

DATA BRIEF



Cancers Associated with Human Papillomavirus in the American Indian and Alaska Native Population, United States—1999–2015 (Purchased/Referred Care Delivery Areas-PRCDA).^a

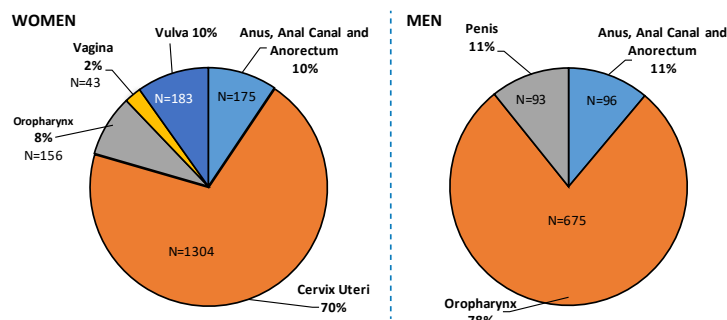
^aCounties that contain federally recognized tribal lands or are adjacent to tribal lands. Race classification for the AI/AN population is more accurate in these counties.

Human papillomavirus (HPV) causes most cervical cancers and causes some cancers of the penis, vulva, vagina, oropharynx (back of the throat, including the base of the tongue and tonsils), and anus. Most HPV infections clear spontaneously and remain asymptomatic. However, persistent infections can progress to cancer. HPV vaccines protect against the types of HPV that can lead to cervical, vaginal, vulvar, and anal precancers and cancers.

Cancer incidence data from the central cancer registries have been linked with the Indian Health Service (IHS) patient registration database for improved accuracy of racial classification. In previous studies, these data have shown higher rates of certain cancers for the American Indian/Alaska Native (AI/AN) population, with substantial variation by geographic region. HPV status is not routinely collected in cancer registries. Therefore, in this report **HPV-associated cancers** are defined as those that occur in parts of the body where HPV is often found.

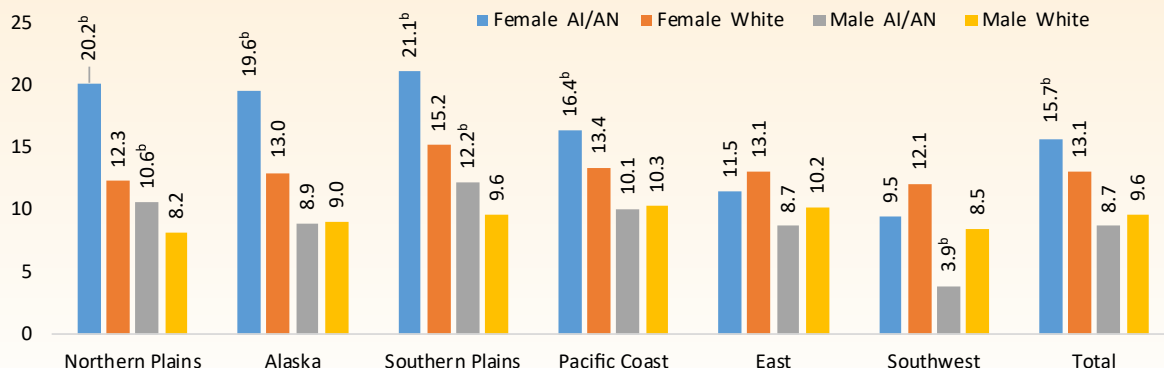
Number of Total HPV-associated cancer cases among AI/AN men and women in PRCDA, 1999–2015

Using data from the United States Cancer Statistics American Indian and Alaska Native Incidence Database (USCS AIAD), there were approximately 2,725 HPV-associated cancer cases in the AI/AN population between 1999–2015. Among these, 1,861 were in women and 864 in men. Cervical cancer is the most common HPV-associated cancer among AI/AN women, comprising approximately 70% (n=1,304) of all HPV-associated cancers. Cancers of the oropharynx comprise approximately 78% (N=675) of HPV-associated cancers in AI/AN males.



Rate of HPV-associated cancers by IHS region, sex and race in PRCDA, 1999–2015

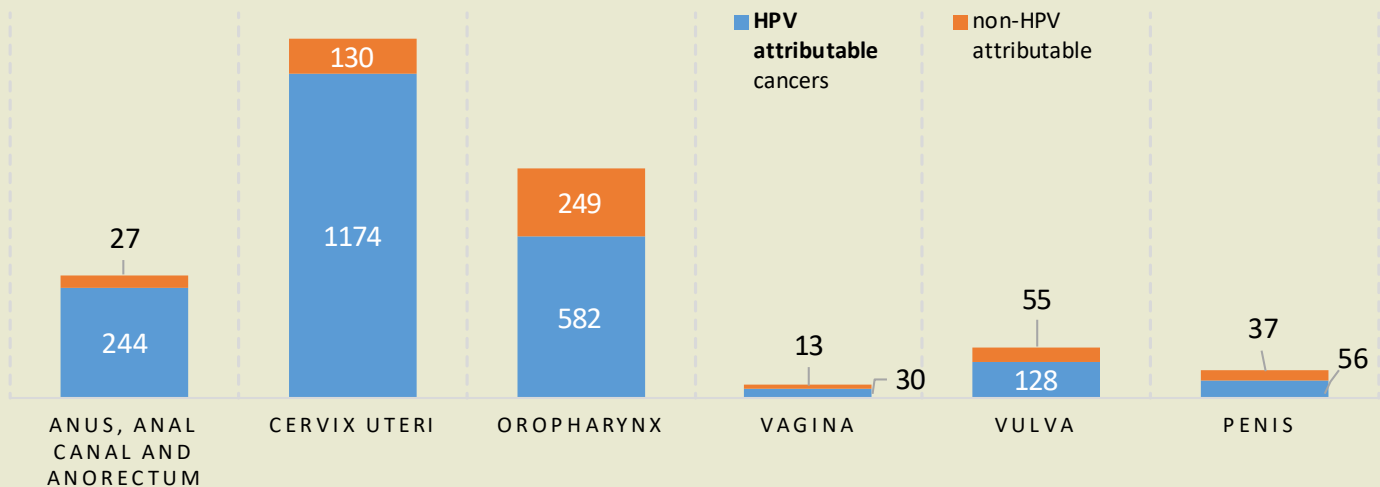
The incidence rate (expressed per 100,000 population) of HPV-associated cancers varied by IHS region and by sex. Overall, AI/AN women had higher rates of HPV-associated cancers (15.7 versus 13.1). Rates of HPV-associated cancers by region range from 9.5 in the Southwest to 21.1 in the Southern Plains in AI/AN women, and were higher among AI/AN women than among white women in all regions except the East and Southwest where rates were similar. HPV-associated cancers were significantly different between AI/AN men and white men in the Northern Plains (10.6 vs 8.2), Southern Plains (12.2 vs 9.6) and the Southwest (3.9 vs 8.5).



^b Differences in incidence rates between AI/AN and white population were statistically significant.



Estimated number of cancer cases attributable to HPV by cancer type in AI/AN, PRCDA, US, 1999-2015



For each cancer type, we estimated HPV-attributable cancers by multiplying the number of cancer cases by the percentage attributable to HPV using a genotyping study^c. We estimated that from the total 2,725 HPV-associated cancers between 1999–2015, about 2,373 can be attributed to HPV infection. Currently, HPV vaccination is recommended for girls and boys aged 11 to 12 years old and for females through age 26 and males through the age 21 who have not previously received the HPV vaccination.

^c 90% of cervical and anal cancers, 70% of oropharyngeal, vaginal and vulvar cancers, and 60% of penile cancer

Data source:

Data are from the United States Cancer Statistics American Indian/Alaska Native Incidence Database (USCS AIAD). This database includes data from cancer registries participating in CDC's National Program of Cancer Registries and/or NCI's Surveillance, Epidemiology, and End Results program that have been linked with the Indian Health Service patient registration database. The USCS AIAD and PRCDA counties have been previously described.¹ These linkages address racial misclassification of the AI/AN population in the central cancer registries. These data met quality criteria for 1999–2015.²

For more information about

[HPV](#)

[HPV vaccines](#)

[HPV Cancers](#)

[Cancer Health Disparities Among American Indians and Alaska Natives](#)

Notes about the data:

Population-based cancer registries do not routinely collect information about HPV status; however, the data can be used to monitor the number of cancers associated with HPV and estimate the number probably caused by HPV.

An **HPV-associated** cancer is a specific cellular type of cancer that is diagnosed in a part of the body where HPV is often found. These parts of the body include the cervix, vagina, vulva, penis, anus, and oropharynx (back of the throat, including the base of the tongue and tonsils). These cellular types include carcinomas of the cervix and squamous cell carcinomas of the vagina, vulva, penis, anus (including rectal squamous cell carcinoma), and oropharynx.

An **HPV-attributable** cancer is a cancer probably caused by HPV. The number of cancer cases attributable to HPV is estimated by multiplying the number of **HPV-associated** cancers by the estimated percentage attributable to HPV. On the basis of a CDC study that used population-based data to genotype HPV types from cancer tissue, about 90% of cervical and anal cancers, 70% of oropharyngeal, vaginal, and vulvar cancers, and 60% of penile cancers are attributable to HPV. The analysis and methods were based on [Viens et al. Human Papillomavirus-Associated Cancers—United States, 2008–2012. MMWR. 2016;65\(26\):661–666.](#)

¹Espey DK, Wiggins CL, Jim MA, Miller BA, Johnson CJ, Becker TM. (2008) Methods for improving cancer surveillance data in American Indian and Alaska Native populations. *Cancer*. 113: 1120-30.

²US Cancer Statistics Working Group. United States Cancer Statistics: 2003 Incidence and Mortality. Atlanta, Ga: US Department of Health and Human Services, Centers for Disease Control and Prevention, and National Cancer Institute; 2006.

Suggested citation

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