

WHITE PAPER

Integrating oral health professionals into HPV prevention

Addressing the growing burden of oropharyngeal cancer through prevention, improved care pathways, and strengthened health systems

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Executive summary

Human Papillomavirus (HPV) is a major cause of cancer globally and is contributing to the growing burden of non-cervical cancers, including oropharyngeal squamous cell carcinoma (OPSCC). In the USA, UK, and several European countries, HPV-positive (HPV+) OPSCC has overtaken cervical cancer to become the leading HPV-associated cancer.

The rising incidence is expected due to the long latency between infection and the development of oropharyngeal cancer, i.e., patients have been exposed to HPV prior to vaccine availability. Early detection is made difficult by the fact that a pre-cancerous lesion for HPV+ OPSCC has not yet been identified.

Dentists, as oral physicians, and the wider dental team, together forming the oral healthcare professional (OHP) team, are well-positioned to play a key role in HPV prevention as they have regular contact with patients in the vaccine-relevant age group and, in some countries, have more contact than other health professionals. OHPs can support patient education by encouraging vaccine uptake, preventive and diagnostic interventions, and addressing misinformation. They can play a key role in identifying suspicious oral and oropharyngeal findings and facilitating timely referral.

However, recent studies and the FDI Vision 2030 mid-term survey show that while HPV prevention policies exist, oral health services remain poorly integrated into national HPV prevention policies and vaccination programmes. Several barriers limit the involvement of OHPs in HPV prevention, including gaps in professional knowledge, uncertainty about the scope of practice, and discomfort discussing HPV because of the stigma linked to sexual transmission. At the same time, available evidence suggests that patients and parents are generally receptive to HPV-related information from OHPs and that provider recommendations are a key driver of vaccine uptake.

Therefore, the goal of this white paper is to provide OHPs with updated, evidence-based FDI guidance and tools on the prevention and detection of HPV-associated OPSCC. It is intended to complement, not replace, existing clinical guidance. By recognizing OHPs as important partners in HPV prevention, policymakers, healthcare systems, and initiatives can help close the current gaps in prevention, public awareness and vaccine uptake to reduce the future burden of HPV-associated OPSCC.

Introduction

What is Human Papillomavirus (HPV)?

Human papillomavirus (HPV) is the name given to a group of related viruses that can be sexually transmitted or acquired non-sexually. HPV targets epithelial cells, particularly skin or mucosal squamous epithelium; mucosal epithelium includes the lining of the human oral cavity, oropharynx, and anogenital tract, including the cervix.¹

Overall, approximately 80% of all HPV infections clear spontaneously;^{1,2} however, in some people, persistent infection with high-risk HPV types could potentially increase the risk for oropharyngeal cancer.² There are more than 200 HPV types, and those that infect the mucosal epithelium can be broadly classified into high-risk (oncogenic) and low-risk types. Of these, only 17 are high-risk, including HPV16, HPV18, HPV31, HPV33, HPV45, HPV52 and HPV58.^{3,4}

HPV is responsible for the majority of cervical cancers while also contributing substantially to the global burden of anal, vulvar, vaginal, penile, and oropharyngeal cancers. Consequently, HPV-associated cancer prevention has become a major public health priority through vaccines and early detection screening. To date, prevention efforts have focused on cervical cancer due to high mortality and incidence rates. While these initiatives have contributed to cervical cancer prevention in some countries, the incidence of several non-cervical HPV-associated cancers, including oropharyngeal cancer, continues to rise globally.⁵⁻⁷

Introducing the oral landscape

The oral region exhibits a unique ecosystem, including bone, dental hard tissues, cutaneous and mucosal soft tissues, and the microbiome found in saliva and sulcular fluid. Disruption in the homeostasis of this region can lead to a myriad of local conditions, including developmental aberrations and reactive/inflammatory disease, as well as benign, pre-malignant, and malignant lesions. The oral region can also be the first symptomatic site of systemic disease, including severe disorders such as pemphigus and metastatic cancers.^{8,9} Therefore, the oral health professional (OHP) team has a significant role in prevention, early detection, and clinical outcomes of local and systemic disease. Early detection reduces treatment intensity, treatment-related morbidities, and enhances survival.

Head and neck cancers are a heterogeneous group of malignancies that arise within the upper aerodigestive tract, with the oral cavity being the most common subsite (43%), followed by the larynx (~21.2%), nasopharynx (~15.2%), oropharynx (~11.2%), and hypopharynx (~9.6%).¹⁰ The majority are squamous cell carcinomas (SCCs) arising from the stratified squamous epithelium that lines these sites.

This white paper considers two clinically important subtypes: briefly mentioning oral cavity squamous cell carcinoma (OCSCC) and focusing on oropharyngeal squamous cell carcinoma (OPSCC), particularly on the involvement of HPV and oral health in OPSCC.

Key Abbreviations

Common terms throughout the paper

Oral health professional	Human Papillomavirus	Oral cavity squamous cell carcinoma	Oropharyngeal squamous cell carcinoma
OHP	HPV	OCSCC	OPSCC

Oral cavity squamous cell carcinomas (OCSCC)

Oral cavity squamous cell carcinoma (OCSCC) is the most common type of head and neck cancer. It accounts for approximately 1 to 4% of all cancers in Western populations and is particularly prevalent in Asian countries, where incidence and mortality rates are higher.¹¹ Common sites for OCSCC include the lip, lateral and ventral tongue, and floor of the mouth. Incidence is usually linked to tobacco, alcohol, and areca nut (“betel nut” or “paan”), although some cases are associated with oncogenic HPV. The link between high-risk HPV and OCSCC aetiology is not clearly defined, although HPV16 and, more rarely, other high-risk HPVs have been noted in OCSCC.¹²

Oropharyngeal squamous cell carcinomas (OPSCC)

Oropharyngeal squamous cell carcinoma (OPSCC) is a type of head and neck cancer that arises from the mucosal epithelium overlying the tonsils, base of tongue, soft palate, and posterior pharyngeal wall. Previously, OPSCC was strongly associated with tobacco and alcohol, but the incidence of HPV-associated OPSCC has increased worldwide.^{6,7,10,13} A meta-analysis of multiple published studies found that among 12,163 cases of head and neck SCCs, HPV16 was associated with 82.2% of all HPV-positive (HPV+) cases, followed by HPV18.¹⁴ It is also important to note that, in contrast to OCSCC, where precancerous lesions are well recognized, a precancerous lesion for OPSCC has not yet been identified.¹⁰

HPV and OPSCC: an increasing threat

In high-income countries in North America and Europe, HPV+ OPSCC has increased sharply to surpass cervical cancer as the most common HPV-associated cancer, and its incidence continues to rise.⁶ For instance, in the USA in the 1980s, only 16% of OPSCC were HPV+, whereas this increased to 73% in the 2000's;¹⁵ in Denmark, there was a three-fold increase between 2000 and 2017.¹⁶ In other countries, such as the United Kingdom and Sweden, oncogenic HPV has become the primary risk factor for OPSCC.¹⁷⁻¹⁹ Overall, with an HPV-attributable percentage of 31%, OPSCC is the most common HPV-associated head and neck cancer globally⁶ and has resulted in an increased mortality rate of oral cancers from 2009 to 2022.²⁰

The current gap and the role of oral health professionals

As the incidence of HPV-associated OPSCC continues to rise, it is important to recognize the integral role of the OHP team within the healthcare system, particularly in public health advocacy, education, and health policy development.²¹⁻²⁴ A prospective, cross-sectional study reported that a high plaque and gingival bleeding index and a greater number of extracted teeth are associated with the presence of high-risk HPV in the oral cavity.²⁵ Another study reported that persistence of oral high-risk HPV is associated with gingivitis.² These studies support a biologically plausible pathway of HPV entry and persistence in the oral or oropharyngeal epithelium. Therefore, OHPs may be able to modulate HPV persistence and transmission.

Since precancers have not yet been identified for HPV-associated OPSCC, focus has been placed on prevention. Globally, five HPV vaccines are available and effective against HPV16 and HPV18,²⁶ which are linked to OPSCC. To maximize prophylaxis, the WHO recommends HPV vaccination prior to becoming sexually active.²⁷ HPV vaccination is recommended for individuals aged 9–12 years and through age 26 for those who were not adequately vaccinated at an earlier age. While the vaccine has been approved by the US Food and Drug Administration for adults aged 27-45 years, it is not routinely recommended for this age group.²⁸

Among all countries, two-thirds (125 countries) recommend the vaccine for girls and one-fourth (47 countries) include boys in the prophylactic HPV vaccine programme.²⁷ As of 2019, in the USA, which has a high incidence of HPV-associated OPSCC, 87% of children visit a dentist, likely higher than the percentage who visit a physician regularly.³⁰ Therefore, given

that over 90% of HPV-associated cancers can be prevented by vaccination,³¹ the OHP team can play an important role in HPV prevention through regular contact with patients in the vaccine-relevant age group.

Despite this opportunity, OHP knowledge and confidence in HPV prevention are significantly lacking. A recent systematic review covering 42 studies from 2006 to 2024 examined knowledge, perceptions, and behaviours of OHPs and students regarding HPV-associated OPSCC. While all groups had knowledge, only 9% of dental practitioners discussed HPV vaccination, largely due to a lack of confidence. However, younger generations (40–80%) appear more willing to engage in this discussion.³²

In high-income countries that were early adopters of the HPV vaccine for cervical cancer, there has been a significant reduction in the incidence of HPV-associated cervical cancer⁶ as well as a reduction of other HPV-associated pathology.³³ Similar results could be expected from countries that have introduced an HPV vaccination programme more recently. Although reductions in OPSCC incidence have not yet been observed, possibly due to the long latency between HPV infection and cancer development, HPV vaccination is expected to reduce future disease burden.⁶ Meanwhile, the incidence of HPV-associated OPSCC is projected to continue increasing for two decades, likely because older patients developing HPV+ OPSCC were exposed to the virus prior to vaccine availability,³⁴ highlighting the importance of prevention and awareness among OHPs.

Vaccination policies and recommendations are determined nationally and may vary between countries, including with regard to recommended age groups and the vaccination of adolescents and adults.

FDI White Paper: supporting oral health professionals in HPV prevention

The overall goal of this white paper is to provide OHPs with an overview of HPV-associated OPSCC. This includes reviewing the current global policy landscape and providing resources on prevention, early detection, and effective patient communication. The paper will serve as a foundation for updated, evidence-based FDI guidance and tools and is intended to complement, not replace, existing clinical guidance. The white paper concludes with clear recommendations for not only OHPs but also patients and policymakers.



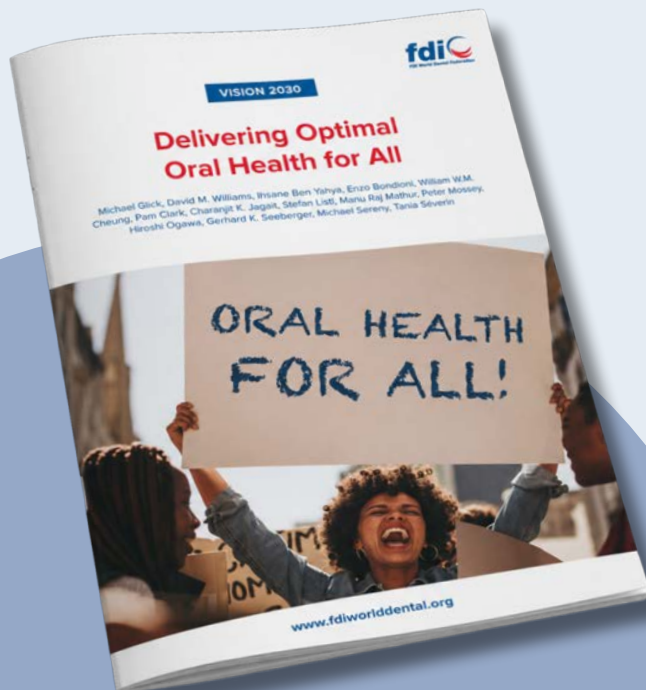
Global policy landscape: current status of HPV prevention strategies

Despite the increase in HPV-associated OPSCC, there are no universal policies supporting the integration of oral health services within HPV vaccination and prevention programmes, highlighting a critical gap in the global response. Understanding how HPV prevention is structured within national health systems and the extent to which oral health is incorporated is therefore essential.

The WHO Immunization Agenda 2030 (IA2030) calls for closer alignment of immunization programmes with primary health care platforms,³⁵ while the WHO Global Strategy and Action Plan on Oral Health advocates for the integration of oral health into primary care systems.³⁶ Collectively, these frameworks articulate a shared vision of strengthened and coordinated service delivery across health sectors. However, cross-sectoral integration of oral health services into HPV prevention remains limited.

FDI's Vision 2030 mid-term survey of its members received 88 country responses representing the following proportions of FDI members by region: Africa (51.7%), Asia-Pacific (41.7%), Europe (81.3%), Latin America (100%), and North America (100%).

In addition to complementary international sources, this section examines the global policy landscape for HPV prevention. It assesses the integration of oral health services within HPV prevention and identifies gaps and opportunities to strengthen cross-sectoral prevention strategies.



FDI Vision 2030

Delivering Optimal Oral Health for All

FDI's vision of a world with optimal oral health is set out in its roadmap, Vision 2030: Delivering Optimal Oral Health for All.

The report provides a **strategic framework** for improving oral health globally, reducing inequalities, and integrating oral health within broader healthcare systems. Its objectives closely align with those of the WHO Oral Health Resolution (WHA74.5), and subsequent WHO Global Strategy and Action Plan on Oral Health, particularly in advancing prevention, universal health coverage, equity, workforce capacity, and person-centred care.

As part of this work, FDI conducted a **global survey** of its members to gather evidence on oral health policies, advocacy activities, health system integration, and progress towards Vision 2030 objectives. The survey provides valuable insights into how oral health is incorporated into national health strategies, including HPV prevention efforts, and helps identify opportunities to strengthen OHPs' contributions to public health and disease prevention.

Download: <https://fdiworldidental.org/vision2030>

Global HPV prevention: policy adoption and oral health service integration

HPV vaccination has been positioned as a cornerstone of cervical cancer prevention.²⁷ In 2020, the WHO launched the ‘*Global Strategy to Accelerate the Elimination of Cervical Cancer as a Public Health Problem*’, articulating 90-70-90 targets for 2030: 90% of girls fully vaccinated against HPV by age 15, 70% of women screened at least twice in their lifetime, and 90% of women identified with cervical disease receiving appropriate treatment.²⁹ This strategy and IA2030^{35,37} move HPV prevention beyond clinical intervention, integrating it into the broader system of global health governance.

According to FDI’s Vision 2030 mid-term survey, whilst 80.3% of responding countries have an HPV prevention policy, there is substantial variation in programme components included within these policies (**Figure 1**). Vaccination is incorporated into 82.3% of reported programmes, public education initiatives into 58.1%, and screening components into 40.3%. In contrast, only 12.9% of respondents reported that oral health services were integrated within HPV prevention programmes. This suggests that HPV prevention is strongly embedded in immunization platforms, moderately incorporated within awareness and screening initiatives, and rarely linked with oral health services. The survey’s limitations are reliance on self-reported national information and uneven regional representation. Though the data provide valuable insights, they may not fully capture policy implementation.

Existence of HPV prevention policy

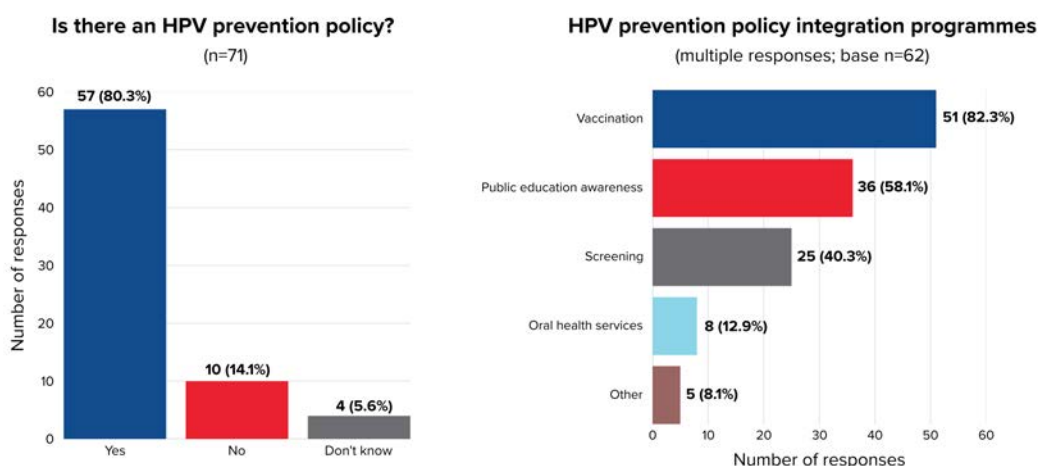


Figure 1. FDI Vision 2030 mid-term survey findings: HPV prevention policy

A breakdown of FDI survey responses highlights variation in HPV prevention policies and programme integration across regions (**Table 1**). Policy adoption was highest in Europe (76.9%), followed by North America (66.7%) and Asia-Pacific (60.0%), and lower in Latin America (53.8%) and Africa (46.7%). Levels of integration mirror this variation: the incorporation of oral health services is minimal in Europe (17.9%) and Latin America (7.7%), and absent in responding countries in Africa, Asia-Pacific, and North America. These patterns suggest that, globally, HPV vaccination has been consolidated as a central cancer prevention strategy, and nationally, most countries report formal policy adoption. However, there are significant differences

in the introduction, coverage, and integration depth of oral health services. Therefore, it is essential to understand how vaccination is operationalized across delivery platforms and potential opportunities for broader integration.

	HPV prevention policy			Policy integrated within programmes				
	There is an HPV prevention policy	There is no HPV prevention policy	Do not know if there is an HPV prevention policy	Vaccination	Screening	Public education awareness	Oral health services	Other
Europe	30 (76.9%)	2 (5.1%)	0	27 (69.2%)	14 (35.9%)	20 (51.3%)	7 (17.9%)	1 (2.6%)
Africa	7 (46.7%)	1 (6.7%)	2 (13.3%)	5 (33%)	6 (40%)	5 (33.3%)	0	3 (20%)
Asia Pacific	9 (60%)	5 (33.3%)	1 (6.7%)	9 (60%)	3 (20%)	5 (33.3%)	0	1 (6.7%)
North America	4 (66.7%)	1 (16.7%)	0	3 (50%)	2 (33.3%)	4 (66.7%)	0	0
Latin America	7 (53.8%)	0	1 (7.7%)	7 (53.8%)	0	2 (15.4%)	1 (7.7%)	0

Table 1. HPV prevention policies worldwide

Note: Multiple programme selections allowed; percentages are of respondents and may sum > 100%

Regional patterns and disparities in HPV vaccination

Analysis of regional reports of HPV prevention policy alongside routine vaccination status indicates that formal policy adoption does not uniformly translate into sustained routine implementation. In several regions, the proportion of countries reporting an HPV prevention policy exceeds that of those reporting routine vaccination delivery. This gap highlights the difference between policy commitment and programme implementation, showing that the existence of policy alone is not a reliable indicator of how well HPV prevention has been established in practice.

Globally, HPV vaccination coverage remains below 50% and has marked regional variation.³⁵ Findings from the FDI Vision 2030 mid-term survey show that 74.7% of responding countries provide routine HPV vaccination (**Figure 2**). Routine provision is reported by 83.3% of North American respondents and 73.3% of Asia-Pacific respondents, compared with 59.0% in Europe and only 40.0% in Africa. Notably, 20% of respondents from African countries indicated uncertainty regarding routine provision, suggesting gaps in institutional clarity, reporting, or system communication.

HPV Vaccination

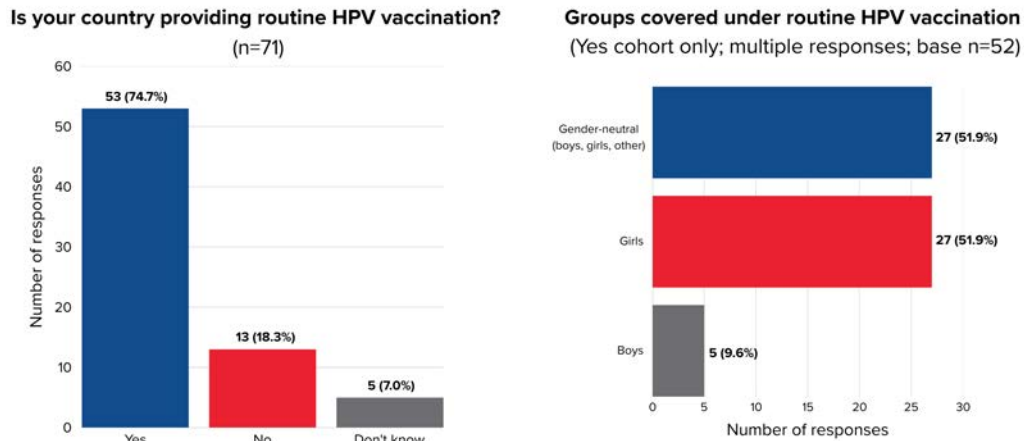


Figure 2. FDI Vision 2030 mid-term survey findings: HPV vaccination

The survey results are further corroborated by data from the International Vaccine Access Centre (IVAC), which show that 166 countries have introduced HPV vaccination nationally (162) or sub-nationally (4) (**Figure 3**). However, around 28 countries still lack HPV prevention programmes, highlighting persistent geographic and economic disparities in access to HPV prevention. This operational architecture provides essential context for interpreting the FDI survey findings, particularly the marginal incorporation of oral health services within national HPV prevention strategies.³⁸

HPV ► Vaccine Introduction ► Current Vaccine Introduction Status

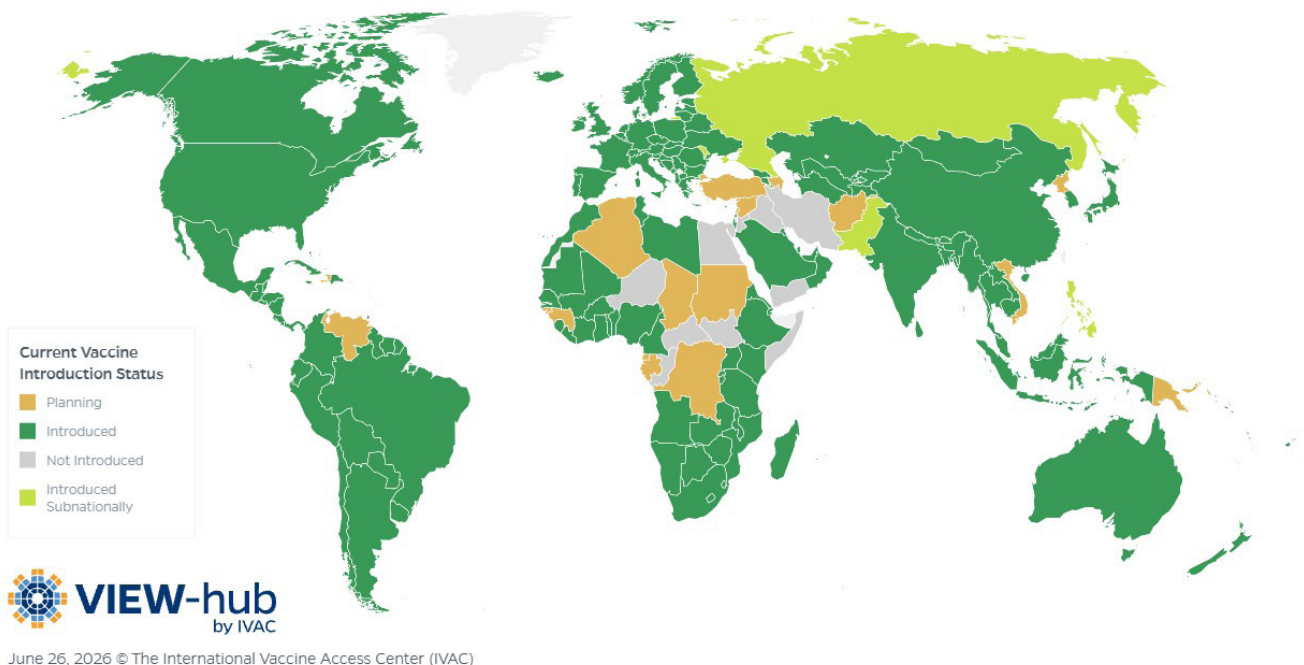


Figure 3. HPV vaccine introduction worldwide³⁸

Gender patterns and disparities in HPV vaccination

Among all countries, two-thirds (125) recommend the vaccine for girls and one-fourth (47) include boys in the prophylactic HPV vaccine programme.^{27,29} Therefore, HPV vaccination programmes are typically delivered through immunization and adolescent health systems.³⁹ Although integration with related services such as cervical cancer screening has been explored, extensions beyond these established pathways remain limited.

Within the FDI survey cohort, 51.9% of countries reporting routine vaccination indicated gender-neutral programmes, and 51.9% indicated girls-only programmes. IVAC data demonstrate comparable global distribution: among 166 countries with HPV vaccination programmes, 80 operate female-only programmes, and 86 include both males and females.⁴⁰ Furthermore, even in settings with gender-neutral policies, coverage among boys remains lower than that among girls.⁴¹ High-income countries are more likely to implement gender-neutral strategies, whereas low-income countries more frequently prioritize girls, reflecting constrained resources and framing of HPV vaccination as a cervical cancer prevention intervention.⁴² This is a key problem as rates of HPV-associated OPSCC are much higher among males (7.6 per 100,000) than females (1.7 per 100,000).^{6,43} These trends provide strong justification for gender-neutral vaccination strategies and highlight the limitations of female-only frameworks. While global introduction has expanded, there is still a requirement for sustained investment, strengthened delivery systems, gender-inclusive policy alignment, and strategies that prioritize equity.

Limited integration of oral healthcare into HPV prevention strategies

With increased HPV vaccine uptake and time, it is expected that the incidence of HPV-associated diseases will decline, as observed for cervical cancer.³³ In the meantime, the incidence of HPV-associated OPSCC will continue to increase for the next two decades in unvaccinated individuals,³⁴ which warrants increased awareness and preventive action amongst OHPs.

Knowledge, confidence, and scope-of-practice barriers

Empirical studies examining the role of OHPs provide insight into the disconnect shown by the FDI survey results. Qualitative research exploring the knowledge, attitudes, and perceived roles of OHPs in relation to HPV-associated oral cancers has identified substantial variability in awareness of the HPV-OPSCC link and uncertainty regarding professional responsibility for discussing HPV with patients.^{32,44} Participants reported discomfort initiating conversations about sexually transmitted infections, concerns regarding patient receptivity, and ambiguity about whether HPV counselling fell within the scope of dental practice. These findings suggest that limited integration of oral health services in HPV prevention is not solely a policy omission but also reflects professional role ambiguity and communication barriers within dental settings.

Targeted educational programmes increase OHPs' perceived self-efficacy and readiness to engage in HPV-associated prevention discussions.^{45,46} Across studies, OHPs expressed interest in recommending vaccination and referring patients, particularly when supported by structured training and professional guidance.⁴⁵⁻⁴⁸ In a state-wide survey, willingness was notably higher among dental and hygiene students than among practising clinicians.⁴⁷ Respondents who reported stronger

beliefs in vaccine efficacy and greater confidence in discussing HPV were more likely to express willingness to administer the vaccine if legally permitted and appropriately trained. These findings indicate that regulatory frameworks, professional training, and institutional guidance play critical roles in shaping the feasibility of integrating vaccination into dental practice.

Patient acceptance and opportunities for prevention

Perceived patient discomfort, often cited as a barrier, appears to be less pronounced than anticipated. Survey evidence indicates that parents consider dentists qualified to counsel their children about HPV, and up to 86% report comfort receiving HPV vaccination information from OHPs.⁴⁹ Addressing this perception gap through communication, training, and dissemination of patient acceptance data may reduce professional hesitation.

Furthermore, evidence from broader vaccination research demonstrates that provider recommendation is one of the strongest predictors of increasing HPV vaccine uptake.⁵⁰ In this context, the limited engagement of OHPs in HPV-associated counselling or vaccination represents a missed opportunity within the health workforce globally. Repeated contact with adolescent and adult populations positions OHPs uniquely within the prevention pathway for HPV-associated OPSCC. Vaccination and preventive counselling regarding HPV transmission could be delivered during patient visits.

Models for integration and delivery

School-based vaccine delivery models have been shown to be associated with improved vaccine uptake and coverage.⁵¹⁻⁵³ Therefore, oral health services linked to school health or community outreach platforms could function as complementary entry points within integrated HPV prevention strategies.

Additionally, legislative feasibility is supported by existing policy models. In several USA states, dentists are authorized to administer influenza vaccines, and in states such as Oregon, broader vaccine authority includes immunizations like HPV.^{47,54} This demonstrates that vaccine administration within dental settings is structurally plausible but contingent on regulatory design, professional training, and reimbursement.

Implications for policy and practice

Taken together, the FDI survey findings and existing empirical literature reveal that OHPs possess substantial capacity to contribute to HPV prevention but currently remain underutilized. Where integration has occurred through school-based platforms, collaborative referral models, or expanded legislative authority, it has demonstrated feasibility and acceptability. Strengthening professional education, clarifying scope-of-practice policies, and aligning reimbursement and referral systems would support HPV-associated cancer prevention and advance broader objectives of primary care integration envisioned within global health strategies. In this regard, oral health integration represents an opportunity to strengthen prevention pathways, improve access to care, and promote more equitable outcomes in cancer prevention.

Oral health professionals: what can be done at practice level

The FDI *Vision 2030: Delivering Optimal Oral Health for All* report sets out the following goal:⁵⁵



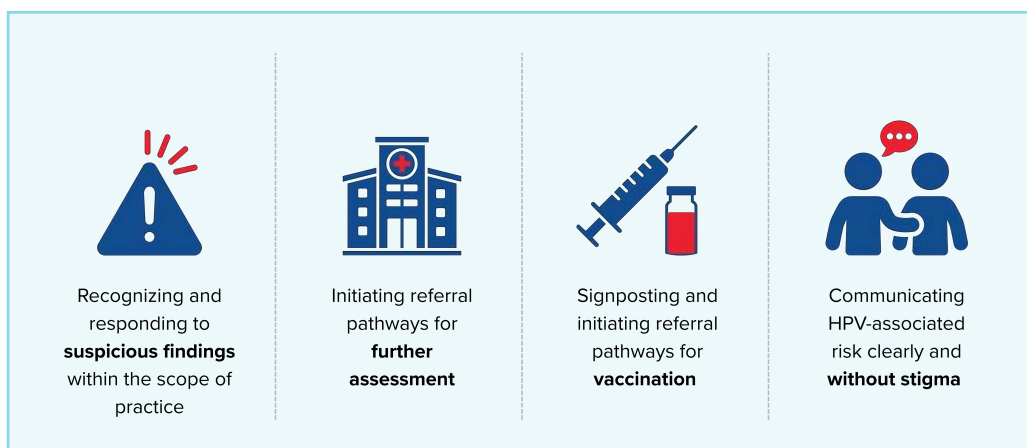
By 2030, OHPs will collaborate with a wide range of health workers to deliver sustainable, health-needs-based, and people-centred healthcare

FDI's Vision 2030: Delivering Optimal Oral Health for All report⁵⁵

Within this scope, OHPs are increasingly important in overall healthcare. Routine oral examinations provide a critical opportunity to increase awareness of HPV-associated disease. Extraoral examination is essential, as cervical lymphadenopathy may be the first presenting sign of HPV-associated OPSCC.⁵⁶

OHPs are only well-positioned to contribute to HPV prevention and detection of early OPSCC if their role is clearly defined, feasible within existing scopes of practice, and supported by appropriate guidance.

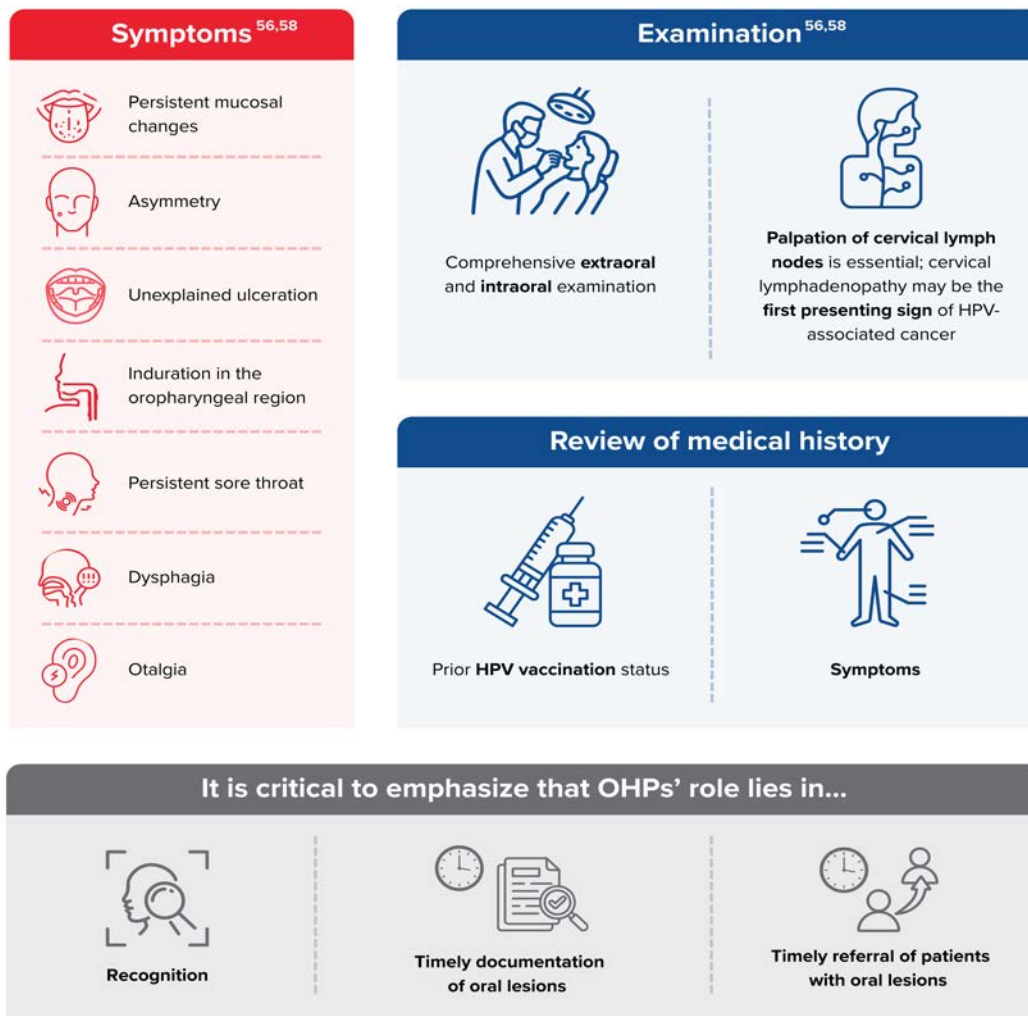
OHPs can implement several key strategies:



Recognizing and responding to suspicious findings within the scope of practice

HPV-associated OPSCC arise at the tonsils, base of tongue, soft palate, uvula, and posterior pharyngeal wall, and may present with subtle or non-specific early signs.⁵⁶⁻⁵⁸

OHPs should remain attentive to suspicious findings:



Initiating referral pathways for further assessment

Suspicious oral or oropharyngeal findings should prompt referral to an appropriate specialist or secondary care service in accordance with established national or regional oral cancer referral pathways. Clear documentation and communication at the point of referral can support continuity of care and reduce delays in diagnosis, which are major contributors to poor outcomes in oral cancers.^{59,60}

Signposting and initiating referral pathways for vaccination

Although OHPs are not directly involved in vaccine delivery in most countries, consistent recommendations from trusted health professionals can positively influence vaccine acceptance and uptake, with recent systematic analyses confirming sustained population-level benefits beyond the initial implementation phase.^{61,62} Clear referral pathways for vaccination, as well as further medical assessment and specialist review, are essential to translate practice-level actions into effective prevention. These pathways should be aligned with national HPV strategies and adapted to local health system structures.

Communicating HPV-associated risk clearly and without stigma

In response to HPV-associated oropharyngeal cancers as a growing public health concern, the American Dental Association (ADA) contributed to the development of a guide by the American Cancer Society.⁶³



Together they recommend that OHPs...

***Get educated about HPV and
oropharyngeal cancer prevention***

Cancer Prevention Through HPV Vaccination: An Action Guide for Oral Health Professionals⁶³

Effective communication has become another cornerstone of HPV prevention at the practice level. As HPV is a common infection, importance must be placed on framing it as a routine public health issue rather than a sexually transmitted disease to avoid stigma and patient discomfort.^{64,65}

OHPs should use clear, neutral, and non-judgmental language when discussing HPV-associated risks. Conversations should be patient-centred and responsive to individual concerns while avoiding unnecessary alarm. Reassurance that HPV infection is common and often transient can help normalize discussions and support informed decision-making regarding vaccination and follow-up. The key principles of effective communication will be outlined in the next section.

Clarifying scope: practical guidance, not clinical management

The actions outlined in this section are intended as practical guidance to support OHPs in contributing to HPV prevention and early detection. They do not constitute clinical diagnostic criteria or treatment recommendations. Rather, they aim to clarify how existing competencies and routine practices can be used to strengthen HPV prevention within current scopes of practice.

Importantly, the identification of HPV-associated or HPV-suspected oropharyngeal findings does not require a distinct or exceptional clinical pathway. When OHPs encounter suspicious lesions or signs potentially associated with HPV, these findings should be managed in the same manner as any other suspected oral or oropharyngeal malignancy. Consistency, clinical safety, and equity in access to specialist assessment are important to avoid unnecessary differentiation or stigma related to HPV, while ensuring that patients receive appropriate and timely evaluation within the health system.

By embedding HPV awareness, sensitive communication, and appropriate referral into routine oral healthcare, without altering established referral processes, OHPs can contribute meaningfully to national and global efforts to reduce the burden of HPV-associated cancers.

Communication strategies: addressing stigma, misconceptions, and communication barriers

In many contexts, HPV is still associated with negative representations of sexuality, shame, and moral judgements. This stigma is a major obstacle to patient communication, prevention, early detection, and access to care. It can discourage individuals/patients from asking questions or consulting a clinician in the event of early symptoms, particularly in the mouth and oropharynx, as well as accepting vaccination.

Among teenagers and young adults, perceptions may be reinforced by sparse and unreliable information, amplified by strong social networks and potentially restrictive social norms.⁶⁶ Confusion between HPV vaccination and early initiation of sexual activity can hinder parental acceptance of vaccination for children. These dynamics contribute to persistent inequalities in prevention and care, which are greater in vulnerable and/or marginalized populations.

Dental clinics and dental offices are regular, non-stigmatizing places of care that are widely frequented by different age groups. As such, they offer a unique opportunity to standardize HPV prevention messages by integrating them into an overall approach to health. To do this, facilities need up-to-date resources, appropriate training, and clear frameworks supported by national health policies.^{32,67,68}

Principles for discussing HPV with patients

Talking about HPV does not require specific communication skills. However, having some simple principles can help guide OHPs in these exchanges.

OHPs can follow a set of core principles when discussing HPV with patients:⁶⁶



Adopt a neutral, factual approach, presenting HPV as a common and largely preventable viral infection, without emphasizing modes of sexual transmission unless relevant.



Use clear, non-judgemental and inclusive language, adapted to the patient's level of understanding, including sign or other language appropriate for patients with disabilities.



Normalize discussion, integrating HPV into conversations about prevention, similar to other oral health risk factors.



Respect patients' pace and limits by allowing them to ask questions or postpone discussions.



Reinforce autonomy and confidence by referring patients to reliable sources and appropriate services.

These skills need to be acquired during initial training but can be developed later through targeted training and practical tools, such as conversation guides with key language elements.

Tailoring communication to a diverse audience

Perceptions of HPV, sexuality and vaccination vary greatly with cultural, religious, and social contexts. A standard approach may be ineffective or even counterproductive. Therefore, OHPs should adopt culturally sensitive, patient-centred approaches. This will help further reduce stigma and improve understanding of HPV, enhancing the impact of national prevention strategies.⁶⁵

It is essential that communication strategies:



Consider local cultural norms and patients' beliefs.



Are adapted to linguistic and social contexts.



Involve, where appropriate, communities, local leaders, and professional organizations.



Recognize inequalities in access to health information and services.

HPV communication strategies: what can OHPs aim to achieve?

Oral health professionals can help to:



Incorporate simple, factual messages about HPV and prevention into routine consultations.



Identify suspicious lesions early on and direct patients towards appropriate care.



Boost confidence in vaccines by relaying coherent information based on scientific data.



Act as a pipeline to vaccination and public health services, where such referral infrastructure exists.

Overall, consistency in messages delivered across the healthcare system is essential for building trust and countering misinformation. Contradictory or ad hoc messages can increase confusion and hesitation, particularly about vaccination. Therefore, OHPs need to be able to rely on messaging aligned with that of health authorities, other health professionals, National Dental Associations (NDAs) and vaccination programmes. The repetition of simple, consistent, and evidence-based messages throughout consultations helps to normalize HPV discussions and reinforces adherence to prevention strategies.

Policy implications: integrating oral health into HPV prevention strategies

The rising incidence of HPV-associated OPSCC, particularly in men,⁵⁷ justifies a more integrated, multi-sectoral approach. OHPs are ideally positioned to contribute to primary prevention via health education and referral for vaccination, as well as to secondary prevention through systematic examination of the oral cavity. Explicitly including oral health in national strategies to combat HPV would fill a major gap in current general health policies.

Education and training programmes

Inclusion of OHPs in HPV prevention depends on structured training in both initial and continuing education. Many professionals currently report a lack of up-to-date knowledge about the links between HPV and OPSCC, as well as difficulties in broaching the subject with patients because of the sexually transmissible nature of the virus and the associated stigma, as well as that of vaccination.^{32,69} Policymakers must support the development of up-to-date curricula, clear guidelines, and evidence-based teaching tools. It is also essential to redefine the scope and roles of different members of the OHP team in health education and prevention, early OPSCC identification, referral mechanisms, and vaccination pathways.

Coordination between healthcare systems

Integrating oral health into HPV strategies provides a concrete opportunity to strengthen interprofessional collaboration in healthcare systems. Increased coordination between OHPs with policies, vaccination programmes, primary care, and cancer control programmes can create more coherent and continuous prevention pathways. For example, dental offices/clinics can act as information, screening, and referral points for HPV vaccination, while primary care and public health services can provide vaccination and medical management of initial lesions if necessary. Such collaborative models reduce separation of care, improve the continuity of care pathways, optimize the use of existing resources (human and financial), and reduce the loss of opportunity for patients.

Implementation of broader healthcare strategies

Integrating oral health into HPV prevention aligns with the broader objectives of universal health coverage (UHC), the prevention of non-communicable diseases (NCDs), and national cancer control plans. It also contributes to a person-centred approach, recognizing that oral health is inseparable from overall health. Ultimately, this integration will reduce costs associated with advanced cancers and improve health outcomes. By adopting an integrated and interprofessional approach, countries can accelerate progress towards these goals, strengthen the coherence of health policies, and contribute more effectively to reducing the global burden of HPV-associated cancers.

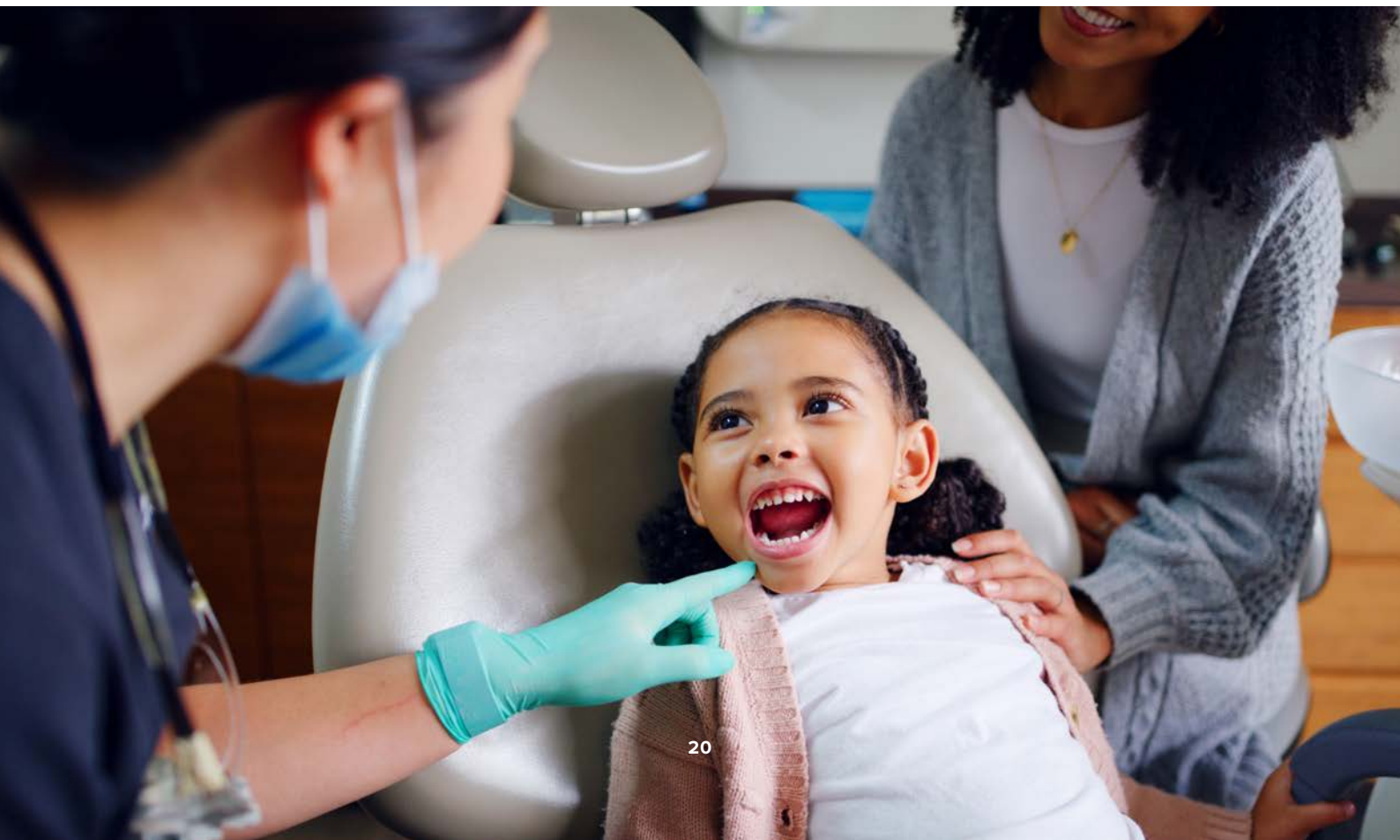
From a health system perspective, integration benefits efficiency, equity, and sustainability, and maximizes the impact of investments by building on existing infrastructures and human resources. It also promotes the sustainability of

interventions by anchoring HPV prevention in everyday practice through dialogue and consultation, rather than in occasional, targeted, time-limited programmes.^{29,70-72}

Global disparities relating to HPV remain significant, particularly in low- and middle-income countries, where access to early and primary care services and vaccination is often limited.^{70,73,74} Oral health can therefore serve as an important platform for raising awareness, improving early detection, and directing patients to appropriate services. However, this integration requires health systems to be modified and adapted to local/regional capacities, as well as adequate political and financial support.^{73,74}

Recommendations for action: patient, professional, and policymaker overviews

While the evidence and recommendations presented in this white paper provide a framework for strengthening HPV prevention through integration within oral healthcare services, practical tools are needed to support implementation in everyday settings. The following one-page graphics translate the key findings of this paper into accessible guidance tailored for patients, professionals, and policymakers.



HUMAN PAPILLOMAVIRUS (HPV) & OROPHARYNGEAL CANCER

What every dentist should know

KEY FACTS



HPV-associated oropharyngeal cancer is rising globally and has overtaken cervical cancer as the leading HPV-associated cancer in several countries^{10,75}



Cancer can develop many years after exposure to oncogenic (high-risk) HPVs



Oral health professionals can **play a key role in prevention** and early detection



Routine oral exams, including lymph node palpation, help **identify early disease**^{56,58}

KEY STATISTICS

+22%

HPV-associated non-cervical cancers have **increased by 22% since 2018**⁷⁶



Men are at greater risk than women to develop HPV-associated throat cancer⁶



Most patients never receive HPV information from their dental provider³²



Up to 90%

of HPV-associated cancers are preventable through vaccination⁷⁷

EARLY CLINICAL SIGNS^{56,58}



Persistent sore throat or hoarseness



Unexplained cervical lymph node enlargement



Painful swallowing



Persistent mucosal changes, asymmetry, lumps, unexplained ulceration or induration in the oropharyngeal region

WHAT DENTISTS CAN DO



Perform systematic oral, oropharyngeal, and neck examinations, including cervical lymph node palpation to **identify suspicious lesions or symptoms**

Educate patients about HPV transmission, vaccination, and the link between HPV and oropharyngeal cancer

Refer patients promptly through appropriate care pathways when suspicious findings are identified

HPV VACCINATION



Recommend **vaccination at age 9–12 years**²⁸

Recommend vaccination **before exposure** to high-risk HPVs²⁷

Recommend catch-up vaccination up to age 26 years²⁸

Use neutral, evidence-based communication to reduce stigma



EARLY DETECTION IN DENTAL PRACTICE CAN SAVE LIVES

EXAMINE · EDUCATE · REFER · PROTECT



HUMAN PAPILLOMAVIRUS (HPV) & OROPHARYNGEAL CANCER

What every **patient** should know

KEY FACTS



HPV is common: most people are exposed during their lifetime; most HPVs do not cause cancer^{1,2}



Two HPV types have been linked to **throat cancers**, even in people who do not smoke or drink alcohol¹⁴



HPV-associated throat cancers may occur **without symptoms**



Dentists can help detect signs of cancer and guide patients toward appropriate care



HPV vaccination can prevent **up to 90%** of HPV-associated cancers⁷⁷

KEY STATISTICS

+22%

HPV-associated non-cervical cancers have **increased by 22% since 2018**⁷⁶



Men are at greater risk than women to develop HPV-associated throat cancer⁶



Most patients never receive HPV information from their dental provider³²

WHEN SHOULD VACCINATION HAPPEN?



Recommended for **children at age 9–12 years**²⁸

Catch-up vaccination recommended **up to age 26 years**²⁸

Vaccination is most effective **before exposure to HPV**²⁷

HOW IS HPV TRANSMITTED?



High risk oral HPV is a **sexually transmitted infection**, associated with oral sex



HPV-associated throat cancers can **develop many years after exposure** to HPV

ARE VACCINES SAFE & EFFECTIVE?



HPV vaccines have been widely used internationally



Long-term studies show the HPV vaccine is safe, effective, and gives long-lasting protection against HPV-associated cancers^{27,28}

WHAT PATIENTS CAN DO

ASK YOUR DENTIST

- ✓ **About HPV** and HPV-associated throat cancers
- ✓ **Whether they routinely screen** for signs of oral cancer during examinations
- ✓ **Whether HPV vaccination is recommended** for you or your children



AVOID RISK FACTORS

- ✗ Avoid tobacco use
- ✗ Limit alcohol consumption
- ✗ Avoid betel quid



ARRANGE A DENTAL CHECK-UP

- ✓ Arrange regular dental check-ups, **even if you have no symptoms**
- ✓ Tell your dentist about any **persistent symptoms** such as:⁵⁸



Sore throat or voice changes



Persistent sores or numbness



Lump in the neck or throat



Pain while swallowing



HUMAN PAPILLOMAVIRUS (HPV) & OROPHARYNGEAL CANCER

What every policymaker should know

KEY FACTS



A LEADING HPV-ASSOCIATED CANCER
HPV-associated oropharyngeal cancer is rising globally and has overtaken cervical cancer as the leading HPV-associated cancer in several countries^{10,75}



AN UNTAPPED WORKFORCE

Oral health professionals (OHPs) have **regular contact** with vaccine-eligible populations



TRUSTED VOICES

Healthcare provider recommendation strongly influences vaccine uptake⁵⁰

KEY STATISTICS

+22%

HPV-associated non-cervical cancers have **increased by 22% since 2018**⁷⁶



Men are at greater risk than women to develop HPV-associated throat cancer⁶



Up to
90%

of HPV-associated cancers are preventable through vaccination⁷⁷

THE POLICY GAP



ORAL HEALTH INTEGRATION

Oral health remains **largely absent** from national HPV strategies

HPV-ASSOCIATED CANCER IN MEN

Many vaccination programmes do not adequately address **HPV-associated cancers in men**⁴⁰

HOW OHPs CAN HELP



REACH children, adolescents, and young adults through regular contact

PREVENT HPV through promoting evidence-based prevention and vaccination messages

RECOMMEND vaccination at age 9-12 years and before exposure to HPV^{27,28}

DETECT suspicious signs during routine oral and neck examinations

REFER patients to vaccination services or specialist care, when appropriate

WHAT POLICYMAKERS CAN DO

POLICY ACTIONS



INTEGRATE

oral health into HPV prevention plans



EDUCATE

oral health workforce in HPV prevention and early detection



ENABLE

referral and vaccination pathways



STRENGTHEN

cross-sector collaboration



INVEST

in implementation and pilots



MEASURE

outcomes and track oral health integration

EXPECTED IMPACT

↑ Vaccine uptake

↑ Early detection

↑ Health system efficiency

↑ Health outcomes

↓ Cancer burden



A MISSED OPPORTUNITY IN CANCER PREVENTION

Integrating oral health into HPV prevention **strengthens cancer prevention**, improves equity, and supports universal health coverage



Conclusion: oral health's role in HPV prevention

HPV remains a major global public health challenge. While substantial progress has been made through the introduction of HPV programmes and implementation of cervical cancer strategies, the continued rise of HPV-associated OPSCC highlights the need for a more integrated approach with oral health systems. This can be achieved through OHPs, who can play a key role in HPV prevention, as patients visit the dentist frequently during the biologically relevant years for HPV vaccination. Therefore, improving OHPs' knowledge of HPV prevention, vaccination and early detection, while equipping them with the communication skills, tools, and policy support needed to address stigma and raise awareness, has the potential to significantly improve patient outcomes.

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