DRAFT:
GLOBAL STRATEGY TOWARDS THE ELIMINATION OF CERVICAL CANCER AS A PUBLIC HEALTH PROBLEM
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CERVICAL CANCER: A GLOBAL PUBLIC HEALTH PRIORITY

[SECTION IN DEVELOPMENT]

In January 2019, at its 144th Session, the Executive Board requested the Director-General to develop, in consultation with Member States and other relevant stakeholders, a draft global strategy to accelerate cervical cancer elimination, with clear goals and targets for the period 2020–2030, for consideration by the Seventy-third World Health Assembly, through the Executive Board at its 146th session.

http://apps.who.int/gb/ebwha/pdf_files/EB144/B144(2)-en.pdf
ABBREVIATIONS

HIV – human immunodeficiency virus

HPV – human papillomavirus

LMICs – low- and lower-middle income countries

NCD – noncommunicable disease

SDGs – sustainable development goals

UHC – universal health care

UN – United Nations

WHO – World Health Organization
SUMMARY

This draft global strategy calls for a comprehensive, population-based approach to put all countries on the path to the elimination of cervical cancer within the century. It covers the period 2020-2030. The strategy proposes an approach that will enable countries to reach 2030 global targets for key interventions that, in turn, will lead to elimination of cervical cancer as a public health problem (hereafter referred to as “elimination”). The proposed targets for 2030 are:

- 90% of girls fully vaccinated with the human papilloma virus (“HPV”) vaccine by 15 years of age;
- 70% of women are screened with a high-precision test \(^1\) at 35 and 45 years of age; and
- 90% of women identified with cervical disease receive treatment and care.

01 The distribution of cervical cancer incidence and mortality reflects global disparities in access to health services. Cervical cancer is the fourth most common cancer among women around the world, with 570,000 new cases and 311,000 deaths in 2018; yet nearly 90% of those deaths were in low- and middle-income countries. Neither inaction nor inadequate efforts are an option. Without bolder action, disparities in health outcomes will also continue to worsen between and within countries.

02 Vaccination against HPV infection, screening and treatment of precancer, early detection and prompt treatment of invasive cancers, and palliative care are all proven, cost-effective strategies. Together they address cervical cancer across the care continuum.

03 WHO established that cervical cancer should no longer be considered a public health problem when the age-adjusted incidence rate is less than 4 per 100,000 women-years. While the incidence cannot be reduced to zero with the current interventions, the elimination threshold is achievable within the 21st century in every country.

04 Although HPV vaccination is vital, models demonstrate that vaccination alone is insufficient. To achieve elimination in the shortest period of time and with maximum impact, intensive vaccination, screening, and treatment must be pursued in combination.

05 Commitment to these 2030 targets is required to achieve elimination within the century:
- 90% of girls fully vaccinated with the HPV vaccine by 15 years of age;
- 70% of women are screened with a high-precision test at 35 and 45 years of age; and
- 90% of women identified with cervical disease receive treatment and care.

06 To reach the 2030 targets, focused action across the continuum of care is required, including:
- Increased coverage of HPV vaccination;
- Increased coverage of screening and treatment of precancer lesions; and

\(^1\) A WHO recommended high-precision test which would have performance characteristics similar to or better than a HPV test. In the future, however, new technologies may be available.
Increased diagnosis and treatment of invasive cancer, as well as palliative care.

07 Monitoring and surveillance will allow the world to track and improve processes. WHO will provide a framework to monitor implementation and to validate elimination.

08 Innovations and research are required to reach elimination faster and more efficiently. WHO will work with partners to expedite research outcomes and to facilitate access to the resulting innovations.

09 Sustainable financing of cervical cancer programmes is necessary to achieve elimination. WHO will work with Member States and partners to make the case for investing in cervical cancer elimination and to jointly mobilize resources.
GROWING INEQUITIES OF CERVICAL CANCER

INCIDENCE AND MORTALITY

Cervical cancer is the fourth most common cancer among women globally, with an estimated 570,000 new cases and 311,000 deaths worldwide in 2018\(^2\). The highest regional incidence and mortality rates are seen in Africa, where the rates are 7 to 10 times higher than in North America, Australia, New Zealand and Western Asia.

 MAP 1: ESTIMATED AGE-STANDARDIZED INCIDENCE RATES IN 2018, CERVIX UTERI, ALL AGES

 MAP 2: ESTIMATED AGE-STANDARDIZED MORTALITY RATES IN 2018, CERVIX UTERI, ALL AGES

Source: IARC GLOBOCAN 2018

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INEQUITIES

Projections indicate that without urgent scale up of services, the burden will increase to almost 460,000 deaths by 2040. Lower-income countries will have the greatest relative increase in the annual number of cases in the period, exacerbating the current disparity. Today nearly 90% of deaths already occur in low- and middle-income countries (LMICs).

Within countries, there is also evidence that women from the poorest income quintile, those with lesser education levels, those in rural areas and those facing adverse gender norms are less likely to benefit from timely prevention and detection. They are also more likely to die from cervical cancer than those who come from more socio-economically advantaged groups.3

HIV AND CERVICAL CANCER

HIV and cervical cancer are tightly inter-linked. Women living with HIV are four to 10 times more likely to develop cervical cancer – and more likely to develop it at a younger age4,5. Conversely, women infected with HPV are twice as likely to acquire HIV than those without HPV-infection.

MAP 3: ESTIMATED AGE-STANDARDIZED INCIDENCE RATES IN 2018 CERVIX, UTERI, ALL AGES IN RELATION TO HIV PREVALENCE

ELIMINATION OF CERVICAL CANCER AS A PUBLIC HEALTH PROBLEM

DEFINITION OF ELIMINATION

“Elimination as a public health problem” is a term that is defined by achievement of measurable global targets set by WHO, in relation to a specific disease. When elimination is reached, control measures are still required to maintain the targets or to continue to interrupt transmission (Figure 1). Namely, to maintain cervical cancer elimination, countries will need to continue vaccination, screening, and treatment programmes.

Expanding access to these services for cervical cancer is critical to achieving WHO’s goal of Universal Health Coverage (“UHC”). Furthermore, by strengthening health systems, the interventions to eliminate cervical cancer will also benefit the broader UHC agenda.

FIGURE 1: CONTINUUM OF CONTROL, ELIMINATION AND ERADICATION

Source: The Dahlem Workshop in March 1997
ELIMINATION THRESHOLD FOR CERVICAL CANCER

WHO established\(^6\) that cervical cancer should no longer be considered a public health problem when the age-adjusted incidence rate is less than 4 per 100,000 women-years. Although incidence cannot be reduced to zero with the current interventions, the elimination threshold is achievable within the 21\(^{st}\) century in every country.

At present, age-standardized incidence rates vary from 80 per 100,000 in the highest-risk countries to less than 10 per 100,000 in the lowest-risk countries (Figure 2).\(^7\) To reach elimination, all countries must reduce cervical cancer incidence below the threshold.

FIGURE 2: VARIABILITY OF CERVICAL CANCER INCIDENCE BY REGION, 2018

![Variability of cervical cancer incidence by region, 2018](image)

Source: IARC

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\(^6\) WHO reached this determination through its consultative processes which were conducted over the course of 2018.

TARGETS TOWARDS GLOBAL ELIMINATION

WHO modelled three different scenarios to analyze the impact of interventions for elimination:

1- Scenario 1 - modelling the current HPV vaccination and screening and treatment coverage. This will not achieve global elimination during the next century.

2- Scenario 2 - modelling intensive HPV vaccination, made available only to girls, and reaching 90% coverage globally by 2030. This will achieve elimination within a century. However, this scenario implies that many women alive today who have not received the HPV vaccine will develop cervical cancer and die.

3- Scenario 3 - modelling the combination of intensive HPV vaccination and intensive screening and treatment of pre-cancer. This will achieve elimination within a century, it will do so in less time, and it will prevent millions of cervical cancer deaths.

Therefore, to achieve elimination in the shortest period of time and with maximum impact, intensive vaccination and screening and treatment must be pursued in combination. Additionally, patients who present with invasive cervical cancer must receive proper care and treatment (Figure 3).

In order to achieve elimination within a century, the following targets need to be met by 2030 (Figure 3):

- 90% of girls fully vaccinated with the HPV vaccine by 15 years of age;
- 70% of women are screened with a high-precision test at 35 and 45 years of age;
- 90% of women identified with cervical disease receive treatment and care:
  - 90% of women screened positive treated for precancer lesions;
  - 90% of invasive cancer cases managed.

These targets support the realization of the 2030 Sustainable Development Goals (“SDGs”). That includes SDG target 3.4: one-third mortality reduction from noncommunicable diseases. The targets are also aligned with the WHO Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013-2020, the Global Strategy for Women’s, Children’s and Adolescents’ Health (2016–2030), the Global Health Sector Strategies on HIV, Hepatitis and Sexually Transmitted Infections (2016–2021), the UN High-Level Meeting on Prevention and Control of Noncommunicable Diseases (2018) and health systems strengthening for social protection and universal health coverage, as set out in United Nations General Assembly resolution 72/81.

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8 Cervical disease identified through screening programmes or early diagnosis of symptomatic patients.
The timeframe for reaching elimination is sensitive to the baseline incidence rates in each country. Accordingly, the trajectories towards elimination will vary across countries (Maps 4 and 5). Countries with a starting cervical cancer incidence above 20 per 100,000 women-years will progress more slowly towards elimination. However, those countries will make substantial absolute gains in the near future, in terms of cases prevented and lives saved (mainly due to the impact of screening and treatment programmes).
MAP 4: INCIDENCE RATES OF CERVICAL CANCER IN 78 LOW- AND MIDDLE-INCOME COUNTRIES IN 2020

2020

MAP 5: INCIDENCE RATES OF CERVICAL CANCER IN 78 LOW- AND MIDDLE-INCOME COUNTRIES IN 2080 WITH INTENSIVE GIRLS-ONLY VACCINATION AND 2 LIFE TIME SCREENS

2080


[SECTION IN DEVELOPMENT]

IMPACT:

[PLACEHOLDER: A graph showing the projected reduction in cervical cancer incidence and lives saved.]
03

ACHIEVING THE 90-70-90 TARGETS TOWARDS ELIMINATION

To eliminate cervical cancer as a public health problem within a century, these 90-70-90 targets must be reached by 2030:

- **90%** of girls fully vaccinated with the HPV vaccine by 15 years of age;
- **70%** of women are screened with a high-precision test at 35 and 45 years of age; and
- **90%** of women identified with cervical disease receive treatment and care.

This draft strategy identifies various “accelerators” for achieving each of the targets by 2030. For each accelerator, it then identifies more specific “priority actions”. A core action across all accelerators will be community engagement and collaboration.

**ACHIEVING 90% COVERAGE OF HPV VACCINATION**

The following accelerators are required to meet the 2030 HPV vaccination target:

- **Sufficient supply of affordable HPV vaccines.** Currently the supply of HPV vaccines is constrained. A concerted commitment is needed from manufacturers and partners, including those in both public and private sectors, to overcome supply constraints. Additionally, market-shaping interventions are needed to achieve affordable prices for countries at various income levels and to maintain a healthy market for HPV vaccines.

- **Introduction of the HPV vaccine into more countries’ national immunization programmes.** Political advocacy is needed to promote new introductions. In addition to sharing evidence to support such policy decisions, this will include a coordinated initiative to identify and leverage resources from countries, donors and financing agencies.

- **Increased quality and coverage of immunization service delivery.** Many immunization programmes do not reach sufficient coverage among girls. Increasing the coverage of HPV vaccination will require building innovative, multi-sectoral, efficient, and sustainable delivery platforms (for example, school immunization programmes). During the introduction phase and the early years of vaccination programmes, evidence-based communication and social mobilization efforts will be required for various target audiences. In some communities, additional engagement will be needed to overcome vaccine hesitancy.

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11 WHO MI4A Global HPV Vaccine Market Study
ACHIEVING 70% COVERAGE FOR SCREENING AND 90% TREATMENT OF PRECANCER LESIONS

The following accelerators are required to meet the 2030 screening and treatment targets:

- **Sufficient, affordable supply of optimal screen-and-treat tests and other medical devices.** Market shaping is needed to improve affordability and availability of HPV tests and novel tests with similar (or better) performance characteristics. Such measures include: prompt WHO prequalification of commercially available products; alerting WHO to the most promising products in the pipeline, so that WHO is ready to respond in a timely fashion as they come to market; coordinated forecasting; improved procurement practices; increased market transparency; increased competition; and negotiations with manufacturers. For screening, there is a need for WHO prequalification of promising new technologies, with subsequent deployment of the technologies that prove to be effective. For treatment of precancer lesions, new technologies need to be verified, followed by similar market-shaping interventions to increase availability and affordability.

- **Identifying innovative, optimal service delivery models for increased quality and coverage in different contexts.** In order to effectively prevent cervical cancer, screening needs to be linked to prompt treatment for precancer lesions. Appropriate models need to be defined for different settings based on considerations including: existing testing infrastructure and human resources at health facilities, laboratories, and in communities; culturally appropriate methods for community outreach; population distribution; urban and rural settings; and the burden of HIV co-infection and HIV-cervical cancer co-morbidity. In areas with a high HIV-burden, existing HIV testing infrastructure should be leveraged as much as possible, given HIV patients’ continued need for interaction with the healthcare system for regular follow-up and laboratory monitoring. Integrated reproductive health delivery platforms should also be further explored, including access to family planning services, HIV counseling and testing, and self-sampling at different entry points.

- **Tiered and integrated testing networks.** Integrated testing networks are fundamental to ensuring access. An integrated testing network can maximize the impact of limited human and financial resources by providing appropriate testing services tailored to the volumes and capacity of each testing facility.¹⁵
  - Review and simplify existing algorithms to promote a single-visit approach, and identify the levels of the health system where a single-visit approach to screening and treatment should be implemented.
  - Optimize the laboratory network design to leverage the existing installed base of multiplex analyzers that may be used for HPV testing and provide additional capacity where required.
  - Conduct all procurement in line with efforts to standardize and streamline procurement, training and quality assurance. From the outset, plan for the service and maintenance needed to keep medical devices operational, and leverage aggregate demand to negotiate for better after-sales services.
  - Coordinate forecasting efforts led by national authorities and implementing partners. Partners should share data with the national authorities so that countries have optimal information to ensure uninterrupted supply planning and to improve countries’ ability to obtain the best prices.
  - Integrate specimen referral networks with existing systems, such as those used for HIV, TB, and viral hepatitis specimens.

- **Quality of testing.** Any site conducting testing, regardless of the technology employed, should operate within a quality management system. Implement post-market surveillance for all tests to ensure that safety nets are in place as programs scale up.

- **National scale-up of screening and treatment programmes.** Scale up should be incorporated into countries’ plans from the outset, and programmes should learn as they go. National programmes should learn from one another’s experiences, and collaboration can allow for more effective implementation without repeating the same learning curve in all countries; feedback and data from early adopters should be expeditiously shared with other national programmes. Partners should be supportive and not withhold data that can help national programmes make faster, informed decisions.

- **Create demand for HPV testing.** Sensitize clinicians and primary care providers to the programmatic needs and to the available services, taking into account the unique circumstances in different settings (e.g., tailoring the approach differently for rural and urban clinics).¹⁶ Strong patient retention and linkage to treatment is essential for success. If treatment is not available on site, robust data and management systems are needed to link patients to services for the treatment of cervical disease. Patients with complex precancer lesions will require LEEP, and patients requiring diagnosis and treatment of suspected cervical cancer will need to be referred to tertiary cancer care centers.

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¹⁵ WHO procurement guidance for IVDs http://apps.who.int/iris/bitstream/handle/10665/255577/9789241512558-eng.pdf?sequence=1
¹⁶ http://apps.who.int/iris/bitstream/handle/10665/255693/WHO-HTM-TB-2017.06-eng.pdf?sequence=1
ACHIEVING 90% TREATMENT AND CARE OF CERVICAL CANCER CASES

The following accelerators are required to meet the 2030 cancer management target:

- **Strengthening health system capacity to deliver quality pathology, multi-modality treatment and palliative care.** Identify challenges and develop strategies to address common barriers. Improving cervical cancer management requires investment across the health system building blocks – governance, health workforce, access to priority technologies, service delivery, health information systems and financing – according to the national context.

- **Capacity building of the cancer health workforce and provision of multidisciplinary team-based care.** Develop strategies to bridge existing workforce gaps and plan for long-term sustainability. Immediate needs for training can be addressed by solutions which are demonstrated to be effective, such as twinning programmes, regional training hubs, and developing national training programmes. Leverage innovative solutions – such as telemedicine, eLearning and mLearning – where they can enhance efficiency and effectiveness. Multidisciplinary team-based care should be implemented, as it improves patient assessment and management practices in oncology.

- **Implemented cervical cancer management guidelines and care pathways.** Develop and implement national cervical cancer management guidelines. Establish care pathways and effective referral networks to link the different levels of service facilities (laboratory, diagnostic and treatment centers) and improve the continuity of care. Identify and implement interventions which have proven to be effective, such as patient navigation programmes.

- **Affordable and sustainable supply of priority medical devices and essential medicines for cervical cancer management.** Priorities should be set for cervical cancer management within the national context. Optimize procurement mechanisms and supply chains.

- **Assured financial protection.** Include cervical cancer care in UHC benefit packages and link patients to other social support programmes wherever possible.
**BOX 3: PRIORITY ACTIONS FOR TERTIARY PREVENTION**

- Governments
- Communities and civil society
- WHO and UN partners
- Development partners
- Private sector
- Academia / research
- Other partners
MONITORING, SURVEILLANCE AND VALIDATION

MONITORING AND SURVEILLANCE
WHO is committed to promoting a monitoring and surveillance framework with a recommended set of processes and impact indicators.

FIGURE 4: CERVICAL CANCER STRATEGIC INFORMATION CONTINUUM

POPULATION-BASED CANCER REGISTRIES
A fundamental gap among these monitoring and surveillance activities is the lack of population-based cancer registries, which are required to track incidence data. On the global scale, only one in three countries has high-quality incidence data at present. Together with information on risk factors for noncommunicable diseases (provided by population surveys) and mortality (by vital statistics), cancer incidence and survival complete the necessary elements to plan and evaluate the cancer control measures.

VALIDATION
WHO will establish protocols for assessing when countries have reached the elimination threshold (or interim thresholds) and will apply those protocols to validate elimination.
BOX 4: PRIORITY ACTIONS FOR MONITORING, SURVEILLANCE AND VALIDATION
- Governments
- Communities and civil society
- WHO and UN partners
- Development partners
- Private sector
- Academia / research
- Other partners
INNOVATION AND RESEARCH

RESEARCH

Innovations will allow the world to reach elimination faster and more efficiently with more efficiency. WHO will work with partners to expedite research outcomes.

PRIORITY RESEARCH AREAS

New HPV vaccine delivery technologies to simplify schedules and administration, increase access, and achieve the same population impact at a lower cost.

New screen and treat technologies to simplify the process for both patients and providers, increase access, and lower the cost.

New care and treatment techniques for invasive cancer to simplify the process for both patients and providers, increase access, and lower the cost.

Innovations in social and delivery research, which could increase vaccination and screening and treatment coverage in traditionally hard-to-reach, priority populations by overcoming implementation and social barriers. These innovations should also reach key, at-risk populations, including:

- Rural, low-income and lesser educated girls and women, who often lack access to services across the continuum of care.
- Girls and women who experience adverse gender norms and other cultural norms that prevent or delay them from seeking services across the continuum of care and which cause stigmatization when using services.
- Girls who are out of school (and therefore likely less to be aware of the disease) and who are also harder to reach for vaccination.
- Women living with HIV, who are more likely to develop cervical cancer due to persistent HPV infections and more rapid progression to invasive cancer. Additionally, women living with and at risk of HIV, including sex workers, are often marginalized and stigmatized within the community and may have greater difficulty accessing health services.
- Migrants and internally displaced persons, who may also lack access to local health systems.

Additionally, research in new communication technologies, such as digital health solutions, can support programme management, promote behavior change and build community buy-in and understanding.
RESEARCH CAPACITY BUILDING
WHO will collaborate with partners to support the ability of individuals, institutions and networks to conduct high quality research and to transfer knowledge.

[PLACEHOLDER: A table illustrating the priority actions for each stakeholder based on feedback from the web and regional consultation processes]

BOX 5: PRIORITY ACTIONS FOR INNOVATION AND RESEARCH
- Governments
- Communities and civil society
- WHO and UN partners
- Development partners
- Private sector
- Academia / research
- Other partners
COSTING, FINANCING & INVESTMENT CASE

WHO will work with Member States and partners to make the case for investing in cervical cancer elimination and to jointly mobilize resources. These activities will assist policy-makers, funders and other stakeholders by disseminating data about the value of investing in cervical cancer elimination.

[SECTION IN DEVELOPMENT]

[PLACEHOLDER: A table illustrating the priority actions for each stakeholder based on feedback from the web and regional consultation processes]

BOX 6: PRIORITY ACTIONS FOR COSTING, FINANCING & INVESTMENT CASE
- Governments
- Communities and civil society
- WHO and UN partners
- Development partners
- Private sector
- Academia / research
- Other partners