



Caring Ambassadors Lung Cancer Program

American Indian/Alaska Native (AI/AN) Literature Review

Disparities in lung cancer stage, treatment and survival among American Indians and Alaskan Natives. Smith CB1, Bonomi M, Packer S, Wisnivesky JP. Lung Cancer. 2011 May;72(2):160-4. doi: 10.1016/j.lungcan.2010.08.015.

BACKGROUND: Disparities in lung cancer care and outcomes have been documented for blacks and Hispanics. Less is known about the care received by the American Indian and Alaskan Native population (AI/AN). We sought to evaluate lung cancer outcomes in this population and to assess if potential disparities in survival are explained by differences in stage of disease at diagnosis and type of treatment received. **METHODS:** We identified patients with potentially resectable (stages I-IIIa) non-small cell lung cancer (NSCLC) from the Surveillance, Epidemiology and End Results registry between 1988 and 2006. Kaplan-Meier curves were used to compare survival of AI/AN patients to those of other racial groups. Cox regression analysis was used to identify potential mediators of the association between AI/AN origin and worse survival. **RESULTS:** Five-year lung cancer survival was 47% for AI/AN, 56% for whites, 51% for blacks, 55% for Hispanics and 59% for individuals of other race ($p < 0.0001$). AI/AN were more likely to be diagnosed with stage IIIa ($p < 0.0001$) and less likely to undergo resection ($p < 0.0001$) than whites. In multivariable regression analyses, controlling for patient characteristics and histology, AI/AN race was associated with worse survival than white patients. When stage, treatment and surgery were added to the model, AI/AN origin was no longer significantly associated with worse outcomes. **CONCLUSIONS:** AI/AN with potentially resectable NSCLC have survival rates comparable to other minority groups and worse than whites. These survival differences are partly explained by advanced stage at diagnosis, and lower rates of treatment.

Cancer Treatment Delays in American Indians and Alaska Natives Enrolled in Medicare.

Adams SV, Bansal A, Burnett-Hartman AN, Cohen SA, Karnopp A, Warren-Mears V, Ramsey SD. J Health Care Poor Underserved. 2017;28(1):350-361. doi: 10.1353/hpu.2017.0027.

To assess whether timing of initial post-diagnosis cancer care differs between American Indian and Alaska Native (AI/AN) and non-Hispanic White (NHW) patients, we accessed SEER-Medicare data for breast, colorectal, lung, and prostate cancers (2001-2007). Medicare claims data were examined for initiation of cancer-directed treatment. Overall, AI/ANs experienced longer median times to starting treatment than NHWs (45 and 39 days, $p < .001$) and lower rates of treatment initiation (HR[95%CI]: 0.86[0.79-0.93]). Differences were largest for prostate (HR: 0.80[0.71-0.89]) and smallest for breast cancer (HR: 0.96[0.83-1.11]). American Indians / Alaska Natives also had elevated odds of greater than 10 weeks between diagnosis and treatment compared with NHWs (OR[95% CI]: 1.37[1.16-1.63]), especially for prostate cancer (OR: 1.41[1.14-1.76]). Adjustment for comorbidity and socio-demographic factors attenuated

associations except for prostate cancer. In this insured population, we observed evidence that AI/ANs start cancer therapy later than NHWs. The modest magnitude of delays suggests that they are unlikely to be a determinant of survival disparities.

Cancer Stage in American Indians and Alaska Natives Enrolled in Medicaid. Adams SV1, Burnett-Hartman AN2, Karnopp A3, Bansal A4, Cohen SA5, Warren-Mears V6, Ramsey SD3. *Am J Prev Med.* 2016 Sep;51(3):368-72. doi: 10.1016/j.amepre.2016.02.016. Epub 2016 Mar 24.

INTRODUCTION: Nationally, a greater proportion of American Indians and Alaska Natives (AI/ANs) are diagnosed with advanced-stage cancers compared with non-Hispanic whites. The reasons for observed differences in stage at diagnosis between AI/ANs and non-Hispanic whites remain unclear. **METHODS:** Medicaid, Indian Health Service Care Systems, and state cancer registry data for California, Oregon, and Washington (2001-2008, analyzed in 2014-2015) were linked to identify AI/ANs and non-Hispanic whites diagnosed with invasive breast, cervical, colorectal, lung, or prostate cancer. Logistic regression was used to estimate ORs and 95% CIs for distant disease versus local or regional disease, in AI/ANs compared with non-Hispanic white case patients. **RESULTS:** A similar proportion of AI/AN (31.2%) and non-Hispanic white (35.5%) patients were diagnosed with distant-stage cancer in this population (AOR=1.03, 95% CI=0.88, 1.20). No significant differences in stage at diagnosis were found for any individual cancer site. Among AI/ANs, Indian Health Service Care Systems eligibility was not associated with stage at diagnosis. **CONCLUSIONS:** In contrast to the general population of the U.S., among Medicaid enrollees, AI/AN race is not associated with later stage at diagnosis. Cancer survival disparities associated with AI/AN race that have been observed in the broader population may be driven by factors associated with income and health insurance that are also associated with race, as income and insurance status are more homogenous within the Medicaid population than within the broader population.

Disparities in Prostate, Lung, Breast, and Colorectal Cancer Survival and Comorbidity Status among Urban American Indians and Alaskan Natives. Emerson MA1, Banegas MP2, Chawla N3, Achacoso N3, Alexeeff SE3, Adams AS3, Habel LA3. *Cancer Res.* 2017 Dec 1;77(23):6770-6776. doi: 10.1158/0008-5472.CAN-17-0429. Epub 2017 Nov 29.

Cancer is the second leading cause of death among American Indians and Alaskan Natives (AIAN), although cancer survival information in this population is limited, particularly among urban AIAN. In this retrospective cohort study, we compared all-cause and prostate, breast, lung, and colorectal cancer-specific mortality among AIAN (n = 582) and non-Hispanic white (NHW; n = 82,696) enrollees of Kaiser Permanente Northern California (KPNC) diagnosed with primary invasive breast, prostate, lung, or colorectal cancer from 1997 to 2015. Tumor registry and other electronic health records provided information on sociodemographic, comorbidity, tumor, clinical, and treatment characteristics. Cox regression models were used to estimate adjusted survival curves and hazard ratios (HR) with 95% confidence intervals (CI). AIAN had a significantly higher comorbidity burden compared with NHW (P < 0.05). When adjusting for patient, disease characteristics, and Charlson comorbidity scores, all-cause mortality and cancer-specific mortality were significantly higher for AIAN than NHW patients with breast cancer (HR, 1.47; 95% CI, 1.13-1.92) or with prostate cancer (HR, 1.87; 95% CI, 1.14-3.06) but not for AIAN patients with lung and colorectal cancer. Despite approximately equal access to preventive services and cancer care in this setting, we found higher mortality for AIAN than NHW with some cancers, and a greater proportion of AIAN cancer patients with multiple comorbid

conditions. This study provides severely needed information on the cancer experience of the 71% of AIANs who live in urban areas and access cancer care outside of the Indian Health Services, from which the vast majority of AIAN cancer information comes. *Cancer Res*; 77(23); 6770-6. ©2017 AACR.

[Indian Health Service Care System and Cancer Stage in American Indians and Alaska](#)

[Natives](#). Burnett-Hartman AN, Adams SV, Bansal A, McDougall JA, Cohen SA, Karnopp A, Warren-Mears V, Ramsey SD. *J Health Care Poor Underserved*. 2018;29(1):245-252. doi: 10.1353/hpu.2018.0017.

PURPOSE: We aimed to determine whether the association between late-stage cancer and American Indian/Alaska Native (AI/AN) race differed by enrollment in the Indian Health Service Care System (IHSCS). **METHODS:** We used Surveillance, Epidemiology, and End Results (SEER) data linked to Medicare files to compare the odds of late-stage breast, colorectal, lung, or prostate cancer between non-Hispanic Whites (NHWs) (n=285,993) and AI/ANs with (n=581) and without (n=543) IHSCS enrollment. **RESULTS:** For AI/ANs without IHSCS enrollment, the odds of late-stage disease were higher in AI/ANs compared with NHWs for breast (OR=3.17, 95%CI: 1.82-5.53) and for prostate (OR=2.59, 95%CI:1.55-4.32) cancer, but not for colorectal or lung cancers. Among AI/ANs with IHSCS enrollment, there was not a significant association between late-stage disease and AI/AN race for any of the four cancers evaluated. **CONCLUSION:** Our results suggest that enrollment in the IHSCS reduced the disparity between AI/ANs and NHWs with respect to late-stage cancer diagnoses.

[Lung cancer histology, stage, treatment, and survival in American Indians and Alaska](#)

[Natives and whites](#). *Cancer*. 2010 Oct 15;116(20):4810-6. doi: 10.1002/cncr.25410.

Fesinmeyer MD1, Goulart B, Blough DK, Buchwald D, Ramsey SD.

BACKGROUND: Studies of lung cancer disparities between American Indians and Alaska Natives (AIANs) and whites have yielded mixed results. To the authors' knowledge, no studies to date have investigated whether race-based differences in histology could explain survival disparities. **METHODS:** Data were obtained on AIANs and whites with lung cancer from the 17 population-based cancer registries participating in the Surveillance, Epidemiology, and End Results (SEER) program from 1973 to 2006. Logistic regression was used to determine whether race and other covariates were associated with histology, stage at diagnosis, and receipt of surgery. Cox regression was used to determine the risk of death associated with race, after adjusting for histology, stage, and other covariates. **RESULTS:** Histology, but not race, was found to be associated with stage at diagnosis, and both race and stage were found to be associated with histology. AIANs were less likely to receive surgery than whites, after adjusting for patient and tumor characteristics. Survival improved for both AIANs and whites after 2000, compared with the 1973 through 1999 period, but survival was consistently shorter for AIANs. The association between AIAN race and decreased survival was strongest in the later time period. **CONCLUSIONS:** Lung cancer histology appears to be associated with tumor characteristics, treatment, and survival. AIAN race is associated with tumor histology, receipt of surgery, and survival. In the future, studies with access to smoking data, patient comorbidity information, and health systems-level data will be able to identify factors responsible for the disparities observed in these analyses.

[Fifty years of cancer in an American Indian population.](#) Mahoney MC1, Va P, Stevens A, Kahn AR, Michalek AM. Cancer. 2009 Jan 15;115(2):419-27. doi: 10.1002/cncr.24039.

BACKGROUND: A clear understanding of cancer patterns among American Indian tribal groups has been complicated by a variety of issues. A retrospective cohort study design was applied to a Seneca Nation of Indians (SNI) cohort for the period from 1955 through 2004. **METHODS:** Incident cancers were identified through a computer match with the New York State Cancer Registry. Standardized incidence ratios (SIRs) and 95% confidence intervals were calculated for the overall interval as well as for each of the 5 10-year intervals. The SNI cohort consisted of 3935 men and 4193 women with a total of 120,403 person-years. **RESULTS:** Significant deficits in cancer incidence were noted among men for all sites combined (SIR, 69), and for lung (SIR, 59), prostate (SIR, 54), urinary bladder (SIR, 8), and Hodgkin lymphoma (SIR, 0); no cancer sites were identified with significantly elevated incidence. Women demonstrated significantly reduced cancer incidence for all sites combined (SIR, 70) and for breast (SIR, 39), colorectal (SIR, 72), ovary (SIR, 37), uterus (SIR, 42), bladder (SIR, 20), pancreas (SIR, 10), and non-Hodgkin lymphoma (SIR, 39); elevated incidence was noted for cancers of the lung (SIR, 139) and liver (SIR, 405). **CONCLUSIONS:** To the authors' knowledge, the current study represents the most comprehensive investigation to date of cancer patterns among an American Indian tribal group and provides insights for the development of tribal cancer control programming.

[The High Burden of Cancer Among American Indians/Alaska Natives in Wisconsin.](#)

Footo M, Strickland R, Lucas-Pipkorn S, Williamson A, Lamers L. WMJ. 2016 Feb;115(1):11-6.

OBJECTIVE: American Indians/Alaska Natives (AI/AN) who live in the Northern Plains, including Wisconsin, face disproportionate cancer disparities. This report examines cancer incidence and mortality based on residence in Contract Health Service Delivery Areas (CHSDA) to assess disparities between AIs/ANs and other racial populations in Wisconsin. **METHODS:** To improve identification of the AI/AN race, incidence data were linked with Indian Health Service (IHS) patient records. Analysis further focused on residents of IHS CHSDA counties. Age-adjusted cancer incidence and mortality rates (2007-2011) were calculated by sex and major cancer sites. AI/AN rates were analyzed for both statewide and CHSDA residency in comparison to statewide white rates and comparable national rates. **RESULTS:** In comparison with whites, AI/ANs in CHSDA counties had higher incidence rates of cervical (3.5 times), liver (3.2), lung (2.3), and kidney cancers (2.1), and higher mortality rates for liver (2.7), kidney (2.2) and lung (1.9) cancers. Although there were similar rates of prostate cancer incidence between the 2 populations, AI/ANs were 1.9 times more likely to die from the disease. **CONCLUSIONS:** AI/AN individuals in Wisconsin CHSDA counties experience the highest cancer incidence rate of any racial group for both genders combined and for females. This population also has the highest mortality rate among all racial groups for both males and females. To meet the Wisconsin Comprehensive Cancer Control Plan 2015-2020 and Healthy People 2020 goals of lowering cancer incidence and mortality rates, the disproportionate cancer burden among AIs.

[Access to the Indian health service care system is not associated with early enrollment in Medicaid for American Indian and Alaska Natives with cancer.](#)

Burnett-Hartman AN1, Bensink ME, Berry K, Mummy DG, Warren-Mears V, Korenbrot C, Ramsey SD. Cancer Epidemiol Biomarkers Prev. 2014 Feb;23(2):362-4. doi: 10.1158/1055-9965.EPI-13-1099. Epub 2013 Dec 2.

BACKGROUND: For uninsured American Indians and Alaskan Natives (AIAN) diagnosed with cancer, prompt enrollment in Medicaid may speed access to treatment and improve survival. We hypothesized that AIANs who were eligible for the Indian Health Service Care System (IHSCS) at cancer diagnosis may be enrolled in Medicaid sooner than other AIANs. **METHODS:** Using Washington, Oregon, and California State Cancer Registries, we identified AIANs with a primary diagnosis of lung, breast, colorectal, cervical, ovarian, stomach, or prostate cancer between 2001 and 2007. Among AIANs enrolled in Medicaid within 365 days of a cancer diagnosis, we linked cancer registry records with Medicaid enrollment data and used a multivariate logistic regression model to compare the odds of delayed Medicaid enrollment between those with (n = 223) and without (n = 177) IHSCS eligibility. **RESULTS:** Among AIANs who enrolled in Medicaid during the year following their cancer diagnosis, approximately 32% enrolled >1 month following diagnosis. Comparing those without IHSCS eligibility to those with IHSCS eligibility, the adjusted odds ratio (OR) for moderately late Medicaid enrollment (between 1 and 6 months after diagnosis) relative to early Medicaid enrollment (≤ 1 month after diagnosis) was 1.10 [95% confidence interval (CI), 0.62-1.95] and for very late Medicaid enrollment (>6 months to 12 months after diagnosis), OR was 1.14 (CI, 0.54-2.43). **CONCLUSION:** IHSCS eligibility at the time of diagnosis does not seem to facilitate early Medicaid enrollment. **IMPACT:** Because cancer survival rates in AIANs are among the lowest of any racial group, additional research is needed to identify factors that improve access to care in AIANs.

[A randomized controlled calendar mail-out to increase cancer screening among urban American Indian and Alaska Native patients.](#) Doorenbos AZ1, Jacobsen C, Corpuz R, Forquera R, Buchwald D. J Cancer Educ. 2011 Sep;26(3):549-54. doi: 10.1007/s13187-011-0217-z.

This study seeks to ascertain whether a culturally tailored art calendar could improve participation in cancer screening activities. We conducted a randomized, controlled calendar mail-out in which a Native art calendar was sent by first class mail to 5,633 patients seen at an urban American Indian clinic during the prior 2 years. Using random assignment, half of the patients were mailed a "message" calendar with screening information and reminders on breast, colorectal, lung, and prostate cancer; the other half received a calendar without messages. The receipt of cancer screening services was ascertained through chart abstraction in the following 15 months. In total, 5,363 observations (health messages n = 2,695; no messages n = 2,668) were analyzed. The calendar with health messages did not result in increased receipt of any cancer-related prevention outcome compared to the calendar without health messages. We solicited clinic input to create a culturally appropriate visual intervention to increase cancer screening in a vulnerable, underserved urban population. Our results suggest that printed materials with health messages are likely too weak an intervention to produce the desired behavioral outcomes in cancer screening.

[Cancer-Directed Therapy and Hospice Care for Metastatic Cancer in American Indians and Alaska Natives.](#) Shiovitz S1, Bansal A2, Burnett-Hartman AN3, Karnopp A3, Adams SV3, Warren-Mears V4, Ramsey SD5. Cancer Epidemiol Biomarkers Prev. 2015 Jul;24(7):1138-43. doi: 10.1158/1055-9965.EPI-15-0251. Epub 2015 May 18.

BACKGROUND: Little has been reported regarding patterns of oncologic care in American Indian/Alaska Natives (AI/AN). Observed worse survival has been attributed to later-stage

presentation. We aimed to evaluate racial differences in cancer-directed therapy and hospice care utilization in AI/ANs and non-Hispanic whites (NHW) with metastatic cancer. **METHODS:** The linked Surveillance, Epidemiology, and End Results (SEER)-Medicare claims database was accessed for AI/AN and NHW metastatic-cancer cases diagnosed between 2001 and 2007. Utilization of cancer-directed therapy (surgery, radiation, and/or chemotherapy) and/or hospice services was compared between AI/ANs and NHWs. Minimally adjusted (age, sex, diagnosis year) and fully-adjusted (also Klabunde comorbidity score, sociodemographic factors) regression models were used to estimate odds (OR) and hazard ratios (HR) for receipt of care. **RESULTS:** AI/ANs were younger, more likely to reside in the West, be unmarried, have lower income, and live in a nonurban setting than NHWs. Fewer AI/ANs received any cancer-directed therapy (57% vs. 61% NHWs) within 3 months of diagnosis; sociodemographic factors accounted for much of this difference [fully-adjusted HR, 0.94; 95% confidence interval (CI), 0.83-1.08]. We noted differences in hospice utilization between AI/ANs (52%) and NHWs (61%). A significant difference in hospice utilization remained after adjustment for sociodemographics (OR, 0.78; 95% CI, 0.61-0.99). **CONCLUSION:** Observed absolute differences in care for AI/ANs and NHWs with metastatic cancer were largely accounted for by adjusting for socioeconomic, comorbidities, and demographic factors. A significant association between race and hospice utilization was noted. **IMPACT:** Efforts to improve metastatic-cancer care should focus on socioeconomic barriers and investigate the observed disparity in receipt of hospice services.

[Caregiving among American Indians and Alaska Natives with cancer.](#) Sawchuk CN1, Van Dyke E, Omidpanah A, Russo JE, Tsosie U, Buchwald D. Support Care Cancer. 2015 Jun;23(6):1607-14. doi: 10.1007/s00520-014-2512-9. Epub 2014 Nov 22.

PURPOSE: Caregivers are an important source of support for oncology patients during cancer diagnosis and treatment, often helping patients manage barriers to care. Our study had three goals: to describe the characteristics of caregivers for American Indian and Alaska Native (AI/AN) oncology patients, to assess the similarities and differences between the perceptions of caregivers and patients regarding barriers to cancer care, and to compare AI/AN caregivers to non-AI/AN caregivers on perceived barriers to cancer care. **METHODS:** We conducted a structured interview that assessed perceived barriers to cancer care with a paired sample of 98 adult caregivers and 98 AI/AN oncology patients and to assess the degree of agreement between these two groups. We also investigated whether AI/AN and non-AI/AN caregivers had differing perceptions of barriers to cancer care. **RESULTS:** Caregivers reported that their role was very meaningful and not highly stressful. Caregivers and patients agreed 70 % of the time on specific barriers to cancer care. Both groups overwhelmingly reported financial and family or work issues as major barriers to care, whereas trust in providers was the least frequently endorsed barrier. A comparison of AI/AN and non-AI/AN caregivers revealed that AI/AN caregivers identified confidentiality among clinical staff as a significant barrier, whereas non-AI/AN caregivers perceived financial barriers as more significant. **CONCLUSIONS:** Finances, family, and work are perceived as the largest barriers to the receipt of cancer care for AI/AN oncology patients. Both patients and caregivers trusted health-care providers. Assessing barriers to care early in the assessment process may result in better engagement with cancer treatment by patients and their caregivers.

[Cancer statistics for Asian Americans, Native Hawaiians, and Pacific Islanders, 2016: Converging incidence in males and females.](#) Torre LA1, Sauer AM1, Chen MS Jr2, Kagawa-

Singer M3, Jemal A4, Siegel RL5. CA Cancer J Clin. 2016 May;66(3):182-202. doi: 10.3322/caac.21335. Epub 2016 Jan 14.

Cancer is the leading cause of death among Asian Americans, Native Hawaiians, and Pacific Islanders (AANHPIs). In this report, the American Cancer Society presents AANHPI cancer incidence data from the National Cancer Institute, the Centers for Disease Control and Prevention, and the North American Association of Central Cancer Registries and mortality data from the National Center for Health Statistics. Among AANHPIs in 2016, there will be an estimated 57,740 new cancer cases and 16,910 cancer deaths. While AANHPIs have 30% to 40% lower incidence and mortality rates than non-Hispanic whites for all cancers combined, risk of stomach and liver cancers is double. The male-to-female incidence rate ratio among AANHPIs declined from 1.43 (95% confidence interval, 1.36-1.49) in 1992 to 1.04 (95% confidence interval, 1.01-1.07) in 2012 because of declining prostate and lung cancer rates in males and increasing breast cancer rates in females. The diversity within the AANHPI population is reflected in the disparate cancer risk by subgroup. For example, the overall incidence rate in Samoan men (526.5 per 100,000) is more than twice that in Asian Indian/Pakistani men (216.8). Variations in cancer rates in AANHPIs are related to differences in behavioral risk factors, use of screening and preventive services, and exposure to cancer-causing infections. Cancer-control strategies include improved use of vaccination and screening; interventions to increase physical activity and reduce excess body weight, tobacco use, and alcohol consumption; and subgroup-level research on burden and risk factors. CA Cancer J Clin 2016;66:182-202. © 2016 American Cancer Society

[Disparities in hospice utilization among American Indian Medicare beneficiaries dying of cancer.](#) Guadagnolo BA, Huo J, Buchholz TA, Petereit DG. Ethn Dis. 2014 Autumn;24(4):393-8.

OBJECTIVE: We sought to compare hospice utilization for American Indian and White Medicare beneficiaries dying of cancer. **METHODS:** We used the Surveillance, Epidemiology, and End Results (SEER)-Medicare linked databases to analyze claims for 181,316 White and 690 American Indian patients dying of breast, cervix, colorectal, kidney, lung, pancreas, prostate cancer, or stomach cancer from 2003 to 2009. **RESULTS:** A lower proportion of American Indians enrolled in hospice compared to White patients (54% vs 65%, respectively; $P < .0001$). While the proportion of White patients who used hospice services in the last 6 months of life increased from 61% in 2003 to 68% in 2009 ($P < .0001$), the proportion of American Indian patients using hospice care remained unchanged ($P = .57$) and remained below that of their White counterparts throughout the years of study. **CONCLUSION:** Continued efforts should be made to improve access to culturally relevant hospice care for American Indian patients with terminal cancer.

[Guideline-concordant cancer care and survival among American Indian/Alaskan Native patients.](#) Javid SH1, Varghese TK, Morris AM, Porter MP, He H, Buchwald D, Flum DR; Collaborative to Improve Native Cancer Outcomes (CINCO). Cancer. 2014 Jul 15;120(14):2183-90. doi: 10.1002/cncr.28683. Epub 2014 Apr 7.

BACKGROUND: American Indians/Alaskan Natives (AI/ANs) have the worst 5-year cancer survival of all racial/ethnic groups in the United States. Causes for this disparity are unknown. The authors of this report examined the receipt of cancer treatment among AI/AN patients compared with white patients. **METHODS:** This was a retrospective cohort study of 338,204

patients who were diagnosed at age ≥ 65 years with breast, colon, lung, or prostate cancer between 1996 and 2005 in the Surveillance, Epidemiology, and End Results-Medicare database. Nationally accepted guidelines for surgical and adjuvant therapy and surveillance were selected as metrics of optimal, guideline-concordant care. Treatment analyses compared AI/ANs with matched whites. **RESULTS:** Across cancer types, AI/ANs were less likely to receive optimal cancer treatment and were less likely to undergo surgery ($P \leq .025$ for all cancers). Adjuvant therapy rates were significantly lower for AI/AN patients with breast cancer ($P < .001$) and colon cancer ($P = .001$). Rates of post-treatment surveillance also were lower among AI/ANs and were statistically significantly lower for AI/AN patients with breast cancer ($P = .002$) and prostate cancer ($P < .001$). Nonreceipt of optimal cancer treatment was associated with significantly worse survival across cancer types. Disease-specific survival for those who did not undergo surgery was significantly lower for patients with breast cancer (hazard ratio [HR], 0.62), colon cancer (HR, 0.74), prostate cancer (HR, 0.52), and lung cancer (HR, 0.36). Survival rates also were significantly lower for those patients who did not receive adjuvant therapy for breast cancer (HR, 0.56), colon cancer (HR, 0.59), or prostate cancer (HR, 0.81; all 95% confidence intervals were < 1.0). **CONCLUSIONS:** Fewer AI/AN patients than white patients received guideline-concordant cancer treatment across the 4 most common cancers. Efforts to explain these differences are critical to improving cancer care and survival for AI/AN patients.

[**Lung cancer deaths among American Indians and Alaska Natives, 1990-2009.**](#) Plescia M1, Henley SJ, Pate A, Underwood JM, Rhodes K. Am J Public Health. 2014 Jun;104 Suppl 3:S388-95. doi: 10.2105/AJPH.2013.301609. Epub 2014 Apr 22.

OBJECTIVES: We examined regional differences in lung cancer among American Indians/Alaska Natives (AI/ANs) using linked data sets to minimize racial misclassification. **METHODS:** On the basis of federal lung cancer incidence data for 1999 to 2009 and deaths for 1990 to 2009 linked with Indian Health Service (IHS) registration records, we calculated age-adjusted incidence and death rates for non-Hispanic AI/AN and White persons by IHS region, focusing on Contract Health Service Delivery Area (CHSDA) counties. We correlated death rates with cigarette smoking prevalence and calculated mortality-to-incidence ratios. **RESULTS:** Lung cancer death rates among AI/AN persons in CHSDA counties varied across IHS regions, from 94.0 per 100,000 in the Northern Plains to 15.2 in the Southwest, reflecting the strong correlation between smoking and lung cancer. For every 100 lung cancers diagnosed, there were 6 more deaths among AI/AN persons than among White persons. Lung cancer death rates began to decline in 1997 among AI/AN men and are still increasing among AI/AN women. **CONCLUSIONS:** Comparison of regional lung cancer death rates between AI/AN and White populations indicates disparities in tobacco control and prevention interventions. Efforts should be made to ensure that AI/AN persons receive equal benefit from current and emerging lung cancer prevention and control interventions.

[**Lakota elders' views on traditional versus commercial/addictive tobacco use; oral history depicting a fundamental distinction.**](#) Margalit R1, Watanabe-Galloway S, Kennedy F, Lacy N, Red Shirt K, Vinson L, Kills Small J. J Community Health. 2013 Jun;38(3):538-45. doi: 10.1007/s10900-012-9648-7.

This qualitative study is intended to elucidate Lakota elders' views on traditional tobacco and commercial/addictive tobacco use, capturing the oral history that depict the cultural protocol regarding traditional tobacco, called Cansasa. Commercial tobacco use has significantly

impacted the Northern Plains Indians. National surveillance systems report that tobacco use is more prevalent among American Indian/Alaska Natives than any other population, and is notably higher than the national average. Lung cancer among Native Americans is highest in the Northern Plains and Alaska, where smoking prevalence is also the highest, and smoking is responsible for nearly 90 % of all lung cancer cases. Yet, the use of traditional tobacco is largely ignored by surveillance and seems to have a distinct, positive role. Using a community-based participatory research approach, semi-structured interviews, and qualitative analysis tools, the research team, including 2 Lakota tribe elders, Lakota speaking tribal college students, and university faculty, sought to discern tribal elders' distinctions between traditional and the addictive commercial tobacco. The team interviewed thirty Lakota elders, transcribed the interviews and field notes, and analyzed them using immersion/crystallization organizing framework. The research design engaged the Lakota tribal community in all stages, from planning to publication. Analysis revealed a clear distinction between traditional and commercial tobacco: tribal elders conveyed strong positive messages connected to traditional tobacco use (i.e., spirituality, respect, health and wellness, humility, and thoughtfulness) versus strong negative messages linked to addictive tobacco (i.e., crime, loss of control and self-esteem, lack of respect to self and others, sickness and death). These messages, along with stories in the Lakota language that were told and recorded during the interviews, can guide new ways to address addictive tobacco prevention in this community, to enhance cultural pride, and to serve as a cross-generation bridge regarding tobacco use.

[A randomized controlled calendar mail-out to increase cancer screening among urban American Indian and Alaska Native patients.](#) Doorenbos AZ1, Jacobsen C, Corpuz R, Forquera R, Buchwald D. *J Cancer Educ.* 2011 Sep;26(3):549-54. doi: 10.1007/s13187-011-0217-z.

This study seeks to ascertain whether a culturally tailored art calendar could improve participation in cancer screening activities. We conducted a randomized, controlled calendar mail-out in which a Native art calendar was sent by first class mail to 5,633 patients seen at an urban American Indian clinic during the prior 2 years. Using random assignment, half of the patients were mailed a "message" calendar with screening information and reminders on breast, colorectal, lung, and prostate cancer; the other half received a calendar without messages. The receipt of cancer screening services was ascertained through chart abstraction in the following 15 months. In total, 5,363 observations (health messages n = 2,695; no messages n = 2,668) were analyzed. The calendar with health messages did not result in increased receipt of any cancer-related prevention outcome compared to the calendar without health messages. We solicited clinic input to create a culturally appropriate visual intervention to increase cancer screening in a vulnerable, underserved urban population. Our results suggest that printed materials with health messages are likely too weak an intervention to produce the desired behavioral outcomes in cancer screening.