

# Human Papillomavirus and Cervical Cancer: Not Just a Sexually Transmitted Disease

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Clinical studies have confirmed that the human papillomavirus (HPV) is the cause of essentially all cervical cancers and is detected in approximately 50%–80% of vaginal, 50% of vulvar, and nearly all penile and anal cancers (Sisk & Robertson, 2002). HPV is the most common sexually transmitted disease (STD) in the United States, with an estimated 24 million Americans infected. The Association of Reproductive Health Professionals (ARHP) (2001) estimated that the lifetime likelihood of contracting genital HPV is in the range of 75%–90%.

Cervical cancer is the fourth most common cancer in women in the United States following lung, breast, and colon and rectal cancers. Cervical cancer is a highly curable disease when detected early, and the Pap test has reduced the mortality of this disease in the United States by 70%. The five-year survival for all stages of cervical cancer is 70% (American Cancer Society, 2002). However, in 2003, 4,100 American women will die from cervical cancer, many unnecessarily (Jemal et al., 2003).

Knowledge about HPV testing and its role after an abnormal Pap test can reduce the incidence and mortality related to cervical and other cancers. The diagnosis of an STD or abnormal Pap test often is frightening and anxiety provoking. Nurses have a significant role in educating clients and the public, providing reassurance and support, and proactively working to reduce the incidence and mortality of the highly curable cervical cancer.

The human papillomavirus (HPV) is the cause of virtually all cancers of the cervix, the fourth most common cancer in women in the United States. HPV is sexually transmitted, and the lifetime risk of contracting the virus is estimated to be 75%–90%. New methods of detecting HPV infection and cellular changes (dysplasia) caused by HPV can greatly reduce the mortality associated with this virus. More than 100 types of HPV exist and may be classified as low-, intermediate-, or high-risk in terms of causing cancer. The virus can cause genital warts, subclinical dysplasia, and cancer. Nurses play an important role in educating patients regarding HPV and preventive measures as well as in screening and treatment. Most women diagnosed with HPV need emotional support and factual information provided in a supportive, nonjudgmental manner. Nurses can meet this challenge and make a difference in reducing the incidence and mortality of cervical cancer.

**Key Words:** papillomavirus, cervix neoplasms

## What Is Human Papillomavirus?

HPV is a small, double-stranded DNA virus that is epitheliotropic, meaning it has a special affinity for epithelial cells (see Figure 1). HPV infects specific types of epithelium, such as the epithelium in the genital area and head and neck. Of the more than 100 types of papillomaviruses, about 40 affect the genital tract. The rest infect skin on other areas of the body, such as the hands and feet (Park, Fujiwara, & Wright, 1995).

Most individuals who get an HPV infection never know they have it because symptoms often do not develop. External genital

warts (condylomata acuminatum) seen as small, flat, flesh-colored bumps or tiny, cauliflower-like bumps appear in a small percentage of those infected with HPV. This is associated with two HPV types, numbers 6 and 11. The time frame from HPV exposure to development of genital warts is six weeks to eight months, but HPV can remain latent for years or decades before warts or cervical disease is evident. Subclinical HPV infection (skin changes not visible to the “naked” eye) is 10–30 times more common than apparent infections. Thus, determining exactly when or from whom the exposure to the virus occurred often is not possible (Brentjens, Yeung-Yue, Lee, & Tying, 2002; Wiley, 2002; Wiley et al., 2002; Wilson, 2002).

The various subtypes of HPV hold different levels of oncogenic potential. Types 6 and 11 (associated with genital warts) are examples of low-risk types, which rarely, if ever, are found in cervical cancer. These low-risk types are associated with benign lesions or low-grade dysplasia (i.e., abnormal changes in the size, shape, and organization of mature cells). In low-grade dysplasia, variability exists among cells, although the variability is less than in high-grade dysplasia. A low-grade dysplasia is unlikely to transform into cancer (Apgar, Spitzer, Brotzman, & Ingnatavicius, 2002; Magnusson, Lichtenstein, & Gyllensten, 2000; Park et al., 1995).

*Submitted September 2002. Accepted for publication December 16, 2002.*

Digital Object Identifier: 10.1188/03.CJON.271-276