

Cervical Cancer ACTION

Coalition to STOP Cervical Cancer

Governing Council



ISSUE BRIEF

Strategies for HPV Vaccination in the Developing World

Introduction

HPV vaccine represents an important opportunity to significantly reduce the global burden of cervical cancer. With more than 80% of cervical cancer cases affecting women in the developing world, the burden of this preventable disease disproportionately affects women in countries where cervical cancer screening and treatment systems are weak or non-existent. Developing strategies to effectively reach adolescent girls with HPV vaccines — a population not typically the focus of public health programs — is essential to achieving high coverage rates and reducing the cervical cancer burden. This brief outlines a number of newly identified strategies and best practices in community education, mobilization, and HPV vaccine delivery.

Background on HPV vaccines

Cervical cancer is caused by persistent infection with oncogenic types of the human papillomavirus (HPV). Two HPV vaccines have been developed that protect women against the two types of HPV (16 and 18) responsible for 70% of cervical cancer cases worldwide. Since 2006, Merck's HPV vaccine, Gardasil® and GlaxoSmithKline's HPV vaccine, Cervarix®, have been licensed in over 100 countries worldwide.

Clinical trials found that both vaccines are at least 95% effective in preventing HPV-16 or -18 persistent infection and at least 93% effective in preventing vaccine

type-specific cervical lesions when given to girls prior to sexual activity, or to women without prior infection with these HPV types.^{1,2} Widespread use of HPV vaccine alone has the potential to reduce cervical cancer deaths by 50% over several decades, and some estimates anticipate an even higher prevention rate of 71%, depending on immunization coverage and additional cross-protection against certain types of HPV not currently targeted by the existing vaccines.^{3,4,5,6}

Clinical trials show that HPV vaccines are effective for seven to eight years at a minimum (the duration to date of the published trials), but they might prove to be effective for much longer.^{7,8} It is unclear whether booster doses will be needed. Because HPV infection has been shown to spike just after sexual debut, the vaccine plays an important role in protecting adolescent girls during the crucial period when risk of infection is highest.

Availability

HPV vaccines are currently available in many parts of Europe, Australia, Canada, United States and are increasingly available in some middle-income countries. For low-income and some middle-income countries, vaccination at scale will be possible only with substantial subsidies. In the future, it is hoped that the GAVI Alliance and the Pan American Health Organization (PAHO) could help provide subsidies or cost-saving mechanisms to facilitate the purchase of HPV vaccine for these countries. At present, HPV vaccine is one of four vaccines that the GAVI Alliance is considering for subsidized provision to the poorest countries in the world.⁹

In some low-income countries, Ministries of Health and non-governmental organizations (NGOs) have developed pilot projects to test the feasibility of HPV vaccine delivery in their countries. Many of these projects have received donated vaccine through corporate donation programs. At the same time, several middle-income countries have started national or sub-national HPV vaccination programs led by Ministries of Health with NGO partners. Lessons learned from these early experiences will help other countries develop effective country-wide programs. For example, vaccination of girls at school has been shown to be an effective and acceptable strategy in Peru, Uganda and Vietnam, though interventions also must be in place to reach girls who do not attend school.

WHO Recommendations

The World Health Organization recommends that routine HPV vaccination be included in national immunization programs based on the following key considerations:

- Prevention of cervical cancer or other HPV-related diseases, or both, constitutes a public health priority;
- Vaccine introduction is programmatically feasible;
- Sustainable financing can be secured;
- The cost-effectiveness of vaccination strategies in the country or region is considered; and
- HPV vaccination is targeted to adolescent girls prior to sexual debut.¹⁰

Target populations

Focus on vaccinating adolescent girls

HPV vaccines are most effective in girls who have not been exposed to vaccine related HPV types. Therefore, from a public health perspective, the most effective population to target for HPV vaccination is young, adolescent girls. The WHO recommends that the primary target population for vaccination should be selected based on the age of initiation of sexual activity and the feasibility of reaching young adolescent girls through schools, health-care facilities or community-based settings. The primary target population is likely to be girls within the age range of 9 or 10 years through 13 years.¹¹

In low-resource settings, the WHO and other international bodies do not recommend that sexually active women be vaccinated since both vaccines show much lower effectiveness after HPV infection. Based on these recommendations, many countries have adopted policies that support vaccination of female adolescents before sexual debut.

Vaccinating boys is not as cost-effective as focusing on adolescent girls

From a public health perspective, models suggest that the most effective way to reduce cervical cancer is to focus resources on reaching more girls for HPV vaccination rather than to split resources between girls and boys.

Boys can become infected with HPV and they can develop other HPV-associated disease such as penile, anal, and oral cancers or genital warts, but only about 7% of cancers caused by HPV 16 and 18 occur in men.¹² Some experts maintain that vaccinating both males and females would benefit women because women are infected by male sexual partners, but computer models suggest that this strategy may not be cost-effective in most settings.¹³

HPV vaccine messaging

Experience from HPV vaccine demonstration projects in developing countries has shown that public messaging around cervical cancer, HPV, and the HPV vaccine has an important impact on the acceptability and effectiveness of vaccination programs. The high levels of HPV vaccine acceptance seen so far most likely are due to the extensive educational work done in communities prior to vaccine introduction. Anecdotal reports suggest that public and media distrust of the vaccine has arisen in some places where insufficient time and resources were dedicated to preparing communities and health systems for vaccine introduction. Research indicates that such scenarios might be avoided through the expansion of HPV vaccine programs to include effective education and mobilization of key stakeholders, including not only parents, health practitioners, and girls, but also community leaders, religious leaders, teachers, and journalists.

The following messages have been found to be helpful in promoting the acceptability of the vaccine among targeted communities:

“There is a vaccine that protects against cervical cancer vaccine and which is safe and effective”: Experience from HPV vaccine demonstration projects in Africa, Asia and Latin America suggests that communities respond well to messages about “cervical

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cancer vaccine.”¹⁴ Early project results suggest that: 1) by and large parents and community members believe in the benefits of immunization, and 2) they are afraid of cancer (even when they are not very knowledgeable about it), and 3) once convinced that the HPV vaccine is safe and effective, they request vaccination for their daughters. It is possible that communities may not as readily support an “HPV vaccine,” because most do not know what HPV is. The medical community, on the other hand, prefers the term HPV vaccine.

“There is no evidence that HPV vaccination has any impact of a girl’s future fertility”: A number of communities have asked whether or not HPV vaccination will negatively impact a girl’s future fertility. There is no evidence to suggest that would be the case. Given this expressed concern, however, it is important to expect the question and to be ready to respond.

“HPV prevention strategies differ from HIV prevention strategies”: An unanticipated challenge is confusion between HPV and HIV. Experience has shown that people sometimes mistakenly assume that because HIV and HPV are both sexually transmitted diseases, prevention strategies would be similar for both. It is important to have clear messaging around the fact that while reducing numbers of sex partners and consistent use of condoms can dramatically reduce HIV infection, those strategies are not as effective against HPV, making vaccination that much more important.

Researchers have been pleased to find that some anticipated cultural concerns have not proven to be barriers. Their concerns included fears that parents would distrust a vaccine offered only to girls, or that they would worry that giving their daughters a vaccine against a sexually transmitted infection could dis-inhibit the girl from early sexual experimentation. There also was concern that conservative religious leaders might take a stand against HPV vaccination for the same reasons. But in general communities have not reacted in that way in areas studied to date, as long as the vaccine was framed as an “anti-cancer” intervention.

Parents and community members positively accept HPV vaccination for their daughters if the vaccine is framed as a vaccine against cervical cancer

Ensuring access to HPV vaccine

Young adolescents do not routinely interact with health systems in most developing countries, and ensuring access to vaccine will be a challenge. As noted above, one promising suggestion is to strengthen school health programs, especially because of the increase in primary school attendance over the past decade. Where many young girls drop out of school at an early age, community programs might help to fill the gap.¹⁵

Once effective strategies have been developed to reach adolescent girls for HPV vaccination, additional health interventions appropriate for this population also can be provided. These include tetanus, rubella, hepatitis B, measles, and eventually HIV immunization; deworming; vitamin A supplementation; malaria intermittent preventive treatment; provision of bed nets; treatment of schistosomiasis, filariasis, and trachoma; iron and/or iodine supplementation; nutritional supplementation; and education about hand washing, tobacco, drugs, body awareness, and life-choice decision-making. Using one system to deliver multiple interventions — at the same time as HPV vaccination or at different times — could increase the cost-effectiveness of all the interventions.

Comprehensive approach: Vaccination in partnership with screening

Although the new HPV vaccines are expected to significantly reduce the incidence of cervical cancer, they will not replace screening. Rather, a comprehensive approach which uses vaccination in partnership with screening will maximize effectiveness.^{16,17,18} Screening is needed for the millions of women aged 30 or older in whom infection with HPV has likely occurred already if they have been sexually active sometime in their lives. Because the new vaccines are not therapeutic, they cannot benefit women who are already infected with HPV. And the vaccines do not protect against cancer caused by some HPV types that are not included in the current vaccine formulation.

Countries with screening programs already in place should continue to support screening even if a vaccination program is instituted. In countries without screening programs, policymakers should consider initiating a screening program for women aged 30 and older once or twice in their lifetimes, in conjunction with vaccination of adolescent girls and women who are not yet sexually active.¹⁹

A comprehensive approach which uses vaccination in partnership with screening will maximize effectiveness.

Resources on HPV vaccination

- RHO Cervical Cancer — Vaccination [www.rho.org/vaccination.htm]
- Cervical Cancer Prevention Action Planner (an interactive, online tool) [www.rho.org/actionplanner]
- WHO position paper on human papillomavirus vaccines [www.rho.org/files/WHO_WER_HPV_vaccine_position_paper_2009.pdf]
- Cervical cancer, human papillomavirus (HPV), and HPV vaccines: Key points for policy-makers and health professionals (WHO) [http://www.rho.org/files/WHO_PATH_UNFPA_cxca_key_points.pdf]
- Cervarix® on the web (GSK vaccine on GSK website) [www.cervarix.co.uk/index.asp]
- Gardasil® on the web (Merck vaccine on Merck website) [www.gardasil.com]

Cervical Cancer Action

Cervical Cancer Action: A Global Coalition to Stop Cervical Cancer (CCA) was founded in 2007 to expedite the global availability, affordability, and accessibility of new and improved cervical cancer prevention technologies to women in developing countries.

For more information:

Cervical Cancer Action

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