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

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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

Source: https://www.healthaffairs.org/do/10.1377/forefront.20210729.116320/full/
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
METHODS (WE’LL BE BRIEF)
Defining the border region

Table 1. List of Border Counties

<table>
<thead>
<tr>
<th>State</th>
<th>Border County Names</th>
<th>Number of Counties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arizona</td>
<td>Cochise, Pima, Santa Cruz, and Yuma</td>
<td>4</td>
</tr>
<tr>
<td>California</td>
<td>Imperial and San Diego</td>
<td>2</td>
</tr>
<tr>
<td>New Mexico</td>
<td>Doña Ana, Grant, Hidalgo, Luna, Otero, and Sierra</td>
<td>6</td>
</tr>
</tbody>
</table>

Rural Counties (33)
Urban Counties (11)
Mexican States
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

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

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

- Rural: Border - 35.0, Non-Border - 27.0
- Urban: Border - 31.0, Non-Border - 21.0
- Total: Border - 34.0, Non-Border - 24.0

RURAL & MINORITY Health Research Center
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)

Rural
- Border: 25.8*
- Non-Border: 16.2

Urban
- Border: 25.8*
- Non-Border: 14.7

Total
- Border: 25.8
- Non-Border: 15.7
Low income with poor access to food stores

• 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

- 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

Map source: https://www.ruralhealthinfo.org/rural-maps/mapfiles/hpsa-primary-care.jpg?v=12
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)
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%)
Preventive behaviors: mammogram

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

![Figure 36. Percent Women Age 40+ Who Had a Mammogram Within the Past Two Years, 2016, 2018](image)
Preventive behaviors, COVID vaccination

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

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

- Border mortality higher than other counties in the same states

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

Border: Total 124.0, Urban 119.2, Rural 186.3
Non-Border: Total 79.4, Urban 76.6, Rural 113.6
Covid mortality 2020

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

Figure 56. Age adjusted COVID 19 mortality rate per 100,000 residents, 2020
## Leading causes of death, overall

### Age-Adjusted Mortality Per 100,000 For 5 Leading Causes of Death, Border Region, CDC WONDER, 2015-2019 †

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

Map Credit: Donald Warne, University of North Dakota
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 ≥ 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)

Figure 63. American Indian Population in Border States, 2019

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
The Tribal Behavioral Risk Factor and Surveillance Survey (TBRFSS) is adapted by AI for use in AI populations in the U.S. It reports data from almost 5,000 completed surveys from tribal areas in border states.

The mission of tribal epidemiology centers (TECs) is 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

Figure 64. Total Number of Completed Surveys, Tribal BRFSS, 2013-2020

- Region 1: 2,346
- Region 2: 973
- Region 3: 1,250

Data for American Indian surveys extracted from Tribal BRFSS, 2013 - 2020
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
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
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). 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.

Source: https://tinyurl.com/44fk4cm
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

![Figure 70. Mean Percent of Population Who Utilize a Traditional Healer or Native Medicine, Tribal BRFSS, 2013-2020](image)

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

- 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.

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

–Sitting Bull
Tribal Data: resources for exploring data

COVID-19 AMONG AMERICAN INDIAN / ALASKA NATIVES

The total proportion of state cases reported to the CDC on a given day varies on a state-by-state and day-by-day basis. We recommend caution when comparing information across states and across times as numbers in this dashboard are highly dependent on this changing proportion of available data. Click on tiles below to change data visualized in the map and trend chart. Please use the racial data availability percentage as a measure of the overall completeness of racial data available for the selected counties.

Nationwide All Counties: Total Count of AI/AN Cases
Select a state to filter.

TOTAL COUNT
399,902

TOTAL RATE PER 100K
16,423.7

Past 4 Weeks Count

Legend:
- Suppressed
- 10-50
- 51-100
- 101-500
- 501-1,000
- 1,001-5,000
- 5,001-10,000
- >10,000

Nationwide Cases Demographic Comparison - All Time

<table>
<thead>
<tr>
<th>American Indian / Alaska Native</th>
<th>Non-Hispanic White</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counts</td>
<td>Rate per 100K</td>
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</tbody>
</table>

RURAL & MINORITY
Health Research Center
Tribal Data: resources for exploring data

- Indian Health Service National Data Warehouse (NDW)
- U.S. Census Bureau, American FactFinder

DATA VISUALIZATION RESOURCES
- Visualizing Health
- AI/AN Incidence Analytic Database module
Tribal Data: resources for exploring data

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
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
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 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).

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

Funded by the Federal Office of Rural Health Policy, Health Resources & Services Administration