

Resources for HPV Vaccine and Cervical Cancer Prevention in Low-Income and Lower Middle-Income Countries in 2018

Cervical cancer is a global health crisis. Each year, over 311,000 women die from cervical cancer worldwide, and most deaths occur in poor and developing countries. Cervical cancer is the leading cause of cancer death in most Sub-Saharan African countries. Women living with HIV are four to ten times more likely to develop cervical cancer than their HIV-negative peers.ⁱ

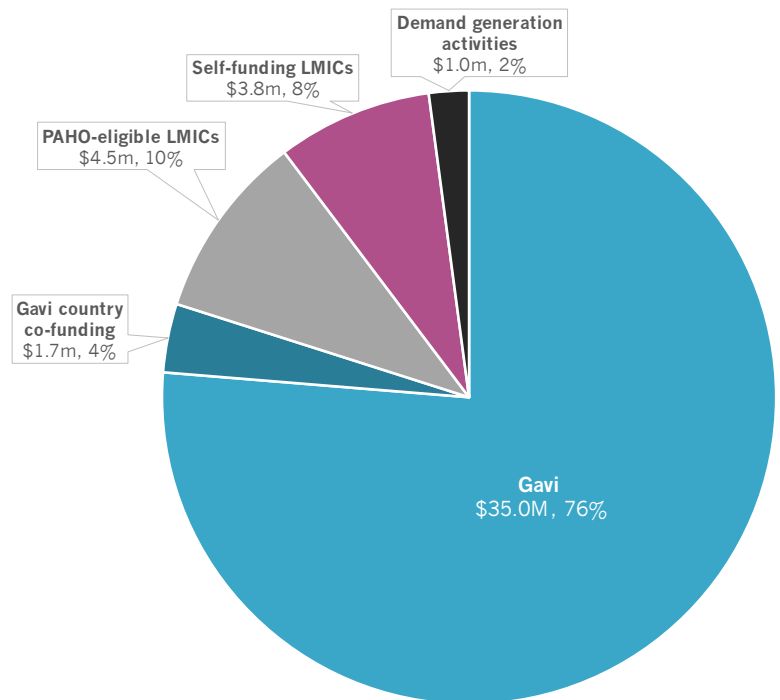
Effective, low-cost tools to prevent and treat cervical cancer are available today, with new tools to save even more women just steps from being deployed. Despite this, resources for cervical cancer prevention, screening, and treatment remain insufficient to change the trajectory of this global epidemic.

Better data on current investments in cervical cancer programs in low-income countries (LICs) and lower middle-income countries (LMICs) can inform decision-makers and provide a basis for advocacy for increased financial and political support. This brief seeks to highlight investments in HPV immunization and cervical cancer screening and treatment in low-resource settings.

HPV vaccination

Vaccines to prevent infection by strains of the human papillomavirus (HPV) that cause cervical cancer are safe and effective, and affordable for countries eligible for negotiated discounts. Most country guidelines recommend that girls between the ages of 9 and 14 receive the two-dose course of HPV vaccine. However, experts at the World Health Organization estimate that only 10% of girls globally have access to the vaccine, in part due to high vaccine cost and insufficient supply.ⁱⁱ And fewer than half of all countries have introduced the HPV vaccine into national immunization programs.ⁱⁱⁱ Total funding for HPV vaccination programs in LICs and LMICs for 2018 – including both vaccine procurement and vaccine implementation – is estimated at \$US 45.9 million.

Figure 1 – Support for HPV Vaccine Programs in LICs and LMICs totaled \$45.9 million in 2018



HPV vaccines for public program use in low-income countries and some lower-middle income countries are funded by Gavi, the Vaccine Alliance, and procured through the services of UNICEF.^{iv,v} Gavi expenditures for HPV vaccination in 2018 – including country demonstration projects, national routine immunization programmes, and operational costs for multi-age cohorts – totaled around \$35 million,^{vi} with per-dose purchase prices (currently around \$4.50) set through manufacturer offers during the last UNICEF tender exercise.

Gavi is funded from a diverse group of donors – prominently the United Kingdom, Norway, the United States, the Bill & Melinda Gates Foundation (BMGF) and the International Finance Facility for Immunisation (IFFIm). Most Gavi-eligible countries must provide co-funding for routine HPV vaccination programs, with such country contributions totaling \$1.7 million in 2018.^{vii}

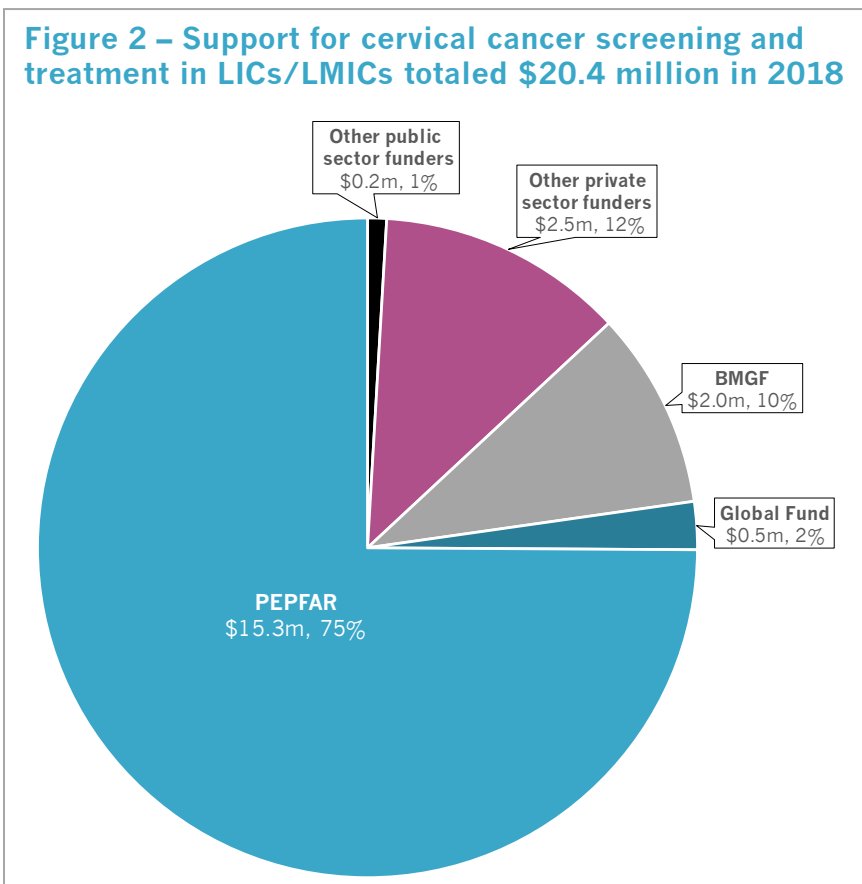
Middle-income countries (MICs) are ineligible for Gavi support, and must procure HPV vaccines via other mechanisms. MICs in the Americas that are members of the Pan-American Health Organization (PAHO) can purchase discounted HPV vaccines from suppliers through PAHO’s Revolving Fund.^{viii} In 2018, lower middle-income PAHO members supported domestic HPV vaccination programs totaling an estimated \$4.5 million, with a purchase price between \$8.50 and \$9.58 per dose.^{ix} However, HPV vaccines have been omitted from PAHO’s 2019 vaccine pricing list, raising concerns about HPV vaccine access and affordability in lower middle-income and upper middle-income countries.^x

While MICs outside the Americas are sometimes eligible for discount vaccines from UNICEF, such vaccines are still up to three times the Gavi price. Otherwise, MICs can purchase directly from suppliers, although prices may be quoted as high as the \$150 per dose price paid in high-income countries. Such pricing significantly limits the ability of MICs to purchase HPV vaccines.^{xi} Self-purchasing LMICs spent an estimated \$3.8 million^{xii} in 2018 on HPV vaccination programs.

Beyond vaccine procurement and implementation, at least \$1 million – and likely more – was provided to efforts to raise awareness and generate demand for HPV vaccination in low- and lower middle-income countries.

Cervical cancer screening and treatment

Cervical cancer screening is an essential part of women’s healthcare. Women are screened for either HPV virus or precancerous lesions, using HPV DNA tests, pap smears, or visual inspection with acetic acid. If precancerous lesions are found, they can be ablated with cryotherapy or thermal ablation. Women with larger lesions are referred for LEEP (Loop Electrosurgical Excision Procedure) treatment to remove potentially cancerous cells, and women with invasive cancers must be treated in hospitals with cancer treatment. Few women in LICs and LMICs have adequate access to these services, although there are efforts underway to increase access. Estimated total funding for cervical cancer screening and treatment in LICs and LMICs totaled \$20.4 million in 2018.



The United States government invests in cervical cancer screening and treatment in LICs and LMICs, most notably through the Centers for Disease Control (CDC) and U.S. Agency for International Development (USAID) as implementing agencies of the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). In May 2018, PEPFAR announced a \$30 million initial investment into the Partnership to End AIDS and Cervical Cancer among HIV-positive women in Africa, which aims to accelerate cervical cancer prevention, screening, and treatment for women living with HIV/AIDS in sub-Saharan Africa.^{xiii} In 2018, PEPFAR provided an estimated \$15.3 million in support for screen-and-treat efforts situated in Botswana, Eswatini, Lesotho, Malawi, Mozambique, Namibia, Zambia, and Zimbabwe.^{xiv}

Given the major burden of cervical cancer/HIV co-morbidities, funding guidelines for the Global Fund to Fight AIDS, TB, and Malaria allow countries to seek support for cervical cancer prevention. The Global Fund now supports three-year programs in Zambia, Malawi, and Tanzania, and provided an estimated \$480,000 in 2018 for the integration of HIV treatment and cervical cancer services in those countries.^{xv,xvi}

Other funders of cervical cancer screening and treatment programs in LICs and LMICs include the Bill and Melinda Gates Foundation, the Swedish International Development Cooperation Agency, and members of Population Service International's philanthropic Maverick Collective.

The future of the cervical cancer response

Existing tools deployed at scale can end cervical cancer deaths, but efforts to develop more efficient and effective interventions hold the potential to accelerate progress. Research efforts are ongoing to determine whether a single dose of the HPV vaccine provides sufficient protection against infection, which would enable programs to greatly expand access. Cutting-edge screening techniques using artificial intelligence to identify precancerous lesions are being tested in low-resource settings, as are lower-cost HPV DNA tests, and less expensive, easier-to-use treatments.

What will it take?

A recent study from Harvard's School of Public Health and the American Cancer Society estimated that an investment of about \$3 billion over a ten-year period will be necessary to fully fund cervical cancer prevention, screening, and treatment programs in low- and middle-income countries.^{xvii} Further investments in HPV vaccine manufacturing capacity are critical to ensure adequate supply.^{xviii}

The World Health Organization is developing a strategic plan for the global elimination of cervical cancer. However, without increased political and financial support, the number of women dying from cervical cancer is projected to rise almost 50% by the year 2040.^{xix} Thus, investment today is necessary to curb the growing trends of deaths from this preventable disease, particularly among LMICs. International donors can catalyze investment in cervical cancer, but this should also be funded out of national budgets, especially in MICs.

New funding commitments in 2019 signaled potential new momentum in combating cervical cancer. In January of 2019, USAID announced its first-ever grants to integrate innovative cervical cancer services with broader reproductive health efforts, with funding for projects in Malawi and Mozambique totaling \$12 million.^{xx} The multilateral partnership Unitaid announced in May of 2019 that it would provide \$33 million to an effort with the Clinton Health Access Initiative (CHAI) to invest in innovative screening methods and portable treatment devices for cervical pre-cancers, with the goal of reducing the cost of cervical cancer screening and treatment to around \$1.00 per patient.^{xxi}

Recommendations

2018 data outlined in this report supports recommendations to critical stakeholders that can better enable the global response against cervical cancer:

- **Funders** – including public sector agencies and private foundations – should consider investing in programs and renew and increase commitments to Gavi and the Global Fund in order to ensure increased access to HPV vaccination and cervical cancer screening and treatment. Such investments should promote the inclusion of cervical cancer prevention in primary health care programs and universal health coverage.
- **Governments in low- and middle-income countries** should continue to expand HPV vaccine and screen-and-treat programs, and develop budgeted national cancer control plans that incorporate cervical cancer prevention programs and enhance disease surveillance through national cancer registries. Governments should also consider expanding HPV vaccine programs to target boys.
- **Vaccine suppliers** should increase investments in manufacturing capacity to ensure sufficient supply, and work with procurers to support fair pricing for procurement and distribution of HPV vaccines in LICs and LMICs. **Donors and partners** should encourage the entry of new vaccine suppliers, including generics, to increase supply and reduce prices.
- **Multisectoral partnerships** between donors, countries, and the commercial sector should prepare to invest in the rapid deployment of new approaches to preventing, screening and treatment of cervical cancer as their effectiveness is demonstrated in low-resource settings.
- **Implementers** should focus on integrating cervical cancer screening and treatment into existing HIV and reproductive health programs.

Methodology and Request for Further Data

Compiled data for this brief is derived from a mixture of limited available sources and represents an estimate combining documented budgets, data on HPV vaccine administration, disbursements, and information obtained from donors and implementers. TogetHER seeks feedback and contributions from donors, experts and advocates to expand our sources and to improve future iterations of this analysis. Please contact us at info@togetherforhealth.org.

About TogetHER

TogetHER focuses on one issue - cervical cancer - to build new programs to prevent and treat the disease. We are bringing together implementers, advocates, donors, governments and policymakers to make rapid progress on preventing cervical cancer. We are coordinating partners, mobilizing critical resources for implementers, and ensuring that cervical cancer receives the attention needed to prevent unnecessary deaths.

This brief was written by Tom Harmon with Celina Schocken of TogetHER.

References

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ⁱⁱⁱ [https://www.unicef.org/supply/files/SESSION_2_03_UNICEF_\(VC\)_UPDATE.pdf](https://www.unicef.org/supply/files/SESSION_2_03_UNICEF_(VC)_UPDATE.pdf)

^{iv} <https://www.who.int/news-room/feature-stories/detail/protecting-adolescents-with-hpv-vaccine>

^v <https://www.gavi.org/about/mission/facts-and-figures/>

^{vi} Provided by Gavi. Data on disbursements available at <https://www.gavi.org/country/all-countries-commitments-and-disbursements/>

^{vii} Ibid

^{viii} <http://www.paho.org/immunization/toolkit/vaccine-procurement-fund.html>

^{ix} Author calculation based data on doses administered reported to WHO. See http://www.who.int/immunization/monitoring_surveillance/data/HPVadmin.xls?ua=1

^x https://www.paho.org/hq/index.php?option=com_docman&view=download&category_slug=revolving-fund-2625&alias=25038-revolving-fund-vaccine-prices-038&Itemid=270&lang=en

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