

WHO GUIDANCE NOTE

Comprehensive cervical cancer prevention and control: a healthier future for girls and women



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INTRODUCTION

Women's cancers, including breast, cervical and ovarian cancer, lead to hundreds of thousands of premature deaths among women. Investments and programmes to prevent and treat women's cancers such as cervical cancer have improved and led to strong reductions in high income countries.

Cervical cancer is the second most common cancer in women worldwide. Yet, because of poor access to screening and treatment services, the vast majority of deaths occur in women living in low- and middle-income countries. Effective methods for early detection of precancerous lesions using cytology (Pap smear) exist and have been shown to be successful in high income countries. However, competing health care priorities, insufficient financial resources, weak health systems, and limited numbers of trained providers have made high coverage for cervical cancer screening in most low- and middle-income countries difficult to achieve.

New technological developments offer the potential to tackle cervical cancer in a more comprehensive way and build a healthier future for girls and women.

The increasing availability of an alternative screening technology called VIA¹, and new vaccines against the *Human papillomavirus* (HPV) may help prevent cervical cancer further. Moreover, because HPV vaccination targets 9–13 year old girls, there is the opportunity to catalyse a life course approach to cervical cancer prevention and control from childhood and through adulthood.

Implementation of cervical cancer prevention and control programmes contributes to the attainment of the Millennium Development Goals through universal access to sexual and reproductive health services to improve women's health, to the 2010 UN Secretary-General's *Global Strategy for Women and Children's Health* and to the 2011 Political Declaration of the UN General Assembly High level Meeting on Non-Communicable Diseases.

Cervical cancer is highlighted in the "Political Declaration of the High-level Meeting of the General Assembly on the Prevention and Control of Non-communicable Diseases" as well as in the "comprehensive global monitoring framework" under development which includes key indicators, and a set of global targets for the prevention and control of non-communicable diseases.

This WHO Guidance Note, that is part of the overall guidance WHO is issuing on Women's cancers, is aimed at senior policy-makers and programme managers. It gives a broad vision of what a comprehensive approach to cervical cancer prevention and control means. It is not new guidance but summarizes existing WHO publications. In particular, it outlines the complementary strategies for comprehensive cervical cancer prevention and control, and highlights the need for collaboration across programmes, organizations, and partners.

KEY FACTS ABOUT CERVICAL CANCER

- Every year more than 270 000 women die from cervical cancer, more than 85% of these deaths are in low and middle income countries.
- Cervical cancer is caused by sexually-acquired infection with *Human papillomavirus* (HPV). Most people are infected with HPV shortly after onset of sexual activity.
- Vaccination against HPV in girls 9 to 13 years old combined with regular screening in women over age 30 for precancerous lesions followed by adequate treatment are key tools to prevent the 530 000 new cervical cancer cases diagnosed every year.
- Survival rates for cervical cancer can be further improved by establishing effective cancer treatment programmes.

¹ Visual inspection with acetic acid (VIA).

CERVICAL CANCER PREVENTION AND CONTROL: A COMPREHENSIVE APPROACH

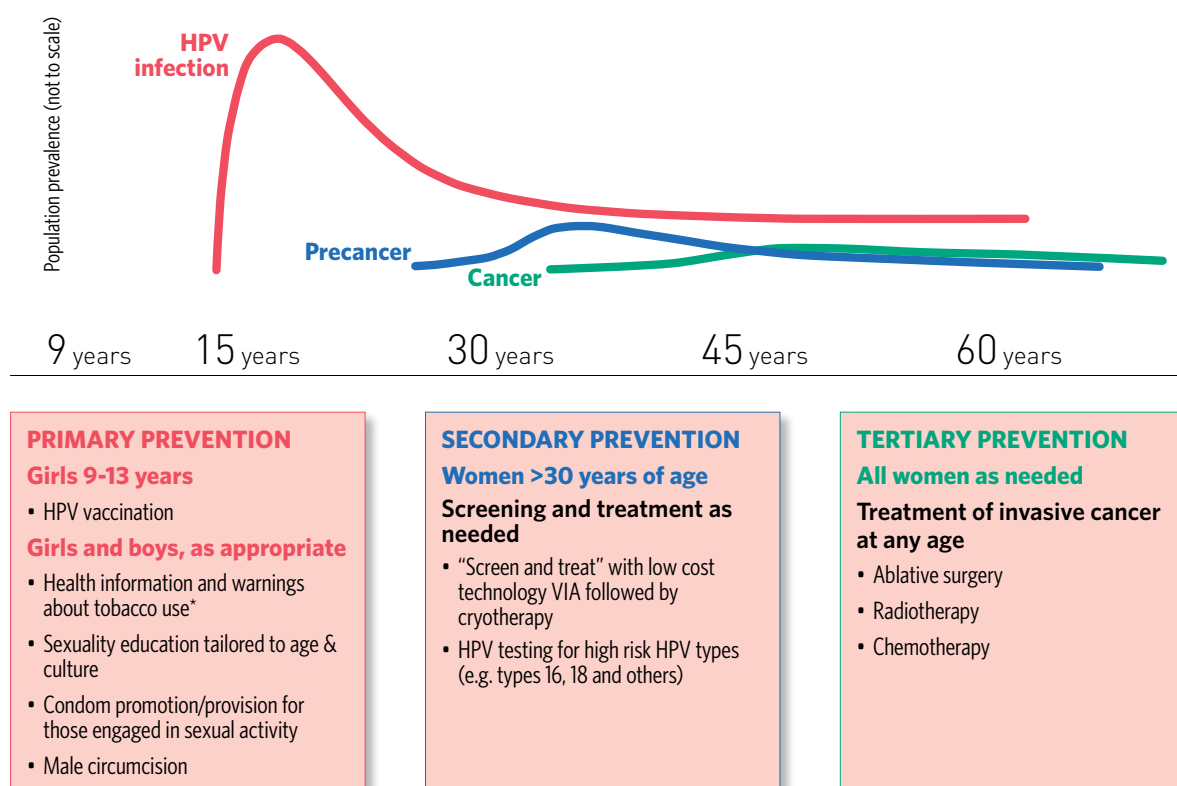
Cervical cancer is caused by the sexually transmitted HPV, which is the most common viral infection of the reproductive tract. Almost all sexually active individuals will be infected with HPV at some point in their lives and some may be repeatedly infected. The peak time for infection is shortly after becoming sexual active.

The majority of HPV infections resolve spontaneously and do not cause symptoms or disease. However, persistent infection with specific types of HPV (most frequently, types 16 and 18) may lead to precancerous lesions. If untreated, these lesions may progress to cervical cancer.

The core principle of a comprehensive approach to cervical cancer prevention and control is to act across the life course using the natural history of the disease to identify opportunities in relevant age groups to deliver effective interventions (Figure 1).

At the national level, a comprehensive approach to cervical cancer prevention and control benefits from being multidisciplinary. As this approach is made up of several key components ranging from community education, social mobilization, vaccination, screening, and treatment to palliative care, it is important to involve representatives from various disciplines and national health programmes such as immunization, reproductive health, cancer control and adolescent health. HPV vaccination does not replace cervical cancer screening. In countries where HPV vaccine is introduced, screening programmes will need to be developed or strengthened.

FIGURE 1: OVERVIEW OF PROGRAMMATIC INTERVENTIONS OVER THE LIFE COURSE TO PREVENT HPV INFECTION AND CERVICAL CANCER



* Tobacco use is an additional risk factor for cervical cancer.

PRIMARY PREVENTION

HPV VACCINATION: OPPORTUNITIES AND CHALLENGES

HPV vaccination is targeted at girls 9–13 years of age. The fact that this age group is a different target population from the infants who routinely receive vaccines through the national immunization programme presents both opportunities and challenges:

» **Choice of delivery strategy:** Effective, affordable and equitable delivery strategies to reach girls 9–13 years of age three times during a 6 month period are required. Where school enrolment of girls is high, school-based vaccination is a possibility; however, different approaches are needed to reach girls not in school and who may be particularly vulnerable (e.g. street children, migrants). Attracting young girls to repeatedly come to health facilities and outreach sessions is likely to take special efforts. Prior to national introduction, countries are encouraged to pilot and assess vaccine delivery strategies in order to determine how to achieve affordable and high HPV vaccination coverage. At the same time, reaching these girls with HPV vaccine offers a huge opportunity to provide them with other health interventions (Figure 1).

KEY FACTS ABOUT HPV VACCINES

- Seventy-percent (70%) of cervical cancers worldwide are caused by only two HPV types (16 and 18).
- Three vaccines against HPV are licensed in most countries.
- The vaccines prevent over 95% of HPV infections caused by HPV types 16 and 18, and some cross-protection against other less common HPV types which cause cervical cancer. One of the vaccines also protects against HPV types 6 and 11 which cause anogenital warts.
- Both vaccines work best if administered prior to exposure to HPV.
- The vaccines cannot treat HPV infection or HPV-associated disease.
- The WHO recommended target group for vaccination is 9–14 year old girls who have not yet become sexually active.
- HPV vaccines require 2 doses administered over a period of 6 months.
- Safety of these vaccines is being closely monitored, and thus far, is very reassuring.
- HIV-infected individuals can be vaccinated and need 3 doses

» **Communication:** National educational campaigns for vaccine introduction should be used to increase community awareness about cervical cancer and its prevention. Carefully designed messages are essential to educate communities, parents, teachers, adolescents and other stakeholders about the HPV vaccine, HPV infection and cervical cancer and the availability of services. Programmes can be quickly undermined by rumours and misinformation if the reasons for targeting girls only are not fully and sensitively communicated. Educating men, including fathers and boys, about HPV vaccines and cervical cancer is particularly important in this regard. Providing cervical cancer information to older women and mothers of the girls being offered vaccination is a potential way to involve parents. Informed consent for HPV vaccination can be another communication opportunity to educate parents and girls about adolescent health issues or cervical cancer screening.

» **Monitoring and evaluation:** It is important to have strong systems in place to monitor national vaccination programmes. Existing systems for monitoring vaccine coverage need to be adapted for HPV vaccines. HPV vaccine coverage data need to be collected by dose number and by year of age of the girl receiving the vaccine. This requires the redesign of tally sheets and registers. As for any new vaccine, WHO recommends that a post-introduction evaluation (PIE) of an HPV vaccination programme be undertaken 6–12 months after the vaccine has been introduced.



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» **Affordability and sustainability:** Current market prices of HPV vaccines range from more than US\$100 to below US\$10 a dose. In addition to vaccine costs, there are operational costs for delivery that need to be calculated and financed. Careful analysis of the financial costs of both the vaccine and the delivery strategy will be a critical step in the decision-making process. Support by GAVI and industry donation² programmes provide opportunities for some of the poorest countries to access HPV vaccine, but many low- and middle-income countries are not able to benefit from these mechanisms. To be affordable and sustainable in low income countries, WHO estimates a negotiated price considerably less than US\$5 per fully vaccinated girl will be necessary. However, this does not include the full vaccine delivery costs (see box for more details) that require substantial additional financial resources which countries need to secure.

HPV VACCINE DELIVERY COSTS (EXCLUDING VACCINE COSTS)

Costs vary by country and whether HPV vaccine is administered monthly or in campaign mode; in urban, rural, or mountainous areas; via health facility, school or integrated community outreach; and by the number of girls per vaccination session.

Currently available data suggest that for GAVI-eligible countries:

- Start-up costs for HPV vaccine introduction are ~US\$3/girl.
- Operational costs for delivering 3 doses is ~US\$4.20/girl.
- During the first year, total start-up and operational costs for delivering 3 doses of HPV vaccine is ~US\$7.20/girl (not including the cost of the vaccine).

² For guidance on "Good Donations Practice" see WHO-UNICEF Joint Statement on Vaccine Donations August 7, 2010 http://whqlibdoc.who.int/hq/2010/WHO_IVB_10.09_eng.pdf

SECONDARY PREVENTION

SCREENING AND TREATMENT OF PRECANCEROUS LESIONS

Cervical cancer screening is the systematic application of a test to identify cervical abnormalities in an asymptomatic population. Women targeted for screening may actually feel perfectly healthy and see no reason to visit health facilities.

Screening services may be provided either as organized or opportunistic (i.e. taking advantage of a woman's visit to the health facility for another purpose) services or a combination of both. It is generally accepted that organized screening is more cost-effective than opportunistic screening, making better use of available resources and ensuring that the greatest number of women will benefit.

For treatment of precancerous lesions, the technology of choice is loop electrosurgical excision procedure (LEEP). For settings where LEEP cannot be performed or in low resource settings, recent WHO guidelines recommend cryotherapy as a good alternative treatment for eligible VIA positive lesions. In high-resource settings, other techniques such as cold knife conisation can be used.



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