

Key Findings

- Between March and October 2020, AI/AN residents accounted for 19% of COVID-19 cases and 32% of COVID-19 associated deaths in Montana.
- The cumulative COVID-19 incidence and mortality rates of for AI/AN residents was almost three-fold and twelve-fold higher compared with NHW residents in Montana, respectively.
- The median age at death for AI/AN residents was 15 years younger than the median age at death for NHW residents.

Office of Epidemiology and Scientific Support

1400 E Broadway
Helena, Montana 59260-2951

(406) 444-0064

<http://www.dphhs.mt.gov/publichealth/epidemiology>

December 21, 2020

COVID-19 Incidence and Death Rates among American Indians/Alaska Natives and Non-Hispanic Whites – Montana, March – October 2020

Introduction

Limited epidemiology studies in select states in the U.S. indicate that COVID-19 incidence and mortality rates are higher among American Indian/Alaska Native (AI/AN) populations compared with non-Hispanic Whites (NHW).¹⁻³ Regional and state-level surveillance of COVID-19 incidence and mortality can play an important role in understanding the burden of this disease on different populations and help inform prevention and mitigation strategies in Montana. To assess the impact of COVID-19 on AI/AN residents in Montana, case-level surveillance and death certificate data were analyzed and compared with NHW residents.

Data and Analysis

COVID-19 case-level surveillance data from the Montana Infectious Disease Information System (MIDIS) and death certificate data from the DPHHS Office of Vital Records were utilized to describe the number, percent, and crude rates of COVID-19 cases and deaths among AI/AN and NHW in Montana by demographic characteristics. Laboratory-confirmed or probable cases reported to DPHHS between March and October 31, 2020 that were Montana residents were included in the analysis. Cases with missing race information were excluded. COVID-19 deaths occurring in Montana among Montana residents were identified using International Classification of Diseases, Tenth Revision (ICD-10) code U07.1 listed as either the underlying cause or a contributing cause of death. The death counts in this report are provisional. Counts from previous weeks are continually revised as more death certificates are received and processed. Provisional death counts may not match counts from other sources, such as the daily COVID-19 case information reported by DPHHS, or numbers from county health departments.

Cases and deaths were classified as AI/AN if AI/AN race was documented on the case report or death certificate alone or in combination with other race and ethnicities. NHW was classified for cases or deaths which documented white race alone and non-Hispanic ethnicity. The 2019 National Center for Health Statistics bridged-race population estimates were utilized as denominators to calculate crude rates per 100,000 population.⁴ Case fatality rates per 1,000 cases were also calculated.



Results

Among the 32,551 COVID-19 cases reported to DPHHS between March and October 2020, 28,002 (86%) had complete race information. Among these 28,002 cases, 5,236 (19%) occurred among AI/AN persons and 20,993 (75%) occurred among NHW persons. AI/AN cases were younger than NHW cases. The median age of AI/AN cases was 34 years compared to 41 years among NHW cases. The cumulative incidence rate among AI/AN was 6,713 per 100,000 people compared with 2,248 per 100,000 among NHW, representing almost a three-fold difference (Figure 1). The cumulative incidence rates were also three to four times higher by sex and age group categories for AI/ANs compared with NHWs.

Between March and October 2020, 474 COVID-19 deaths were reported to DPHHS among Montana residents; 100% had complete race information. Of the 474 deaths, 154 (32%) were AI/AN and 320 (68%) were NHW. The overall mortality rate among AI/AN was 275 per 100,000 people compared to 23 per 100,000 among NHW, representing a twelve-fold difference (Figure 2). The mortality rates were also multi-fold higher by sex and age group categories for AI/ANs compared with NHWs. AI/AN decedents were younger than NHW decedents. The median age of death among AI/ANs was 68 years compared to 83 years among NHWs. The mortality rates for both AI/AN and NHW were higher among men compared to women. Mortality rates were also higher for AI/AN compared with NHW among men and women and by age category. The case-fatality rate per 1,000 cases was approximately two-fold higher among AI/AN compared with NHW (29 deaths per 1,000 cases and 15 per 1,000, respectively).

Figure 1. COVID-19 incidence rate among American Indian/Alaska Native (AI/AN) and non-Hispanic white (NHW) residents, Montana, March- October 2020.

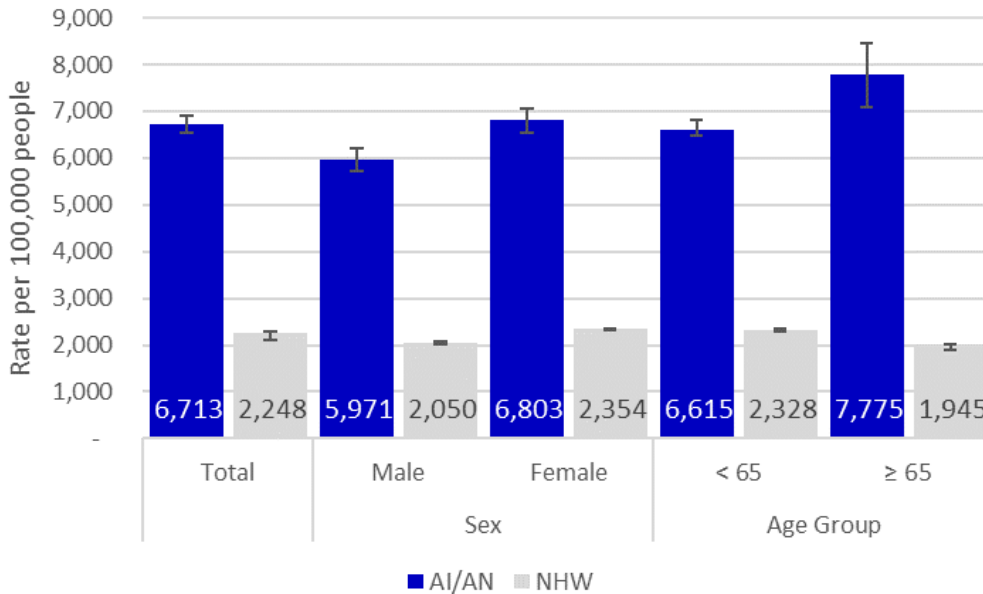
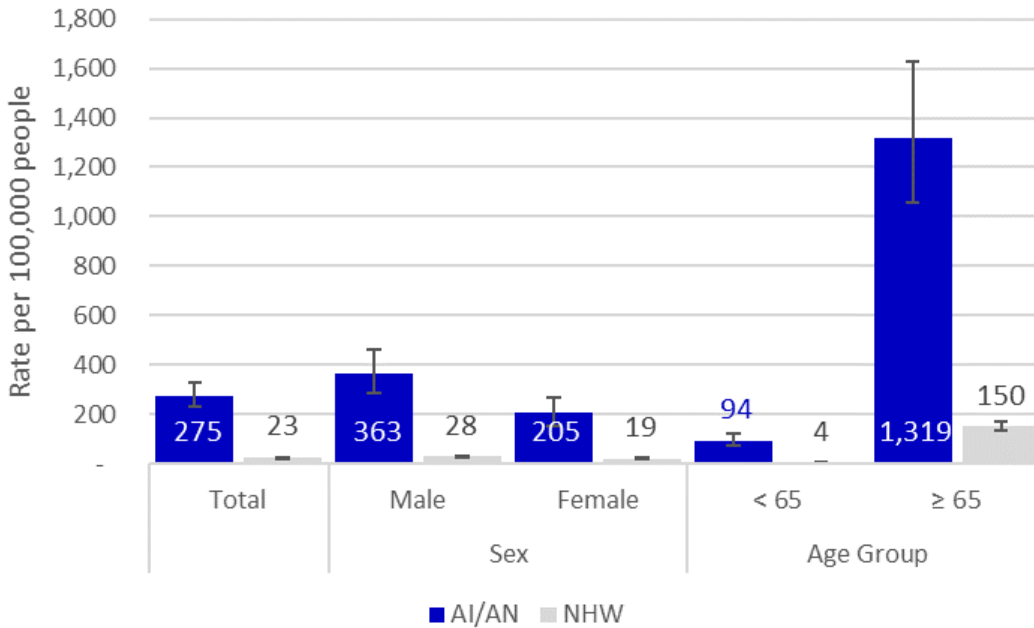


Figure 2. COVID-19 associated mortality rate among American Indian/Alaska Native (AI/AN) and non-Hispanic white (NHW) residents, Montana, March- October 2020.



Conclusions

These findings illustrate that COVID-19 disproportionately affected AI/AN residents in Montana compared to NHW residents. Overall, the COVID-19 incidence and mortality rates were approximately three-fold and twelve-fold higher among AI/AN residents compared to NHW residents, respectively. Additionally, the case fatality rate among AI/AN was almost two-fold higher than NHW. A few factors may contribute to the strikingly high incidence and mortality rates of COVID-19 among AI/AN residents. AI/AN communities in Montana, generally, have higher levels of social vulnerability including living in shared housing, challenges with accessing health care and transportation, and lower household income and other factors.⁵ AI/AN persons may be more likely to live in multi-generational households or not be able to work from home (*e.g.*, front line worker, lack of internet), which may lead to increased risk of infection. Also, many AI/AN residents have chronic health conditions (*e.g.*, cardiovascular disease, diabetes) which increase the risk of severe illness or death due to COVID-19.

The findings in this report are subject to at least three limitations. First, the case surveillance and death record data utilized in this report were not fully complete at the time of the analysis and are subject to change. Therefore, this analysis likely underestimates the number of cases and deaths that occurred, particularly for more recent time periods. Second, information for race was missing for 14% of incident cases. Collection of this and other information (*e.g.*, hospitalization status) during the case investigation is important both for surveillance and to effectively guide the public health response. Third, previous studies utilizing epidemiologic and administrative data suggest that AI/AN persons may be misclassified as non-AI/AN races and ethnicities. However, two previous studies assessing AI/AN race misclassification



in Montana and among northern plains states indicate that race misclassification is relatively small compared to other areas of the U.S.^{6,7}

These findings reinforce the importance of culturally responsive public health measures and enhanced community education to prevent or limit community transmission of COVID-19 (e.g., wearing face coverings, physical distancing, limiting gatherings, adherence to public health isolation or quarantine orders). The findings also emphasize the importance of delivering vaccine to AI/AN communities at the earliest possible time and will inform State and Tribal COVID-19 vaccine allocation strategies.

References

1. Hatcher SM, Agnew-Brune C, Anderson M, et al. COVID-19 Among American Indian and Alaska Native Persons - 23 States, January 31-July 3, 2020. *MMWR Morb Mortal Wkly Rep.* 2020 Aug 28;69(34):1166-1169.
2. Arrazola J, Masiello MM, Joshi S, et al. COVID-19 Mortality Among American Indian and Alaska Native Persons - 14 States, January-June 2020. *MMWR Morb Mortal Wkly Rep.* 2020 Dec 11;69(49):1853-1856.
3. Bassett MT, Chen JT, Krieger N. Variation in racial/ethnic disparities in COVID-19 mortality by age in the United States: A cross-sectional study. *PLoS Med.* 2020 Oct 20;17(10):e1003402.
4. CDC. National Center for Health Statistics. Vintage 2019 Bridged-Race Postcensal Population Estimates. Atlanta, Georgia; US Department of Health and Human Services, CDC, National Center for Health Statistics: 2019. https://www.cdc.gov/nchs/nvss/bridged_race/data_documentation.htm
5. CDC. Agency for Toxic Substances and Disease Registry. Social Vulnerability Index. <https://svi.cdc.gov/map.html> (Accessed on December 14, 2020).
6. Harwell TS, Hansen D, Moore KR, Jeanotte D, Gohdes D, Helgerson SD. Accuracy of race coding on American Indian death certificates, Montana 1996-1998. *Public Health Rep.* 2002 Jan-Feb;117(1):44-9.
7. Jim MA, Arias E, Seneca DS, et al. Racial misclassification of American Indians and Alaska Natives by Indian Health Service Contract Health Service Delivery Area. *Am J Public Health.* 2014 Jun;104 Suppl 3(Suppl 3):S295-302.