



衛生防護中心
Centre for Health Protection

**Scientific Committee on Vaccine Preventable Diseases
Scientific Committee on AIDS and Sexually Transmitted
Infections**

**Recommendation on the
Use of Human Papillomavirus (HPV) Vaccine**

Background

The HPV, stands for Human Papillomavirus, is known to cause cervical cancer and anogenital warts. There are more than 200 types of papillomavirus and about 40 of which infect human mucosal areas. Among these, HPV-16 and HPV-18 are the most commonly identified high-risk HPV (HR-HPV) associated with cervical cancer whereas HPV-6, HPV-11 are the commonest low-risk HPV (LR-HPV) which cause anogenital warts.

2. Transmission of genital HPV infection is mainly through sexual contact (both vaginal and anal sex) with an infected person. Prevention of HPV transmission is through abstinence of sexual activities, practice of safer sex especially use of condom, as well as reducing the number of sex partners. However epidemiologic studies suggest that up to 75% of all sexually active people will eventually be infected with HPV at some point during their lifetime and most infections are subclinical. Many would have acquired the infection soon after sexual debut. There has not been any study to support transmission of genital HPV through toilet seats, kissing on the mouth, hugging, or holding hands, poor personal hygiene, sharing food or utensils, or swimming in pools or hot tubs. However, some oropharyngeal cancers have been associated with HPV infection.



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3. In Hong Kong, the HPV prevalence is between 7-11% in those attending cervical screening services and the rate was higher in those visiting social hygiene or colposcopic clinics. Among those with cervical abnormalities, HPV-16 is the most commonly identified type and has been found in 33% to 70% of the subjects. Other commonly identified HPV types were 11 and 18. Infection with HPV-58, unlike western countries where the infection is uncommon, is also commonly detected in 3.8% to 31.5% of subjects, depending on the severity of the lesions.

4. Persistent infection of HR-HPV is a prerequisite for the development of cervical intraepithelial neoplasia (CIN) III lesions and invasive cervical cancers. Other risk factors of cervical cancer include sexual activity at an early age, having multiple sex partners, and smoking.

5. In 2011, cervical cancer was the 8th leading cause of female cancer deaths in Hong Kong and there were 151 registered deaths, accounting for 2.85% of total female cancer deaths. The age-standardized incidence rate decreased from 9.5 per 100,000 standard female population in 2004 when the Cervical Screening Programme was established to 7.3 per 100,000 standard female population in 2010. Likewise, the age-standardised mortality rate decreased from 2.6 per 100,000 standard female population to 2.4 per 100,000 standard female population from 2004 to 2010.

6. Cervical cancer may be treated with radiotherapy, surgery, adjuvant chemotherapy or in combination according to the stage at diagnosis. When diagnosed at precancerous stage, the lesion can be effectively managed by less aggressive method. Evidence has shown that cervical screening can effectively prevent cervical cancer.

7. A territory-wide Cervical Screening Programme has been launched in Hong Kong since 2004 with the key objective of reducing cervical cancer burden in Hong Kong. Any women aged 25 to 64 with prior sexual experience is recommended to have regular cervical screening once every 3 years, after two consecutive annual smears found to be normal. According to the Behavioural Risk Factor Surveillance System from 2004 to 2012, the percentage of respondents aged 25-64 who have ever had a cervical smear ranged from 69.0% to 72.0%.

HPV Vaccines

8. To date, two prophylactic vaccines against HPV infection have become available. GardasilTM is a quadrivalent HPV vaccine, targeting at HPV types 6, 11, 16 and 18, developed by Merck and Co., Inc. In Hong Kong, it is approved for use in females aged 9 to 45 years and 3 doses are to be administered at 0, 2, 6 months. Gardasil is also approved for use in males aged 9 to 26 years for prevention of HPV 6 and 11 related genital warts.

Cervarix™, developed by GSK, is a bi-valent vaccine targeting at HPV types 16 and 18. It is approved in Hong Kong for use in females from the age of 9 years onwards and is to be administered at 0, 1, 6 months. Interchange of the two vaccines is not recommended because there is currently no data on the relevant safety or efficacy.

9. A review of the available safety and efficacy studies showed that protection among the HPV naïve women against lesions that are caused by the types of HPV covered by the vaccine was more than 90% in various endpoints, and reached almost 100% against cervical cancer during the study period. The duration of protection is still not known since the maximum duration of clinical studies published to date is around 8 years.

10. The common side effects of these vaccines include mild local reaction, such as erythema, pain and swelling, and systematic adverse effects such as muscle aches, fever, headache and nausea. The vaccine is contraindicated in persons with a history of immediate hypersensitivity to yeast or any of the vaccine components. Because of limited data, vaccination during pregnancy is not recommended.

11. A recent local economic evaluation of HPV vaccine showed that the cost-effectiveness of a universal programme in Hong Kong depended on the vaccine price and duration of protection. The vaccine would not be cost-effective should the current private sector market price of the vaccine remain unchanged and should the duration of protection be limited to less than 15 years.

Recommendations

12. Based on current scientific evidence, HPV vaccine is considered to be effective and safe. It can protect against infection of the specific HPV types targeted by the vaccines. The desirable age of vaccination is before commencement of sexual activity. The vaccine may not provide the same level of protection against infection of HPV types not included in the vaccine and hence cannot completely eliminate the risk of cervical cancer. Therefore, regular cervical screening is recommended for prevention of cervical cancer irrespective of the HPV vaccination status.

13. The local Cervical Screening Programme should be strengthened, monitored and evaluated on an ongoing basis to optimize its impact on reducing cervical cancer incidence, morbidity and mortality. It is suggested that the coverage of the Cervical Screening Programme be enhanced by offering screening to hard-to-reach groups such as commercial sex workers and underscreened populations such as new immigrants, ethnic minority groups, etc.

14. Public education and promotional effort are as important as cervical screening and HPV vaccination for cervical cancer prevention.

15. Healthcare providers are advised to inform their clients and parents, who are considering HPV vaccination, that protection is limited to the serotypes included in the vaccine, that eventual duration of protection is unknown at this stage, and that cervical screening remains an important part of cervical cancer prevention even with HPV vaccination.

16. Healthcare providers are also advised to keep good records of their vaccines and vaccinees for the potential need for booster doses, as well as to provide or arrange for cervical screening in accordance with the latest recommendations.

17. While the HPV vaccine has been added to the public health vaccination programme in some countries, its applicability in Hong Kong should be further examined. HPV vaccine could in future be considered for introduction into Hong Kong's universal vaccination programme if the duration of protection is further established and universal vaccination programme is supported by local economic evaluation. Information on the logistics, feasibility and acceptability of such a programme, compared to alternative programmes, should also be sought.

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