

Investing in Global Cervical Cancer Prevention: Resources for Low-Income and Lower Middle-Income Countries in 2023

- In 2023, a total of US\$202.8 million was invested in HPV vaccine programming in low- and lower middle-income countries, a year-to-year increase of 244.5% primarily attributed to a large increase in HPV vaccination investments by the funders of Gavi, the Vaccine Alliance.
- US\$54.9 million was invested in cervical cancer screen-and-treat programs in 2023, a significant year-to-year decrease of 18.2%.
- Estimated six-year funding for HPV vaccination (2018-2023) totaled US\$548.1 million, an annual average of US\$91.4 million.
- Between 2018-2023, total funding for cervical cancer screening and pre-cancer treatment totaled US\$312.6 million, averaging US\$ 52.1 million per year.
- These data are likely an underestimate given the difficulty of disaggregating cervical cancer investments from larger, integrated health programs. More transparency specific to cervical cancer investments is needed to ensure accountability at national and global levels.
- Funding remains grossly insufficient to achieve the World Health Organization's targets for the scale-up of cervical cancer elimination targets by 2030.

In 2022, around 660,000 women were diagnosed with cervical cancer globally, and 342,000 lost their lives to the disease.¹ Early detection can make cervical cancer both preventable and treatable, but the dire reality that 90% of cervical cancer deaths occur in low- and middle-income countries speaks directly to the unavailability of prevention interventions for the world's most vulnerable women. Insufficient access to prevention and treatment is compounded by sparse educational resources, gender-based stigma, and misinformation about this disease, its risk factors, and means of prevention.

Cervical cancer is the leading cause of cancer death among women in 37 countries worldwide and is the most common female cancer in 25 countries globally.² A woman's chance of dying from cervical cancer is directly correlated to where she lives, with mortality rates in countries with low Human Development Index (HDI) scores six times higher than those with high HDI scores.³ This disparity is also exacerbated by related health conditions. Women living with HIV are six times more likely to be diagnosed with cervical cancer than their HIV-negative peers, while women testing positive for infection with the human papillomavirus (HPV) that causes almost all cervical cancers are twice as likely



to be infected with HIV.^{4,5} Notably, these statistics likely underestimate the disease’s true burden, with one recent analysis projecting that only 8% of women in lower middle-income countries (LMICs) and 11% of women in low-income countries (LICs) have ever been screened for cervical cancer.⁶

The tools and strategies to prevent this cancer are safe, effective, and increasingly affordable, inspiring the World Health Organization (WHO) to launch a Global Strategy to Accelerate the Elimination of Cervical Cancer as a Public Health Problem in November 2020.⁷ The Strategy sets specific 10-year targets (e.g., “90-70-90 targets”) for scaling up coverage of evidence-based cervical cancer interventions:

- Vaccinating 90% of girls against HPV by age 15;
- Screening 70% of women at ages 35 and 45 for precancerous cervical lesions with a high-performance test; and
- Ensuring that 90% of those women in need receive treatment for cervical disease.

Cervical cancer elimination is only possible with sufficient investment toward these effective interventions. This report, published annually by TogetHER for Health, provides a snapshot of global funding for implementation of cervical cancer prevention activities conducted in LICs and LMICs, omitting domestic investments in screening and treatment by countries themselves due to a lack of publicly available data.¹ Annual data on investments in cervical cancer prevention programs in LICs and LMICs can inform decision-makers and highlight areas of focus for advocates seeking to increase financial and political support for global elimination efforts. All reported figures are in US Dollars (\$).

Cervical Cancer Screening and Pre-Cancer Treatment

Early detection of cervical abnormalities through screening is a critical component of cervical cancer elimination, saving lives in the near-term by ensuring that women who are ineligible for vaccine have access to screening and timely follow-up. The second pillar

of WHO’s Elimination Strategy holds that women be screened twice, ideally at ages 35 and 45 years, with a high-performance test.

The WHO’s most recent guidelines recommend primary screening for the HPV virus, which is more accurate and cost-effective at scale than more widely available methods involving cytology or visual inspection.⁸ Notably, HPV testing offers the potential to accurately screen women for high-risk HPV without requiring physical visits to clinics, provided women are given the opportunity to collect and submit vaginal samples (i.e., self-sampling). If women test positive for high-risk HPV and/or pre-cancerous lesions are detected on the cervix, these lesions can be treated using ablative methods. Women above the age of 50 and those with large lesions are generally referred for colposcopy and/or LEEP (Loop Electrosurgical Excision Procedure). Diagnosed invasive disease should be treated in medical facilities with appropriate cancer treatment capabilities.

Programs enabling access to these services have expanded in recent years, but only around one out of nine

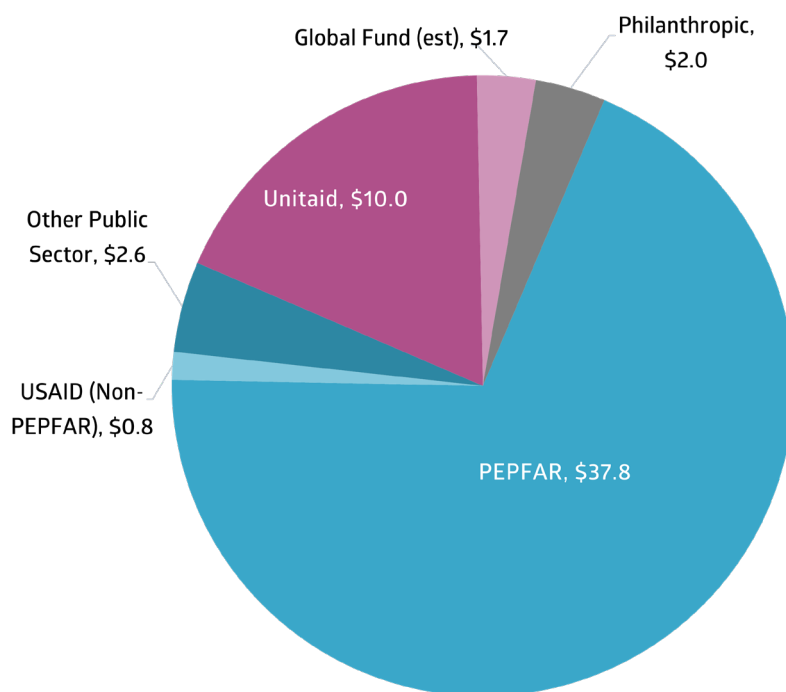


Figure 1. Support for Cervical Cancer Screen-and-Treat in LICs and LMICs totaled \$54.9 million in 2023.

¹ NB: These data do not include research funding or funds allocated for the treatment of cervical cancer. It does include funds allocated for prevention: HPV vaccination, cervical screening, and treatment of pre-cancerous lesions.

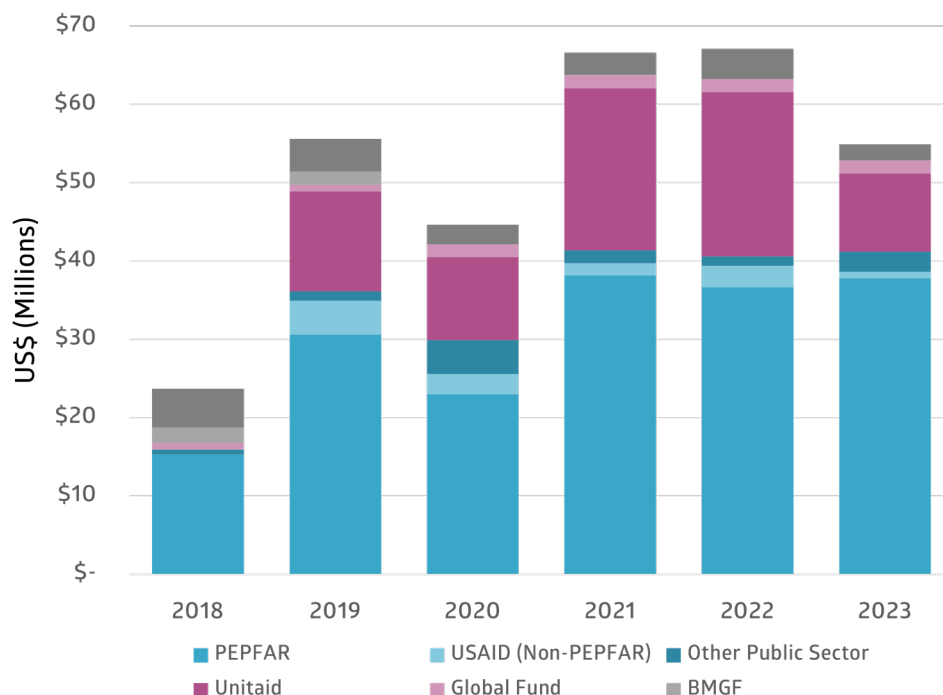


Figure 2. Support for Cervical Cancer Screen-and- Treat in LICs and LMICs decreased by 18.2% between 2021 and 2023.

women in LICs/LMICs has ever been screened for cervical cancer.⁹ Estimated funding for cervical cancer screening and preventive treatment in LICs and LMICs totaled US\$54.9 million in 2023, a decrease of 18.2% from 2022. Funding in 2023 was 6.5% above the US\$51.6 million five-year funding average for cervical cancer screening and treatment in LICs/LMICs from 2018 to 2022.

The United States government (USG) invests in cervical cancer screening and preventive treatment in LICs and LMICs, primarily through the U.S. Agency for International Development (USAID) and the Centers for Disease Control and Prevention (CDC) as implementing agencies of the U.S. President’s Emergency Plan for AIDS Relief (PEPFAR). As of May of 2018, PEPFAR investments in cervical cancer screening and treatment for women living with HIV were substantially increased under the Go Further program, a public-private partnership organized with the George W. Bush Institute, the Joint United Nations Programme on HIV/AIDS (UNAIDS), Merck, and Roche. Go Further has reported screening over 8.9 million women between 2018 and July 2024, almost 70% of whom were screened for the first time.¹⁰ In 2024 PEPFAR is also seeking to accelerate access to HPV vaccination via collaboration between the Go Further, DREAMS (Determined, Resilient,

Empowered, AIDS-free, Mentored, and Safe), and orphans and vulnerable children programs.¹¹

In 2023, the Go Further program was active in twelve African countries of high HIV burden (Botswana, Eswatini, Ethiopia, Kenya, Lesotho, Malawi, Mozambique, Namibia, Tanzania, Uganda, Zambia, and Zimbabwe), aiming to screen women ages 25-49 living with HIV and accessing antiretroviral drugs and, where necessary, treat all precancerous lesions found or refer suspected cancers for further management. In 2023, PEPFAR investments through the Go Further program totaled US\$37.8 million, a modest 3.0% increase from 2022.

Other USG investments in cervical cancer screening and preventive treatment in 2023 included US\$0.8 million spent in support from USAID and the National Academies of Sciences, Engineering & Medicine, toward the integration of innovative cervical cancer screen-and-treat services into voluntary family planning programs in Malawi and Mozambique under the Partnerships for Enhanced Engagement in Research (PEER) award. This small amount of funding reflected final expenses as the project was completed.

The multilateral partnership, Unitaid, provided US\$10 million in 2023, a 52.4% decrease in its support for introduction of innovative tools for screening and treatment of pre-cancerous lesions, including innovative service delivery models, HPV testing with self-sampling, and expansion of portable thermal ablation devices, as well as developing an artificial intelligence-based screening tool. In 2023, Unitaid renewed its commitment by extending its two investments, one implemented by the Clinton Health Access Initiative (CHAI) in sub-Saharan Africa, and the Scale Up Cervical Cancer Elimination with Secondary prevention Strategy (SUCCESS) Project, led by Expertise France, in collaboration with Jhpiego in Côte d'Ivoire, Burkina Faso, Guatemala, and the Philippines. This next phase of investments focuses on a targeted scope, emphasizing the expansion of HPV self-sampling delivery models into communities while supporting countries to strengthen screening and treatment programs. Unitaid has successfully secured co-funding commitments from partners, including a €5 million commitment from the French Government through L'Initiative.¹²

The Global Fund to Fight AIDS, TB, and Malaria supports programs to integrate HIV treatment and cervical cancer services. 2023 represented the first year in the Global Fund's current three-year funding cycle. Funding data for this cycle was unavailable, prompting TogetHER for Health to report an estimated flat funding amount of US\$ 1.7 million for 2023. Public sector contributions to screen-and-treat programs from non-U.S. contributors – including the United Kingdom's Foreign, Commonwealth & Development Office, the Swedish International Development Cooperation Agency, and Scotland's International Development Fund – fell to an estimated US\$2.6 million in 2023. Philanthropic contributions to screen-and-treat programs totaled US\$2.0 million in 2023.

HPV Vaccination

Infection by high-risk types of human papillomavirus (HPV), the virus that causes over 99% of cervical cancers, can be prevented by safe and effective vaccines. Many country guidelines have evolved based on updated guidance from the WHO Strategic Advisory Group of Experts (SAGE), which now recommend that girls between

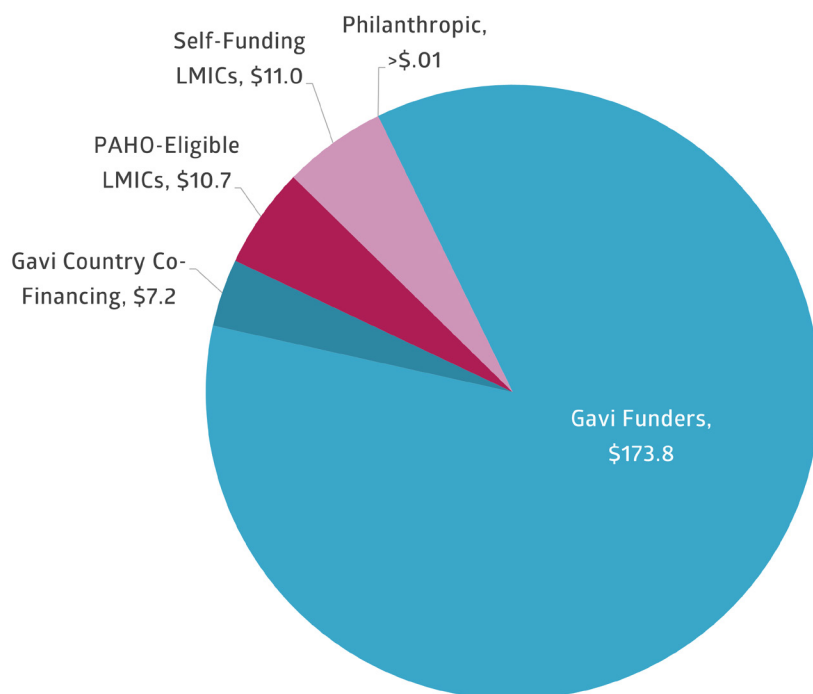


Figure 3. Support for HPV Vaccine Programs in LICs and LMICs Totaled \$202.8 Million in 2023.

9-14 years of age may receive only a single dose of HPV vaccine based on mounting evidence showing comparable preventive effects between multiple doses and a single dose.¹³ Guidance has also evolved to recommend at least two doses for people living with HIV and other immunocompromised individuals, down from three. To date, 53% of low- and lower middle-income countries have introduced the HPV vaccine into national immunization programs, compared to more than 90% of high-income countries.¹⁴ UNICEF estimates that global coverage with the first dose of HPV among girls has reached 27%.¹⁵

Total funding for HPV vaccination programs in LICs and LMICs for 2023 – including both vaccine procurement and vaccine delivery – is estimated at US\$202.8 million, a substantial increase of 244.5% from 2022 levels. This increase was heavily driven by a US\$133.6 million increase in funding for HPV vaccination programs by Gavi, the Vaccine Alliance, alongside a correlating increase in investment by Gavi-eligible countries co-financing their domestic programs. The increase also accounts for higher support from middle-income self-financing their HPV vaccine programs and purchasing doses through the Pan-American Health Organization's (PAHO) Revolving Fund.

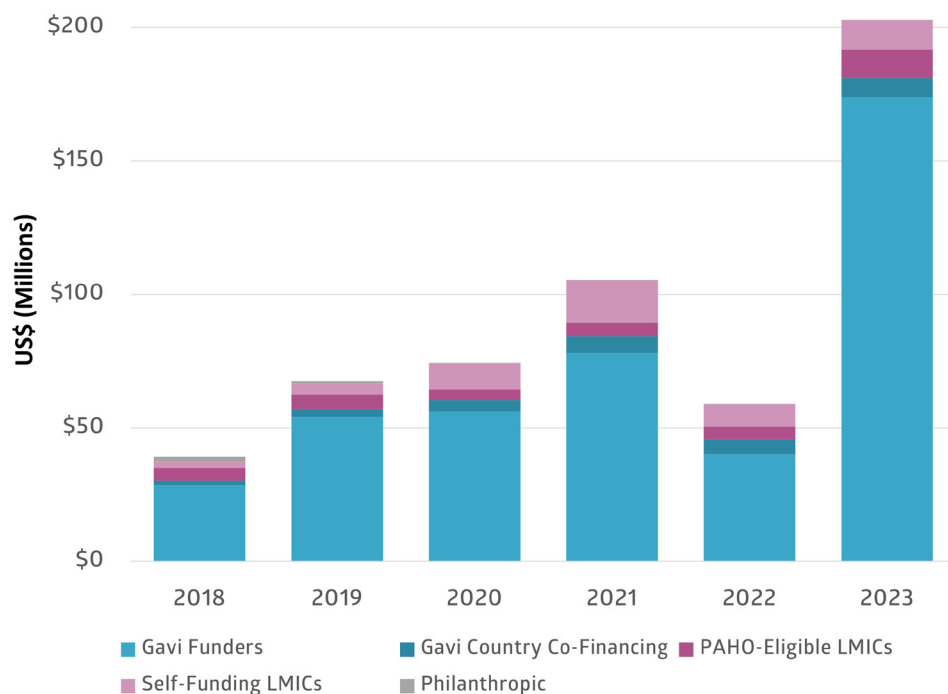


Figure 4. Support for HPV Vaccine Programs in LICs and LMICs Increased by 244.5% between 2022 and 2023.

HPV vaccines for public program use in LICs and in some LMICs are funded by Gavi, the Vaccine Alliance, and procured through the services of UNICEF. Gavi expenditures for HPV vaccination in 2023 – including national routine immunization programs, and operational costs for multi-age cohorts – totaled \$173.8 million, with per-dose purchase prices (currently \$4.50 for Merck’s Gardasil and \$5.18 for GlaxoSmithKline Biologicals’ Cervarix) set through manufacturer offers during the most recent UNICEF tender exercise. HPV vaccine supply from both existing manufacturers and companies entering the market (Innovax, Serum Institute of India, and Walvax) is expected to meet demand in 2025. Gavi has committed to vaccinating 86 million girls against HPV through its programs by the end of 2025.¹⁶

Gavi’s massive increase in funding in 2023 follows a sizable reduction in reported support between 2021 and 2022, during which many countries utilized unused vaccines retained during COVID 19-related school closures. Gavi’s Board approved a revitalization initiative in December of 2022 to provide new country resources for HPV vaccine introduction and to strengthen routine immunization programs starting in 2023, resulting in the sizable upswing in investments.

Gavi is funded from a diverse group of donors – including the United Kingdom, Norway, the United States, the Bill & Melinda Gates Foundation (BMGF) and the International Finance Facility for Immunisation (IFFIm). Gavi-eligible countries are also required to provide co-funding for routine HPV vaccination programs, with such country contributions totaling US\$7.2 million in 2023, an increase of US\$1.8 million (32.2%) from 2022 that correlates to the increase by Gavi itself.

Many LMICs are ineligible for Gavi support, and thus must procure HPV vaccines via alternate mechanisms. Middle-income countries (MICs) in the Americas that are Members of PAHO can purchase HPV vaccines at a negotiated purchase price of \$10.48 per dose from suppliers through PAHO’s Revolving Fund. In 2023, lower middle-income PAHO Members supported their domestic HPV vaccination programs at an estimated US\$10.7 million, a US\$5.8 (118.2%) increase from 2022.¹⁷

LMICs outside the Americas are eligible to purchase vaccines for national use from UNICEF Supply Division at more affordable prices, and in some specific cases at the same price as Gavi-eligible countries. Estimated support by non-PAHO/non-Gavi LMICs funding their own HPV

vaccination programs totaled US\$11.0 million in 2023, a 32.5% increase (US\$2.7 million).¹⁸

A Bright Future but an Uncertain Present

Annual funding for cervical cancer prevention in LICs and LMICs saw uneven progress in 2023, speaking to the divergent investment paths of HPV vaccination and cervical cancer screening and treatment. Investments in HPV vaccination rose far above prior levels while funding for screening and preventive treatment fell by roughly 25% during the same period.

The massive 2023 increase in Gavi funding driven by its revitalization program - a program meant to continue into 2024 and 2025 - will ensure that millions of young women and girls will be protected from cervical cancer and other HPV-related cancers later in life. Nearly twenty years after the introduction of the first vaccines against HPV, this represents a long-awaited leap toward true global access. In 2023, a total of 13 new countries introduced HPV vaccines to their national immunization schedules, bringing the global total to 143 WHO Member States.¹⁹

The investment case for HPV vaccines has been bolstered in recent years. In 2023, the WHO’s Strategic Group of Experts (SAGE) recommended the option of delivering certain HPV vaccines on a single-dose regimen in the general population and a two-dose for people living with HIV has made vaccination a much more cost-effective and logistically feasible intervention. As of the publication of this report, 57 countries have adopted single-dose vaccination schedules for young people.²⁰ In October of 2024, the WHO added Inovax’s Cecolin HPV vaccine to its prequalified list of vaccines eligible for single-dose regimens alongside Cervarix, Gardasil, and Gardasil-9. And the real-world effectiveness of HPV vaccination in preventing cervical cancer is now becoming apparent as cohorts of young women vaccinated in the first several years of availability are now reporting essentially zero new diagnoses.²¹ The increase in HPV vaccine supply unlocked by switching to single-dose schedules also opens up the possibility of gender-neutral vaccination schedules, with analyses showing that vaccinating boys as well as girls could hasten the achievement of elimination goals, while also providing wider protection against some anal, penile, and oral cancers linked to the HPV virus.²²

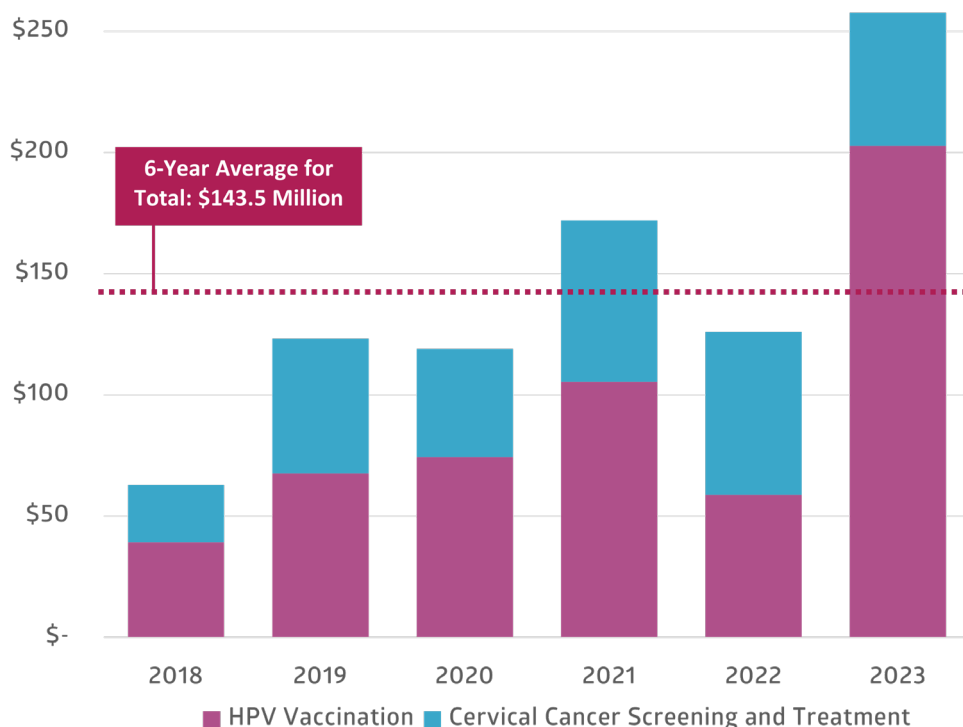


Figure 5. An Average Total of \$143.5 Million Was Invested in Cervical Cancer Vaccination and Cervical Cancer Screening and Treatment from 2018 to 2023.

The availability of HPV vaccines has in the past represented a major limitation to access in LICs and LMICs, but that appears to be a waning concern. New suppliers have entered the market, providing not only a boost to the overall vaccine supply but potentially providing leverage to reduce prices. New vaccines from the Chinese companies Inovax - currently priced at US\$2.90 per dose - and Walvax are now listed on UNICEF's price list. The Cervavac vaccine produced by the Serum Institute of India is still in the early stages of domestic launch, but the Institute's role as a major supplier of other vaccines to UNICEF highlights its potential for more global distribution. UNICEF has recently noted that by the end of 2025 the global supply of HPV vaccines will meet demand, representing a major turning point in prevention of cervical cancer, and other HPV-related cancers.²³

Critical momentum must be rebuilt to ensure that cervical cancer screening programs are moving forward toward higher effectiveness and improved patient outcomes.

Despite increased funding and vaccine supply, challenges remain for achieving the 90% global HPV vaccine coverage goal articulated in the WHO's elimination strategy. COVID-19's global spread in 2020 disrupted HPV vaccination programs around the world, necessitating Gavi's revitalization push. Kenya is just one example of a country in which rollout of HPV vaccination programs has been hindered by misinformation, putting special onus on communications and awareness efforts to combat ongoing concerns.²⁴ Of 13 countries in sub-Saharan Africa for which the Vaccine Confidence Project gathered yes/no responses to the statement "Vaccines are safe," only one (Niger) achieved a 90% "yes" rate mirroring the first WHO elimination pillar, signaling a need for continued awareness raising and effective strategies to combat misinformation and distrust in the vaccine.²⁵ While HPV vaccine supply has moved toward meeting global demand, it remains dependent on the limited number of suppliers. Merck announced in March of 2024 that a large portion of its global supply would not be available due to manufacturing problems and could only commit to delivering 18.8 million of the 29.6 million doses originally committed.²⁶

The substantial increase in HPV vaccination investments marks a critical step toward a cervical cancer-free generation in the future – an incredible global health achievement. However, without a proportionate global commitment to screening and access to treatment today, millions of women around the world remain at risk for a preventable condition, particularly in countries with high burdens of HIV.

While HPV vaccination rates in LICs and LMICs have increased in tandem with increased funding, the year-to-year drop in external funding for cervical cancer screening and treatment speaks to a murkier environment for women at risk of developing cervical cancer today. Recent updates to the WHO's global guidance emphasize testing for the HPV virus as the preferred method, given its high sensitivity and acceptability, especially when deployed via self-sampling, wherein samples are collected by the woman herself, giving her more control and agency over the screening experience. HPV testing can reduce the burden on health systems – especially important in low-resource settings – and offers the potential for scaling at population level, key to achieving the second and third pillars of the WHO elimination strategy. However, individual HPV tests remain more expensive, and a number of more established tests also require investments in costly testing platforms, in staff training, and in setting up reliable referral systems.

Ideally, scale-up of HPV testing in LMICs can replace the more entrenched visual screening methods such as cytology (Pap smears) and visual inspection with acetic acid (VIA) or Lugol's iodine (VILI). Today, these methods account for the majority of cervical screening in LICs and LMICs, in large part due to inexpensive materials, although the overall cost must factor in the time and effort of health workers as well as the effort required by women to present themselves to health clinics and undergo pelvic exams. Logistical challenges are exacerbated by the low sensitivity of VIA, which has a high rate of false negatives – wasting valuable health worker time and putting women at heightened risk for undetected lesions, which if left untreated, may progress to invasive cancer.

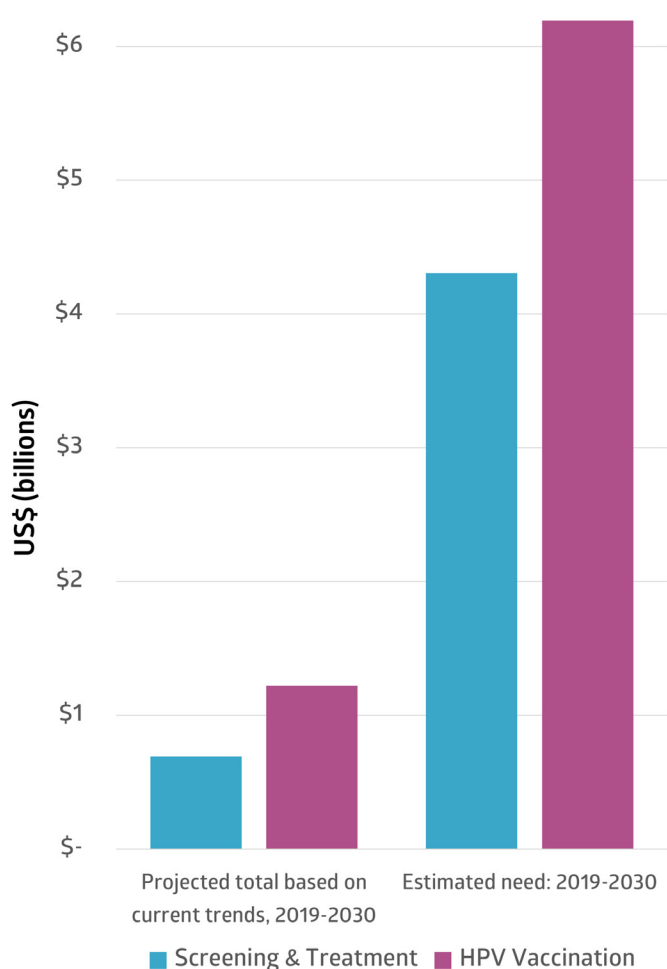


Figure 5. Pace of Funding for Cervical Cancer Prevention in LICs/LMICs (Based on 2019-2023 Data) Compared to Projected Resource Need for Cervical Cancer Elimination in LICs/LMICs 2019-2030.

As global investments in screening and treatment falter, there is a deep concern that programs in low-resource settings have begun to backslide toward visual inspection as the only available and affordable diagnostic method. Critical momentum must be rebuilt to ensure that cervical cancer screening programs are moving forward toward higher effectiveness and improved patient outcomes.

The transition to HPV testing has made some recent progress in policy terms. A self-sampling pilot in Sweden found that the strategy increased testing coverage by 5.3%.²⁷ Regulatory approval for self-sampling for HPV testing by the United States Food and Drug Administration – often a bellwether for approval in other global settings – was given in limited healthcare settings in July of 2024, seen by many experts as a first step toward application

in wider contexts.²⁸ Currently a small number of LICs/LMICs have begun introducing HPV self-sampling into their national policies although scale-up is has been limited by availability.²⁹ Molecular testing infrastructure in LICs and LMICs has increased in recent years thanks to investments in molecular testing platforms to stop the spread of HIV, tuberculosis, and COVID-19, which can also be utilized to process HPV diagnostics.³⁰

The two primary means of removing cervical pre-cancer in LICs and LMICs are cryotherapy (utilizing extreme cold to freeze pre-cancerous tissue) and thermal ablation (the use of targeted heat). Thermal ablation has emerged as a preferred strategy in low-resource settings given the proliferation of portable battery-powered devices that can be deployed even in remote areas and that have high acceptability with patients. Cryotherapy’s use can be limited given the need for bulky tanks of nitrogen gas, which can be challenging to reliably procure. Regardless of method, programs providing cervical cancer screening bear an ethical obligation to provide every woman identified with cervical pre-cancer with treatment for those lesions – requiring commensurate investment in both testing and ablation.

The WHO’s elimination strategy is built upon tools with a track record of effectiveness, but new methodologies to bolster the cervical cancer toolbox continue to advance thanks to investments in research, development, and implementation science.³¹ The most recent analysis of funding for HPV/cervical cancer research and development from Policy Cures Research reported a total investment of US\$ 142 million into HPV and related cervical cancer research and development in 2021, with significant support for the development of therapeutic HPV vaccines.³² The CASCADE Clinical Trials Network organized by the U.S. National Cancer Institute is evaluating the effectiveness of proven interventions to optimize cervical cancer screening, management, and precancer treatment cascade for women living with HIV in low- and middle-income countries and in regions with health disparities in the United States.³³ The use of artificial intelligence to better analyze cervical photographs is currently being studied as a means of improving the accuracy of VIA.³⁴ The International Federation of Gynecology and Obstetrics (FIGO), the

Union for International Cancer Control, and TogetHER for Health have each supported small grants programs seeking to expand the evidence base around effective, innovative cervical cancer prevention strategies in low-resource settings.^{35,36,37}

Uneven Investments in Elimination

In no uncertain terms, overall investments to end this preventable cancer took a massive leap between 2022 and 2023. And yet, this leap could not speak more clearly to the uneven focus on one pillar of WHO's cervical cancer elimination strategy (HPV vaccination) as the other two pillars (screening and treatment) saw a collective year-to-year decline. Early real-world results based on young women vaccinated against HPV in the years immediately after licensure portend well for the young people vaccinated today, spared from the threat of cervical cancer as adults. Today's investments will save hundreds of thousands of lives in the future, a breathtaking accomplishment in global health.

However, today's adult women living in low-resource settings cannot be left behind. The holistic nature of the WHO cervical cancer elimination strategy will not be realized without critical investments in high-performance testing and effective, acceptable ablation to remove cervical pre-cancers. We know such investments can be effectively deployed, thanks to the success of Unitaid-funded pilot programs implemented in seven low- or lower middle-income countries, which achieved 90% cervical cancer treatment targets for women identified with pre-cancerous lesions seven years ahead of the 2030 WHO target.³⁸ Investments in cervical cancer prevention preserve lives, and the women at risk today are no less worthy of that investment than their daughters.

2025 will essentially mark the halfway point to the WHO's 2030 cervical cancer prevention scale-up targets. A critical review of progress made, as well as remaining gaps, will be necessary to better determine future areas of priority and investments needed to align with the WHO elimination plan.

The 2020 WHO strategy projected the costs of achieving the three elimination pillars in low- and lower middle-

income countries at \$10.5 billion between 2019 and 2030. Even with the massive upswing in funding for HPV vaccination in 2023, estimated support for these activities from 2019 to 2023 – the first five years of the 12-year projections – total \$797.9 million, setting a funding pace of only \$1.9 billion for the 12-year period, approximately 18% of WHO's projected need. Those projections also modeled especially high levels of investment in the first several years to initiate program scale-up, funding at a level that has not materialized in our research. Notably, these projections predate the evidence for single-dose HPV vaccine regimens and other potential cost-reducing factors, but even the most optimistic perspective would likely fail to conclude that investments have brought cervical cancer elimination significantly closer to achievement. Our report seeks to estimate funding for cervical cancer prevention in LICs and LMICs as a means to celebrate the commitment of those funding, but just as importantly to highlight the unmet need. Thankfully, new global investments may be in a position to accelerate progress.

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In March of 2024, the Governments of Colombia and Spain hosted the inaugural Global Cervical Cancer Elimination Forum in Cartagena de Indias, Colombia, bringing together PAHO, WHO, UNICEF, the Bill & Melinda Gates Foundation, Unitaid, Global Financing Facility, Gavi, the Vaccine Alliance, USAID, and the World Bank. Significant commitments from these partners totaled \$590 million USD, including new support for global HPV vaccination through Gavi and research and development of new HPV vaccines.³⁹ Specific commitments to expanding screening and treatment are difficult to parse, although the World Bank and the Global Financing Facility (GFF) committed \$400 million for HPV-related programs over a three-year period, building on prior investments to assist countries in providing HPV screening, vaccination and treatment.

The relaunch of United States President Joe Biden's Cancer Moonshot initiative in 2022 signaled an openness to expand into the global cancer space. The October 2024 announcement at the Indo-Pacific

“Quad” summit between the United States, Australia, India, and Japan focused on collaboration to reduce cervical cancer’s burden in the Asia Pacific region marked a potential turning point, not only through a recommitment to supporting Gavi but also through a stated goal of reducing the cost of HPV diagnostics through bulk purchasing.⁴⁰ Beyond its participation in the Quad effort, the Australian government committed AUD 12.5 million to an effort to expand screening in the Western Pacific headed by the Daffodil Centre.⁴¹

Such global commitments stand in contrast to concerning funding shifts likely to impact the global cervical cancer prevention landscape in the near-term. PEPFAR’s Go Further program has stood as the largest funder of screening and treatment in LICs and LMICs since 2018, but recent politicization of PEPFAR programs has put a program that regularly saw multi-year, bipartisan U.S. congressional support move to a year-to-year reauthorization that may be under threat on an annual basis, a chaotic state that could threaten the lives of women living with HIV.⁴² As 2023 saw the end of the USAID PEER program’s support for cervical cancer prevention activities, the United States’ government’s commitment to ensuring early detection and treatment of cervical cancer on the African continent was reduced to one program with an uncertain future.

The United States is not the only funder for whom cervical cancer investment is embedded within a larger program. Cervical cancer prevention investments through multilaterals such as the World Bank/Global Financing Facility and the Global Fund appear difficult to disentangle from wider health systems investments integrating multiple women’s health services. Integration is a key piece of scale-up, with compelling evidence for the crossover benefits of co-locating services. But without such disaggregation, it is difficult to gauge the actual investments in cervical cancer prevention, and in turn to call for necessary accountability by WHO Member States – especially in high-income countries – adopting the goals of the global elimination strategy.

To that end, true commitment to ending this preventable cancer must be increased, sustained, and measurable. The number of individual donors must increase beyond the very small cadre currently making such investments. A more substantial, more predictable, and more sustainable funding landscape is not just an input toward increasing vaccinations, screenings, and treatment but a means to catalyze a larger impact.

As has been seen with Gavi and other major global health programs, predictable financing at high enough levels can provide significant leverage toward reducing the per-patient costs of such programs. In 2024, TogetHER for Health released a report exploring the potential for pooled procurement mechanisms to reduce the per-test price of HPV tests, a key step toward expanding access to the high-performance screening explicitly highlighted in the WHO strategy.⁴³ The most prominent feedback expressed by stakeholders from across relevant perspectives was the need for a sizable and predictable funding stream to support volume commitments and in turn reduce prices.

Policy action must take place in concert with an improved funding landscape. As the United States takes steps toward the approval of self-sampling for HPV testing, the large body of evidence that this strategy saves time, money, and lives must be translated into new guidelines at the country and global level, including in programs funded and coordinated by global donors. Updates in the cervical cancer prevention policy space – including



changes to single-dose regimens and new emphasis on high-performance testing and treatment – should be incorporated into costed national cervical cancer control plans. And more regular and reliable data on cervical cancer diagnoses and mortality and on the number of women and girls accessing cervical cancer prevention interventions should signal where resources can make the most difference, coordinated with context-specific learnings on the best ways to scale up programs.

The rise of global advocacy partnerships has a potentially impactful role to play in moving this agenda forward. In the first full year since its launch by the Sabin Vaccine Institute, the Global HPV Consortium has expanded its membership to over 40 global organizations, launched an Action Plan, and leveraged its strong partnerships to initiate key dialogues with stakeholders in Africa and Asia.⁴⁴ The Asia Pacific Women's Cancer Coalition relaunched in 2024 with a new emphasis on cervical cancer prevention, seeking to support national elimination strategies across the region.⁴⁵ (TogetHER is a member of both of these groups.) Coordinated by JSI with support from the Bill & Melinda Gates Foundation, the HPV Vaccine Acceleration Program Partners Initiative (HAPPI) Consortium launched in January of 2023 to increase and sustain equity, program quality, and accelerate coverage of HPV vaccination by 37 million girls above Gavi's goal of reaching 86 million girls.⁴⁶

This report's funding analysis places its focus on primary and secondary cervical cancer prevention, but the third pillar of WHO's global elimination strategy involves ensuring that 90% of women receive treatment for identified pre-cancer (preventive treatment) as well as for invasive cancer. Given the paucity of screening services in many LICs and LMICs, too many women are diagnosed with cervical cancer too late for preventive treatment. Support organizations like Kenya's KILELE Health, Zambia's Teal Sisters Foundation, and the U.S.-based but globally inclusive Cervivor have provided much-needed survivor perspectives in global fora, courageously leveraging their personal experiences with cervical cancer to make the case for sustained investment for global cervical cancer prevention and control.

The Case for Investing in Cervical Cancer Prevention

Somewhere in the world, a woman dies of cervical cancer – a preventable, treatable condition – every 90 seconds. Since the first edition of this report in 2019, around 2.1 million women have lost their lives to cervical cancer, akin to losing the female population of Medellín, Colombia - a short flight from the site of the March 2024 Global Cervical Cancer Elimination Summit in Cartagena de Indias. In that same time, 1.2 million children have been orphaned by cervical cancer deaths.⁴⁷

The investment necessary to eliminate this cancer is outweighed by the global value it would provide. The economic benefits of HPV vaccination and cervical cancer screening and treatment are highlighted by their inclusion as global "Best Buys" for non-communicable diseases (NCDs). A total of \$3.20 is returned to the global economy for each dollar invested in cervical cancer prevention and treatment, a projection that does not reflect the additional value that single-dose HPV vaccination and improved screening and treatment methods may provide.⁴⁸ WHO analysis models a tremendous economic benefit from the achievement of cervical cancer elimination goals by 2030, bringing an additional \$28 billion to the global economy through 2050.⁴⁹ And the long-term value of elimination – forever removing a debilitating and often fatal condition from a lengthy list of women's health concerns - is essentially limitless.

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In the aggregate, the investment case for cervical cancer prevention is strong, but no less compelling than the moral case for preserving the life of a woman in the prime of her life whose value is impossible to quantify. Access to cervical cancer prevention can be a safeguard against a motherless household, a shuttered storefront, a community missing a passionate leader in a time of crisis. One vaccination, one screening, one visit to a health center can be all the difference.

Recommendations

2023 data outlined in this report supports recommendations to critical stakeholders that can better enable the global response against cervical cancer:

- **International funders** – public sector agencies and private foundations – must emphasize holistic commitments to the global elimination targets, and prioritize screening/early detection and treatment to address existing barriers to access as 2030 approaches. New funding streams must be prioritized to widen and strengthen overall investment. Efforts to provide increased transparency on investments toward cervical cancer prevention – including disaggregation of costs embedded in integrated health budgets – are necessary to both celebrate progress toward elimination and hold agencies accountable to their commitments.
- **Multisectoral stakeholders** including governments, healthcare supply companies, philanthropies, and non-governmental actors must address the issue of high HPV testing costs and consider the application of new or existing pooled funding and procurement mechanisms dedicated to achieving the scale-up of elimination interventions, especially HPV viral testing and preventive treatment.
- **Governments in low- and middle-income countries** should continue to expand HPV vaccine and screen-and-treat programs and develop budgeted national cervical cancer control plans that incorporate cervical cancer prevention programs and enhance disease surveillance through national cancer registries. These plans should incorporate WHO guidelines emphasizing HPV viral testing as the primary method of screening and more strongly consider gender-neutral HPV vaccine programs as supply becomes less of a constraint.
- **Manufacturers** of HPV vaccines, cervical cancer screening diagnostics, and preventive treatment tools must stay engaged as partners in global elimination activities and seek opportunities to provide critical technical expertise. Technology transfer agreements such as that being leveraged to increase Indonesia's HPV vaccine supply should be considered across the cervical cancer prevention continuum.

- **Implementing organizations** – including nongovernmental actors and private sector partners – should continue to seek synergies in women's health by integrating cervical cancer screening and treatment into existing HIV, family planning, and reproductive health programs. This includes integration of health messages, service delivery, clinical training, and quality assurance programs. Further, learnings gleaned from the implementation of promising service delivery models must be documented and disseminated to inform programs in similar settings and improve health outcomes.
- **Civil society** must continue to inform and inspire policymakers, funders, and implementers to make cervical cancer elimination a signature generational effort, arguing for evidence-based strategies to ensure access to cervical cancer prevention, regardless of geography.

2025 represents a point of reflection for the global effort to end this preventable cancer, taking stock of progress since the 2020 launch of the WHO strategy and making plans to fill the significant gap in services that leaves millions of women at risk each year. This report usually ends on a message stating that the time for action and investment in the lives of girls and women is now. Immediate and sustained global action is crucial to achieving cervical cancer elimination by 2030.

Methodology and Request for Data

Data included in this brief have been compiled from multiple sources, including documented budgets, data on HPV vaccine administration, program disbursements, and funding information obtained directly from donors and implementers. This brief provides a high-level aggregate of global funding data; the authors acknowledge that such aggregation can reduce the visibility of specific country and regional contexts for cervical cancer prevention programs. 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.

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References

¹ Bray, Freddie & Laversanne, Mathieu & Sung, Hyuna & Ferlay, Jacques & Siegel, Rebecca & Soerjomataram, Isabelle & Jemal, Ahmedin. (2024). Global cancer statistics 2022: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA: A Cancer Journal for Clinicians*. 74. 10.3322/caac.21834.

² *ibid*

³ International Agency for Research on Cancer. (2024). Global Cancer Observatory. <https://gco.iarc.who.int/en>. Accessed November 9, 2024.

⁴ World Health Organization. (2020). "WHO releases new estimates of the global burden of cervical cancer associated with HIV." <https://www.who.int/news/item/16-11-2020-who-releases-new-estimates-of-the-globalburden-of-cervical-cancer-associated-with-hiv>.

⁵ Houlihan, Catherine & Larke, Natasha & Watson-Jones, Deborah & Smith-McCune, Karen & Shiboski, Stephen & Gravitt, Patti & Smith, Jennifer & Kuhn, Louise & Wang, Chunhui & Hayes, Richard. (2012). HPV infection and increased risk of HIV acquisition. A systematic review and meta-analysis. *AIDS (London, England)*. 26. 10.1097/QAD.0b013e328358d908.

⁶ Bruni, Laia & Serrano, Beatriz & Roura, Esther & Alemany, Laia & Cowan, Melanie & Poljak, Mario & Murillo, Raul & Broutet, Nathalie & Riley, Leanne & de Sanjose, Silvia. (2022). Cervical cancer screening programmes and age-specific coverage estimates for 202 countries and territories worldwide: a review and synthetic analysis. *The Lancet Global Health*. 10. e1115-e1127. 10.1016/S2214-109X(22)00241-8.

⁷ World Health Organization. (2020). Global strategy to accelerate the elimination of cervical cancer as a public health problem. <https://www.who.int/publications/i/item/9789240014107>.

⁸ World Health Organization. (2021). WHO guideline for screening and treatment of cervical pre-cancer lesions for cervical cancer prevention. <https://www.who.int/news/item/06-07-2021-new-recommendations-for-screening-and-treatment-to-prevent-cervical-cancer>. Published July 6, 2021.

⁹ Bruni et al (2022).

¹⁰ George W. Bush Presidential Center. (2024). Go Further Program Highlights. https://gwbushcenter.imgix.net/wp-content/uploads/GoFurther_GlobalHighlights_FY22-Q4.pdf. Accessed October 10, 2024.

¹¹ U.S. President's Emergency Plan for AIDS Relief (PEPFAR) (2023.) PEPFAR Addendum to Fiscal Year 2024: Technical Considerations. <https://www.state.gov/wp-content/uploads/2023/12/PEPFAR-Addendum-to-Fiscal-Year-2024-Final.pdf>. Published December 8, 2023.

¹² Unitaid. (2024). "Unitaid and Expertise France announce the launch of Phase II of the SUCCESS program for the elimination of cervical cancer in ten low-resource countries." [https://unitaid.org/news-blog/unitaid-](https://unitaid.org/news-blog/unitaid-and-expertise-france-announce-the-launch-of-phase-ii-of-the-success-program-for-the-elimination-of-cervical-cancer-in-ten-low-resource-countries)

[and-expertise-france-announce-the-launch-of-phase-ii-of-the-success-program-scale-up-cervical-cancer-elimination-with-secondary-prevention-strategy-for-the-elimination-of-cervical-c/#en](https://www.who.int/news/item/16-11-2020-who-releases-new-estimates-of-the-globalburden-of-cervical-cancer-associated-with-hiv). Published April 16, 2024.

¹³ World Health Organization. (2022). "One-dose Human Papillomavirus (HPV) vaccine offers solid protection against cervical cancer." [https://www.who.int/news/item/11-04-2022-one-dose-human-papillomavirus-\(hpv\)-vaccine-offers-solid-protection-against-cervical-cancer](https://www.who.int/news/item/11-04-2022-one-dose-human-papillomavirus-(hpv)-vaccine-offers-solid-protection-against-cervical-cancer). Accessed October 10, 2024.

¹⁴ World Health Organization (2024). HPV Dashboard. [https://www.who.int/teams/immunization-vaccines-and-biologicals/diseases/human-papillomavirus-vaccines-\(HPV\)/hpv-clearing-house/hpv-dashboard](https://www.who.int/teams/immunization-vaccines-and-biologicals/diseases/human-papillomavirus-vaccines-(HPV)/hpv-clearing-house/hpv-dashboard). Accessed November 7, 2024.

¹⁵ UNICEF. (2024). "Vaccine Market Update: Human Papillomavirus (HPV) Vaccine." Presentation provided by UNICEF from annual Industry Consultation taking place September 17-19, 2024.

¹⁶ Gavi, the Vaccine Alliance. (2024). "Human papillomavirus vaccine support." <https://www.gavi.org/types-support/vaccine-support/human-papillomavirus>. Accessed October 9, 2024.

¹⁷ Author calculation based data on doses administered reported to WHO, based on publicly available information on pricing and implementation cost assumptions derived from Portnoy (citation below). This total includes all countries listed as lower middle-income by World Bank criteria for each calendar year, meaning that countries included in calculation may differ year-to-year as income status changes.

Portnoy, A. (2020). Costing and Evaluating Human Papillomavirus (Hpv) Vaccine Strategies in Low- and Middle-Income Countries (Lmics) Utilizing Modeling and Economic Analyses. Doctoral dissertation, Harvard T.H. Chan School of Public Health. <https://dash.harvard.edu/bitstream/handle/1/42676005/PORTNOY-DISSERTATION-2020.pdf>

¹⁸ *ibid*

¹⁹ UNICEF (2024).

²⁰ World Health Organization. (2024). "WHO adds an HPV vaccine for single-dose use." <https://www.who.int/news/item/04-10-2024-who-adds-an-hpv-vaccine-for-single-dose-use>. Accessed October 15, 2024.

²¹ Palmer, Tim & Kavanagh, Kimberley & Cuschieri, Kate & Cameron, Ross & Graham, Catriona & Wilson, Allan & Roy, Kirsty. (2024). Invasive cervical cancer incidence following bivalent human papillomavirus vaccination: a population-based observational study of age at immunization, dose, and deprivation. *Journal of the National Cancer Institute*. 116. 10.1093/jnci/djad263.

²² Karolinska Institute. (2023). "Gender-neutral HPV vaccination best at preventing cervical cancer." <https://news.ki.se/gender-neutral-hpv-vaccination-best-at-preventing-cervical-cancer>. Published August 11, 2023.

²³ UNICEF. (2024).

²⁴ The Elephant. (2023). "Unmasking the Silent Saboteur: How

Misinformation Affected Kenya's HPV Vaccine Uptake." <https://www.theelephant.info/analysis/2023/10/10/unmasking-the-silent-saboteur-how-misinformation-affected-kenyas-hpv-vaccine-uptake>. Published October 10, 2023.

²⁵ Vaccine Confidence Project (2024). Vaccine Confidence Index Map. <https://www.vaccineconfidence.org/vci/map>. Accessed October 15, 2024.

²⁶ New York Times. (2024). "Millions of Girls in Africa Will Miss HPV Shots After Merck Production Problem." <https://www.nytimes.com/2024/04/18/health/hpv-vaccine-africa-merck.html>. Published April 18, 2024.

²⁷ Economist Impact. A global blueprint for cervical cancer elimination: learnings from Sweden. https://impact.economist.com/perspectives/sites/default/files/download/msd_ccp_fullreport_final.pdf. Accessed October 10, 2024.

²⁸ U.S. National Cancer Institute. (2024). "FDA Approves HPV Tests That Allow for Self-Collection in a Health Care Setting." <https://www.cancer.gov/news-events/cancer-currents-blog/2024/fda-hpv-test-self-collection-health-care-setting>. Published July 24, 2024.

²⁹ Serrano, Beatriz & Ibáñez, Raquel & Robles, Claudia & Peremiquel Trillas, Paula & Sanjose, S. & Bruni, L. (2021). Worldwide use of HPV self-sampling for cervical cancer screening. *Preventive Medicine*. 154. 106900. 10.1016/j.ypmed.2021.106900.

³⁰ Clinton Health Access Initiative. (2024). "Affordability of Screen and Treat Tools for Cervical Cancer." https://cdn.who.int/media/docs/default-source/cervical-cancer/hpv-pricing-slides-2024.pdf?sfvrsn=9a2e29e7_4. Accessed November 8, 2024.

³¹ Unitaid. (2024). Screening and treatment of precancerous lesions for secondary prevention of cervical cancer: Technology landscape report. <https://unitaid.org/assets/Screening-and-treatment-of-precancerous-lesions-for-secondary-prevention-of-cervical-cancer-technology-landscape-report.pdf>. Published September 18, 2024.

³² Policy Cures. (2023). Sexual and Reproductive Health Research and Development: Beyond Spillovers. <https://www.policycuresresearch.org/analysis/2023-srh-g-finder-report>. Accessed October 15, 2024.

³³ HIV/Cervical Cancer Prevention Clinical Trials Network. (2024). "HIV/Cervical Cancer Prevention 'CASCADE' Clinical Trials Network" <https://www.cascade-network.org/public/>. Accessed October 10, 2024.

³⁴ Hou, Xin & Shen, Guangyang & Zhou, Liqiang & Li, Yinuo & Wang, Tian & Ma, Xiangyi. (2022). Artificial Intelligence in Cervical Cancer Screening and Diagnosis. *Frontiers in Oncology*. 12. 851367. 10.3389/fonc.2022.851367.

³⁵ International Federation of Gynecology and Obstetrics. (2021). "Eliminating Cervical Cancer: FIGO calls for grant proposals for new pilot project." <https://www.who.org/project-eliminate-cervical-cancer>. Accessed October 14, 2024.

³⁶ Union for International Cancer Control. (2024). "Project grants in HPV vaccination." <https://www.uicc.org/what-we-do/member-benefits/learning-and-development/grants/project-grants-hpv-vaccination>. Accessed October 10, 2024.

³⁷ TogetHER for Health. (2024). "Cervical Cancer Grants Program." <https://togetherforhealth.org/cervical-cancer-grants>. Accessed October 10, 2024.

³⁸ Clinton Health Access Initiative. (2022). "Unitaid and global health partners reach 90 percent treatment target for women screened with cervical cancer in multi-country pilots." <https://www.clintonhealthaccess.org/news/unitaid-and-global-health-partners-reach-90-percent-treatment-target-for-women-screened-with-cervical-cancer-in-multi-country-pilots/> Accessed November 9, 2024.

³⁹ TogetHER for Health. (2024). "New financial commitments for global cervical cancer elimination." <https://togetherforhealth.org/new-financial-commitments-for-global-cervical-cancer-elimination>. Published March 14, 2024.

⁴⁰ The White House. (2024). "Fact Sheet: Quad Countries Launch Cancer Moonshot Initiative to Reduce the Burden of Cancer in the Indo-Pacific." <https://www.whitehouse.gov/briefing-room/statements-releases/2024/09/21/fact-sheet-quad-countries-launch-cancer-moonshot-initiative-to-reduce-the-burden-of-cancer-in-the-indo-pacific>. Published September 21, 2024.

⁴¹ University of Sydney. (2023). "Australia takes EPICC step to cervical cancer elimination." <https://www.sydney.edu.au/news-opinion/news/2023/11/22/australia-takes-epicc-step-to-cervical-cancer-elimination.html>. Published November 22, 2023.

⁴² Kaiser Family Foundation. (2024). "PEPFAR's Short-Term Reauthorization Sets an Uncertain Course for Its Long-Term Future." <https://www.kff.org/policy-watch/pepfars-short-term-reauthorization-sets-an-uncertain-course-for-its-long-term-future>. Published March 27, 2024.

⁴³ TogetHER for Health. (2024). Pooled Procurement to Expand Access to Cervical Cancer Screening in Low- and Middle-Income Countries. <https://togetherforhealth.org/new-together-publication-explores-pooled-procurements-potential-to-increase-access-to-cervical-cancer-screening>. Accessed October 10, 2024.

⁴⁴ Sabin Vaccine Institute. (2024). "The Global HPV Consortium." <https://www.sabin.org/communities/the-global-hpv-consortium>. Accessed October 10, 2024.

⁴⁵ APAC Women's Cancer Coalition. (2024). "Empower Her: Advancing Women's Cancer Care in Asia Pacific." <https://womenscancercoalition.org>. Accessed October 15, 2024.

⁴⁶ JSI. (2024). "HAPPI Consortium Unveils Project Expansion in Honor of Cervical Cancer Awareness Month." <https://www.jsi.com/happi-consortium-project-expansion-cervical-cancer-awareness-month>. Published January 17 2024.

⁴⁷ Guidi, Florence & Kidman, Rachel & Ferlay, Jacques & Schüz, Joachim & Soerjomataram, Isabelle & Kithaka, Benda & Ginsburg, Ophira & Mailhot, Raymond & Galukande, Moses & Parham, Groesbeck & Vaccarella, Salvatore & Canfell, Karen & Ilbawi, Andre & Anderson, Benjamin & Bray, Freddie & Silva, Isabel & McCormack, Valerie. (2022). Global and regional estimates of orphans attributed to maternal cancer mortality in 2020. *Nature Medicine*. 28. 1-10. 10.1038/s41591-022-02109-2.

⁴⁸ Forbes. (2022). WHO: Here Are The 16 'Best Buys' To Tackle Non-Communicable Diseases." <https://www.forbes.com/sites/brucelee/2022/02/21/who-here-are-the-16-best-buys-to-tackle-noncommunicable-diseases/?sh=1f5b282035ec>. Published February 22, 2022.

⁴⁹ Cervical Cancer Action for Elimination. (2021). "Cervical Cancer Elimination: A Global Vision Requiring a Coordinated Effort." <https://cervicalcanceraction.org/cervical-cancer-elimination>. Accessed October 15, 2024.

TogetHER for Health is a global partnership igniting the movement to end cervical cancer everywhere around the world by driving awareness, supporting catalytic programs, and fighting for the political and financial resources needed to end this preventable disease.

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