

# United States Cancer Statistics

# DATA BRIEF

No. 1

December 2017

## Cancers associated with human papillomavirus, United States—2010–2014

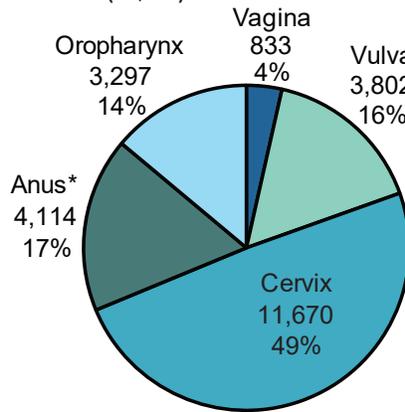
Human papillomavirus (HPV) is a recognized cause of cancer. Although most HPV infections are asymptomatic and clear spontaneously, persistent infections can progress to precancer or cancer. HPV causes most cervical cancers, as well as some cancers of the vagina, vulva, penis, anus, and oropharynx (cancers of the back of the throat, including the base of the tongue and tonsils). Cancer registries do not routinely collect information about HPV status, so in this report, **HPV-associated cancers** are defined as those that occur in parts of the body where HPV is often found.

### Number of new HPV-associated cancer cases each year

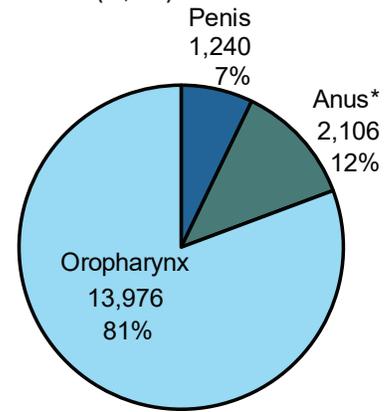
Based on data from 2010 to 2014 about 41,000 new cases of HPV-associated cancers occurred in the United States each year, including about 23,700 among women, and about 17,300 among men.

Cervical cancer is the most common HPV-associated cancer among women, and oropharyngeal cancers (cancers of the back of the throat, including the base of the tongue and tonsils) are the most common among men.

Females (23,716)

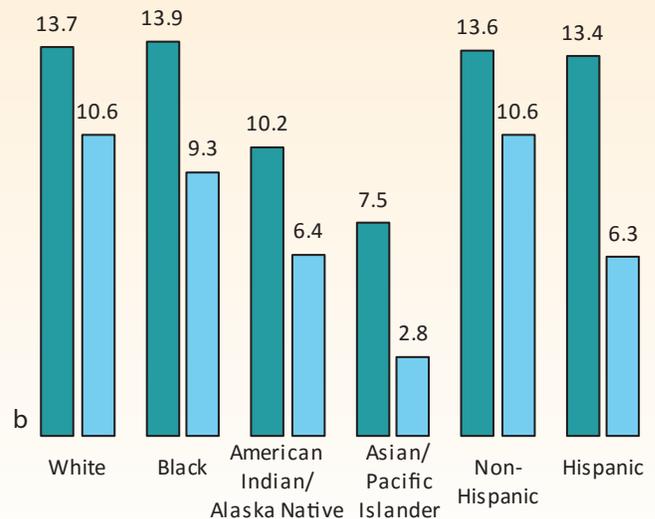
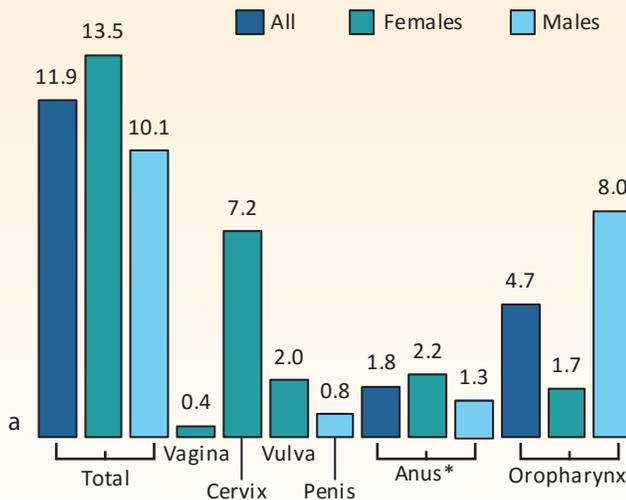


Males (17,322)

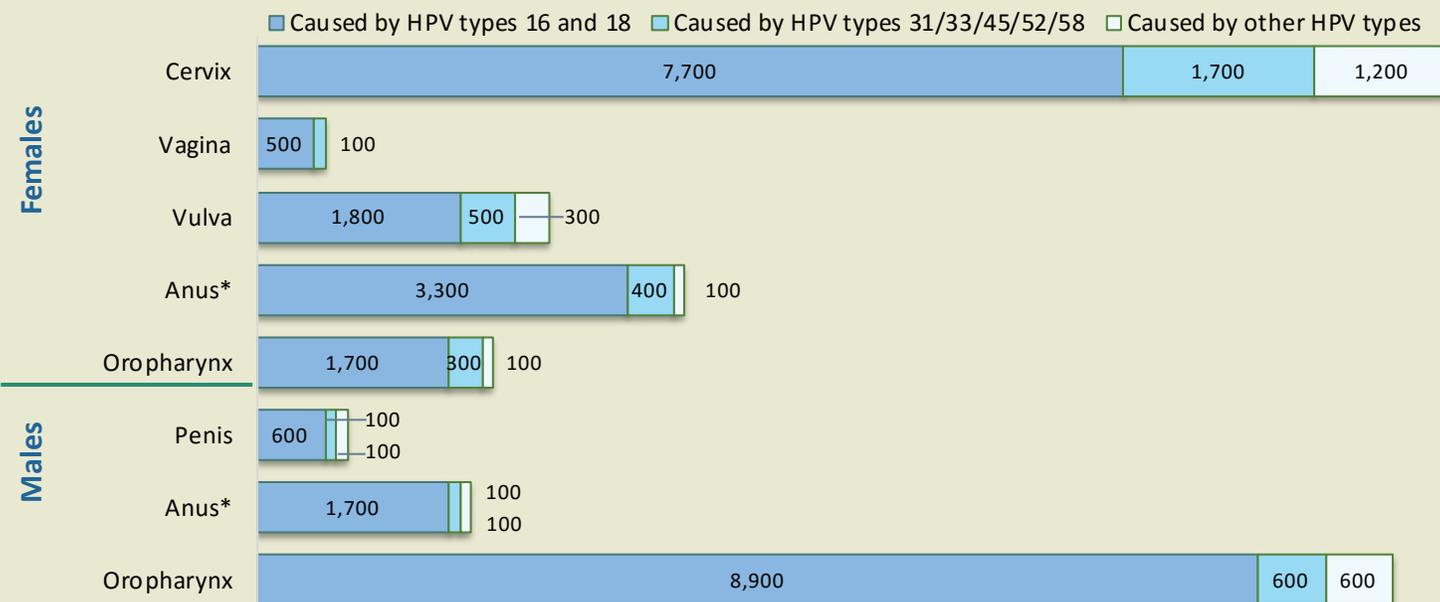


### Rate of HPV-associated cancers by a) sex and cancer type and b) sex and race/ethnic group

The incidence rate (number of cases per 100,000 persons, age-adjusted to the 2000 U.S. standard population) of HPV-associated cancers varied by cancer type, sex, and race/ethnic group. In each race/ethnic group, women had higher incidence than men. However, there were differences by cancer site. For example, men had higher incidence of HPV-associated cancers of the oropharynx than women. Among women, blacks had the highest and Asian/Pacific Islanders had the lowest incidence compared with other racial groups. Among men, whites had the highest and Asian/Pacific Islanders had the lowest incidence compared with other racial groups, and non-Hispanics had higher incidence than Hispanics. More data can be found at [cdc.gov/cancer/hpv](http://cdc.gov/cancer/hpv).



## Estimated number of cancer cases attributable to HPV by sex, cancer type, and HPV type



For each cancer type, we estimated **HPV-attributable** cancers by multiplying the number of cancer cases by the percentage attributable to HPV based on a genotyping study. We estimated that 32,500 cancers (79%) were attributable to HPV each year during 2010–2014. Of these, we estimated that 30,000 cancers could have been prevented by the 9-valent HPV vaccine, including 26,200 caused by HPV types 16 and 18, and 3,800 caused by HPV types 31/33/45/52/58. The 9-valent HPV vaccine protects against HPV types 6/11/16/18/31/33/45/52/58.

**HPV vaccination** is recommended for girls and boys 11 to 12 years old, and for females through age 26 and males through age 21 who did not receive the HPV vaccine when they were younger. HPV vaccination may be given to males age 22 through 26, and is recommended for some males in this age group.

### Data source:

Data are from cancer registries participating in CDC's National Program of Cancer Registries and/or NCI's Surveillance, Epidemiology, and End Results program that met data quality criteria for 2010–2014, covering 99% of the U.S. population. The analysis and methods were based on: Viens et al. Human Papillomavirus-Associated Cancers—United States, 2008–2012. *MMWR* 2016;65(26):661–666.

### 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, and is estimated by multiplying the number of HPV-associated cancers by the percentage attributable to HPV. Based on 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.

\*Includes anal and rectal squamous cell carcinomas.

### For more information about:

HPV: <https://www.cdc.gov/STD/HPV/STDFact-HPV.htm>  
 HPV vaccines: <https://www.cdc.gov/hpv/parents/vaccine.html>  
 HPV cancers: <https://www.cdc.gov/cancer/hpv/>

### Suggested citation

Centers for Disease Control and Prevention. Cancers associated with human papillomavirus, United States—2010–2014. *USCS data brief*, no. 1. Atlanta, GA: Centers for Disease Control and Prevention. 2017.

