

Human Papillomavirus Vaccine Update



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KEYWORDS

- Human papillomavirus • Human papillomavirus vaccine • Adolescent vaccination
- Cervical cancer • Genital warts

KEY POINTS

- Seventy-nine million people in the United States are currently infected with human papillomavirus (HPV).
- Fourteen million new HPV infections and 26,000 cancers attributable to HPV are diagnosed yearly.
- Every year in the United States, ~15,000 HPV-associated cancers in women and ~7000 HPV-associated cancers in men may be prevented by HPV vaccines.
- Human papillomavirus vaccine has been shown to be safe and effective.
- In 2012, only 33% of girls aged 13 to 17 years had received the 3 recommended doses of HPV vaccine.
- Health care providers play a key role in improving HPV vaccination rates.

INTRODUCTION TO HUMAN PAPILLOMAVIRUS

Genital human papillomavirus (HPV) is the most commonly diagnosed sexually transmitted infection in the United States. It is estimated that nearly all sexually active men and women have HPV at some point in their lives (**Box 1**).

Human Papillomavirus Transmission and Risk Factors

The most consistently listed HPV infection predictors are measures of sexual activity and, in particular, the number of sex partners and the number of their sex partners, and earlier age at time of first sexual encounter. Most commonly transmitted by

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Box 1
HPV overview

- Seventy-nine million Americans are infected with HPV, with about 14 million new infections per year¹
- Approximately 50% of the HPV infections occur in young adults aged 15 to 24 years, who represent only 25% of the sexually experienced population²
- Twenty-five percent of girls and women aged 14 to 19 years are infected with HPV³
- Every year 26,000 new cancers are attributable to HPV, including 18,000 in women and 8000 in men⁴
- Cervical cancer is the most common HPV-associated cancer among women, and oropharyngeal cancers are the most common among men
- More than 360,000 cases of genital warts occur yearly in the United States among sexually active men and women¹

direct genital contact during vaginal and anal sex, it is less common for HPV to be transmitted by oral sex, genital-to-genital contact without intercourse, or from mother to newborn.⁵

Clinical Course of Human Papillomavirus Infections

Greater than 90% of HPV infections are transient and asymptomatic so adolescents may not even be aware they are infected. Most HPV infections clear within 1 to 2 years causing no sequelae. However, 10% of infections persist with the potential to cause a variety of serious health problems.⁵

HEALTH PROBLEMS CAUSED BY HUMAN PAPILLOMAVIRUS

The scope of the HPV problem in the United States is presented in **Box 2**. HPV infection can cause a variety of health problems, as shown in **Box 3**. There is no definitive way to predict which adolescents infected with HPV will go on to develop warts, cancer, or other health problems. However, the problem that may develop is determined largely by the HPV type that they contract, as listed in **Table 1**.

Box 2
Scope of HPV problem in the United States in 2013

- Genital warts: 360,000 cases
- Cervical cancer: ~12,340 new cases and 4030 deaths
- Other genital cancers: 7500 cases
- Oropharyngeal cancers: 8400 cases

Data from CDC. Recommendations on the use of quadrivalent human papillomavirus vaccine in males – Advisory Committee on Immunization Practices. *MMWR Morb Mortal Wkly Rep* 2011;60(50):1705–8; and National Cancer Institute. Cervical cancer. Available at: <http://www.cancer.gov/cancertopics/types/cervical>. Accessed February 24, 2014.

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