Promoting the HPV Vaccine: An Opportunity For Medical-Dental Collaboration

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High Sierra AHEC, HPV
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Learning Objectives

1. Describe the relationship between HPV and oropharyngeal cancers (OPC) and the role of the HPV vaccine and disease prevention within an appropriate clinical context.

2. Understand how community/clinical linkages can increase health promotion efforts regarding the HPV vaccine in order to increase the use of the HPV vaccine and to raise public awareness about signs, symptoms, and risk factors.

3. Discuss the rates of Oral-HPV and HPV vaccination trends in the U.S.
Cancers of the head and neck occur in a number of anatomical areas, including the oral cavity, pharynx, larynx, the paranasal sinuses, nasal cavity, and salivary glands.
Natural History of HPV Infection

1. (e.g. genital warts and certain types of cancers)
2. Typically doesn’t cause health problems
3. Name given to the HPV found in the mouth and throat

- ~80-85% of people acquire any HPV infection at some point in their lives
- ~90% of infections clear in 1-2 years in healthy individuals
- Almost all cervical cancers are caused by HPV infections that persist more than 2 years.
Oral HPV

- HPV in mouth and throat
- “High Risk”: head and neck cancers
- “Low Risk”: warts in the mouth and throat
- 7% of people have Oral HPV
- Only 1% have HPV type 16 (type causes oropharyngeal cancer)

Source: http://www.cdc.gov/std/hpv/stdfact-hpvandoropharyngealcancer.htm
HPV and Oral Cancer

HPV is one of the most common sexually transmitted infections (STI) and the leading cause of oral cavity cancer (OCC) and oropharyngeal cancer (OPC).

1. ~12,000 people ages 15-24 are affected by HPV everyday.

2. Resulting in ~23 million people with oral HPV on any given day.

3. ~230,000 are HPV 16 and 18.

4. 9vHPV because it has the potential to increase overall cancer prevention from 70% to 90%; it is approved for use in both boys and girls.

Source: http://oralcancerfoundation.org/understanding/hpv/hpv-oral-cancer-facts/
Cancer probably caused by HPV type

HPV types 16/18

HPV types 31/33/45/52/58

Other HPV types

HPV-negative*

**targeted by bivalent and quadrivalent vaccines**

**targeted by 9-valent vaccine**

### Sex / Cancer Site

#### Women

- **Cervix**
- **Vagina**
- **Vulva**
- **Anus**
- **Rectum**
- **Oropharynx**

#### Men

- **Penis**
- **Anus**
- **Rectum**
- **Oropharynx**

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**Average number of cases per year**
HPV Vaccine

• HPV vaccine safely and effectively prevents infection by the major cancer-causing HPV types

• More than 80 million doses have been given in the US and it has been studied for more than 10 years by medical and scientific experts

• Since becoming available in 2006, this vaccine has decreased HPV infection, genital warts, and precancers of the cervix in young people (71% drop in HPV infections among teen girls)

• Source: AAP Fact Sheet: Answering Questions about HPV Vaccine: A Guide for Dental Professionals; National HPV Vaccination Roundtable Cancer Prevention through HPV Vaccination
HPV Associated Cancers

• HPV-positive oropharyngeal cancer has surpassed cervical cancer as the most prevalent HPV cancer

• Oropharyngeal cancer is the 8th most common cancer among males and the 13th most common among females in the US, with a 5-year survival rate of 66%

HPV and Oropharyngeal Cancer
HPV-Associated Oropharyngeal Cancer Prevalence

- Some cancers of the oropharynx (back of the throat, tongue and tonsils) have been linked with HPV
- Recent studies report that about 70% of oropharyngeal cancers probably caused by HPV (previously tobacco and alcohol alone)
- Approximately 60% of oropharyngeal cancers probably caused by HPV-16/HPV-18

HPV-Associated Oropharyngeal Cancer Prevalence

- Oropharyngeal squamous cell carcinoma (SCC) is now the most common HPV-associated cancer in the United States (CDC, 1999-2015)
- The transition happened because cervical carcinoma incidence rates decreased 1.6% per year, and oropharyngeal SCC incidence rates increased 2.7% per year among men and 0.8% per year among women.

Source: https://www.cdc.gov/mmwr/volumes/67wr/mm6733a2.htm?s_cid=mm6733a2_w
### Table. Annual Change in Type of Cancer From 1999 to 2015

<table>
<thead>
<tr>
<th>Cancer Type</th>
<th>Average Annual Change (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cervical</td>
<td>−1.6</td>
</tr>
<tr>
<td>Vaginal</td>
<td>−0.6</td>
</tr>
<tr>
<td>Oropharyngeal in men</td>
<td>2.7</td>
</tr>
<tr>
<td>Oropharyngeal in women</td>
<td>0.8</td>
</tr>
<tr>
<td>Anal in men</td>
<td>2.1</td>
</tr>
<tr>
<td>Anal in women</td>
<td>2.9</td>
</tr>
<tr>
<td>Vulvar</td>
<td>1.3</td>
</tr>
</tbody>
</table>

Source: https://www.cdc.gov/mmwr/volumes/67wr/mm6733a2.htm?s_cid=mm6733a2_w
Trends* in age-adjusted HPV-associated cancer incidence,† by cancer type and sex — United States,§ 1999–2015

Source: https://www.cdc.gov/mmwr/volumes/67wr/mm6733a2.htm?s_cid=mm6733a2_w
HPV-Associated Cancers - Oropharynx

FEMALES

~3,200 new cases/year among women

11,600 70% Percentage OPC probably caused by any HPV type

16,479 100% Average number of OPC per year in sites where HPV is often found

MALES

~13,200 new cases/year among men

9,900 60% Percentage OPC probably caused by HPV types 16/18

CDC, March 3, 2018
Oropharyngeal cancers (back of the throat, base of the tongue, and tonsils) are the most common among men.
Oral Cavity and Oropharynx
Oropharyngeal Cancer

SIGNS/SYMPTOMS

1. Persistent sore throat
2. Earaches (usually unilateral and last for a few days)
3. Hoarseness/persistent sore throat
4. Enlarged lymph nodes
5. Pain when swallowing/chewing
6. Unexplained weight loss
7. An ulcer or sore that does not heal within 2-3 weeks
8. A red, white, or black discoloration on the soft tissues in the mouth

Some people may have no signs or symptoms!
Non-traditional Risk Factors HPV-related OPCs

- Delayed diagnosis due to array of non-traditional risk factors.

- May be more difficult to detect than tobacco-related cancers because the symptoms are not always obvious.

- As with most head and neck cancers, the symptoms may be subtle and painless.

- Affected areas are approximate to the back of the throat and generally more difficult to detect and diagnose early.

National Cancer Institute, 2017; Saraiya M, Unger ER, Thompson TD, et al. 2015; Chaturvedi AK, Engels EA, Pfeiffer RM. 2011
HPV-Associated Oropharyngeal Cancer Rates by Race, Ethnicity, and Sex, United States, 2009–2013

Viens et al, MMWR, 2016
<table>
<thead>
<tr>
<th></th>
<th>Racial/Ethnic Disparities HPV-associated OC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Among whites, about 1.8 women and 8.2 men per 100,000</td>
</tr>
<tr>
<td>2</td>
<td>Among blacks, about 1.5 women and 6.8 men per 100,000</td>
</tr>
<tr>
<td>3</td>
<td>Among American Indian/Alaska Natives, about 1.1 women and 4.7 men per 100,000</td>
</tr>
<tr>
<td>4</td>
<td>Among Asian/Pacific Islanders, about 0.6 women and 2.0 men per 100,000</td>
</tr>
<tr>
<td>5</td>
<td>Among Hispanics, about 0.9 women and 4.3 men per 100,000</td>
</tr>
<tr>
<td>6</td>
<td>Among non-Hispanics, about 1.8 women and 8.2 men per 100,000</td>
</tr>
</tbody>
</table>
## HPV Attributable Cancer Cases Each Year

<table>
<thead>
<tr>
<th>Cancer site</th>
<th>Average number of cancers per year in sites where HPV is often found (HPV-associated cancers)</th>
<th>Percentage probably caused by HPV</th>
<th>Probably Caused by HPV 16, 18</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Both Sexes</td>
<td>Percentage</td>
</tr>
<tr>
<td>Anus</td>
<td>1,750</td>
<td>3,260</td>
<td>5,010</td>
<td>91%</td>
</tr>
<tr>
<td>Cervix</td>
<td>0</td>
<td>11,771</td>
<td>11,771</td>
<td>91%</td>
</tr>
<tr>
<td>Oropharynx</td>
<td>12,638</td>
<td>3,100</td>
<td>15,738</td>
<td>70%</td>
</tr>
<tr>
<td>Penis</td>
<td>1,168</td>
<td>0</td>
<td>1,168</td>
<td>63%</td>
</tr>
<tr>
<td>Vagina</td>
<td>0</td>
<td>802</td>
<td>802</td>
<td>75%</td>
</tr>
<tr>
<td>Vulva</td>
<td>0</td>
<td>3,554</td>
<td>3,554</td>
<td>69%</td>
</tr>
<tr>
<td>Rectum</td>
<td>237</td>
<td>513</td>
<td>750</td>
<td>91%</td>
</tr>
</tbody>
</table>

**TOTAL** | **15,793** | **23,000** | **38,793** | **24,600** |

Source: http://www.cdc.gov/cancer/hpv/statistics/cases.htm
Percentage of New Cases by Age Group: Oral Cavity and Pharynx Cancer

Source: SEER 8 2009–2013, all races, both sexes
Overview

- Approximately 70% of oropharyngeal cancers may be linked to HPV
- 3,200 new cases in females
- 13,200 new cases in males
- Approximately 60% probably caused by HPV 16, HPV 18
- Median age at diagnosis for women: 62 years old
- Median age at diagnosis for men: 59 years old
- White, non-smoking males age 35 to 55 are most at risk, 4-to-1 over females
Prevention of HPV-related Oropharyngeal Cancer
ORAL CANCER SCREENINGS FOR ADULTS
Screening for Oropharyngeal Cancers

- Difficult to detect at early stage (5 yr survival, <50%)
- No standardized screening test
- No FDA approved test for oral HPV infection
- No evidence that detection of oral HPV could be used to predict development of oropharyngeal cancer
HPV-Related Oropharyngeal Cancer

- Soft palate
- Tongue
Screening for HPV-related OPCs

- Screen through visual and tactile exam.
- Exam should be accompanied by a thorough medical history, include possible exposure specific to HPV.
- If pathology is suspected...
  - Indirect pharyngoscopy exam follow-up using mirrors
  - Direct pharyngoscopy exam follow-up special fiber-optic scopes
- Any symptoms that persist for two or more weeks should be evaluated (e.g., sore in the mouth that does not heal, pain that doesn’t go away, a white or red patch, persistent sore throat or lump/swelling of unknown origin.)

National Cancer Institute, 2017; American Cancer Society, 2017
HPV Screening

- Oral
- Brush biopsy
  - Histology
  - Immunohistochemistry
- Saliva sampling
  - PCR
  - Serology (IgA)
  - Commercial kits/labs
Diagnostic Aids

- Tolonium chloride/toluidine blue dye
- Oral CDx brush biopsy
- Salivary diagnostics
- Optical imaging systems
Nasopharyngeal Cancer (NPC)

• 0.6% of all cancers worldwide
• Highest prevalence in Southeast Asia, Southern China, and Northern Africa
• Epstein-Barr Virus (EBV)
• Recent reports attribute NPC with HPV
• Oncogenic HPV is associated with a subgroup of NPC patients, predominantly whites (HPV 16)
• No significant difference in survival between patients with HPV + and HPV – NPC
HPV Vaccine
HPV Vaccines

• In 2006, the FDA licensed a quadrivalent vaccine that protected against HPV 6, 11, 16, 18 for females to prevent genital warts and cervical cancer.
• In 2009, the FDA licensed a bivalent vaccine that protected against HPV 16 and 18 for females.
• In 2009, the quadrivalent vaccine was recommended for use in males to prevent genital warts.
• In 2010, the quadrivalent vaccine was approved by the FDA for prevention of anal cancers in males and females.
• In 2014, the 9-valent vaccine was approved by the FDA for males and females. [HPV 16, 18, 31,33,45,52,58]
HPV Vaccines

- Gardasil (Male, Female); genital warts and other types of cancer
- Gardasil 9 (Male, Female); genital warts and other types of cancer
- Cervarix (Female only); cervical cancer
- Recommended 11-12 years of age (males, females) [can be given at age 9]
- Female catch up: 13-26 years of age
- Male catch up: 13-21 years of age [can go to age 26 if didn’t complete the 3 doses]

** Advisory Committee on Immunization Practices (ACIP)**
HPV Vaccine Schedule

• According to the Centers for Disease Control and Prevention (CDC), the HPV vaccine has been demonstrated to be safe, effective and offers long lasting protection against HPV-associated cancers.
• Safety of Gardasil 9 was evaluated in approximately 13,000 males and females.
• Most commonly reported adverse reactions were injection site pain, swelling, redness and headaches.
• Most benefit is to complete series before initial exposure to HPV infection.
• The number of doses and the time period are dependent upon the age of the recipient when the process begins.
• In 2016, new recommendations for use of a 2-dose schedule for girls and boys who initiate the vaccination series at ages 9 through 14 years were published. (2nd dose between 6 and 12 months after the first dose)

• Three doses remain recommended for persons who initiate the vaccination series at ages 15 through 26 years and for immunocompromised persons.
HPV Vaccine Schedule

• Adolescents between 9 through 14 that have received 2 doses of HPV vaccine less than 6 months apart will still require a third dose.

• The vaccines are most effective when given to children before they become sexually active and are not recommended for anyone with a history of severe allergic reactions to any of the HPV vaccine components or women who are pregnant.
Routine HPV Vaccination be initiated at age 11 or 12 for girls and boys.

For females age 13 to 26 and males age 13 to 21 who have not been vaccinated previously.

Two-dose schedule for girls and boys who initiate the vaccination series between the ages of 9-14 were published.

Three-dose schedule for those who initiate the vaccination series at age 15-26 and for immunocompromised.
FDA News Release

• Release on October 5, 2018

• FDA approved a supplemental application of Gardasil 9 (HPV 9-valent vaccine)

• Expand the approved use of the vaccine to include women and men aged 27 through 45 years

• FDA granted the Gardasil 9 application priority review status.
FDA News Release

- Gardasil 9 has been shown to be effective in this older population

- 3,200 women aged 27 through 45 were followed for an average of 3.5 years

- Gardasil was 88% effective in the prevention of persistent infection, genital warts, vulvar and vaginal precancerous lesions, cervical precancerous lesions and cervical cancer related to HPV types covered by the vaccine.
FDA News Release

• Effectiveness of Gardasil 9 in men the same age range (27 through 45 years of age) is inferred from the study previously stated for women as well as efficacy data from Gardasil in younger men (16 through 26 years of age).

• In addition, data from a clinical trial in which 150 men (27 through 45 years of age) received a 3-dose regimen of Gardasil over the course of 6 months.
NEXT STEPS

IDENTIFY VACCINE INFORMATION GAPS
INTERDISCIPLINARY COLLABORATIONS
PROACTIVE APPROACHES
EDUCATION FOR PROVIDERS AND PATIENTS
COMMUNICATION STRATEGIES
EARLY DETECTION
CONTRAINDICATIONS

STRATEGIES
What Oral Health Care Providers Can Do to Close the Gap?

- Promote risk-based oral cancer screenings (children/adults)
- Talk to parents/caregivers about HPV vaccine
- Promote integrated health care model
- More research
There is no current practice behavior to counsel patients on the benefits of HPV vaccine.

Dental health care providers are now being encouraged to become more familiar with HPV and its connection with oropharyngeal cancer.

Dental health care providers play a very important role in the prevention of oral HPV.

Dental providers must have reliable foundation knowledge of basic clinical medicine to safely and effectively treat individuals with chronic and other diseases (health care educators).
Public/Private Partnerships

1. Health Professions school curriculum (Higher Education)
   Interprofessional Education and Collaborative Practice
   - Health care providers (dentists, dental hygienists, physicians, pediatricians, physician assistants, nurses, etc.)
2. Allied health care providers (Community Health Workers, Community Health Nurses)
   - Community clinics/immunization clinics
   - Community-based immunization clinics associated with health fairs/back to school fairs
3. Organized dental/medical organizations
4. American Cancer Society/AHEC/Intermountain West HPV Coalition
HPV Statements/Material

- The American Dental Association (ADA) and the American Academy of Pediatric Dentistry (AAPD) have published documents on HPV and how oral health care providers can play a role in increasing the HPV vaccination rates.
- The American Academy of Pediatrics (AAP) published guides to help dentists and pediatricians start the conversation in a clinical setting.
- The Centers for Disease Control and Prevention (CDC) published material for clinicians to use in discussing the HPV vaccine.
Collaboration with AAP

What Dental Professionals Need to Know about HPV Vaccination

Make a strong recommendation. Ask parents if their child has completed the Human Papillomavirus (HPV) vaccine series. Let them know that you strongly support giving the HPV vaccine to children 9-12 years of age to protect them from HPV-associated cancers. Be ready to accurately answer parents’ questions. Usually, telling parents how HPV causes oropharyngeal cancer (a type of throat cancer in young adults) is enough. If a parent needs more information, be ready to add more information to your presentation. Support parents on their vaccination journey by providing clear, concise, and easy-to-remember facts and recommendations. For more information, please visit www.aap.org and search for “human papillomavirus.”

Below are some things that parents might say and tips on how to respond:

HPV VACCINE IS IMPORTANT
Why is HPV vaccination important? Ask parents if you are recommending the HPV vaccine to their child. The vaccine is recommended at ages 11 or 12.

- The American Academy of Pediatrics recommends that all young children receive the HPV vaccine series before age 13.

Who else gets vaccinated? Ask parents if they know anyone in their community who has been vaccinated for HPV. The answer may be yes or no.

- Parents who have had children vaccinated for HPV may be more likely to accept the vaccine for their own children.

HPV VACCINE IS SAFE
Is the vaccine safe? Ask parents how they feel about the vaccine. They may have concerns about side effects or other medical conditions.

- The HPV vaccine is very safe. There have been no deaths linked to the vaccine. However, parents may express concerns about the occurrence of other illnesses in their children.

HPV VACCINE IS EFFECTIVE
What can parents do to reduce the risk of HPV infection? Ask parents how they can help reduce the risk of HPV infection.

- Encourage their children to avoid sexual contact until they are vaccinated.

Why do boys need HPV vaccine? Ask parents if they know anyone in their community who has been vaccinated for HPV.

- Some parents may be concerned that the vaccine is only for girls. It is important to explain that the vaccine is given to both boys and girls.

You are the key to cancer prevention.

For more information, visit www.aap.org/childhealth and search for “human papillomavirus.”


Oropharyngeal Cancer (OPC) and HPV Prevention in Children

5 Key Points That Dental Professionals Need to Know

1. OPC is a type of throat cancer that is rapidly increasing in people 45 years and older.

2. HPV is the most common cause of throat cancer.

3. HPV is not only associated with cervical cancer but also with OPC.

4. OPC occurs in younger individuals who have never smoked.

5. OPC is a preventable cancer that can be detected early.

Download the full article at www.aap.org/en-us/Documents/AAP_OPCHPV_5KeyPoints_Pediatrician_final.pdf
How State Oral Health Programs can Help

- Facilitate partnerships, including referral relationships among stakeholders
- Work with private and public medical and dental clinical professionals and their professional associations to craft messages that clinicians can sue in discussing HPV and promoting the HPV vaccine
- Importance of referrals to primary care medical and dental providers for HPV vaccinations
- Work with chronic disease and prevention to discuss HPV related oral cancers
- Dissemination plan on how to best promote the use of HPV vaccination in preventing OPC
ADA Policy 2018

• American Dental Association has adopted a policy that urges dentists to support the use and administration of the HPV vaccine (10/25/2018 new release)

• According to the ADA Council on Scientific Affairs, the single best predictor of whether a young person or adolescent receives the vaccine is a recommendation from a trusted health care professional.
HPV IMMUNIZATION RATES
• 60% of girls received at least one HPV dose (2016)

• 50% of boys received at least one HPV dose (2016)
CDC Data (2017)

- HPV vaccination rates are rising

- Nearly half of adolescents ages 13 to 17 had received all the recommended doses

- 2/3 had received the first dose

- 5% increase from the 2016 reported data
GIRLS

- 72% of girls received at least one HPV dose (US: 60%)
- 42% of girls received the 3 doses of HPV

BOYS

- 44% of boys received at least one HPV dose (US: 42%; 2015 figure)
- 24% of boys received the 3 doses of HPV

• Healthy People 2020: 80% of 13-15 year olds complete the 3 dose series
HPV Cancer and Prevention Profiles 2017

• George Washington University School of Medicine and Health Sciences/GW Cancer Center
HPV Cancer & Prevention Profile
Nevada

Percentage of Cancers Probably Caused by HPV

- Cervix: 91%
- Oropharynx: 77%
- Anus: 77%
- Vulva: 64%
- Rectum: 62%
- Penis: 63%
- Vagina: 25%

HPV causes nearly all cervical cancers and many cancers of the vagina, vulva, anus, rectum, and oropharynx.1

State vs. U.S. HPV-Associated Cancer Incidence per 100,000 Population (2009-2013)2

- Oropharyngeal Cancer
  - NV: 15.6
  - U.S.: 17.1
- Oropharyngeal Cancer
  - NV: 7.4
  - U.S.: 8.6
- Cervical Cancer
  - NV: 7.9
  - U.S.: 7.6

HPV, Tdap and MenACWY Vaccination Coverage among Adolescents 13-17 Years (2015)3

Take Action! 81% of new HPV-associated cancer cases diagnosed each year could be prevented by HPV vaccination1

Gaps in HPV vaccination coverage compared to other recommended vaccines for adolescents (Tdap and MenACWY) reveal missed opportunities. Use local data to inform efforts to reduce missed opportunities in HPV vaccination.

A strong provider recommendation is the most effective method for increasing HPV vaccination. Recommend the HPV vaccine the same way you recommend the other adolescent vaccines. Try saying, “Your child is due for vaccinations today to help protect against meningitis, HPV cancers and pertussis. We’ll give those shots at the end of the visit.” Review the back of this document for tips on addressing parents’ top questions about the HPV vaccine.

Visit bit.ly/HPVvaxRecs for the most up-to-date HPV vaccination schedules from CDC including new 2-dose HPV vaccine schedule recommendation for young adolescents.

Consider conducting quality improvement activities around HPV vaccination, including utilizing Immunization Information Systems (IIS) and implementing reminder/recall interventions to increase HPV vaccination coverage.

For more information, contact:

Talking to Parents about HPV Vaccine

Recommend HPV vaccination in the **same way** and on the **same day** as all adolescent vaccines. You can say, **Now that your son is 11, he is due for vaccinations today to help protect him from meningitis, HPV cancers, and pertussis.** Remind parents of the follow-up shots their child will need and ask them to make appointments before they leave.

**Why does my child need HPV vaccine?**
HPV vaccine is important because it prevents infections that can cause cancer. That’s why we need to start the shot series today.

**Is my child really at risk for HPV?**
HPV is a very common infection in women and men that can cause cancer. Starting the vaccine series today will help protect your child from the cancers and diseases caused by HPV.

**What diseases are caused by HPV?**
Some HPV infections can cause cancer—like cancer of the cervix or in the back of the throat—but we can protect your child from these cancers in the future by getting the first HPV shot today.

**How do you know the vaccine works?**
Studies continue to prove HPV vaccination works extremely well, decreasing the number of infections and HPV precancers in young people since it has been available.

**Why do they need HPV vaccine at such a young age?**
Like all vaccines, we want to give HPV vaccine earlier rather than later. If you wait, your child may need three shots instead of two.

**I’m worried about the safety of HPV vaccine. Do you think it’s safe?**
Yes, HPV vaccination is very safe. Like any medication, vaccines can cause side effects, including pain, swelling, or redness where the shot was given. That’s normal for HPV vaccine too and should go away in a day or two. Sometimes kids faint after they get shots and they could be injured if they fall from fainting. We’ll protect your child by having them stay seated after the shot.

**I’m worried my child will think that getting this vaccine makes it OK to have sex.**
Studies tell us that getting HPV vaccine doesn’t make kids more likely to start having sex. I recommend we give your child her first HPV shot today.

**Would you get HPV vaccine for your kids?**
Yes, I gave HPV vaccine to my child (or grandchild, etc.) when he was 11, because it’s important for preventing cancer.

**Can HPV vaccine cause infertility in my child?**
There is no known link between HPV vaccination and the inability to have children in the future. However, women who develop an HPV precancer or cancer could require treatment that would limit their ability to have children.

**Why do boys need HPV vaccine?**
HPV vaccination can help prevent future infection that can lead to cancers of the penis, anus, and back of the throat in men.

**What vaccines are actually required?**
I strongly recommend each of these vaccines and so do experts at the CDC and major medical organizations. School entry requirements are developed for public health and safety, but don’t always reflect the most current medical recommendations for your child’s health.

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**HPV VACCINE IS CANCER PREVENTION**

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

December, 2016 | 032045438
Why does my child need HPV vaccine?
HPV vaccine is important because it prevents infections that can cause cancer. That’s why we need to start the shot series today.
What diseases are caused by HPV?
Some HPV infections can cause cancer – like cancer of the cervix or in the back of the throat.

We can protect your child from these cancers in the future by getting the first HPV shot today.
Is my child really at risk for HPV?
HPV is a very common infection in women and men that can cause cancer. Starting the vaccine series today will help protect your child from the cancers and diseases caused by HPV.
BEST PRACTICE
Medical History

- Ask about HPV vaccinations in the medical history (reminders to ask about completion of required doses)

- Conduct a thorough oral cancer screening frequently

- Discuss HPV and oropharyngeal cancer with patients
HPV Vaccination (children)
If the Answer is NO!

If the answer to this question is “no”, then please print the following on the walkout statement:

Your child has not yet been vaccinated for HPV. Here are some facts you should know regarding HPV and its vaccine:

- Lifetime risk of acquiring HPV infection is 75-80% and can occur with various forms of contact, not just sexual activity.
- Each year, an estimated 26,000 cancers are linked to HPV with an approximate 10,000 deaths from these cancers.
- HPV can cause cervical, mouth, throat and anal cancers, thus, the HPV vaccine is a safe and effective cancer prevention strategy for boys and girls if given at the recommended age of 11-12 years.

For more information, contact info@immunizenevada.org or call 775-624-7117. You can also find additional information at ImmunizeNevada.org/HPVfreeNV. (ADD QR CODE)
SUMMARY

- Increased awareness should focus on the prevention of HPV-related OPC.
- Public health programs can begin by establishing collaborative partnerships
- Help raise public awareness about signs, symptoms, risk factors and changes in the demographics of head and neck cancer, including OPC.
- An integrated workforce can counsel patients about the HPV vaccine and how it can help reduce the risk of HPV-related OPCs.
- Offer head and neck cancer screenings for targeted, high risk populations
- Integrate HPV and OPC education into dental, dental hygiene, and other health professions curricula.
HPV Publications


ASTDD White Paper

- White Paper: Human Papilloma Virus (HPV) and Oropharyngeal Cancer Association of State and Territorial Dental Directors (ASTDD) Adopted July 10, 2017

White Paper: Human Papilloma Virus (HPV) and Oropharyngeal Cancer
Association of State and Territorial Dental Directors (ASTDD)
Adopted July 10, 2017

Problem

Cancers of the head and neck occur in a number of anatomical areas including the oral cavity, pharynx, larynx, the paranasal sinuses, nasal cavity, and salivary glands. The main causes of head and neck cancers are from one or more of an array of behavioral, environmental, cultural, and viral factors with the majority (approximately 75%) of these attributed to tobacco and alcohol use.

Recent studies show that an increasing proportion (approximately 60% to 70%) of oropharyngeal cancers (OPC) may be linked to the Human Papilloma Virus (HPV). Cancers of the oropharynx, the middle part of three anatomical areas comprising the pharynx, impact the back of the throat, which includes the soft palate, base of the tongue, and tonsils. HPV-related OPC mainly affect the base of the tongue and tonsils. However, it remains unclear whether HPV is linked to other head and neck cancer areas including the oral cavity.

HPV is the most common sexually transmitted virus and infection in the U.S. A person can have HPV for many years, even decades, before it is detected or develops into cancer. The vast majority of infected people, even those with a high risk strain of HPV, will not develop cancer. In the US, estimates show an average of 13,790 new cases of HPV-associated OPC are diagnosed each year in sites where HPV is found, with 3,100 new cases in women and 12,638 in men. Findings from the National Health and Nutrition Examination Survey (NHANES) indicate that on any given day, approximately 26 million Americans have an oral HPV infection, with approximately 2.6 million of these individuals infected with a high-risk cancer-causing strain. According to the CDC, the highest prevalence of HPV-associated OPC is found in non-Hispanic males. The fastest growing segment of the HPV-related OPC population is healthy, non-smokers in the 25-50 age range. White, non-smoking males age 35 to 55 are at risk, four to one over females.

Because of an array of non-traditional risk factors associated with HPV-related OPC, including a younger age cohort and no history of significant tobacco and alcohol use, diagnosis may be delayed since both patients and practitioners may not readily be considering and looking for such oral pathology. HPV-related OPCs may also be more difficult to detect than tobacco-related cancers because the symptoms are not always obvious to the individual or to the professionals. As with most head and neck cancers, the symptoms may be subtle and painless. Because the affected areas for OPC are approximate to the back of the throat, OPC, including those caused by HPV, are generally more difficult to detect and diagnose early when compared to other oral cavity cancers.

According to the Oral Cancer Foundation, the best way to screen for head and neck cancers, including HPV-related OPC, is through a visual and tactile exam given by a medical or dental professional. However, traditional screening techniques may not always be effective for OPC since the oropharynx is located deep inside the neck and cannot be easily visualized or palpated. The exam should be accompanied by a thorough medical history asking about signs and symptoms of OPC along with possible exposure specific to HPV. If the practitioner suspects possible pathology based on the history, a follow-up exam using mirrors (indirect pharyngoscopy) or special fiber-optic scopes (direct pharyngoscopy) will likely be needed to thoroughly examine the oropharynx. An oral health professional or physician should
evaluate any symptoms that persist for two or more weeks including a sore in the mouth that does not heal, pain that doesn’t go away, a white or red patch, persistent sore throat or lump/swelling of unknown origin. Persistent problems should be assessed for a definitive diagnosis.

According to the Oral Cancer Foundation, about 12,000 people between the ages of 15 to 24 are infected with HPV every day in the U.S. Yet despite the availability of a vaccine for young boys and girls, HPV OPC rates have increased in recent years. Many factors may pose barriers to receiving the vaccine in healthcare settings including the hesitancy of healthcare providers to discuss HPV in a clinical setting. It is likely that dental professionals, while routinely screening for oral cancer, may not be recommending the HPV vaccine to their patients because: (1) they may be unaware of HPV-related OPC; (2) they may be aware of HPV-related OPC but not about the vaccine and its purported use and effectiveness; and (3) perhaps the most likely reason, dental professionals may feel uncomfortable discussing HPV since it is a sexually transmitted disease.

Method

The Advisory Committee on Immunization Practices (ACIP) recommends routine HPV vaccination for girls and boys ages 11 and 12. Vaccination is also recommended for females ages 13 through 26 and for males ages 13 through 21 who have not been vaccinated previously or who have not completed the recommended series. Vaccination is also recommended through age 26 for men who have sex with men and for immunocompromised persons (including those with HIV infection) if not vaccinated previously. These vaccines are most effective if given to children before they become sexually active.

Given the intricacies in effectively diagnosing HPV-related OPC in a timely manner, receiving the HPV vaccine at a young age by both boys and girls becomes ever more critical. Integrating effective communication strategies to discuss HPV and the HPV vaccine in a clinical setting can build awareness for the possible risk of HPV-related OPC. Healthcare professionals must feel comfortable discussing HPV and the HPV vaccine in their practices. At times it is difficult discussing sexual concerns in a healthcare setting, but rephrasing the message as a cancer prevention strategy can help encourage conversations with patients. If healthcare providers, particularly dentists and dental hygienists, are uncomfortable discussing the subject of sexually transmitted diseases, emphasizing how the HPV vaccine can reduce the risk of OPC and other cancers may be the most prudent tactic to encourage more providers to discuss this topic. Webinars and continuing education courses can help healthcare providers learn the most effective communication tools to implement in their practice.

State oral health programs (SOHP) can play an important role in communicating information regarding HPV and the HPV vaccine. SOHPs can facilitate partnerships, including referral relationships among stakeholders. Because of their positioning with external as well as internal partners, SOHPs have the opportunity to work with private and public health medical and dental clinical professionals and their professional associations to craft messages that clinicians can use in discussing HPV and promoting the HPV vaccine. Such messages can include the importance of referrals to primary care medical and dental providers for HPV vaccination, depending on what individual state practices acts allow. These messages might also form the basis of broader, community-based campaigns employing public health approaches, using risk communications techniques and framing appropriate to the intended audiences. Similarly, SOHPs’ relationships with state health department colleagues in programs such as Chronic Disease and Cancer Prevention enable them to discuss HPV-related oral cancers and for the programs to make their own networks aware of the OPC risk due to HPV. In both situations, the SOHP can help develop messages for dissemination on how best to promote use of HPV vaccination in preventing OPC.
The primary focus of HPV vaccines has been on reducing cervical cancer. However, increased awareness should focus on the prevention of OPC in males and females as well. The SOHP and other public health programs can address HPV-related OPC through the establishment of collaborative partnerships resulting in an interprofessional workforce that encompasses healthcare professionals and includes immunization staff. Together, they can help raise public awareness about signs, symptoms, risk factors and changes in the demographics of head and neck cancer, including OPC. Further, this integrated workforce can counsel patients about the HPV vaccine and how it can help reduce the risk of HPV-related OPCs. Offering head and neck cancer screenings for targeted, high risk populations during an immunization clinic also might create an important opportunity to discuss the increasing trends of OPC and HPV.

Finally, and perhaps most important, integrating HPV and OPC education into dental, dental hygiene and other health professions curricula can increase the comfort level of healthcare providers in addressing HPV and the HPV vaccine in a clinical setting. The next generation of healthcare professionals needs to be well versed in the emerging evidence as it relates to HPV and OPC.

**Concluding Statement:**

The Association of State and Territorial Dental Directors (ASTDD) endorses promotion of the HPV vaccine to reduce the risk of HPV-related oropharyngeal cancer. State oral health programs (SOHPs) can play a critical role in facilitating evidence-based state and community practice interventions and messaging campaigns aimed at effectively promoting the HPV vaccine. Through external and internal partners, SOHPs can help develop collaborative partnerships and referral networks that can empower an interprofessional workforce of dental and medical practitioners to promote use of the HPV vaccine for their patients and increase the rates of completion of the HPV vaccination series. A cost-effective approach to promoting overall health in evidence-based state and community practice interventions is to incorporate HPV-related oropharyngeal cancer awareness strategies into oral health promotion efforts and healthcare professional academic curricula.

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THANK YOU!
References


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