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ORAL CANCER HAS A NEW RISK FACTOR: HPV

Tira Hanrahan, MPH,* and Shillpa Naavaal, BDS, MS, MPH†

Tobacco and alcohol use are no longer the only major risk factors for oral cancers. Research illustrates there is an association between the human papillomavirus (HPV) and oral cancers, particularly for a subset of oropharyngeal cancers (back of the throat, including the base of the tongue and tonsils).¹ The awareness of the risks associated with HPV and oropharyngeal cancers is on the rise as the virus infects nearly 14 million people each year and currently infects around 79 million Americans.²

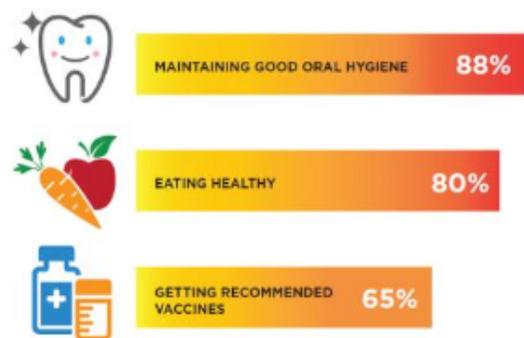
HPV is the most common sexually transmitted infection in the United States. Nearly 80 – 90% of all males and females will be infected with the virus at some point in their lives.³ HPV infects both mucosal and cutaneous areas of the body with over 150 different strains of HPV between the two sites.⁴ Mucosal infections can be caused by either high risk (oncogenic) HPV strains and cause cancer or low risk (non-oncogenic) HPV strains and cause warts at those sites in the body. The sites of infection for at least 40 types of mucosal HPV include the cervix, vagina, anal canal and oropharynx. The majority of HPV infections are transient, asymptomatic, causing no clinical problems and clears on its own within two years.⁵ When the virus persists in the body for longer periods it can become an infection which increases the likelihood of the virus turning into health problems, such as genital warts and cancer. HPV 16 and 18 together account for nearly 70% of cervical cancers, and HPV 16 is linked to more than half of oropharyngeal and other anogenital cancers.⁶

HPV is the leading cause of oropharyngeal cancers. In the United States, HPV is linked to approximately 70% of all throat and neck cancers with approximately 60% of oropharyngeal cancers caused by HPV 16 alone.^{3,7} Rates of oropharyngeal cancers and the prevalence of HPV associated oropharyngeal cancers are rising in both men and women nationwide.⁸ By 2020 the annual number of HPV associated oropharyngeal cancers will outweigh the annual number of cervical cancers.⁹ HPV associated oropharyngeal cancers will account for nearly half of all head and neck cancers by 2030. The rise in HPV associated oral cancers disproportionately impacts men.^{3,10} There are about 3,200 new cases of HPV associated oropharyngeal cancers diagnosed in women whereas about 13,200 are diagnosed in men each year in the United States.¹¹

Common signs and symptoms of oropharyngeal cancer may include persistent sore throat, earaches, hoarseness, enlarged lymph nodes, pain when swallowing, and unexplained weight loss.³ Cancer caused by HPV can take years to develop after the initial HPV infection. Some people may show no signs or symptoms whereas others may experience symptoms but its cause may not be obvious to the individual who is developing a disease.¹² The combination of the absence of symptoms, long latency period, lack of early detection processes, difficulty to visualize oropharyngeal cancers due to their location and inadequate knowledge about link between HPV and oral cancer cause most HPV associated oropharyngeal cancers to be diagnosed at the later stages.² Although there is the pap smear for the screening for cervical cancer, there is a lack of early detection processes for other sites of high risk mucosal HPV, such as oral HPV.

The challenges of the virus highlight the importance of HPV vaccination. Completion of the HPV vaccine series provides safe, effective, and lasting protection against nine types of HPV infections. The HPV vaccine has similar efficacy as other vaccines.⁴ The HPV vaccine can prevent HPV associated cancers of the cervical, vulvar, vaginal and anal mucosa and may reduce HPV associated oropharyngeal cancers. Over 10 years of vaccine safety data and ongoing systems to monitor the efficacy of the vaccine determine the HPV vaccine is safe.⁴ The National Advisory Committee on Immunization Practices recommends routine HPV vaccination for girls and boys ages 11 and 12, as well as individuals ages 13 to 26 if they haven't received the vaccine already.¹³ The vaccine is recommended at adolescence because the vaccine is most effective at preventing HPV infections and associated cancers when it is administered before the patient has been exposed to the virus. Additionally, the body has a stronger immune response when the vaccine is administered between 11 and 12 years of age than later in adolescence. If the vaccine series is initiated

Fewer teens consider vaccination *as important to maintaining their health* as most other aspects of healthcare.



before the patient's 15th birthday, then the adolescent only needs two doses, whereas three doses are required if the series is initiated after the 15th birthday.³

The Center for Disease Control and Prevention (CDC) states that the HPV vaccine was initially developed to protect against cervical and other genital cancers.³ The Oral Cancer Foundation further explains, "the FDA restricts the manufacturers from talking about other potential positive implications of these vaccines in different anatomical sites that HPV is known to infect."¹⁴ Therefore "if you can't get the virus, you can't get things the virus might cause."¹⁴ Research supports that the HPV vaccination reduces the prevalence of HPV 16 in girls who received the HPV vaccine suggesting that the vaccine may offer protection against HPV associated oropharyngeal cancers.¹⁵ Additionally, the Association of State and Territorial Dental Directors (ASTDD) "endorses promotion of HPV vaccine to reduce the risk of HPV-related oropharyngeal cancer."¹⁶

Healthy People 2020 objective states the goal of increasing HPV vaccination completion rates to 80% for males and females by 2020.

However, the adolescent immunization rates are far below the projected goal.¹⁷ The National Immunization Survey (NIS-Teen) is a nationwide survey that collects data from parents and guardians about the vaccine uptake of eligible adolescents aged 13 – 17 years old.¹⁸ For 2016, NIS-Teen found that 49.5% of females and 37.5% of all males between the ages of 13 to 17 years have completed their HPV vaccine series.¹⁸ In Virginia less adolescents are protected from HPV associated cancers as compared to the national coverage rate with only 41.1% of female adolescents and 37.4% of male adolescents up-to-date on their HPV vaccine series completion.¹⁸ The most common reasons parents reported not vaccinating their child with the HPV vaccine are a lack of or weak provider recommendation, lack of education, and limited awareness about the importance of the HPV vaccine from a healthcare professional.¹⁹ It is important that all health care professionals and parents understand the importance of vaccinating adolescents.

Dental offices are a common place for adolescents to interface with the health care system. Teens are seen less regularly by their primary care physicians which makes it challenging for medical providers to recommend the HPV vaccine. A compounding result is that parents are then less likely to be informed about the importance of adolescent vaccines because they have fewer interactions with their teen's doctor in comparison to their child's early age visits.²⁰ A comprehensive study on adolescents found that American teens value maintaining good oral hygiene (88%) over getting recommended vaccines (65%).²⁰ Dental care providers are a trusted resource and can help to reduce missed opportunities for HPV vaccination by providing education and recommendation during interactions with teens and their parents at their bi-annual visits. Dental health professionals can play a crucial role in improving completion rates of HPV vaccine and reducing HPV associated cancers.

For dental providers, the conversation with adolescents about the HPV vaccine can remain simple, such as "You are the perfect age for getting a cancer prevention vaccine. It can prevent you from getting 9 different viruses, 7 different types of cancer, one of which is in your mouth. Here is more information so you can tell your mom or dad or guardian that you need it, and should get it before you turn 15"²¹ Similar conversations can take place with parents too. In an effort to further facilitate and encourage conversations about HPV immunizations, dental providers can also have HPV and oral cancer pamphlets and posters in their office, exam rooms and waiting room areas.

The Virginia Department of Health (VDH) is actively seeking to partner with the dental community to improve HPV immunization rates among Virginia adolescents. Ms. Tira Hanrahan, Adolescent Immunization Coordinator at VDH, partnered with Dr. Shillpa Naavaal, a diplomat of American Board of Dental Public Health and an assistant professor in the Department of Oral Health Promotion and Community Outreach at the Virginia Commonwealth University, School of Dentistry and the Philips Institute for Oral Health Research to create a HPV and oral cancer education presentation. If you are interested in accessing resources related to HPV and oral cancer, learning more about HPV and oral cancers and/or you want to have Ms. Hanrahan and Dr. Naavaal to provide an educational seminar, please contact Tira Hanrahan at tira.hanrahan@vdh.virginia.gov.

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