



TRENDS IN PREMATURE MORTALITY: FOCUS ON WOMEN'S HEALTH

Emily A. Haozous, PhD, RN, FAAN
Research Scientist
Pacific Institute for Research and Evaluation



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A graphic of the state of Montana in blue. Inside the state outline, there is a white line drawing of a mountain range on the left and a DNA double helix on the right. Below these drawings, the text "MONTANA INBRE" is written in white, bold, sans-serif capital letters.

A map of the United States with 25 states highlighted in blue. The highlighted states are: MT, ND, SD, NE, KS, OK, NM, NV, ID, WY, AK, HI, ME, VT, NH, RI, DE, WV, KY, AR, MS, LA, SC, and PR. The remaining states are shown in white.

Presentation overview



- **Background information**
 - Collaboration with NCI Division of Cancer Epidemiology and Genetics
 - Premature mortality and deaths of despair
- **Research findings and publications**
- **Summary and next steps**



Background: Collaboration

- NCI Division of Cancer Epidemiology and Genetics
 - Scientists with overlapping interests: radiation in New Mexico and population-based studies
- Investigating population-level data, including American Indian and Alaska Native mortality
- Sought expertise on American Indian data concerns





Background: Premature Mortality and Deaths of Despair

- **Premature mortality**
 - Deaths occurring before the age of 65
- **Deaths of despair**
 - Deaths due to poisonings, alcohol-related deaths, and suicides
- **Injuries by intent**
 - A categorization that provides important nuance to specific external causes of death (suicide, homicide, unintentional injury)
- **Why study cause of death?**
 - Build meaningful benchmarks
 - Help public understand context for health outcomes
 - Identify reasonable and practical interventions that fit the data and populations



Trends in premature mortality by sex, race, and ethnicity

- Between 1999-2014, premature mortality increased in non-Hispanic White and American Indian/Alaska Native persons
- Increases were highest in women and in people between the ages of 25-30
- Mortality patterns in non-Hispanic white people between ages of 25-49 dramatically shifting from previous years – most race/ethnicities see rates improving

Shiels MS, Chernyavskiy P, Anderson WF, Best AF, Haozous EA, Hartge P, Rosenberg PS, Thomas D, Freedman ND, Berrington de Gonzalez A. Trends in premature mortality in the USA by sex, race, and ethnicity from 1999 to 2014: an analysis of death certificate data. Lancet (London, England).

Callout! Implications for women's health:

American Indian and Alaska Native populations are guaranteed healthcare through the Indian Health Service, yet access to behavioral health services are scant.

Women needing treatment for mental health and drug and alcohol-related concerns have few options, contributing to high rates of mortality in this population.





Premature mortality projection in the US population through 2030

- Projected a 10% increase in premature mortality in non-Hispanic White women and American Indian/Alaska Native men and women
- Accidental death rates expected to increase in all populations except Asian and Pacific Islander women
- Suicide rates projected to increase in all groups

Best AF, Haozous EA, de Gonzalez AB, Chernyavskiy P, Freedman ND, Hartge P, Thomas D, Rosenberg PS, Shiels MS. Premature mortality projections in the USA through 2030: a modelling study. The Lancet Public health. 2018;3(8):e374-e84. Epub 2018/07/25. doi: 10.1016/s2468-2667(18)30114-2. PubMed PMID: 30037721.

Callout! Implications for women's health:

Adopting prevention, education, treatment, and recovery legislation to address opioid addiction can effectively eliminate drug poisonings and reduce accident-related mortality by 2%





Infant and youth mortality trends by race/ethnicity and cause of death

- Mortality for US youth is declining slowly in comparison to Canada and England/Wales
- Mortality remains high for American Indian and Alaska Native and Black/African American youth.
- There are concerning increases in suicide and drug poisoning deaths in US youth population
- 2015 infant mortality rate in US was disproportionately high in Black individuals (11/1,000) and American Indian/Alaska Natives 9.7/1,000)

Khan SQ, Berrington de Gonzalez A, Best AF, Chen Y, Haozous EA, Rodriguez EJ, Spillane S, Thomas DA, Withrow D, Freedman ND, Shiels MS. Infant and Youth Mortality Trends by Race/Ethnicity and Cause of Death in the United States. JAMA pediatrics. 2018;172(12):e183317. Epub 2018/10/05. doi: 10.1001/jamapediatrics.2018.3317. PubMed PMID: 30285034; PMCID: PMC6583035.

Callout! Implications for women's health:

In this study, US has the highest infant mortality rate, attributed to high pre-term birth rate, high adolescent birth rates, and limited access to prenatal care in some populations





Trends in mortality from drugs, suicide, and alcohol from 2000-2016 and 2000-2017

- Alcohol-related death rates increased the most in American Indian /Alaska Native men & women and in white women
- Rates of increase vary by racial group and age group, with large increases taking place in mid-life for white men and women and American Indian/Alaska Native women.
- Alcohol-related deaths increased and accelerated in White and American Indian/Alaska Native women during the study period
- Mortality rates have increased overall over time, although rates and causes vary by region

Shiels MS, Tatalovich Z, Chen Y, Haozous EA, Hartge P, Nápoles AM, Pérez-Stable EJ, Rodriquez EJ, Spillane S, Thomas DA, Withrow DR, Berrington de González A, Freedman ND. Trends in Mortality From Drug Poisonings, Suicide, and Alcohol-Induced Deaths in the United States From 2000 to 2017. JAMA Network Open. 2020;3(9):e2016217-e. doi: 10.1001/jamanetworkopen.2020.16217.

Spillane S, Shiels MS, Best AF, Haozous EA, Withrow DR, Chen Y, Berrington de González A, Freedman ND. Trends in Alcohol-Induced Deaths in the United States, 2000-2016. JAMA Network Open. 2020;3(2):e1921451-e. doi: 10.1001/jamanetworkopen.2019.21451.

Callout! Implications for women's health:

Deaths from drug poisonings, suicide, and alcohol-related causes vary by region, indicating each community requires its own tailored intervention





Racial and ethnic disparities in excess deaths during the first year of the COVID-19 pandemic

Excess deaths were 2-4 times higher in

- **Black/African American**
- **American Indian/Alaska Native**
- **Latino populations**

than in non-Hispanic white populations during the first nine months of the COVID-19 pandemic

Shiels MS, Haque AT, Haozous EA, Albert PS, Almeida JS, García-Closas M, Nápoles AM, Pérez-Stable EJ, Freedman ND, Berrington de González A. Racial and Ethnic Disparities in Excess Deaths During the COVID-19 Pandemic, March to December 2020. *Annals of internal medicine*. 2021. Epub 2021/10/05. doi: 10.7326/m21-2134. PubMed PMID: 34606321; PMCID: PMC8489677

Callout! Implications for women's health:

During the study period, Black, Latinas, and AIAN women had higher rates of excess mortality from heart disease, diabetes-related causes, cerebrovascular disease, and Alzheimer's disease





Trends in mortality from poisonings, firearms, and all other injuries by intent

- Between 1999 and 2020, death rates due to drug poisonings, firearms, and other injuries of intent increased greatly
- Drug poisoning (drug overdose) rates tripled in 2019-2020, despite a decrease in opioid prescribing
- Mortality due to firearms increased over time, overall increase by 1.1% annually
 - 4.7% annual increase between 2013 – 2020 in people between the ages of 20-39
 - 6.9% annual in firearm homicides between 2014-2020
- Black individuals had the highest rate of firearm deaths overall

Lawrence WR, Freedman ND, McGee-Avila JK, Berrington De González A, Chen Y, Emerson MA, Gee GC, Haozous EA, Haque AT, Inoue-Choi M, Jackson SS, Lord B, Nápoles AM, Pérez-Stable EJ, Vo JB, Williams F, Shiels MS. Trends in Mortality From Poisonings, Firearms, and All Other Injuries by Intent in the US, 1999-2020. JAMA internal medicine. 2023. doi: 10.1001/jamainternmed.2023.2509.

Callout! Implications for women's health:

Focused public health interventions are necessary to address rising mortality rates from preventable causes

Women are particularly vulnerable to homicide deaths from firearms, requiring direct and urgent attention to counteract this serious public health threat





Summary

- Premature mortality and deaths of despair are important public health concerns
- Specific need to address firearm deaths and drug poisonings through public health and policy changes
- New analyses are needed to update projections following COVID-19 pandemic
- American Indian and Alaska Native women's health is a specific health disparity population



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