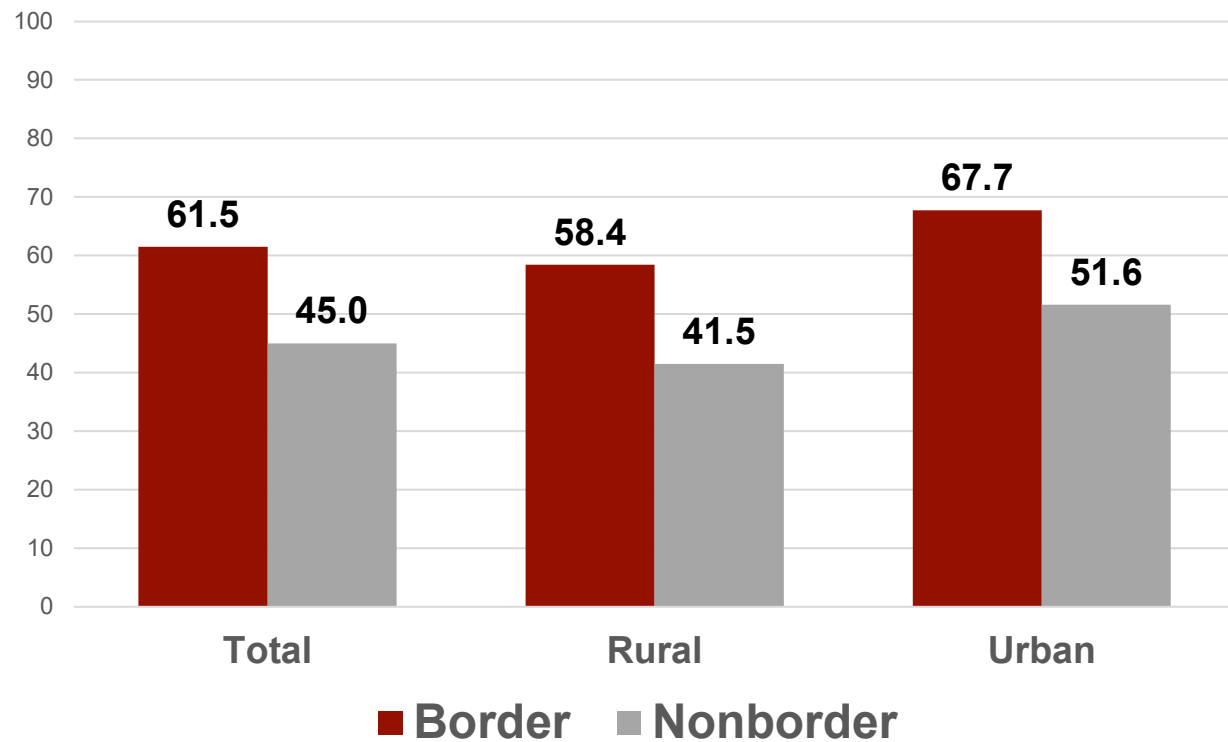
Preventive behaviors: mammogram

- Rural border women least likely to report mammogram
- Sharp ethnic disparities in rural:
 - Non-Hispanic: 82.2%
 - Hispanic: 48.1%



Preventive behaviors, COVID vaccination

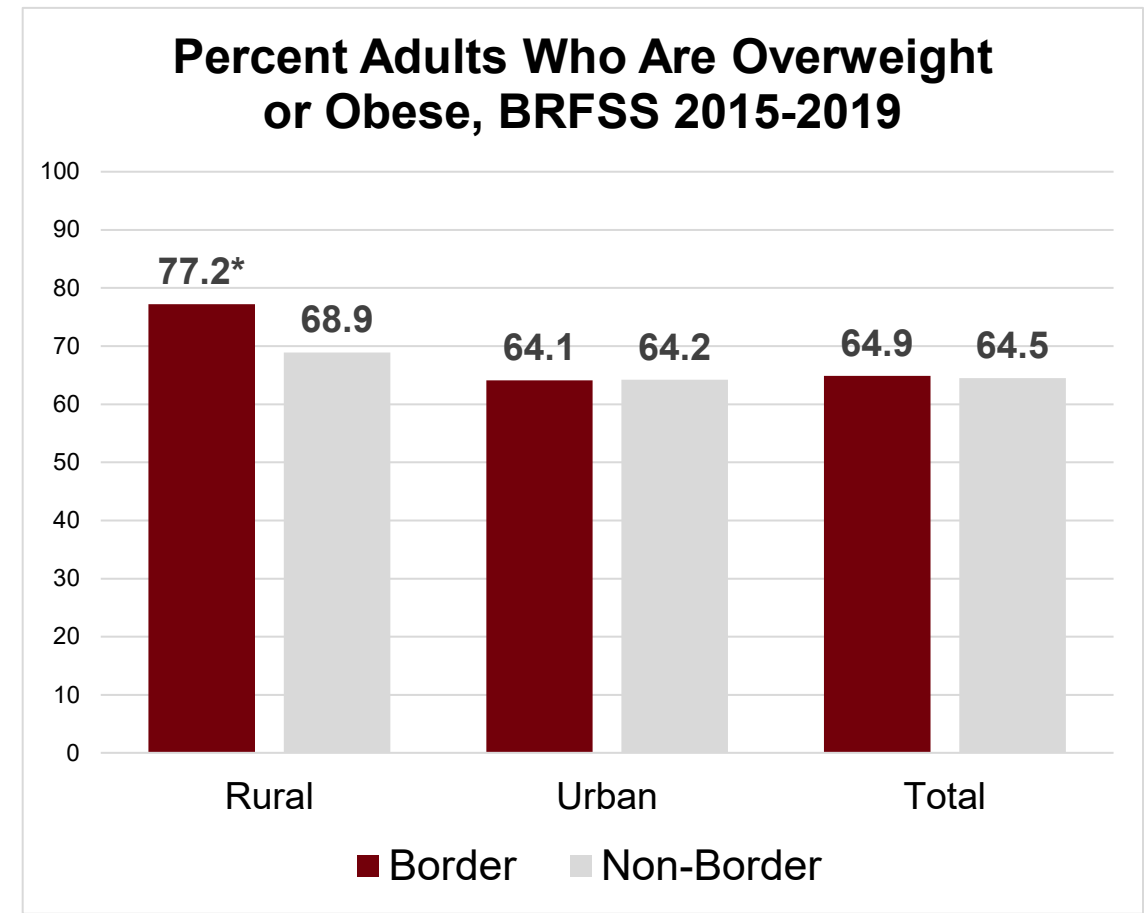
Figure 57. Median Percent of County Residents with 2-shot COVID Vaccination, January 23, 2022



- Based on CDC data, border residents more likely to be vaccinated

Health behaviors: overweight/obesity

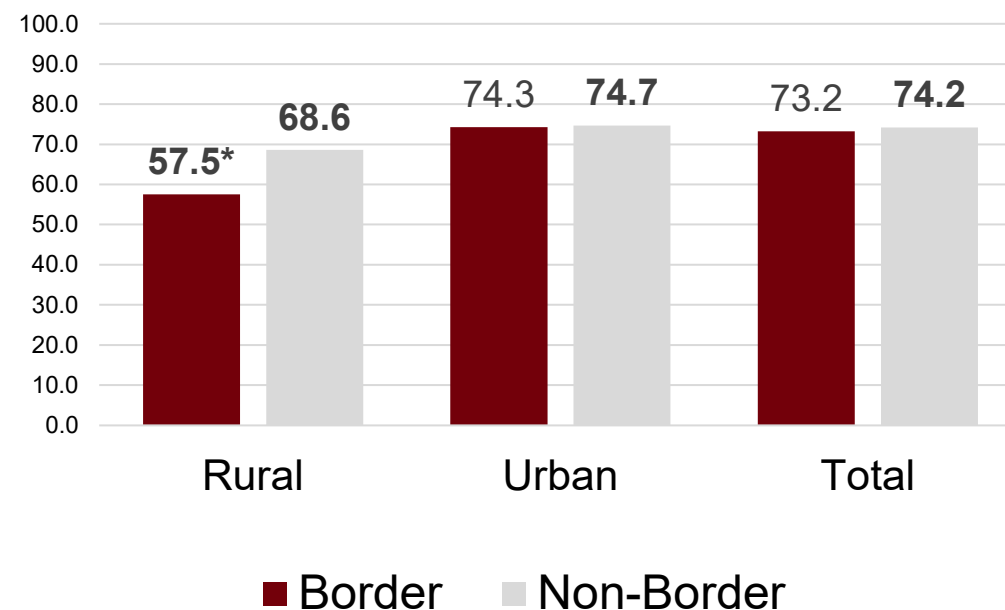
- Highest prevalence of OW/OB found in rural border counties
- Within rural border counties, 82.8% of Hispanic versus 62.0% of non-Hispanic adults have high BMI



Health behaviors: physical activity

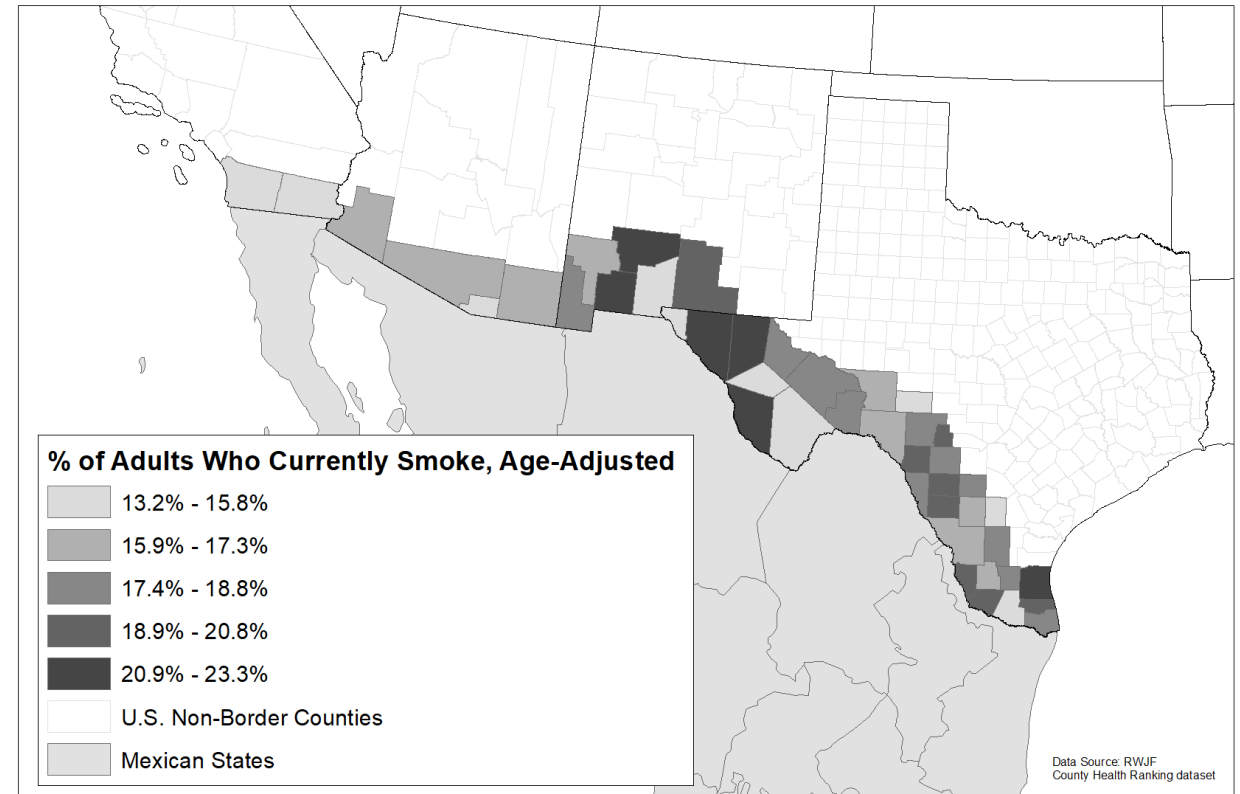
- Across the 4 border states, 74% of adults reported physical activity (no difference based on border status)
- But:
 - Rural less than urban
 - Hispanic rural less likely to report exercise than other rural residents (54.4% versus 66.0%)

Figure 40. Percent Adults Reporting Physical Activity Outside of Work, 2015-2019



Less healthy behavior: smoking

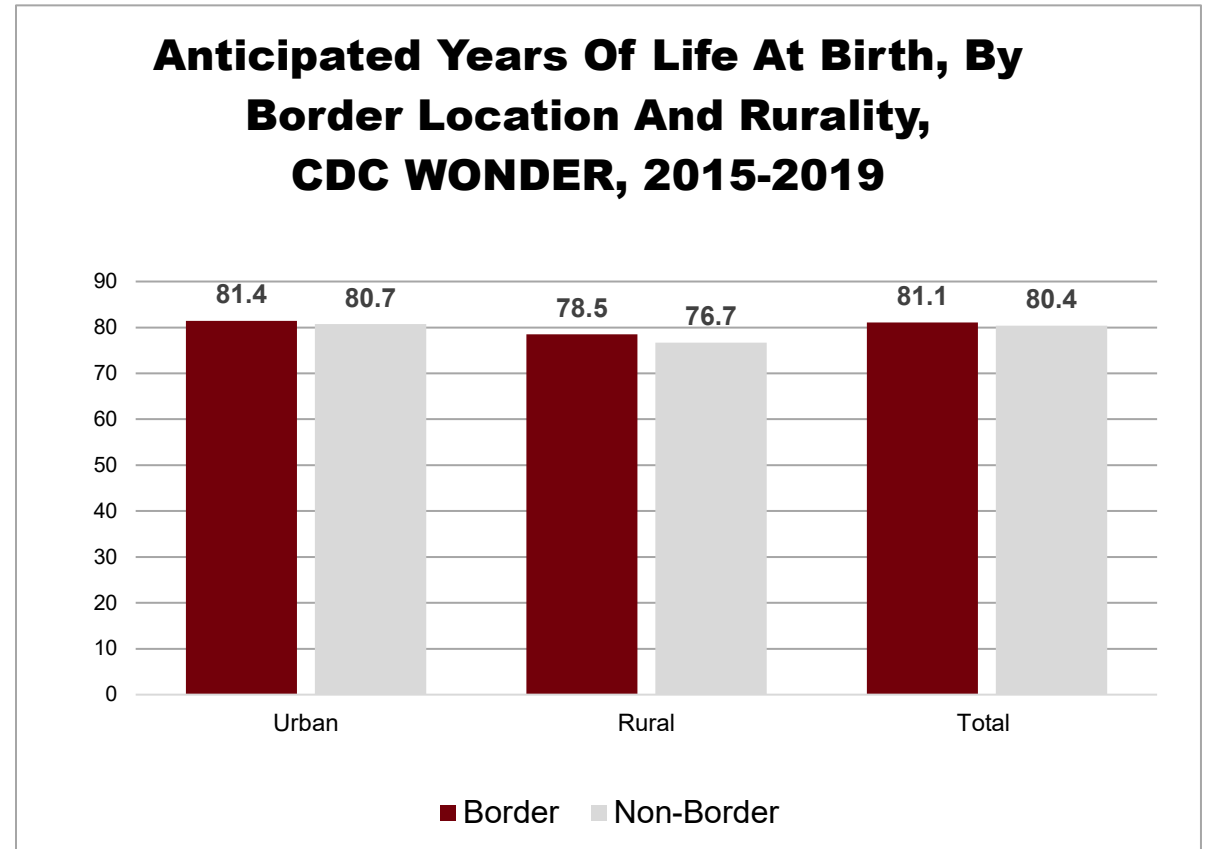
- Across the 4 border states, 12.8% of adults reported current smoking
- But:
 - Rural border: 21.1%
 - Urban border: 12.8%



The end result: life expectancy & mortality

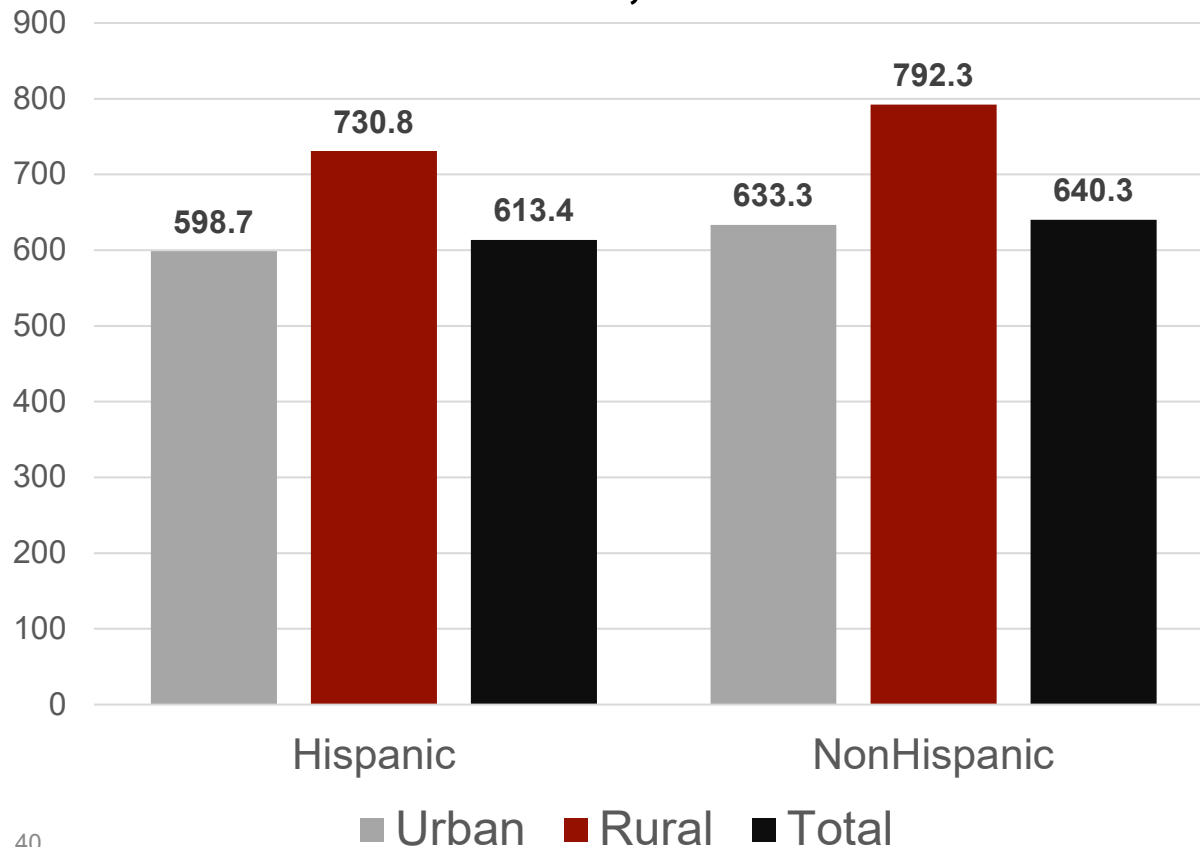
LIFE OR DEATH: MORTALITY DISPARITIES AT THE BORDER

- Border residents across the region enjoy a small lifespan advantage
- Hispanic residents have a slightly higher estimated lifespan than NH White residents (81.6 versus 80.6 years)



Mortality rates

Age-adjusted mortality per 100,000 border residents, 2015-2019

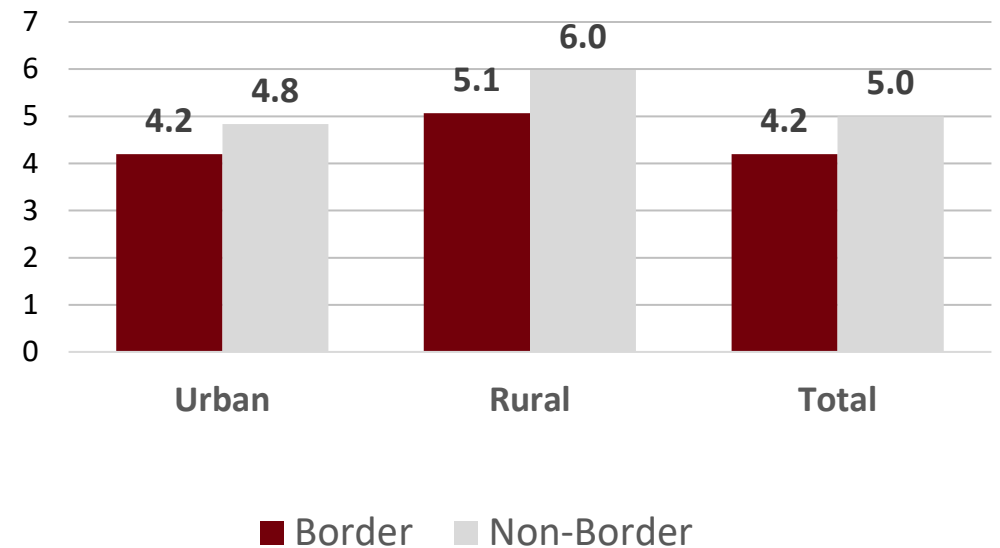


- Mortality rates across the border area clearly illustrate rural disparities
- And (perhaps) the Hispanic paradox

INFANT MORTALITY

- Infant outcomes are better among border residents than in other areas, in both urban and rural counties
- Leading causes of infant death:
 - Congenital problems
 - Maternal complications of pregnancy
 - Short gestation/LBW

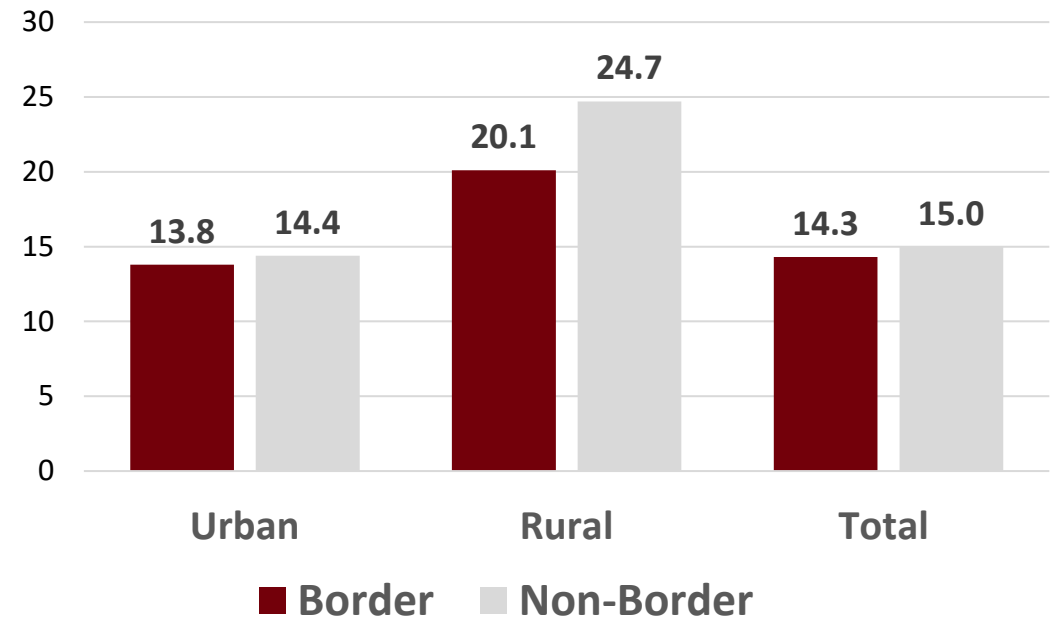
Figure 60. Infant Deaths Per 1,000 Live Births by Border Region and Rurality, CDC WONDER, 2015-2019



CHILD MORTALITY

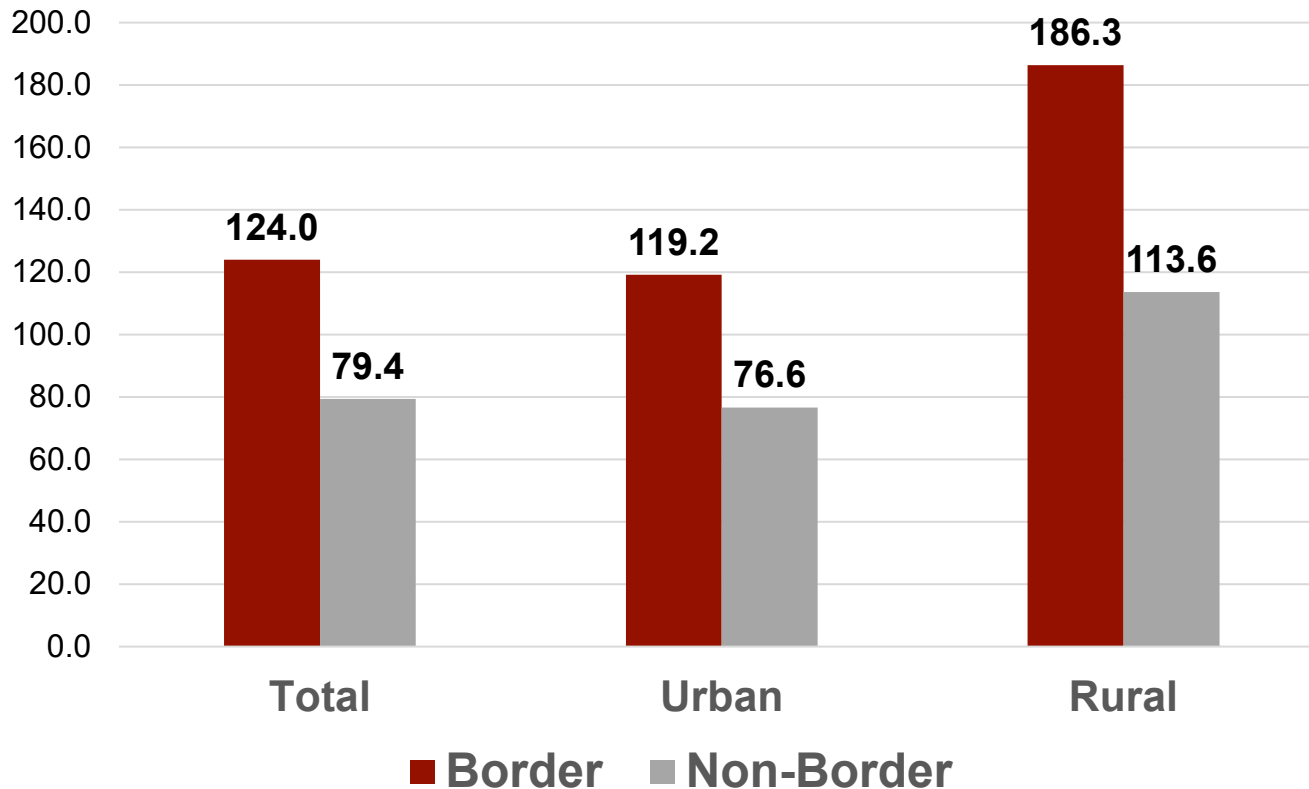
- No significant differences, despite “different” values – because child deaths are so rare
- Leading causes of death:
 - Perinatal problems
 - Congenital problems
 - Accidents

Figure 61. Age Adjusted Mortality per 100,000 Residents, Children Ages 1-14, by Border Location and Rurality, 2015-2019



COVID MORTALITY, 2020

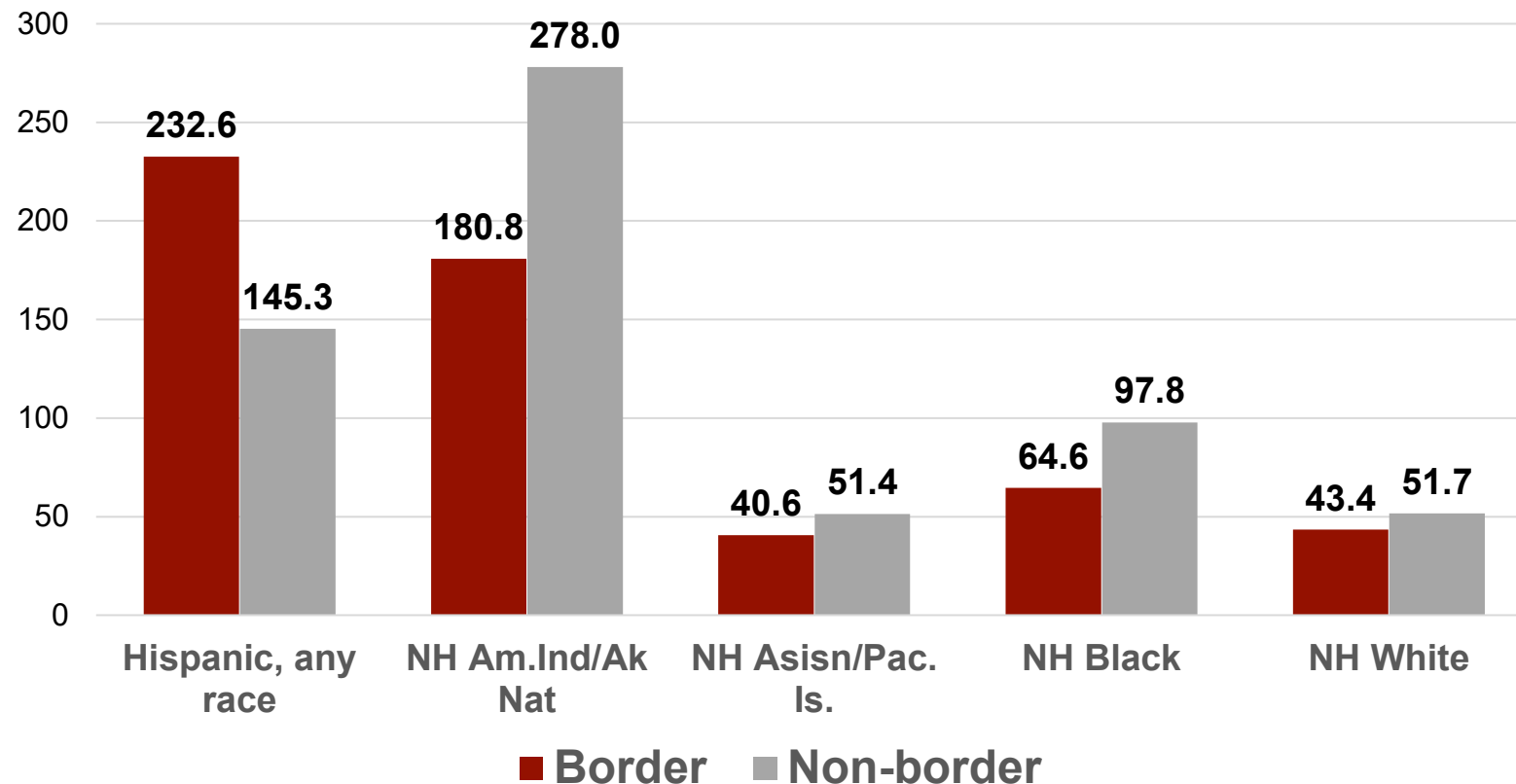
Figure 55. Age-adjusted COVID-19 mortality rate per 100,000 residents, by border location and rurality, 2020



- Border mortality higher than other counties in the same states

Covid mortality 2020

Figure 56. Age adjusted COVID 19 mortality rate per 100,000 residents, 2020



- In Border counties, Hispanic residents at highest risk
- In other counties across Border states, AI/AN persons

Leading causes of death, overall

Age-Adjusted Mortality Per 100,00 For 5 Leading Causes of Death, Border Region, CDC WONDER, 2015-2019 †

	Border		Non-Border	
	Rate	SE	Rate	SE
Diseases of heart (I00-I09,I11,I13,I20-I51)	137.6	0.6	152.1	0.2
Malignant neoplasms (C00-C97)	133.5	0.6	140.6	0.2
Accidents (unintentional injuries) (V01-X59,Y85-Y86)	37.5	0.3	38.1	0.1
Alzheimer disease (G30)	33.5	0.3	36.9	0.1
Cerebrovascular diseases (I60-I69)	34.1	0.3	38.0	0.1

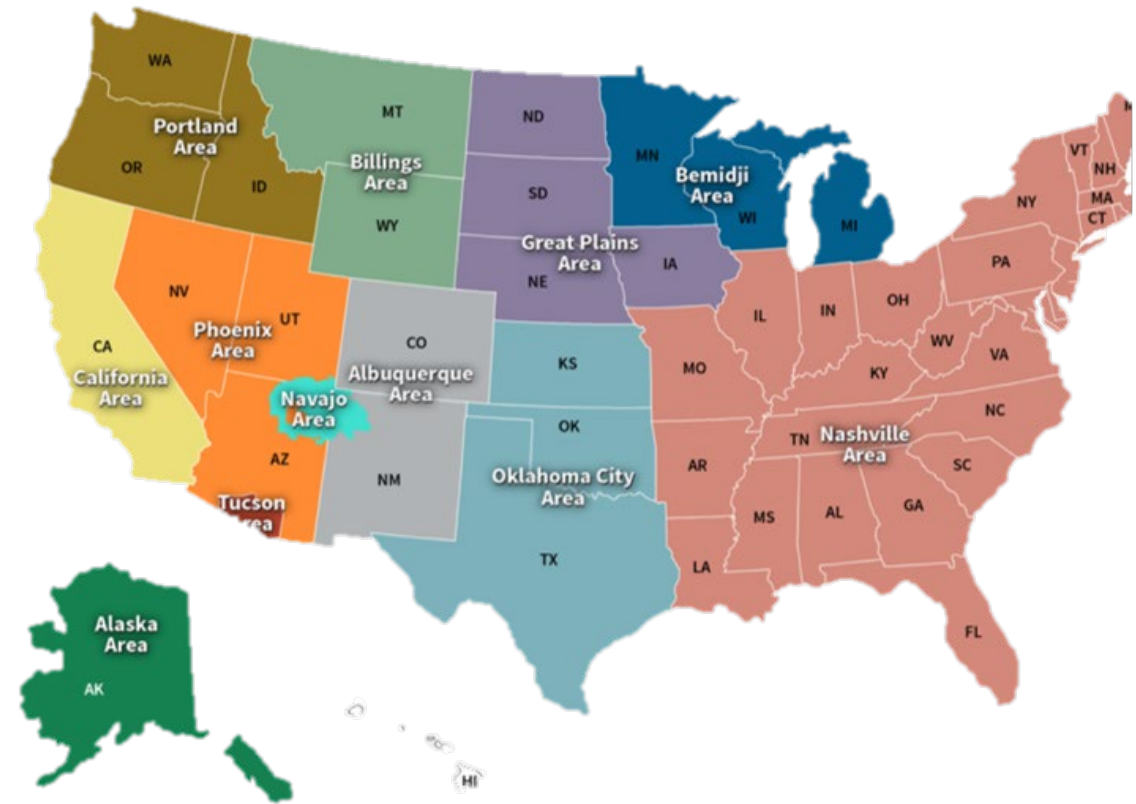
AMERICAN INDIAN HEALTH

Overview

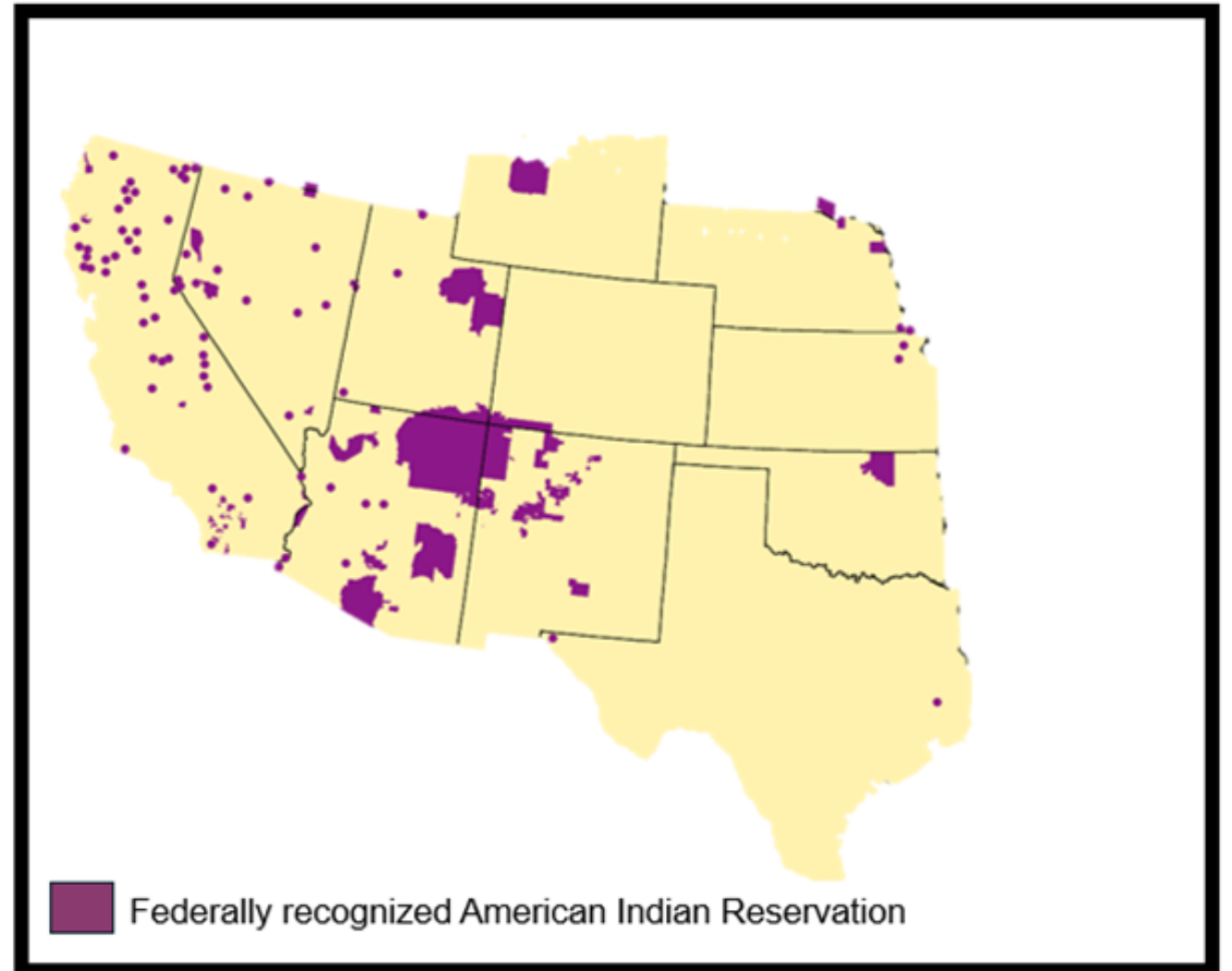
- Economic disparities
- Disproportionate burden of disease
- Reduced life expectancy

Understanding Tribal Geography

- Tribal lands in the border region are divided into six geographic regions through the National Institutes of Health Tribal Health Research Office

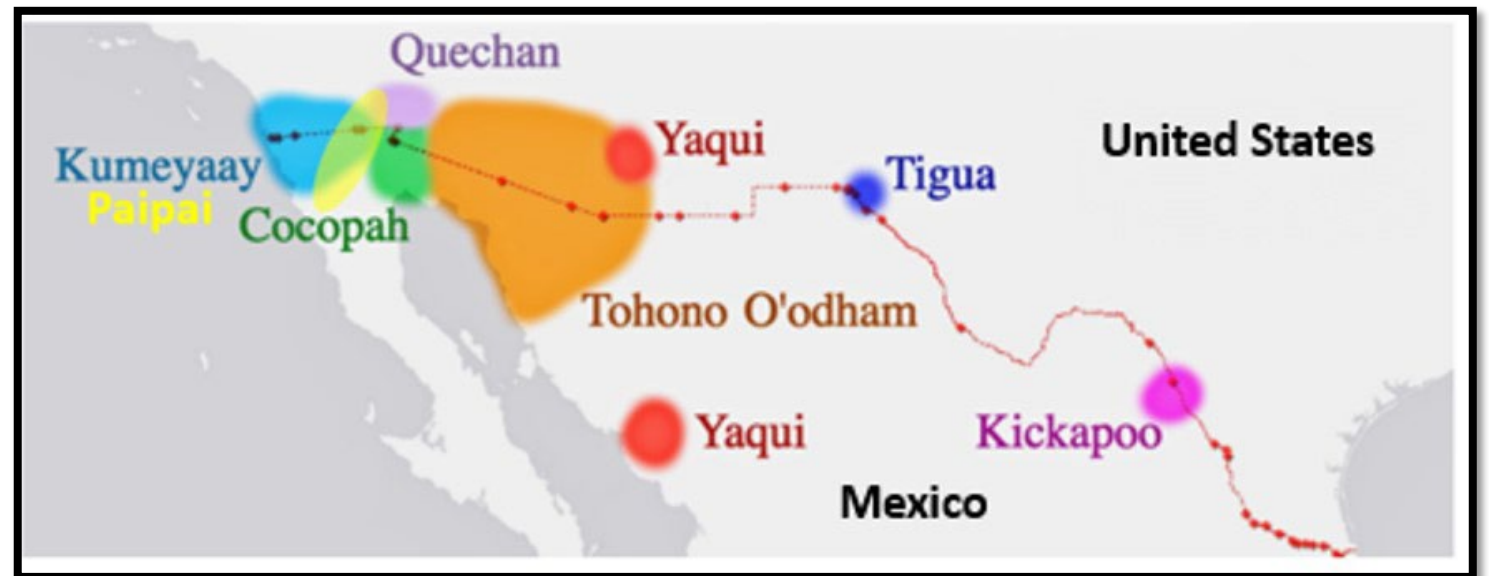


- There are 24 tribal nations along the U.S.-Mexico border



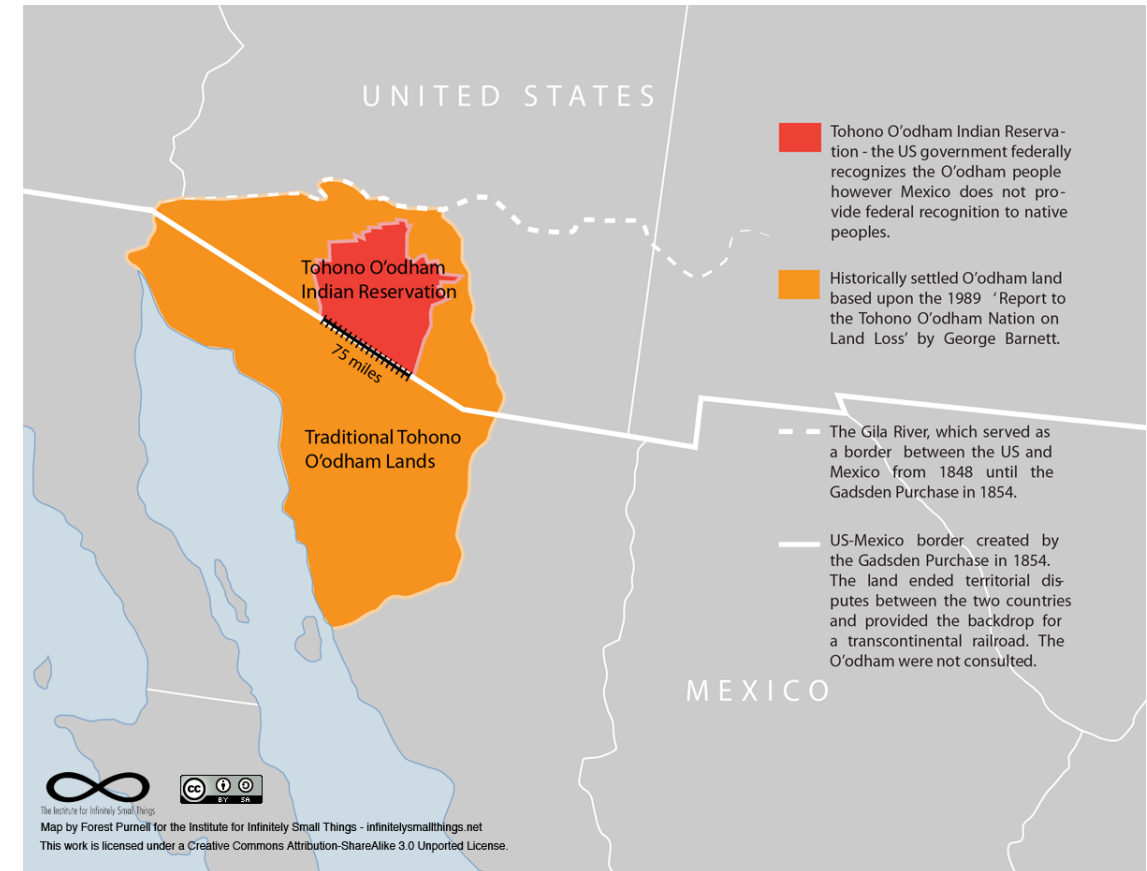
Cross-border Tribal Nations

- There are five indigenous communities in Mexico that are a part of U.S. Tribes separated by the border
 - Cucapa (Cocopah)
 - Kikapu (Kikapoo)
 - Kumiai (Kumeyaay)
 - Paipai
 - San Francisquito (Tohono O'odham)



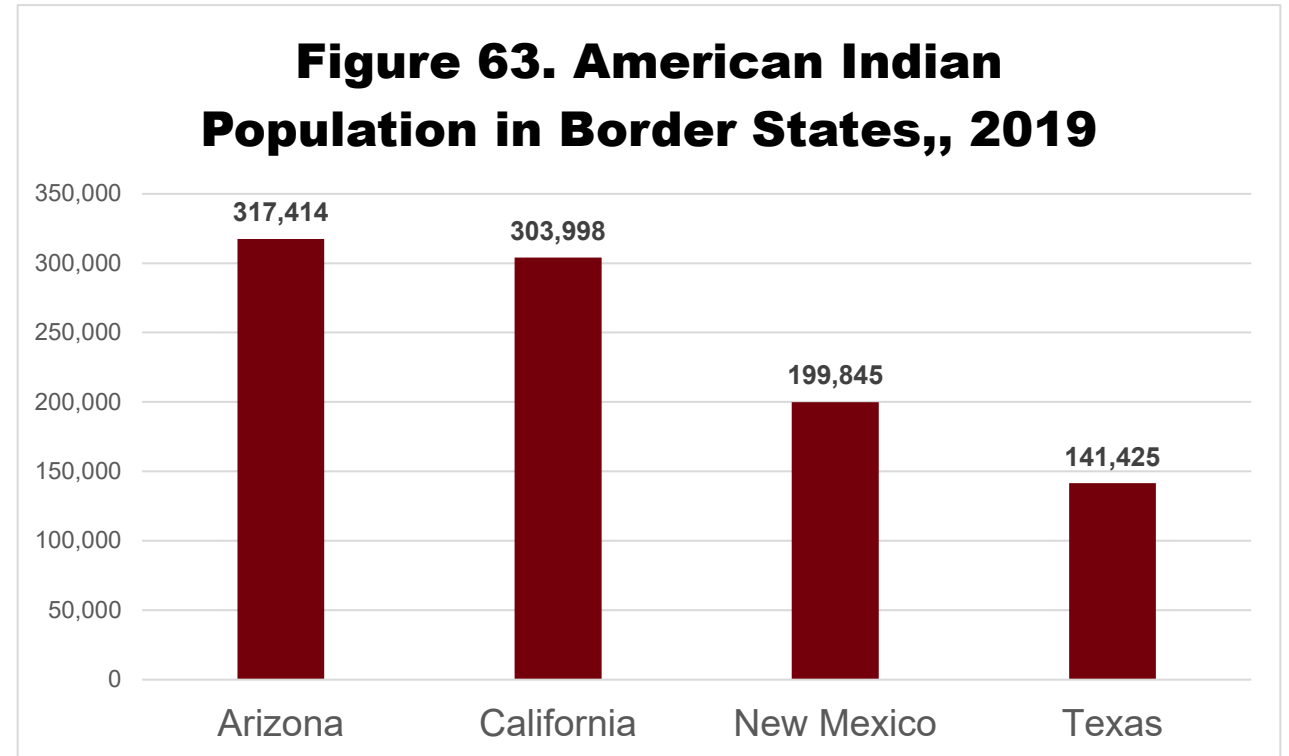
Cross-border Tribal Nations

- Separated by this “imaginary” and now “walled” line, the legal boundary between the United States and Mexico divides tribal communities
- The border is a physical barrier, as well as a psychological, mental, social, religious, and ceremonial barrier
- The border separates tribal members from family, tribal resources and, also, violates the religious freedom of many tribal nations



American Indian Population in Border States

- Increased 86.5% between 2010 and 2020
- 2021: at least 15 states had AI/AN populations $\geq 100,000$
- 60% percent live in metropolitan areas, and 40% live in rural areas
- Border states plus OK house more than 1/3 of the total U.S. AI/AN population (CA, OK, AZ, TX, & NM)



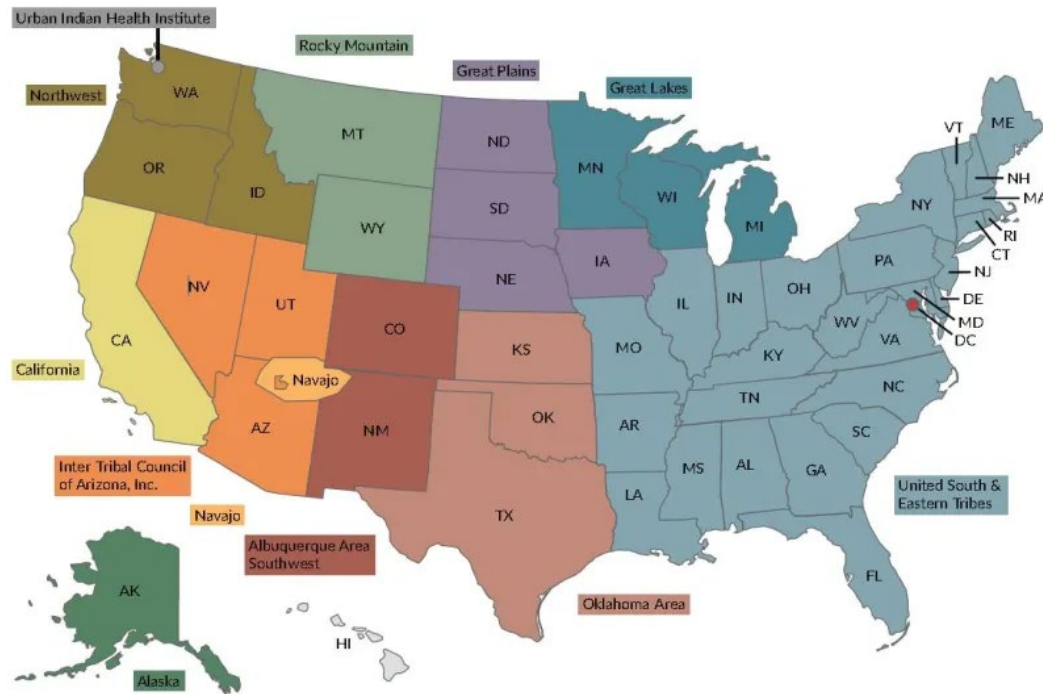
Data for American Indian population extracted from the U.S. Census Bureau, 2021

American Indian Population in Border States (2020 Census)

- 2020 Census, all US
 - 3.7 million people identify as only AI/AN in U.S.
- Across Border states:
 - AI/AN (only) comprise the second largest population within NM, at 8.9 % of the state's population
 - 3.7 % of Arizona population
 - 1.6% of California population
 - 1.1% of the Texas v population

Tribal Behavioral Risk Factor and Surveillance Survey (TBRFSS)

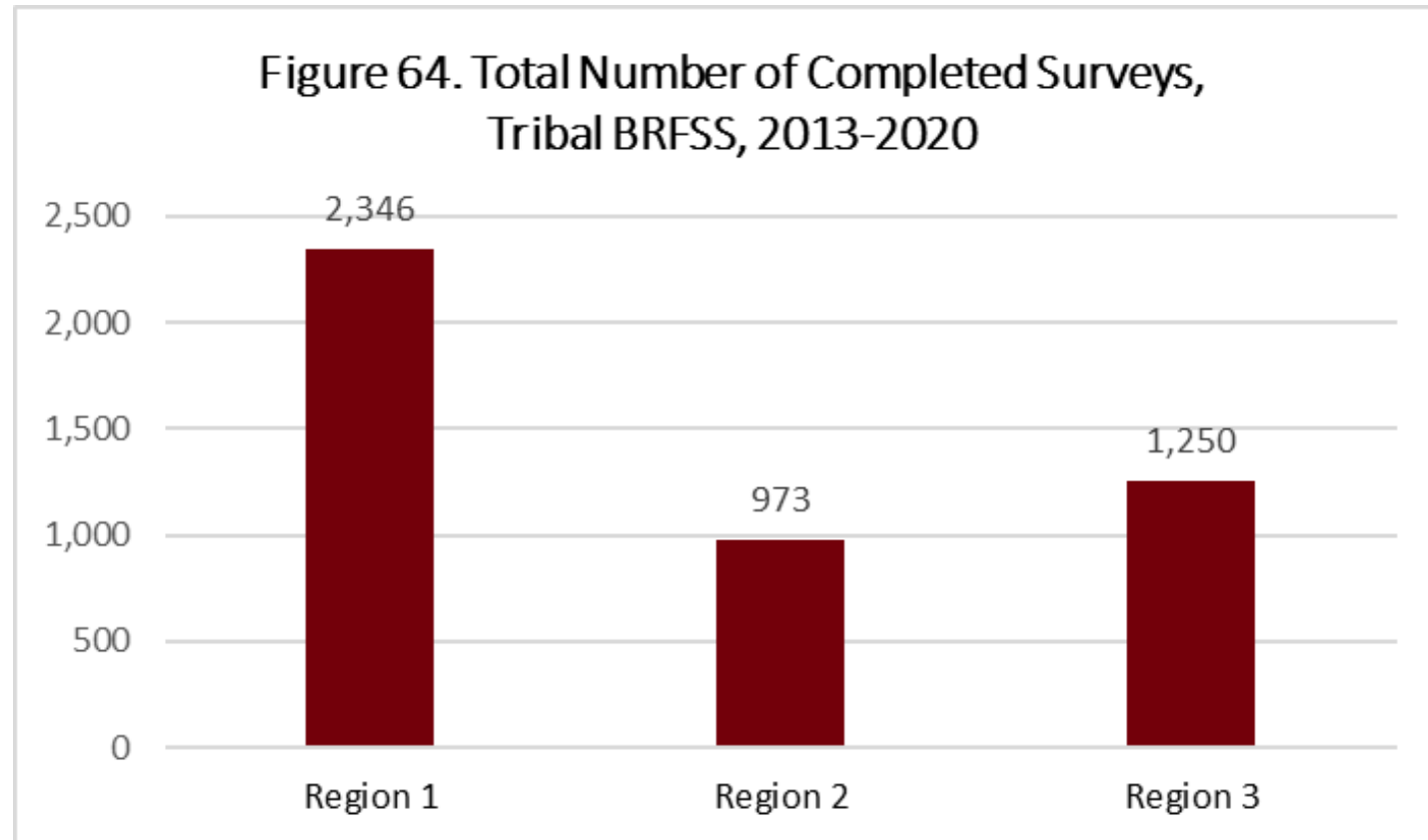
TRIBAL EPIDEMIOLOGY CENTERS Regional Locator Map



- Adapted by AI for use in AI populations in the U.S
- Report data from almost 5,000 completed surveys from tribal areas in border states
- Mission of tribal epidemiology centers (TECs): “to improve the health status of American Indians and Alaska Native people by identification and understanding of health risks and inequities, strengthening public health capacity, and assisting in disease prevention and control.”
- 12 TECs in the U.S., each serves the federally recognized tribes within one of the 12 Indian Health Service (IHS) areas where located.

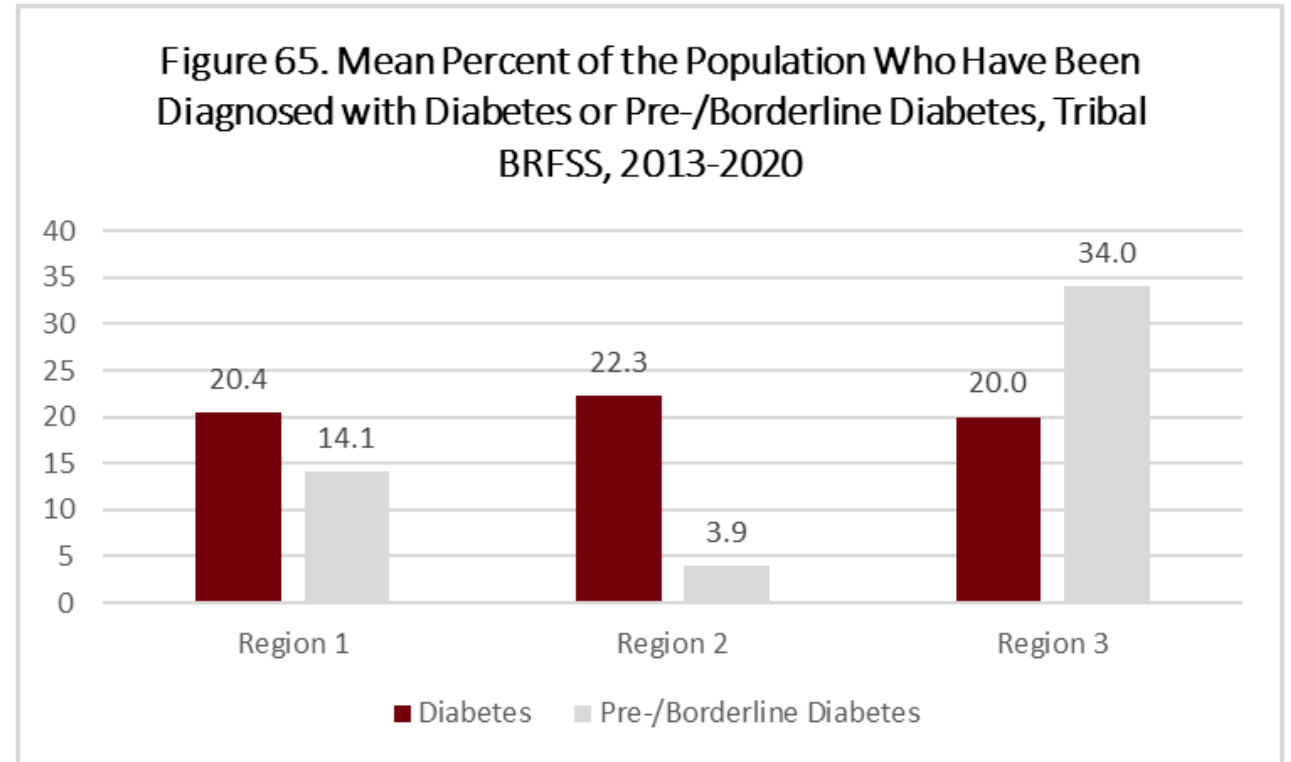
(Please note, El Paso, TX, and Ysleta Del Sur Pueblo are part of Albuquerque Area Southwest.)

American Indian Population in Border States

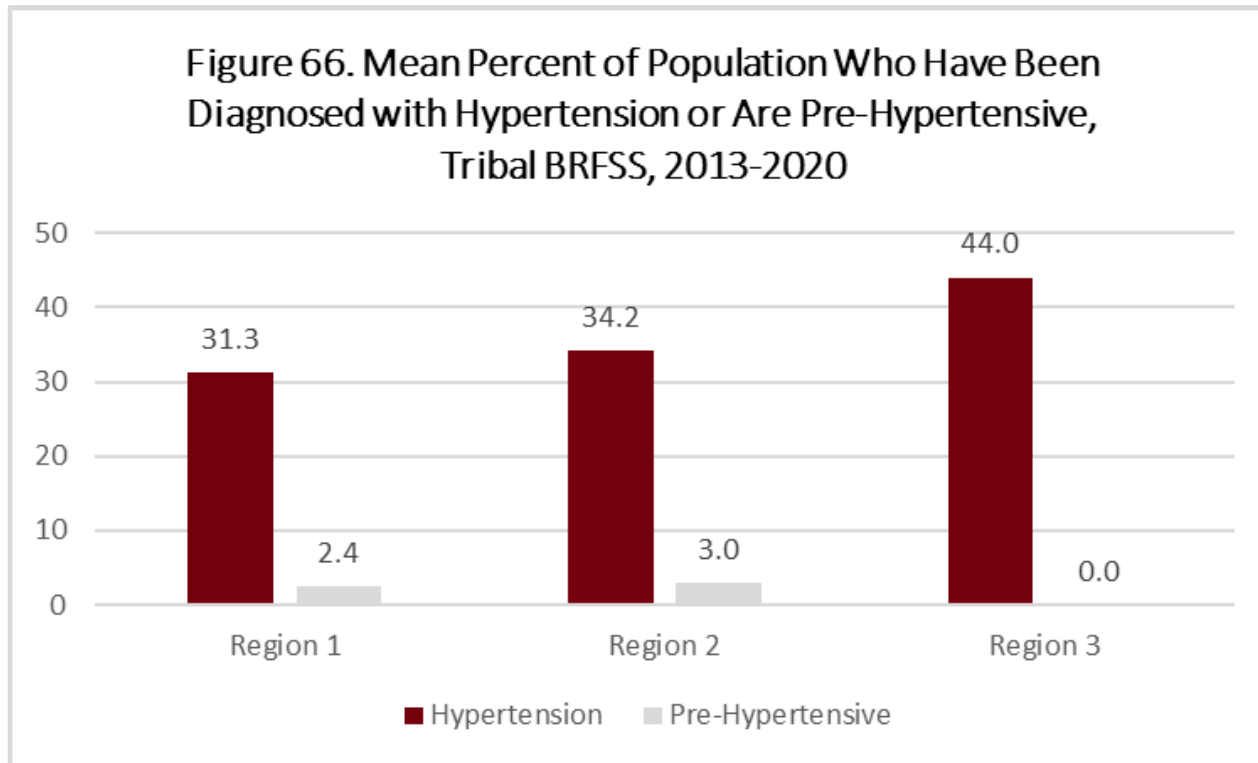


Diabetes or Pre-Diabetes Prevalence

- 3.2x lower life expectancy and higher rates of death from chronic health conditions such as diabetes
- Percent of the population with diabetes was consistent in several tribal regions in the border area (20.4%, 22.3%, and 20%)
- One in five individuals have been diagnosed with diabetes



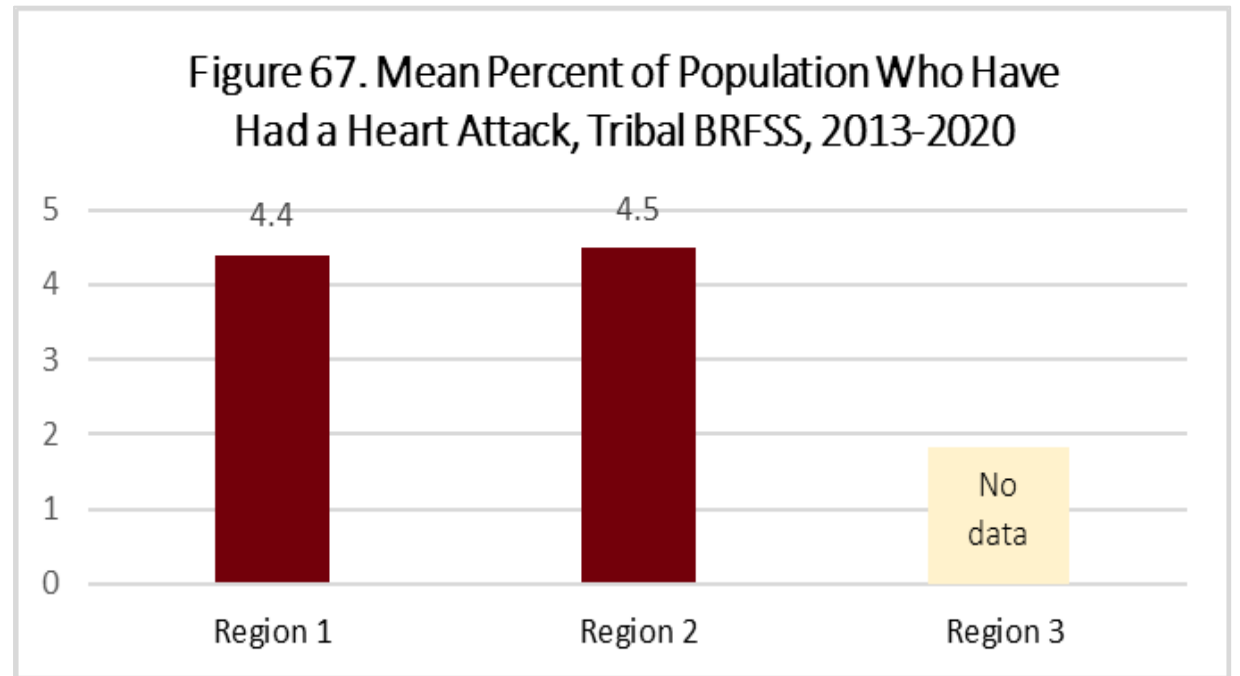
Hypertension or Pre-Hypertension Prevalence



- This prevalence is unexpectedly low
- May be associated with failure to diagnose

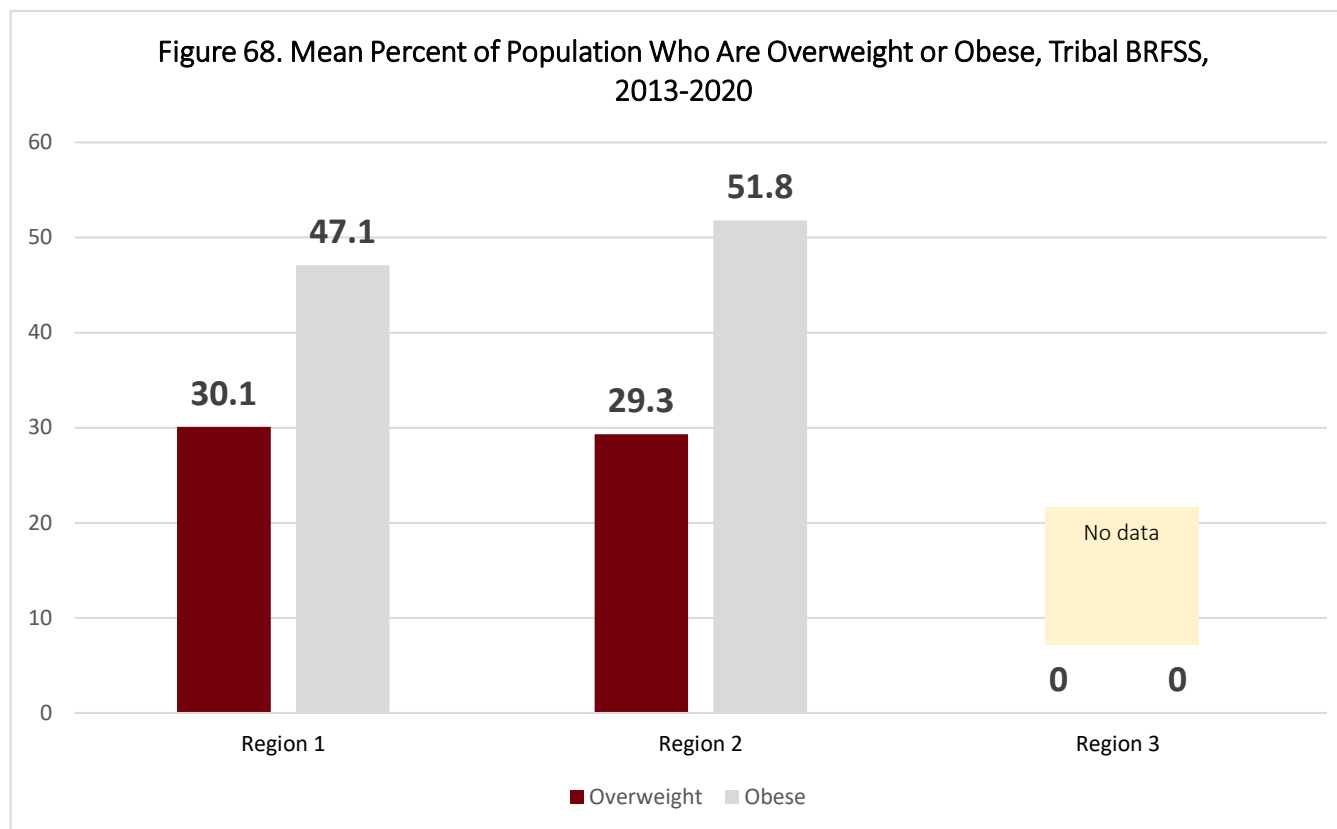
Heart Attack Prevalence

- Percent of the population who experienced a heart attack was consistent across the two tribal regions in the border area for which data were available (4.5% and 4.4%).
- AI/AN die from heart disease at rates 1.3x higher than those of all other races and ethnic groups



Overweight or Obese

- Three in four individuals were considered overweight or obese in tribal regions in the border area for which data was available
- Adults 50% more likely to be obese than non-Hispanic whites
- Adolescents are 30% more likely to be obese than non-Hispanic white adolescents



Data for general health and health conditions extracted from Tribal BRFSS, 2013 - 2020

LIMITATIONS DUE TO DISABILITY & HISTORICAL TRAUMA

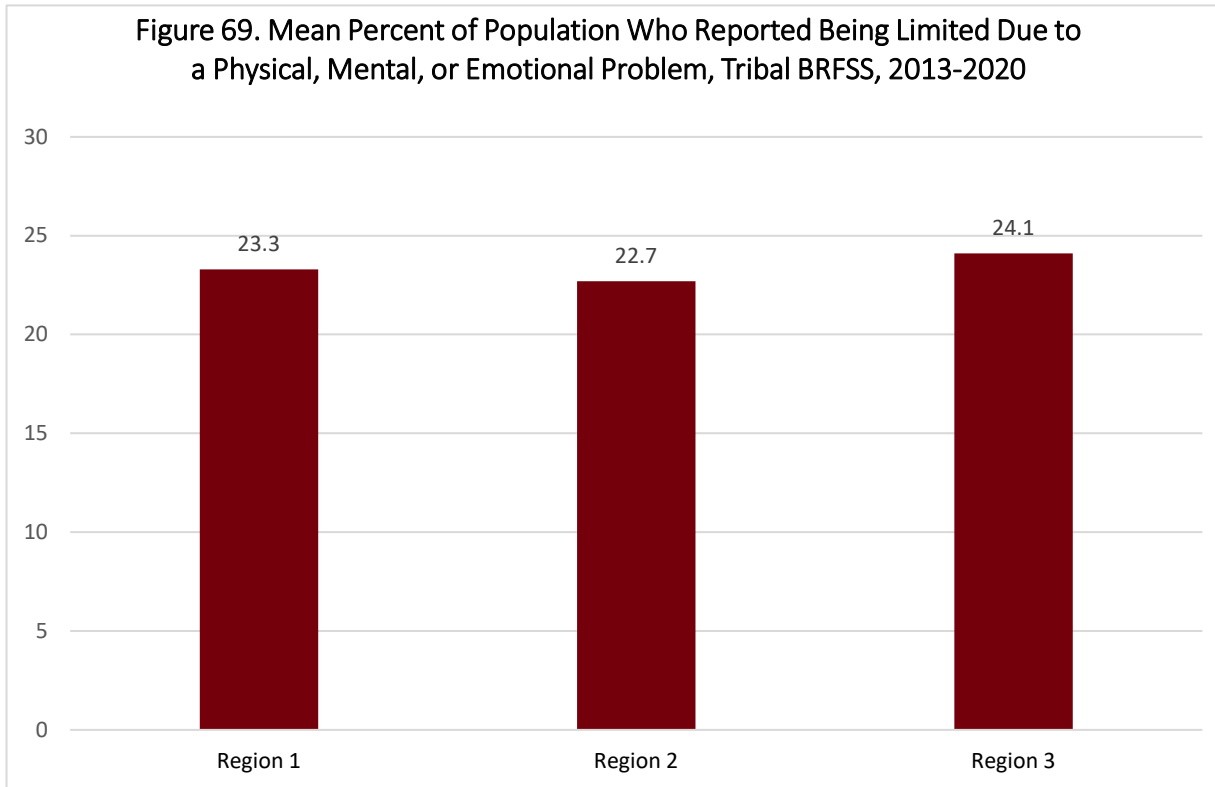
- Risk of depression among AI/ AN is 3x higher
- Risk of suicide is 2x higher
- Alcohol use disorder is 6x higher

“Historical trauma is like generational post-traumatic stress.”

-Dr. R. Dale Walker, Cherokee

MENTAL HEALTH

Figure 69. Mean Percent of Population Who Reported Being Limited Due to a Physical, Mental, or Emotional Problem, Tribal BRFSS, 2013-2020

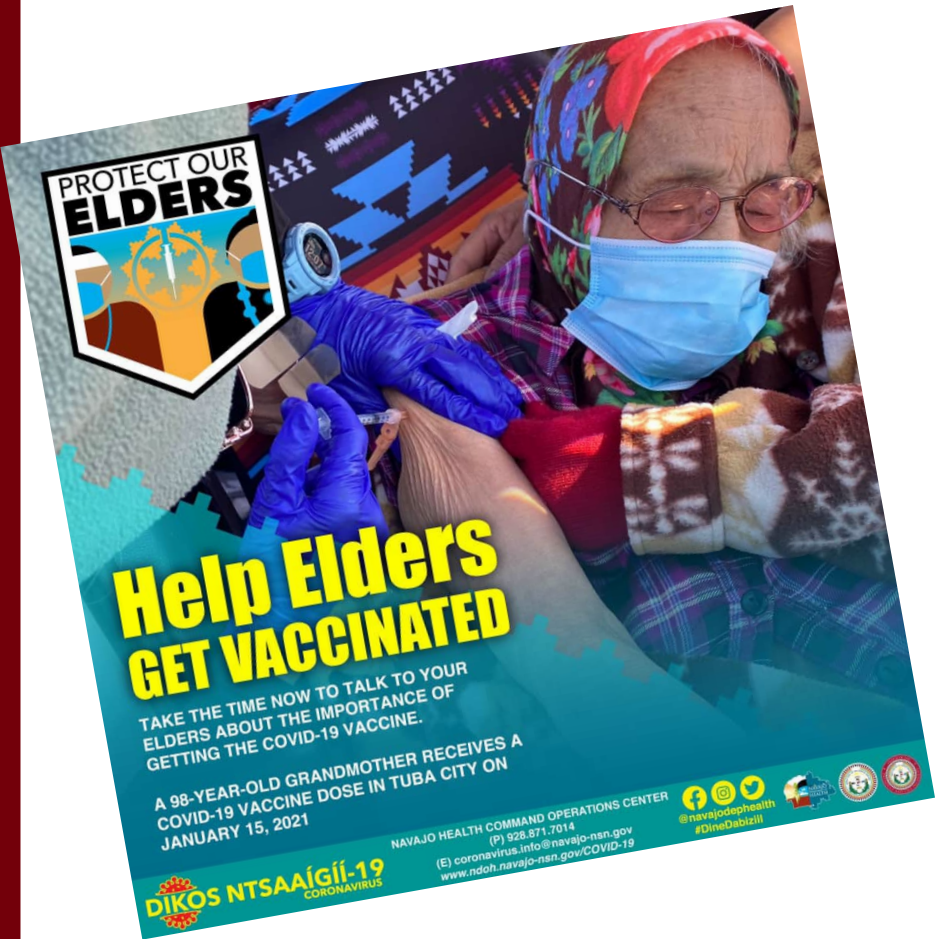


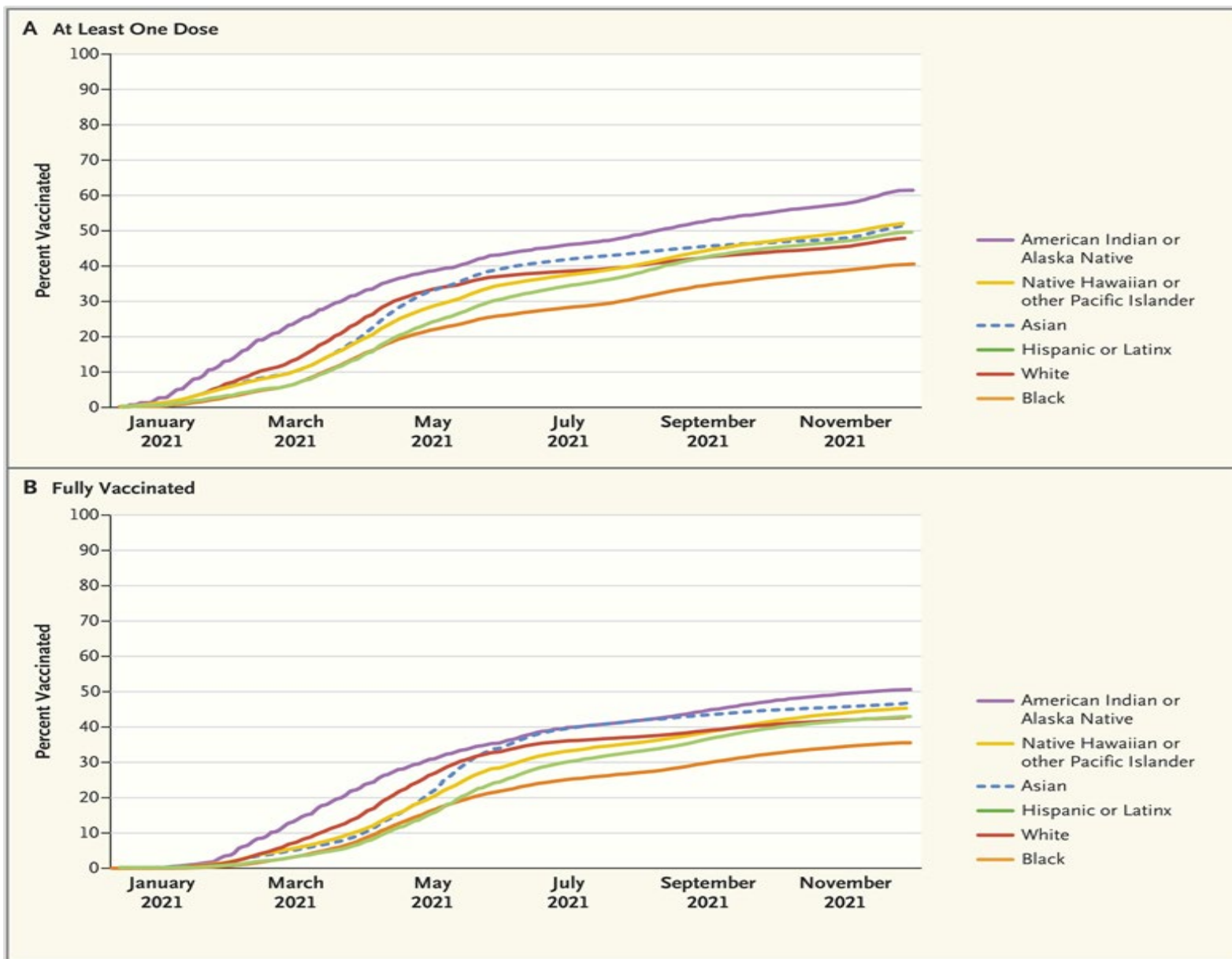
Data for disability extracted from Tribal BRFSS, 2013 - 2020

- In the 2020 Tribal BRFSS, 29% of AI/ AN adults reported having a mental health illness
- Covid-19 also took a mental health toll on AI communities
- Experience serious psychological distress 2.5x times more than the general population

Covid-19 Vaccination Rates

- COVID significantly affected AI/AN pop., physically and from a mental health perspective
- 34% of American Indian/Alaska Native residents vs 21% of whites were at risk for severe illness from COVID-19
- In New Mexico, the American Indian population accounted for 8% of the overall population, COVID-19 deaths accounted for over 60% of all deaths
- Increased death rates from the pandemic led to higher COVID-19 vaccination rates than any other racial/ethnic group
- November 2021
 - Over 50% had received 2 doses of Covid-19 vaccine
 - Over 60% had received at least 1 dose of Covid-19 vaccine



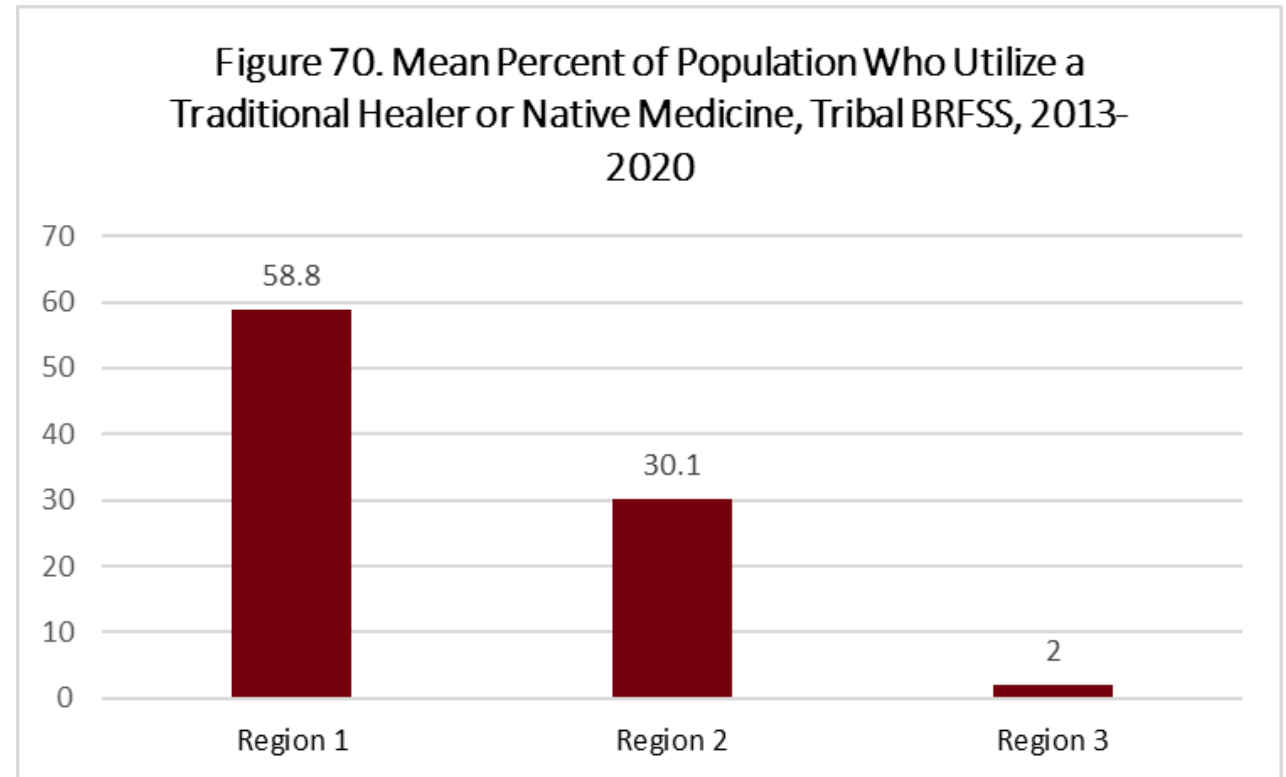


COVID-19 Vaccination Rates for AI/ AN persons nationally

Adapted from the Centers for Disease Control and Prevention (CDC).¹ Information on race and ethnic group was available for only 70.0% of persons who received at least one dose and 73.3% of fully vaccinated persons.

Traditional Healer or Native Medicine Use

- Combine research-based modern medicine with traditional healing ceremonies
- Traditional healing ceremonies are sacred and spiritual
- Connecting the physical body to the spiritual
 - Body and spirit must be healthy together to achieve wellness
- In the border region, the use of traditional healers or native medicine remains commonplace



Data for traditional healer and native medicine extracted from Tribal BRFSS, 2013 - 2020

“ ...Indigenous people are often categorized into the “Other” category and thus not represented in the data. This junk data category tells us nothing; why is it still included in standard data collection nationwide? ”

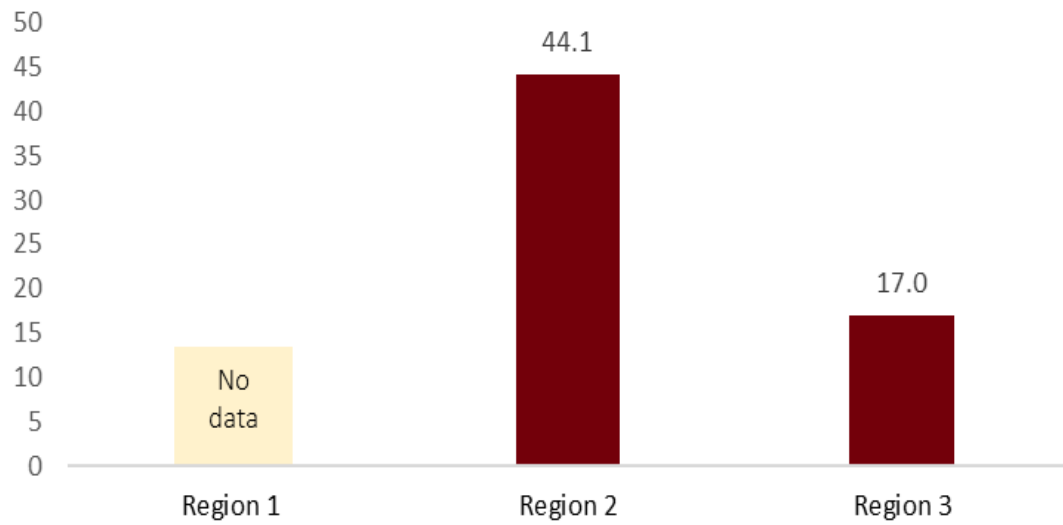


ABIGAIL ECHO-HAWK

Seattle Indian Health Board

Tobacco Use for Ceremonies, Prayer, or Tradition

Figure 71. Percent of Population Who Utilize Tobacco for Ceremonial, Prayer, or Traditional Reasons, Tribal BRFSS, 2013-2020



Data for tobacco extracted from Tribal BRFSS, 2013 - 2020

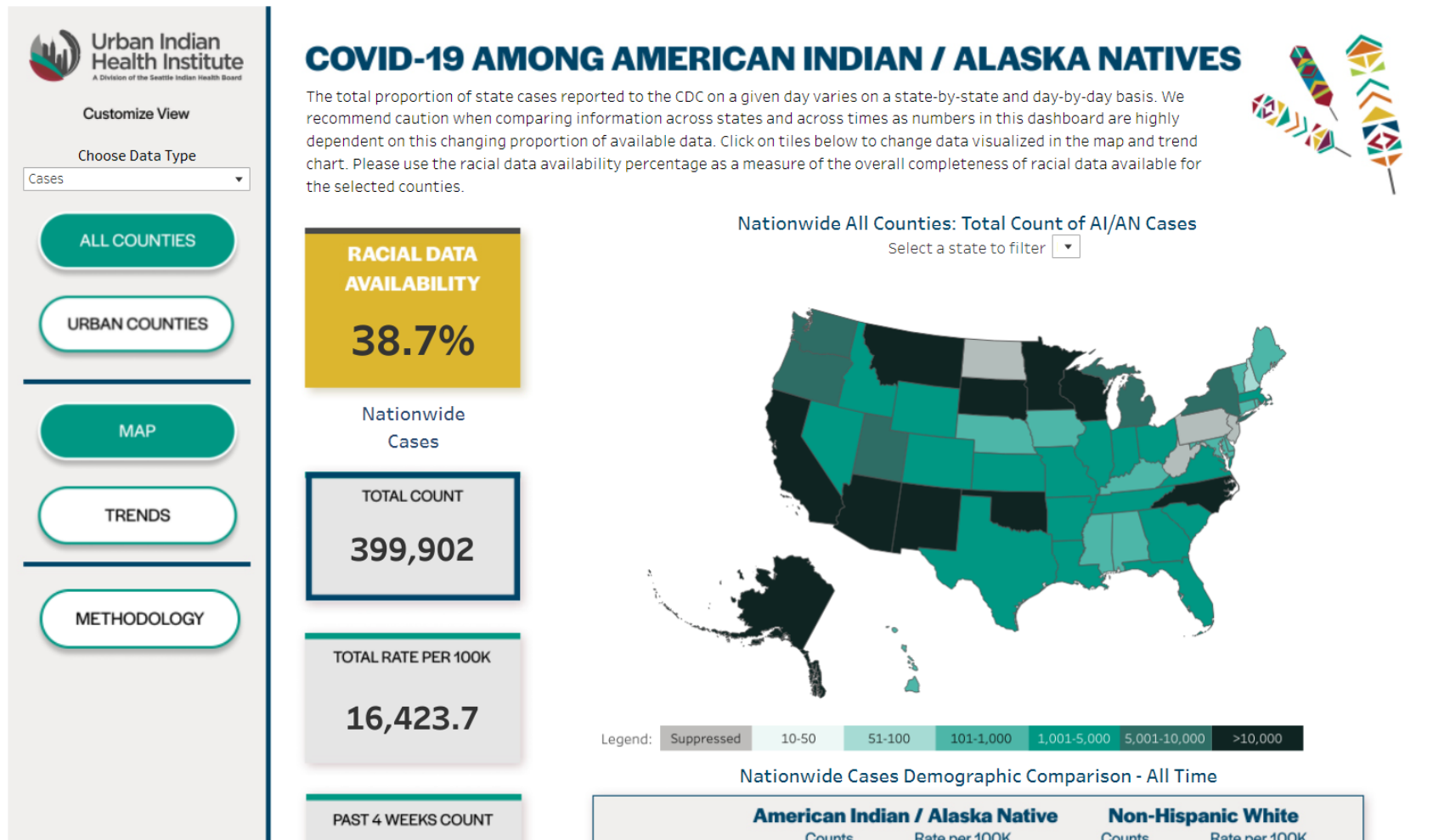
- Tobacco has been used for centuries for ceremonial, religious, spiritual, and medicinal purposes
- Many studies do not distinguish between ceremonial and recreational use, distinguishing is critical
- AI/ AN have the highest prevalence of cigarette smoking compared to other racial and ethnic groups in the U.S
- Tribes maintain cultural connectedness and pass down generational sharing of traditions and stories on the origins of tobacco

***“Let us put our
minds together
and see what life
we can make for
our children”***

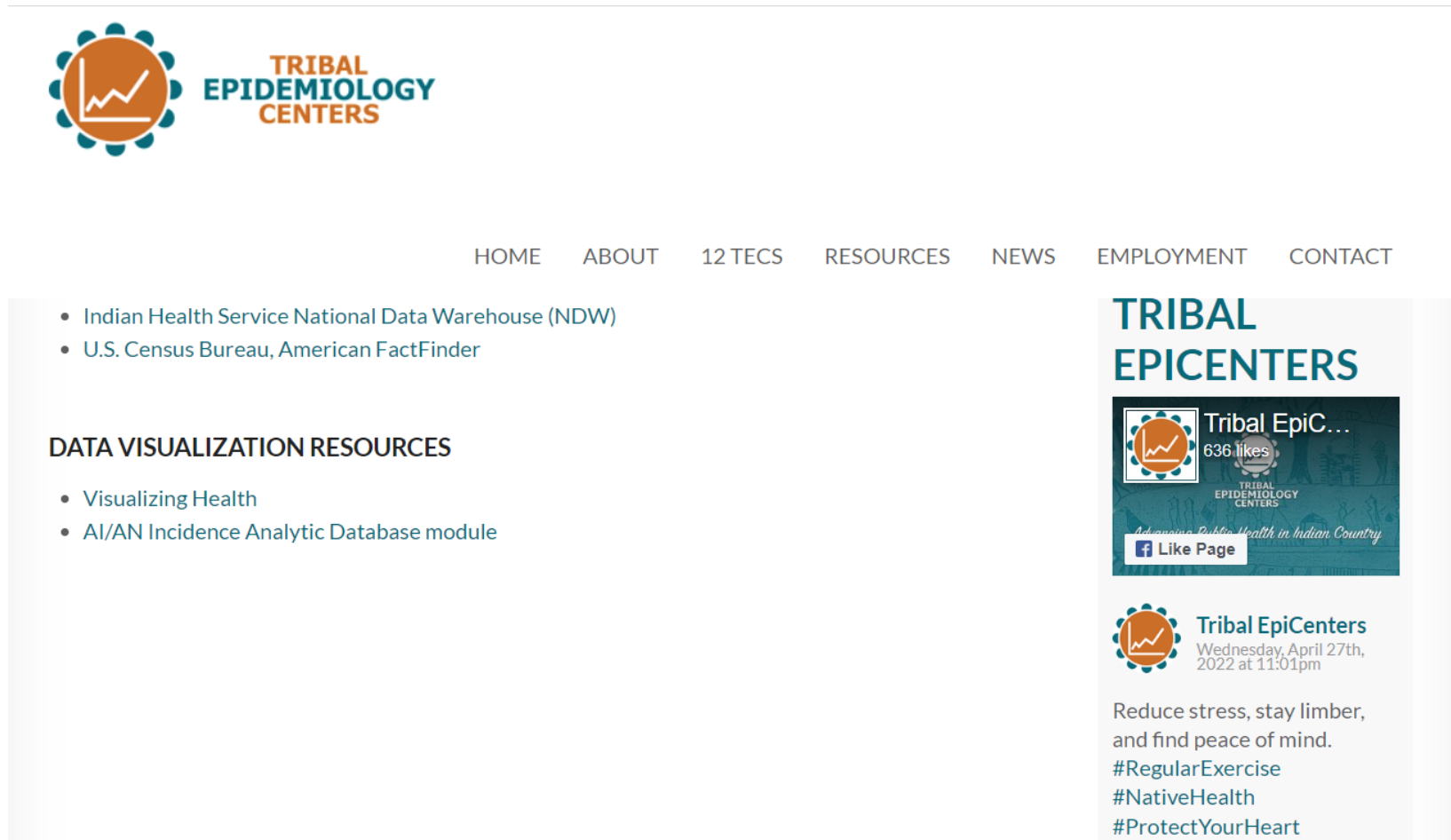
–Sitting Bull



Tribal Data: resources for exploring data



Tribal Data: resources for exploring data



The screenshot displays the Tribal Epidemiology Centers website. At the top left is the logo, which consists of a blue gear-like circle containing an orange line graph, with the text "TRIBAL EPIDEMIOLOGY CENTERS" to its right. A horizontal navigation menu below the logo includes the following links: HOME, ABOUT, 12 TECS, RESOURCES, NEWS, EMPLOYMENT, and CONTACT. Below the navigation menu, there are two columns of content. The left column contains a bulleted list of resources: "Indian Health Service National Data Warehouse (NDW)" and "U.S. Census Bureau, American FactFinder". Below this list is a section titled "DATA VISUALIZATION RESOURCES" with another bulleted list: "Visualizing Health" and "AI/AN Incidence Analytic Database module". The right column features a social media-style post for "TRIBAL EPICENTERS" with a profile picture of the organization's logo, the text "Tribal EpiC..." and "636 likes", and a "Like Page" button. Below the post is a date and time stamp: "Tribal EpiCenters Wednesday, April 27th, 2022 at 11:01pm". The main text of the post reads: "Reduce stress, stay limber, and find peace of mind. #RegularExercise #NativeHealth #ProtectYourHeart".

Tribal Data: resources for exploring data

CalOES Governor's Office of Emergency Services GIS Data Hub

Indian Lands and Native Entities

CalOES GIS Data Management
CA Governor's Office of Emergency Services

Summary

The American Indian Reservations / Federally Recognized Tribal Entities dataset depicts feature location, selected demographics and other associated data for the 561 Federally Recognized Tribal entities in the contiguous U.S. and Alaska.

[View Full Details](#)

Details

- Dataset**
Feature Layer
- September 5, 2021**
Info Updated
- September 5, 2021**
Data Updated

698 records

NEVADA UTAH COLORADO ARIZONA NEW MEXICO

Las Vegas Phoenix Albuquerque Santa Fe

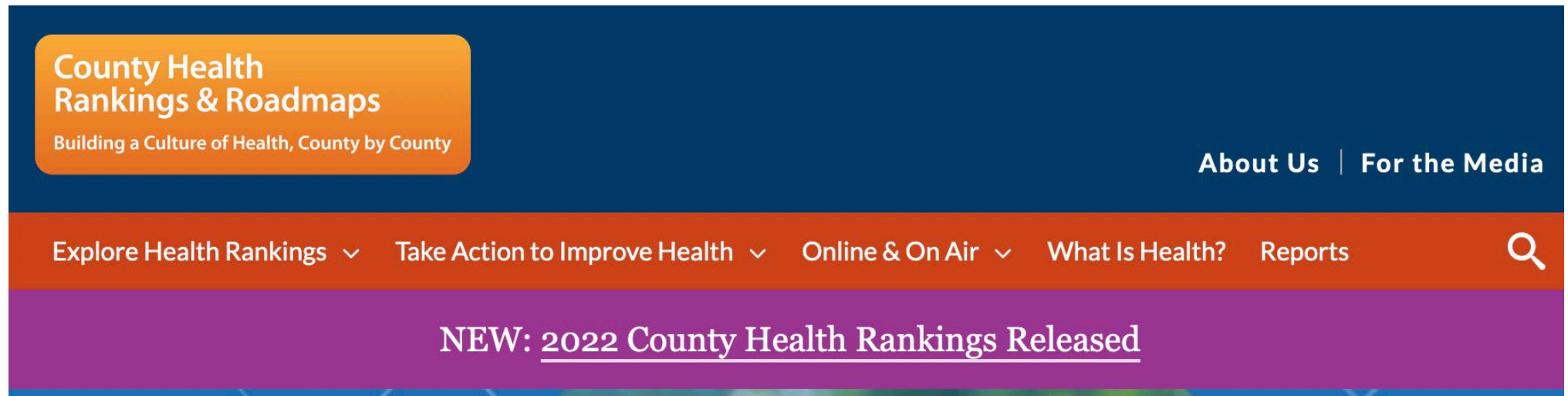
San Diego Mexicali

Denver

Wrapping up

- New Chartbook will provide policy makers in the border region with updated information
- Helpful for local comparisons, advocacy within counties and regions
- And ask us if you need help! (We have an ample supply of data geeks)
- But for those who like to explore on their own: some more about our data sources

Resources for exploring county data: County Health Rankings



County level data in convenient Excel files.

Note: some information is model-based

Resources for exploring county data: RHI Hub data explorer

- Lots of county level information
- Across multiple years
- Can make maps



The screenshot shows the RHI Hub website. At the top is the logo for RHI Hub, which consists of a stylized hexagonal icon in orange and purple, followed by the text "RHI hub" in orange and purple, and "Rural Health Information Hub" in black below it. Below the logo is a dark red navigation bar with three white buttons: "Online Library ▾", "Topics & States ▾", and "Rural Data Visualizations ▾". Below the navigation bar is a breadcrumb trail: "Rural Health > Data Visualizations". Below the breadcrumb trail is the title "Rural Data Explorer" in a large, bold, black font.

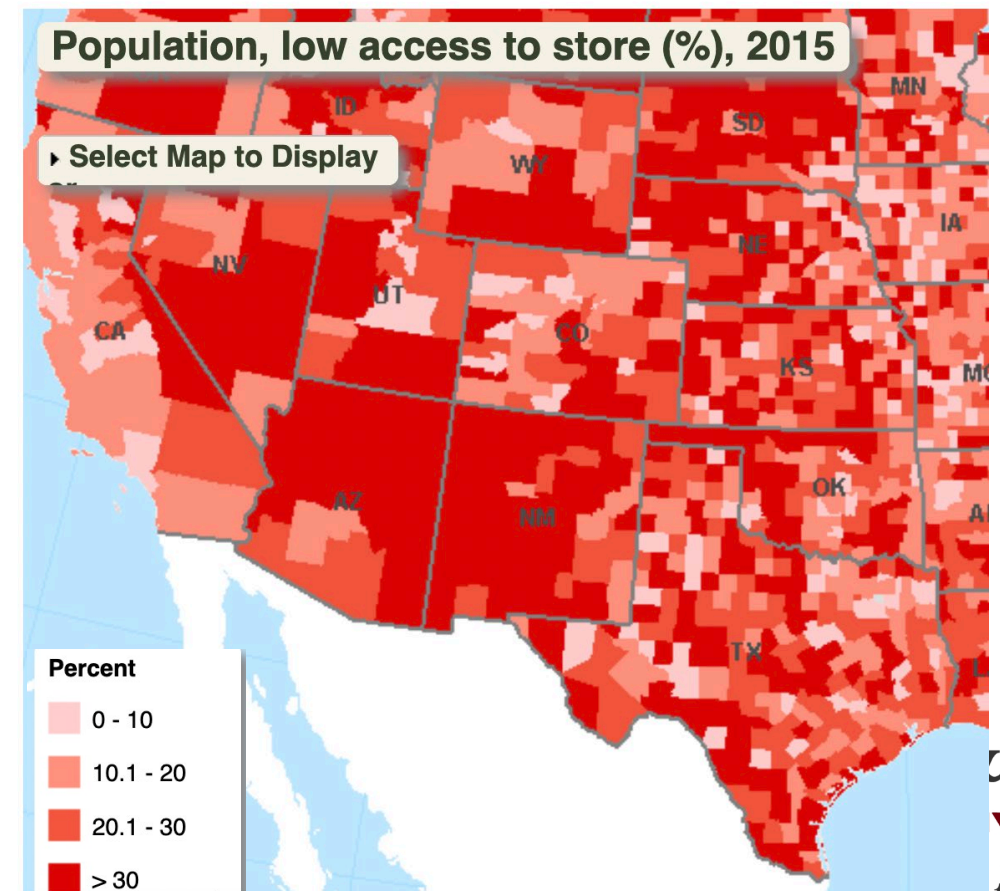
Resources for exploring county data: USDA Food Environment Index

USDA Food Environment Index

- Lots of stuff about food plus SDOH
- County level
- Maps and downloadable data

- ▶ Access and Proximity to Grocery Stores
- ▶ Store Availability
- ▶ Restaurant Availability and Expenditures
- ▶ Food Assistance
- ▶ State Food Insecurity
- ▶ Food Taxes
- ▶ Local Foods
- ▶ Health and Physical Activity
- ▶ Socioeconomic Characteristics

Go to the Atlas



Resources for exploring local county & ZCTA-level data: CDC Places

PLACES: Local Data for Better Health



PLACES is a collaboration between CDC, the Robert Wood Johnson Foundation, and the CDC Foundation. PLACES provides health data for small areas across the country. This allows local health departments and jurisdictions, regardless of population size and rurality, to better understand the burden and geographic distribution of health measures in their areas and assist them in planning public health interventions.

PLACES provides model-based, population-level analysis and community estimates of health measures to all counties, places (incorporated and census designated places), census tracts, and ZIP Code Tabulation Areas (ZCTAs) across the United States. [Learn more about PLACES](#)

2021 Release Live!

Estimates based on Behavioral Risk Factor Surveillance System data from 2019 (22 measures) or 2018 (7 measures).

⁷⁵ County and ZCTA level data.
Note: some information is model-based

thank
you

The presenters have no conflicts to disclose

This presentation has been approved by Sam the rural health advoCAte.



The Rural and Minority Health Research Center receives funding from a variety of federal, state, and local grants and contracts including a cooperative agreement with the **Federal Office of Rural Health Policy**.

For more than 30 years, the Rural Health Research Centers have been conducting research on healthcare in rural areas.



The Rural Health Research Gateway ensures this research lands in the hands of our rural leaders.

ruralhealthresearch.org