Epidemiology of Suicide Trends in Indigenous Communities

Emily Haozous, PhD, RN, FAAN
Fort Sill Apache
Pacific Institute for Research and Evaluation
ehaozous@pire.org

Disclosure

- I have no conflicts of interest to disclose

Background

- 2017- NCI intramural research team analyzing premature mortality
  - Using national datasets
    - U.S. National Center for Health Statistics, Statistics Canada, UK Office of National Statistics, U.S. Census, and CDC WONDER
  - Premature mortality:
    - Deaths between the ages of 25-64 years
- Every analysis they ran had AIANs dying at disproportionately higher rates.
- Contacted me to help understand why they had these findings

Premature mortality projections in the USA through 2030: a modelling study

Ana F Best, Emily A Haozous, Amy Berrington de Gonzalez, Pavel Chernyavskiy, Neal D Freedman, Patricia Hartge, David Thomas, Philip S Rosenberg, Meredith S Shiels**

Summary

Background Although life expectancy has been projected to increase across high-income co
are anticipated to be among the smallest, and overall US death rates actually increased
divergence for specific US populations. Therefore, projecting future premature mortality i
public health service planning, curbing rapidly increasing causes of death, and sustaini
causes of death. We aimed to project premature mortality (here defined as deaths of indi
trends through 2030, and to estimate the total number of projected deaths, the projected nu
life lost due to premature mortality, and the effect of reducing projected accidental death ra

Methods We obtained death certificate data for the US population aged 25–64 years for
Centers for Disease Control and Prevention (CDC) National Center for Health Statistics. V
data for 2016 for non-American Indian or Alaska native groups from CDC WONDER; data f
for American Indians or Alaska natives. Our analysis focused on all-cause premature mor
causes of premature death (cancer, heart disease, accidents, suicide, and chronic liver dis

Research

JAMA Pediatrics | Original Investigation

Infant and Youth Mortality Trends by Race/Ethnicity and Cause of Death in the United States

Sahar Q. Khan, MS; Amy Berrington de Gonzalez, DPhil; Ana F. Best, PhD; Yingxi Chen, MD, PhD; Emily A. Haozous, PhD; Erik J. Rodriquez, PhD, MPH; Susan Spillane, PhD; David A. Thomas, PhD; Diana Withrow, PhD; Neal D. Freedman, PhD; Meredith S. Shiels, PhD, MHS

Supplemental content

r infant and youth mortality rates than other
rities by racial/ethnic group. Understanding
for leading causes of death is imperative for

t and youth mortality rates from 1999 to 2015 by
ling causes of death, and compare mortality rates

Articles

Annals of Internal Medicine

ORIGINAL RESEARCH

Racial and Ethnic Disparities in Excess Deaths During the COVID-19 Pandemic, March to December 2020

Meredith S. Shiels, PhD, MHS; Anika T. Haque, MPH; Emily A. Haozous, PhD, RN; Paul S. Albert, PhD; Jonas S. Almeida, PhD; Montserrat García-Closas, MD, DrPH; Anna M. Nápoles, PhD; Eliseo J. Pérez-Stable, MD; Neal D. Freedman, PhD; and Amy Berrington de González, DPhil

Background: Although racial/ethnic disparities in U.S. COVID-19 death rates are striking, focusing on COVID-19 deaths alone may underestimate the true effect of the pandemic on disparities. Excess death estimates capture deaths both directly and indirectly caused by COVID-19.

Objective: To estimate U.S. excess deaths by racial/ethnic group.

Design: Surveillance study.

Setting: United States.

Participants: All decedents.

Measurements: Excess deaths and excess deaths per 100 000 persons from March to December 2020 were estimated by race/ethnicity, sex, age group, and cause of death, using provisional death certificate data from the Centers for Disease Control and Prevention (CDC) and U.S. Census Bureau population estimates.

Results: An estimated 2.88 million deaths occurred between March and December 2020. Compared with the number of expected deaths based on 2019 data, 477 200 excess deaths Black, American Indian/Alaska Native (AI/AN), and Latino males and females were more than double those in White and Asian males and females. Non-COVID-19 excess deaths also disproportionately affected Black, AI/AN, and Latino persons. Compared with White males and females, non-COVID-19 excess deaths per 100 000 persons were 2 to 4 times higher in Black, AI/AN, and Latino males and females, including deaths due to diabetes, heart disease, cerebrovascular disease, and Alzheimer disease. Excess deaths in 2020 resulted in substantial widening of racial/ethnic disparities in all-cause mortality from 2019 to 2020.

Limitations: Completeness and availability of provisional CDC data; no estimates of precision around results.

Conclusion: There were profound racial/ethnic disparities in excess deaths in the United States in 2020 during the COVID-19 pandemic, resulting in rapid increases in racial/ethnic disparities in all-cause mortality between 2019 and 2020.

Primary Funding Source: National Institutes of Health Intramural Research Program.

Ann Intern Med. doi:10.7326/M21-2134 Annals.org

JAMA Network | Open™

Original Investigation | Substance Use and Addiction

Trends in Alcohol-Induced Deaths in

Susan Spillane, PhD; Meredith S. Shiels, PhD; Ana F. Best, PhD; Emily A. Haozous, PhD; Diana R. Withrow, PhD; Yingxi Chen Amy Berrington de González, DPhil; Neal D. Freedman, PhD

Abstract

IMPORTANCE Notable increases in mortality from alcohol-induced causes over the past 2 decades in the United States have been reported. However, comprehensive assessments of trends in alcohol-induced mortality by sex, age, race/ethnicity, and social and geographic factors are lacking.

ortality in the USA by sex, race, and ethnicity from 1999 to 2014: an analysis of death certificate data

Meredith S Shiels, Pavel Chernyavskiy, William F Anderson, Ana F Best, Emily A Haozous, Patricia Hartge, Philip S Rosenberg, David Thomas, Neal D Freedman, Amy Berrington de Gonzalez**

Summary

Background Reduction of premature mortality is a UN Sustainable Development Goal. Unlike other high-income countries, age-adjusted mortality in the USA plateaued in 2010 and increased slightly in 2015, possibly because of rising premature mortality. We aimed to analyse trends in mortality in the USA between 1999 and 2014 in people aged 25–64 years by age group, sex, and race and ethnicity, and to identify specific causes of death underlying the temporal trends.

Methods For this analysis, we used cause-of-death and demographic data from death certificates from the US National

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See Online/Comment http://dx.doi.org/10.1016/S0140-6736(17)30186-1

*Contributed equally

American Indian and Alaska Native Data

- Racial misclassification is a known issue
- In national datasets, gold standard:
  - Purchased/Referred Care Delivery Areas (PRCDA) – formerly CHSDA
  - Linkage with IHS
  - Linkage with Tribal Data

2020 Census Demographic Data Map Viewer

A Story Map

United States Census 2020

Population | Race alone | Race alone or in combination | Hispanic Origin | Housing | Group Quarters

Population Density | Population Change | Population Age 18 and Over

This map shows the population density—expressed as persons per square mile—from the 2020 Census at the state, county, and census tract levels. Zoom in to see county- and tract-level data. Click on the map to learn more.

Legend

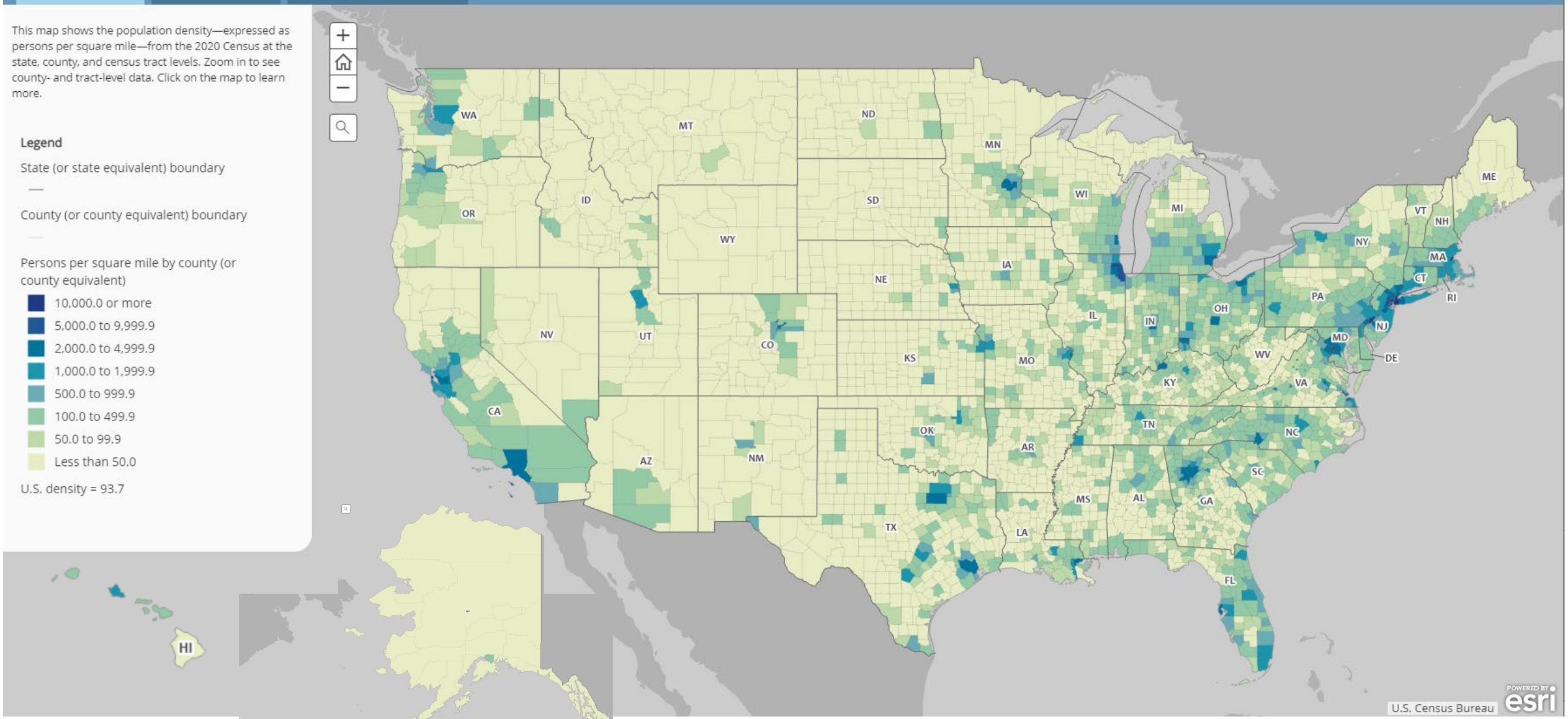
State (or state equivalent) boundary

County (or county equivalent) boundary

Persons per square mile by county (or county equivalent)

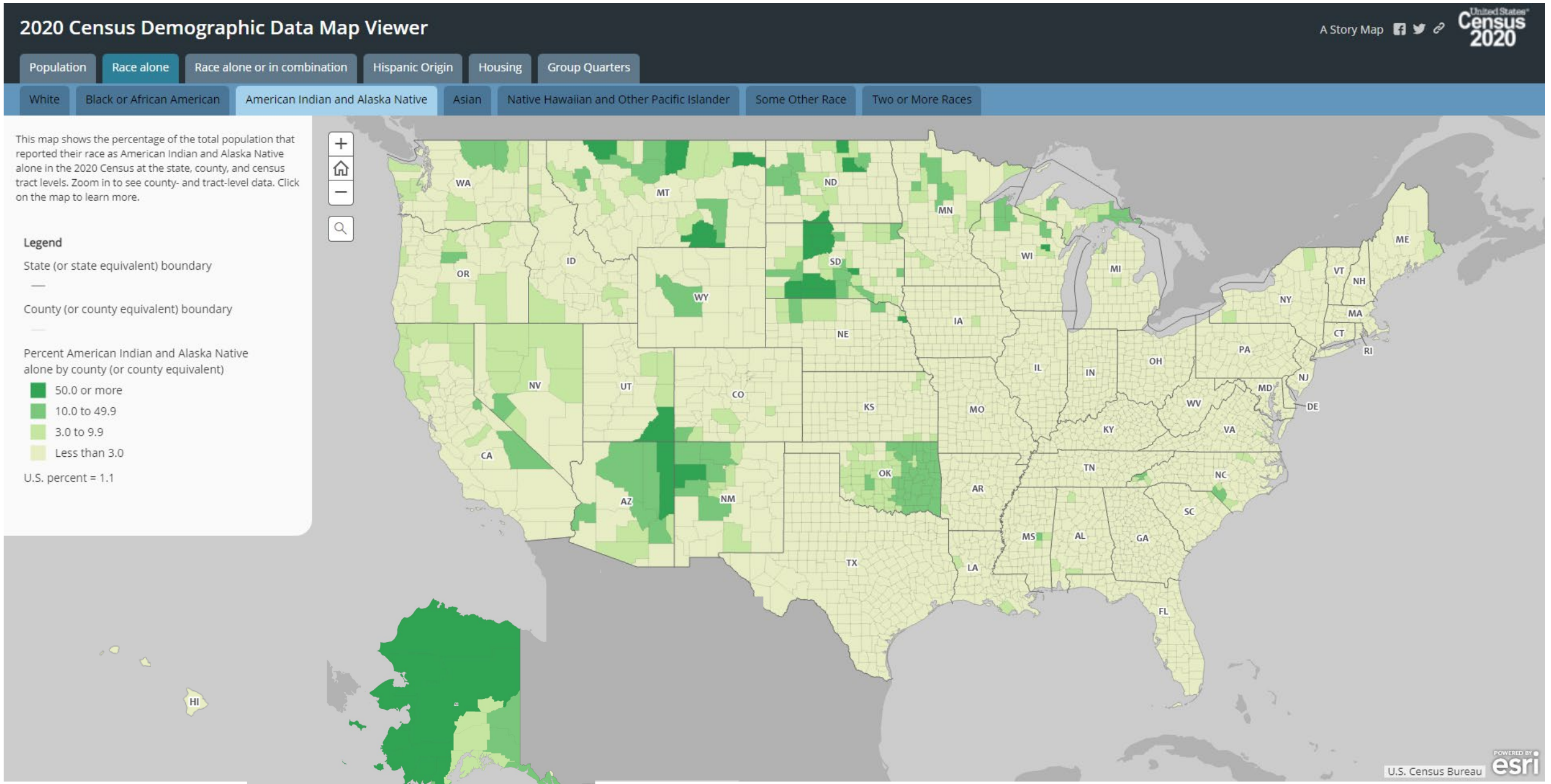
- 10,000.0 or more
- 5,000.0 to 9,999.9
- 2,000.0 to 4,999.9
- 1,000.0 to 1,999.9
- 500.0 to 999.9
- 100.0 to 499.9
- 50.0 to 99.9
- Less than 50.0

U.S. density = 93.7



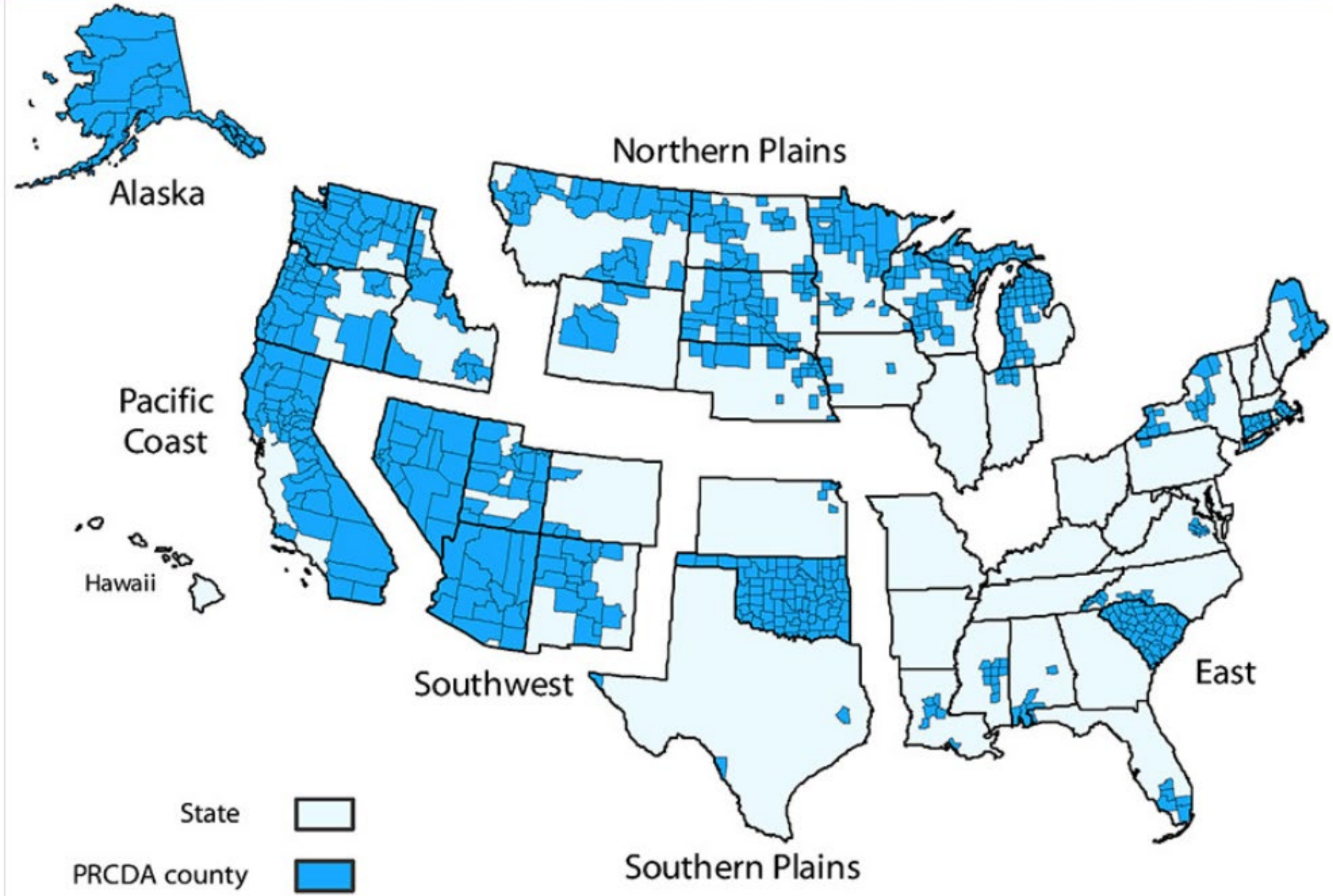
U.S. Census Bureau

POWERED BY esri



https://mtgis-portal.geo.census.gov/arcgis/apps/MapSeries/index.html?appid=2566121a73de463995ed2b2fd7ff6eb7

States and Purchased/Referred Care Delivery Area Counties by IHS Region: United States



https://www.cdc.gov/cancer/uscs/about/tools/AIAN-incidence-analytic-db.htm

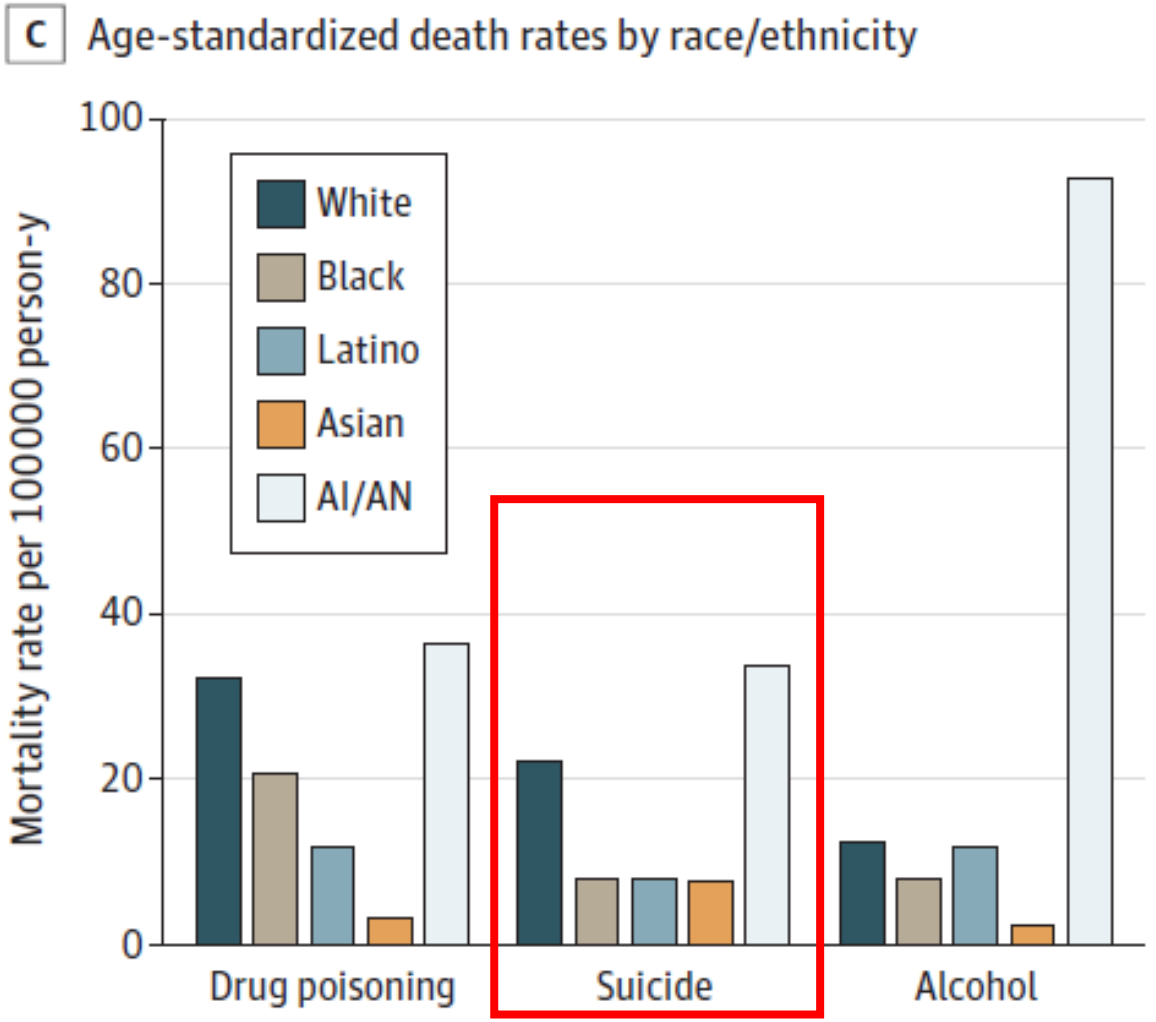
American Indian and Alaska Native Data

- Racial misclassification is a known issue
- Gold standard is to use PRCDA and Linked datasets
- Data tells a story

- Data have power

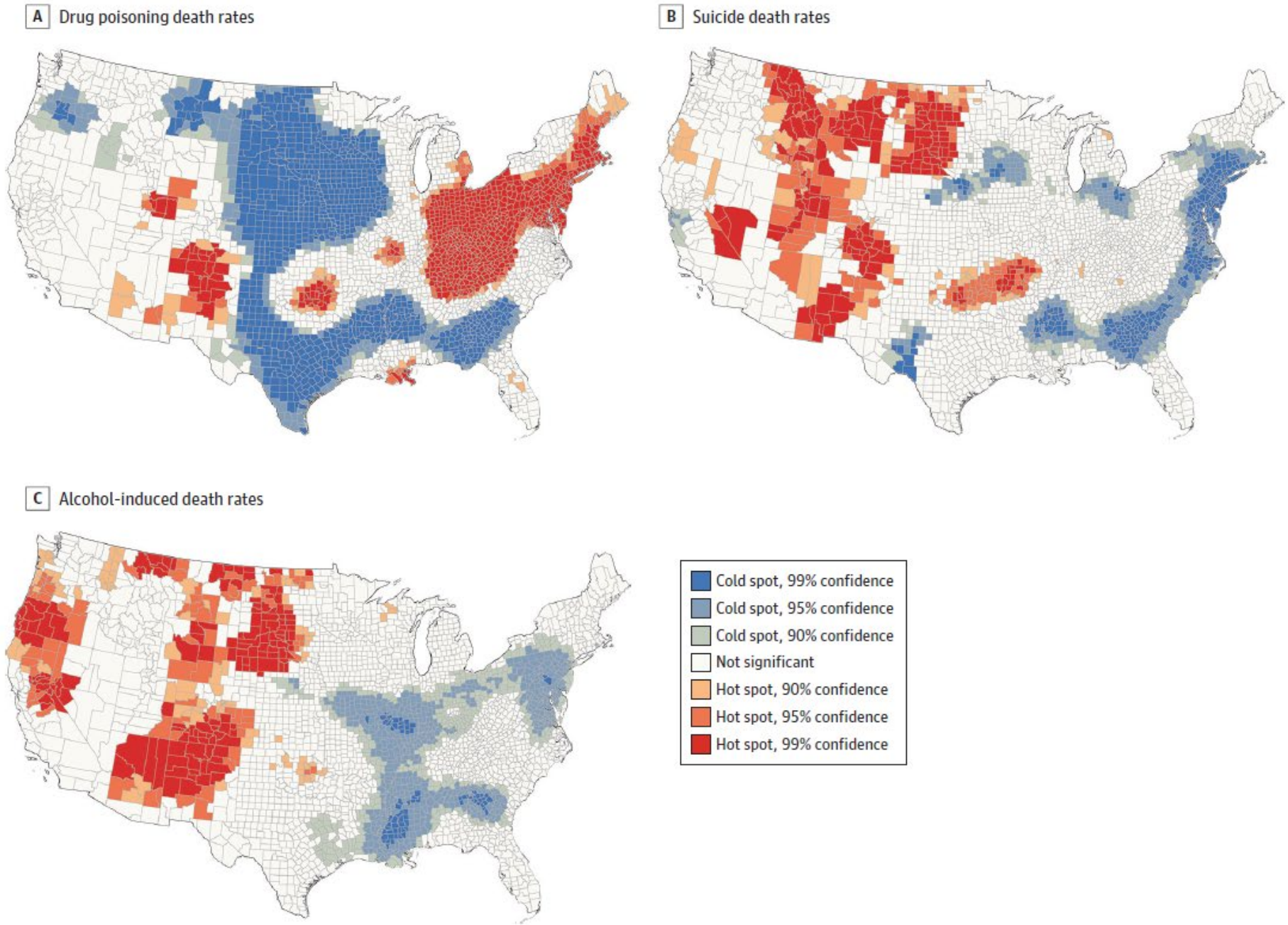
What we have learned

Age standardized death rates per 100,000 person-years for drug poisonings, suicide, and alcohol induced deaths from 2013-2017

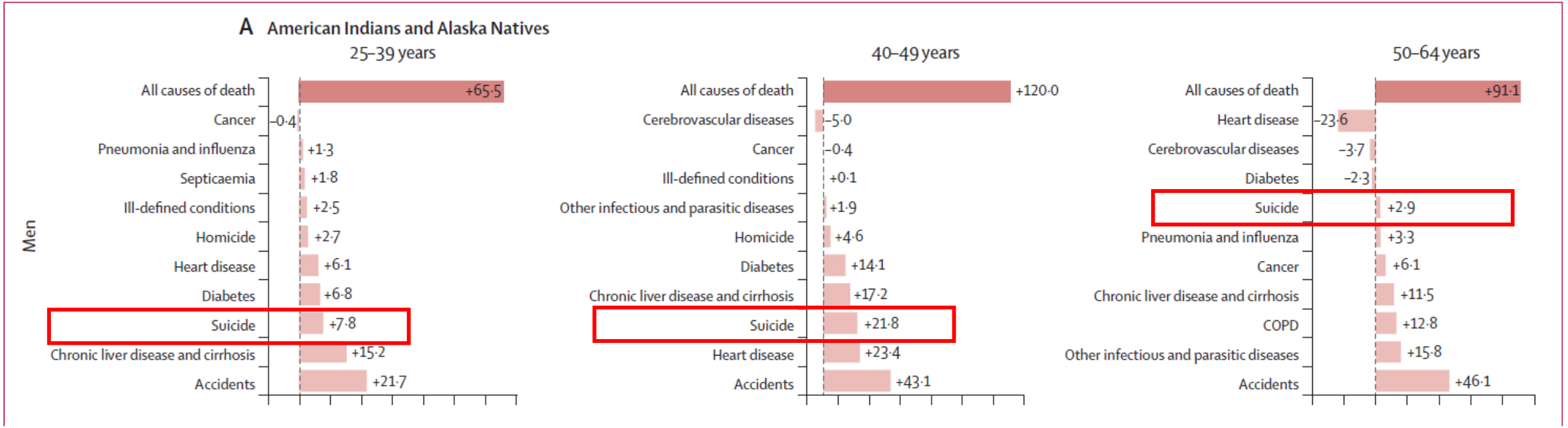


Spillane, S., Shiels, M. S., Best, A. F., Haozous, E. A., Withrow, D. R., Chen, Y., Berrington de González, A., & Freedman, N. D. (2020). Trends in Alcohol-Induced Deaths in the United States, 2000-2016. *JAMA Network Open, 3(2), e1921451-e1921451. https://doi.org/10.1001/jamanetworkopen.2019.21451*

Figure 3. Hot Spot Analysis From 2013 to 2017

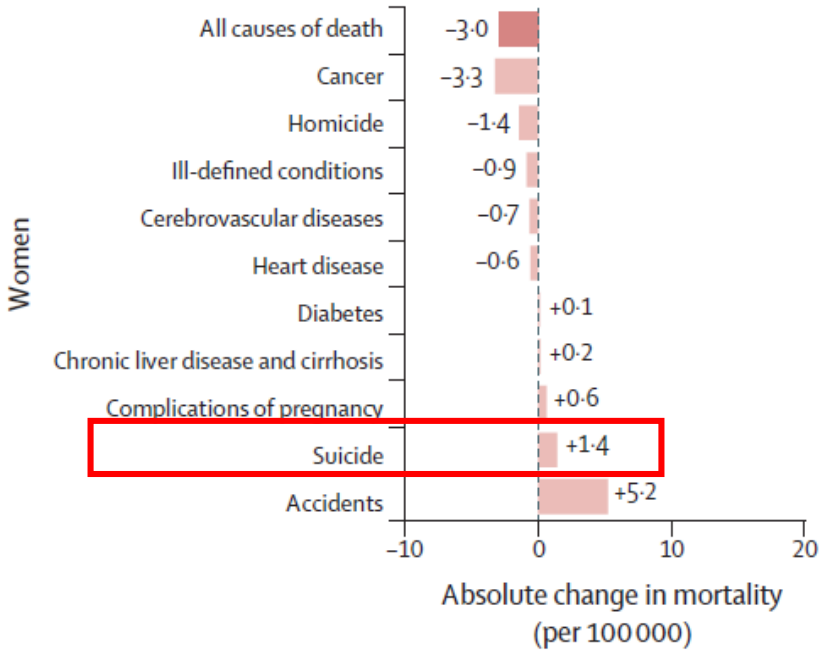


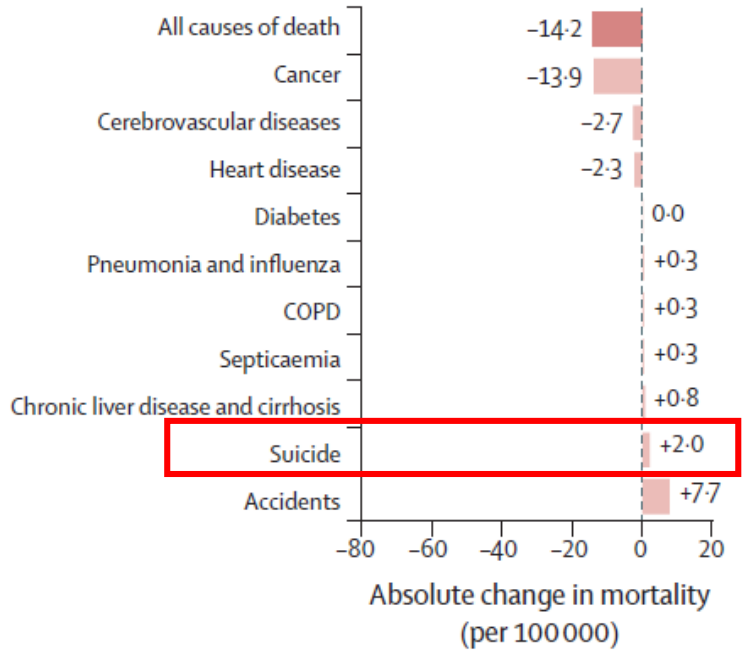
Absolute change in all cause and cause-specific age-standardized mortality in AIAN men by age group, 2011-14 vs 1999-2002

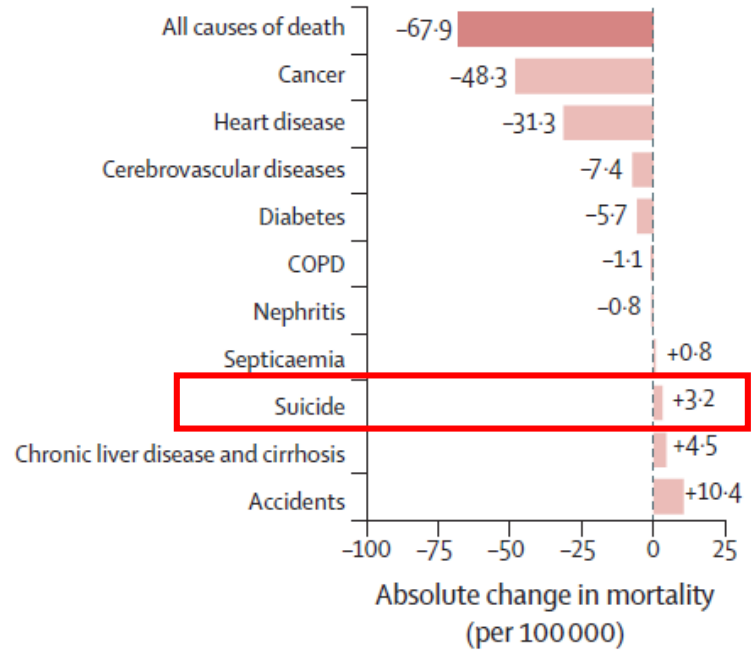


Shiels, M. S., Chernyavskiy, P., Anderson, W. F., Best, A. F., Haozous, E. A., Hartge, P., Rosenberg, P. S., Thomas, D., Freedman, N. D., & Berrington de Gonzalez, A. (2017). Trends in premature mortality in the USA by sex, race, and ethnicity from 1999 to 2014: an analysis of death certificate data. *Lancet, 389(10073), 1043-1054. https://doi.org/10.1016/S0140-6736(17)30187-3*

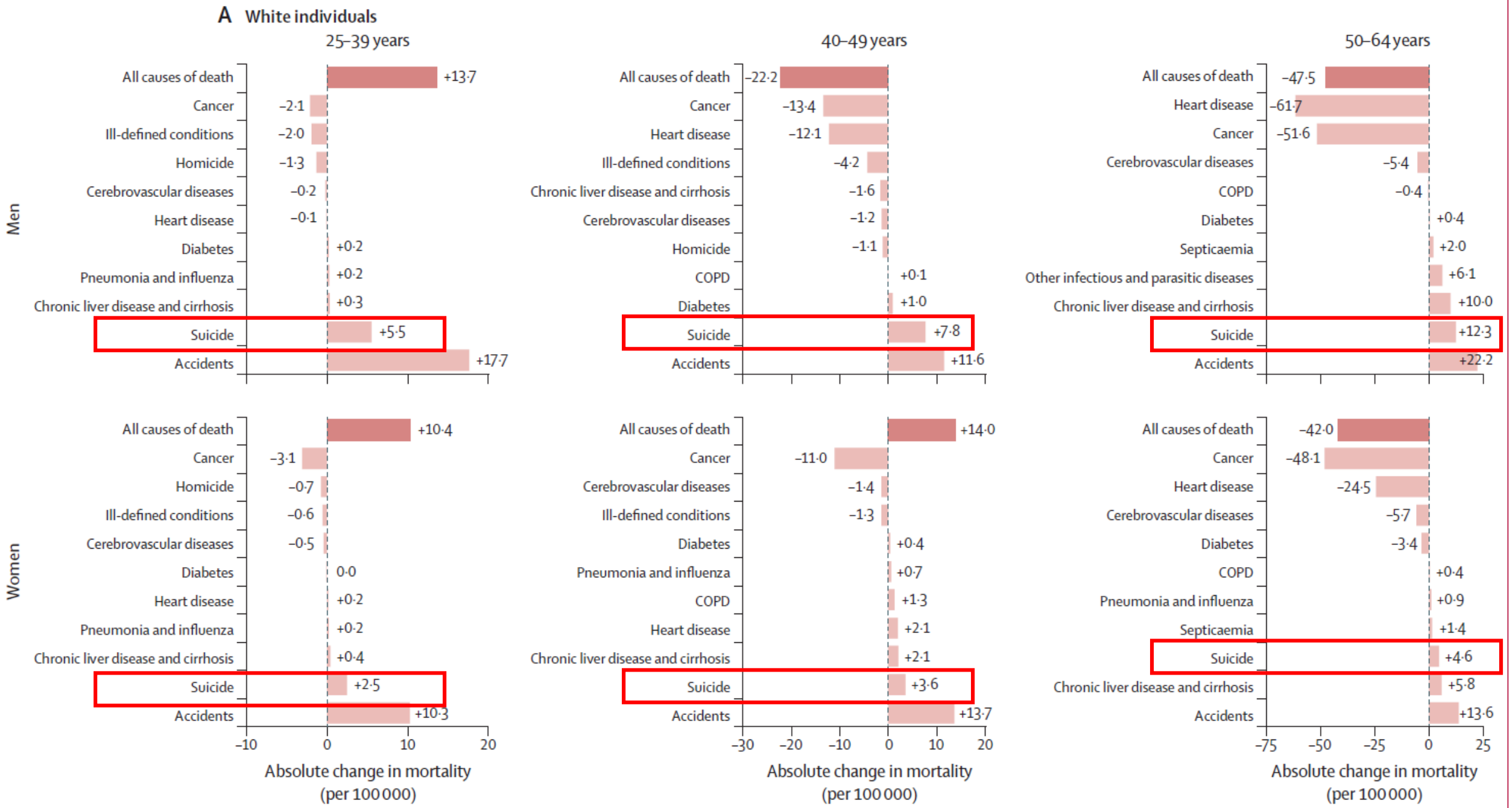
Absolute change in all cause and cause-specific age-standardized mortality in AIAN women by age group, 2011-14 vs 1999-2002







Absolute change in all cause and cause-specific age-standardized mortality in non-Hispanic men and women by age group, 2011-14 vs 1999-2002



Summary

What is the story that will be told?