

Successful Management of HPV-related Oropharyngeal Cancers (OPC) Takes an Interprofessional Team!

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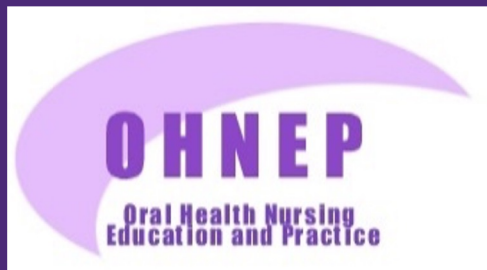
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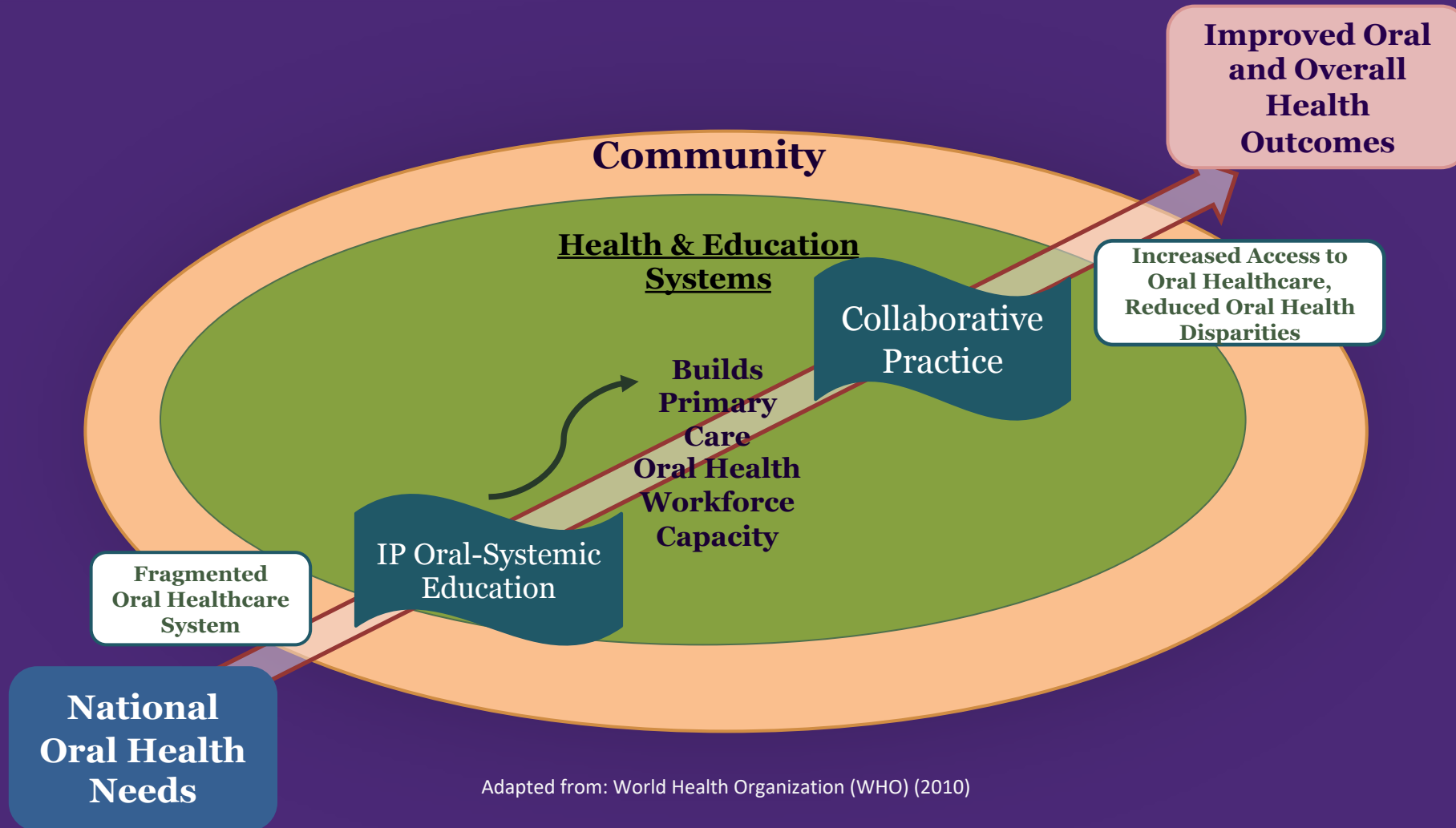
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Interprofessional Oral Health Care Model



Adapted from: World Health Organization (WHO) (2010)

Management of Diabetes Calls for an *Interprofessional Team*

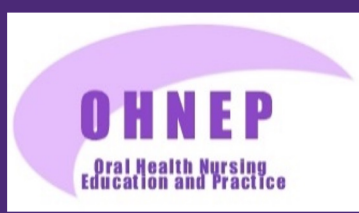


- **4.2 million RNs**
- **290,000 NPs**
- **11,800 MWs**
- **1 million MD/DO**
- **115,000 PAs**
- **200,000 DDS/DMD**
- **185,000 dental hygienists**
- **150 dental therapists**

(American Association of Nurse Practitioners, 2019; American College of Nurse-Midwives, 2017; American Dental Association, 2020a)

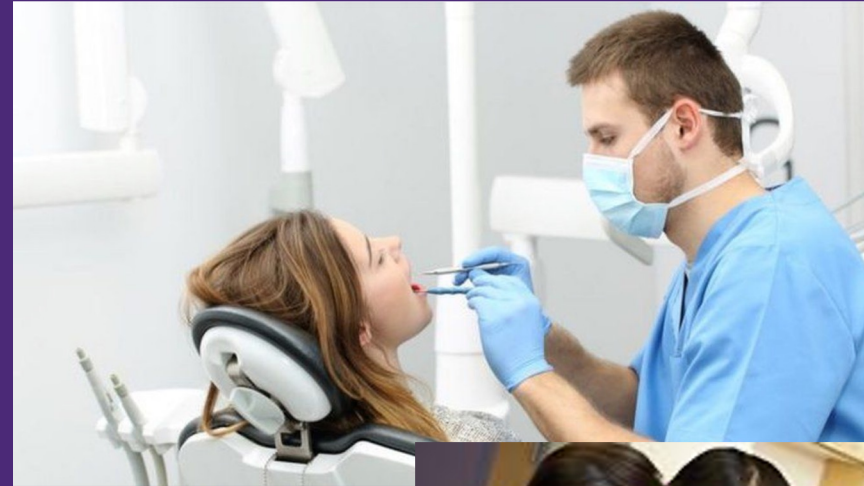


Why do we need the whole IP team?



- **84% of adults** have an annual medical visit
- **89 million** patients seek urgent care per year
- **64% of adults** have an annual dental checkup
- **85% of all U.S. children** ages 2-17 in 2017 had an annual dental checkup

(CDC, 2019a; Medical Economics, 2018; CDC, 2020a; Lebrun-Harris et al., 2019)



Images: Getty Images

Medical and Dental Teams Contribute to Improving HPV Outcomes

- Prevention
- Screening
- Health Literacy
- Counseling
- Vaccination
- Management of late effects of OPC



HPV Facts

HPV is the most common sexually transmitted virus and infection in the US.

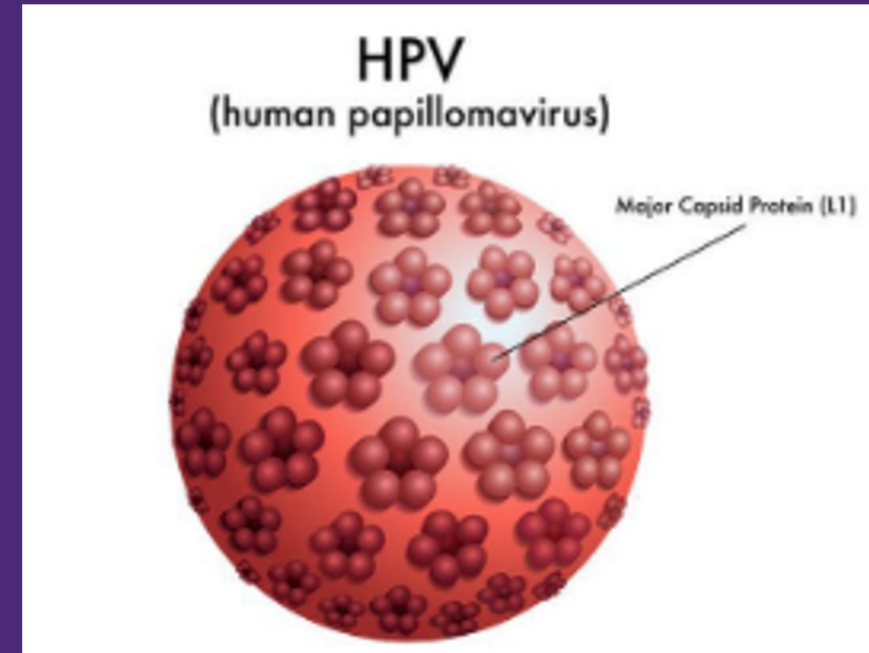
More than 80% of Americans have an HPV infection in their lifetimes.

Every day in the US, about 12,000 people ages 15 to 24 are infected with HPV.

Approximately 26 million Americans on any given day have an oral HPV infection.

HPV is the leading cause of oral and oropharyngeal cancers.

(CDC, 2019b)



HPV & Oral Cancer Facts



- HPV is the leading cause of oropharyngeal carcinoma and a very small number of front of the mouth, oral cavity cancers.
- HPV 16, also associated with cervical, anal, and penile cancers, is the primary cause.
- There are 9 other HPV strains known to cause cancers, and another 6 are suspected of causing cancers.
- HPV is thought to cause 70% of oropharyngeal cancers in the U.S.
- White, non-smoking males age 35 to 55 are most at risk, 4 to 1 over females.

(CDC, 2019b)

Cancer site	Average number of cancers per year in sites where HPV is often found (HPV-associated cancers)	Percentage probably caused by any HPV type ^a	Estimated number probably caused by any HPV type ^a
Cervix	12,143	91%	11,000
Vagina	867	75%	700
Vulva	4,114	69%	2,800
Penis	1,348	63%	900
Anus ^b	7,083	91%	6,500
Female	4,751	93%	4,400
Male	2,332	89%	2,100
Oropharynx	19,775	70%	14,000
Female	3,530	63%	2,200
Male	16,245	72%	11,800
TOTAL	45,330	79%	35,900
Female	25,405	83%	21,100
Male	19,925	74%	14,800

HPV Lesions



Benign HPV-associated squamous papilloma (wart)



Squamous cell carcinomas on side of the tongue (common site for these lesions)

Oropharyngeal papilloma

Squamous cell carcinoma of the tonsil

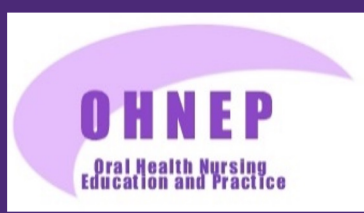


HPV-related Cancer Screening



- PCPs, including dentists, should perform oral cancer screening.
- Visual examination of all the soft tissues of the mouth, the tongue, and the lymph nodes surrounding the oral cavity and in the neck.

HPV-related Cancer Prevention



- Collaborate with dental and medical colleagues about a coordinated HPV prevention strategy
- Conduct patient and parent HPV education
- Discuss oral cancer prevention
 - o Vaccine
 - o Oral sex risk factors
 - o Use of condoms and dental dams

(CDC, 2019b)

“FDA expands Gardasil 9 approval for head and neck cancer prevention”



(Mehra, 2020)

- Vaccine Recommendation
 - Gardasil protects against HPV16 associated with oral cancers
 - Girls and boys ages 9-14, 2 doses 6-12 months apart (0, 6-12)
 - If started at age 15 or later, 3 doses are needed: first 2 doses 1 month apart and third dose at 6 months (0, 1-2, 6)
 - Immunocompromised children and adults require 3 doses
 - Catch-up for females and males through age 45 now

The Importance of Vaccine Counseling



As of 2018, only 51% of US teens were fully vaccinated for HPV.

The most influential predictor of vaccine uptake is quality of health care provider recommendation.

- ❖ 45% of parents who initially declined the HPV vaccine later decided to accept it. Reasons for secondary acceptance:
 - 34% reported increased knowledge about the HPV vaccine
 - 33% reported health care provider recommendation
- ❖ Only 53% of parents reported HPV vaccination communication with health care providers

Receiving recommendations on HPV vaccination from multiple sources contributes to increased HPV vaccine uptake.

(Stull et al., 2020; Kornides et al., 2018; Moss et al., 2016; CDC, 2019b)



Screening & Prevention



AAPD Policy Statement:

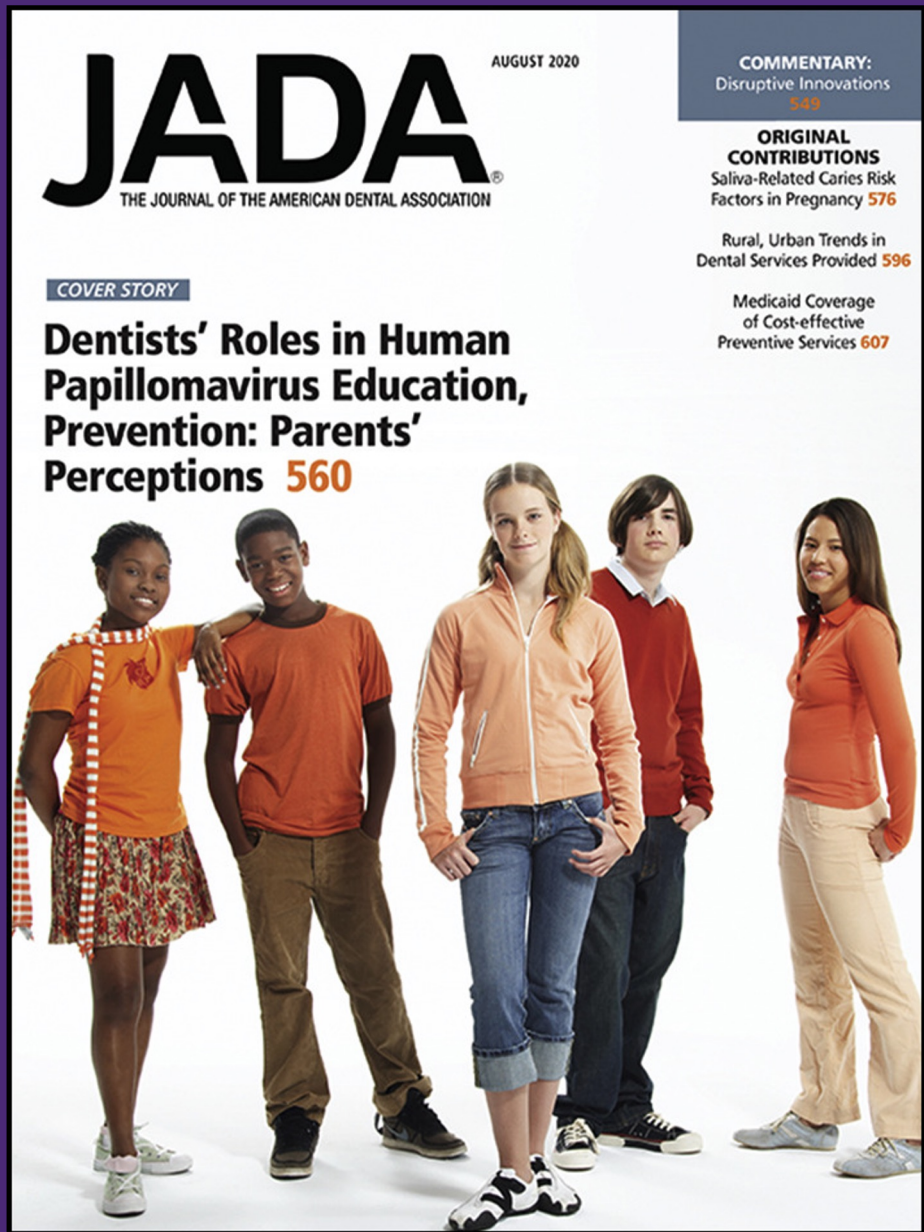
The AAPD supports measures that prevent OOPC, including the prevention of HPV infection, a critical factor in the development of oral squamous cell carcinoma.

The AAPD encourages oral health care providers to:

- Educate patients, parents, and guardians on the serious health consequences of OOPC and the relationship of HPV to OOPC.
- Counsel patients, parents, and guardians regarding the HPV vaccination, in accordance with CDC recommendations, as part of anticipatory guidance for adolescent patients.
- Routinely examine patients for oral signs of and changes consistent with OOPC.
- Follow current literature and consider incorporating other approaches for HPV prevention in their practices so as to minimize the risk of disease transmission.

(AAPD, 2020)





Many dental providers are not discussing the HPV-OPC link or recommending vaccination

- ❖ 90% of parents reported never receiving HPV information from their or their child's dentist

(Stull et al., 2020)

Vaccine Myths Debunked

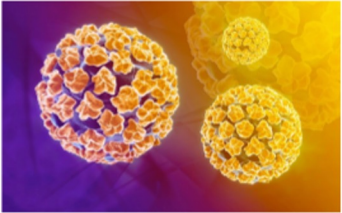
- ❖ *Myth: Vaccine has many harmful side effects*
Studies show vaccine to be incredibly safe with minor side effects
- ❖ *Myth: Physician referral required*
Nurses, NPs, pharmacists, PAs, and others can administer vaccine
- ❖ *Myth: Vaccine increases teen sexual activity*
Studies confirm that HPV vaccine does not increase sexual activity in teens
- ❖ *Myth: Boys do not need the vaccine*
Males and females are at risk for HPV-associated oral cancers
(CDC, 2019c)

Safe and Sound: The HPV Vaccine

The HPV vaccine is the most effective form of prevention against HPV-associated cancers and illnesses, and is highly effective in preventing most serious types of HPV. There are many misconceptions surrounding HPV transmission and the HPV vaccine, and it is important to know that the HPV vaccine can be safely administered to teen children starting between ages 9-12.

HPV affects both men and women.

- Most common sexually transmitted virus in the U.S.
- **80% of people** will get an HPV infection in their lifetime.
- Spread through vaginal, anal or oral sex.
- Mostly undetectable and asymptomatic.
- Can often disappear on its own in healthy people, but if not resolved can cause serious health problems like warts and cancer.



Cancer	Cases in Women	Cases in Men
Back of the Throat	2,200	11,800
Cervical	11,000	0
Anus	4,400	2,100
Vulva	2,800	0
Penis	0	800
Vagina	700	0
Total	21,100	14,700

Rates of HPV-Associated Cancers in U.S. per Year
Source: CDC
Data as of August 2020

HPV causes 6 types of cancer.

- Most common HPV-associated cancer is oropharyngeal cancers (mouth and throat).
- HPV is believed to cause about 70% of all oropharyngeal cancers.
- Cervical cancer rates have decreased over the past ten years, but **rates of oral cancers** have dramatically increased.
- Highly preventable with screenings and administration of the Gardasil® vaccine.

Common HPV Vaccine Myths **DEBUNKED**

- Myth: The HPV vaccine has many harmful side effects.*
The Truth: Studies show the HPV vaccine to be incredibly safe with minor side effects.
- Myth: A referral from a physician is required to receive the HPV vaccine.*
The Truth: Many health professionals can administer the HPV vaccine, including nurses, nurse practitioners, physician assistants, midwives, pharmacists and dentists.
- Myth: Teens will be more likely to engage in sexual activity if they have the HPV vaccine.*
The Truth: Experts have confirmed that HPV vaccine does not promote sexual activity in teens.
- Myth: Boys do not need the HPV vaccine since they are not at risk for cervical cancer.*
The Truth: Although cervical cancer is only a concern for women, men can still get oral cancer which is the most prevalent HPV-associated cancer.

(OHNEP, 2021)

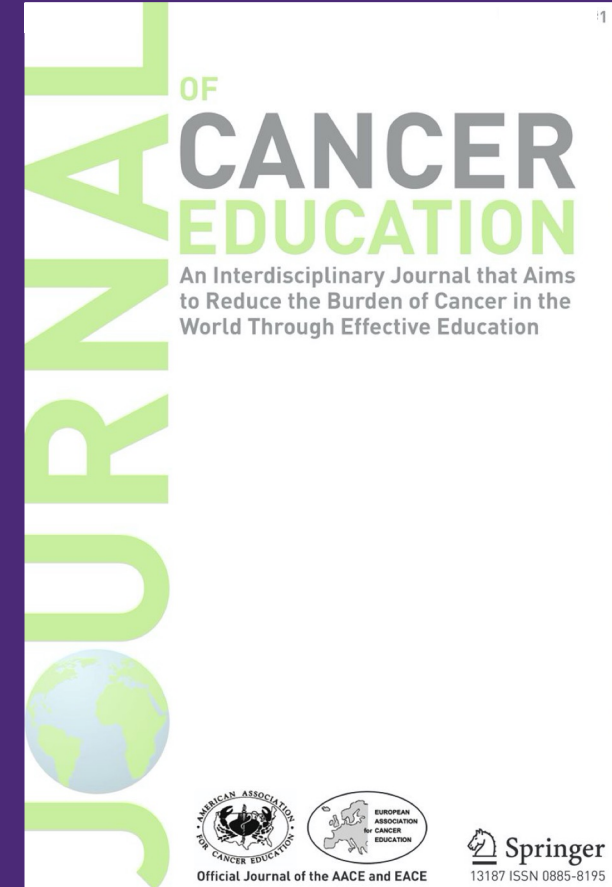
Assessing Dental Students' HPV Health Literacy and Intention to Engage in HPV-Related Oropharyngeal Cancer Prevention



Academic Deans from 40 US dental schools participated

- ❖ Only 8% of Deans reported education content on HPV prevention strategies and only 11% on HPV patient education

(Torres et al., 2020)



Assessing Dental Students' HPV Health Literacy and Intention to Engage in HPV-Related Oropharyngeal Cancer Prevention



109 students from a Southeastern dental school participated

- ❖ 99% agreed that educating patients about the link between HPV and OPCs falls within the scope of the dental professional and 91% thought recommending the HPV vaccine also falls within the scope of practice for dentists
- ❖ 82% support the potential expansion for dentists to administer the HPV vaccine
- ❖ 96% were interested in obtaining HPV-specific education
- ❖ 56% reported feeling somewhat / not at all confident in recommending the vaccine and performing oral cancer exams.

(Torres et al., 2020)

Barriers to Discussing HPV



(Walker et al., 2018)

- ❖ Sensitive topic
 - Discomfort discussing a sexually transmitted infection
 - Dentists get minimal training on conducting sensitive conversations
- ❖ Providers less likely to discuss with parents they perceive as hesitant or parents they believe to be low risk
- ❖ Provider knowledge and awareness of HPV and the vaccine
 - Low self-efficacy in HPV communication
 - Knowledge does not necessarily translate to readiness among dentists to discuss HPV vaccination

Parental Perceptions



- ❖ 80% of parents were comfortable with dentists providing written or verbal information about the HPV vaccine
 - 70% comfortable receiving information from other dental staff members
 - 57% comfortable with their children's dentists talking to their children about HPV
- ❖ 86% of parents expected dentists to discuss the relationship between HPV and mouth and throat cancer
- ❖ 81% of parents expect their dentist to be interested in their adolescents' vaccination statuses
- ❖ Compared with parents living in urban areas, parents from rural areas reported feeling less comfortable with receiving HPV information or vaccination from dental care providers.

(Stull et al., 2020)

The Role of Dentists in Vaccination

Same validated survey, different results:

- ❖ 77% of parents were not comfortable with their adolescent children receiving the vaccination in a dental setting, citing a lack of trust in dentist and dental staff member training and qualifications in vaccine delivery
- ❖ 63% of parents reported comfort with their child receiving the vaccine during a routine dental examination

(Lazalde et al., 2018; Stull et al., 2020)

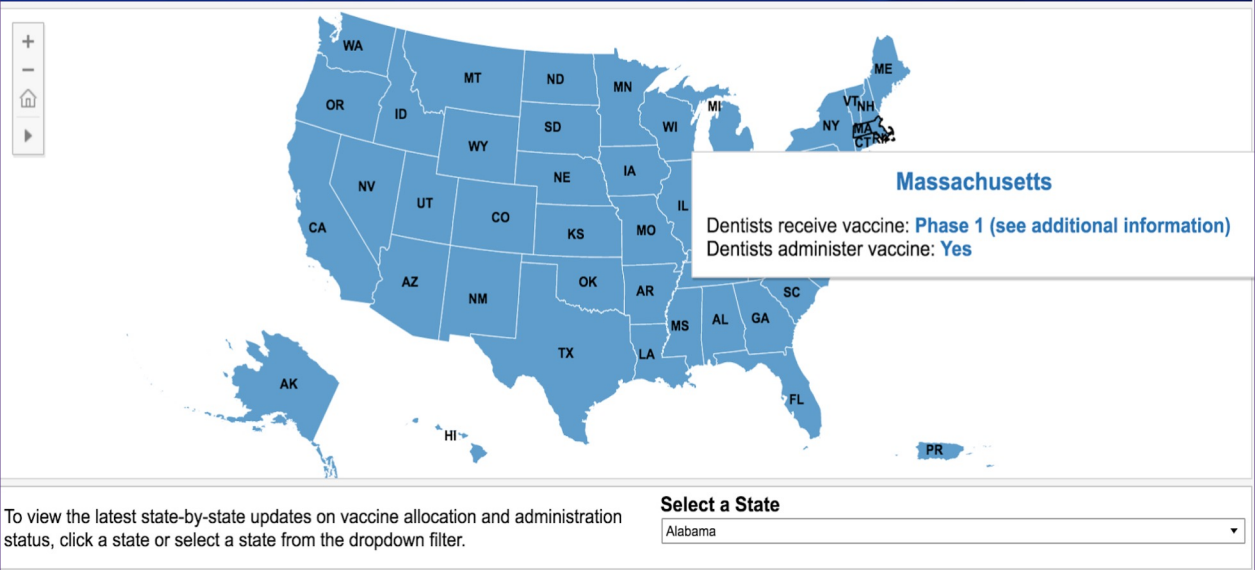


The screenshot shows the top navigation bar of the KGW8 website with links for News, Weather, Sports, Connect, and Watch Live. Below the navigation bar are several article teasers: 'LIVE RADAR', 'IRS DEBIT CARDS - WHAT TO KNOW', 'REOPENING OREGON SCHOOLS', and 'OREGON'. The main article is titled 'Historic moment: Oregon dentist first dentist in the US to administer COVID-19 vaccine' and is categorized under 'CORONAVIRUS'. The article text states: 'Dr. Ryan Thrower is the first dentist in the nation to administer a COVID-19 vaccine. She called it a historic moment in U.S. history.'

(Koumoué, 2020)

The Role of Dentists in Vaccination

COVID-19 Vaccine Allocation and Administration Status for Dentists



As of 1/26/21 the ADA listed 20 states where dentists can administer COVID-19 vaccines

(American Dental Association, 2020b)



ADA supports efforts allowing dentists to administer vaccines
Resolution outlines clinicians' skills, training to increase vaccination rates
October 23, 2020

Making the Case for Dentists as Vaccinators

- ❖ Arguments against dentists offering vaccines:
 - Taking care outside of the medical home
 - Lack of coordinated EHRs and thus continuous care
 - CVS/ Walgreens and other pharmacies offer vaccinations
 - Cost concerns:
 - How will dentists be reimbursed? By medical or dental insurance?
 - If dentists don't accept a patient's insurance, patients could potentially pay out of pocket for a vaccine from a dentist that would be covered elsewhere
 - Need for more training (CE) to address contraindications, etc

(Pressey, 2013)

“Manage Late Effects From HPV-Positive Oropharyngeal Cancers”



(Becze, 2020; Cerar et al., 2020)

- Dental Decay
- Dysphagia
- Lymphedema
- Osteonecrosis
- Ototoxicity
- Mucositis
- Taste Disorders
- Thyroid Dysfunction
- Trismus
- Xerostomia

It takes an *interprofessional team* to manage OPC late effects.



Dental Decay, Trismus, Osteonecrosis	Dentist, Dental Hygienist
Dysphagia, Taste Disorders	Speech & Language Therapist, Nutritionist, Psychologist, Surgeon
Xerostomia	Nurse, Nurse Practitioner, Pharmacist, Dentist
Mucositis	Physicians, Medical Oncology, Dentist
Lymphedema	Physical Therapist
Ototoxicity	Audiologist
Thyroid dysfunction	Endocrinologist

Health Literacy: HPV Oral Health Facts

Patient FACTS www.acponline.org/patient_ed

Oral Health and HPV

What Is HPV?
Human papillomavirus (HPV) is a virus that can infect your skin, mouth, penis, vagina, cervix, and anus. If HPV infects your mouth, it could put you at risk for mouth or throat cancer. Some research suggest that smoking and heavy drinking can increase the risk that oral HPV will turn into cancer. It is important to discuss your risk of HPV and oral health with both your dentist and primary health care professional (physician, nurse practitioner, physician assistant).



How Are Oral Health and HPV Linked?

- HPV is spread through oral sex. If your partner is infected with genital HPV and you perform oral sex, you risk getting HPV.
- Having oral sex with many partners increases your risk for oral HPV.

How Can I Prevent Oral HPV?

- HPV can be spread even when an infected person has no signs or symptoms. The best way to protect yourself is to always use condoms and dental dams with all partners. A dental dam is a small, thin piece of latex that can be used for protection during oral sex.
- The HPV vaccine protects you against other types of HPV. It is recommended for most people, both male and female, ages 11 through 26. Talk to your health care professional about the HPV vaccine.
- It's possible that the HPV vaccine will help protect you from oral HPV, but more studies need to be done. For more information on the HPV vaccine, go to: www.cdc.gov/vaccines/vpd-vac/hpv/

What Are the Warning Signs of HPV?
Many times, the HPV virus does not cause any symptoms. The virus could cause warts or sores in the mouth. Mouth or throat cancer could also develop because of HPV infection. The symptoms of mouth or throat cancer can include:

- Ulcers or sores in the mouth that don't heal
- Difficult or painful swallowing
- Pain when chewing
- A sore throat or hoarse voice that doesn't go away
- A swelling or lump in the mouth or neck
- A numb feeling in the mouth or lips
- Constant coughing
- An earache on one side that lasts for more than a few days

in partnership with



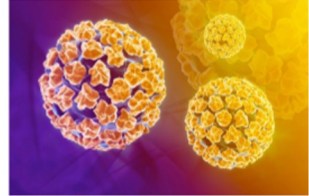

National *Interprofessional Initiative*
on Oral Health

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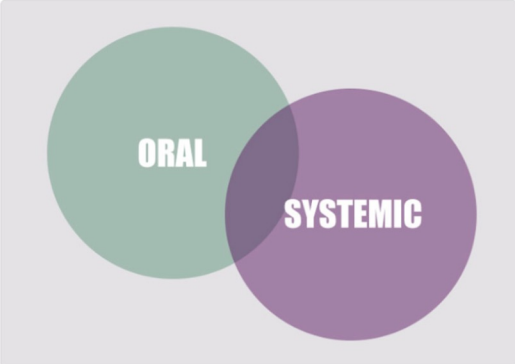
Available under Oral Health Literacy at: <http://ohnep.org/interprofessional-resources>

Smiles for Life: A National Oral Health Curriculum

Smiles for Life
A national oral health curriculum

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References

- American Academy of Nurse Practitioners. (2019). NP Fact Sheet. Retrieved from: <https://www.aanp.org/about/all-about-nps/np-fact-sheet>
- American Academy of Pediatric Dentistry. (2020). Policy on Human Papilloma Virus Vaccinations. Reference Manual of Pediatric Dentistry, 102-103. Retrieved from <https://www.aapd.org/research/oral-health-policies--recommendations/human-papilloma-virus-vaccinations/>
- American College of Nurse-Midwives (ACNM). (2019) Midwives & birth in the United States. Accessed December 21, 2020. <https://www.midwife.org/acnm/files/cclibraryfiles/filename/000000007531/EssentialFactsAboutMidwives-UPDATED.pdf>.
- American Dental Association. (2020a). Supply and Profile of Dentists. Retrieved from <https://www.ada.org/en/science-research/health-policy-institute/data-center/supply-and-profile-of-dentists>.
- American Dental Association. (2020b). COVID-19 Vaccine Regulations for Dentists Map. Retrieved from <https://success.ada.org/en/practice-management/patients/covid-19-vaccine-regulations-for-dentists-map>
- American Dental Education Association. (2015). Examining America's Dental Safety Net. ADEA Policy Center White Paper.
- American Dental Hygienists Association. ADHA Fact Sheet. Accessed February 1, 2021. https://www.adha.org/resources-docs/72210_Oral_Health_Fast_Facts_&_Stats.pdf.
- Becze, E. (2020). Manage Late Effects From HPV-Positive Oropharyngeal Cancers. ONS Voice. Retrieved from <https://voice.ons.org/news-and-views/manage-late-effects-from-hpv-positive-oropharyngeal-cancers>
- Centers for Disease Control and Prevention. (2019a). Ambulatory Care Use and Physician office visits. Retrieved from <https://www.cdc.gov/nchs/fastats/physician-visits.htm>.
- Centers for Disease Control and Prevention. (2020a). Oral and Dental Health. Retrieved from <https://www.cdc.gov/nchs/fastats/dental.htm>.
- Centers for Disease Control and Prevention. (2020b). How Many Cancers Are Linked with HPV Each Year? Retrieved from <https://www.cdc.gov/cancer/hpv/statistics/cases.htm>.
- Centers for Disease Control and Prevention. (2019b). Human Papillomavirus. Retrieved from <https://www.cdc.gov/hpv/index.html>.
- Centers for Disease Control and Prevention (CDC). (2019c). HPV Vaccine Safety. Retrieved from <https://www.cdc.gov/hpv/parents/vaccinesafety.html>.
- Cerar, J, Bryant, K.B., Shoemaker, S.E., Battiato, L., Wood, G. (2020). HPV-Positive Oropharyngeal Cancer: The Nurse's Role in Patient Management of Treatment-Related Sequelae. *Clinical Journal of Oncology Nursing*, 24(2), 153-159. doi: 10.1188/20.CJON.153-159.
- Hummel, J., Phillips, K.E., & Holt, B., (2015). Oral health: An Essential Component of Primary Care. Qualis Health. Retrieved from <http://www.safetynetmedicalhome.org/sites/default/files/White-Paper-Oral-Health-Primary-Care.pdf>
- Koumoué, C. (2020). Historic moment: Oregon dentist first dentist in the US to administer COVID-19 vaccine. KGW8. Retrieved from <https://www.kgw.com/article/news/health/coronavirus/oregon-is-the-only-state-in-the-nation-where-your-dentist-is-authorized-to-give-you-a-vaccine-other-than-a-flu-shot/283-26f77398-740f-4932-9acd-0e342c79ecaa>.
- Kornides M.L. McRee A.L. Gilkey M.B. (2018) Parents who decline HPV vaccination: who later accepts and why? *AcadPediatr*, 18: 37-43. doi:10.1016/j.acap.2017.06.008.

References

- Lazalde, G., Gilkey, M., Kornides, M., & McRee, A.L. (2018). Parent perceptions of dentists' role in HPV vaccination. *Vaccine*, 36, 461-466. doi: 10.1016/j.vaccine.2017.12.020.
- Lebrun-Harris L.A., Canto M.T. & Vodicka P. (2019). Preventive oral health care use and oral health status among US children: 2016 National Survey of Children's Health. *JADA*, 150, 246-258. doi: 10.1016/j.adaj.2018.11.023.
- Medical Economics. (2018). What's behind the growth of urgent care clinics?. Retrieved from <https://www.medicaleconomics.com/view/whats-behind-growth-urgent-care-clinics>.
- Moss, J.L., Gilkey, M.B., Rimer, B.K., & Brewer, N.T. Disparities in collaborative patient-provider communication about human papillomavirus (HPV) vaccination. *Hum Vaccin Immunother*. 2016 Jun 2;12(6):1476-83. doi: 10.1080/21645515.2015.1128601.
- Mehra, S. (2020). FDA expands Gardasil 9 approval for head and neck cancer prevention. *HemOnc Today*. Retrieved from <https://www.healio.com/news/hematology-oncology/20200615/fda-expands-gardasil-9-approval-for-head-and-neck-cancer-prevention>.
- Oral Health Nursing Education and Practice (OHNEP). (2021). Safe and Sound: The HPV Vaccine. Fact Sheet. Retrieved from <http://ohnep.org/sites/ohnep/files/Safe-and-Sound-HPV-HL-2021.pdf>
- Pressey, D. (2013). Doctors oppose allowing dentists to administer vaccinations. *The News Gazette*. Updated June 27, 2019. Retrieved from https://www.news-gazette.com/news/doctors-oppose-allowing-dentists-to-administer-vaccinations/article_3d619508-7fb9-5c43-a64b-f990ef50d78f.html.
- Stull, C., Freese, R., & Sarvas, E. (2020). Parent perceptions of dental care providers' role in human papillomavirus prevention and vaccine advocacy. *JADA*, 151(8), 560-567. doi: 10.1016/j.adaj.2020.05.004.
- Torres, E., Richman, A., Wright, W. & Wu, Q. (2020). Assessing Dental Students' HPV Health Literacy and Intention to Engage in HPV-Related Oropharyngeal Cancer Prevention. *Journal of Cancer Education*, Published ahead of print. doi: 10.1007/s13187-020-01905-z.
- Walker, K.K., Jackson, R.D., Sommariva, S., Neelamegam, M., & Desch, J. (2018). USA dental health providers' role in HPV vaccine communication and HPV-OPC protection: a systematic review. *Human Vaccines & Immunotherapeutics*, 15(7-8), 1863-1869. doi: 10.1080/21645515.2018.1558690.
- World Health Organization (WHO). (2010). Framework for Action on Interprofessional Education & Collaborative Practice. *Geneva: World Health Organization*. Retrieved from: http://www.who.int/hrh/nursing_midwifery/en/