

HPV (human papillomavirus)

Quick facts

- Approximately 270,000 women die every year from cervical cancer. Over 80% of those deaths occur in developing countries.
- Safe and effective vaccines protect against human papillomaviruses (HPV) types 16 and 18 which cause about 70% of cervical cancer cases.
- HPV is highly transmissible, so vaccinating girls before the age of initiation of sexual activity to protect against HPV infection can be a key strategy to prevent cervical cancer.
- Comprehensive prevention and control strategies which include vaccination, cervical cancer screening, and treatment will save the most lives.

The highest burden of cervical cancer mortality falls on developing countries where the prevalence of HPV infection is higher, and screening and treatment services are lacking.

- HPV also causes other health problems in both sexes including penile cancer, anal cancer, vaginal cancer, vulvar cancer, and genital warts.
- The two new HPV vaccines are highly effective at preventing infections from the two main virus strains (types 16 and 18) that lead to cancer. The vaccines are safe and have been proven to remain effective for at least six to eight years when three vaccine doses are given.
- HPV is the most common sexually transmitted infection, and using condoms is not sufficient for significantly reducing rates of infection. Vaccination is only effective before a person is infected with the targeted virus types, therefore it is optimal to immunise prior to sexual debut.
- Mathematical modelling suggests that, in terms of cervical cancer prevention, it is more cost-effective to focus resources on vaccinating as many girls as possible, rather than vaccinating both girls and boys.
- The World Health Organization recommends that routine HPV vaccination of girls who are 9-13 years old be included in national immunisation programmes in countries where cervical cancer constitutes a public health

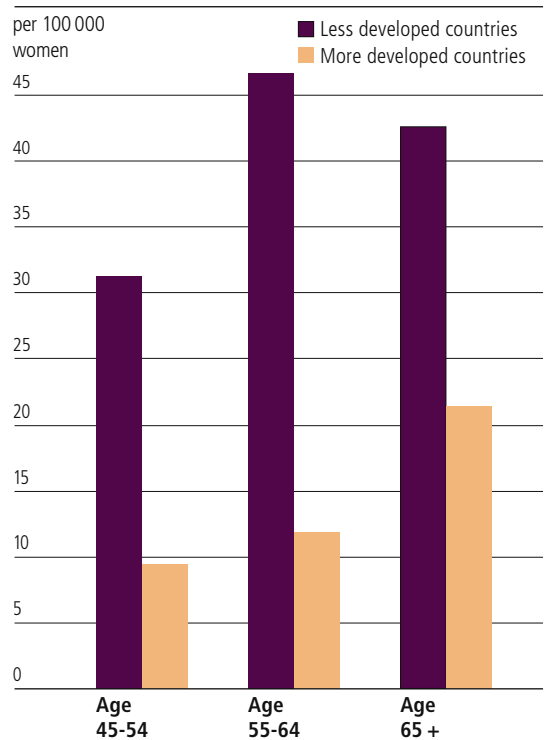
priority and where vaccine introduction is feasible, sustainable financing can be secured, and cost-effectiveness is considered.

- Demand for improved cervical cancer prevention is growing in the developing world and decision-makers need to make informed choices about cervical cancer prevention and control strategies.
- The World Health Organization, the Alliance for Cervical Cancer Prevention and the Cervical Cancer Action coalition, along with many others, recommend comprehensive cervical cancer prevention plans that include both vaccination of young girls and screening and treatment of adult women.

Prevention strategies

Although HPV vaccines are expected to significantly reduce risk and incidence of cervical cancer, the vaccines do not protect against all cancer-causing types. Cervical cancer is easy to prevent, even among unvaccinated women who are infected with HPV, if pre-cancerous lesions are detected and treated early. Over

Age specific cervical cancer mortality rates



the past few decades, routine screening has dramatically reduced cervical cancer morbidity and mortality in the industrialised world. However, women in developing countries often lack access to screening and treatment programmes. While it is important to continue looking for effective ways to expand cervical cancer screening and treatment services for women who are 30 years and older, the new vaccines offer an important new strategy for reducing cervical cancer morbidity and mortality.

HPV vaccines

Two HPV vaccines have been licensed in over 100 countries, including many which are GAVI-eligible. Both have been prequalified by WHO for purchase by UN agencies. In clinical trials, both vaccines were at least 90% effective in preventing persistent HPV infection caused by types 16 and 18 and 93% effective in preventing type-specific cervical lesions.

Both vaccines require three doses within six months. Research is ongoing to determine if fewer doses, or three doses offered on a different schedule, will provide the same levels of protection.

The new vaccines are expensive on the retail market. However, both companies have committed to offering the vaccines at significantly reduced prices in the developing world.

HPV vaccination challenges

Vaccinating adolescent girls before sexual debut is important for reducing rates of cervical cancer. As of 2009, 27 countries have adopted policies that support vaccination of girls between the ages 9 to 13, though policies vary by country. However, most health care systems in developing countries do not offer routine adolescent health visits. Adolescent girls typically visit clinics only for medical emergencies or when they become pregnant. Reaching this group with new health initiatives will be one of the primary challenges. However, initial experience offering HPV vaccination at schools is encouraging.

Cultural barriers or rumours fuelled by misinformation could hinder HPV vaccine acceptance. However, to date response to the vaccine has been largely enthusiastic and supportive among the health care community, women's groups, and the general public in both developing and industrialised countries.

Finally, sufficient evidence is still lacking on long-term duration of vaccine protection, the best and most affordable ways to deliver HPV vaccine to girls, the population impact of HPV vaccination, and vaccine efficacy among HIV-positive populations.

This fact sheet was developed by GAVI in collaboration with PATH.

GAVI's response

In late 2008, the GAVI Alliance prioritised support for HPV vaccines as part of its new vaccine investment strategy, which identified the vaccines that would have the biggest impact on the disease burden in developing countries. Support will depend on GAVI raising additional donor funds for countries wishing to introduce new vaccines. With the HPV vaccines, GAVI enters a new area: the field of adolescent sexual and reproductive health. GAVI will collaborate with reproductive health and cancer control communities to ensure a successful and integrated programme to decrease the global incidence of cervical cancer.

Partners

Many organisations are actively involved with clinical and operational research, policy analysis, and advocacy related to HPV vaccine. The Bill & Melinda Gates Foundation was a major supporter of much of this work. Collaborating partners and their main roles include:

- **The World Health Organization (WHO)**, global HPV advocacy, technical information sharing, developing standards.
- **International Agency for Research on Cancer (IARC)**, epidemiological studies assessing HPV type-specific prevalence among various populations.
- **PATH**, operational research in India, Peru, Uganda, and Vietnam to gather evidence for informed decisions about how to introduce HPV vaccine.
- **Alliance for Cervical Cancer Prevention**, field studies, especially in relation to screening approaches.
- **The Cervical Cancer Action coalition**, advocacy and education.
- **Vaccine manufacturers and academia**, clinical research.
- **UNFPA**, reproductive health.
- **GAVI Alliance**, financial support in roll-out of HPV vaccine in the future.

Resources

- **RHO Cervical Cancer Library**
www.rho.org
- **WHO – Cancer**
www.who.int/reproductivehealth/topics/cancers
- **PATH – Cervical Cancer**
www.path.org/cervicalcancer
- **Alliance for Cervical Cancer Prevention**
www.alliance-cxca.org

Information current as of May 2010

