



Contract Health Service Delivery Area/Purchased Referred Care Delivery Area (CHSDA/PRCDA) American Indian/Alaska Native Cancer Incidence and Mortality in Wisconsin, 1995-2016/2017

Technical Notes

Contract Health Service Delivery Areas, recently renamed Purchased/Referred Care Delivery Area (CHSDA/PRCDA), include federally recognized tribal reservations or off-reservation trusts or lands that are adjacent to them (1). Linkage studies indicate less misclassification of race for American Indian/Alaska Native (AI/AN) populations in CHSDA counties (2). CHSDA counties also have higher proportions of AI/AN persons in relation to total population than do non-CHSDA counties, with 64% of the US AI/AN population residing in the 637 counties designated as CHSDA (2). We restrict analyses to CHSDA counties for incidence and mortality rates for the purpose of offering improved accuracy in interpreting statistics for AI/AN populations. For these rates restricted to CHSDA

Incidence. Invasive incident cancer cases diagnosed from 1995 to 2016 were identified from the population-based central cancer registry; Wisconsin Cancer Reporting System (WCRS) participates in the Centers for Disease Control and Prevention's (CDC) National Program of Cancer Registries (NPCR). WCRS classifies tumor histology, tumor behavior, and primary cancer site according to the International Classification of Diseases for Oncology, Third Edition (ICD-O-3). All cases reported to WCRS are linked to the Indian Health Service (IHS) patient registration database to correct racial misclassifications.

Mortality. Death certificate data from 1995 to 2017 were compiled by each state before being sent to the NCHS, where they were edited, stripped of identifiers, and made available to the general public as part of the National Vital Statistics System (NVSS). The underlying cause of death was coded according to the International Classification of Diseases, the Tenth Revision (ICD-10).

Age-Adjusted Rates. All rates, expressed per 100,000 population, were directly age-adjusted to the 2000 U.S. standard population (Census P25-1130), using SEER*Stat software (version 8.3.4; National Cancer Institute, Bethesda, MD). Readers should avoid comparison of these data with published rates adjusted to a different standard population.

Confidence Intervals. The 95% confidence intervals were computed for age-adjusted rates, as practical. Cancer incidence and mortality rates were determined to be statistically significantly different at the 0.05 level if the confidence intervals did not overlap. Rates based on a small number of cases or deaths are less reliable, as shown by larger confidence intervals (CI). We calculated 95% CIs for age-adjusted rates, based on methods described by Tiwari et al. (4).

Limitations and Caveats. There are several limitations to consider when interpreting the results presented in these tables. Race may be reported incorrectly to WCRS. Although linkage with the IHS patient registration database improves the classification of race for AI/AN residents, the issue is not completely resolved. This is because AI/AN persons who are not members of the federally recognized tribes are not eligible for IHS services, and not represented in the IHS database. Some people might be eligible, but have never used IHS services, and therefore were not included in the IHS registration database. The analyses based on CHSDA/PRCDA designation excluded AI/ANs in areas that were not classified as CHSDA/PRCDA counties (such as Milwaukee County). AI/AN residents in non-CHSDA/PRCDA areas may differ in poverty level, health care access, and other factors that may influence cancer rates. Finally, some rates were based on relatively small numbers that preclude more detailed analyses, and required aggregations of multiple years.

Cell suppression. To maintain confidentiality, cells with small numbers are suppressed to prevent the identification of any individual. Numbers and rates for incidence cells with less than 6 cases and mortality cells with less than 10 deaths are not displayed.



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Resources

For more detailed information, see the publication featuring CHSDA data: Foote M., Strickland R., Lucas-Pipkorn S., et al. The High Burden of Cancer among American Indians/Alaska Natives in Wisconsin. February 2016; 115 (1). Available at: https://www.wisconsinmedicalsociety.org/_WMS/publications/wmj/pdf/115/1/11.pdf

Comments, suggestions, and request for further information may be addressed to:

Wisconsin Cancer Reporting System
Office of Health Informatics
Division of Public Health
1 W. Wilson Street, Rm 131/133
Madison, WI 53703
Email: dhsdphdataresourcecenter@dhs.wisconsin.gov

References

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2. Espey, David K., Melissa A. Jim, Thomas B. Richards, Crystal Begay, Don Haverkamp, and Diana Roberts. "Methods for improving the quality and completeness of mortality data for American Indians and Alaska Natives." Am J Public Health 104, no. Sup3 (June 2014): S286-94. PubMed.gov (24754557). <https://doi.org/10.2105/AJPH.2013.301716>.
3. CHSDA/PRCDA designated counties: <https://seer.cancer.gov/seerstat/variables/countyattribs/PRCDA.pdf>
4. Tiwari, Ram C., Yi Li, and Zhaohui Zou. "Efficient interval estimation for age-adjusted cancer rates." Stat Methods Med Res 15, no. 6 (December 2006): 547-69. PubMed.gov (17260923). <https://doi.org/10.1177/0962280206070621>.

