



**衛生防護中心**  
Centre for Health Protection

**Scientific Committee on Vaccine Preventable Diseases**

**Updated Recommendations on the Use of 9-valent Human  
Papillomavirus Vaccine in Hong Kong  
(As of 30 November 2022)**

**Background**

In October 2018, the Scientific Committee on AIDS and Sexually Transmitted Infections (SCAS) and Scientific Committee on Vaccine Preventable Diseases (SCVPD) of the Centre for Health Protection of the Department of Health (DH) recommended to include human papillomavirus (HPV) vaccine in the Hong Kong Childhood Immunisation Programme (HKCIP) as a public health programme for cervical cancer prevention for girls of suitable ages before sexual debut.

2. The 9-valent HPV vaccine has been incorporated to the HKCIP since the 2019/20 school year. At present, female students are offered the first dose of 9-valent HPV vaccine in Primary Five and the second dose in Primary Six by the School Immunisation Teams of DH through outreach visits to schools. A three-dose schedule would be offered to those who initiate the HPV vaccination at age 15 years or above, as well as those who are known to be immunocompromised at the time of immunisation.



3. The HPV vaccination coverage rates of the first and second doses were over 80% among eligible female students in the 2019/20, 2020/21 and 2021/2022 school years. Secondary school female students who missed the HPV vaccination in primary schools can receive the vaccination when attending the annual health assessment at the Student Health Service Centre of DH.

### **Local Disease Burden of Cervical Cancer and HPV-related Cancers**

4. Persistent infection with high risk types of HPV can cause cervical cancer. In 2020, cervical cancer ranked the seventh most common cancer among female and the eighth leading cause of female cancer deaths, accounting for 3.2% of all new cancer cases in females, and 2.6% of female cancer deaths respectively.

5. HPV also causes a proportion of anogenital (e.g. vulva, vagina, penis, anus) cancers and oropharyngeal cancers<sup>1</sup>. In 2020, these cancers (except rectal/anal cancer combined) ranked beyond the tenth in Hong Kong.

### **World Health Organization's Recommendations on Use of HPV Vaccines**

6. In 2017, the World Health Organization (WHO) recommended initial vaccination of multiple birth cohorts aged 9 to 14 years when the HPV vaccine was first introduced. A two-dose schedule of HPV vaccine was recommended for individuals receiving the first dose before 15 years of age. A three-dose schedule was recommended for all vaccinations initiated at 15 years of age or above, including those younger than 15 years known to be immunocompromised and/or HIV-infected (regardless of whether they are receiving antiretroviral therapy).<sup>2</sup>

7. In April 2022, WHO Strategic Advisory Group of Experts (SAGE) on Immunization urged all countries to introduce HPV vaccines for the primary target group of girls aged 9 to 14 years and prioritize multiple birth cohort catch-

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<sup>1</sup> B.Serrano et al. Epidemiology and burden of HPV-related disease. Best Pract. Res. Clin. Obstet.Gynaecol. 2018 Feb;47:14-26.

<sup>2</sup> World Health Organization. Human papillomavirus vaccines: WHO position paper, May 2017. [https://www.who.int/teams/immunization-vaccines-and-biologicals/diseases/human-papillomavirus-vaccines-\(HPV\)](https://www.who.int/teams/immunization-vaccines-and-biologicals/diseases/human-papillomavirus-vaccines-(HPV)). Accessed 26 Oct 2022.

up of missed girls and older cohort of girls up to 18 years old. SAGE also requested WHO to develop a prioritization framework to assist countries to identify secondary target groups, such as boys, based on disease burden, affordability, cost-effectiveness, herd immunity and programme feasibility in the local context. Vaccination of secondary target groups should be carefully managed as long as vaccine supply is constrained.

8. Based on the review findings that one-dose HPV vaccination schedule provided protection comparable to two-dose or three-dose schedule for at least 10 years, SAGE also recommended an off-label one-dose option for routine and catch-up HPV vaccination.<sup>3</sup> Girls aged between 9 to 20 years can follow either a one-dose or a two-dose vaccination schedule. Female aged 21 years or above should receive 2 doses.

### **Human Papillomavirus Vaccination Programme in Overseas Countries**

9. Currently, overseas countries mostly used a two-dose schedule and a three-dose schedule for younger and older girls respectively, except UK which has recommended to move from two-dose to one-dose schedule in August 2022.<sup>4</sup> Some countries provide catch-up HPV vaccination programs for older girls (aged 13 to 18 years) and young females up to 26 years old.

10. According to the WHO (As at 21 November 2022), 117 countries have introduced HPV vaccination nationwide or partially into their national immunisation programme, with over 60% of these countries do not include male in their programme.<sup>5, 6</sup>

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<sup>3</sup> World Health Organization. Strategic Advisory Group of Experts on Immunization Meeting of April 2022. Session 6. Human papillomavirus vaccination. [https://terrance.who.int/mediacentre/data/sage/SAGE\\_Slidedeck\\_Apr2022.pdf](https://terrance.who.int/mediacentre/data/sage/SAGE_Slidedeck_Apr2022.pdf). Accessed 26 Oct 2022.

<sup>4</sup> The Joint Committee on Vaccination and Immunisation (JCVI) statement on a one-dose schedule for the routine HPV immunisation programme. 5 August 2022. <https://www.gov.uk/government/publications/single-dose-of-hpv-vaccine-jcvi-concluding-advice/jcvi-statement-on-a-one-dose-schedule-for-the-routine-hpv-immunisation-programme>. Accessed 26 Oct 2022.

<sup>5</sup> WHO Vaccination schedule for Human papilloma virus. [https://immunizationdata.who.int/pages/schedule-by-disease/hpv.html?ISO\\_3\\_CODE=&TARGETPOP\\_GENERAL=](https://immunizationdata.who.int/pages/schedule-by-disease/hpv.html?ISO_3_CODE=&TARGETPOP_GENERAL=). Accessed 21 Nov 2022

<sup>6</sup> WHO Introduction of HPV (Human Papilloma Virus) vaccine. [https://immunizationdata.who.int/pages/vaccine-intro-by-antigen/hpv.html?ISO\\_3\\_CODE=&YEAR=](https://immunizationdata.who.int/pages/vaccine-intro-by-antigen/hpv.html?ISO_3_CODE=&YEAR=). Accessed 21 Nov 2022

## Analysis on HPV Vaccination

11. A local study found that 9-valent HPV routine plus catch-up vaccination of females yields the most public health benefits (e.g. reductions in HPV-related cervical cancer and genital warts) and may be cost-saving relative to the screening only and 9vHPV routine vaccination alone, supporting the incorporation of a catch-up strategy for females up to 18 years old to the current routine HPV vaccination programme.<sup>7</sup>

12. Vaccinating boys in addition to girls may increase herd immunity especially when vaccination coverage for girls is low. An overseas systematic review involving models from 17 research teams suggested when the vaccination coverage of girls reached 80%, vaccinating boys would only produce small incremental reduction in overall HPV 16 prevalence for women and men.<sup>8</sup>

## Recommendations

### HPV vaccine for older girls

13. Giving HPV vaccine to girls of suitable age before sexual debut has been demonstrated to provide greater health impact than other age groups in the prevention of precancerous lesions and cancers of the cervix. Having reviewed up-to-date overseas and local scientific evidence and taking into account of updated WHO recommendation and overseas practices, SCVPD recommends the Government to provide catch-up HPV vaccination for secondary school female students or older age girls up to 18 years.

### HPV vaccine for boys

14. Based on overseas studies, it is expected there will be minimal incremental benefit from adding HPV vaccine to the routine childhood immunization programme (CIP) for boys, given the high HPV vaccination

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<sup>7</sup> Cheung TH, Cheng SSY, Hsu DC, Wong QW, Pavelyev A, Walia A, Saxena K, Prabhu VS. The impact and cost-effectiveness of 9-valent human papillomavirus vaccine in adolescent females in Hong Kong. *Cost Eff Resour Alloc.* 2021 Nov 20;19(1):75.

<sup>8</sup> Brisson M, et al.. Population-level impact, herd immunity, and elimination after human papillomavirus vaccination: a systematic review and meta-analysis of predictions from transmission-dynamic models. *Lancet Public Health.* 2016 Nov;1(1):e8-e17.

coverage of over 80% in girls under the CIP.

15. Local economic and acceptability studies on HPV vaccination for boys are lacking to support to include HPV vaccine for boys in the CIP. According to the WHO, vaccination of boys should be carefully managed until there is unconstrained supply of vaccine.

16. Based on the above, SCVPD does not recommend to include HPV vaccine in the CIP for boys at this juncture. On the other hand, boys may choose to be vaccinated for personal protection according to manufacturer's recommendation. Parents could seek advice from doctors for the benefits and limitations of vaccinating their boys against HPV infection.

#### Dosing schedule

17. SCVPD has reviewed the WHO recommendation, overseas practice and scientific evidence, and recommends to maintain a 2-dose schedule for immunocompetent individuals aged 9 to 14 years.

18. For immunocompetent individuals aged 15 years or above, a 2-dose schedule as an off-label use, is recommended instead of the current 3-dose schedule.

19. For individuals who are immunocompromised, a 3-dose schedule is recommended.

### **November 2022**

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