

## A strong case for vaccination: HPV-associated cancer rates increasing

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**Editor's note:** *This article summarizes key points from a Centers for Disease Control and Prevention (CDC) report published in Morbidity and Mortality Weekly Report (MMWR). The Introduction and Comment sections may include information that did not appear in the original publication. To subscribe to MMWR, visit [www.cdc.gov/MMWR](http://www.cdc.gov/MMWR).*

- “Human Papillomavirus-Associated Cancers – United States, 2008-2012.” *MMWR*. 2016;65(26):661-666, [https://www.cdc.gov/mmwr/volumes/65/wr/mm6526a1.htm?s\\_cid=mm6526a1\\_w](https://www.cdc.gov/mmwr/volumes/65/wr/mm6526a1.htm?s_cid=mm6526a1_w).

### Introduction

Genital human papillomavirus (HPV) is the most common sexually transmitted infection in the U.S. Most infections are asymptomatic and resolve spontaneously, but persistent infection with one of the 13 known oncogenic types may progress to precancerous dysplasia or cancer.

The Centers for Disease Control and Prevention (CDC) analyzed population-based cancer registry data and found that from 2008-'12 an average of almost 39,000 HPV-associated cancers were diagnosed each year. Fifty-nine percent of cases occurred in females.

### Study results

The most common cancers diagnosed were cervical carcinomas (7.4 per 100,000 females), followed by oropharyngeal squamous cell carcinomas (SCCs). Twelve cases of cervical carcinoma were detected in women younger than 20 years of age and 636 cases in the 20-29 year age group. Cases of vulvar, penile, oropharyngeal and anal SCCs also were diagnosed in the 20-29 year age group.

Rates of cervical carcinoma were higher among blacks (9.2 per 100,000) and Hispanics (9.7 per 100,000) than among other racial or ethnic groups.

Stratification of data by state demonstrated rates of all HPV-associated cancers ranging from a low of 7.5 per 100,000 people in Utah to a high of 14.7 in Kentucky. As a whole, the U.S. Census Southern region contained the states with the highest rates of HPV-associated cancers.

### Public health, clinical implications

Data compared across two time periods showed an overall increase in the incidence of HPV-associated cancers, from 10.8 per 100,000 during 2004-'08 to 11.7 during 2008-'12.

Of the average 38,793 cancers that occur annually in the U.S. at anatomic sites associated with HPV, approximately 30,700 can be attributable to HPV. Of these, 24,600 cancers can be attributable to HPV types 16 and 18, which are in all current HPV vaccines. In addition, 3,900 cancers can be attributable to the additional five high-risk HPV types in the 9vHPV vaccine.

Vaccination is recommended in all females 11-26 years and males 11-21 years (or up to 26 years in men who have sex with men or who are HIV-infected). Children may begin the three-dose series at 9 years of age, especially if they are considered high-risk for infection due to a history of sexual abuse or assault.

Vaccine uptake remains suboptimal as only 60% of adolescent females (ages 13-17) and 42% of males had received at least one dose of the vaccine in 2014. Current guidelines recommend cervical cancer screening of all women with Pap testing at 21 years of age regardless of sexual history with follow-up of abnormal test results. There are no established population-based guidelines for screening of HPV-associated cancers at other anatomic sites.

### **Comment**

9vHPV vaccine prevents carcinoma of the cervix and SCCs of the vulva, vagina, penis, anus, rectum and oropharynx. Improved vaccination coverage of the U.S. population could prevent cases of HPV-attributable cancers and potentially reduce the racial and ethnic disparities in the incidence of HPV-associated cancers.

### **Quiz**

Which of the following statements are correct?

- a. Cervical cancer rates are higher among black and Hispanic women than other racial and ethnic groups in the U.S.
- b. 9vHPV vaccine offers protection against an additional 12% of cancers compared to protection by 4vHPV vaccine.
- c. States in the Southern region of the U.S. have the highest rates of HPV-associated cancers.
- d. Genital HPV is the most common sexually transmitted infection in the U.S.
- e. All of the above

*Answer: e*

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*See related article ["Grant recipients develop strategies to increase HPV immunization rates"](#)*