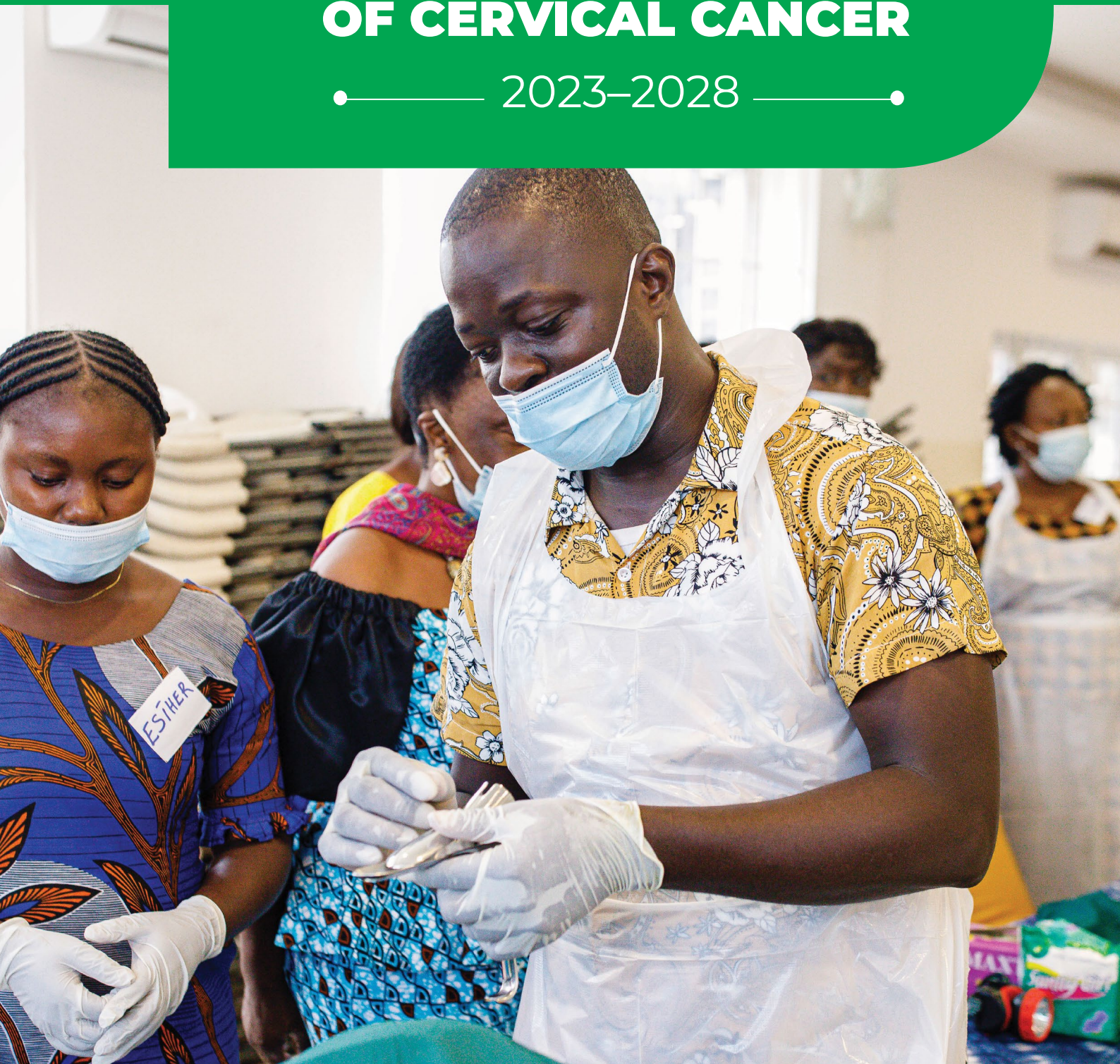
MINISTRY OF HEALTH
The Republic of Sierra Leone

NATIONAL POLICY AND STRATEGY FOR THE ELIMINATION OF CERVICAL CANCER

2023–2028



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ACRONYMS & ABBREVIATIONS

ANC	Antenatal care
BPEHS	Basic Package of Essential Services
CHW	Community Health Worker
CIP	Costed Implementation Plan
DHMT	District Health Management Team
EmONC	Emergency Obstetrics and Newborn Care
FHCI	Free Health Care Initiative
GoSL	Government of Sierra Leone
HMIS	Health Management Information System
hrHPV	High-risk HPV
HPV	Human papilloma virus
IEC	Information, Education, and Communication
ICT	Information, Communication and Technology
JICC	Joint Interagency Coordinating Committee
LEEP	Loop Electrosurgical Excision Procedure
LLETZ	Large Loop Excision of the Transformation Zone
LMIC	Lower-Middle-Income Country
MAC	Multiple Age Cohorts
M&E	Monitoring and Evaluation
MDGs	Millennium Development Goals
MOH	Ministry of Health
NAP	National Action Plan
NCD	Non-communicable disease
NCHW	National Community Health Worker
NGO	Non-governmental organization
PCL	Pre-cancerous lesions
PNC	Postnatal care
RHT&S	Reproductive Health Training and Supervision
RNCH	Reproductive, Newborn, and Child Health
SARA	Service Availability and Readiness Assessment
SDGs	Sustainable Development Goals
SDHMT	Sub-District Health Management Team
SLDH	Sierra Leone Demographic and Health Survey
STI	Sexually transmitted infection
SVA	Single-visit approach
TWG	Technical Working Group
TOT	Training of trainers
UHC	Universal Health Coverage
VIA	Visual Inspection with Acetic Acid
WHO	World Health Organization

FOREWORD

The National Policy and Strategy for the Elimination of Cervical Cancer 2023-2028 adopts the current 2022 WHO global strategic recommendations of 90:70:90 targets for cervical cancer elimination in Sierra Leone. The interventions outlined for cervical cancer prevention, treatment and elimination are integral to reaching the Sustainable Development Goals (SDGs) for health (SDG 3) and gender equality (SDG 5). Thirteen policies have been formulated that are key to guiding the development of strategies specific to the ecosystem of Sierra Leone. The policies and strategies adhere to the public health approaches of primary, secondary and tertiary preventive interventions across the life course of women.

Primary cervical cancer prevention has a community focus for information, education and communication aimed at behaviour change and uptake of the HPV vaccination. This includes vaccination of girls aged 9-14, who are both in and out of school, prior to their sexual debut. A single dose will be provided except for those who are HIV-infected, who will obtain two doses.

Secondary cervical cancer prevention emphasizes screening and treatment of pre-cancerous lesions, with the need to optimize the single visit see-and-treat approach, as close to the community as possible, to enable them to have access to these services and to curtail costs for both the community and the health system. The strategy proposes that see-and-treat be nurse-led and be heavily invested in the Peripheral Health Units. However, referral systems would be strengthened to enable district and regional referral facilities to provide LEEP/LEETZ services.

The tertiary cervical cancer prevention component, which is physician-driven, will be strengthened to facilitate clinical evaluation and histological diagnosis, before eventual referral to the tertiary facility for more comprehensive treatment.

Improvement of the health system pillars, including capacity-building across various cadres, is essential, so that frontline heath care workers understand the WHO algorithms that rely heavily on HPV testing and screening with Visual Inspection with Acetic Acid. Advocacy and collaboration for resource mobilization cannot be underestimated. Facilitative leadership is needed at all levels to coordinate all the components of the strategy.

The Ministry of Health will work with other line ministries and partners to foster community empowerment, coupled with facility preparedness, so that our goals of early HPV vaccination, screening for precancerous lesions, and early diagnosis of cancer will improve outcomes. We will support district-level monitoring and evaluation to minimize disparities in care.

We will integrate our cervical cancer elimination interventions with other sexual and reproductive health interventions, and use implementation research to determine cost of implementation, recommend a cost-effectiveness model and address some of the challenges we encounter during implementation. We will work assiduously to reach cervical cancer elimination targets in Sierra Leone by 2030 as part of the broader vision of the Ministry of Health and Sanitation to improve the lives of women and girls in Sierra Leone.

Dr. Austin Demby
Minister of Health, Sierra Leone
August 2023

ACKNOWLEDGEMENTS

The Ministry of Health of Sierra Leone extends its sincere gratitude and heartfelt appreciation to all the individuals and organizations who have played a significant role in the development of the National Policy and Strategy for the Elimination of Cervical Cancer in Sierra Leone 2023-2028. Without your invaluable support and contributions, this milestone achievement would not have been possible.

Cervical cancer is a debilitating condition for women and girls, and its elimination is a priority for the Ministry of Health and Sanitation. This document will guide our work as a Ministry, in collaboration with other line ministries and partners, towards achieving this goal.

We also wish to acknowledge the United Nations Population Fund (UNFPA), the World Health Organization (WHO) and their donors for their unwavering commitment to our nation's health and well-being, which has been instrumental in advancing our efforts to combat cervical cancer. Their support and technical expertise in guiding our cervical cancer elimination initiatives have been invaluable in ensuring that this policy and strategy are comprehensive, evidence-based and aligned with global best practices.

Marie Stopes Sierra Leone deserves special recognition for their dedicated efforts and contributions towards the elimination of cervical cancer in our country. Their commitment to reproductive health and family planning has been pivotal in shaping our approach and strategies. Furthermore, we express our gratitude to other partner NGOs who have worked tirelessly alongside us, providing additional resources, expertise and on-the-ground support to accelerate the elimination of cervical cancer in Sierra Leone.

The success of this document would not have been possible without the exceptional leadership and guidance of Dr. Tom Sesay, Director of Reproductive and Child Health, in the Ministry of Health. His vision and dedication have been instrumental in driving our collective efforts forward. We also extend our heartfelt appreciation to management and staff of the Reproductive Health and Family Planning Programme: Dr. Francis Moses, Dr. Sattu Issa, and Sister Sallay Carew, for their coordination and unwavering commitment to this critical initiative.

We acknowledge the diligent efforts of the members of the Technical Working Group whose expertise and tireless efforts have shaped and refined this policy and strategy. Your dedication to this cause has been truly inspiring. We would like to extend our special thanks to our esteemed consultants Dr. Ruth Jahonga and Dr. Michael Ezeanochie, who have provided invaluable technical input in developing this document. Their expertise and guidance have been crucial in ensuring that this policy and strategy are evidence-based, effective and tailored to our unique context.

Finally, we want to express our appreciation to all the stakeholders, health professionals and community members who have been actively engaged in shaping this policy and strategy. Your commitment to improving women's health and fighting against cervical cancer is commendable and will undoubtedly make a significant impact on the health of our nation. Together, we are determined to eliminate cervical cancer in Sierra Leone, and your contributions have brought us one step closer to achieving this noble goal. Your dedication to the health and well-being of our people is deeply appreciated and will leave a legacy for generations to come. Thank you all for your support and collaboration.

Dr. Sartie Kenneh
Chief Medical Officer
Ministry of Health, Sierra Leone
August 2023

CHAPTER 1
OVERVIEW

The world has witnessed a steady decrease in maternal deaths in the recent past, driven by the United Nations (UN) Sustainable Development Goals (SDGs) and their forerunner, the Millennium Development Goals (MDGs). Unfortunately, the same cannot be said of the progress to combat cervical cancer deaths. Despite recent medical advances in diagnosis, treatment and research, cervical cancer continues to be ranked as the fourth most common cancer among women globally (Sung, et al., 2021). Among low and lower-middle-income countries the disease is the second most frequent cancer among women, breast cancer being the commonest. Cervical cancer is preventable and can be eliminated.

In 2020, an estimated 604,000 new cases and 342,000 deaths occurred worldwide. Of the global new cervical cancer cases, 543,600 (90 per cent) occurred in women living in LMICs including upper-middle-income countries (Brisson, et al., 2020). It is projected that, without a scale-up of elimination strategies, the burden of the disease will increase to about 460,000 deaths by 2040 (Brisson, et al., 2020). Throughout the life stages of a woman, the risk factors associated with cervical cancer may be targeted to reduce the disease burden later in life. This calls for a life-course approach to cervical cancer elimination, starting from childhood and continuing through adulthood.

Of all cancers, data on cervical cancer highlights the great inequality in incidence and mortality that exists between developed and developing countries. It has been reported that over 85 per cent of new cases and 80 per cent of mortality from cervical cancer occurs in LMICs (Beddoe, 2019). Currently, nearly 90 per cent of cervical cancer deaths occur in LMICs and these countries are expected to account for more than 95 per cent of deaths by 2030 (Sung, et al., 2021). It is therefore imperative that LMICs align with strategies and targets set by the World Health Organization (WHO), to eliminate cervical cancer as a public health burden, by 2030.

While cervical cancer deaths are increasing in LMICS, the high-income countries (HICs) have continued to report a steady decline in both incidence and mortality of cervical cancer. This decline is attributed to robust screening and treatment programmes, effective follow-up and adequate infrastructure. Consequently, HICs are within reach of total eradication of the disease.

In its vision to eliminate cervical cancer as a public health problem by 2120, WHO set specific targets, defined as "90:70:90", for countries to meet by 2030 to be on a sustainable pathway towards the elimination of cervical cancer (WHO, 2019).

By 2030, 95 per cent of cervical cancer deaths will occur in LMICs countries

The numerals 90:70:90 signify the following:

- **90 per cent of girls are fully vaccinated with the human papilloma virus (HPV) vaccine by age 15.**
- **70 per cent of women are screened with a high-performance test by age 35 and 45.**
- **90 per cent of women identified with cervical cancer receive treatment.**

First, vaccinating girls against high-risk HPV (hrHPV) types before the age of 15 is the foundation for reducing the incidence rate of cervical cancer. This is because the primary cause of precancerous and cancerous cervical lesions is infection with hrHPV or an oncogenic HPV type. Secondly, scaling up screenings for adult women for cervical cancer to at least twice every ten years, at ages 35 and 45, allows for detection of precancerous lesions (PCLs) before they become cancerous. This increases a woman's likelihood of early and successful treatment. Lastly, screening should be linked to treatment of identified cervical PCLs, in the screen and treat approach, and where possible, offered on the same day of screening, in the single-visit approach (SVA). The SVA approach eliminates the need for an additional hospital visit as both screening and treatment are done in a single hospital visit, thus reducing likelihood of loss to follow up and additional costs to the facility and the client.

Therefore, the pillars for a successful cervical cancer prevention control programme must incorporate:

i. High vaccination coverage with the HPV vaccine of girls between ages 9-14 before they become sexually active;
ii. High screening coverage by cost-effective high-performance tests of the target population, which must be linked to treatment of cervical PCLs as combined interventions in a single hospital visit (the see-and-treat approach);
iii. High treatment coverage for women diagnosed with cervical PCLs, while a large number of those with invasive cancer are managed appropriately.

There are proven strategies and approaches that have been implemented in specific countries that are on track to eliminate cervical cancer. The majority of these are developed countries while a number are LMICs. Developing policies that will lead to achieving the triple intervention targets proposed by WHO is, therefore, a priority for LMICs. An examination of policy guidelines drafted by HICs and LMICs that have been successful in achieving a decline in cervical cancer incidence and mortality is therefore necessary.

Australia is expected to be the first country in the world to effectively eliminate cervical cancer. The Australian success is largely attributed to a publicly funded large-scale HPV vaccination coverage for primary prevention that, by 2017, (through the free school vaccination programme, which began in 2007) had reduced the HPV infection rate by 92 per cent, which in turn has reduced the rate of cervical abnormalities and had achieved 80 per cent coverage of eligible females (Megan, Winch, Canfell, & Julia, 2021). The secondary arm of the prevention effort was implemented through strengthened robust screening programmes that included transitioning from cytology to five-year HPV testing in 2017. Current research in Australia projects that cervical cancer rates will drop to 6 cases per 200,000 making it a "rare cancer" by 2022 (Canfell, Smith, Saville, & Arbyn, 2022). In the United States, a decline in cervical cancer incidence and mortality has been well-documented (Siegel, Miller, & Jemal, 2019). These reductions, like in the case of Australia, have been attributed to effective screening and removal of pre-malignant lesions before they become malignant. Similar successes have been reported in Scandinavian countries where the introduction of nationwide screening programmes and treatment of screen-detected cervical PCLs has almost halved the number of cervical cancer cases in the period 1961-2010 (Black & Richmond, 2018; UN, 2019).

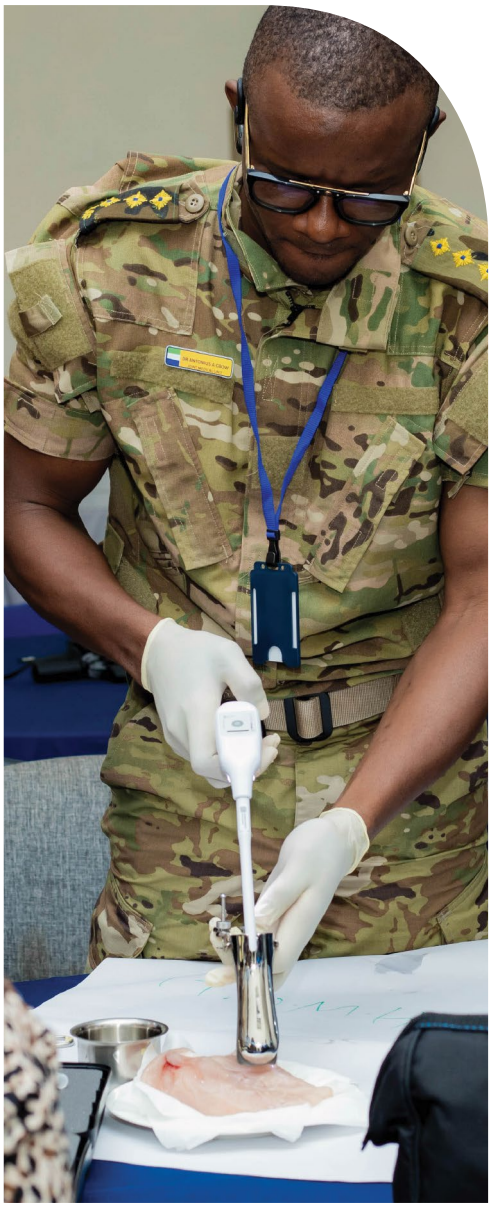
Success in the reduction of cervical cancer burden has not been restricted to developed countries. Rwanda, in East Africa, has been hailed as a LMIC that has achieved tremendous success in cervical cancer control which should inspire other countries. The country became the first African country to launch a national cervical cancer prevention campaign in 2013. The campaign was preceded by several pre-immunization advocacy and negotiations that were aimed at promoting the HPV vaccine as a cancer prevention vaccine. The result is an excellent vaccination coverage rate of above 93 per cent among girls aged 11–15 years old, surpassing that of Australia (Black & Richmond, 2018). Along with the vaccination programme, Rwanda also launched a national screen and treat programme available to women with HIV aged 30 to 50, and non-HIV infected women aged 35 to 45. The country is therefore on course to eliminate cervical cancer as a public health burden. High commitment by the government, strong collaboration with partners and a robust, health system with a strong capacity for communication and outreach are the reasons for this success. A review reported that from the overall cervical cancer patients worldwide, between 84 and 90 per cent deaths are from LMICs.

CHAPTER 2
THE CONTEXT OF SIERRA LEONE

Sierra Leone is situated on the West Coast of Africa. The country is emerging from two catastrophic events in the last decade, namely the civil war (1991-2002) and the Ebola epidemic (2013-2016). The civil war effectively eliminated the health and economic infrastructure during the 10 years it lasted. Many clinics that had been established by the government were demolished. Ebola, on the other hand, ravaged the health care system due to the number of deaths which included 106 health care workers. Ten out of 124 medical doctors in the country died due to Ebola. The global COVID pandemic diverted a lot of development resources, While the country is emerging from these tragic events, the health care system is still fragile but recovering. Sierra Leone is a signatory to various global protocols regarding non-communicable diseases (NCDs).

Consequently, it is focusing its resources on implementing its NCD strategic plan (2019-2023) based on the observation that these diseases contributed to 41 per cent mortality in 2016. Cervical cancer is one of the four most frequent cancers in the country and constitutes a major public health burden. It ranks as the second most frequent cancer among women in Sierra Leone and the second most frequent cancer among women between 15 and 44 years of age. Current estimates indicate that every year 512 women are diagnosed with cervical cancer and 372 die from the disease. The age-adjusted death rate is estimated at 22.47/100,000 population, which places Sierra Leone at number 22 in the world.

While data on the HPV burden in the general population in Sierra Leone is unavailable, an estimated 1.85 million women, aged 15 and older are at risk of developing cervical cancer. Additionally, the West African region where Sierra Leone is located has the second highest burden of HPV in Africa, after East Africa. The country's 2017 Service Availability and Readiness Assessment (SARA) survey indicated that a paltry 3 per cent of the 1,284 health facilities provide cervical cancer services with only 2 per cent of 1,203 public facilities providing the service, and 20 per cent of the private facilities. Availability is reported to be higher in urban (11 per cent) than in rural (2 per cent) facilities (GoSL, 2017). In 2020, UNFPA in collaboration with the Ministry of Health (MOH) developed the China South-South Cooperation project aimed at improving women's health and reaching vulnerable and marginalized women at high risk of maternal mortality and cervical cancer. The project led to the development of three key national documents: the first ever National Policy on Cervical Cancer, the Strategic Plan, and Clinical Guidelines for the management of cervical cancer, as well as the refurbishment and equipping of Reproductive Health Centres in seven health facilities (UNFPA, 2021).



In Sierra Leone, an estimated 1.85 million women, aged 15 and older are at risk of developing cervical cancer

According to the *2022 Revision of World Population Prospects* (UN, 2022), the country has a total population of over 8.8 million according to the latest census figures and projections, and more than half of whom, according to the World Bank, live in poverty. The life expectancy is 52 years for males and 54 years for females. The country's health care system is organized into three tiers of care: Peripheral Healthcare Units (PHUs) with an extended community health programme, which provide primary health care; 21 district hospitals providing secondary care; and three regional referral hospitals providing tertiary level care. There are also 45 private clinics and 27 private hospitals, mostly in the (capital) Freetown area (UNFPA, 2023). The PHUs are further subdivided into maternal and child health posts, Community Health Posts and Community Health Centres. The country has 1.4 doctors per 10,000 population compared to the SDG threshold (set in 2016) of 44.5.

In 2019, the Sierra Leone Demographic and Health Survey (SLDHS) found that 21 per cent of women were using a family planning method and the country had a contraceptive prevalence rate ranging between 9 per cent and 27 per cent (Statistics, 2019).

The 2019 SLDHS results showed that 98 per cent of women who gave birth in the five years preceding the survey had received antenatal care (ANC) from a skilled provider at least once. And 86 per cent of women reported having received a postnatal care (PNC) checkup in the first two days after birth (Statistics, 2019). Childhood vaccination coverage has generally improved in the past decade. Overall, in 2019, 56 per cent of children had received all basic vaccinations, and 50 per cent had received all age-appropriate vaccinations. The adult HIV prevalence is estimated at 1.4 per cent. The country has a 6-3-3-4 system of education, six years of primary education followed by three years of junior secondary education, three years of senior secondary school and four years at university. The literacy level in the general population is estimated at 43.2 per cent.

2.1 BARRIERS TO IMPLEMENTATION OF THE CERVICAL CANCER CONTROL PROGRAMME

According to a 2014 WHO assessment of capacity and preparedness for introducing or scaling up a comprehensive cervical cancer and prevention report, Sierra Leone performed dismally in most of the interventions under review (WHO, 2014). The report identified several gaps and barriers that would impede the implementation of a cervical cancer control programme. The Republic of Sierra Leone will therefore need to address the following gaps to make the 90-70-90 targets for 2030 a reality.

Lack of a national cervical cancer prevention and control policy: A cervical cancer policy provides overall guidance, consistency, accountability, and efficiency. It also provides a framework for resource mobilization.

Lack of guidelines for cervical cancer screening: Screening of asymptomatic and apparently healthy women allows detection of PCLs, the early cancer stage when there is a high potential for cure.

Lack of a referral system and treatment options for PCLs and cervical cancer: The long latent period between precancer and development of invasive cancer provides an ample opportunity for treatment upon early detection while late detection allows for supportive and palliative care. A referral system is able to link those diagnosed with proper care.

Non-availability of cervical cancer screening services at any level of its public health service delivery system: Screenings have been used to successfully reduce cervical cancer incidence and mortality by identifying and treating women with PCLs. VIA has been particularly useful in resource-limited settings.

Lack of essential equipment for cancer treatment: These include a Telecobalt unit (Cobalt-60) and linear accelerator. The country also lacks modern imaging equipment such as an MRI scanner and PET scanner, and it has only two CT scanners.

Lack of indicators to track cervical cancer services: A national registry/ data system that captures indicators useful in measuring vaccination, screening and disease trends in the population is currently lacking.

2.2 RATIONALE FOR CERVICAL CANCER ELIMINATION POLICY IN SIERRA LEONE

The current situation in Sierra Leone necessitates concerted efforts to reduce the burden of this disease in the country. Cervical cancer is a preventable disease. It is also curable if detected early and adequately treated. Proven and cost-effective measures for eliminating cervical cancer exist, but to date have not been widely implemented in regions of the world where the disease burden is highest. To be optimally effective, these measures must be scaled to national levels and delivered using integrated health service platforms that are sensitive to women's needs, their social circumstances, and the personal, cultural, social, structural and economic barriers hindering their access to health services. Urgent and bold action is needed to scale up and sustain implementation of evidence-based interventions (HPV vaccinations, cervical cancer screenings and the management of detected disease) for eliminating cervical cancer as a public health problem, but such action must be strategic.

The Government has therefore targeted as a priority the accelerated reduction of the high burden of cervical cancer. This has been captured by the Government in the recently developed NCDs strategic plan 2019-2023 (GoSL, 2020). In the plan, the Government in Strategic Objective 4 aims to roll out vaccination against HPV (one or two doses) in girls aged 9-14 years and support the establishment of a national cervical cancer screening of women aged 30–49 years at least once every five years.

To achieve the desired outcome of a reduced cervical cancer burden, Sierra Leone would benefit from an integrated health care delivery system. Such a system includes coordinating different activities and caregivers. This will require collaborative efforts between the MOH and other sectors of the Government specifically to reduce the risk factors that predispose women to the development of cervical cancer. Such an integrated approach allows for a more balanced, efficient, and equitable use of limited resources.
It is evidently clear that cervical cancer has had detrimental effects on the health of women in Sierra Leone and affected their ability to contribute maximally to national development. There is therefore an urgent need for the development of approaches that will ensure optimal cervical cancer screening and control which are also sustainable. The overall purpose of this policy is to improve the health and well-being of women by decreasing cervical cancer-related morbidity and mortality.

CHAPTER 3
POLICY FRAMEWORK

The national cervical cancer elimination policy and strategy should be anchored within existing national frameworks and policies. This enables the provision of an enabling environment to fast-track reduction of cervical cancer morbidity and mortality. Additionally, it should allow for the linking of the national cervical cancer prevention and control programme with other national programmes. The relevant national frameworks and policies are outlined in the sections that follow.

3.1 THE SIERRA LEONE CONSTITUTION AND NATIONAL LEGISLATION

Sierra Leone's constitution (Act No. 6 of 1991) in Chapter II and III provides fundamental guidelines to protect the rights of all citizens without any form of discrimination. Chapter II Section 8, Subsection 3b states, "The State shall direct its policy towards ensuring that the health, safety and welfare of all persons in employment are safeguarded and not endangered or abused." The same section in Subsection 3c guarantees that policy will be directed to ensure that there are adequate medical and health facilities for all persons. Chapter III Section 22 in Subsection 2e makes provisions for assistance and care to protect the health and well-being of women.

Sierra Leone's Public Health Ordinance of 1960 (Government of Sierra Leone, 1960) is the legislative framework that defines the powers of the state to regulate areas concerned with public health such as sanitation, housing, infectious disease control and food safety. The Health Service Commission Act 2011 (Government of Sierra Leone, 2011) established the Health Service Commission as an independent body created to assist the MoH to provide quality, affordable, and accessible health care services to the people of Sierra Leone.

The Government has also enacted the Local Council Act 2004 (Government of Sierra Leone, 2004) as a means of enhancing the participation in and ownership of the health care system by the local councils and their communities and the Hospital Boards Act 2003 (Government of Sierra Leone, 2003) to address the management of all hospitals nationwide.

3.2 POLICIES, STRATEGIC PLANS, PROGRAMMES, AND DECLARATIONS

The Government has developed several policies to guide health service delivery in the country. The policy under development will therefore align to these already existing policies in the country. This will facilitate integration of service provision to comprehensively address cervical cancer prevention and control needs of women in the country. The Reproductive Health Policy and Child Health Policy (2008) was subsequently used to develop the Reproductive, Newborn, and Child Health policy for 2011-2015 (MoHS, 2011).

This policy, among other things, aims at reducing the rate of both infectious and non-infectious conditions of the reproductive health system among women. Recently in 2016, the National Community Health Worker Policy (MoHS, 2016) was drafted due to the recognition that Community Health Workers (CHWs) are an integral part of a resilient national health system. Also, that they provide efficient, basic, and high-quality services that are accessible to everybody, especially people living in hard-to-reach areas. In the same year, the National Health Promotion Strategy 2017-2021 (MoHS, 2016) was drafted. This policy outlines a plan for strengthening the capacity of the Health Education Division and change agents at all levels to enable them to raise the quality of health promotion and harmonize it across the country. The National Communication Strategy for guiding HPV Vaccination Campaign (MoHS, 2019) was drafted in 2019 to mobilize public support. In early 2020, the Non-Communicable Diseases Policy (Government of Sierra Leone, 2020) was drafted, with cervical cancer as one of the target diseases identified for accelerated reduction.

Strengthening the capacity to raise the quality of health promotion in the country

CHAPTER 4
POLICY GOALS AND STRATEGIC OBJECTIVES

4.1 POLICY GOAL

The overall goal of this national policy, aligned with the global vision of a world where cervical cancer is eliminated as a public health problem, is to enable Sierra Leone to meet the 90-70-90 target by 2030 and be on a sustainable path towards cervical cancer elimination as a public health problem. The policy will address the core components of prevention, early diagnosis and screening, treatment, palliative care and survivorship care.

Specifically, the national policy has three main goals:

1. Reduce the incidence of HPV infections through HPV vaccination, providing information for behaviour change communication, and health education.

2. Reduce cervical cancer incidence through effective screening, detection and treatment of PCLs and prompt management of early-stage invasive cervical cancer.

3. Reduce the burden of cervical cancer by expanding access to treatment for advanced cervical cancer and providing palliative care services for incurable advanced cancer to improve quality of life of cervical cancer patients.

4.2 STRATEGIC OBJECTIVES

This policy articulates six Strategic Objectives that will be achieved to attain the stated goals. These policy objectives are aligned with the SDGs for NCDs, namely SDG Target 3.4 (Reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being) (UN, 2015); and Target 3.8 (Universal Health Coverage); the Global Action Plan for the Prevention and Control of NCDs (2013-2020) (WHO, 2013); the third UN High-level meeting on NCDs (2018) (UN, 2018) and the WHO Global Strategy for Cervical Cancer Elimination (2020) (WHO, 2020).

4.2.1 Strategic Objective 1:
Reduce the incidence of oncogenic HPV infections through nationwide scaling up of the HPV vaccination programme to cover 75 per cent of eligible population by 2028.

4.2.2 Strategic Objective 2:
Decrease age-standardized incidence and mortality rate from cervical cancer by 2025 through promoting screening, early detection, and treatment of pre-cancerous and cancerous lesions with an effective see-and-treat programme that covers 50 per cent of the target population.

4.2.3 Strategic Objective 3:
Improve the quality of life of women with incurable cancer through provision of supportive, palliative and survivorship care in alignment with the NCDs policy.

4.2.4 Strategic Objective 4:
Intensify mobilization for public support of HPV vaccination and cervical cancer screenings.

4.2.5 Strategic Objective 5:
Improve training programmes for health care workers involved in the cervical cancer elimination programme.

4.2.6 Strategic Objective 6:
Strengthen hospital information systems and cancer registries.

Proposed indicators to evaluate the achievement of these Strategic Objectives are listed in the monitoring and evaluation (M&E) section.

Successful implementation will require collaborative partnerships of key strategic enablers

4.3 STRATEGIC ENABLERS OF THE POLICY OBJECTIVES

The policy recognizes that successful implementation will require collaborative partnerships of key strategic enablers. It also recognizes that strengthening existing health systems is essential to ensure that these strategic enablers are in place to support policy implementation. The identified strategic enablers of this policy include:

- Political and financial commitment;
- Multisectoral engagement;
- Technical leadership and programme management;
- Community engagement for increased health seeking behaviours at the personal, family and community level, and increased demand for and utilization of services;
- Skilled and motivated health workforce (management, service providers and laboratory personnel);
- Strengthened laboratory capacity including quality assurance mechanism;
- Appropriately equipped health facilities;
- Adequate supply of vaccines;
- Efficient cold chain;
- Supply and maintenance of medical equipment;
- Supply of sufficient and screening and treatment commodities;
- Strong referral and feedback linkages between levels of care to ensure continuity of care for clients, for PCLs and overt cancer;
- Effective strategic information and M&E systems.

These strategic enablers have been articulated in various existing national reforms, strategies and policies such as the Medium-Term National Development Plan 2019-2023 (Government of Sierra Leone, 2019); the Health Policy; Non-communicable Diseases Policy and Strategic Plan (Government of Sierra Leone, 2020); the National Health Sector Strategic Plan 2017-2021 (Ministry of Health & Sanitation, 2017); Basic Package of Essential Services 2015-2020 (BPEHS) (Ministry of Health & Sanitation, 2015); and the Free Health Care Initiative (FHCI) (Government of Sierra Leone, 2019). A comprehensive strengthening of the health system will be done in accordance with these existing instruments to support the cervical cancer elimination policy.

CHAPTER 5
GUIDING PRINCIPLES

The following principles guided the development of this policy and will continue to guide its implementation:

5.1 OWNERSHIP AND ACCOUNTABILITY

This policy recognizes the leading role of the Government through the MOH and specifically the NCD & Maternal Health Directorate in the MOH, in the development and implementation of this policy, and accountability.

5.2 INTEGRATED PEOPLE-CENTRED HEALTH SERVICES

- People-centred health services is an approach to care that consciously adopts the perspectives of individuals, families and communities, and sees them as participants as well as beneficiaries of trusted health care systems that respond to their needs and preferences in humane and holistic ways. People-centred care requires that people have the education and support they need to make decisions and participate in their own care. It is organized around the health needs and expectations of people rather than diseases.
- Integrated health services are health services that are managed and delivered in a way that ensures people receive a continuum of health promotion, disease prevention, diagnosis, treatment, disease management, rehabilitation and palliative care services, at the different levels and sites of care within the health system, and according to their needs, throughout their whole life.

5.3 UNIVERSAL HEALTH COVERAGE

Universal Health Coverage (UHC) is defined as ensuring that all people have access to the needed health services (including prevention, promotion, treatment, rehabilitation, and palliation) of sufficient quality to be effective while also ensuring that the use of these services does not expose the user to financial hardship. Sierra Leone, as a member of the UHC partnership and an endorser of the SDGs, is moving towards UHC.

5.4 FOCUS ON REDUCING INEQUITIES

Interventions must address the need to reduce inequities by addressing the social determinants of health, to attain good health outcomes for all people.

5.5 ENCOMPASSING THE ENTIRE CONTINUUM OF CARE

This policy affirms the importance of a balanced and interconnected approach to cervical cancer control, from primary prevention to tertiary and palliative care.

5.6 COST-EFFECTIVE EVIDENCE-BASED INTERVENTIONS

WHO "Best Buys"[1] and other cost-effective evidence-based interventions will assist in reducing preventable morbidity and mortality due to cervical cancer.

5.7 CULTURAL RELEVANCE

This cervical cancer control policy, programmes and services must respect and take into consideration the specific cultural and religious diversity of people within Sierra Leone.

5.8 COMMUNITY PARTICIPATION

Considering the key role of prevention and the often-long-standing chronic nature of cervical cancer, community participation is essential for the successful implementation of this policy.

5.9 MULTISECTORAL PARTNERSHIPS

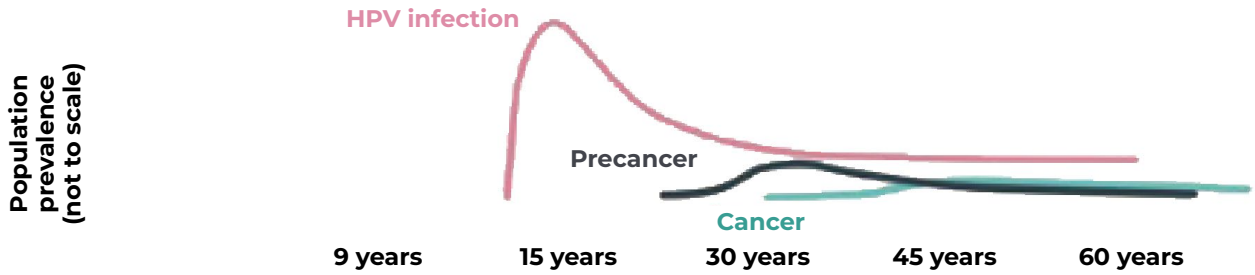
The occurrence of cervical cancer and its successful control is influenced by many determinants outside the health sector. This policy will promote and strengthen multisectoral partnerships (governmental and non-governmental including private partners) to adequately prevent and control cervical cancer.

1. The WHO's "best buys" and other recommended interventions are a menu of policy options and cost-effective interventions for the prevention and control of major NCDs.

CHAPTER 6
THE PACKAGE OF CARE FOR CERVICAL CANCER ELIMINATION

The WHO recommends a comprehensive life course approach to cervical cancer elimination (see Figure 1).

Figure 1: Life-course approach of cervical cancer interventions



Primary Prevention	Secondary Prevention	Tertiary Prevention
Girls 9-14 years: • HPV vaccination **Girls and boys, as appropriate** • Health information and warning about tobacco use • Sexuality education tailored to age and culture • Condom promotion/provision for those engaged in sexual activity • Male circumcision	**Women +30 years of age** • Screening with a high performance test equivalent to or better than HPV test • Followed by immediate treatment or as quickly as possible, of precancerous lesions.	**All woman, as needed** Treatment of invasive cancer at any age • Surgery • Radiotherapy • Chemotherapy • Palliative care

Source: World Health Organization, 2020.

6.1 PRIMARY PREVENTION

HPV is the primary cause of 99.7 per cent of all cervical cancers. About 5–10 per cent of all infected women develop persistent infection, which may progress within months or years to premalignant glandular or squa¬mous intraepithelial lesions, classified as CIN, and then to cancer. Most low grade (1 and 2) CIN lesions regress spontaneously.

Infection with one or more of the 15 high-risk oncogenic types leads to invasive cervical cancer after 10 to 20 years. Globally, about 70 per cent of all cases of cervical cancer are caused by HPV types 16 and 18. With vaccines against these two types of HPV now available, there exists great potential to reduce the incidence of cervical and other HPV-related cancers.

The main aim of primary prevention therefore is to prevent infection with HPV, and cofactors that increase the risk of HPV acquisition and expression. These cofactors include HPV type; low immune status; HIV-infected; receiving immunosuppressive therapy; co-infection with other sexually transmitted infections (STIs) such as the herpes virus, chlamydia and gonococ¬cal infections; parity; first pregnancy at a very young age; current or recent use of hormonal contraceptives; and tobacco smoking. The risk of women living with HIV developing cervi¬cal cancer is estimated to be six times higher than for other women. There is, therefore, a need to create awareness and behaviour change to reduce the risk of these co-factors.

6.1.1 HPV vaccine

Provision of prophylactic HPV vaccine is foundational to the elimination of cervical cancer. To date, 125 countries (64 per cent) have introduced HPV vaccine in their national immunization programme for girls, and 47 countries (24 per cent) for boys as well. The first vaccine for the prevention of HPV-related disease was licensed in 2006. HPV vaccines do not contain live biological products or viral DNA and are therefore non-infectious.

Policy statement 1:
HPV vaccines shall be part of the national immunization schedule.

6.1.2 HPV vaccine types

Currently, six prophylactic HPV vaccines have been licensed to be administered before the onset of sexual activity. HPV vaccines use different expression systems, contain adjuvants and do not contain antibiotics or preservative agents. All HPV vaccines contain VLPs against hrHPV types 16 and 18; the nonavalent vaccine also contains VLPs against hrHPV types 31, 33, 45, 52 and 58; and the quadrivalent and nonavalent vaccines contain VLPs to protect against anogenital warts causally related to HPV types 6 and 11.

i. Bivalent HPV vaccines

- **Cervarix** is licensed for girls and boys aged 9–14 years as a 2-dose schedule (5–13 months apart). If the recip¬ient's age at the time of the first dose is ≥15 years, three doses should be given (at 0, 1–2.5 months and 5–12 months).
- **Cecolin** is licensed for girls aged 9–14 years as a 2-dose schedule (6 months apart). From age 15, a 3-dose schedule is indicated (at 0, 1–2 months and 5–8 months).
- **Walrinvax** is licensed for girls aged 9–14 years as a 2-dose schedule (6 months apart, with a minimum interval of 5 months). From age 15, a 3-dose schedule is indicated (at 0, 2–3 and 6–7 months).

ii. Quadrivalent HPV vaccines

- **Gardasil** is licensed for girls and boys aged 9–13 years as a 2-dose schedule (6 months apart). From age 14, a 3-dose schedule should be given (at 0, 1–2 and 4–6 months).
- **Cervavax** is licensed for girls and boys aged 9–14 years, as a 2-dose schedule (6 months apart). From age 15, a 3-dose schedule should be given (at 0, 2 and 6 months).

iii. Nonavalent HPV vaccine

- **Gardasil 9** is licensed for girls and boys aged 9–14 years as a 2-dose schedule (5–13 months apart). From age 15, a 3-dose schedule should be followed (at 0, 1–2 and 4-6 months).

6.1.3 Choice of HPV vaccine

All HPV vaccines are indicated for use in females aged 9 years or older and are licensed for use up to 26 or 45 years of age.

Policy statement 2:
Bivalent/quadrivalent vaccines shall be offered to females aged 9 to 45 years.

6.1.4 Age at vaccination

All HPV vaccines are indicated for use in females aged 9 years or older and are licensed for use up to 26 or 45 years of age. Some HPV vaccines are also licensed for use in males. Prevention of cervical cancer is best achieved through the immunization of girls before they become sexually active.

Policy statement 3:
HPV vaccine shall be offered to girls aged 9 to 14 years.

6.1.5 Administration

The vaccines should be administered intramuscularly in the deltoid region. The standard dose is 0.5 ml.

6.1.6 Vaccination schedule

i. Two-dose schedule

The current evidence supports the recommendation that a two-dose schedule be used in the primary target group from 9 years of age and for all older age groups for which HPV vaccines are licensed. The minimum interval between first and second dose is six months. A 12-month schedule results in higher GMTs (Cochrane, 2019) and it is suggested for programmatic and efficiency reasons. There is no maximum recom-mended interval between doses, and longer intervals of up to three or five years can be considered if useful from a programme perspective.

ii. Alternative single-dose schedule

As an off-label option, a single-dose schedule can be used in girls and boys aged 9–20 years. Current evidence suggests that a single dose has compa¬rable efficacy and duration of protection as a two-dose schedule and may offer programme advantages, be more efficient and affordable, and contribute to improved coverage (WHO, 2022). From a public health perspective, the use of a single dose schedule can offer substantial benefits that outweigh the potential risk of a lower level of protection if efficacy wanes over time, although there is no current evidence of this.

iii. Schedule for immunocompromised persons

Individuals known to be immunocompromised or HIV-infected (regardless of age or antiretroviral therapy status) should receive at least two HPV vaccine doses (minimum six months interval) and, where possible, three doses.

Policy statement 4:
Single dose vaccine shall be offered, however, for immunocompromised or WHIV, a two-dose schedule shall be provided.

6.1.7 Pregnancy and breastfeeding

HPV vaccines are not recommended for use in pregnant women. However, in 16 RCTs including more than 25,000 participants, no specific safety concerns were identified for the outcome of pregnancy, spontaneous abortion, miscarriage, stillbirths or foetal develop¬ment (Scheller, Pasternak, Mølgaard-Nielsen, Svanström, & Hviid, 2017). HPV vaccines given to lactating women do not affect the safety of breastfeeding for mothers or infants.

6.1.8 Interchangeability

Some data are available on the safety and immunoge¬nicity of selected mixed schedules. When one dose of nonavalent vaccine (Gardasil-9) and one dose of bivalent vaccine (Cervarix) were compared with two doses of nonavalent vaccine, there was 100 per cent seropositivity to all nine HPV types included in the nonavalent vaccine and an increase in GMTs in all study groups after the second dose (Gilca, et al., 2018).

6.1.9 Cost-effectiveness

Global cost-effectiveness analysis suggests that vacci¬nating pre-adolescent girls is usually cost-effective for cervical cancer prevention, particularly in resource-constrained settings where screening and other cervical cancer prevention and control measures often have limited coverage (WHO, 2022). At current prices for the bivalent and quadrivalent vaccines, girls-only vaccination is cost-effective (compared with no vaccination) irrespec¬tive of the schedule or vaccine used, even when no cross-protection or herd protection is assumed. HPV vaccination is considered a best buy for NCD prevention.

Gender-neutral vaccination is less cost-effective than vaccination of girls only. If the HPV vaccination cover¬age in girls is greater than approximately 50 per cent, gender-neutral vaccination is unlikely to be cost-effective (versus girls-only vaccination). If vaccination coverage in girls is below 50 per cent, vaccination of boys may be cost-effective in some settings, depending on the costs involved, the epidemiology of HPV-related disease outcomes consid¬ered, and programme issues. Vaccinating multiple age cohorts (MAC) is predicted to result in a substantially faster impact of vaccination compared with single age cohort vaccination. However, the impact of MAC vaccination could be reduced in countries where sexual activity starts at an early age.

6.1.10 Cervical cancer screening after HPV vaccination

HPV vaccination is a primary prevention intervention and does not eliminate the need for screen¬ing later in life, since the existing vaccines do not protect against all hrHPV types and will have limited impact on disease in unvaccinated women and those vaccinated at older ages.

6.1.11 Integration of vaccination with other preventive measures

HPV vaccines should be introduced as part of a coor¬dinated and comprehensive strategy to prevent cervical cancer and other diseases caused by HPV.

6.1.12 HIV testing prior to HPV vaccination

It is not necessary to screen for HPV or HIV infec¬tion prior to HPV vaccination.

6.1.13 Recommendations and strategies for HPV vaccination in Sierra Leone

The following are the recommendations and strategies to be implemented in Sierra Leone in order to initiate services within the current resource settings to achieve 90 per cent coverage by 2030.

6.1.13.1 Implement HPV vaccination as part of the national immunization programme

The 2020 WHO Global Strategy to Accelerate the Elimination of Cervical Cancer as a Public Health Problem recommends that HPV vaccines should be included in all national immu¬nization programmes and should reach 90 per cent of all girls by age 15 by 2030.

i. Incorporate HPV vaccination into the national programme: HPV vaccines shall be part of the national immunization schedule and shall be offered to all girls aged 9–14 years.

ii. Housing of the HPV vaccination programme: The rollout of this programme will be led by the EPI/Child Health Programme in the Ministry of Health in collaboration with relevant units in the Ministry (Directorate of Reproductive Health and Child and Adolescent Health), Education Ministry, Ministry of Gender and Children Affairs, local governments, NGOs, the private sector and other relevant stakeholders. This is already in place per the National Policy. HPV vaccination has recently been integrated into the national immunization schedule. However, there are challenges such as very low awareness, misconceptions, low human resources, difficult and hard to reach areas, delays in supplies and incentives.

iii. Target population: The target for vaccination will be pre-adolescent and young adolescent girls before first coitus. The recommended age group is 9–14 years. Antibody response is high in this age group and vaccine efficacy is highest in those who are naïve to vaccine-specific oncogenic HPV types. The Government of Sierra Leone shall review the target population for HPV vaccination on an ongoing basis with a view to increasing the age bracket and possibly including male children, older females and other susceptible age groups. The inclusion of MAC will depend on the availability of adequate resources and additional funding from donor agencies.

iv. Delivery approach: This will be through the broad participation of young adolescent girls rather than older girls or women. The best approach would be a school-based programme. The out-of-school population will be targeted through facility or outreach approach.

v. Catch-up vaccination: This will be provided for non-sexually active older girls; however, modelling studies suggest diminishing protection when the age of vaccination is increased.

vi. Choice of vaccine: Either bivalent or quadrivalent type of vaccine may be used.

vii. Dosage: No boosters will be given; a single dose shall apply (except for the HIV-infected population).

6.1.13.2 Secure sufficient and affordable HPV vaccines

A concerted effort will be needed between partners and the private sector to overcome vaccine supply constraints. Additionally, through appropriate market-shaping interventions, more affordable prices can be achieved while ensuring a healthy HPV vaccines market. A concerted effort will be needed between partners and the private sector to overcome vaccine supply constraints. Additionally, through appropriate market-shaping interventions, more affordable prices can be achieved while ensuring a healthy HPV vaccines market. Some of the strategies to be employed include:

i. Costing analysis: The cost of scaling up the interventions varies by country and depends on specific attributes, such as the existing health system infrastructure, the demographic and epidemiological characteristics and the coverage goals in each country's national cervical cancer plan. Once completed, the cost projections can be used to plan and operationalize a national cervical cancer elimination programme tailored to a country's needs. The WHO will take advantage of these initial detailed costing case studies to develop global guidance for countries' resource mobilization efforts. It is critical for the government to

- enhance resource mobilization for the HPV vaccination;
- improve equitable resource allocation with emphasis on HPV vaccination scale-up;
- ensure HPV immunization is part of UHC;
- strengthen health systems governance.

ii. National/global partnership: Partnerships with professional associations and academic institutions will also contribute to capacity-building, skills transfer and strengthening existing collaboration, between developed and developing countries. The role of civil society, women's groups, NGOs and a wide range of local networks is fundamental to the successful uptake of services at the community level. Innovative ways must be found to secure sustainable resources for these partnerships. This will require effective partnerships and multisectoral collaboration among current and future partners to ensure alignment of interests, efficient execution and the establishment of mechanisms to resolve emerging challenges and the pre-empting of foreseeable risks. In ramping up this partnering approach, HPV can provide a template for other health and immunization programmes.

iii. Forecasting and quantifications: Quantification of vaccines includes forecasting and supply planning. Forecasting will involves estimating the quantities of HPV that will be dispensed or used to meet the health needs of the targeted population during a specific future period. Estimating the amount of revenue and income that would be required to implement HPV vaccination projects. Creates a baseline to compare actual results to determine how the results vary from the expected performance. The WHO has provided guidance on costing of cervical cancer prevention services in *The Cervical Cancer Prevention and Control Costing (C4P) Tool* which is intended specifically to assist low- and middle-income country programme managers in planning cervical cancer control strategies and approximating the five-year cost projections of such a comprehensive national cervical cancer pro¬gramme at the country level (WHO, 2022). Sierra Leone can borrow a leaf from Nigeria, an LMIC country that has used this Tool to develop a costed implementation plan for cervical cancer elimination plan involving all aspects of primary, secondary and tertiary prevention (WHO, 2020), the results of which are tabulated under Annex 2.

6.1.13.3 Improve communication and social mobilization

As HPV vaccination programmes are introduced and expanded, they will need nationwide evidence-based communication and social mobilization efforts.

i. Research to understand the social, cultural, societal and other barriers that may affect the acceptance and uptake of the vaccine will be critical. Some communities will need extra engagement to overcome vaccine hesitancy and counter misinformation.

ii. Age-appropriate information needs to be provided on sexual and reproductive health and rights and safer sexual practices (such as delaying sexual debut, decreasing the number of sexual partners, condom use, male circumcision where appropriate) to reduce the risk of HPV and ending tobacco use.

iii. Healthy lifestyles must be promoted among the youth (boys and girls) as they are critical for a healthier population for sustainable development.

iv. Cervical cancer elimination strategies must be integrated in **comprehensive sexuality education in Sierra Leone.**

Policy statement 5: The Ministry of Health, in collaboration with the Ministry of Basic and Senior Secondary Education, and the Ministry of Social Welfare, Gender and Children's Affairs, will include education and information on cervical cancer elimination in the school curriculum in order to raise awareness about the issue and for the prevention of early coitarche and exposure to cofactors for cervical cancer.

6.1.13.4 Implement best practices and innovative technologies

i. National guidelines, policies and strategies should be updated as new evidence and innovations become available on better and more efficient approaches to HPV vaccination.

ii. Integration of cervical elimination strategy into other health policy is necessary. Development of auto-response application targeting cervical elimination strategies and other SRH&R approaches. An SRH&R national call centre needs to be created.

iii. A digital data collection tool is needed for accuracy in data collection and efficiency in service delivery.

6.1.13.5 Increase the quality and coverage of vaccination

Increasing the coverage of HPV vaccination will require:

i. Developing efficient and sustainable multisectoral delivery platforms (such as school immunization programmes);

ii. Innovative community-based approaches to reach vulnerable populations (such as adolescent girls who are not in school, and children living with disability);

iii. Electronic monitoring systems or registers to track and improve coverage and quality.

6.2 SECONDARY PREVENTION: SCREENING AND TREATMENT OF PRECANCEROUS LESIONS

The principal goal of secondary prevention is to reduce cervical cancer incidence and mortality by screening and treating women with PCLs. To prevent cervical cancer, women can be screened using various tests to identify those who have or are at risk of cervical pre-cancer. Traditionally, cytology has been used as the method of screening for cervical cancer. Positive cytology results are usually followed by colposcopy, and appropriate treatment is informed by histological diagnosis. HIC has successfully reduced cervical cancer mortality fivefold over the past 50 years but efforts in using cytology-based screening in LMIC have not been successful (WHO, 2021; Habbema, DeKok, & Brown, 2012).

Newer screening tests such as VIA have been introduced in the last 15 years, as well as molecular tests, mainly hrHPV DNA-based tests, which have been found to be feasible in all settings. Newer tests and techniques have been developed recently which include molecular tests such as those based on HPV mRNA, oncoprotein detection or DNA methylation; more objective tests performed on cytological samples such as p16/Ki-67 dual staining; and more advanced visual inspection tests based on artificial intelligence/machine learning platforms (e.g., automated visual evaluation of digital images).

Table 1: Three approaches to cervical cancer screening and future tests

Molecular cytologic	Cytologic	Visual inspection
Nucleic Acid Amplification Tests (NAAT)[a] » high-risk HPV DNA/NAAT » mRNA DNA methylation[b] Protein biomarkers[b] » HPV antibodies » Oncoproteins	Conventional pap smear Liquid-based cytology (LBC)[a] Dual staining to identify p16 and Ki-67[a]	Visual inspection with Acetic acid or with Lugol's Iodine (VIA/VILI) » Naked eye » Magnified by ·Colposcope or camera · Automated visual · Evaluation of digital images

Note: a = current tests; b = tests under evaluation (future tests).
Source: WHO (2021)

6.2.1 Approaches to screening and treatment

Cervical intraepithelial neoplasia (CIN) is characterized by cellular changes in the transformation zone of the cervix. CIN is typically caused by infections with HPV, especially the hrHPV strains 16 and 18 (these two strains cause more than 70 per cent of cervical cancers) (WHO, 2022; WHO, 2020).

CIN1 lesions – also referred to as low-grade squamous intraepithelial lesions – are morphological correlates of HPV infections. CIN2/3 lesions – also referred to as high-grade squamous intraepithelial lesions – are correlates of cervical pre-cancers that, if left untreated, may progress into cervical cancer. The WHO recognizes two approaches to screening and treatment; the screen-and-treat approach and the screen, triage and treat approach.

6.2.1.1 Screen-and-treat approach.

In a screen-and-treat approach, treatment is provided based on a positive primary screening test alone, without triage (i.e., no second screening test and no histopathological diagnosis).

- When the patient is eligible for ablative treatment, this should ideally be done immediately, at the same visit as the screening test (the SVA). At some facilities, this is not feasible, and a second visit is needed (the multiple-visit approach).
- Women who are not eligible for ablation can have excisional treatment on the same day if the clinic has the capacity for large-loop excision of the transformation zone (LLETZ). If LLETZ is not available on-site, women need to be referred for the excisional treatment or for further evaluation.

6.2.1.2 Screen, triage and treat approach

In a screen, triage and treat approach, the triage test is done if the primary screening test is positive, and the decision to treat is made when both the primary test and the triage test are positive.

- A positive triage test can lead to colposcopy with biopsy and histopathological examination for diagnosis to determine the appropriate treatment. The implementation of colposcopy and biopsy can be challenging, however, so this guideline also considers triage strategies that are not dependent on the availability of colposcopy.
- When the primary screening test is positive, and the triage test is negative, women need appropriate follow-up evaluation at a specified date according to the recommendations.

6.2.2 Screening and triage tests

6.2.2.1 Screening tests

a) High-risk HPV DNA tests

These tests identify a group of high-risk carcinogenic HPV genotypes, typically including up to 14 types (HPV16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58 and 59, which are Group 1 carcinogens, and HPV66 and 68) (Denny, et al., 2012). HPV16 and 18 are the highest-risk genotypes and are the most common in cancers. Some of the tests on the market provide information about specific HPV genotypes, such as HPV16 and 18. We refer to HPV tests with partial genotyping when they report HPV16 and 18 (including HPV45 in some cases) and other carcinogenic types separately. Other HPV tests may provide extended genotyping, when they report additional types, or groups of types, such as HPV31, 33, 35, 45, 52 and 56. This guideline specifically refers to partial genotyping (i.e., the detection of HPV16 and 18 versus other carcinogenic types) to identify women at the highest risk of cervical cancer among those testing positive for HPV. Self-sampling or provider sampling can be used for HPV DNA testing. In this guideline, an HPV DNA test means a high-risk HPV DNA test, which is a nucleic acid amplification test (NAAT).

b) Visual Inspection with Acetic Acid (VIA)

VIA testing uses dilute acetic acid (vinegar) on the cervix without magnification to identify aceto-white lesions that need treatment (e.g., ablation or excision) or further evaluation. VIA is not appropriate for use in women when the transformation zone is no longer visible or after menopause. This guideline makes a distinction between using VIA as a screening or triage test and assessing eligibility for treatment (after positive screening) using acetic acid and visual evaluation.

c) Cytology

Cytology tests – including the Papanicolaou smear test and liquid-based cytology [LBC] – identify atypical cells on the cervix through the preparation and interpretation of slides using microscopy by a trained expert. LBC requires sophisticated processing to create slides from liquid specimens. The threshold used in this guideline to identify the need for further evaluation or treatment is a cytological result of atypical squamous cells of undetermined significance (ASCUS) combined with the presence of high-risk HPV.

d) Colposcopy

Colposcopy is used to assess the epithelium of the transformation zone to determine its type, whether there is evidence of abnormality or not, and, where indicated, to facilitate a biopsy or treatment. It is not commonly used as a screening tool. Colposcopy may also be used after a primary positive screening test, to assess whether ablative or excisional therapy is appropriate.

6.2.2.2 Triage tests

The triage tests include:

a) hrHPV DNA partial genotyping;
b) Cytology;
c) VIA;
d) Colposcopy;
e) Biopsy for histological diagnosis (that may or may not be included);
f) Visual evaluation to assess eligibility for treatment versus VIA as a screening test.

There is a distinction in these recommendations between using visual evaluation to assess eligibility for ablative treatment and using VIA as a screening test as part of an algorithm to determine whether there is a PCL or not. Some of these triage tests may be conducted sequentially (e.g., cytology followed by colposcopy with biopsy).

Policy statement 6:
Cervical cancer screening, using HPV DNA testing, shall be offered by the public healthcare system free of charge to all sexually active women after 25 years, who are HIV-infected, as a national priority. Screening with VIA every three years is an acceptable alternative.

6.2.3 Treatment considerations

Although there is no virus-specific treatment for HPV infection, screening and treatment of cervical PCLs is highly successful in preventing cervical cancer. Cervical PCLs can be treated by ablative methods, which include destruction of abnor¬mal tissue by burning or freezing (thermal ablation or cryotherapy), or by excisional treatment by large-loop excision of the transformation zone (LLETZ) or cold knife conization (CKC) in women not eligible for abla¬tive treatment. In a screen-and-treat approach, women who screen positive are treated without histological diagnosis. The treatment aims to destroy or remove the transformation zone of the cervix or remove areas of the cervix that have been identified as abnormal by screening.

6.2.3.1 Thermal ablation

Thermal ablation is the latest treatment method for PCLs. It is based on a 20–30 second application of a reusable metallic probe that is electrically heated to approximately 100°C, leading to epithelial and stromal destruction of the lesion. Conventional desktop devices weigh about 5 kg and are reasonably portable.

The newer thermal ablation devices are light, weigh less than 2 kg, are hand-held, battery-operated, often come with an extra battery, and are compact enough to carry in a backpack which makes for easy implementation in LMIC, including outreach-based services. The treatment time is much shorter with thermal ablation compared to cryotherapy. As in the case of cryotherapy, thermal ablation is provided by a variety of qualified health care personnel, including primary health care workers, and no anaesthesia is required. When available, thermal ablation should be the first option for ablative treatment where applicable.

6.2.3.2 Cryotherapy

This method involves freezing abnormal tissues with a probe cooled by liquid nitrous oxide or carbon dioxide. It has an overall effectiveness rate of 80–90 per cent in women with suitable lesions. It is simple, safe, and major complications are uncommon. It is also inexpensive; does not require electricity and is practical for low-resource settings. It has been safely performed by nurses and other non-physicians in low-level facilities. Cryotherapy is not suitable for lesions that are larger than the cryoprobe tip or for lesions that extend into the cervical canal. It may also be problematic in areas like Sierra Leone where supplies of nitrous oxide or carbon dioxide are erratic.

6.2.3.3 LEEP /LLETZ

A common outpatient method used is the Loop Electrosurgical Excision Procedure (LEEP) or large loop excision of the transformation zone (LLETZ). The main advantages are that it can be used to treat large lesions not amenable to cryotherapy and ones that extend into the cervical canal. It also can provide tissue specimens for histology. It is 90□95 per cent effective in treating high-grade cervical dysplasia.

However, it requires more expensive equipment than cryotherapy and a highly skilled provider. It also requires electricity and local anaesthesia and has a higher risk of serious complications, therefore emergency backup facilities to deal with complications must be available. This method can be made available at the tertiary level, while cryotherapy should be made more widely available at the primary and secondary levels of care.

6.2.3.4 Cold knife conization

In situations where cryotherapy and LLETZ are not available, and there is a doctor competent in this procedure, cold knife conization (preferably a shallow conization) may be offered to clients with high grade cervical lesions. Cold knife conization generally has similar requirements to LEEP and additionally has to be performed in a theatre usually by a gynaecologist. The personnel required does not make this method ideal for Sierra Leone which has only a few gynaecologists. It can however be conducted at the tertiary level. It carries the risk of short- and long-term complications similar to those of LEEP. However, since it is an excision method, the specimen obtained can be taken to the laboratory for histological analysis.

6.2.3.5 Other excisional methods

Other excisional methods such as cold knife conization, trachelectomy and hysterectomy are in-patient procedures which require theatre, anaesthesia, and blood, and are expensive and associated with high morbidity, compared to simpler cost-effective day-care procedures such as thermal ablation.

Policy statement 7:
Screening and treatment of precancerous lesions will be limited to non-pregnant women only. However, women found with precancerous lesions shall be offered treatment using appropriate ablative or excisional treatment.

6.2.4 Strategies and recommendations to enhance availability of screenings and treatment

To attain the global requisite 70 per cent coverage for screening, and 90 per cent treatment for PCLs and overt cancer, efforts will be made to have the cervical cancer prevention services at designated primary health care levels. Linkages between private and public sector facilities will be improved to expand the laboratory and referral networks, provide comprehensive prevention and treatment services, implement quality assurance, and facilitate M&E of the programme.

6.2.4.1 Strengthen leadership and governance

To manage the cervical cancer programme as an integrated activity, leadership and governance strengthening will be done at the MOH at the national, district, facility, and community level, and will include all relevant ministries and departments. This will include orientation of the policy and strategy direction, and the inclusion of cervical cancer activities in corresponding national, district and facility-based plans.

6.2.4.2 Service delivery

Introduction of screening and treatment services is needed into the primary health care package, including existing sexual and reproductive health services, HIV care and treatment clinics, antenatal care, well-women clinics and school-based health outreach. These are points of entry for reaching women and girls and will include outreach during mass screenings.

See-and-treat will be piloted in every district to ensure access and equitable distribution of treatment services across the country. The promotion of the screen-and-treat approach as a combined intervention in Sierra Leone will include the following aspects:

i) Women who screen positive are treated without histological diagnosis. Cervical cancer screening will require a matching increase in capacity for treatment of the detected lesions, as screening women without ensuring that they have access to treatment, is unethical. Based on the current knowledge of the natural history of cervical cancer and its epidemiology, the national programme will focus on saving the clients' and providers' time, reducing revisits, and reducing loss to follow-up.

ii) Most at-risk women will be targeted, i.e., HIV-infected women, hard to reach populations, those living with disability or in extreme poverty, and others.

iii) The target age is women aged 30–49 among the general or non-HIV infected population or non-infected, and age 25–49 for the HIV-infected population. However, those who request a screening or those for whom it is advised but are outside of this target group will still be screened.

iv) Promotion of SVA will be done to prevent delay any missed opportunities for diagnosis.

v) Regular screening intervals will be carried out for women who either had negative screening results or have completed the recommended additional follow-up after treatment and who are thus eligible to return for regular screening intervals.

vi) Follow-up will be conducted among women with a positive primary screening test but a negative triage test.

vii) Follow-up of women after treatment shall be done annually.

viii) Screening registries and call-and-recall efforts are important aspects of appropriate management to ensure that women are coming back to the service centre for treatment and follow-up.

ix) For the continuity and completeness of care, strong links will be established between the multiple levels of the health service (primary and secondary care) and individual patients.

x) Cervical cancer prevention will be integrated into existing MCH/FP services, comprehensive care clinics, and routine gynaecology services since cervical cancer prevention services use personnel and other resources such as materials, space, equipment, supplies, and reporting systems similar to those in other service areas and the result of integration will be more cost-effective, more efficient to manage, and a more convenient and acceptable service for clients.

xi) The integrated approach method can be extended to include screening during integrated outreaches for other services e.g., immunization, and campaigns during national and international cancer awareness days to reach more women, especially in hard-to-reach areas.

Policy statement 8:
All women eligible for screening as defined by policy, shall have access to see-and-treat as a combined approach to cancer prevention in order to prevent unnecessary visits and costs to the health care system.

6.2.4.3 Improve availability of sufficient infrastructure

• Several critical steps are needed to start up the service component of the National Cervical Cancer Prevention Programme. Each facility offering cervical cancer screening services will be subjected to a site assessment to determine the facility readiness to offer the cervical cancer services. The results will inform mobilization of resources to facilitate smooth programme implementation. The minimum clinical services to be offered at each level of health care will be defined. In addition, standard management activities (supervision, record-keeping, reporting) shall occur at each level.

• Procurement of thermal ablation devices at all models' sites will be done and ensuring equitable distribution in the districts.

• Enhanced laboratory diagnostics are needed.

6.2.4.4 Improved availability of medical products, vaccines, and technologies

• New medical products and technologies will be used such as HPV self-sampling methods, which are part of already existing self-care initiatives such as self-DMPA of self-HIV testing.

• An affordable supply of quality-assured high-performance screening tests and treatment devices will be ensured. Prompt registration and market shaping for cervical cancer diagnostics and treatment devices will lead to improved access and affordability.

6.2.4.5 Increased community participation

Information and education as well as community mobilization will be done in order to reach women, especially those in marginalized populations.

6.2.4.6 Different approaches to health system financing

• Regular costing and evaluation will be needed to determine the most cost-effective equipment, commodities, and strategies of delivery.

• Sierra Leone will fully embrace UHC ensuring that all people have access to the needed health services (including prevention, promotion, treatment, rehabilitation, and palliation).

• An appropriate national budget will ensure that funds are allocated for procurement of necessary equipment.

6.2.4.7 Health workforce

• Specialist care will be provided at regional and national referral facilities for the management of overt cancer patients and others with special needs.

• Competency-based training for personnel for each level will be carried out using a variety of methods, including regional and district workshops, on-site training, on the job experience-based learning and mentorship. Among the selection criteria for the health providers to be trained will be a commitment for their supervisors to retain them in the respective units for at least two years after training. A certificate of competency will be given by the DRH/ MOPHS.

• Capacity-building for frontline health care workers will be carried out, including the training of nurses, midwives, medical officer, specialists and programme officers in thermal ablation and cryotherapy. This includes:

- Training of specialists in LEEP/LLETZ, trachelectomy and knife conization procedures;
- Development of clinical guidelines;
- Development of learning resource package;
- Inclusion of training curriculum in nursing and medical schools.

6.2.4.8 Health information systems

• **Strengthening quality assurance programmes:** Strong quality assurance programmes are critical to ensure that screening services meet the requisite standards. Training and supervision must be an integral component of service delivery.

• **Monitoring and evaluation:** A standard set of M&E tools will be introduced to facilitate data capturing, reporting and utilization. Cervical screening and pre-cancer treatment indicators will be integrated into the health management information system (HMIS) to enhance proper programme monitoring.

The national RT cancer TWG will support the DRH in guiding programme roll-out and expansion.

• **National database:** It is envisaged that apart from basic reporting to the DHIS, the DRH will maintain a database to capture details of programme roll-out and implementation to facilitate planning, scale-up and reporting on global indicators. All health facilities and practitioners providing cervical cancer screening services will be required to submit their reports to the Directorate RH/FP. This information will also be linked to the national cancer registry in line with the NCD Control Strategy.

Inevitably some women with invasive cervical cancer will be identified as a result of the screening programme, and they must receive appropriate care and treatment. It is recommended that basic diagnostic and treatment services should be available at the secondary and tertiary levels of care.

6.3 TERTIARY MANAGEMENT OF OVERT CERVICAL CANCER

6.3.1 Diagnosis

Confirmation of the diagnosis is an essential first step. For this to be successful, the presence of a functional histopathological laboratory is imperative. The following approaches are recommended:

- Staging and biopsy
- Histopathology

Policy statement 9:
All women found with suspected cervical cancer shall undergo the necessary evaluation and diagnostic procedures to histologically confirm the diagnosis.

6.3.2 Management of invasive cancer

The options for the management of cervical cancer will depend on the stage of the disease. The following treatment options will be made available and accessible to the people of Sierra Leone: surgery, radiotherapy and chemotherapy. Hysterectomy services are already available in tertiary hospitals within the country but there is a need to domesticate the capacity to offer more specialized surgical services like Wertheim's radical hysterectomy for operable early-stage cervical cancer. The first ever radiotherapy and nuclear medicine facility in the country is under construction and will soon be available. Chemotherapy services are currently available at the Teaching Hospital in Freetown (Connaught and PCMH) but needs to be more accessible and resourced with drugs and infrastructure. For more advanced cases, palliative care services will need to be provided for patients. This will enhance the quality of end-of-life care.

Policy statement 10:
All women diagnosed with operable cervical cancer shall be given the appropriate surgical, medical, and radiobiological interventions, depending on the stage of the cancer.

Policy statement 11:
Where treatment is not locally available, the government shall facilitate access to such treatment outside the country.

6.3.3 Strategies to enhance early-stage cervical cancer treatment

The strategies to increase treatment at an early stage of cervical cancer include the following:

- Community engagement to educate women and families about the signs and symptoms of cervical cancer which include abnormal bleeding and discharge;
- Training of specialist in oncology procedures;
- Training of theatre nurses;
- Enhanced laboratory diagnostics, including sourcing external support;
- Training of oncologists and support personnel to provide chemotherapy;
- Training of radiotherapists and support personnel to provide radiotherapy;
- Improved blood banking services;
- Ongoing support and networking of palliative care teams to encourage a high standard of palliative care, patient follow up and further learning, via visits and update meetings, with reestablishment of a Sierra Leone Palliative Care Association;
- Advocacy for availability of immediate release oral morphine in the public sector;
- Availability of kidney replacement services such as dialysis.

6.3.4 Palliative care and strategies to enhance quality of life

The overall goal is to achieve the best quality of life for patients and their families. Palliative care should be integrated into the treatment plan and provided throughout the course of the disease. In addition to managing pain and other distressing symptoms, palliative care should encompass psychosocial and spiritual care for women and their families.

Currently, palliative care is only available in the tertiary hospital (Connaught) and the privately operated Shepherd's Hospice, both in Freetown. There is need to expand the services countrywide. Strategies to enhance palliative care include the following:

- Training of health care professionals in palliative care;
- Development of palliative care teams in district hospitals (next to the one in Connaught hospital);
- Ongoing support and networking of palliative care teams to encourage a high standard of palliative care, patient follow up and further learning, via visits and update meetings, with reestablishment of a Sierra Leone Palliative Care Association;
- Advocacy for availability of immediate release oral morphine in the public sector.

Policy statement 12:
All women diagnosed with advanced cervical cancer disease shall be provided with supportive care, including palliative care, as close as possible to the community. The necessary supportive care to family members shall also be provided.

6.3.5 Programme recommendations to achieve 90 per cent treatment of invasive cancer

To attain the global requisite 70 per cent coverage for screening, and 90 per cent treatment for PCLs and overt cancer, efforts will be made to have the cervical cancer prevention services at designated primary health care levels. Linkages between private and public sector facilities will be enhanced in order to expand the laboratory and referral networks; provide comprehensive prevention and treatment services; implement quality assurance and facilitate M&E of the programme.

6.3.5.1 Implementation of cervical cancer management guidelines

Developing and implementing national cervical cancer management guidelines, adapted to the national context, is central to ensuring high quality care.

6.3.5.2 Establishing of referral pathways and people-centred linkages throughout the continuum of care

Streamlining care pathways and referral networks linking all levels of care will ensure timely management of patients.

6.3.5.3 Strengthening of pathology services

Access to high-quality pathology services is crucial for management of invasive cancer. The development of regional pathology centres, making use of affordable telepathology platforms, is possible for countries with limited or no capacity to interpret samples. Where telepathology networks are already being used for complex cases, they could be used for routine ones.

6.3.5.4 Expansion of surgical capacity

Cervical cancer can often be cured by surgery alone, if diagnosed and treated in its early stages. However, of the cancer patients who live in the world's poorest countries, less than 5 per cent have access to safe, effective and timely cancer surgery. In high-income countries, cervical cancer surgery is provided by highly qualified and trained personnel whilst in developing countries oncological care is usually provided by generalists (general surgeons, gynaecologists, general practitioners and medical officers) without formal, certified subspecialty training, who provide cancer care out of necessity. Novel attempts to scale up surgical capacity in these environments using focused, competency-based training. North–South twinning partnerships have met with success and should be expanded.

6.3.5.5 Improved access to radiotherapy and chemotherapy

Most patients with cervical cancers in low- and middle-income countries present at stages that require radiation, so sustainable capacity for curative radiation therapy (external beam and brachytherapy) is critical.

6.3.5.6 Strengthened and integrated palliative care services

Treatment plans should incorporate not only end-of-life care and pain relief for patients but also psychological support, family support and other services from the outset. Where possible, home-based models of palliative care should be integrated into primary health care.

6.3.5.7 Optimized health workforce competencies throughout the continuum of care

A strategy for long-term national health workforce education and training, recruitment and retention is the key to ensuring sustainable multidisciplinary team-based care. The WHO Global Strategy on Human Resources for Health: Workforce 2030 provides a blueprint for countries to address workforce challenges. In addition, a wide range of regional observatories on human resources in health systems provide valuable resources for planning and policy development. More options include twinning programmes, regional training hubs located in centres of excellence, tele-mentoring, e-learning, mobile learning, and low-cost virtual reality surgical simulation. Remote training may be appropriate for areas such as surgery, radiology, pathology and patient consultation.

6.3.5.8 Reduction in cancer stigmatization

Patient awareness, health literacy and education initiatives, especially through survivor groups, contribute to addressing stigmatization associated with cancer.

6.3.5.9 Comprehensive support designed to enhance quality of life

Programmes to enhance quality of life and address physical, psychological, social, and spiritual challenges faced by survivors are best developed locally, tailored to the sociocultural context of affected communities and engaging advocates of sexual and reproductive health and rights.

Policy statement 13:
The directorate shall incorporate costing mechanisms into primary, secondary, and tertiary prevention in order to generate sufficient data on cervical cancer to determine cost-effective see-and-treat approaches, such as type of technology, and method of delivery of services to the community.

Table 2 summarizes the strategic interventions and activities geared towards primary, secondary and tertiary prevention, with corresponding outputs.

Table 2: IEC/BCC and HPV vaccination and other means of primary prevention

Service delivery	Strategies, interventions, activities	Inputs	Outputs
	IEC/BCC		
• Community • Community gate keepers • Churches • Schools • Businesspeople • Youth • Tertiary institutions • Finance institutions • Workplaces • Marketplaces	• Raise awareness on causes of cervical cancer and mitigating factors. • Provide information on services and where they are found. • Develop champions and ambassadors. • Raise awareness on role of STI/HIV toward CC. • Promote healthy sexual behaviour by condom use. • Promote delayed coitarche among adolescents. • Raise awareness about the role of STIs and HIV in cervical cancer. • Cancer infectious diseases that contribute to cancer.	• Key messages • Job aids • Videos • IEC/BCC materials • SMS messages • Radio, TV sessions • Minimum package for outreach services (supplies and commodities, equipment) • Data tools	• Trained community health care workers • Trained community champions • Community curriculum developed

Table 2: IEC/BCC and HPV vaccination and other means of primary prevention (continued)

Service delivery	Strategies, interventions, activities	Inputs	Outputs
	IEC/BCC · Identify and mitigate social and ecological factors that contribute to poor health outcomes especially in women and girls, such as GBV. **HPV VACCINATION** · Promote HPV vaccination through outreach and static facility-based services · Engage head teachers, schools, parents, community to encourage the 10-year-olds to get vaccinated. · Integrate with EPI · Mapping schools by service delivery points · Reaching out to schoolchildren **INTEGRATED OUTREACH SERVICES** · Assess and identify suitable facilities and spaces for outreach services. · Coordinate outreach services with supporting facility for community-based see-and-treat		
Primary	· Promote condom use. · Promote contraception among sexually active youth. · Treat STIs/HIV · Identify and manage malnutrition. · Regular health talks at facilities **HPV VACCINATION** · Cold chain management · Integration of HPV into EPI system · Quantification and forecasting · Data management · PITC · Treatment of malnutrition · Link HIV care to HPV vaccine · Mapping of schools for · service delivery within acceptable geographical reach · Data management	· Adequate supply of medicine to treat common infectious agents associated with cancer. · Adequate vaccines (HPV) · Data tools	· HIV tests performed. · Number of persons screened and treated for STI · Family planning initiated for sexually active adolescents. · Number tested for HIV. · Number of vaccines dispensed. · Health · Number of girls vaccinated. · Number of facilities with appropriate cold chain capacity

Table 2: IEC/BCC and HPV vaccination and other means of primary prevention (continued)

Service delivery	Strategies, interventions, activities	Inputs	Outputs
Secondary	• As above	• As above	• Trained Nurses • Cold chain capacity
Tertiary	• As above	• As above	• Trained doctors and nurses • Trained experts
National Level Leadership **DHMT** **DRH** **EPI**	• Integrate with EPI • Coordinate with Ministries of Basic and Secondary School Education; and Tertiary and Higher Education and sectors to integrate cervical cancer programmes into existing school health programmes • Forecasting vaccines • Develop curriculum for Community Health Workers (CHW) to integrate screening and referral for Cervical Cancer • Integrate communication with other relevant departments	• Review the operationalization of the strategy	• Facilitative supervision at all levels of care, including community

CHAPTER 7
IMPLEMENTATION FRAMEWORK

The national policy strategy will strengthen the relationship between different line ministries of the Government.

7.1 MANAGEMENT AND COORDINATION

The National Cervical Cancer Policy shall be implemented in line with existing national policies and strategies through a multisectoral approach that includes collaboration and partnerships with state and non-state actors. It shall be managed and coordinated by the MOH. At the district, sub-district and community levels, management and coordination shall be done by:

- District Health Management Teams (DHMT);
- District Hospital Management Teams;
- Primary Care Facility Management Teams and Community Units.

Collaboration and partnerships shall be realized through the Joint Interagency Coordinating Committee (JICC); Health Sector Coordinating Committees (ICC and TWGs); District Health Stakeholders' Forum; Sub-District Health Stakeholders' Forum; and Community Health Committees. The policy encourages formation of TWGs at the district and sub-district levels.

7.2 PROVISION OF CERVICAL CANCER SERVICES

The policy shall ensure the provision of cervical cancer services to girls and women in Sierra Leone. It shall outline the levels at which services shall be provided, applicable standards in service provision and a health system requirement for service provision.

7.3 LEVELS OF SERVICE PROVISION

The policy shall be implemented in the decentralized health system across the following tiers:

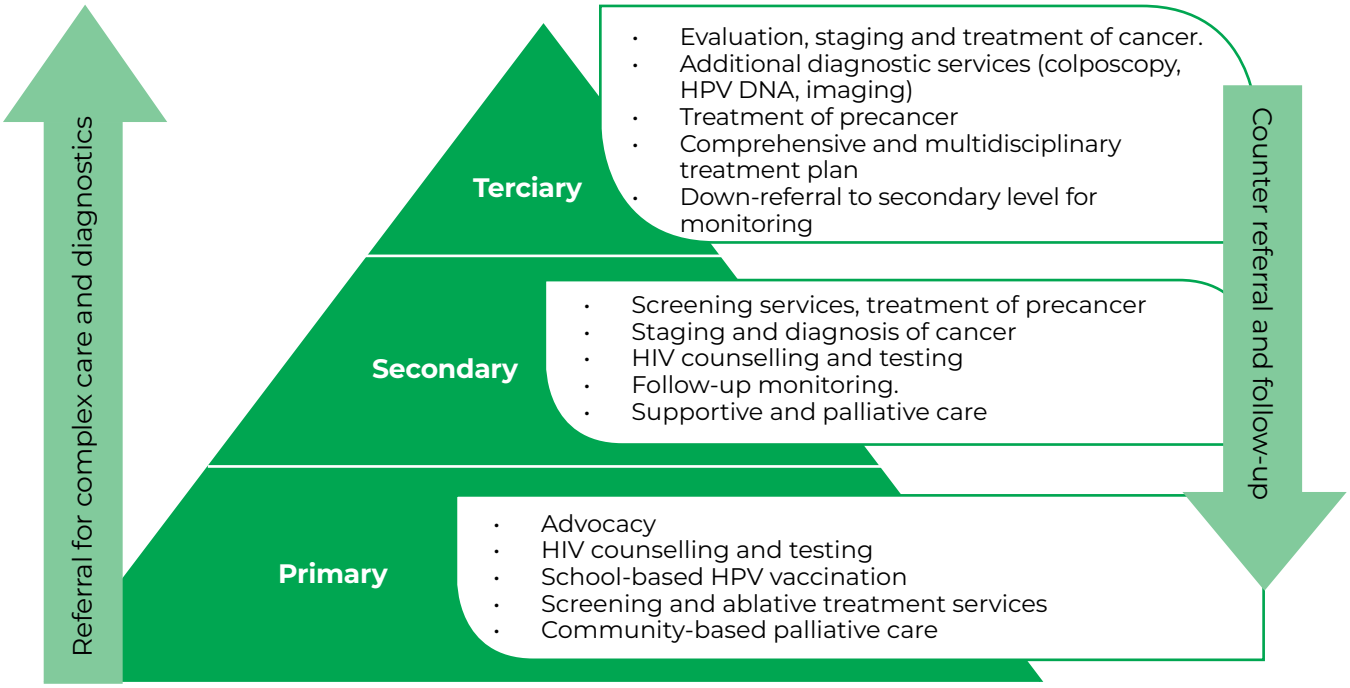
- Tier 1 – Community Health Services
- Tier 2 – Primary Care Units
- Tier 3 – District Referral Services
- Tier 4 – National Referral Services

Facilities operated by NGOs, faith-based organizations (FBOs) and the private for-profit sector shall follow the same classification depending on their level of resources and capacity. The referral system shall be developed and strengthened to ensure that clients at all levels gain access to appropriate skilled care.

According to the WHO, comprehensive cancer control is founded on integrated, people-centred care. Activities aimed at meeting the goals of this policy will take place at all levels of care: primary, secondary, and tertiary. To ensure that holistic and comprehensive support and services are provided to those who test positive, a referral pathway between the three levels of care will be formulated similar to the one on national referral protocol on levels of healthcare.

Figure 2 below provides a general overview of the expectations for each level of care. Further detail is provided in subsequent chapters.

Figure 2: Recommended services by level of care



7.4 SOCIAL AND ECOLOGICAL DETERMINANTS OF HEALTH

Each of the interventions for cervical cancer elimination has its own requirements for implementation, and unique challenges. Biomedical and clinical interventions alone will not be sufficient for reaching the cervical cancer elimination targets, as many of the implementation challenges are related to health care system weaknesses that commonly plague LMICs where disease burden is the highest. Strategic actions must therefore be customized by each country to take into consideration its unique structural deficiencies, level of readiness to implement, as well as the other barriers to care (e.g., sociocultural, gender, myths and misconceptions about the disease and its prevention and treatment) that drive cervical cancer incidence, morbidity, and mortality. WHO recommends a life-course approach to a comprehensive strategy for cervical cancer elimination to ensure that lifetime benefits are maintained. This approach includes primary prevention in pre-pubertal girls, secondary prevention for women under 30 years and tertiary prevention for all women as needed. Community mobilization will also be utilized to ensure improved health literacy, reduce stigma and facilitate access to care.

Table 3: Service provision by levels of care

Health institution	Personnel	Services offered
Community Families Individuals	CHWs	· Awareness-raising and counselling for BCC · School-based HPV vaccination · IEC/BCC /community mobilization for services · Screening (HPV self-sampling) and treatment at facility during outreach · Home-based and palliative care · Community Health Information Systems · Referral and linkages
PHU community/ Level one	· Trained Nurse/ Midwife I	· IEC, BCC · Community mobilization · Screening and treatment at facility or during outreach · Referral of screen positive clients · Referral of suspected cancer · Support home-based and palliative care · Analyse Health Information Systems · Referral and linkages · Training community health workers
Level 2 District Hospitals	· Nurses/Midwives · Medical officers · Clinical officers · Public health officers · Public health technicians · Nurses · Clinical officer · Medical Officer Public health officer · Health education officer CHEWs · Gynaecologist	· Screening and treatment of pre-cancer · Referral to tertiary level · Supportive and palliative care IEC/BCC · Screening using HPV and VIA · Treatment with cryotherapy/thermal ablation · HUB/base for Inpatient and Outreach see-and-treat. · Facility-based and home-based palliative care · Diagnosis using colposcopy if available. · Staging and biopsy of overt cancer · Other excisional treatment with conization, trachelectomy · Referral of advanced cases for palliative care. · Coordination/M&E research, cancer registry. · Preservice training
Level 3 Regional Hospitals	· Nurse · Clinical Officer Medical Officer Gynaecologist Pathologist · Radiotherapist · Oncologist	· Same as District Hospitals · Treatment of large lesions (LLETZ) · Evaluation and staging of cancer · Additional diagnostic services (cytology, HPV DNA) · Histopathology · Treatment for women with cancer · Treatment with LEEP · Extended hysterectomy / referral of advanced cases · Radiotherapy / chemotherapy · Complex surgery e.g., Wertheim's hysterectomy · Pre-service training
Tertiary Teaching Hospitals	· Nurse · Clinical Officer · Medical Officer Gynaecologist Oncologist · Radiotherapist · MDT	· Same as regional or provincial hospitals plus radiotherapy / chemotherapy / complex surgery e.g., Wertheim's hysterectomy, pre-service training

7.5 STANDARDS FOR THE PROVISION OF CERVICAL CANCER SERVICES

The Policy shall support access to and provision of high-quality and affordable cervical cancer services at all levels of health service provision. The standards shall be described further, in the national guidelines for adolescent- friendly SRH services.

7.6 HEALTH SYSTEMS REQUIREMENTS

A functional health system is a key determinant of quality of services. To provide efficient, effective, and sustainable cervical cancer services, the following essential health system building blocks are outlined in the GoSL Health Sector Strategic and Investment Plan (2013-2017):

1. Health leadership
2. Health workforce
3. Health infrastructure
4. Health products and technologies
5. Health information
6. Health financing and sustainability

7.6.1 Health leadership

The policy recognizes the role of leadership and governance in provision of cervical cancer services. The MOH shall:

a) Build capacity of health managers at all levels in strategic leadership, health systems and service management for adolescents.
b) Strengthen Reproductive Health Training and Supervision system at all levels for effective provision of cervical cancer services.
c) Ensure that annual work plans at all levels of service provision prioritize cervical cancer services.
d) Continuously monitor provision of cervical cancer services at all levels.
e) Establish and strengthen partnerships for cervical cancer service provision at all levels.

7.6.2. Health workforce

The MOH shall enhance human resources for provision of cervical cancer services in the following ways:

a) Build capacity of health providers to provide cervical cancer services through in service, on job training, mentorship, and continuous medical education.
b) Support integration of cervical cancer training into pre-service curriculum in all medical training institutions.
c) Strengthen quality assurance mechanisms through continuous support, supervision, and mentorship at all levels, to provide cervical cancer services.

7.6.3 Health infrastructure

The MOH health infrastructure will support the cervical cancer service provision framework to meet complex integrated needs of the women. The service-related issues to be addressed, include:

- Access
- Assessment of capacities
- Communication
- Effectiveness
- Efficiency
- Information systems for data collection
- Patient-centredness
- Quality improvement
- Safety
- Timeliness

7.6.4 Health products and technologies

Medical products, vaccines and technologies are essential in the provision of Cervical Cancer Services. The MOH shall:

a) Ensure equitable access to essential medical products, vaccines and technology in health facilities at all levels;
b) Ensure linkage with other policies on the procurement system and commodity supply chain;
c) Ensure linkage with institutions offering quality assurance of all medical commodities used in cervical cancer services.

7.6.5 Health information

An HMIS is critical in the implementation of the policy. Towards this end, the MOH shall take the following actions:

a) Revise and standardize data collection tools to capture disaggregated data for cervical cancer at levels of data collection;
b) Strengthen HMIS for cervical cancer;
c) Routinely collect, analyse and utilize high quality data on adolescents for decision-making at all levels;
d) Utilize modern technology to improve management of cervical cancer information at all levels.

7.6.6 Health financing and sustainability

The policy recognizes the need to increase financial resources and to put in place sustainability mechanisms for effective and efficient provision of cervical cancer services. To this end, the MOH shall:

a) Generate and avail evidence to justify resource allocation to cervical cancer programmes;
b) Seek increased budgetary allocation for provision of cervical cancer information and services at national and district levels;
c) Coordinate and harmonize donor support for cervical cancer programmes;
d) Establish mechanisms for mobilizing financial resources, including Public Private Partnerships;
e) Improve efficiency and accountability in resource allocation and utilization.

CHAPTER 8
INSTITUTIONAL FRAMEWORK

The national GoSL Cervical Cancer Prevention Programme is an MOH initiative but requires collaboration with different sectors and partners to be successful. The roles and responsibilities of various ministries are discussed below.

8.1 ROLE OF THE MINISTRY OF HEALTH

The MOH shall:

- Provide the overall policy formulation;
- Develop and revise strategy;
- Develop and review guidelines and standard operating procedures;
- Carry out programme management and coordination, quality assurance, and M&E;
- Ensure institutionalization of the programme into routine service delivery and capacity-building.

The Programme Secretariat is at the Directorate of Reproductive Health and will carry out the following.

- Oversee and facilitate implementation of the policy at national and district levels, through coordination of all national activities and all stakeholders with an interest in cervical cancer prevention activities;
- Collaborate and ensure linkages with other government sectors and nongovernmental organizations;
- Chair and coordinate meetings and be responsible for presenting programme issues to the Reproductive Health Interagency Coordinating Committee and the Health Sector Coordinating Committee, convening quarterly and annual reviews;
- Make the Reproductive Health Inter-Agency Coordinating Committee (RH-ICC) and cervical cancer TWG, the mechanisms for involving stakeholders to review and revise the cervical cancer policy and action plan. Also, standardize and review implementation and study protocols, guidelines and procedures, and review evaluation findings for learning;
- Make the Joint Interagency Coordinating Committee (JICC) the key mechanism for involving other ministries and development partners in coordinating resource mobilization and allocation;
- At the regional and district level, enable coordination through the regional and district health management teams with technical guidance from the Reproductive Health Directorate;
- Ensure collaboration by the MOH among ministries, departments and divisions within and outside the ministry and encourage them to mainstream cervical cancer preventive issues in their core functions. Also, ensure meaningful participation by MOH of all stakeholders in the RH-ICC policy implementation and the Collaborating, Learning and Adapting (CLA) initiative;
- Ensure that there is adequate capacity in terms of staffing, equipment and supplies;
- Develop a comprehensive Plan of Action for the implementation of this policy;
- Disseminate the cervical cancer policy;
- Set standards and regulatory mechanisms;
- Regulate and coordinate capacity-building, training, information sharing and service delivery;
- Coordinate activities supported by development partners;
- Mobilize and allocate resources for cervical cancer programmes.

8.2 ROLE OF THE MINISTRY OF HEALTH AT THE DISTRICT LEVEL

District and local governments are responsible for health service delivery at the district level. Within the devolved governance structure, the district governments shall allocate resources towards implementation of the cervical cancer policy. The planning, implementation, supervision, and coordination of all cervical cancer programme activities shall be undertaken by:

- The District Health Management Teams (DHMT);
- District Hospital Management Teams;
- Sub-District Health Management Teams (SDHMT);
- Primary care facility management teams;
- Community units;
- Chiefdoms.

The district health committees, district hospital boards, primary care facility management committees and community health committees shall play an oversight role in cervical cancer matters, including resource mobilization, ensuring high quality of services as well as M&E.

The district and sub-district health stakeholders' forums and the community shall use existing dialogue days to provide avenues for partnership and public participation in cervical cancer issues. The MOH shall ensure collaboration with key departments within and outside the ministry and encourage relevant agencies to mainstream cervical cancer issues in their core functions.

8.3 ROLE OF THE MINISTRY OF BASIC AND SENIOR SECONDARY EDUCATION

- Strengthen partnership with the MOH to provide cervical cancer information and services in schools;
- Facilitate provision of information to parents on sexual and reproductive health of adolescents within the school set-up;
- Strengthen health referral systems e.g., those related to STI.

8.4 ROLES OF OTHER MINISTRIES AND STATE AGENCIES

A multisectoral approach shall be promoted in the implementation of the policy. The following ministries and state agencies shall be involved.

8.4.1 Department of Population and Planning

- Support policy advocacy, resource mobilization and generation of data/information;
- Integrate cervical cancer into HIS;
- Support advocacy on elimination of cervical cancer;
- Monitor cervical cancer activities.

8.4.2 Ministry of Communication and Technology (Communication Authority of Sierra Leone)

- Support utilization of ICT in the delivery of cervical cancer information;
- Work with media to develop and disseminate content on cervical cancer.

8.4.3 Ministry of Labour, Social Security and Services

Ensure greater access to services for persons living with disabilities and in hard-to-reach areas in line with existing laws.

8.4.4 Parliamentarians

Support the implementation of the policy in their areas of jurisdiction and authority.

8.4.5 The National Treasury

Allocate financial resources for implementation of the policy, improve fiscal responsibility and support allocation of resources for implementation of the policy.

8.5 ROLE OF NON-STATE ACTORS (NGOS, CBOS AND THE PRIVATE SECTOR)

A variety of NGOs, CBOs and FBOs and private sector health care agencies and businesses have interests in cervical cancer prevention. These actors will be critical in the promotion of community involvement and in community mobilization for utilization of services.

The Directorate Reproductive Health will coordinate with partners at the national, regional and district levels. DMOs will designate people on their management teams to coordinate with groups at provincial and district levels. The MOH will establish a database indicating what kind of activities the partners engage in and their area of operation within the country.

Professional associations will play a critical role in advocacy and dissemination of new policies and technical information to their membership. The MOH will also work closely with potential partners in the area of resource mobilization and service provision.

8.6 ROLE OF THE COMMUNITY

Communities will use their existing systems to enhance awareness on the risk factors for cervical cancer including promoting safer sex practices; prevention of early pregnancies, HIV, STI and male circumcision. When available they will ensure that young girls obtain the HPV vaccine. They will educate their members on availability of screening services and where to obtain them, and especially men to support or facilitate access to these services and adherence to treatment protocols. They will also develop and maintain systems that facilitate timely referral and transfer of patients that need hospital care, and in addition, they will provide home-based care and support for patients with overt cervical cancer.

8.7 ROLE OF ACADEMIC AND RESEARCH INSTITUTIONS

Medical training institutions, including universities, shall ensure that health workers on completion of training have the necessary knowledge and skills to implement and integrate screening and treatment services wherever they are deployed according to national guidelines and standards.

The continuous technological and evidence-based practice are critical to the improvement of the quality of service rendered to patient. The academic and research institutions if working in a coordinated manner and minimize duplication can enhance the rapid introduction of the technological innovations. The key future research areas include but not limited to:

- Early diagnosis to the disease, implementation of the HPV-DNA testing technology.
- Point of care testing to reduce the lag time between screening and diagnosis and access to treatment and care.
- Development of cost-effective technology for an updated national cancer registry.
- Research institutions will regularly conduct research to inform practice in cervical cancer prevention and control in line with the MOH research agenda. They will disseminate research findings to relevant stakeholders and support capacity development of interested partners in operations research.

8.8 ROLE OF OTHER SECTORS/DEPARTMENTS

Although the cervical cancer is managed within the MOH, collaboration with other sectors in Government to reduce the risk factors that predispose women to the development of cervical cancer is critical. Such collaboration will include outcomes such as

- Reduction in poverty and improvement of the conditions of living for women;
- Reduction of GBV and the economic empowerment of women that will contribute to the reduction of mortality related to cervical cancer;
- Managing of reproductive health goals for women;
- Improving the health decision-making skills of women;
- Improving the literacy level of women.

8.9 ROLE OF CIVIL SOCIETY ORGANIZATIONS

A variety of NGOs, CBOs, FBOs and private sector health care agencies and businesses have interests in cervical cancer prevention.

Client recruitment through information, education, and communication (IEC) by CSOs in a coordinated manner will improve awareness in the community about cervical cancer. Coordinated strategies are needed to inform, and educate at-risk women about screening, cervical cancer prevention and the benefits of early detection and treatment. Providing user-friendly and understandable information for eligible women is an essential part of screening to ensure that women understand the rationale for screening and utilize these services. Information and educational strategies will include:

- Providing information on cervical cancer through one-on-one health education by trained health care workers and community dialogue and support groups using various participatory methods;
- Developing appropriate IEC materials and strategies that facilitate dialogue between communities and health workers; engender peer counselling; engage the broader public (e.g., through mass media methods such as radio and TV broadcasts and edutainment programmes); and include important community leaders as advocates for screening. The Directorate of Reproductive Health will coordinate with partners at the national level, while DMOs will designate people on their management teams to coordinate with groups at district levels;
- Establishing of a database by the MOH indicating what kind of activities the partners engage in and their area of operation within the country. Professional associations will play a critical role in advocacy and dissemination of new policies and technical information to their membership. The MOH will also collaborate closely with potential partners in resource mobilization and service provision.

8.10 ROLE OF COMMUNITY HEALTH CARE WORKERS

Counselling services offered by community health care workers in primary health care facilities, is envisaged as the main driver of the educational and awareness-raising activities. Counselling will be provided free of charge at the primary care level at all clinics and community health centres, as well as at designated district hospitals in their out-patient departments.

Community health care workers should provide information on how and where to access screening services with every household visit. This will include training on technique for self-sampling for HPV testing.

8.11 ROLE OF SERVICE DELIVERY POINTS

Health Service Delivery Points both in public and private sector will endeavour to implement screening and treatment services according to the set guidelines and standards, integrating cervical cancer screening into relevant service areas in line with the level of care. They will ensure the following:

- Availability of commodities, supplies and equipment to facilitate cervical cancer screening in their specific sites; maintaining equipment always in good condition (servicing and repairs as necessary);
- Follow-up of clients (especially screen positive clients) to ensure that they complete treatment and adhere to management protocols;
- Completion of the requisite data tools/registers and submission reports in a timely, accurate and consistent manner;
- Community mobilization activities in their areas of operation and availability of IEC/BCC materials and technical support;
- Outreach and facility cervical cancer screening and treatment activities.

CHAPTER 9
MONITORING AND EVALUATION AND RESEARCH

M&E is essential for the implementation of the cervical cancer prevention and control programme. M&E systematically captures good, quality service delivery and reliable measurable indicators, analyses it with appropriate aggregation and reporting tools, and generates quality and reliable information to make informed decisions for monitoring progress and evaluating health outcomes of the programme both globally and nationally.

The WHO in December 2014, conducted a survey baseline assessment titled Country Capacity and Preparedness for Introducing or Scaling Up a Comprehensive Cervical Cancer Prevention and Control Programme (WHO, 2017). The report indicated that Sierra Leone lacked preparedness for providing cervical cancer services, goals and indicators for cervical cancer monitoring. The country had launched a cancer registry in June 2012 but lacked adequate human resources to manage cancer patients, engage in research and surveillance as recommended by WHO.

The Sierra Leone cervical cancer prevention and control programme and scale-up needs a robust M&E system with recommendations adopted from the WHO toolkit (WHO, 2018). Indicators will be collected at the community, facility and/or national levels and focus on structure, input, process, or outcome measures. Targets should be developed based on a valid, current situation analysis focusing on prioritized metrics and according to the national and local context. Wherever possible, data should be analysed by sex, geographic location, ethnicity, and socioeconomic status to allow inequalities in cancer care to be detected and addressed.

The M&E will be carried out at facility, community and national levels. Cervical cancer data should be integrated in the existing national HMIS with standardized set of indicators and standardized data practices for it to be successful. At health facilities, quality should be monitored to assess for any delays in care, incomplete referrals, adherence to guidelines or adverse events monitoring and learning systems. Monitoring of outcomes should incorporate continuous quality improvement that links data with improved service delivery by feeding back performance to providers. Monitoring should extend beyond data entry and include serial audits to identify ways that care might be improved. Data generated from assessments must direct decision-making for planners, managers and providers based on identified deficits. Robust health information systems at the facility level can assist with evaluation of integrated services by documenting the status of the patient to identify delays in or obstacles to care. This may be organized through a hospital-based cancer registry, oriented toward improving quality of care for individual cancer patients, facility planning and service delivery.

At the community level, a regular survey of a small sample of patients (minimum of 100 patients as per the type of cancer, recruited at various cancer facilities across the country) can also provide data on core process indicators such as duration of each early diagnosis interval. This evaluation, when performed regularly (e.g., at least every five to six years), can assess progress and direct programme planning. Cancer advocates and patients are an important source of feedback and an asset to improve quality through focus groups.

Population-based cancer registries are important at the national and subnational levels for collecting cancer data and to compute incidence and mortality rates among residents of a well-defined geographic region. Data are also needed to track the accessibility and quality of care, timeliness of referral and coordination between levels of care and budgeting of resources. Participation in and support of a population-based cancer registry benefits not only the community, but also national and international cancer control programmes.

To successfully monitor and evaluate the cervical cancer services programme in Sierra Leone, the MOH, implementing partners, and stakeholders should jointly determine benchmarks and identify the opportunities to strengthen the programme as recommended in the WHO toolkit (WHO, 2018). Below are measures that they can undertake.

9.1 RAPID SITUATIONAL ASSESSMENT OF DATA AND DATA SYSTEMS

Rapid situational assessment of data and data systems should be conducted to identify opportunities for strengthening country-level data and data systems.

This process identifies opportunities and challenges associated with implementing data systems for primary and secondary cervical cancer prevention and invasive cervical cancer treatment. The goal of the data systems assessment is to contribute to the available evidence base for planning and implementing cervical cancer M&E, surveillance and information systems through documentation and analysis of the Sierra Leone landscape, information systems, programmes and services. This documentation and subsequent analysis will lead to the development of actionable country-level recommendations.

9.2 POPULATION-BASED SURVEY MODULES

A population-based survey should be conducted to enable Sierra Leone to measure population coverage of cervical cancer screening and secondary prevention. Population-based surveys will be used to assess cervical cancer screening coverage, and to identify barriers to accessing screening and precancerous treatment services. This will provide country stakeholders with standardized cervical cancer screening and treatment questions that can be incorporated into existing population-based surveys. This component will assist Sierra Leone in monitoring key indicators and measures of cervical cancer screening and treatment and will include screening prevalence; screening intervals; follow-up and treatment of precancer; SVA; HPV vaccination; knowledge and awareness; facilitators for screening and barriers to screening and treatment. WHO standardized questions help to ensure that collected data are useful for programme planning and evaluation and are comparable over time and across other countries (WHO, 2018).

9.3 PATIENT AND PROGRAMME MONITORING

The patient and programme monitoring process includes data collection, aggregation, analysis, and reporting for cervical cancer secondary prevention (screening and PCL treatment) programmes. Information generated assists the health care providers, facility managers, subnational and national MOH staff and their partners to collect, systematically analyse and use data to:

- Better plan, target, tailor, and scale interventions;
- Assess whether programmes are being implemented with quality;
- Respond effectively when they are not implemented as planned;
- Report on standardized global indicators.

9.4 FACILITY-BASED SURVEYS

Facility-based surveys should be conducted to gather and evaluate accurate, up-to-date information on the availability of cervical cancer secondary prevention services, the readiness and capacity to deliver services, and the quality of the services being delivered. The findings will inform the MOH decision-makers, implementing partners, facility administrators, and service providers with information to provide a comprehensive approach to monitoring cervical cancer screening and PCL treatment service availability, capacity, and quality.

9.5 PREVENTION AND CONTROL COSTING ANALYSIS AND PLANNING MODULE FOR SCREENING AND TREATMENT

Policy makers and programme managers will need information on the projected costs of introducing cervical cancer interventions in order to make decisions on the 'when' and 'where' of service introduction and scale-up. Through a facilitated process, the MS Excel-based tool should be introduced to enable health programme planners and managers to estimate, synthesize and analyse programme and service costs.

9.6 INDICATORS

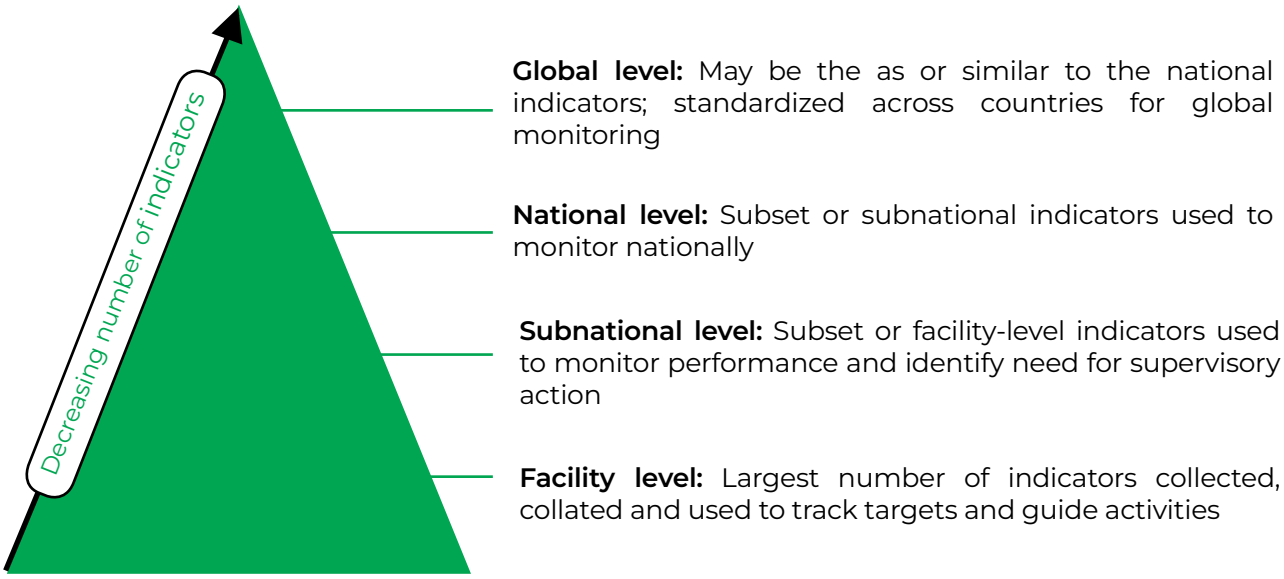
Comprehensive cervical cancer prevention and control programme indicators data will be derived from the provision of screening and treatment services. The indicators will demonstrate quantitatively how a programme is progressing towards expected outputs and outcomes. Data from the population surveys will also contribute additional indictors. A list of suggested indicators is adopted from the WHO toolkit (WHO, 2018) with accompanying guiding information.

The indicator should be used by ministries of health, implementing partners and other stakeholders to establish M&E systems for new cervical cancer programmes, or can be cross-referenced by existing programmes to enhance M&E systems through the adaptation, deletion, or addition of indicators according to need.

Data required to calculate the indicators should be collated and reported on a monthly, quarterly, or annual basis as appropriate, and analysed in a timely manner. The required variables for the numerators and denominators of the percentage-based indicators should be integrated into the existing HMIS for consistency of calculation.

Figure 3 is an illustration of the indicator information flows from facility, subnational and national and global levels. The indicators decrease as you move from one level to the next.

Figure 3: Information flow chart for indicators



Source: Improving data for decision-making: a toolkit for cervical cancer prevention and control programmes (WHO, 2018).

9.6.1 Global indicators

The WHO recommends the collection of performance, result, and impact indicators to monitor cervical cancer prevention and control programmes nationally and globally (WHO, 2019). The performance indicators recommended by WHO are related to coverage, screening, and treatment of PCLs. The recommended impact indicator assesses mortality. Data sources for the global coverage and impact indicators fall outside the scope of routine service delivery data collection and aggregation. The indicator for coverage is approached in the Population-Based Survey Modules; and the impact indicator requires population-level or sentinel hospital-based cancer registry data to calculate. Cancer registries support collection of data on cancer cases and deaths that can be analysed to inform disease occurrence and trends in a defined population.

9.6.2 National-level indicators

National programmes calculate country-level indicators using data aggregated from monthly facility summary forms that are fed into the HMIS. The indicators monitored at national level are typically a small set of core indicators which provide a focused yet comprehensive overview that informs programme tracking and management.

9.6.3 Subnational-level indicators

A larger set of indicators is monitored at the subnational level to provide a broader view of programme activities (e.g., training, facility-based surveillance, etc.) and routine service delivery. Using these indicators, subnational units can review facility-level data and trends and respond rapidly to any issues identified.

9.6.4 Facility-level indicators

The majority of indicator data are collected at the facility level using a client form and a register or logbook. Data from these sources are summarized through a monthly summary form, which then allows calculation of indicators at the facility level as well as reporting of summary data to subnational and national levels. At the subnational, national and global levels, data aggregated across facilities are used to calculate key indicators for monitoring.

The WHO toolkit (WHO, 2018) organized the cervical cancer programme indictors into Global (G), Core (C), and Optional (OPT) categories. It is not possible to collect all the indicators. Appendix 1 illustrates prioritized indicators in the overall cascade of indicators and continuum of care.To best support prioritization, reference tables with expanded detail on the method of measurement for each indicator can be found in the package of implementation tools and materials in the appendices.

The Draft Global Strategy has three main pillars: prevent, screen, and treat, that capture a comprehensive approach that includes prevention, effective screening and treatment of PCLs, early cancer diagnosis and programmes for the management of invasive cancer.

To reach elimination, efforts must be aligned and accelerated. Every country must reach the following global targets by 2030:

- Ninety per cent coverage of HPV vaccination of girls by 15 years of age);
- Seventy per cent coverage of screening (70 per cent of women are screened with high-performance tests by the ages of 35 and 45 years) and 90 per cent treatment of PCLs;
- Management of 90 per cent of invasive cancer cases.

The national policy shall adopt the WHO 90-70-90 strategy in order to augment services toward elimination. To achieve this, the following indicators are recommended for programme monitoring.

9.6.5 Performance indicators

- HPV vaccination coverage: percentage of adolescent girls aged 9 to 14 who have received at least one dose of HPV vaccine.
- Screening rate of the target population (women aged 30–49 years): percentage of women aged 30–49 years who have been screened at least once in the previous 12-month period.
- Positivity rate: percentage of screened women aged 30–49 years with a positive screening test result in the previous 12-month period.
- Treatment rate: percentage of screen-positive women receiving treatment in the previous 12-month period.
- SVA rate: proportion of screen-positive women receiving treatment on the same day they were screened.

9.6.6 Results indicator

Coverage rate indicator: percentage of women aged 30–49 years who have been screened with a high-performance test at least once between the ages of 30 and 49 years, and the percentage screened at least twice.

9.6.7 Impact indicator

- Cervical cancer age-specific incidence.
- Cervical cancer age-specific mortality.

The MOH shall provide overall strategic leadership in monitoring and evaluating implementation of the policy with technical assistance from a multisectoral TWG that includes development partners. An M&E framework for assessing implementation and impact shall be established based on the goals and objectives of the policy and targets set in the Plan of Action. The MOH and partners shall mobilize sufficient resources to support M&E of the policy and its Plan of Action.

The M&E framework for the policy shall link to the MOH institutional M&E framework and other key M&E frameworks including the HMIS. The policy shall advocate for integration of cervical cancer relevant indicators into the National Integrated Monitoring and Evaluation System and other relevant M&E frameworks. State and non-state actors shall align their projects and or programs to the MOH M&E framework.

The MOH shall ensure continuous monitoring of the policy implementation through routine data collection using HMIS and support supervision. The policy shall promote collection, analysis and utilization of disaggregated data for cervical cancer. The MOH shall support capacity-building of programme managers, planners, and service providers on data utilization for decision-making. The MOH shall provide technical support to relevant research institutions to ensure inclusion of cervical cancer indicators in periodic population-based surveys and research.

CHAPTER 10
OBJECTIVES AND TARGETS OF THE IMPLEMENTATION FRAMEWORK

10.1 TARGETS FOR CERVICAL CANCER SERVICES

- Ninety per cent community reached with IEC.
- Ninety per cent Girls aged 9-15 vaccinated for HPV using single dose vaccine.
- Seventy per cent women aged 25-49 screened using cost-effective screening test.
- Seventy per cent women screened using HPV test, by age 35.
- Seventy per cent women screened for the second time, using HPV test, by age 45.
- Ninety per cent women with HIV aged 25-65 screened.
- Ninety per cent women with PCLs treated.
- Ninety per cent women with histological diagnosis of cervical cancer treated.
- Ninety per cent women with advanced cancer receiving palliative care.

10.2 ASSUMPTIONS AND TARGETS FOR QUALITY CONTROL

The following assumptions have been made when calculating some targets:

- The screen positivity for VIA is expected to be 5-10 per cent for non-HIV-infected women.
- The screen positivity for VIA is expected to be 20 per cent for HIV-infected women.
- Around 90 percent of positive lesions will be eligible for cryotherapy and thermal ablation, whilst 10 percent will need referral for LEEP/ LEETZ.
- SVA rate of 90 percent can be expected in model sites.
- Around 2 percent of screened women have suspected cancer, needing tertiary care.
- Around 10 percent of those with suspected cancer are operable, needing surgical interventions and a clear referral pathway which might include staging and biopsy.
- The majority will have late presentation, needing palliative care within districts.

10.3 PHASED APPROACH TO IMPLEMENTATION

A phased approach to implementation of the strategy is presented in Table 4.

Table 4: Phased approach to implementation

Indicators: G = Global; C = Core; OPT = Optional	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
Development of guidelines, policies, training materials, M&E tools, etc.	X	X						
Training of trainers (TOTs) e.g., for programme managers, gynaecologists, MOs, and District Nurses	X	X						
Procurement of equipment	X	X						
Development of a referral pathway for external referral criteria	X	X						
Conducting baseline assessment	X	X						
Introduction of services	X	X						
Scale-up of activities			X	X	X			
Conducting end-line evaluation						X		

Table 5: Summary of key strategic objectives and indicators

Strategic Objective 1: To increase by 90 per cent the number of people reached with education and information by intense mobilization for public support of HPV vaccination and cervical cancer screening and treatment, by 2025		
Outcomes	**Strategies and key activities**	**Indicators**
• Increased awareness of cervical cancer in the population • Increased health care seeking behaviour • Cervical cancer mainstreamed into health care delivery system • Increased awareness of cervical cancer prevention so that health personnel, other relevant government staff, community leaders, eligible women and their male partners understand the need for cervical cancer prevention services and support utilization of available services • Population-based screen-and-treat services with equitable coverage across districts • Available trained personnel • Improved infrastructure and equipment for integrated services • Available equipment	1. Hold meetings with community gate keepers to sensitize them on cervical cancer 2. Hold community dialogue meetings with men, women, youth, both girls and boys for information and engagement on cervical cancer 3. Identify and collaborate with existing multisectoral programs at community level 4. Train Community Health Workers and volunteers, youth groups, women groups, chiefs, elders, school health programmes, professional bodies, training institutions, workplace programmes, business and religious communities, and others on cervical cancer 5. Develop key media messages and disseminate to local media houses 6. Develop and disseminate IEC/BCC materials 7. Provide regular and planned health talks in facilities 8. Develop community role models/champions 9. Integrate cancer prevention and control into the CHW training materials 10. Conduct mobilization of community for outreach services	1. Community campaigns 2. Self-sampling 3. Chiefdoms reached 4. CHWs trained 5. Community leaders oriented

Table 5: Summary of key strategic objectives and indicators (continued)

Strategic Objective 2: To reduce the incidence of oncogenic HPV infections through vaccination of 90 per cent of girls aged 9-13 by 2025		
Outcomes	**Strategies and key activities**	**Indicators**
• Increased HPV vaccination rates • Increased linkages to STI management • Improved cold chain management • Increased skills to manage HPV	1. Quantify and procure adequate quantities of HPV vaccine and supplies 2. Increase cold chain capacity at facility, regional and national levels 3. Train health workers to forecast, order, store, effectively use and monitor HPV vaccine 4. Conduct outreach for HPV vaccination in hard to reach areas 5. Develop indicators to track HPV data through HMIS 6. Develop, print and distribute data collection tools 7. Conduct micro-plans for HPV scale-up and roll-out nationally 8. Conduct supportive supervision for HPV 9. Conduct regular data quality assessments for HPV 10. Document and disseminate best practices for HPV vaccination.	a) Facilities providing HPV vaccination b) Providers trained to perform HPV vaccination c) Girls 9-13 who have completed first dose d) Girls 9-13 who have completed second dose Girls 9-13 who are enrolled in school e) Girls 9-13 out of school
Strategic Objective 3: To halt the progress of precancerous lesions to cancer, by screening 70 per cent of women aged 25-49, using VIA, by 2025		
Outcomes	**Strategies and key activities**	**Indicators**
• Increased screening for high-risk women aged 30-49 • Increased screening for women with HIV aged 15-65	1. Quantify, procure and distribute 5 per cent acetic acid to facilities 2. Procure HPV testing reagents 3. Procure self-testing HPV kits 4. Procure pap smear kits 5. Procure speculums 6. Procure light source 7. Update the existing HMIS to include screening data 8. Develop appropriate data tools	a) Women screened b) Initial screening rate c) First-time screening for women with HIV d) Self-sampling e) Linkage to HIV services f) See-and-treat for HIV services g) Screening test positivity rate h) Suspected cancer cases i) Public facilities providing VIA-based screening j) Mobile outreach screening

Table 5: Summary of key strategic objectives and indicators (continued)

Strategic Objective 4: To reduce the prevalence of PCLs in the population by treating 90 per cent of women with PCLs, using ablative technology, at all levels of care, including community level, by 2025		
Outcomes	**Strategies and key activities**	**Indicators**
• Increased HPV vaccination rates • Increased linkages to STI management • Improved cold chain management • Increased skills to manage HPV Increased treatment of PCL lesions • Increased number of publics, private, FBO and industrial facilities providing cryotherapy, thermal ablation and LLETZ treatment • Increased treatment at all levels of care: community, PHU, Level 2 • Increased number of providers offering treatment • Increased see-and-treat among client found to have PCL	1. Procured cryotherapy systems 2. Procure C02 cylinder 3. Fabricate adopters and connectors 4. Procure cylinder trolleys 5. Procure appropriate spanners, tapes and essential support 6. Procure thermal ablation system 7. Procure extra batteries 8. Procure LEEP system 9. Procure haemostatic solution (Monsell) 10. Procure LEEP accessory equipment and reagents 11. Train HCW in cryotherapy procedure 12. Train HCW in thermal ablation procedure 13. Train HCW on LLETZ/LEEP procedure 14. Train biotechnicians in care and maintenance 15. Refer large lesions and link to advanced care	a) Treatment with cryotherapy b) Treatment with thermal ablation c) Treatment for large lesions using LLETZ d) Large lesion referral
Strategic Objective 5: To prevent the lack of follow-up after screening by expanding the see-and-treat approach to treatment for 90 per cent of women with PCLs		
Outcomes	**Strategies and key activities**	**Indicators**
• Increased see-and-treat among clients with PCL	1. Assess and standardize see-and-treat spaces for adequacy and safety 2. Develop pre- and post-procedure informational materials for clients 3. Link to STI treatment 4. Link to HIV screening 5. Develop referral tools	a) SVA rate b) Facility-based SVA c) Community-based SVA d) Referrals for large lesions

Table 5: Summary of key strategic objectives and indicators (continued)

Strategic Objective 6: To improve early diagnosis of invasive cancer, by comprehensive clinical and histological evaluation, for 90 per cent of women with suspected cancer, by 2025		
Outcomes	**Strategies and key activities**	**Indicators**
• Increased EUA, biopsies and staging at district level • Increased histological diagnosis	1. Perform LEEP biopsies 2. Perform colposcopy 3. Perform EUA, staging, biopsy 4. Perform histopathology on all specimens at district level 5. Perform quality control for histopathology	a) Suspected cervical cancer cases b) Suspected cervical cancer referral c) EUA for staging and biopsy d) Histologically confirmed cervical cancer
Strategic Objective 7: To improve treatment of invasive cancer for 90 per cent of women histologically diagnosed with invasive disease, by 2025		
Outcomes	**Strategies and key activities**	**Indicators**
• Increased LLETZ conization • Increased Wertheim's hysterectomy • Increased chemotherapy for cervical cancer • Increased radiotherapy for cervical cancer	1. Develop consent forms specific to procedures. 2. Develop job aids and counselling materials for clients. 3. Procure essential equipment and commodities. 4. Train HCW in surgical procedures 5. Train pathologists to support histopathology. 6. Develop stands and criteria for external referral for radiotherapy	a) Histologically confirmed cancer (stage 1 and 2) b) LLETZ conization c) Wertheim's hysterectomy d) Chemotherapy for cervical cancer at the district level e) MOH-facilitated radiotherapy referral
Strategic Objective 8: To provide palliative and hospice care, as appropriate, at all levels of care, for 90 per cent of women diagnosed with invasive cancer, by 2025		
Outcomes	**Strategies and Key Activities**	**Indicators**
• Increased number of facilities providing palliative/hospice care • Increased number of patients provided home-based care • Increased number of CHWs providing palliative care	1. Review policies on palliative drugs 2. Procure palliative drugs 3. Train CHWs on home-based palliative care 4. Sensitize community on home-based palliative care	a) Facilities providing palliative care services b) Number of public health facilities providing palliative care services c) Number of Patients receiving home-based palliative/ hospice care

Table 5: Summary of key strategic objectives and indicators (continued)

Strategic Objective 9: To increase the capacity to provide see-and-treat, advanced secondary prevention and tertiary prevention services by training 90-100 per cent of health care workers including nurses, midwives, nurse officers, medical officers and specialists, by 2025		
Outcomes	**Strategies and key activities**	**Indicators**
• Increased capacity for see-and-treat • Increase capacity for LLETZ and surgical procedures • Increased capacity of laboratory technologists /technicians to perform cytology • Increased capacity of biomedical engineers to maintain cervical cancer equipment • Increased capacity of M&E personnel to manage cervical cancer data • Increased number of health care workers trained in colposcopy • Increased number of pathologists	1. Train health care workers in VIAC/thermal ablation 2. Train Medical Officers and specialists in LLETZ 3. Train laboratory technologists in cytology 4. Train biomedical engineers in repair and maintenance of cervical cancer equipment 5. Train M&E officers in cervical cancer data tools 6. Develop curricula for various trainings 7. Train TOTs 8. Train CHWs in self-HPV sampling 9. Train medical officers and specialists in EUA, staging and biopsy 10. Train health care workers in cryotherapy and thermal ablation procedures 11. Train health care workers in LLETZ/LEEP procedure 12. Train biotechnicians in care and maintenance 13. Train health care workers in M&E tools 14. Train health care workers in palliative care 15. Develop curriculum for home-based palliative care	a) Trained service providers for SVA b) Trained service providers in LLETZ c) Trained providers in other excisional procedures (e.g., trachelectomy) d) Trained CHWs in cervical cancer module e) Trained nurses in palliative care f) Trained laboratory technicians in cytology g) Trained biomedical technicians in maintenance of cervical cancer equipment h) Trained M&E officers in cervical cancer data tools i) Trained pathologists
Strategic Objective 10: To increase collaboration between relevant ministries, departments, stakeholders, for resource support and resource mobilization		
Outcomes	**Strategies and key activities**	**Indicators**
• Increased intersectoral meetings in cervical cancer • Increased number of women referred to relevant ministries and sectors for linkage of care	1. Hold intersectoral meetings within districts 2. Empower women to seek health care as well other relevant care needed to improve their health condition	a) Exchange visits undertaken b) Inter-ministerial forums on cervical cancer and social and ecologic determinants of health

Table 5: Summary of key strategic objectives and indicators (continued)

Strategic Objective 11: To strengthen the knowledge and evidence base on cervical cancer prevention and control through improved HMIS, cancer registry, M&E and research		
Outcomes	**Strategies and key activities**	**Indicators**
• M&E data tools and indicators developed • Expanded population-based cancer registry • Cervical cancer data included in HMIS • Research on cervical cancer • Documentation of learning and best practices	1. Develop M&E tools 2. Expand the population-based registers to all facilities 3. Specific set of data to HMIS, to include global and core indicators 4. Document learning and best practices	a) Facilities supplied with cervical cancer data tools b) Facilities reporting to the DHIS c) District facilities supplied with population-based cancer registry d) Facilities supplied with population-based cancer registry e) Newly diagnosed cervical cancer cases f) Cervical cancer deaths g) Private facilities reporting cervical cancer service data h) Private facilities reporting newly diagnosed cervical cancer cases
Strategic Objective 12: To increase leadership and governance capacity for management, coordination and advocacy for quality equitable service delivery		
Outcomes	**Strategies and key activities**	**Indicators**
• Sustained partnerships and increased synergy that lead to successful resource mobilization and effective SRHR interventions leading to increased Quality of services • Increased resources available • Increased reports, plans, data, best practices • Increased effectiveness and capacity of the TWG to coordinate the cervical cancer programme • Increased stakeholder participation • Increased supportive supervision • Increased mapping • Increased funding	1. Implementation of joint programmes by partners 2. Establish regional clusters for joint advocacy and programming 3. Exchange visits 4. Quarterly and annual meetings 5. Joint resource mobilization initiatives 6. Information sharing and learning through forums and internet/social media 7. Conduct TWG and stakeholder meetings 8. Advocate for cervical cancer funding 9. Develop annual work plans for cervical cancer	a) Number of meetings/forums held, and attendance b) Number of exchange visits undertaken c) Joint resource mobilization initiatives undertaken d) Existence of learning resource packages e) Existence of M&E tools f) TWG meetings conducted g) Stakeholder meetings conducted h) Existence of TOTs i) Trained health care providers j) Existence of specific focal persons k) Funding sources

10.4 TIMELINES FOR TARGETS OF STRATEGIC OBJECTIVES

Table 6: List of indicator targets by Strategic Objectives

INDICATOR (performance and result)	What it measures	Target trend line						Data source
		Baseline	Year 1	Year 2	Year 3	Year 4	End Line	
Strategic Objective 1: To increase by 90 per cent the number of people reached through intense public mobilization and provided education and information to gain their support for HPV vaccination and cervical cancer screening and treatment, by 2025								
Community campaigns	Proportion of chiefdoms reached through community campaigns (including mass screening campaigns carried out)	X	50 per cent	60 per cent	70 per cent	80 per cent	90 per cent	DHIS
	Proportion of schools reached through HPV campaign	X	50 per cent	60 per cent	70 per cent	80 per cent	90 per cent	DHIS
	Proportion of clinicians and CHWs reached through communication messages on cervical cancer	X	50 per cent	60 per cent	70 per cent	80 per cent	90 per cent	DHIS
Self-sampling	Proportion of screening tests conducted using a self-collected sample	X	2 per cent	3 per cent	4 per cent	5 per cent	10 per cent	DHIS
	Proportion of women educated on self-sampling	X	50 per cent	60 per cent	70 per cent	80 per cent	90 per cent	DHIS
Strategic Objective 2: To reduce the incidence of oncogenic HPV infections through vaccination of 90 per cent of girls aged 9-13 by 2025								
Facilities providing HPV vaccination	If the site provided routine vaccination, they are included in total number of sites with capacity to provide HPV	X	X	X	X	X	X	HMIS
Providers trained to perform HPV vaccination	Certified during training programme	X	X	X	X	X	X	HMIS
Girls 9-13 who have completed first dose	Total number and proportion of girls 9-13 who have completed first dose	X	90 per cent	90 per cent	90 per cent	90 per cent	90 per cent	HMIS
Girls 9-13 who have completed second dose	Total number of girls 9-13 who have completed second dose	X	90 per cent	90 per cent	90 per cent	90 per cent	90 per cent	HMIS
Girls 9-13 who are enrolled in school	Total number of girls 9-13 who are enrolled in school	X	X	X	X	X	X	HMIS
Girls 9-13 out of school	Total number of girls 9-13 out of school	X	X	X	X	X	X	HMIS

Table 6: List of indicator targets by Strategic Objectives (continued)

Strategic Objective 3: To halt the progress of PCLs to cancer, by screening 70 per cent of women aged 25-49 by 2025								
INDICATOR (performance and result)	**What it measures**	**Target trend line**						**Data source**
		Baseline	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**End Line**	
Women screened	Number of women screened [by screening visit type and age group or range] in a given time period	5 per cent	10 per cent	30 per cent	50 per cent	60 per cent	70 per cent	HMIS
Initial screening rate	Percentage of women aged 30-49 years screened for the first time in a 12-month period	5 per cent	10 per cent	30 per cent	50 per cent	60 per cent	70 per cent	HMIS
Screening rate (Initial)	Percentage of women within the target age range screened for the first time in a given time period	5 per cent	10 per cent	30 per cent	50 per cent	60 per cent	70 per cent	HMIS
First time screening for women with HIV	Percentage of women enrolled in HIV care and treatment who were screened for cervical cancer for the first time	5 per cent	10 per cent	30 per cent	50 per cent	60 per cent	70 per cent	HMIS
Self-sampling	Proportion of screening tests conducted using a self-collected sample	X	X	X	X	X	X	HMIS
PITC service provision	Percentage of women with previously unknown HIV status who received provider-initiated testing and counselling (PITC) and now know their status	5 per cent	10 per cent	30 per cent	50 per cent	60 per cent	70 per cent	HMIS
Linkage to HIV services See-and-treat for HIV services	Percentage of clients linked to HIV care and treatment after receiving an HIV-positive result through PITC	5 per cent	10 per cent	30 per cent	50 per cent	60 per cent	70 per cent	HMIS
Screening test positivity rate	Percentage of screened women aged 30-49 years with a positive result in a 12-month period	5 per cent	10 per cent	30 per cent	50 per cent	60 per cent	70 per cent	HMIS
Screening test positivity rate	Percentage of first time screened women [aged 25-49] who received a positive screening result in a given time period	5 per cent	10 per cent	30 per cent	50 per cent	60 per cent	70 per cent	HMIS
Suspected cancer cases	Percentage of first time screened women 25-49 with suspected cervical cancer	X	X	X	X	X	X	HMIS
Public facilities providing VIA based screening	Proportion of public facilities offering VIA-based screening	X	X	X	X	X	X	HMIS

Table 6: List of indicator targets by Strategic Objectives (continued)

Strategic Objective 3: To halt the progress of PCLs to cancer, by screening 70 per cent of women aged 25-49 by 2025 (continued)								
INDICATOR (performance and result)	**What it measures**	**Target trend line**						**Data source**
		Baseline	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**End Line**	
Private facilities providing VIA screening	Proportion of private facilities offering VIA-based screening	X	X	X	X	X	X	HMIS
Number of private facilities providing HPV testing	Proportion of private facilities providing HPV testing	X	X	X	X	X	X	HMIS
Number of private facilities providing pap smear testing	Proportion of private facilities proving pap smear testing	X	X	X	X	X	X	HMIS
Mobile outreach screening	Proportion of women screened for cervical cancer in mobile outreach activities	X	X	X	X	X	X	HMIS
Strategic Objective 4: To reduce the prevalence of PCLs in the population by treating 90 per cent of women with PCLs, at all levels of care, including community level								
Treatment with cryotherapy	Percentage of screen-positive women with lesions eligible for cryotherapy who received cryotherapy	X	X	X	X	X	X	HMIS
Treatment with thermal ablation	Percentage of screen-positive women with lesions eligible for thermal ablation who received thermal ablation	X	X	X	X	X	X	HMIS
Postponed cryotherapy	Percentage of VIA-positive women with lesions eligible for cryotherapy who postponed cryotherapy	X	X	X	X	X	X	HMIS
Cryotherapy after post-ponement	Percentage of VIA-positive women with lesions eligible for cryotherapy who received cryotherapy after postponing	X	X	X	X	X	X	HMIS
Did not return for cryotherapy	Percentage of VIA-positive women with lesions eligible for cryotherapy who did not return for cryotherapy after postponing	5 per cent	10 per cent	30 per cent	50 per cent	60 per cent	70 per cent	HMIS
Treatment for large lesions using LLETZ	Percentage of screen-positive women referred for large lesions who received LLETZ	X	X	X	X	X	X	HMIS

Table 6: List of indicator targets by Strategic Objectives (continued)

INDICATOR (performance and result)	What it measures	Target trend line						Data source
		Baseline	Year 1	Year 2	Year 3	Year 4	End Line	
Strategic Objective 4: To reduce the prevalence of PCLs in the population by treating 90 per cent of women with PCLs, at all levels of care, including community level (continued)								
Large lesion referral	Percentage of screen-positive women referred for large lesions (lesions not eligible for cryotherapy)	X	X	X	X	X	X	HMIS
Treatment rate	Percentage of screen-positive women who have received treatment in a given time period	90 per cent	90 per cent	90 per cent	90 per cent	90 per cent	90 per cent	HMIS
Treatment rate	Percentage of screen-positive women who have received treatment in a given time period	90 per cent	90 per cent	90 per cent	90 per cent	90 per cent	90 per cent	HMIS
Strategic Objective 5: To prevent lack of follow-up after screening, by expanding the "see-and-treat" approach to treatment for 90 per cent of women with PCLs								
PCL treatment – eligible for see-and-treat	Percentage of screen-positive women with lesions eligible for cryotherapy or thermal ablation who received that treatment	X	X	X	X	X	X	HMIS
PCL treatment – not eligible for see-and-treat	Percentage of screen-positive women with lesions not eligible for cryotherapy or thermal ablation and were referred for LLETZ who received that treatment	X	X	X	X	X	X	HMIS
SVA rate	Percentage of VIA-positive women with lesions eligible for cryotherapy treated during the same visit	X	20 per cent	30 per cent	50 per cent	60 per cent	70 per cent	HMIS
Facility-based SVA	No. of facilities providing SVA	X	X	X	X	X	X	HMIS
Community-based SVA	No. of community outreaches where SVA was provided	X	X	X	X	X	X	HMIS
Mobile see-and-treat	Proportion of women provided see-and-treat mobile outreach approach	5 per cent	10 per cent	30	50 per cent	60 per cent	70 per cent	HMIS
Strategic Objective 6: To Improve early diagnosis of invasive cancer, by comprehensive clinical and histological evaluation, for 90 per cent of women with suspect cancer								
Suspected cancer cases	Percentage of (first time) screened women 25-49 with suspected cervical cancer	X	X	X	X	X	X	HMIS
Suspected cancer referral	Percentage of screen-positive women referred for suspected cancer	5 per cent	10 per cent	30	50 per cent	60 per cent	70 per cent	HMIS

Table 6: List of indicator targets by Strategic Objectives (continued)

Strategic Objective 6: To Improve early diagnosis of invasive cancer, by comprehensive clinical and histological evaluation, for 90 per cent of women with suspect cancer (continued)								
INDICATOR (performance and result)	**What it measures**	**Target trend line**						**Data source**
		Baseline	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**End Line**	
Suspected cancer referral compliance	Percentage of screen-positive women referred for suspected cancer who attended the referral visit	5 per cent	10 per cent	30	50 per cent	60 per cent	70 per cent	HMIS
EUA for staging and biopsy	Percentage of screen-positive women referred for suspected cancer who underwent EUA	5 per cent	10 per cent	30	50 per cent	60 per cent	70 per cent	HMIS
District based EUA and staging	Proportion of district hospitals offering EUA and staging	5 per cent	10 per cent	30	50 per cent	60 per cent	70 per cent	HMIS
Confirmed cancer	Percentage of screen-positive women referred for suspected cancer who were histologically diagnosed with cancer	5 per cent	10 per cent	30	50 per cent	60 per cent	70 per cent	HMIS
Results turn-around time	Number of days between sample collection and sending of results to screened women	X	X	X	X	X	X	HMIS
Sample submission time	Number of days between sample collection and transport of sample to laboratory	X	X	X	X	X	X	HMIS
Laboratory processing time	Number of days between laboratory receipt of sample and return of results to facility	X	X	X	X	X	X	HMIS
Results communica-tion turnaround time	Number of days between facility receipt of results and sending of results to screened women	X	X	X	X	X	X	HMIS
District-based histo-pathology for cervical cancer	Proportion of district facilities performing histopathology for cervical cancer	X	X	X	X	X	X	HMIS
CT scan evaluation	Proportion of suspect cervical cancer with CT scan evaluation	X	X	X	X	X	X	HMIS

Table 6: List of indicator targets by Strategic Objectives (continued)

INDICATOR (performance and result)	What it measures	Target trend line						Data source
		Baseline	Year 1	Year 2	Year 3	Year 4	End Line	
Strategic Objective 7: To improve treatment of invasive cancer for 90 per cent of women histologically diagnosed with invasive disease, by 2025								
Histologically confirmed cancer (stage 1 and 2)	Proportion of histologically confirmed cancer which is operable	X	10 per cent	20 per cent	30 per cent	40 per cent	50 per cent	HMIS
LLETZ for cervical cancer	Proportion of operable cancer treated with LLETZ conization	X	X	X	X	X	X	HMIS
Cold knife conization	Proportion of operable cancer treated with cold knife conization	X	X	X	X	X	X	HMIS
Simple hysterecto-my for cervical cancer	Proportion of operable cancer treated by simple hysterectomy	X	X	X	X	X	X	HMIS
Wertheim's hysterecto-my	Proportion of operable cancer treated by Wertheim's hysterectomy	X	X	X	X	X	X	HMIS
Chemother-apy for cervical cancer	Proportion of histologically confirmed cancer treated by chemotherapy	X	X	X	X	X	X	HMIS
Radiotherapy for invasive cancer	Proportion of histologically confirmed cancer referred for radiotherapy	X	X	X	X	X	X	HMIS
Communi-ty-based SVA	No. of community outreaches where SVA was provided	X	X	X	X	X	X	HMIS
Palliative care for cervical cancer	Proportion of histologically confirmed cancer treated by palliative care	X	X	X	X	X	X	HMIS
Treatment of invasive cancer	Proportion of histologically diagnosed cervical cancer who received treatment	X	10 per cent	30 per cent	50 per cent	60 per cent	90 per cent	HMIS
Strategic Objective 8: To provide palliative and hospice care, as appropriate, at all levels of care, to 90 per cent of women diagnosed with invasive cancer, by 2025								
Facilities providing palliative care services	Proportion of district health facilities providing palliative care services	X	10 per cent	30 per cent	50 per cent	60 per cent	100 per cent	HMIS
Facilities providing palliative care services	Proportion of districts providing home-based palliative care services	X	10 per cent	30 per cent	50 per cent	60 per cent	100 per cent	HMIS

Table 6: List of indicator targets by Strategic Objectives (continued)

INDICATOR (performance and result)	What it measures	Target trend line						Data source
		Baseline	Year 1	Year 2	Year 3	Year 4	End Line	
Strategic Objective 8: To provide palliative and hospice care, as appropriate, at all levels of care, to 90 per cent of women diagnosed with invasive cancer, by 2025 (continued)								
Facilities providing palliative care services	Proportion of private facilities providing palliative care services	X	X	X	X	X	X	HMIS
Facilities providing hospice care services	Proportion of districts with hospice care services	X	10 per cent	30 per cent	50 per cent	60 per cent	100	HMIS
Proportion of facilities providing palliative care services	Proportion of district health facilities providing palliative care services	X	10 per cent	30 per cent	50 per cent	60 per cent	80 per cent	HMIS
Proportion of facilities providing palliative care services	Proportion of districts providing home-based palliative care services	X	10 per cent	30 per cent	50 per cent	60 per cent	80 per cent	HMIS
Proportion of facilities providing palliative care services	Proportion of private facilities providing palliative care services	X	X	X	X	X	X	HMIS
Patients receiving home-based palliative/ hospice care	Proportion of patients who are on palliative/ hospice care, who are receiving home-based care	X	X	X	X	X	X	HMIS
Strategic Objective 9: To Increase the capacity of to provide see-and-treat, advanced secondary prevention and tertiary prevention services by training 90-100 per cent of HCWs including nurses, midwives, nurse officers, medical officers and specialists, by 2025								
Trained service providers for SVA	Proportion of service providers (nurses, midwives, medical officers and gynaecologists) trained in screening with VIA and treatment with cryotherapy / thermal ablation	X	30 per cent	50 per cent	60 per cent	70 per cent	90 per cent	SARA
Trained service providers in LLETZ	Proportion of gynaecologists trained in LEEP	X	80 per cent	85 per cent	90 per cent	95 per cent	100 per cent	SARA
Trained providers in other excisional procedures, e.g., trachelecto-my	Proportion of gynaecologists trained in other forms of excision procedures	X	80 per cent	85 per cent	90 per cent	95 per cent	100 per cent	SARA

Table 6: List of indicator targets by Strategic Objectives (continued)

INDICATOR (performance and result)	What it measures	Target trend line						Data source
		Baseline	Year 1	Year 2	Year 3	Year 4	End Line	
Strategic Objective 9: To Increase the capacity of to provide see-and-treat, advanced secondary prevention and tertiary prevention services by training 90-100 per cent of HCWs including nurses, midwives, nurse officers, medical officers and specialists, by 2025 (continued)								
Trained community health care workers in cervical cancer module	Proportion of community health care workers trained in cervical cancer package of care for community services	X	30 per cent	50 per cent	60 per cent	70 per cent	90 per cent	SARA
Trained nurses in palliative care	Proportion of nurses trained in cervical cancer package of palliative care	X	30 per cent	50 per cent	60 per cent	70 per cent	90 per cent	SARA
Trained laboratory technicians in cytology	Proportion of laboratory technicians trained to perform pap smears	X	10 per cent	20 per cent	30 per cent	40 per cent	50 per cent	SARA
Trained biomedical technicians in maintenance of cervical cancer equipment	Number of biomedical engineers trained in maintenance of cervical cancer equipment	1	3	4	5	5	5	SARA
Trained M&E officers in cervical cancer data tools	Proportion of district and national M&E officers trained in cervical cancer data tools	X	30 per cent	50 per cent	60 per cent	70 per cent	100 per cent	SARA
Strategic Objective 10: To increase collaboration between relevant ministries, departments, stakeholders, for resource support and resource mobilization								
Meetings/ forums held and attendance	Number of meetings/ forums held and attendance	X	X	X	X	X	X	DRH
Exchange visits undertaken	Number of exchange visits undertaken	X	X	X	X	X	X	DRH
Joint resource mobilization initiatives undertaken	Number of joint resource mobilization initiatives undertaken	X	X	X	X	X	X	DRH
Inter-ministerial forums		X	X	X	X	X	X	DRH
Strategic Objective 11: To strengthen the knowledge and evidence base on cervical cancer prevention and control through improved Hospital Information System, cancer registry, Monitoring, evaluation and Research								
Facilities supplied with cervical cancer data tools	Number of district hospitals supplied with cervical cancer tools	X	10 per cent	30 per cent	50 per cent	60 per cent	70 per cent	HMIS

Table 6: List of indicator targets by Strategic Objectives (continued)

Strategic Objective 11: To strengthen the knowledge and evidence base on cervical cancer prevention and control through improved Hospital Information System, cancer registry, Monitoring, evaluation and Research (continued)								
INDICATOR (performance and result)	**What it measures**	**Target trend line**						**Data source**
		Baseline	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**End Line**	
Facilities reporting to the DHIS	Proportion of facilities providing cervical cancer, reporting to the DHIS	X	50 per cent	60 per cent	70 per cent	80 per cent	90 per cent	HMIS
Facilities supplied with population-based cancer registers	Number of district hospitals reporting cervical cancer cases at the district/facility	X	10 per cent	30 per cent	50 per cent	60 per cent	70 per cent	HMIS
Facilities supplied with cervical cancer data tools	Number of district hospitals supplied with cervical cancer tools	X	10 per cent	30 per cent	50 per cent	60 per cent	70 per cent	HMIS
Facilities reporting to the DHIS	Number of district hospitals reporting to the DHIS	X	10 per cent	30 per cent	50 per cent	60 per cent	70 per cent	HMIS
District facilities supplied with population-based cancer register	Number of district hospitals reporting cervical cancer cases at the district/facility	X	30 per cent	50 per cent	60 per cent	70 per cent	100 per cent	HMIS
Facilities supplied with population-based cancer register	Number of national level/referral facilities with monthly reports for newly diagnosed cervical cancer cases and cervical cancer deaths	X	100 per cent	100 per cent	100 per cent	100 per cent	100 per cent	HMIS
Newly diagnosed cervical cancer cases								Cancer registry
Cervical cancer deaths								Cancer registry
Private facilities reporting cervical cancer service data								
Private facilities reporting newly diagnosed cervical cancer cases								

Table 6: List of indicator targets by Strategic Objectives (continued)

Strategic Objective 12: To increase leadership and governance capacity for management, coordination, and advocacy for quality equitable service delivery								
INDICATOR (performance and result)	**What it measures**	**Target trend line**						**Data source**
		Baseline	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**End Line**	
Existence of learning resource packages	No. of training packages developed for various skills	X	X	X	X	X	X	DRH
Existence of M&E tools	M&E tools developed	X	X	X	X	X	X	DRH
TWG meetings conducted	Number of TWG meetings conducted on a regular basis	X	X	X	X	X	X	DRH
Stakeholder meetings conducted	Number of stakeholder meetings conducted on a regular basis	X	X	X	X	X	X	DRH
Existence of TOTs	Number of TOTs trained to conduct see-and-treat capacity building activities	X	X	X	X	X	X	DRH
Trained health care providers	Number of health care workers trained to provide see-and-treat services	X	X	X	X	X	X	DRH
Existence of specific focal persons	Focal points identified to lead specific aspects of cervical cancer programmes, e.g., HPV, community mobilization	X	X	X	X	X	X	DRH
Funding sources	Number of organizations, persons supporting cervical cancer services nationally	X	X	X	X	X	X	DRH

GLOSSARY

TERM	DEFINITION
Incidence	Incidence is the number of new cases arising in a given period in a specified population. This information is collected routinely by cancer registries. It can be expressed as an absolute number of cases per year or as a rate per 100,000 persons per year (see crude rate and ASR below). The rate provides an approximation of the average risk of developing a cancer.
Mortality	Mortality is the number of deaths occurring in a given period in a specified population. It can be expressed as an absolute number of deaths per year or as a rate per 100,000 persons per year.
Prevalence	The prevalence of a particular cancer can be defined as the number of persons in a defined population who have been diagnosed with that type of cancer, and who are still alive at the end of a given year, the survivors. Complete prevalence represents the number of persons alive at certain point in time who previously had a diagnosis of the disease, regardless of how long ago the diagnosis was, or if the patient is still under treatment or is considered cured. Partial prevalence, which limits the number of patients to those diagnosed during a fixed time in the past, is a particularly useful measure of cancer burden. Prevalence of cancers based on cases diagnosed within one, three and five years are presented as they are likely to be of relevance to the different stages of cancer therapy, namely, initial treatment (one year), clinical follow-up (three years) and cure (five years). Patients who are still alive five years after diagnosis are usually considered cured since the death rates of such patients are similar to those in the general population. There are exceptions, particularly breast cancer. Prevalence is presented for the adult population only (ages 15 and over), and is available both as numbers and as proportions per 100,000 persons.
Crude date	Data on incidence or mortality are often presented as rates. For a specific tumour and population, a crude rate is calculated simply by dividing the number of new cancers or cancer deaths observed during a given time period by the corresponding number of person years in the population at risk. For cancer, the result is usually expressed as an annual rate per 100,000 persons at risk.
ASR (age-standardized rate)	An age-standardized rate (ASR) is a summary measure of the rate that a population would have if it had a standard age structure. Standardization is necessary when comparing several populations that differ with respect to age because age has a powerful influence on the risk of cancer. The ASR is a weighted mean of the age-specific rates; the weights are taken from population distribution of the standard population. The most frequently used standard population is the World Standard Population. The calculated incidence or mortality rate is then called age-standardized incidence or mortality rate (world). It is also expressed per 100,000 according to the world standard population used in GLOBOCAN. The age-standardized rate is calculated using 10 age groups. The result may be slightly different from that computed using the same data categorized using the traditional 5-year age bands.

GLOSSARY

TERM	DEFINITION
Cumulative risk	Cumulative incidence/mortality is the probability or risk of individuals getting/dying from the disease during a specified period. For cancer, it is expressed as the number of newborn children (out of 100 or 1,000) who would be expected to develop/die from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.
Cytologically normal women	No abnormal cells are observed on the surface of their cervix upon cytology.
Cervical intraepithelial neoplasia (CIN) / squamous intraepithelial lesions (SIL)	SIL and CIN are two commonly used terms to describe PCLs, or the abnormal growth of squamous cells observed in the cervix. SIL is an abnormal result derived from cervical cytological screening or pap smear testing. CIN is a histological diagnosis made upon analysis of cervical tissue obtained by biopsy or surgical excision. The condition is graded as CIN 1, 2 or 3, according to the thickness of the abnormal epithelium (1/3, 2/3 or the entire thickness).
Low-grade cervical lesions (LSIL/CIN-1)	Low-grade cervical lesions are defined by early changes in size, shape, and number of abnormal cells formed on the surface of the cervix and may be referred to as mild dysplasia, LSIL or CIN-1.
High-grade cervical lesions (HSIL / CIN-2 / CIN-3 / CIS)	High-grade cervical lesions are defined by a large number of precancerous cells on the surface of the cervix that are distinctly different from normal cells. They have the potential to become cancerous cells and invade deeper tissues of the cervix. These lesions may be referred to as moderate or severe dysplasia, HSIL, CIN-2, CIN-3 or cervical carcinoma in situ (CIS).
Carcinoma in situ (CIS)	Pre-invasive malignancy limited to the epithelium without invasion of the basement membrane. CIN 3 encompasses the squamous carcinoma in situ.
Invasive cervical cancer (ICC)	If the high-grade precancerous cells invade the basement membrane is called ICC. ICC stages range from stage I (cancer is in the cervix or uterus only) to stage IV (the cancer has spread to distant organs, such as the liver).
Invasive squamous cell carcinoma	Invasive carcinoma composed of cells resembling those of squamous epithelium.
Adenocarcinoma	Invasive tumour with glandular and squamous elements intermingled.
Acetic acid	The main ingredient of vinegar; however, the concentration of vinegar varies from about 4-12 per cent acetic acid, so caution should be taken when using an off the shelf product. In some countries, vinegar is not available.
Cold coagulation	The term “cold” has been used due to a treatment temperature of 100°C, which is lower than that used for standard clinical electrocautery (usually between 400-600°C).

GLOSSARY

TERM	DEFINITION
Colposcope	A low magnification, light-illuminated visualization instrument primarily used alongside screening tools for triaging, diagnosing and managing PCLs in women. It allows the examiner to view the epithelial tissues of the cervix and other anogenital areas. For purposes of assessing PCL, it helps determine the transformation zone type and the grade of suspected epithelial abnormality. In addition, colposcopy facilitates and optimizes biopsy and excisional treatment.
Cryoprobe	A cryotip and the cryoshaft. The cryotip is removable to allow for the interchange between various tip shapes and sizes, depending on need, as well as to facilitate cleaning and disinfection.
Cryosurgical unit	A cooled cryoprobe and accessories, intended to destroy cervical tissue with abnormal cells by applying an extremely cold probe to the tissue.
Cryotherapy	An ablative therapy used since 1967, using extremely low temperatures to freeze and destroy abnormal tissue for the destruction of cervical intraepithelial neoplasia (CIN). It is also known as cryocautery, cryosurgery, or simply cryo.
Health care-provider collected HPV testing	The process by which a trained health care provider visualizes the cervix with a speculum to obtain cervical cells by scraping.
HPV testing	Screening for HPV by NAT technologies involves three main steps: collecting the specimen, performing the test and interpreting the results.
Insulated speculum	A speculum coated in non-conductive material is to be used in electrical surgical procedures. It may include a permanent or disposable smoke evacuator tubing.
LEEP	Equipment used for the removal of abnormal areas from the cervix, using a loop made of thin wire heated by electricity.
Self-collected HPV specimen	Specimen obtained from a self-collected vaginal swab.
Thermal ablator	A self-contained, electrically powered medical instrument designed to destroy tissue of the uterine cervix with low-grade heat. It may also be referred to as thermal coagulation or Semm cold coagulation, after the inventor of the device.
Speculum (vaginal) or simply 'speculum'	A medical device used to open the vaginal canal, enabling a health care provider to visually inspect and collect samples from the vagina and cervix, or to perform gynaecological or surgical procedures in a woman's lower genital tract. • **Collins speculum** is a bivalve and self-retaining. It retracts the vaginal walls laterally, or horizontally. Similar to the Graves, both blades are used to retract the vaginal walls and are used to examine the vagina and cervix. • **Cusco speculum** is a bivalve, self-retaining vaginal specula. It is used for examining the vagina and cervix, and is generally used for colposcopy and other minor procedures.

GLOSSARY

TERM	DEFINITION
Speculum (vaginal) or simply 'speculum'	• **Graves's speculum** is a bivalve and self-retaining speculum also known as the duckbill speculum. By retracting both the anterior and posterior vaginal walls, it is used to examine the vagina and cervix. • **Pederson speculum** is a bivalve and self-retaining speculum and is the narrower version of the Graves speculum, typically used for smaller women and adolescents.
Visual inspection with acetic acid (VIA)	A technique used for the detection of PCLs or cancerous lesions in the cervix, or cervical neoplasia. The application of dilute acetic acid on PCLs or cancerous lesions triggers whitening of these regions and is an effective low-cost method used to detect, triage and refer patients appropriately for subsequent treatment.

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APPENDICES

APPENDIX 1: KEY CERVICAL CANCER PERFORMANCE INDICATORS

Table 7: Key cervical cancer performance indicators for M&E adoption

INDICATOR G = Global; C = Core; OPT = Optional	What it measures	Baseline	Target 2025	Target 2030	Data source
SCREENING					
C0.0 Number Screened	Number of women screened [by screening visit type and age group or range] in a given time period	-	30 per cent	70 per cent	DHIS
G1.0 Screening Rate	per cent of women aged 30-49 years screened for the first time in a 12-month period		30	70	DHIS
C1.0 Screening Rate (Initial)	per cent of women within the target age range screened for the first time in a given time period				
OPT1.0.1 Screening Test Failure*	per cent of women whose sample was tested more than once due to error				
OPT1.0.2 Inadequate Sample*	per cent of women whose sample was inadequate for screening test completion				
OPT1.0.3 Received Results*	per cent of women who received screening test results				
OPT1.1 Screened Within Target Age Range	Proportion of total women screened for the first time who were within the target age range		30	70	DHS
OPT1.2 Progress Toward Target Screening Rate	per cent of screening target reached in the last year, quarter, month				
OPT1.3 Rescreened Within Target Interval	per cent of women who were rescreened within the recommended screening interval				
OPT1.4 Precancerous Lesion Post-treatment	per cent of women treated for precancerous lesions who return for a 1-year post-treatment follow-up screening test		70	80	DHIS
SCREENING RESULTS AND REFERRALS					
G2.0 Screening Test Positivity Rate	per cent of screened women aged 30-49 years with a positive result in a 12-month period			+_5 per cent variation	DHIS
C2.0 Screening Test Positivity Rate	per cent of [first time] screened women [within the target age range] who received a positive screening result in a given time period				
OPT2.0.1 Precancerous Lesion Cure Rate	per cent of women who received a negative screening result at their 1-year post-treatment follow-up			80 per cent	DHIS
C2.1 Received Triage Examination**	per cent of screen-positive women who received a triage examination				
C2.2 Triage Examination Percent Positive **	per cent of women who received a triage examination with a positive result in a given time period				

Table 7: Key cervical cancer performance indicators for M&E adoption (continued)

INDICATOR G = Global; C = Core; OPT = Optional	What it measures	Baseline	Target 2025	Target 2030	Data source
SCREENING RESULTS AND REFERRALS (CONTINUED)					
OPT2.2.1 Triage Examination Provision**	per cent of screen-positive women referred for triage who attended the triage visit and received a triage examination				
OPT2.2.2 Triage Referral Compliance**	per cent of screen-positive women referred for triage who attended the triage visit				
OPT2.2.3 Referred for Triage**	per cent of screen-positive women who were referred for triage				
OPT2.2.4 Received Triage Results**	per cent of women who received triage examination results				
OPT2.3 Screened Women Requiring	per cent of women whose sample was inadequate for screening test completion				
C2.4 Suspected Cancer Cases	per cent of [first time] screened women [within the target age range] with suspected cervical cancer				DHIS
TREATMENT AND REFERRALS					
G3.0 Treatment Rate	per cent of screen-positive women who have received treatment in a given time period		50	80	DHIS
C3.0 Treatment Rate	per cent of screen-positive women who have received treatment in a given time period		50	80	DHIS
OPT3.1 Precancerous Lesion Treatment	per cent of screen-positive women with lesions eligible for cryotherapy or LEEP who received that treatment		50	80	DHIS
OPT3.2 Post-treatment Complication	per cent of women receiving cryotherapy or LEEP who returned with a post-treatment complication				
OPT3.3 Treatment with Cryotherapy	per cent of screen-positive women with lesions eligible for cryotherapy who received cryotherapy		50	50	DHIS
OPT3.3 Treatment with Thermocoagulation	per cent of screen-positive women with lesions eligible for Thermo-ablation who received Thermo-ablation		50	80	DHIS
OPT3.3.1 Single Visit Approach Rate	per cent of VIA-positive women with lesions eligible for cryotherapy treated during the same visit		70	90	DHIS
OPT3.3.2 Postponed Cryotherapy	per cent of VIA-positive women with lesions eligible for cryotherapy who postponed cryotherapy				
OPT3.3.3 Cryotherapy After Postponement	per cent of VIA-positive women with lesions eligible for cryotherapy who received cryotherapy after postponing				
OPT3.3.4 Did Not Return for Cryotherapy	per cent of VIA-positive women with lesions eligible for cryotherapy who did not return for cryotherapy after postponing		50	60	Facility
OPT3.4 Treatment for Large Lesions	per cent of screen-positive women referred for large lesions who received LEEP				

Table 7: Key cervical cancer performance indicators for M&E adoption (continued)

INDICATOR G = Global; C = Core; OPT = Optional	What it measures	Baseline	Target 2025	Target 2030	Data source
SCREENING					
OPT3.4.1 Large Lesion Treatment Eligibility	per cent of screen-positive women referred for large lesions who were eligible for LEEP				
OPT3.4.2 Large Lesion Referral	per cent of screen-positive women referred for large lesions (lesions not eligible for cryotherapy)				
OPT3.5 Suspected Cancer Treatment/ Follow-up	per cent of women with suspected invasive cancer who completed appropriate treatment or follow-up				
OPT3.5.1 Suspected Cancer Referral Compliance	per cent of screen-positive women referred for suspected cancer who attended the referral visit				
OPT3.5.2 Suspected Cancer Referral	Percentage of screen-positive women referred for suspected cancer			_+10 per cent inter district variation	DHIS
OPT3.6 Colposcopy Referral Compliance	Percentage of screen-positive women referred for colposcopy who attend the colposcopy visit				DHIS
OPT3.6.1 Colposcopy Referral	Percentage of screen-positive women referred for colposcopy				
EUA for staging and Biopsy	Percentage of screen-positive women referred for suspected cancer Who underwent EUA		50	70	Facility
OPT3.7 Confirmed Cancer	Percentage of screen-positive women referred for suspected cancer who were diagnosed with cancer		40	60	SARA
PROGRAMME AND SERVICE DELIVERY					
C4.0 Proportion of Facilities Providing cervical cancer Services	Proportion of health facilities that are providing the cervical cancer services they are designated to provide by level of care		5 per cent	10 per cent	SARA
OPT4.1 Trained Service Providers	Proportion of service providers trained in screening and treatment services who are providing services By cadre		5 per cent	10 per cent	SARA
	Proportion of service providers trained in screening and treatment services who are providing services, by cadre (Nurses, Midwives, MO, Laboratory, Specialists)				
OPT4.2 Static Facility Screenings	Proportion of cervical cancer screenings conducted at a static facility				SARA DHIS
OPT4.2.1 Mobile Screenings	Proportion of cervical cancer screenings conducted through routine outreach using a mobile approach		5 per cent	10 per cent	
OPT4.3 Community Campaigns	Number of community campaigns (including mass screening campaigns carried out				
OPT4.4 Self-sampling* **	Proportion of screening tests conducted using a self-collected sample				

Table 7: Key cervical cancer performance indicators for M&E adoption (continued)

INDICATOR G = Global; C = Core; OPT = Optional	What it measures	Baseline	Target 2025	Target 2030	Data source
FACILITY AND LABORATORY LINKAGES					
OPT5.0 Confirmed Cancer	Percentage of screen-positive women referred for suspected cancer who were histologically diagnosed with cancer		60	90	
OPT5.0.1 Results Turn-around Time*	Number of days between sample collection and return of results to screened women				
OPT5.0.2 Sample Sub-mission Time*	Number of days between sample collection and transport of sample to laboratory				SARA
OPT5.0.3 Laboratory Processing Time*	Number of days between laboratory receipt of sample and return of results to facility				SARA
OPT5.0.4 Results Communication Turnaround Time*	Number of days between facility receipt of results and return of results to screened women				
HIV/RH SERVICE INTEGRATION WITH CERVICAL CANCER					
OPT6.0 First Time Screening for Women with HIV	per cent of women enrolled in HIV Care and Treatment who were screened for cervical cancer for the first time		70	90	HIV
OPT6.1 PITC Service Provision	per cent of women with previously unknown HIV status who received provider-initiated testing and counselling (PITC) and now know their status				
OPT6.2 Linkage to HIV Services. See-and-treat for HIV services	Percentage of clients linked to HIV Care and Treatment after receiving an HIV positive result through PITC		70	90	HIV
OPT3.4.1 HIV +Large Lesion Treatment Eligibility	Percentage of HIV Infected screen-positive, referred for large lesions, who were eligible for LEEP				
OPT3.4.1 HIV +Large Lesion Treatment Completion	Percentage of HIV Infected, screen-positive, referred for large lesions, who were eligible for LEEP, and who received LEEP				
OPT3.5 HIV infected with Suspected Cancer Treatment / Follow-up	Percentage of women HIV infected, with suspected invasive cancer who completed appropriate treatment or follow-up				
EUA for staging and Biopsy	Percentage of screen-positive women referred for suspected cancer Who underwent EUA				
OPT3.7 Confirmed Cancer	Percentage of screen-positive women referred for suspected cancer who were diagnosed with cancer				
BEHAVIOURAL CHANGE					
Age of sexual debut among 12-14 years				18 years	DHIS
per cent of Teenage pregnancy among adolescent girls 15-19					
Integration					
Came for FP and also received Cervical cancer Screening					

** Applicable to screening, triage, or diagnostic methods requiring sample collection and processing (HPV testing, Pap smear/ cytology, biopsy).*
*** Applicable to screening strategies which include a triage step between screening and treatment (e.g. HPV test followed by VIA; HPV test or cytology followed by colposcopy).*
**** Applicable to HPV testing with client self-sampling.*

APPENDIX 2: WOMEN AGED 25-49, SCREENING AND TREATMENT TARGETS BY DISTRICT BY YEAR (VIA AND THERMAL ABLATION/ CRYOTHERAPY)

Table 8: Treatment targets by district

Region	Percentage of national population	Age/sex accuracy index 15-49	Women aged 25 -49	80% women age 25- 49 screened	Assume 5-10% VIA positivity*	90% with PCL are treated by 2024	2% of 25 - 49 have invasive cancer	90% with invasive cancer treated by 2024
Sierra Leone	100	1,835,328	1,023,489	818,791	40,940	32,752	655	
Eastern	23	421,997	235,402	188,322	9,416	7,533	151	
Kailahun	7.3	134,657	74,715	59,772	2,989	2,391	48	
Kenema	8.7	159,650	89,044	71,235	3,562	2,849	57	
Kono	7	127,690	71,644	57,315	2,866	2,293	46	
Northern	34	624,921	347,986	278,389	13,919	11,136	223	
Bombali	8.3	151,606	84,950	67,960	3,398	2,718	54	
Kambia	4.7	85,857	48,104	38,483	1,924	1,539	31	
Koinadu-gu	5.5	101,022	56,292	45,034	2,252	1,801	36	
Port Loko	8.5	156,511	86,997	69,597	3,480	2,784	56	
Tonkolili	7.1	129,925	72,668	58,134	2,907	2,325	47	
Southern	19.9	364,855	203,674	162,939	8,147	6,518	130	
Bo	8.1	147,604	82,903	66,322	3,316	2,653	53	
Bonthe	2.7	49,969	27,634	22,107	1,105	884	18	
Moyamba	4.2	77,881	42,987	34,389	1,719	1,376	28	
Pujehun	4.9	89,401	50,151	40,121	2,006	1,605	32	
Western Area	23.1	423,555	236,426	189,141	9,457	7,566	151	
Urban	6.6	120,747	67,550	54,040	2,702	2,162	43	
Rural	16.5	302,808	168,876	135,101	6,755	5,404	108	

*Note: *Assumes the cervical cancer distribution is even in the country. Source: Statistics Sierra Leone, 2015 Population and Housing Census.*

APPENDIX 3: WOMEN WITH HIV AGED 15-49 YEARS BY DISTRICT WITH KEY CERVICAL CANCER SERVICES

Table 9: Treatment targets for HIV+ by district

Region	Current Pop: Number of women 15□49 yrs HIV+	Target: 90% HIV+ screened by 2025	Assumption: 20% VIA positivity among HIV+ women)*	Target for PCL: 90% treatment for HIV-infected who have PCL	Assumption: 2% screened HIV+ have suspected cancer	Target for invasive cancer: 90% treatment for HIV-infected who have invasive cancer
Sierra Leone	31,201	28,081	5,616	562	x	x
Eastern	7,176	6,459	1,292	129		
Kailahun	2,278	2,050	410	41		
Kenema	2,714	2,443	489	49		
Kono	2,184	1,966	393	39		
Northern	10,608	9,547	1,909	191		
Bombali	2,590	2,331	466	47		
Kambia	1,466	1,320	264	26		
Koinadu-gu	1,716	1,544	309	31		
Port Loko	2,652	2,387	477	48		
Tonkolili	2,215	1,994	399	40		
Southern	6,209	5,588	1,118	112		
Bo	2,527	2,275	455	45		
Bonthe	842	758	152	15		
Moyamba	1,310	1,179	236	24		
Pujehun	1,529	1,376	275	28		
Western Area	7,207	6,487	1,297	130		
Urban	2,059	1,853	371	37		
Rural	5,148	4,633	927	93		

Note:
** Applicable to screening, triage, or diagnostic methods requiring sample collection and processing (HPV testing, pap smear/cytology, biopsy).*
*** Applicable to screening strategies which include a triage step between screening and treatment (e.g., HPV test followed by VIA; HPV test or cytology followed by colposcopy).*
**** Applicable to HPV testing with client self-sampling.*

APPENDIX 4: DISTRIBUTION OF OUTCOME MEASURES BY DISTRICT

Table 10: Distribution of outcome measures by district

Region	Percentage of national population	Age/sex accuracy index	Mortality as a result of cervical cancer	Reduce mortality 50% by 2025	New cervical cancer cases	Reduce new cases by 80% by 2024
Sierra Leone	100	1,835,328	266	133	299	60
Eastern	23	421,997	61	31	69	14
Kailahun	7.3	134,657	19	10	22	4
Kenema	8.7	159,650	23	12	26	5
Kono	7	127,690	19	9	21	4
Northern	34	624,921	90	45	102	20
Bombali	8.3	151,606	22	11	25	5
Kambia	4.7	85,857	13	6	14	3
Koinadugu	5.5	101,022	15	7	16	3
Port Loko	8.5	156,511	23	11	25	5
Tonkolili	7.1	129,925	19	9	21	4
Southern	19.9	364,855	53	26	60	12
Bo	8.1	147,604	22	11	24	5
Bonthe	2.7	49,969	7	4	8	2
Moyamba	4.2	77,881	11	6	13	3
Pujehun	4.9	89,401	13	7	15	3
Western Area	23.1	423,555	61	31	69	14
Urban	6.6	120,747	18	9	20	4
Rural	16.5	302,808	44	22	49	10

Data source: MOHS stakeholder meeting notes, 5 December 2019.

APPENDIX 5: LIST OF POLICY STATEMENTS

Policy statement 1: HPV vaccines shall be part of the national immunization schedule.

Policy statement 2: Bivalent/quadrivalent vaccines shall be offered.

Policy statement 3: HPV vaccine shall be offered to girls aged 9-14 years.

Policy statement 4: Single dose vaccine shall be offered; however, for immunocompromised or women with HIV, a two-dose schedule shall be provided.

Policy statement 5: The Ministry of Health, in collaboration with Ministry of Basic and Senior Secondary Education; Ministry of Tertiary and Higher Education and Ministry of Social Welfare, will include education and information on cervical cancer elimination in the school curriculum in order to raise awareness about the issue and for the prevention of early coitarche and exposure to cofactors for cervical cancer.

Policy statement 6: Cervical cancer screening, using HPV DNA testing, shall be offered by the public health care system free of charge to all sexually active women after 25 years, who are HIV-infected, as a national priority. Screening with VIA, every three years, is an acceptable alternative.

Policy statement 7: Screening and treatment of precancerous lesions will be limited to non-pregnant women only. However, women found with precancerous lesions shall be offered treatment using appropriate ablative or excisional treatment.

Policy statement 8: All women eligible for screening as defined by policy, shall have access to see-and-treat as a combined approach to cancer prevention in order to prevent unnecessary visits and costs to the health care system.

Policy statement 9: All women found with suspicious cervical cancer shall undergo the necessary evaluation and diagnostic procedures to histologically confirm the diagnosis.

Policy statement 10: All women diagnosed with operable cervical cancer shall be given the appropriate surgical, medical and radiobiological interventions, depending on the stage of the cancer.

Policy statement 11: Where treatment is not locally available, the government shall facilitate access to such treatment outside the country.

Policy statement 12: All women diagnosed with advanced cervical cancer disease shall be provided with supportive care, including palliative care, as close as possible to the community. The necessary supportive care to family members shall also be provided.

Policy statement 13: The directorate shall incorporate costing mechanisms into primary, secondary and tertiary prevention in order to generate sufficient data on cervical cancer to determine cost-effective see-and-treat approaches, such as type of technology, and method of delivery of services to the community.

ANNEXES

ANNEX 1: PARTICIPANT LIST OF REVIEWERS

The following is a list of participants who reviewed the National Policy and Strategy for the Elimination of Cervical Cancer 2023–2028 in Freetown on 21 and 22 July 2023. The Consultant provided online guidance.

Table 11: List of participants

	NAME	CADRE	CONTACT	FACILITY	DISTRICT
1	Dr. Sattu Issa	DPM	076-692-436	RHFP	Freetown
2	Sallay Carew	PPHS	076-409-036	RHFP	Freetown
3	Mamud T Kargbo	WHGN	078-663-625	RHFP	Freetown
4	Dr. Williamson Taylor	OBGYS	078-493-198	Rokupar Hospital	Freetown
5	Doris Taylor	Midwife	078-245-742	Murray Town CHC	Freetown
6	Dr. David Conteh	MO	076-767-280	Bo Govt Hospital	Bo
7	Sister Elizabeth B. Paul	Midwife	079-022-613	Bo Govt Hospital	Bo
8	Sister Victoria Freeman	Midwife	076-807-096	MRH	Bombali
9	Zainab Koroma	Midwife	079-679-450	KHMCH	Bombali
10	Amy M. Pabai	Midwife	076-624-581	MRH	Freetown
11	Jariatu Sesay	Midwife	076-638-009	PCMH	Freetown
12	Edwina Conteh	Midwife	076-661-423	KHMCH	Freetown
13	Rahim Kamara	M& E	078-882-624	RHFP	Freetown
14	Sia Lebbie	Midwife	076-746-220	JCFH	Freetown
15	Kemoh Sesay	NO	077-839-879	JCFH	Freetown
16	Nfalie Sesay	OBGYN	075197683	PCMH	Freetown
17	Dr. Michael	OBGYN	074-949-238	PCMH	Freetown
18	Aminata S. Kamara	Midwife	076-813-319	Ross Road CHC	Freetown
19	Enartoma Koroma	Midwife	078-411-711	Lakka Ogoo Farm CHC	Freetown
20	Yamen Koroma	PPASL	079-446-564	PPASL	Freetown
21	Mabinty Tarawallie	CH/EPI	076-626-071	CH/EPI	Freetown
22	Dr. Felix Ikana	MSSL			Freetown
23	Christiana Tucker	Choithram Hospital			Freetown
24	Representative	WHO			Freetown
25	Representative	UNFPA			Freetown
26	Adama Conteh	Teenage Pregnancy Secretariat			Freetown
27	Ann-Marie Kabia	Midwife	076-939-357	Regent CHC	Freetown
28	Dr. Ruth K. Jahonga	RH Consultant OBGYN	+254 722639705	KEMRI, Kenya	Nairobi, Kenya

ANNEX 2: DOCUMENTS TO ASSIST IN DEVELOPMENT OF CERVICAL CANCER CATALOGUING-IN-PUBLICATION

Figure 4: Map of administrative divisions (districts) of Sierra Leone

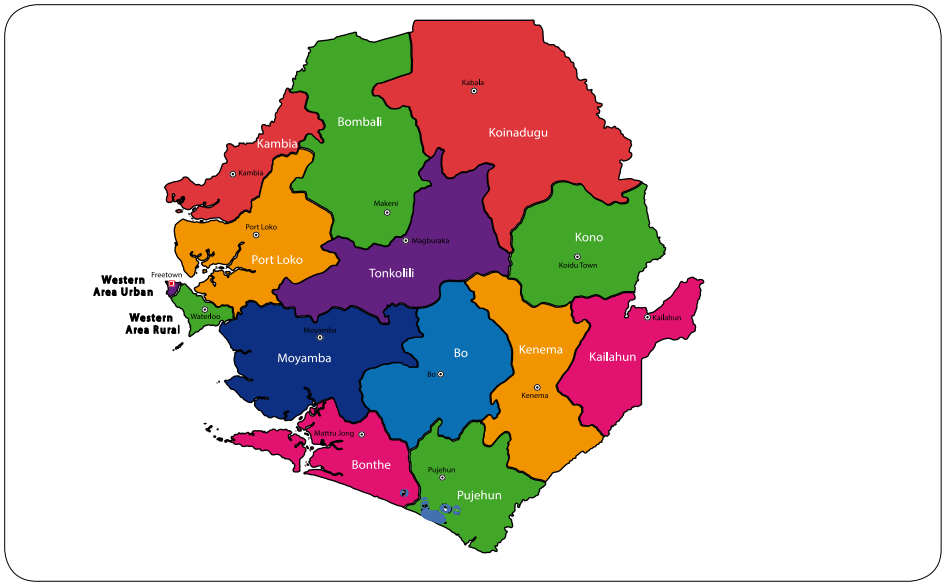
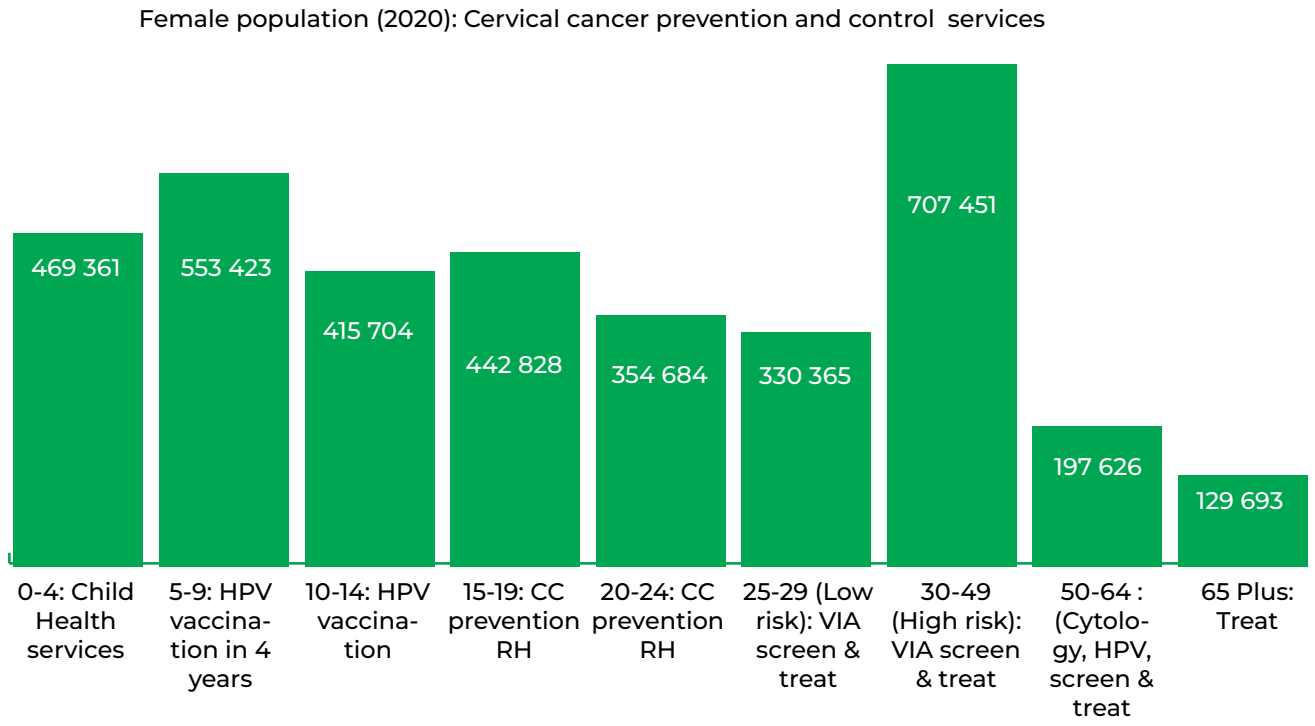


Table 12: HPV vaccination population targets by district and by year

Region	Percentage of national population	Girls 10-14 years of age	90% target vaccination girls 10-14 in 2020	90% target HPV vaccination for girls 10-14 years 2021*	90% target HPV vaccination for girls 10-14 years 2022	90% target HPV vaccination for girls 10-14 years 2023	90% target HPV vaccination for girls 10-14 years 2024
Sierra Leone	100	450,567	405,510	124,520	127,202	129,943	132,733
Eastern	23	103,630	93,267	25,776	26,331	26,898	27,476
Kailahun	7.3	32,891	29,602	8,181	8,357	8,537	8,721
Kenema	8.7	39,199	35,279	9,750	9,960	10,175	10,393
Kono	7	31,540	28,386	7,845	8,014	8,186	8,362
Northern	34	153,193	137,874	38,103	38,924	39,763	40,616
Bombali	8.3	37,397	33,657	9,302	9,502	9,707	9,915
Kambia	4.7	21,177	19,059	5,267	5,381	5,497	5,615
Koinadugu	5.5	24,781	22,303	6,164	6,297	6,432	6,570
Port Loko	8.5	38,298	34,468	9,526	9,731	9,941	10,154
Tonkolili	7.1	31,990	28,791	7,957	8,128	8,303	8,482
Southern	19.9	89,663	80,697	22,302	22,782	23,273	23,772
Bo	8.1	36,496	32,846	9,078	9,273	9,473	9,676
Bonthe	2.7	12,165	10,949	3,026	3,091	3,158	3,225
Moyamba	4.2	18,924	17,031	4,707	4,808	4,912	5,017
Pujehun	4.9	22,078	19,870	5,491	5,610	5,730	5,854
Western Area	23.1	104,081	93,673	25,888	26,445	27,015	27,595
Urban	6.6	29,737	26,764	7,397	7,556	7,719	7,884
Rural	16.5	74,344	66,909	18,491	18,890	19,297	19,711

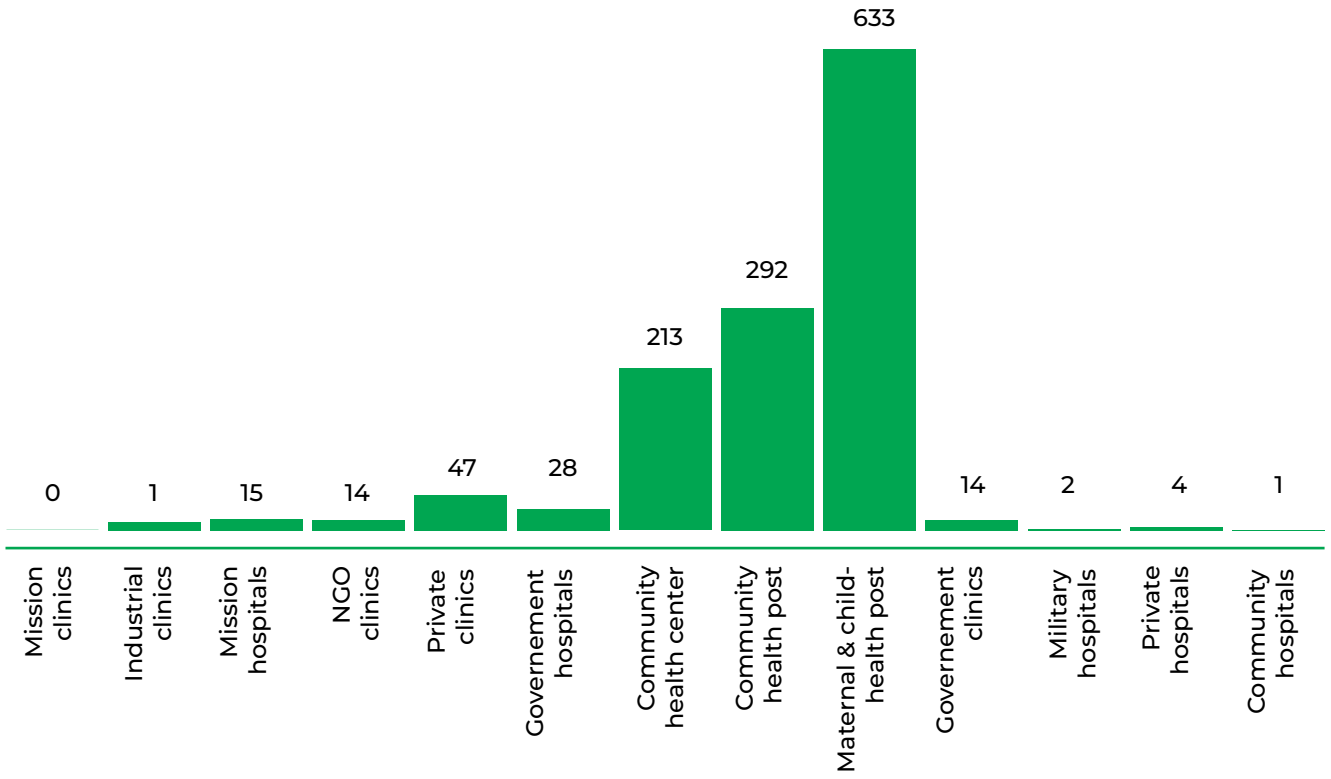
Source of data: Worldometer, at <www.Worldometers.info>. Elaboration of data by United Nations, Department of Economic and Social Affairs, Population Division, World Population Prospects: The 2019 Revision

Figure 5: Age distribution of females by age sets



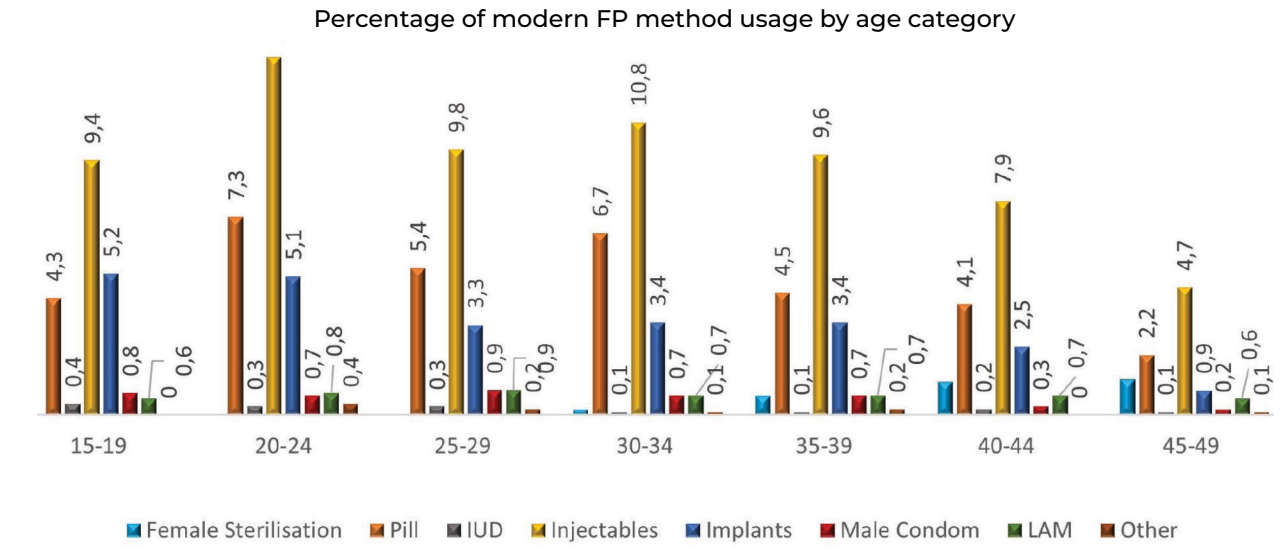
Data source: MOHS stakeholder meeting notes, 5 December 2019.

Figure 6: Health facility type and distribution



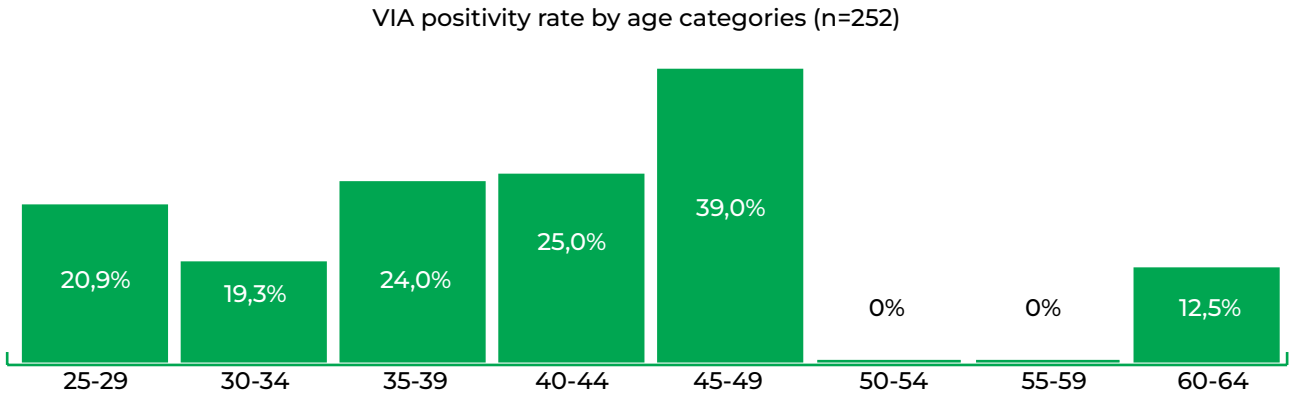
Source: Statistics Sierra Leone (Stats SL) & ICF. (2020) Sierra Leone Demographic and Health Survey 2019. Freetown, Sierra Leone, and Rockville, Maryland, USA: Stats SL and ICF.

Figure 7: Family planning method usage by age



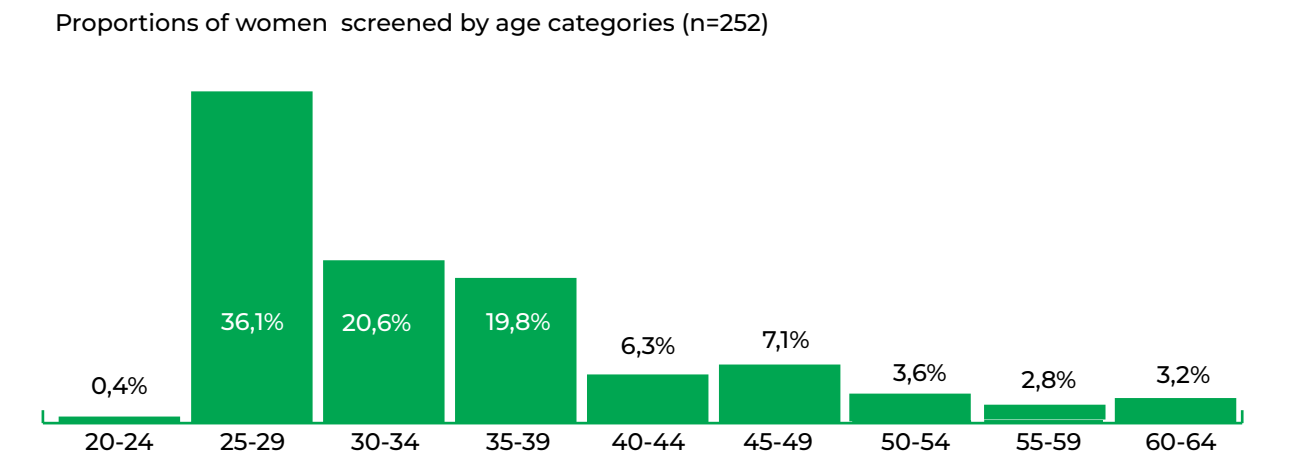
Source: Statistics Sierra Leone (Stats SL) & ICF. (2020) Sierra Leone Demographic and Health Survey 2019. Freetown, Sierra Leone, and Rockville, Maryland, USA: Stats SL and ICF.

Figure 8: VIA positivity rate by age categories



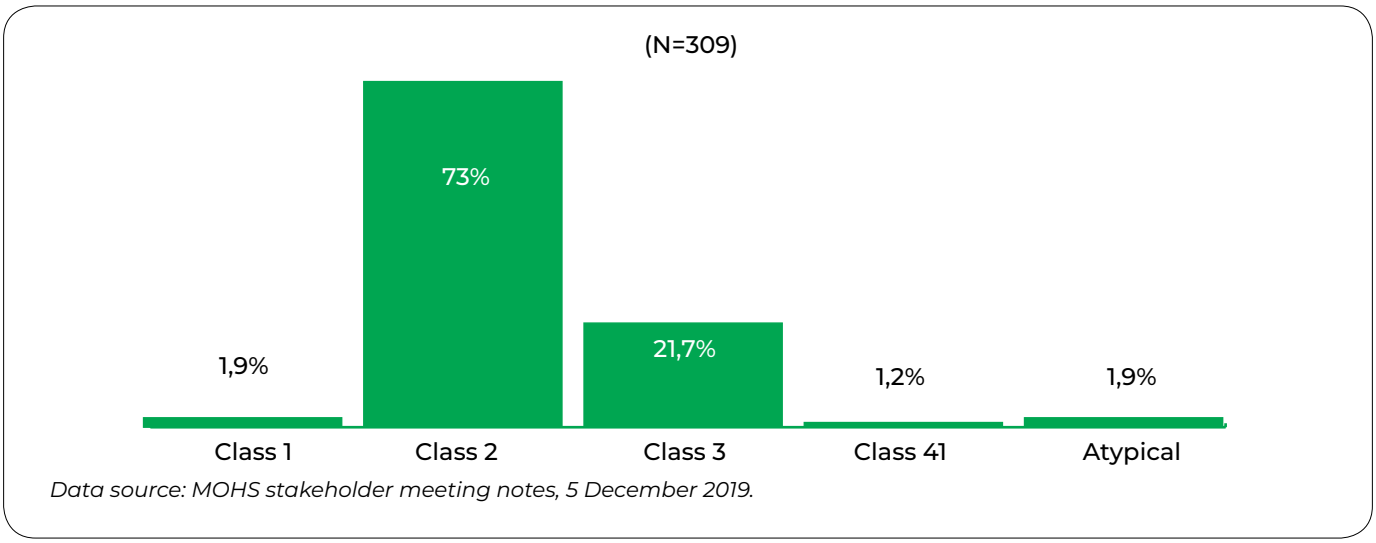
Data source: MOHS stakeholder meeting notes, 5 December 2019.

Figure 9: Age at screening



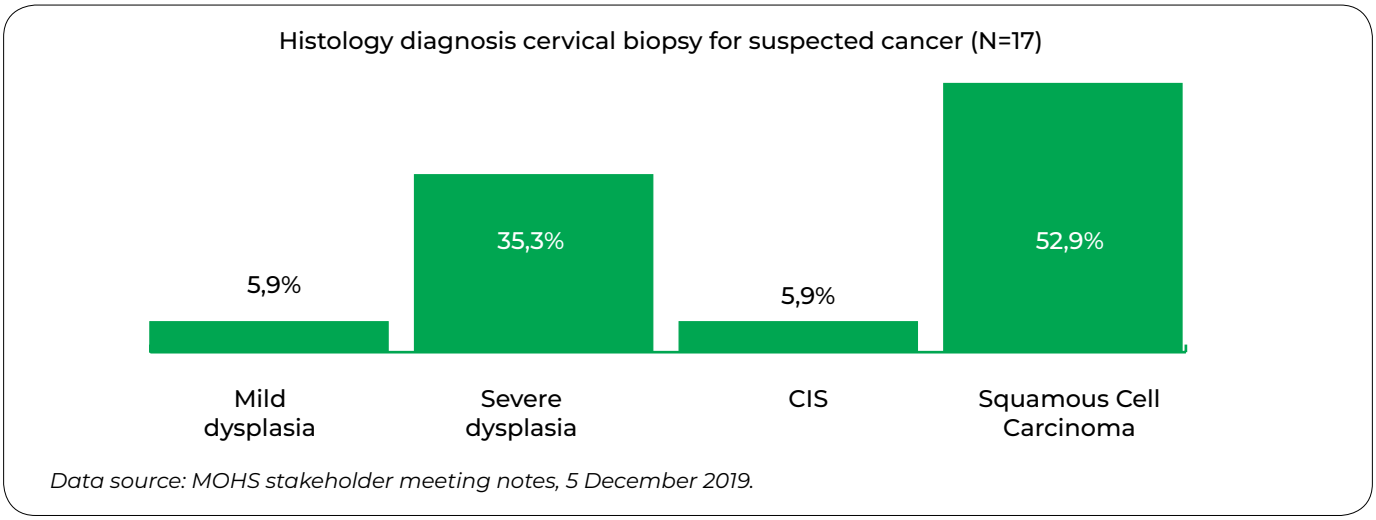
Data source: MOHS stakeholder meeting notes, 5 December 2019.

Figure 10: Cytology results in one facility in Sierra Leone



Data source: MOHS stakeholder meeting notes, 5 December 2019.

Figure 11: Histological diagnosis for cervical biopsies



Data source: MOHS stakeholder meeting notes, 5 December 2019.

Table 13: Risk factors for cervical cancer in Western Africa

Risk factors	Rates	Comments
HPV	High	Specific SL data not available
STI/HIV	1.4%	High in Key Populations
Condom use	3% women, 39% men	Low
Smoking	12%	
Early Coitarche (15 years and below)	18%	
Teen pregnancy	112.8/1000	Higher in rural areas
Malnutrition (Anemia)	47%	Higher in rural areas
Education level	Secondary School	Lower in rural areas
Gender Inequality	0.644 (153 out of 162) (2018)	Worse in rural areas

Source: ICO/IARC, 2019 (Bruni, et al., 2019)

Table 14: SWOT analysis of the health system, 2019

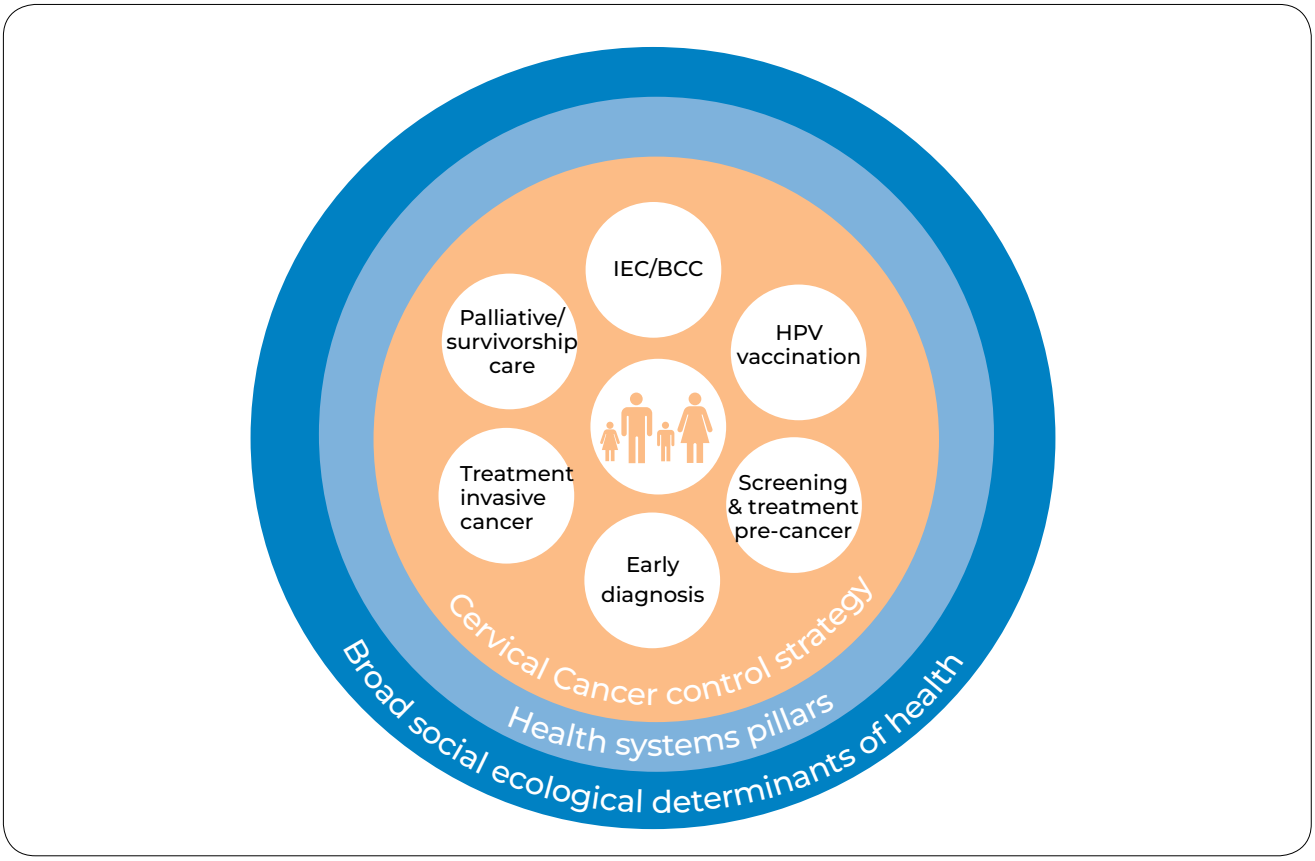
HSSBB	Strengths	Opportunities	Weaknesses
Service Delivery	• HPV demonstration done in Bo 2013 • Cold chain capacity • Outreach • Private facilities performing VIA, pap smear • Private laboratories performing cytology and histopathology • Private palliative care services	• Plans to routinize HPV vaccination for 10-year-old female pre-adolescents. • External referral for radiotherapy	• Not all facilities provide daily vaccination. • Poor temperature control in some fridges, no services in public facilities • No referral strategy • Poor access to pain control for palliative care
Capacity-building	• Lack of skills • Lack of training curriculum	• TOT in RH, e.g., family planning, EmONC. Training curriculum under development	• No country capacity
Products and commodities	• Cryotherapy machines • Gas cylinders • CO2 available in the country • Thermal ablation in private sector	• Other vaccines available	• No plans for vaccinating all children who are age eligible • Facility-based vaccination might have lower coverage • Cost of gas • Bulky cylinders • Lack of Insulated speculums • Lack of Monsell solution • Need to fabricate carts
Finance	• Supportive donors • Budget • Donors • WHO, UNFPA • Other		• Low budget for health
HR	• Gynaecologists, MO • Clinical officers able to perform surgery, nurses		• One-third of MD are not on government payroll
Health facilities	• Private facilities with capability for major surgery		• Only one tertiary facility performing obstetric services
Information	• Data on cervical cancer services available in the private sector, including VIA, pap, hysterectomy for large lesions • Cytology • Histopathology • HMIS functional • Cancer registry launched 2015 • IEC • BCC for CECAP • Job aids		• No clear data on in public facilities • **No cervical cancer indicators tracked on HMIS** • Staging of cervical cancer not routinely done in cancer registries • High levels of late presentation of disease

Table 14: SWOT analysis of the health system, 2019 (continued)

HSSBB	Strengths	Opportunities	Weaknesses
Commodities	• Lugol iodine • 5% acetic acid	• Monsell solution	• May need glacial acetic acid
Infrastructure	• FP rooms • Coaches • Lights • IPC	• Assessment needed	• IPC strengthening needed
Leadership Coordination Governance	• Cervical cancer housed under Directorate RH • TWG for cervical cancer • TWG for HPV • Supportive supervision • D4D	• Several policy documents under development	• No support supervision in private sector
Community	• High ANC, PNC • High levels of school enrolment		• Gender disparity • Poverty • Significant GBV • Biologic risk factors • Low family planning • Low IUCD • Low condom use • High adolescent and teen pregnancy

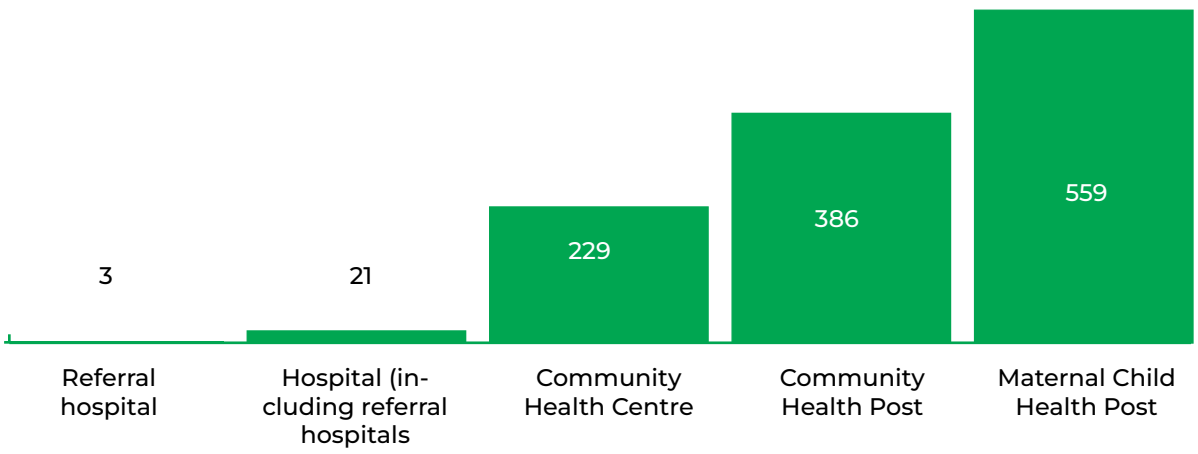
Data source: MOHS stakeholder meeting notes, 5 December 2019.

Figure 12: Socioecological context of key cervical cancer interventions



Data source: MOHS stakeholder meeting notes, 5 December 2019. Derived from WHO Socioecological Determinants of Health.

Figure 13: Prioritization of services along the continuum of care by type of facilities



Data source: MOHS stakeholder meeting notes, 5 December 2019.

KEY:

- Surgical treatment
- Chemotherapy
- Radiotherapy
- Multi-disciplinary team evaluation

- See-and-treat.
- LLETZ
- EUA, staging, biopsy, histology
- Chemotherapy
- Blood transfusion

- See-and-treat community education
- HPV vaccination
- Male circumcision
- Contraception
- HIV prevention
- Mitigate social determinants of health

Table 15: See-and-treat delivery model

Service delivery	Interventions and Activities	Inputs	Outputs
Community	**IEC/BCC and SCREENING** Create public awareness where services are available in the facilities · Community mobilization · Tracing those screened who need treatment follow-up · Community spaces identified for screening outreaches · Self-sampling HPV testing · Hygiene post-treatment · Male-centred brochures for post-treatment care and support of partners	· IEC/BCC materials · Job aids · Counselling materials · Pre-treatment and post-treatment counselling materials · Package for community see-and-treat	· Trained CHWs · Number of appropriate spaces for outreach

Table 15: See-and-treat delivery model (continued)

Service delivery	Interventions and Activities	Inputs	Outputs
Community	**TREATMENT** · Community engagement with male partners to support women who have undergone treatment · IEC/BCC for men to support women undergoing convalescence following LEEP/ cryo/thermal ablation to refrain from penetrative sex until healing takes place Promote hygiene following treatment · Promotion of condom use · Community treatment outreach	· IEC/BCC materials · Job aids · Counselling materials · Pre-treatment and post-treatment counselling materials · Package for community see-and-treat	· Trained CHWs · Number of appropriate spaces for outreach
Primary	**SCREENING** · Screening with VIA · Regular health education and engagement · Counselling for results · Offer/refer immediate treatment · Follow-up **TREATMENT** · Provide immediate cryotherapy / Thermal ablation for those who are screen positive the same day · Facilitate referral of women who need treatment elsewhere, or further investigation · Post treatment counselling · Review of treatment complications · Documentation	**IEC/BCC materials Job aids** · Screening reagents · 3-5 per cent · AA Protocols · Cryotherapy machines with C02 gas supply (detail list annexed) · Thermal ablation machines	· Procured equipment · Assessed and standardized facilities · Trained health care workers · Referral pathway for treatment of ineligible lesions
Secondary	**SCREENING** As above · Triage referrals from primary facilities · Screening with VIA · Screening using other methods · Colposcopy · Offer immediate treatment **TREATMENT** · Provide immediate cryotherapy / provide thermal ablation for those who are screen positive · Provide LLETZ /refer for ineligible lesions · Facilitate referral of women who need treatment elsewhere or need further investigation · Training of nurses, health officers and doctors on cervical cancer screening and treatment by cryotherapy, thermal ablation	· Screening reagents · 3-5 per cent AA · 95 per cent glacial acetic acid · Job aids · Pap smear kits · HPV sampling kits · Laboratory support · Cryotherapy machines with C02 gas supply · Thermal ablation machines · Male-centred brochures with messages for post-treatment care and support of partners · Treatment equipment · LLETZ · Hysterectomy	· Trained providers · No of patients accessing treatment · No facilities with standards for care

Table 15: See-and-treat delivery model (continued)

Service delivery	Interventions and Activities	Inputs	Outputs
Tertiary	**SCREENING** As above · Screening with VIA · Screening using other methods, e.g., cytology · Provide cryotherapy /thermal ablation/LLETZ · Training of nurses, health officers and doctors on cervical cancer screening and treatment by cryotherapy, thermal ablation · Data management **TREATMENT** · Provide cryotherapy/thermal ablation /LLETV · Provide other surgical procedures, e.g., trachelectomy · Facilitate multidisciplinary team · Training of nurses, health officers and doctors on cervical cancer screening and treatment by cryotherapy, thermal ablation · Capacity building for pre-service	· As above · Treatment equipment · LLETZ · Trachelectomy · Cold knife conization · Simple hysterectomy · Treatment equipment · LLETZ · Trachelectomy · Cold knife conization · Simple hysterectomy · Colposcopy · LEEP biopsy	· No trained · No treated · Facilities with capacity · No. trained · No. treated by various approaches
Regional / national level DHMT DRH	· Standardize and expand facilities to enable SVA /see-and-treat · Develop SVA standards · Develop job aids · Develop training curriculum · Integrate into preservice curriculum · Develop QI standards · Develop guidelines · Develop different models of service integration suitable to maximize services · Develop data tools	· Guidelines and job aids	TWG · Technical experts · Programme experts · Support supervision · Data for decision-making · Monitor, evaluate services

Data source: MOHS stakeholder meeting notes, 5 December 2019.

Table 16: Simplified staging of cervical cancer

Cervical cancer stages	
Stage 1	**The cancer is found only in the tissue of the cervix.**
Stage 2	The cancer has spread outside the cervix to the upper part of the vagina or other tissue next to the cervix.
Stage 3	The cancer has spread to the tissue on the side of the pelvis (pelvic sidewall) and/or the lower part of the vagina.
Stage 4	The cancer has spread to the bladder or rectum, or beyond the pelvis to the lungs, liver or bones.

Table 17: Invasive cancer management by service delivery level of care

Service delivery	Interventions and Activities	Inputs	Outputs
Community	· Train community on care of a patient with cervical cancer · Emphasize need for early detection · Train on need for follow-up. · Counselling on reproductive implications	· IEC/BCC materials · Treatment support	· Train HEWs, HDAs
Primary	· Train nurses on how to provide supportive care · Train on options of treatment · Train on need to counsel patients on follow-up on results · Trace patients referred with suspected cancer so that they complete referral	· IEC/BCC materials · Job aids · Treatment support	
Secondary	· Provide chemotherapy according to protocols · Train health workers in chemotherapy · Other supportive care · Multidisciplinary teams · Referral	· Hysterectomy · Anaesthesia · Functional theatre · Blood transfusion · Chemotherapy drugs · IPC	· No. of surgeries · No. of patients on chemotherapy
Tertiary	· Provide chemotherapy according to protocols · Train health workers in chemotherapy · Other supportive care · Multidisciplinary teams · Referral · Radiotherapy · Palliative surgery · Integration with other services · Link to palliative care · Data management	· Wertheim's hysterectomy · Histopathology · Chemotherapy drugs · Chemotherapy protocols · Radiotherapy · Protocols · Oncologists · IPC	· No. of cases for Wertheim's hysterectomy procedures · No. of cases in chemotherapy · No. referred for radiotherapy
Regional / national level	Develop treatment protocols · Develop standard protocols for treatment including chemotherapy · Protocols for facilitated referral for radiotherapy abroad · Provide treatment (LEEP, surgery, chemo and radiation) for advanced cervical cancer	· Guidelines · Job aids	· Technical and programme experts · Supportive supervision

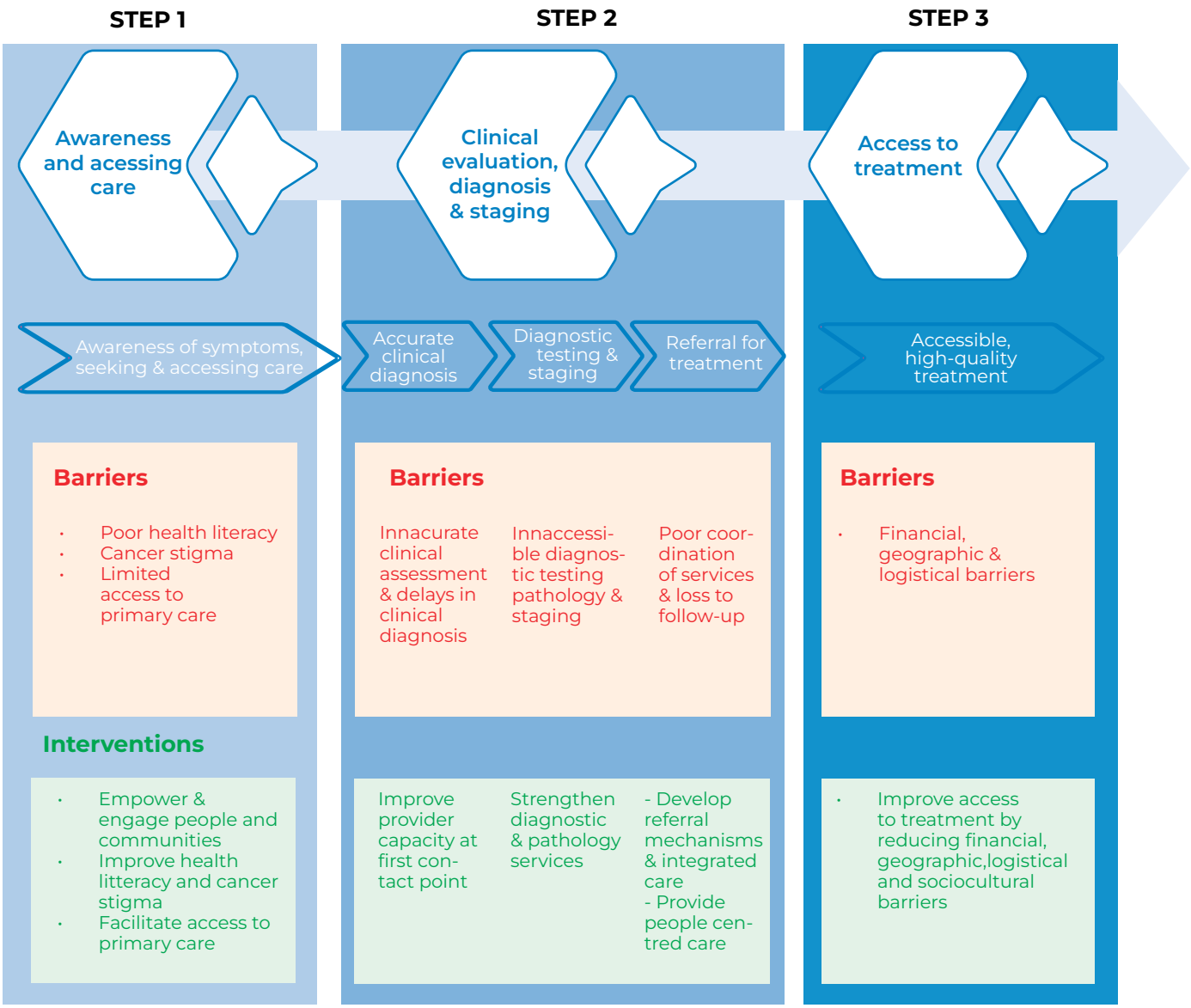
Data source: Recommendations from MOHS stakeholder meeting, 5 December 2019.

Table 18: Palliative/hospice care by level of care model

Service delivery	Interventions and Activities	Inputs	Outputs
Community	**IEC/BCC** · Create public awareness on support for cases of cancer · Support home-based palliative care · Support hospice facilities in the communities · Patient support groups · Train spiritual leaders in palliative care · Support family members · Outreach-based services from supporting facility	· IEC/BCC · materials · Home-based care protocols · Home-based care minimum package of care standards · IPC	· Trained communicators · Trained CHW · No. of home-based care providers
Primary	· Provide palliative care according to protocol for primary level of care · Train HCWs in palliative care · Support communities · Helplines · Integration with other departments for holistic care	· IEC materials · Minimum package of care for palliation at primary level · IPC	· Trained providers · No. of home-based care providers at primary level
Secondary	· Provide palliative care according to protocol for secondary level of care · Train health care workers on palliative care · Support PHUs · Help lines · Integration with other departments for holistic care	· Palliative drugs · Minimum package of care for palliation at secondary level · Standards · Protocols · Drugs · Facility focal persons · IPC	· No. of patients provided care · No. of providers trained
Tertiary	· As above · Palliative surgery · Train health care professionals (nurses, doctors) on palliative care	· Palliative drugs Minimum package of care for palliation at tertiary level · Drugs · IPC	· No. of health care workers trained · No. of patients provided care
Regional/ national level DHMT DRH	· Develop standards and protocols for palliative care by level of care	· Development of guidelines, learning resource materials, job aids	· Supportive supervision · Technical and programme experts

Data source: Recommendations from MOHS Stakeholder meeting 5th Dec 2019.

Figure 14: Steps in early cancer diagnosis: components, barriers and interventions



Source: https://communitymedicine4all.com/2017/02/04/who-releases-guide-to-cancer-early-diagnosis-3-february-2017/.

WHO GUIDANCE ON COSTING FOR CERVICAL CANCER ELIMINATION IMPLEMENTATION PLAN

The WHO has provided guidance on costing of cervical cancer prevention services (WHO, 2022). The following tables are examples from an LIC Case Study (Nigeria) that can help guide the development of Sierra Leone's costed implementation plan for cervical cancer elimination.

Table 19: Overall summary of NNSCP of cervical cancer, 2017□2021

TOTAL COST OVER FIVE YEARS	
Total financial cost of National Strategic Plan over five years	US$ 1,017,481,645
Total economic cost of National Strategic Plan over five years	US$ 2,329,995,713
HPV VACCINATION	
Delivery strategy and interventions	Administration of a 2-dose vaccine to be delivered to 9□13-year-old girls in the first year and 9-year-old girls from the second year. Fifty per cent of girls to be vaccinated at schools in the first year, others to be vaccinated at outreaches or health facilities.
Target coverage	78%
Number of FIGs	4,547,678
Cost per FIG (financial)	US$ 3.98
Cost per FIG (economic)	US$ 14.88
Total cost (financial)	US$ 18,105,758 (including programme support activities costs)
Total cost (economic)	US$ 67,681,025 (including programme support activities costs)
SCREENING	
Delivery strategy and interventions	HPV DNA as primary screening test VIA used for triaging and determining treatment modality 2,417 health facilities providing screening services
Target coverage	80%
Number of services provided	24,002,597 — HPV DNA 870,570 — VIA
Cost per service (financial)	US$ 35.90 — HPV DNA US$ 12.78 — VIA
Cost per service (economic)	US$ 81.67 — HPV DNA US$ 31.83 — VIA
Total service delivery cost (financial)	US$ 872,852,387 (excluding programme support activities costs)
Total service delivery cost (economic)	US$ 1,998,070,776 (excluding programme support activities costs)

Table 20: Summary of total financial costs of the national response by programme areas

Programme areas	2017	2018	2019	2020	2021	Total
Costs of HPV vaccination (including programme support activities costs) (million US$)	9.9	0.5	1.5	2.3	3.8	18.1
Service delivery costs of screening and pre-cancer treatment (million US$)	147.5	255.3	256.3	163.0	97.3	919.4
Service delivery costs of cancer diagnosis, treatment and palliative care (million US$)	10.6	14.4	14.5	11.1	8.8	59.3
Programme support activities costs of secondary and tertiary prevention (million US$)	13.9	0.1	6.5	0.1	0.1	20.7
Total	181.9	270.3	278.8	176.6	110.0	1017.5

Table 21: Costing summary of HPV vaccination

	2017	2018	2019	2020	2021	2017-2021
Target vaccination coverage	2%	10%	29%	49%	78%	N/A
Number of FIGs per year	223,305	230,451	736,308	1,266,450	2,091,163	4,547,678
Financial cost per FIG (US$)	44.54	2.03	2.10	1.84	1.82	3.98*
Economic cost per FIG (US$)	57.80	11.89	13.47	12.59	12.51	14.88*

Tables 19, 20, and 21 above can be used as guidance in developing the costed National Plan Budget by for the Sierra Leone Cervical Cancer Control Plan.

Table 22: Budget template

Cost category	Year 1	Year 2	Year 3	Year 4	Year 5	Total cost	per cent
Training							
Strategy development							
Workshop							
Medicine							
Vaccine							
Medical supplies							
Medical equipment							
Infrastructure							
Human resources							
Awareness Raising							
Research and publications							
M & E							
Manual development							
Others							
Total							

The C4P tool including its manual can be found in: World Health Organization. (2023). User Manual for WHO cervical cancer prevention and control costing tool: HPV vaccination module (C4P-HPV tool) and can be used to develop the costing for future projects on cervical cancer elimination.

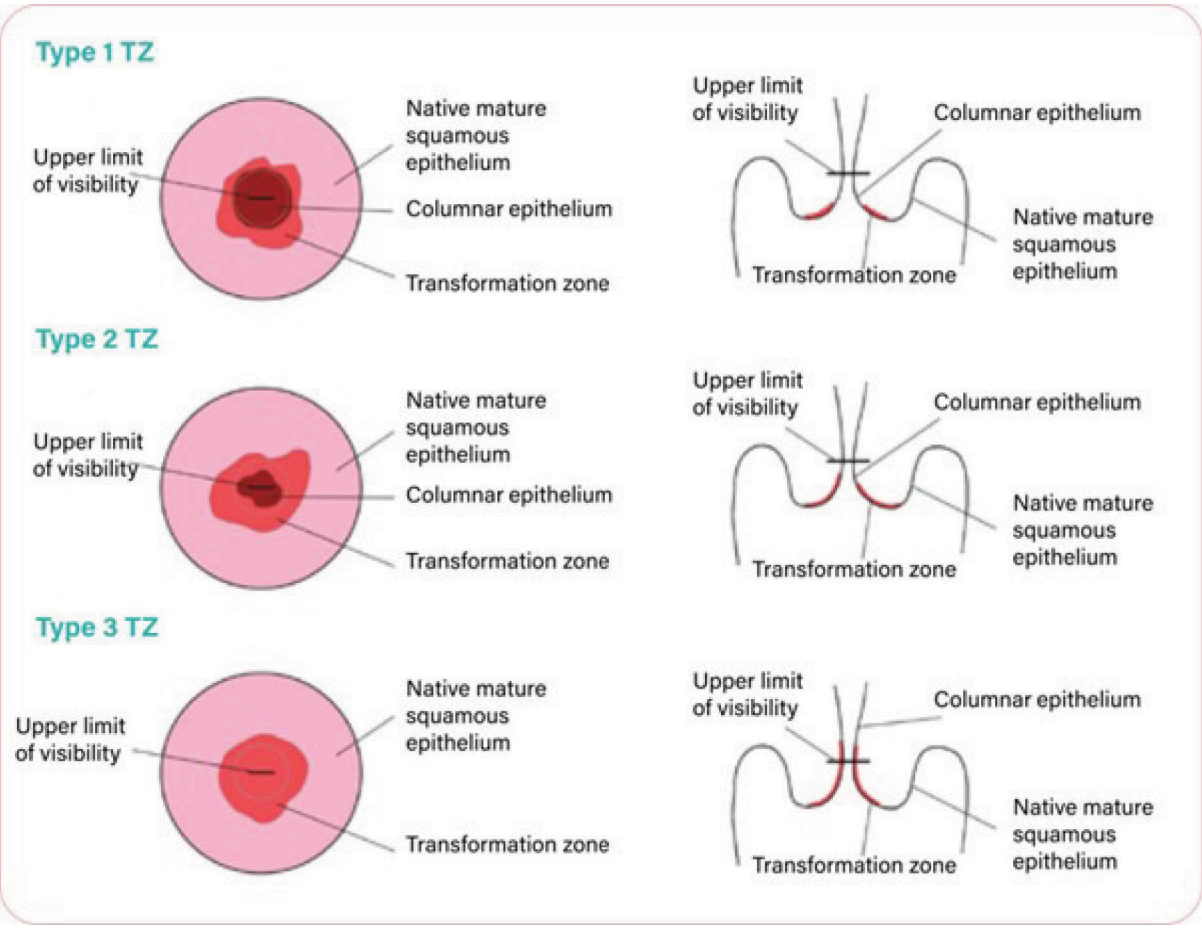
ANNEX 3: TYPES OF TRANSFORMATION ZONE

Type 1: The entire transformation zone is visible. The transformation zone is entirely visible and only ectocervical.

Type 2: The entire transformation zone is visible. The transformation zone is entirely visible and has an endocervical component.

Type 3: The transformation zone is not entirely visible. The transformation zone extends into the endocervical canal and is not fully visible.

Figure 15: Types of transformation zone



ANNEX 4: CRITERIA FOR ELIGIBILITY FOR ABLATIVE TREATMENT

- There is no suspicion of invasive cancer or glandular disease (i.e., adenocarcinoma oradenocarcinoma in situ, AIS).

- The transformation zone is fully visible, the whole lesion is visible, and it does not extend into the endocervix.

- The lesion is type 1 transformation zone. Interventions may be constrained by feasibility, training, programme quality assurance and resources. In the absence of certain infrastructure, such as the availability of LLETZ or of safe surgical settings, bridging strategies may be considered in carefully selected circumstances, to extend access to treatment rather than provide no treatment.

  For example, ablation may be an option for a carefully chosen small type 2 transformation zone where the probe tip will achieve complete ablation of the squamocolumnar junction epithelium – that is, where it can reach the full extent, depth and upper limit of the transformation zone – and where adequate training for selection and follow-up is available.

ANNEX 5: CRITERIA FOR REFERRAL

- There is any suspicion of invasive cancer or glandular disease (i.e., adenocarcinoma or AIS).
- The transformation zone is not fully visible because it is endocervical (type 2 or 3 transformation zone).

ANNEX 6: LIST OF ALGORITHMS FOR APPROACHES TO SCREEN-AND-TREAT

SEVEN ALGORITHMS PRIORITIZED FOR PHASE 1 OF THE GUIDELINE UPDATE

a. Screen-and-treat approaches:

1. VIA as the primary screening test, followed by treatment
2. HPV DNA (self- or clinician-collected) as the primary screening test, followed by treatment

b. Screen, triage and treat approaches:

3. Cytology as the primary screening test, followed by colposcopy triage, followed by treatment
4. HPV DNA as the primary screening test, followed by HPV16/18 triage (when already part of the HPV test), followed by treatment, and using VIA triage for those who screen negative for HPV16/18
5. HPV DNA as the primary screening test, followed by VIA triage, followed by treatment
6. High-risk HPV DNA as the primary screening test, followed by colposcopy triage, followed by treatment
7. HPV DNA as the primary screening test, followed by cytology triage, followed by colposcopy and treatment

*A few examples have been presented in the following sections. Refer to the WHO Guideline for further information. (WHO, 2021).

Figure 16: Algorithm 5 - primary HPV DNA screening and VIA triage (screen, triage & treat approach)

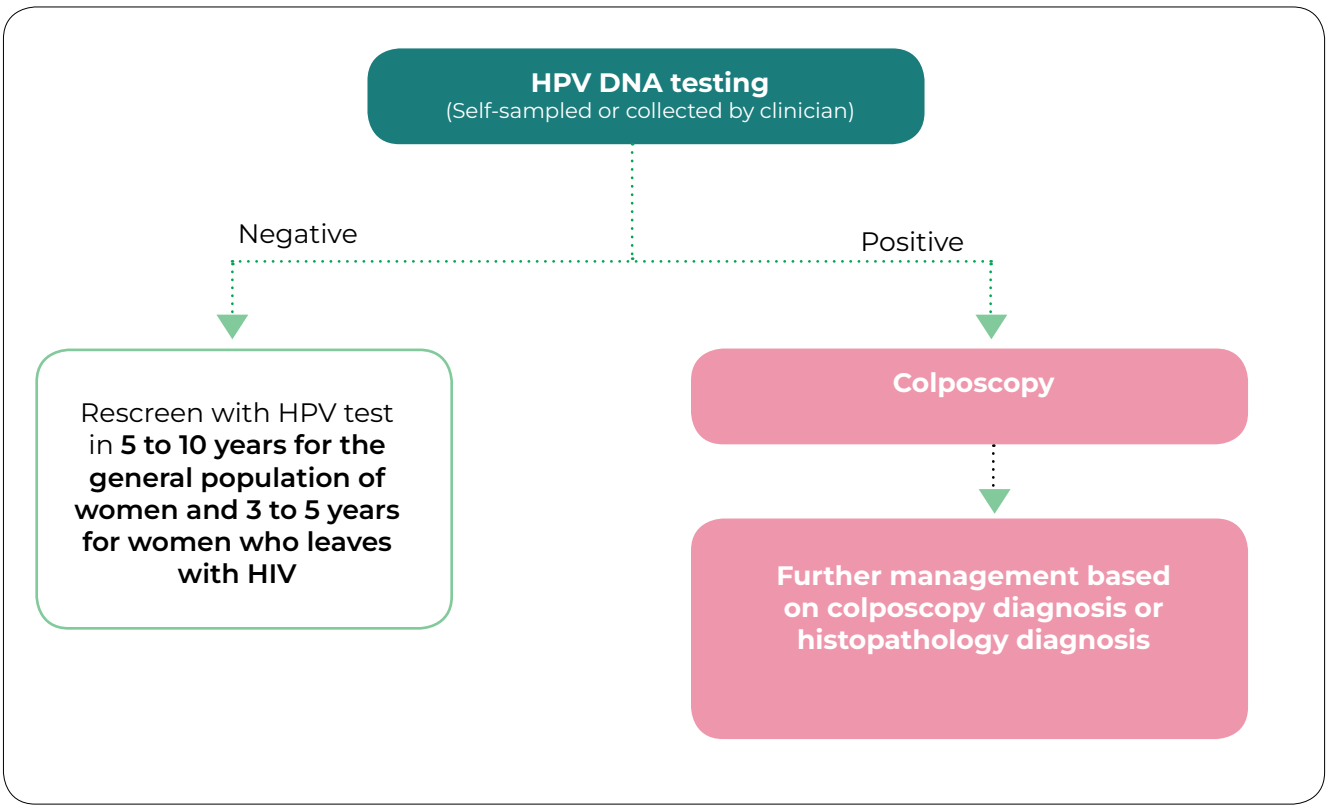


Figure 17: Algorithm 6 - Primary HPV DNA screening and colposcopy triage (screen, triage & treat approach)

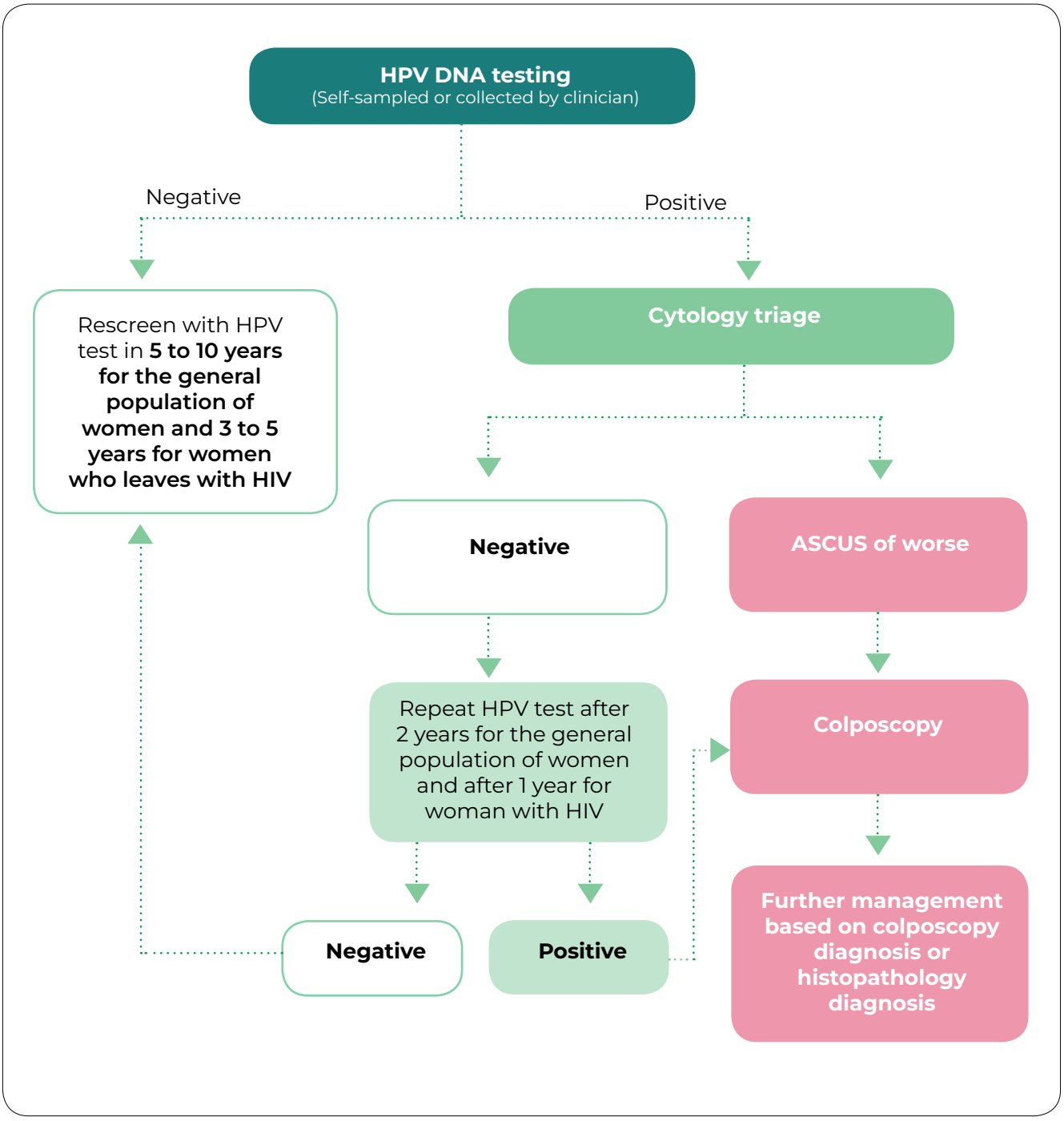


Figure 18: Post-treatment follow-up tests at 12 months for general population of women

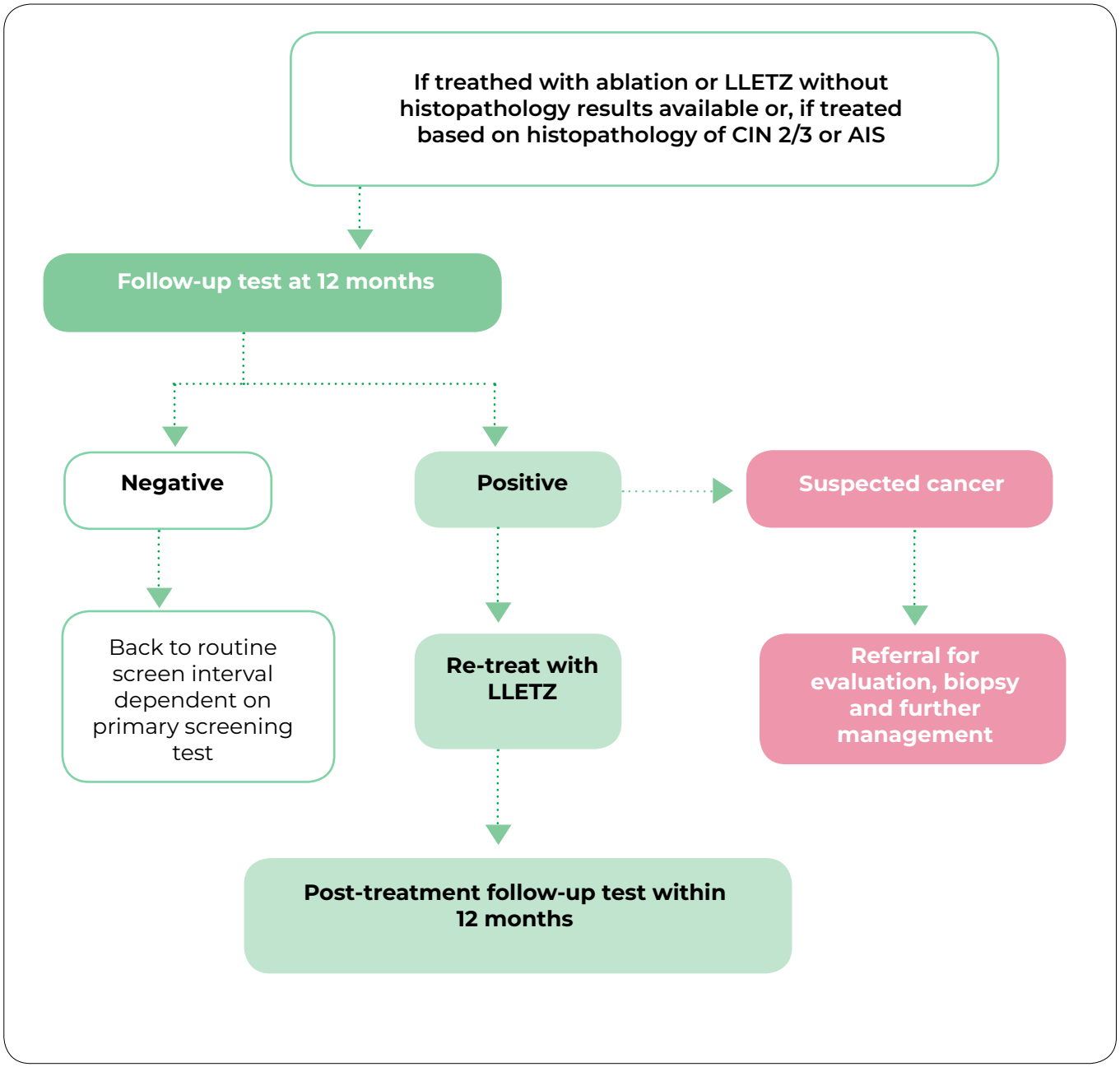
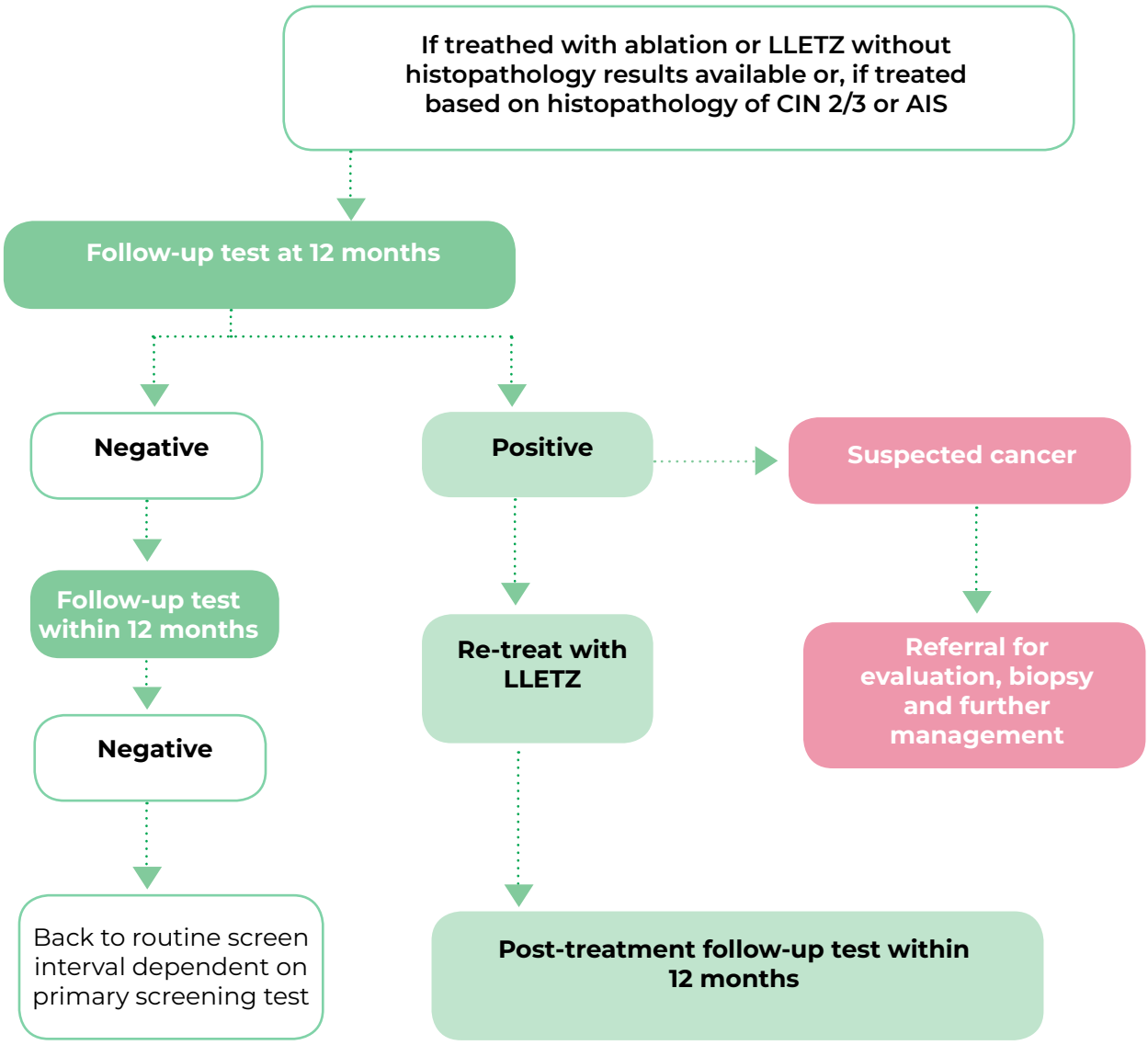


Figure 19: Follow-up tests at 12 months post-treatment for women with HIV



- [a] Ablative treatment includes cryotherapy and thermal ablation.
- [b] Cold knife conization (CKC) if LLETZ not available.
- [c] LLETZ and LEEP (loop electrosurgical excision procedure) indicate the same procedure.
- [d] Histology may not be available in certain settings; women should be advised to attend follow-up after one year or to report earlier if they have any of the symptoms of cervical cancer.
- AIS: adenocarcinoma in situ; CIN: cervical intraepithelial neoplasia; HPV: human papillomavirus; LLETZ: large-loop excision of the transformation zone; VIA: visual inspection with acetic acid.