HPV (human papillomavirus)

Many more women die of cervical cancer in the developing world than in wealthier countries.
Lack of screening programmes in the developing world means that the disease is not identified until it is too late, resulting in higher mortality.

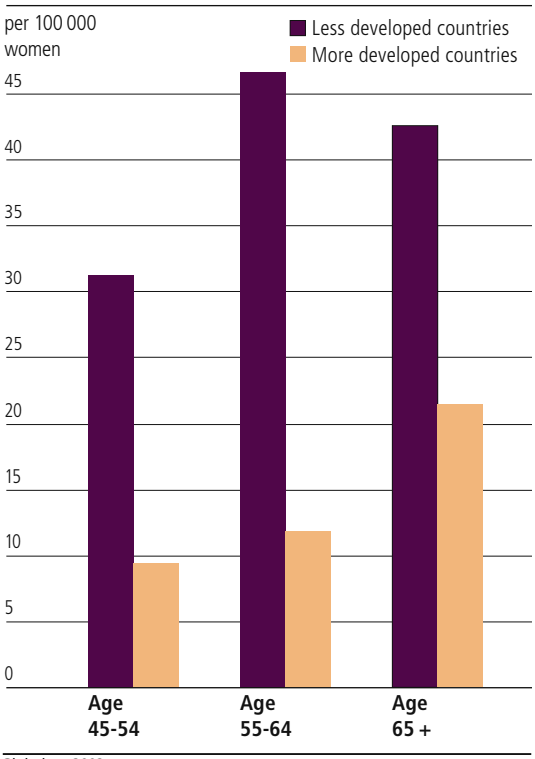
Quick facts

- HPV (human papillomavirus) is the primary cause of cervical cancer.
- Worldwide, cervical cancer affects 490,000 women each year with more than 270,000 deaths.
- About 85% of women dying from cervical cancer reside in developing countries.
- Two HPV types – 16 and 18 – account for 70% of cervical cancer cases (though regional variations exist).
- HPV also causes other health problems including penile cancer, anal cancer, vaginal cancer, oral cancer, and genital warts.
- The World Health Organization recommends that routine HPV vaccination 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.
- Two new HPV vaccines are highly effective at preventing the two main strains of the virus that lead to cancer. The vaccines are safe and have proven to remain effective for at least eight years and it is anticipated that they will continue to protect women for many more years.
- Women most often are infected with HPV during sex. Vaccination is only effective before women or girls are infected with the virus, therefore it is best 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.
- District-scale HPV vaccination projects are achieving high coverage in Africa, Asia and Latin America.
- 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 adolescent girls and screening and treatment of adult women.

Cervical cancer prevention strategies

Cervical cancer is easy to prevent, even among unvaccinated women, if pre-cancerous lesions are detected and treated early. Over the past few decades, routine screening has dramatically reduced cervical cancer mortality in the industrialised world. But screening programs have proven difficult to implement in developing countries. While it is important to continue looking for effective ways to expand screening for women already infected with HPV, the new vaccines offer a complementary strategy for reducing cervical cancer morbidity and mortality worldwide.

Age specific cervical cancer cortality cates



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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 and 93% effective in preventing type-specific cervical lesions. One of the vaccines also protects against genital warts.

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–costing at least US$ 360 for the three-dose series in the US. However, both companies have committed to offering the vaccines at significantly reduced prices in the developing world.

HPV vaccination challenges

It is best to offer HPV vaccine prior to sexual debut – for that reason programmes are seeking to protect girls before puberty or in their early teens. But most health care systems in developing countries do not offer routine adolescent health visits – young adolescents typically visit clinics only for medical emergencies or when they become pregnant. Reaching these girls and young women with new health initiatives will be one of the primary challenges. However, initial experience offering HPV vaccination at schools is encouraging.

Identifying sustained financing for new vaccines is also a challenge.

Cultural barriers or rumours fuelled by misinformation conceivably 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 the developing and industrialised worlds. Communities respond well to the idea of a "cervical cancer vaccine."

Finally, we lack sufficient evidence on duration of vaccine protection, the best ways to reach girls, the impact of vaccinating both girls and boys, and vaccine efficacy among HIV+ populations.

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. Implementation is dependent on GAVI raising additional donor funds to support countries wishing to adopt the new vaccines.

Partners

Many organisations are actively involved with clinical and operational research, policy analysis, and advocacy related to HPV vaccine. The Bill & Melinda Gates Foundation is 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.
- **The Catalan Institute of Oncology (ICO)**, web-based HPV database for country and regional decision-makers.
- **Harvard University**, modelling of health impact and cost effectiveness of various HPV programme approaches.
- **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.

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

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