Call to Action: Advancing HPV Vaccination for Adults

– From Evidence to Action

Introduction

Human papillomavirus (HPV) is highly prevalent worldwide, affecting an estimated 80% of individuals at some point in their lives (1). While most infections are effectively controlled by our own immune response on their own, persistent infections with HPV genotypes, including high-risk types and, in some cases, certain low-risk-types, can lead to serious health conditions, including cervical, anal, head and neck, oropharyngeal, vaginal, vulvar, and penile cancers (2). The risk of acquiring new infection with the same or different HPV type is lifelong (3, 4). Model-based studies consistently estimate that at least 50% of HPV infections associated with HPV-related disease occur after 23 years of age (5, 6). HPV transmission is almost twice as likely from females to males as in the reverse direction. Viral clearance occurs more rapidly in men (around six months on average) than in women, in whom infection tends to persist longer (7). Men can asymptomatically harbour and transmit HPV, acting as a reservoir despite most infections resolving naturally (8).

Global efforts to combat HPV related cancers have primarily focused on vaccinating female adolescents before potential exposure to the virus. An increasing number of countries recognize the importance of universal male and female HPV vaccination as part of a comprehensive cancer prevention strategy. However, despite the availability of highly effective vaccines, HPV vaccination coverage remains suboptimal, especially among adults, boys, and populations in low and middle-income countries due to limited awareness, misconceptions about efficacy, access barriers, weak provider recommendations, and policy gaps (9). Supply constraints between 2017 and 2022, now overcome, further slowed progress. Since the full benefits of HPV vaccination take time to emerge, expanding age, disease, and gender indications is essential to ensure everyone can benefit from this cancer-preventing vaccine. Vaccination also remains the only preventive measure against the type of HPV-related cancers for which no screening is available.

Expanding HPV vaccination to include adults who missed immunization during adolescence, presents a significant opportunity to reduce the burden of HPV related diseases and move toward long term cancer prevention goals (10). In this context, adults are defined as individuals aged 19 years and older, with particular emphasis on those aged 30 and above. Vaccination also helps protect individuals from HPV strains to which they have not yet been exposed (11). Moreover, because natural immunity from previous infections does not provide full protection against reinfection for other HPV genotypes strains, vaccination remains beneficial even for individuals who have already had HPV (10). There are also positive indications on the impact of vaccination preceding or following cervical conization (12).

Despite the clinical and economic benefits of HPV vaccination and the fact that vaccines are licensed for use in adults up to age 45 in many countries, adult vaccine uptake remains low (13).

Policymakers play a crucial role in creating sustainable vaccination opportunities by integrating HPV vaccination for medically or socially vulnerable populations but also into routine healthcare visits, including annual examination, dental check-up etc., securing funding and ensuring equitable access to vaccines across different populations. Adult programs should be considered carefully and not compromise the coverage rate in the younger population. Cultural and linguistic sensitivity must also be embedded within these strategies to enhance acceptance and trust. Policy implementation should be closely monitored through dedicated registries tracking adult vaccination coverage and outcomes.

Additionally, it is important to note that WHO recommends adolescents girls as the primary target for HPV vaccination but extending coverage to boys and adults is encouraged where feasible (14). Nevertheless, national initiatives can and should move ahead, using emerging data and practical models.

This document emphasises the public health potential economic and individual value of adult HPV vaccination, explores the global burden of HPV-related diseases and highlights successful policy models from various countries. Additionally, it provides key policy recommendations for increasing vaccine uptake, including expanding national immunization guidelines, integrating vaccination with routine cancer screening combined with research efforts, and leveraging public health campaigns to raise awareness among health professionals and communities while utilising a universal approach embracing all genders, ages and countries. By strengthening HPV vaccination programs and providing HPV vaccination opportunities and information to all eligible adults, together with efficient screening programs, healthcare systems can take a significant step toward reducing HPV-related cancer incidence, improving health

equity and ultimately achieving global cervical cancer and other HPV-related cancer elimination goals.

This Call-to-Action urges governments, health leaders, and global stakeholders and organisations, as well national public health associations worldwide, to expand HPV vaccination programs including males and adults without delay, mobilize resources, and integrate evidence-based strategies into national immunization plans, taking into account the following key considerations.

The HPV programs should integrate both vaccination and screening as complementary tools, adopting the most effective strategies that maximize not only the return on investment but also community health and patients' quality of life. It should also be strategically aligned with vaccine supply capacities, which are steadily increasing and becoming widely accessible (15).

Key Policy Themes for Stakeholder Discussion

1. Ineffectiveness of Risk Stratification
    - Risk stratification in adults is unreliable due to the widespread nature of HPV and the unpredictability of individual exposure patterns.
2. Importance of Adult Vaccination
    - Adults remain at risk of acquiring new HPV infections.
3. Increased Vulnerability of Adult Males
    - Adult males, lacking access to screening programs and often acquiring infections later in life, represent a particularly underserved group.
4. Breaking the Chain of Transmission
    - Eliminating HPV-related cancers requires addressing and clearing the viral reservoir, particularly in men, to stop ongoing transmission and achieve long-term control.
5. Benefit Despite Prior Exposure
    - Even adults previously infected with one or more HPV types can benefit from vaccination due to protection against other HPV types.
    - HPV vaccines protect from reinfection with the same HPV type, unlike natural immunity.
6. Public Health Impact and Individual Benefit
    - Adult vaccination offers both individual protection and broader public health benefits by reducing transmission and disease burden.
7. Age-Based Funding Limitations
    - Current public funding schemes often rely on fixed age limits, which may exclude adult populations that may still benefit from vaccination.

8. Implementation and Access Considerations
    - Successful adult vaccination must focus on convenience and accessibility, including the use of new vaccination points (e.g., pharmacies, workplaces, community hubs).
    - Education and advocacy initiatives for healthcare professionals, including physicians, nurses, and pharmacists, should be systematically implemented to strengthen their awareness and support for HPV vaccination in adults.
    - Appropriate monitoring systems, including dedicated registries to track adult vaccination coverage and outcomes, should be established to assess program effectiveness and inform policy adjustments when necessary.
9. Need for Consensus on Adult Vaccination
    - A unified definition and scope for adult HPV vaccination is needed to guide evidence-based policy and elevate the level of recommendation.
10. Inclusivity of LMIC Stakeholders
    - Stakeholders from low and middle-income countries should be actively included to ensure global relevance and equity in policy development as they carry the most important burden of HPV associated disease.
    - LMICs should receive support to develop robust data systems from the outset, with non-profit and technical partners assisting in establishing registries and adapting methodologies in settings with limited infrastructure.
11. Acceleration of Elimination Goals
    - Countries like Sweden demonstrate how adult vaccination can contribute to the faster elimination of HPV-related cancers and diseases.
    - Good practice from other vaccination programs, such as the transition of Hepatitis B vaccination from a risk-based approach to universal coverage, can serve as useful models for HPV vaccination strategies.
12. Terminology and Communication
    - Use inclusive language such as universal vaccination (male, female, adolescents and adults) to promote equity and reduce stigma.

By committing to these actions today, adult HPV vaccination will advance global cancer
prevention and accelerate elimination goals.

Conclusion

Preventive health, including immunization and screening, should not be viewed as a cost but as a strategic investment. It strengthens the resilience of health systems, societies, and economies, and serves as a cornerstone of global health security. Expanding HPV vaccination to adults is a critical, evidence-based strategy to reduce the burden of HPV-related diseases and accelerate global cancer prevention goals. HPV vaccines are licensed for use up to age 45 in many countries, and expanding vaccination to adults in line with regulatory approvals and clinical evidence is essential. As outlined in this policy brief, universal adult vaccination provides both individual and population-level benefits, particularly in countries with developing health systems or in regions where access to screening and care remains limited. To realize these benefits, policymakers and health leaders must work collaboratively to address barriers related to access, awareness, and policy. This includes integrating HPV vaccination into routine healthcare, using inclusive and stigma-free communication, with special attention to individuals living with other diseases such as HIV. Taking timely action will accelerate progress toward elimination of HPV-related cancers and achieve greater health equity worldwide.

Disclaimers

Age definition

According to the United Nations (UN), youth refers to individuals aged 15–24 years, while adults are those aged 25 years and older. The World Health Organization (WHO) defines adolescents as individuals aged 10–19 years, youth as 15–24 years, young people as those aged 10–24 years, and adult as a person over 19 years old.

For the purpose of this Call to Action, adults are considered individuals aged 19 years and above, with a particular emphasis on those aged 30 years and older.

Contextual Adaptation

Each country should implement and adapt these recommendations on HPV adult vaccination to its specific context, taking into account local epidemiology, available resources, cost-benefit, screening capacity, and programmatic goals, whether aimed at individual protection or broader population-level and elimination strategies. Depending on the national health system and funding model, public, private, or mixed, these approaches should be applied consistently across all sectors to ensure coherence and equitable access.

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