HIV AND CERVICAL CANCER

Human Papilloma Virus (HPV) is the most common sexually transmitted infection.[1]
HPV types 16 and 18 are responsible for nearly 50% of high grade cervical pre-cancers.[2] Most HPV infections clear on their own, but persistent infection with these HPV types can cause cervical cancer.

Cervical cancer is an AIDS-defining illness and the most common cancer among women living with HIV globally.[3,4]

CERVICAL CANCER IS A PREVENTABLE, CURABLE DISEASE AND CAN BE ELIMINATED AS A PUBLIC HEALTH PROBLEM WITH PRIMARY AND SECONDARY PREVENTION, TREATMENT AND CARE OF CERVICAL CANCER.[4]

PRIMARY PREVENTION

Girls 9–14 years

- HPV vaccination

Girls and boys, as appropriate

- Sexuality education tailored to age and culture
- Condom promotion/provision for those engaged in sexual activity
- Male circumcision
- Health information and warnings about tobacco use

SECONDARY PREVENTION

All women >30 years of age

- Screening with high-performance test equivalent to or better than HPV test
- Followed by immediate treatment or as quickly as possible, of precancerous lesions

Women living with HIV 25 years and older

- Screen, triage and treatment of precancerous lesions

TREATMENT OF INVASIVE CANCER

All women, as needed

Treatment of invasive cancer at any age

- Surgery
- Radiotherapy
- Chemotherapy
- Palliative care

BURDEN OF HIV AND CERVICAL CANCER

HIV

In 2021, an estimated **20.6 million** [18.4 million–23.3 million] women and girls were living with HIV. In sub-Saharan Africa, women and girls accounted for **63%** of all new HIV infections in 2021. Adolescent girls and young women (aged 15 to 24 years)—one of whom becomes infected with HIV every three minutes—are three times more likely to acquire HIV than adolescent boys and young men of the same age group in **sub-Saharan Africa**.[5]

Key populations account for less than **5%** of the global population, but they and their sexual partners comprised **70%** of new HIV infections in 2021. Female sex workers have **30 times** greater risk of acquiring HIV than adult women (15–49) in the general population.[5]

Cervical Cancer

Globally, **#4** most common cancer among women, with **>600 000** estimated cases and **342 000** deaths in 2020.
On average, one woman dies from cervical cancer **every two minutes**.[6]

In sub-Saharan Africa, **#2** most common cancer and **#1** cause of cancer-related deaths among women.[6]

Among female sex workers, the overall median prevalence is at **39%** and **23%** for high-risk HPV subtypes 16 and 18, respectively.[7]

50% Cervical cancer deaths expected to rise by **50%** between 2020 and 2040 if HPV and cervical cancer interventions are not dramatically scaled up.[8]

CO-INFECTION AND CO-MORBIDITY

HIV ⟷ **HPV and Cervical Cancer**

- Women with any HPV infection have **2x** higher risk of acquiring HIV than women without HPV infection[2]
- Women living with HIV have high risk of persistent HPV infection.[9,10,11]
- An estimated **5%** of all cervical cancer cases are attributable to HIV.[12] In nine countries in Southern Africa, **>40%** of women diagnosed with cervical cancer are women living with HIV.[12]
- Women living with both **HIV** and **cervical cancer** face double stigma.[13]
- Women living with HIV are **6x** more likely to develop cervical cancer.[12]
- Cervical cancer develops at least **2x** as fast for women with untreated HIV infection than other women.[11] Early HIV treatment initiation and adherence reduces incidence and progression of precancerous cervical lesions.[14]

HIV AND CERVICAL CANCER: DISEASES OF INEQUALITY

9 in 10 women dying from cervical cancer live in low- and middle-income countries (LMICs)[15]

10x

Women in Eastern and Southern Africa are **10** times more likely to die of cervical cancer than women in Western Europe and Australia[8]

3 in 10 girls in LMICs have access to the HPV vaccination, compared with 9 in 10 girls in high-income countries[16]

GLOBAL STRATEGIES AND TARGETS

The WHO and partners have set out a global vision through the **Global Strategy to Accelerate the Elimination of Cervical Cancer as a Public Health Problem** by achieving a threshold of **<4 cases per 100 000 women-years by 2120.[4]**

Global 2030 cervical cancer elimination targets

The following **90–70–90** targets must be met by 2030 for countries to be on the path towards cervical cancer elimination:

90%	70%	90%
of girls fully vaccinated with HPV vaccine by 15 years of age.	of women are screened with a high-performance test by 35 years of age and again by 45 years of age.	of women identified with cervical disease receive treatment (90% of women with precancer treated, and 90% of women with invasive cancer managed).

Achieving these targets could avert **300 000** deaths by 2030, over **14 million** by 2070 and over **62 million** deaths by 2120.[4]

Global AIDS Strategy 2021–2026

The Global AIDS Strategy has prioritized people-centred and local-context specific integrated services, including for cervical cancer, for ending the AIDS epidemic by 2030. The Strategy and 2025 global HIV targets are aligned with the Global Strategy for cervical cancer elimination.[17,18]

2025 global HIV targets:

90%	90%	90%
of girls aged 9–14 in priority countries have access to HPV vaccination.	of women living with HIV have access to integrated or linked services for HIV treatment and cervical cancer.	of women, adolescent girls and young women have access to sexual and reproductive health services, including for HPV and cervical cancer, that integrate HIV prevention, testing and treatment services.

CERVICAL CANCER AND HIV INTEGRATED STRATEGIES AND INTERVENTIONS

1.

Primary prevention with prioritization of HPV vaccination for girls aged 9–14 at a national scale:[4,19]

- For HPV vaccines, a 2-dose schedule with a 6-month interval between doses is recommended for individuals receiving the first dose before 15 years of age.
- A 3-dose schedule (0, 1–2, 6 months) should be used for all vaccinations initiated ≥15 years of age, including in those younger than 15 years known to be immunocom promised and/or HIV-infected (regardless of whether they are receiving antiretroviral therapy).

2.

Scale up secondary prevention through a screen, triage and treat approach for all women living with HIV, adapted to the local context:[20]

- WHO suggests for cervical cancer prevention among women living with HIV: HPV DNA detection in a screen, triage and treat approach starting at the age of 25 years with regular screening every 3 to 5 years; in this approach, using HPV DNA detection as the primary screening test, WHO suggests using partial genotyping, colposcopy, VIA or cytology to triage women after a positive HPV DNA test.
- WHO suggests that women living with HIV who have screened positive on an HPV DNA primary screening test and then negative on a triage test, are retested with HPV DNA testing at 12 months and, if negative, move to the recommended regular screening interval.
- Once a decision to treat a woman is made, it is good practice to treat as soon as possible within six months to reduce the risk of loss to follow-up.
- Where HPV DNA testing is not yet operational, regular screening interval of every 3 years when using VIA or cytology as the primary screening test.

3.

Provide diagnosis and treatment of invasive cervical cancer with access to surgery, radiotherapy, chemotherapy and/or palliative care as needed.

4.

Integrate HPV and cervical cancer services with sexual and reproductive health, primary healthcare and HIV services, antenatal care, well women clinics, and school-based health outreach:[18, 21]

- Establish links between HIV and cervical cancer services at all levels of the health system, including community systems, for cross-referrals.
- Integrated policies, programmes and services across the life course that are people-centered, human rights- and needs-based, adapted to the local context and promote efficiencies while maintaining quality.
- Offer all women living with HIV cervical cancer screening as part of standard HIV care.

5.

Advance gender equality, girls' and women's empowerment, and key populations and girls' and women's sexual and reproductive health and **rights:**

- Transformative actions to end gender inequalities, health disparities, stigma, discrimination and gender-based violence.
- Support and empower women and organizations of women living with HIV.
- Provide cervical cancer screening and treatment for transgender men, non-binary, gender fluid and intersex individuals who have a cervix.[22]

6.

Empower, engage and strengthen capacities of communities and civil society partners:[22]

- Community engagement and community-led services for peer support, addressing stigma and discrimination, advocacy, accountability, outreach, demand creation and referrals, sexuality education, research, and resource mobilization.

7.

Provide adequate human and financial resources for scaling up HPV vaccination and cervical cancer screening, diagnosis, treatment and care services.

8.

Advance innovations and research in low-cost, easy to use and self-care technologies for cervical cancer screening and for treatment of invasive cervical cancer.

"We save a woman's life by ensuring that she has access to antiretroviral therapy for HIV, yet she dies from cervical cancer. Services must be integrated and available to all, without exception." – UNAIDS[23]

1 Freire, et al. (2014) Genital Prevalence of HPV Types and Co-Infection in Men. International Brazilian Journal of Urology. 40(1): 67-71. https://doi.org/10.1590/s1677-5538.ibju.2014.01.10
2 WHO Cervical Cancer Fact Sheet. Geneva: World Health Organization; 2022. https://www.who.int/news-room/fact-sheets/detail/cervical-cancer
3 WHO Consolidated guidelines on HIV prevention, testing, treatment, service delivery and monitoring: recommendations for a public health approach. Geneva: World Health Organization; 2021.
4 Global strategy to accelerate the elimination of cervical cancer as a public health problem. Geneva: World Health Organization; 2020
5 IN DANGER: UNAIDS global AIDS update 2022, https://www.unaids.org/sites/default/files/media_asset/2022-global-aids-update_en.pdf
6 Sung H, Ferlay J, Siegel RL, Laversanne M, Soerjomataram I, Jemal A, et al. Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA Cancer J Clin. 2021:71:209–49. doi:10.3322/caac.21660.
7 Soohoo M, Blas M, Byraiah G, Carcamo C, Brown B. Cervical HPV Infection in Female Sex Workers: A Global Perspective. Open AIDS J. 2013;7:58-66
8 International Agency for Research on Cancer. Cancer Tomorrow. https://gco.iarc.fr/tomorrow/graphic-bar?type=1&type_sex=0&mode=population&sex=2&populations=900&cancers=23&age_group=value&apc_male=0&apc_female=0&single_unit=500000&print=0
9 Kojic, E. M., et al. (2016). Human papillomavirus vaccination in HIV-infected women: need for increased coverage. Expert review of vaccines, 15(1), 105–117. doi:10.1586/14760584.2016.1110025
10 Ellerbrock TV, Chiasson MA, Bush TJ, Sun XW, Sawo D, Brudney K, Wright TC. Incidence of cervical squamous intraepithelial lesions in HIV-infected women. JAMA. 2000;283:1031–1037.
11 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(3):163-177. doi:10.1177/0956462413491735
12 Stelzle D, et al. (2020) Estimates of the global burden of cervical cancer associated with HIV. The Lancet Global Health. November 16 2020. https://doi.org/10.1016/S2214-109X(20)30459-9
13 Rosser JI, Njoroge B, Huchko MJ. Cervical Cancer stigma in rural Kenya: what does HIV have to do with it? Journal of Cancer Education. 2016 1 June;31(2):413-8.
14 Kelly H, et al. Association of antiretroviral therapy with high-risk human papillomavirus, cervical intraepithelial neoplasia, and invasive cervical cancer in women living with HIV: a systematic review and meta-analysis. Lancet HIV. 2017;5(l):e45-e58.
15 Hull R, Mbele M, Makhafola T, Hicks C, Wang SM, Reis RM, Mehrotra R, Mkhize-Kwitshana Z, Kibiki G, Bates DO, Dlamini Z. Cervical cancer in low and middle-income countries. Oncol Lett. 2020 Sep;20(3):2058-2074. doi: 10.3892/ol.2020.11754. Epub 2020 Jun 19. PMID: 32782524; PMCID: PMC7400218.
16 WHO/IVB Database (June 2022). https://app.powerbi.com/view?r=eyJrIjoiNDIxZTFkZGUtMDQ1Ny00MDZkLThiZDktYWFlYTdkOGU2NDcwliwidCI6ImY2MTBjMGI3LWJkMjQtNGIzOS04MTBiLTNkYzI4MGFmYjU5MCIsImMiOjh9
17 End inequalities. End AIDS. Global AIDS strategy 2021-2026. Geneva: Joint United Nations Programme on HIV/AIDS; 2021.
18 A/75/L.95. Political Declaration on HIV and AIDS: ending inequalities and getting on track to end AIDS by 2030. New York: United Nations General Assembly; 2021.
19 WHO Human Papillomavirus vaccines: WHO position paper, May 2017 https://apps.who.int/iris/handle/10665/255354
20 WHO guideline for screening and treatment of cervical pre-cancer lesions for cervical cancer prevention, second edition. Geneva: World Health Organization; 2021.
21 New WHO recommendations on screening and treatment to prevent cervical cancer among women living with HIV. Policy brief. Geneva: World Health Organization; 2021.
22 UNAIDS Programme Coordinating Board's 47th meeting thematic segment: Cervical cancer and HIV - addressing linkages and common inequalities to save women's lives. 18 December, 2020. https://www.unaids.org/sites/default/files/media_asset/PCB47_Thematic_Segment_BN__EN.pdf
23 https://www.unaids.org/en/resources/presscentre/featurestories/2019/february/20190204_cervical-cancer

UNAIDS

World Health Organization