

Ending cervical cancer: A call to action

Sanchia Aranda¹ | Seth Berkley² | Sally Cowal³ | Mark Dybul⁴ | Tim Evans⁵ |
 Katja Iversen⁶ | Matshidiso Moeti⁷ | Babatunde Osotimehin^{8,†} | Stefan Peterson⁹ |
 Peter Piot¹⁰ | Chittaranjan N. Purandare¹¹ | Michel Sidibé¹² | Ted Trimble¹³ |
 Vivien Davis Tsu^{14,*}

¹Union for International Cancer Control, Geneva, Switzerland

²Gavi, the Vaccine Alliance, Geneva, Switzerland

³American Cancer Society, Atlanta, GA, USA

⁴The Global Fund, Geneva, Switzerland

⁵The World Bank Group, Washington, DC, USA

⁶Women Deliver, New York, NY, USA

⁷World Health Organization, Regional Office for Africa, Brazzaville, Republic of the Congo

⁸United Nations Population Fund, NY, USA

⁹UNICEF, New York, NY, USA

¹⁰London School of Hygiene and Tropical Medicine, London, UK

¹¹International Federation of Gynecology and Obstetrics (FIGO), London, UK

¹²UNAIDS, Geneva, Switzerland

¹³National Cancer Institute, National Institutes of Health, Washington, DC, USA

¹⁴PATH, Seattle, WA, USA

*Correspondence

Vivien Davis Tsu, PATH, Seattle, WA, USA.
 Email: vtsu@path.org

[†]Deceased

Abstract

The outlook for elimination of the scourge of cervical cancer is bright, because we now have the tools to achieve this goal. In recent years human papillomavirus (HPV) vaccination in high-income countries has resulted in dramatic decreases in HPV infection and associated cervical disease. If all countries with a substantial burden of disease introduce the vaccine nationally, we can protect the vast majority of women and girls most at risk. For women who are beyond the vaccination target age, progress has been made in screening and treatment for cervical precancer, but we must accelerate this momentum to reduce incidence and mortality worldwide to the very low rates found in wealthier countries. Human and financial resources must be increased and directed to programs that follow best practices and reach all women, including the marginalized or disadvantaged. Seven key actions are recommended. Now is the time for action at national, regional, and global levels.

KEYWORDS

Cervical cancer; HPV vaccine; Low- and middle-income countries; Prevention; Screening

United Nations Secretary-General Ban Ki-moon's 2016 call to eliminate cervical cancer was a critical moment showing how far we have come—and how far we still have to go.¹ Elimination of this scourge is an exciting, ambitious, and laudable goal. The first steps toward elimination are embodied in the 2013–2020 Global Action Plan for the Prevention and Control of Noncommunicable Diseases.² The outlook for cervical cancer prevention is bright—we know what to do and we have the tools to do it.³ The papers in this Supplement of the IJGO make that clear.

Of the 640 000 cancer cases caused each year by the human papillomavirus (HPV), 89% affect women, and cervical cancer accounts for 82% of the total.⁴ Preventing cervical cancer does not require difficult changes in behaviors developed over a lifetime, such as eating fewer fatty foods or quitting cigarettes. Like liver cancer, cervical cancer is preventable with safe and effective vaccines. Furthermore, screening and preventive treatment (for cervical precancer) prevents the development of invasive cancer. So we are fortunate to have two

This is an open access article under the terms of the Creative Commons Attribution License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

© 2017 The Authors. *International Journal of Gynecology & Obstetrics* published by John Wiley & Sons Ltd on behalf of International Federation of Gynecology and Obstetrics



prophylactic strategies to deploy—vaccination for young adolescents and screening and preventive treatment for adult women.

In the 10 years since HPV vaccines were introduced in high-income countries, we have seen dramatic decreases in HPV infection and associated cervical disease among vaccinated populations, and even among the unvaccinated (through herd immunity, where coverage is high). As coverage increases, we anticipate significant impact from the vaccine, since it can protect against 70%–90% of cervical cancer and several other HPV-related cancers. If all countries with a substantial burden of disease introduce the vaccine nationally, we can go a long way toward protecting the vast majority of those women and girls most at risk. Unfortunately, only about 3% of eligible girls worldwide are estimated to have been vaccinated against HPV so far, despite that more than 80 countries have officially incorporated the vaccine into their national immunization programs.⁵ Countries with high HIV prevalence, which could benefit most from HPV vaccination because of the increased risk for cervical cancer among HIV-positive women,⁶ are among those with very low coverage rates to date.

There also is good news for women who are beyond vaccination target age when HPV vaccines become available in their communities. New, relatively simple and affordable cervical cancer screening and preventive treatment strategies are being adopted by many countries that previously had no such programs.⁷ In most cases, treatment of women with precancer is relatively low cost, especially compared to the cost of invasive cancer treatment (which, in far too many cases, is not widely accessible). More women are now being screened and treated than ever before, but global coverage, again, is estimated to be very low.

While this Supplement focuses on prevention of disease, it should be noted that expanding services to treat invasive cancer could also save many lives.

In spite of low coverage with vaccination and screening/preventive treatment, there is positive momentum and cause for optimism. In just the past few years:

1. The Indian government organized a high-level meeting on moving the cervical cancer screening and control agenda forward— notable in a country with 25% of global cervical cancer deaths;
2. Gavi, the Vaccine Alliance, approved many new countries for HPV vaccine support, including populous Indonesia;
3. In Africa, the WHO supported 18 countries in piloting HPV vaccination, as well as introducing HPV immunization nationwide in six others;
4. The Joint United Nations Programme on HIV/AIDS (UNAIDS) released a comprehensive report on leveraging the synergies between HIV, HPV, and cervical cancer,⁸ and the 2016 UN General Assembly Political Declaration on HIV and AIDS called for integration of HIV and cervical cancer services⁹;
5. The annual UNAIDS-led Global AIDS Monitoring report (GAM) will include two new indicators on HPV vaccination and cervical cancer screening for HIV-positive women beginning in 2017;
6. Harvard and the American Cancer Society completed groundbreaking modeling of the cost of cervical cancer prevention globally¹⁰;

7. Both *The New England Journal of Medicine*³ and *The Lancet*¹¹ published noteworthy papers highlighting the importance of cervical cancer as an equity issue and the urgent need for cervical cancer prevention to expand from pilot projects to national scale.

To accelerate this momentum and reduce cervical cancer incidence and mortality worldwide to the very low rates found in wealthier countries, it is essential that human and financial resources be significantly increased and directed to cervical cancer programs that follow best practices and reach all women, including those who are marginalized or disadvantaged. This requires strategic partnerships. A key focus of one coalition, the Cervical Cancer Prevention Initiative,¹² is to broaden the stakeholder base, engaging organizations for which cancer has not traditionally been a focus—groups like Every Woman Every Child, The US President's Emergency Plan for AIDS Relief (PEPFAR), Rotary International, UNAIDS, and Women Deliver. Furthermore, building on lessons learned from HIV activism and advocacy, civil society—in particular, networks of women living with HIV and the women's rights movement—have a critical role to play in cervical cancer prevention and treatment. The coalition also is seeking common ground with funding mechanisms outside typical bilateral or foundation channels—such as the Global Fund and the Global Financing Facility. Another exciting development is the launch of the United Nations Global Joint Programme on Cervical Cancer with participation from WHO, IAEA, IARC, UNAIDS, UNFPA, UNICEF, and UN Women.¹³ Just getting started as this Supplement goes to press, this partnership also seeks to scale up prevention, screening, and treatment, with a focus on low- and lower-middle-income countries.

Many leaders see cervical cancer prevention and control as a human rights issue. They are quick to point out that progress in prevention will contribute not only to the Sustainable Development Goals for good health and well-being, but also to goals that seek to increase gender equity.¹¹ Women play a critical role in sustainable development. When they are able to reach their full potential, women contribute to thriving families, build more resilient communities, are stalwart stewards of the environment, and are powerful drivers of economic development. It will be difficult for countries to achieve their national aspirations without addressing diseases that deprive them of the talents and contributions of women in the prime of their lives.

At this point in time, scaling up cervical cancer prevention is not a question of waiting for new information or delaying until ideal technologies come to market. It is a question of motivation, commitment, and passion for improving women's health outcomes. It is a question of ensuring that the women who benefit from vastly improved obstetric care or HIV management also have access to screening and will not be torn from their families a decade or two later as victims of cervical cancer. It is a question of ensuring that girls everywhere are protected from HPV infection through vaccination.

Overall, we need to:

1. Harness the tools and best practices we already have in hand and scale them up into national programs;



2. Seek synergies with other primary healthcare services, including integration with HIV services;
3. Ensure seamless linkages between screening and treatment of precancer so that no woman is lost to follow-up;
4. Negotiate affordable vaccine pricing for non-Gavi countries and develop innovative financing mechanisms for essential screening and precancer treatment supplies, equipment, and training;
5. Work with all relevant stakeholders to ensure public and policy maker confidence in HPV vaccination and new screening and preventive treatment modalities in order to achieve maximal vaccine and screening coverage;
6. Capture reliable data on cervical cancer prevention services in national health information systems so that progress against essential indicators can be tracked nationally and globally and so that resources can be allocated where they are needed most;
7. Where resources permit, improve access to definitive cancer treatment and effective palliative care for those who did not benefit from prevention efforts.

The end of cervical cancer is now in sight. With funding already available to vaccinate an additional 40 million girls by 2020, we have a huge opportunity to reduce the number of women dying from cervical cancer. Similar resources must also be mobilized for screening. We call on the new UN Secretary-General, donors, and all national leaders—particularly those in low- and middle-income countries—to support this call for action, to drive national political will, and encourage increased UN coordination and collaboration. Now is the time to prevent the unrelenting pain and isolating stigma of cervical cancer. Now is the time for action at national, regional, and global levels. We can do this and we must.

AUTHOR CONTRIBUTIONS

VT created the first draft. All other authors contributed suggestions and reviewed the final draft.

CONFLICTS OF INTEREST

The authors have no conflicts of interest.

REFERENCES

1. UN Secretary-General Message on World Cancer Day, 2016 <http://www.un.org/en/events/cancerday/sgmessage.shtml>. Accessed January 16, 2017.
2. WorldHealthOrganization. *Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013–2020*. Geneva: WHO; 2013. http://apps.who.int/iris/bitstream/10665/94384/1/9789241506236_eng.pdf?ua=1. Accessed January 16, 2017.
3. Tsu V, Jerónimo J. Saving the world's women from cervical cancer. *N Engl J Med*. 2016;374:2509–2511.
4. Plummer M, de Martel C, Vignat J, Ferlay J, Bray F, Franceschi S. Global burden of cancers attributable to infections in 2012: A synthetic analysis. *Lancet Glob Health*. 2016;4:e609–e616.
5. Bruni L, Diaz M, Barrionuevo-Rosas L, et al. Global estimates of human papillomavirus vaccination coverage by region and income level: A pooled analysis. *Lancet Glob Health*. 2016;4:e453–e463.
6. Denslow SA, Rositch AF, Firnhaber C, Ting J, Smith JS. Incidence and progression of cervical lesions in women with HIV: A systematic global review. *Int J STD AIDS*. 2014;25:163–177.
7. Cervical Cancer Action website. Global maps. <http://cervicalcanceraction.org/comments/maps.php>. Accessed March 21, 2017.
8. UNAIDS. *HPV, HIV and cervical cancer: Leveraging synergies to save women's lives*. Geneva: UNAIDS; 2016. http://www.unaids.org/sites/default/files/media_asset/JC2851_HP-V-HIV-cervicalcancer_en.pdf. Accessed January 16, 2017.
9. United Nations. Political Declaration on HIV and AIDS: On the Fast-Track to Accelerate the Fight against HIV and to End the AIDS Epidemic by 2030. A/RES/70/266. <http://www.unaids.org/en/resources/documents/2016/2016-political-declaration-HIV-AIDS>. Accessed February 22, 2017.
10. Campos NG, Sharma M, Clark A, et al. Comprehensive global cervical cancer prevention—costs and benefits of scaling up within a decade. Center for Decision Science, Harvard School of Public Health and the American Cancer Society, 2016. <https://www.cancer.org/content/dam/cancer-org/cancer-control/en/reports/the-cost-of-cervical-cancer-prevention.pdf>. Accessed March 21, 2017.
11. Ginsburg O, Badwe R, Boyle P, et al. Changing global policy to deliver safe, equitable, and affordable care for women's cancers. *Lancet*. 2017;389:871–880.
12. Cervical Cancer Action. Cervical cancer prevention initiative. www.cervicalcanceraction.org/initiative/index.php. Accessed January 16, 2017.
13. The United Nations Global Cervical Cancer Programme. UN joint global programme on cervical cancer prevention and control. www.who.int/ncds/un-task-force/un-joint-action-cervical-cancer-leaflet.pdf. Accessed January 16, 2017.