



GUIDELINES FOR
**CERVICAL
CANCER**
SCREENING IN NIGERIA

2025



FOREWORD

As Director General of the National Institute for Cancer Research and Treatment (NICRAT), I am honoured to present these comprehensive Guidelines for Cervical Cancer Screening in Nigeria, developed by our National Task Force on Cervical Cancer Elimination in Nigeria (NTFCCE). This document represents a pivotal moment in our nation's commitment to eliminating cervical cancer as a public health threat.

Cervical cancer claims approximately 8,000 Nigerian women annually, deaths that are entirely preventable through screening and treatment. With lifetime screening rates below 12% nationally, we face an urgent imperative to transform our approach from fragmented, opportunistic encounters to a coordinated, systematic national program.

The NTFCCE has undertaken the critical work of adapting international best practices to our unique Nigerian context. Through rigorous methodology and extensive stakeholder consultation, the NTFCCE has produced guidelines that provide healthcare providers at all levels with clear, evidence-based protocols that acknowledge both our current realities and our aspirations for comprehensive cancer control.

The Task Force's emphasis on primary HPV testing represents a scientifically sound approach that maximises detection accuracy while remaining feasible within our healthcare infrastructure. The integration of both self-sampling and provider-collected options addresses critical barriers to access, particularly for rural and underserved populations. Most significantly, the clear management pathways from screening through treatment ensure that detection translates into lives saved.

NICRAT commits to supporting the implementation of these guidelines in collaboration with state governments, development partners, and healthcare providers to build the laboratory capacity, clinical expertise, and quality assurance systems necessary for the successful nationwide deployment. Our NTFCCE has provided the roadmap; our collective action will determine its impact. Every woman screened, every precancerous lesion treated, and every case of invasive cancer prevented brings us closer to our shared vision of a Nigeria where no woman dies from this preventable disease.

I commend the NTFCCE for its exemplary work and urge all stakeholders, policymakers, healthcare providers, community leaders, and development partners to adopt and champion the implementation of these guidelines. Together, we can achieve the WHO's 90-70-90 elimination targets and secure a healthier future for Nigerian women and their families.

Prof. Usman Malami Aliyu

Director General, National Institute for Cancer Research and Treatment



PREFACE

Cervical cancer results in the deaths of about 8,000 Nigerian women annually, a tragic toll that is entirely preventable. With lifetime screening rates below 12% nationally, Nigeria faces one of the most significant yet fixable public health issues of our time.

These Guidelines for Cervical Cancer Screening in Nigeria represent a decisive step toward eliminating cervical cancer as a public health problem in our nation. They provide evidence-based recommendations that acknowledge both the current realities of our healthcare system and our aspirations for the elimination of cervical cancer as a public health concern. Special thanks are due to the chairman, secretary, and members of the Guidelines Sub-Committee for their commitment and dedication.

The development of these guidelines involved extensive consultation with healthcare professionals, researchers, policymakers, development partners, and community stakeholders across Nigeria. The recommendations prioritise interventions that are feasible within our current healthcare infrastructure while providing a roadmap for strengthening our capacity over time.

Central to our approach is the integration of cervical cancer screening with existing reproductive health programmes, HIV care services, and primary healthcare platforms. This strategy maximises efficiency, reduces costs, and ensures that screening becomes routine rather than exceptional in women's healthcare.

The true and accurate measure of success will not be the technical excellence of these guidelines, but rather their impact on the lives of Nigerian women. Our dedication to implementing these recommendations is further motivated by the fact that every prevented case represents a daughter, mother, sister, or friend whose life has been saved.

I call upon all stakeholders, from federal and state governments to healthcare providers, from development partners to community leaders, to adopt them and work collaboratively toward the implementation. The elimination of cervical cancer in Nigeria is achievable, but it requires our collective commitment and sustained action.

The women of Nigeria deserve access to life-saving cervical cancer screening services. These guidelines provide the roadmap; now we must have the courage to follow it.

Professor Isaac F Adewole

President, Nigerian Academy of Medicine

&

Chairman, National Taskforce on Cervical Cancer Elimination in Nigeria

Former Honourable Minister of Health, Federal Republic of Nigeria



Acknowledgements

It is our privilege to acknowledge the organisations and individuals whose contributions made the development of these Guidelines for Cervical Cancer Screening in Nigeria possible. These guidelines represent a critical step toward achieving the global target of eliminating cervical cancer as a public health problem by 2030, reflecting the Federal Government's unwavering commitment to this goal.

We extend our gratitude to the leadership of the Federal Ministry of Health, in particular the Coordinating Minister of Health and Social Welfare, Dr Muhammad Ali Pate, CON, the Minister of State for Health and Social Welfare, Dr Iziaq Adekunle Salako, the Permanent Secretary, the National Coordinator, National Cancer Control Programme, Dr Uchechukwu Emmanuel Nwokwu, and all their dedicated staff for their steadfast support of the National Task Force on Cervical Cancer Elimination (NTFCCE). Special gratitude goes to Dr Muntaqa Umar-Sadiq, Sector-Wide Approach (SWAp) coordinator, for his invaluable support to the NTFCCE and for financing the stakeholder engagement workshop where these guidelines were adopted.

The National Institute for Cancer Research and Treatment (NICRAT) provided essential leadership that enabled the completion, printing, and launch of these guidelines. In accordance with NICRAT's mandate, we anticipate their continued collaboration with the Federal Ministry of Health and other governmental and non-governmental organisations to oversee full implementation. My sincere appreciation extends to all NICRAT Directors and staff for their unwavering support.

The Clinton Health Access Initiative (CHAI) played an instrumental role in supporting cervical cancer screening initiatives in Nigeria. Thank you, Dr Olufunke Fasawe, CHAI Nigeria Country Director and Vice President Integration, for your overwhelming support. The ongoing technical support provided by CHAI was essential to the successful completion of these guidelines. Their generous funding of the comprehensive two-day workshop for guidelines development facilitated critical stakeholder engagement and consensus-building.

Roche Products Inc. provided invaluable support through a combined national and international team of five experts whose technical assistance enhanced the quality of the guideline development process. Importantly, this collaboration maintained complete independence in the development of clinical recommendations, ensuring that all recommendations remained evidence-based.

We are particularly grateful to the Chairman of the NTFCCE, Prof Isaac F. Adewole, for mandating the subcommittee on screening and early detection to develop these guidelines, while providing visionary leadership throughout the process. We also acknowledge all other NTFCCE members who supported the subcommittee's efforts.



We sincerely appreciate all stakeholders who participated in the guideline development workshop, contributing diverse perspectives from clinical practice, public health, policy development, and community engagement. We also thank our partners who endorsed these guidelines, demonstrating their commitment to evidence-based cervical cancer prevention.

These guidelines were developed with careful consideration of existing structures and the commitment of government at all levels, development partners, non-governmental organisations, communities, faith-based organisations, and individuals within our national cancer ecosystem. We look forward to leveraging these existing and emerging platforms to implement these guidelines effectively.

To all organisations, individuals, and groups that have committed to supporting the implementation of these guidelines, and to every person who contributed to making these Guidelines for Cervical Cancer Screening in Nigeria a reality, we extend our sincerest gratitude. Your collective efforts bring us closer to a Nigeria free from the burden of cervical cancer.

Dr Amina Abubakar-Bello

Chair, Subcommittee on Screening and Early Detection

On behalf of the NTFCCCE Subcommittee on Screening and Early Detection Team.

Table of Contents

FOREWORD	iii
PREFACE	iv
Acknowledgements.....	v
Acronyms and Abbreviations	x
Executive Summary.....	xiii
1 Background.....	1
1.1 Cervical Cancer Globally and in Nigeria.	1
1.2 Aetiology of Cervical Cancer.	1
1.3 The Natural History of HPV.	2
1.4 Screening Methods.	3
1.5 The World Health Organisation's Global Strategy for cervical cancer elimination.	4
1.6 Nigeria's current Screening Landscape.	5
1.7 Purpose of the guideline.....	6
1.8 Target Readership for This Guideline.	6
2 Guideline Development Methodology.....	8
2.1 Overview: Systematic Adaptation Approach.	8
2.2 Source Guideline Selection and Assessment.	8
2.3 Search Strategy.	8
2.4 Primary Source Selection: WHO Guidelines 2021.	9
2.5 ADAPTE Methodology and Systematic Adaptation Process.	10
2.6 Contextualisation of Screening in Nigeria.	11
2.7 Alignment with Nigeria's Policy Documents and WHO Guidelines.	14
2.8 Update and Maintenance Framework.	14
3 Recommendations on the Screening.....	16

3.1	<i>Recommendation on the Screening Test: Primary HPV Testing with Partial Genotyping.....</i>	16
3.2	<i>Recommendations for Screening Women in the General Population.</i>	16
3.3	<i>Recommendations for Screening Women 50 to 65 years.</i>	17
3.4	<i>Recommendations for Women Living with HIV (WLHIV).....</i>	18
3.5	<i>Recommendations for Special Groups.....</i>	19
4	<i>HPV Test Sampling Options, HPV Testing Terminology and Reporting</i>	21
4.1	<i>Recommendations for Sampling Options.....</i>	21
4.2	<i>Preparation, storage and transportation of HPV Samples.....</i>	22
4.3	<i>HPV Testing.....</i>	23
5	<i>Recommendations on Sample Analysis and Testing Platforms</i>	26
5.1	<i>Recommendations on Sample Analysis Approaches.</i>	26
5.2	<i>Recommendations for HPV Testing Platforms for Nigeria.</i>	26
6	<i>Recommended triage tests and treatment options.....</i>	30
6.1	<i>Recommended Triage Tests.</i>	30
6.2	<i>Primary Treatment Recommendation.</i>	31
7	<i>Cervical Cancer Screening Pathway in Nigeria.</i>	37
7.1	<i>Recommendation for HPV Negative Result at Screening (Figure 6).</i>	38
7.2	<i>Recommendation for HPV Positive for Types 16,18 (45 and 35 if in the assay) (Figure 7).</i>	38
7.3	<i>Recommendation for HPV positive for “other” types (Figure 8).</i>	40
7.4	<i>Recommendation for Invalid HPV tests.</i>	40
7.5	<i>Recommendation for follow-up HPV test post-treatment.⁽¹⁵⁾</i>	42
8	<i>Client Education and Counselling</i>	44
8.1	<i>Pre-Screening Counselling.....</i>	44
8.2	<i>Addressing Common Barriers.....</i>	45
8.3	<i>Informed Consent Process.....</i>	46
8.4	<i>Pre-Treatment Counselling:.....</i>	48
8.5	<i>Post-Treatment Counselling.</i>	48

8.6	<i>Quick Tips for Effective Counselling/Communication Best Practices:.....</i>	49
9	<i>Patient Navigation</i>	50
10	<i>Infection Prevention and Control.</i>	53
10.1	<i>Sample Processing</i>	53
10.2	<i>Instrument Processing:.....</i>	53
10.3	<i>Waste Management.</i>	54
10.4	<i>Handling and Disposal.....</i>	54
10.5	<i>Staff Safety.</i>	54
10.6	<i>Personal Protective Equipment.</i>	54
	<i>References</i>	56
	<i>ANNEXES.....</i>	61
I.	<i>List of NTFCCE Subcommittee on Screening and Early Detection and Technical Partners on Guidelines Development.....</i>	62
II.	<i>List of Participants at the Guidelines Development Workshop.....</i>	65
III.	<i>List of Participants at the National Consultative Workshop that Endorsed the Guidelines</i>	68
IV.	<i>Minimal Information on an HPV Test Request Form</i>	70
V.	<i>Minimal Information on an HPV Test Report Form.....</i>	73



Acronyms and Abbreviations

AC	Alternating Current
AI	Artificial Intelligence
AIS	Adenocarcinoma in Situ
ART	Antiretroviral Therapy
ASCCP	American Society for Colposcopy and Cervical Pathology
CBSS	Community-Based Self-Sampling
CHEW	Community Health Extension Worker
CHW	Community Health Worker
CIN	Cervical Intraepithelial Neoplasia
CIN2+	Cervical Intraepithelial Neoplasia grade 2 or higher
CLIA	Chemiluminescent Immunoassay
DNA	Deoxyribonucleic Acid
EMR	Electronic Medical Records
FCT	Federal Capital Territory
FEFO	First-Expiry, First-Out
GLOBOCAN	Global Cancer Observatory
GRADE	Grading of Recommendations Assessment, Development and Evaluation
HIV	Human Immunodeficiency Virus
HPV	Human Papillomavirus
IARC	International Agency for Research on Cancer
IFCPC	International Federation for Cervical Pathology and Colposcopy
IVDs	In Vitro Diagnostics
LBC	Liquid-Based Cytology
LEEP	Loop Electrosurgical Excision Procedure
LIMS	Laboratory Information Management Systems
LMIC	Low- and Middle-Income Countries



mRNA	Messenger Ribonucleic Acid
NGO	Non-Governmental Organisation
NHIA	National Health Insurance Authority
NHS	National Health Service (UK)
NICRAT	National Institute for Cancer Research and Treatment
NPC	Near Patient Care
NPV	Negative Predictive Value
NTFCCE	Nigeria's Task Force on Cervical Cancer Elimination
PCR	Polymerase Chain Reaction
POCT	Point of Care Testing
PPE	Personal Protective Equipment
SOP	Standard Operating Procedures
STI	Sexually Transmitted Infection
TZ	Transformation Zone
USPSTF	US Preventive Services Task Force
VAT	Visual Assessment for Treatment
VIA	Visual Inspection with Acetic Acid
WHO	World Health Organisation
WLHIV	Women Living with HIV

List of Tables

Table 1: Cervical Cancer Screening Methods	4
Table 2: HPV DNA Assays that WHO has already prequalified	29
Table 3: HPV DNA Assays currently in the WHO prequalification of IVDs assessment ..	29
Table 4: Important distinction between VAT and VIA(14)	32

List of Figures

Figure 1: The natural history of cervical cancer and the opportunities for intervention to prevent cervical cancer	3
Figure 2: Comparison of different HPV nucleic acid testing technologies.....	27
Figure 3: Pathway of Visual Assessment of the Cervix for Treatment.....	33
Figure 4: Types of Transformation Zones in the Cervix (48)	33
Figure 5: Cervical Cancer Screening Pathway in Nigeria	38
Figure 6: Management pathway for a negative HPV test.....	38
Figure 7: Management pathway for HPV test result positive for HPV16, HPV 18 or HPV 18/45	39
Figure 8: Management pathway for HPV test result positive for “other” high-risk HPV types.....	41
Figure 9: Management pathway for follow-up HPV test in women from the general population	42
Figure 10: Management pathway for follow-up HPV test in WLHIV.....	43
Figure 11: Pathway for Patient Navigation.....	52



Executive Summary

Cervical cancer represents one of Nigeria's most pressing yet preventable public health challenges. With an estimated 13,676 new cases and 7,093 deaths annually, cervical cancer ranks as the second most common cancer among Nigerian women. The current lifetime screening coverage of less than 12% nationally, combined with over 70% of patients presenting with advanced-stage disease, reflects a healthcare crisis that demands urgent, systematic intervention.

To address this, the National Task Force on Cervical Cancer Elimination in Nigeria (NTFCCE) has developed these national guidelines to establish a coordinated, evidence-based, and systematic national screening programme. The goal is to provide a clear roadmap for all stakeholders to work towards the World Health Organisation's (WHO) 90-70-90 elimination targets and save the lives of countless Nigerian women.

The guidelines were developed by Nigeria's Task Force on Cervical Cancer Elimination using the internationally recognised ADAPTE methodology, systematically adapting the WHO Guidelines for Screening and Treatment of Cervical Pre-cancer Lesions (2nd Edition, 2021) to the Nigerian context.

The new national strategy prioritises patients, ensuring it meets the needs of Nigerian women. It focuses on culturally sensitive counselling, helpful patient navigation to guide women through the process, and strong community involvement to overcome common barriers, such as fear, stigma, and misinformation. To ensure sustainability, the guidelines recommend integrating screening services with existing reproductive health programmes, HIV care services, and primary healthcare platforms, utilising both clinic- and community-based services to reach women nationwide, particularly in rural and underserved areas.

The core recommendations for screening, along with the clear triage and treatment pathways established by these guidelines, are summarised in the box below. This new national standard is centred on a high-performance HPV testing strategy designed to achieve broad population coverage and ensure that women who screen positive receive timely, effective care.

These guidelines provide a unified, evidence-based framework to transform cervical cancer prevention in Nigeria from a series of disparate activities into a cohesive national public health programme. The success of this strategy hinges on the collective commitment and coordinated action of all stakeholders—from federal and state governments to healthcare providers, development partners, and community leaders. By adopting and championing the implementation of these guidelines, Nigeria can move decisively toward the elimination of cervical cancer as a public health problem.



SUMMARY OF RECOMMENDATIONS

2.1 Recommendation on the Screening Test

Primary HPV Testing with Partial Genotyping

2.2 Recommendations for Screening Women in the General Population:

Twice in a lifetime, by age 35 and again by age 45

2.2.1 Primary Target Population

Age 30 – 49

2.2.2 Age at initiation

30 years

2.2.3 Age at discontinuing

50 years for those undergoing regular screening

2.2.4 Screening Interval

10 years

2.3 Recommendations for Screening Women 50 to 65 years

2.3.1 Initiation

Immediately

2.3.2 Screening Interval

5 to 10 years

2.3.3 Discontinue

Age 70

2.4 Recommendations for Women Living with HIV (WLHIV)

2.4.1 Age Range

Ages 25 to 65 years

2.4.2 Age at Initiation:

Age 25 years

2.4.3 Screening Intervals:

Every 5 years

2.4.4 Age at Discontinuation:

Age 65 years.



2.5 Recommendations for Special Groups 2.5.1 Women who had a Previous Total Hysterectomy <i>If a hysterectomy is for a benign disease, do not screen</i> <i>If a hysterectomy is for premalignant or malignant conditions, continue to screen</i> 2.5.2.1 Recommendations during Pregnancy and Postpartum <i>Screening can be done during pregnancy, postpartum and post-abortion</i> 2.5.2.2 Recommendations during Heavy Menstrual Bleeding <i>If heavy bleeding, postpone until after the period</i> 2.5.2.3 Recommendations for Women with Previous Radiation Therapy <i>Refer to the oncologist/gynaecological oncologist</i>
3.1 Recommendations for Sampling Options <i>Both self-sampling and provider sampling are recommended.</i>
4.1 Recommendations on Sample Analysis Approaches <i>Point-of-Care/Near-Patient care is recommended.</i> <i>Centralised testing, where POC/near-patient testing is not feasible</i> 4.2 Recommendations for HPV Testing Platforms for Nigeria <i>Prioritise WHO prequalified HPV testing Platforms</i> <i>The platform can be Point-of-care, Manual, or Automated</i>
5.1 Recommended Triage Tests <i>Partial genotyping, Visual Inspection with acetic acid (VIA), Colposcopy.</i> 5.2 Primary Treatment Recommendation <i>Thermal ablation as first-line treatment</i> <i>Loop electrosurgical excision (LEEP)</i>
6.1 Recommendation for HPV negative result at screening <i>Next screen in 10 years for the general population and 5 years for WLHIV</i> 6.2 Recommendation for HPV positive for types 16,18 (35, 45) <i>Immediate treatment</i> 6.3 Recommendation for HPV positive for “other” types <i>Triage with VIA or Colposcopy and treat or follow up</i> 6.4 Recommendation for Invalid HPV tests <i>Retest immediately, ideally within one week</i> 6.5 Recommendation for follow-up HPV test post-treatment <i>All women who tested positive for HPV and had thermal ablation or a negative triage should be seen 12 months after.</i> <i>If LEEP, then see in six months post-treatment</i>



1 Background

1.1 Cervical Cancer Globally and in Nigeria.

Cervical cancer ranks as the fourth most diagnosed cancer among women worldwide, with approximately 660,000 new cases recorded in 2022.⁽¹⁾ Of the 350,000 deaths attributed to cervical cancer that same year, roughly 94% occurred in low and middle-income countries. Sub-Saharan Africa, Central America, and Southeast Asia have the highest incidence and mortality rates from this disease.⁽¹⁾

Cervical cancer is one of the most significant public health challenges facing Nigerian women today, with the national burden remaining among the world's highest despite being entirely preventable and highly treatable when detected early.⁽²⁾ Nigeria experiences an estimated 13,676 new cases and 7,093 deaths annually, according to GLOBOCAN 2022 data, making cervical cancer the second most common cancer among Nigerian women after breast cancer.⁽¹⁾ This devastating toll reflects a healthcare crisis, particularly where over 70% of patients present with advanced disease, overburdening the system.

1.2 Aetiology of Cervical Cancer.

Human papillomavirus (HPV) infection is the essential cause of nearly all cervical cancers, with over 99% of cases linked to persistent high-risk HPV infection.⁽³⁾ This strong causal link designates HPV as the main focus for both prevention and screening efforts. While cervical cancer remains the most significant burden, HPV infection also relates to anogenital cancers (vulvar, vaginal, penile, and anal), oropharyngeal cancers (especially in the tonsils and base of the tongue), and benign conditions such as genital warts and papillomas of skin and mucous membranes.⁽⁴⁾

A recent systematic analysis of the global literature on the causal attribution of human papillomavirus genotypes to invasive cervical cancer worldwide showed that HPV-16 has the highest global population attributable fraction at 61.7%, followed by HPV-18 at 15.3%.⁽⁵⁾ Together, these two genotypes account for approximately 77% of all cervical cancers worldwide.⁽⁵⁾ Regional variations in HPV genotype distribution have important implications for prevention strategies. In Africa, the combined attributable fraction of HPV-16 and HPV-18 is estimated at 71.9%. Notably, HPV-35 exhibits a significantly higher prevalence in Africa at 3.6% compared to other global regions (0.6-1.6%), representing a distinctive epidemiological pattern with implications for vaccine development and screening strategies.^(5,6) In Nigeria, studies show that the prevalence of high risk HPV varies significantly by population studied, geographic region, and risk factors, with rates ranging from approximately 20-40% in the general population.⁽⁷⁾



1.3 The Natural History of HPV.

Understanding the natural progression of HPV infection is crucial for effective screening strategies. The majority of infections (>90%) are transient and asymptomatic, with most infections resolving spontaneously within 12-24 months. Only a small fraction of infections persists beyond 24 months.⁽⁴⁾ Cervical cancer typically develops over 10-20 years from initial high risk HPV infection, following a progression pathway from HPV infection to persistent infection to precancerous lesions to invasive cancer (see Figure 1).⁽⁸⁾ Only a small percentage of persistent infections progress to precancerous lesions and eventually to cancer.⁽⁴⁾

Women living with HIV have a significantly increased risk of cervical cancer compared to HIV negative women as a result of a combination of factors.⁽⁹⁻¹¹⁾ Although HPV infection is the necessary underlying cause of all cervical cancers, women living with HIV are more likely to acquire an HPV infection and less likely to clear the infection than are women without HIV, both factors contributing to higher rates of persistent HPV infection in this population.^(9,12) Furthermore, HIV has an indirect role in oncogenesis, mainly via immune suppression, enhancing the effects of high-risk HPV.⁽⁹⁾

The progression from HPV infection to cervical cancer is influenced by multiple factors, including viral factors (HPV genotype, viral load, and persistence), host factors (immune status, genetic susceptibility, hormonal influences), and environmental factors (smoking, nutritional status, co-infections, and sexual behaviour)⁽⁴⁾.

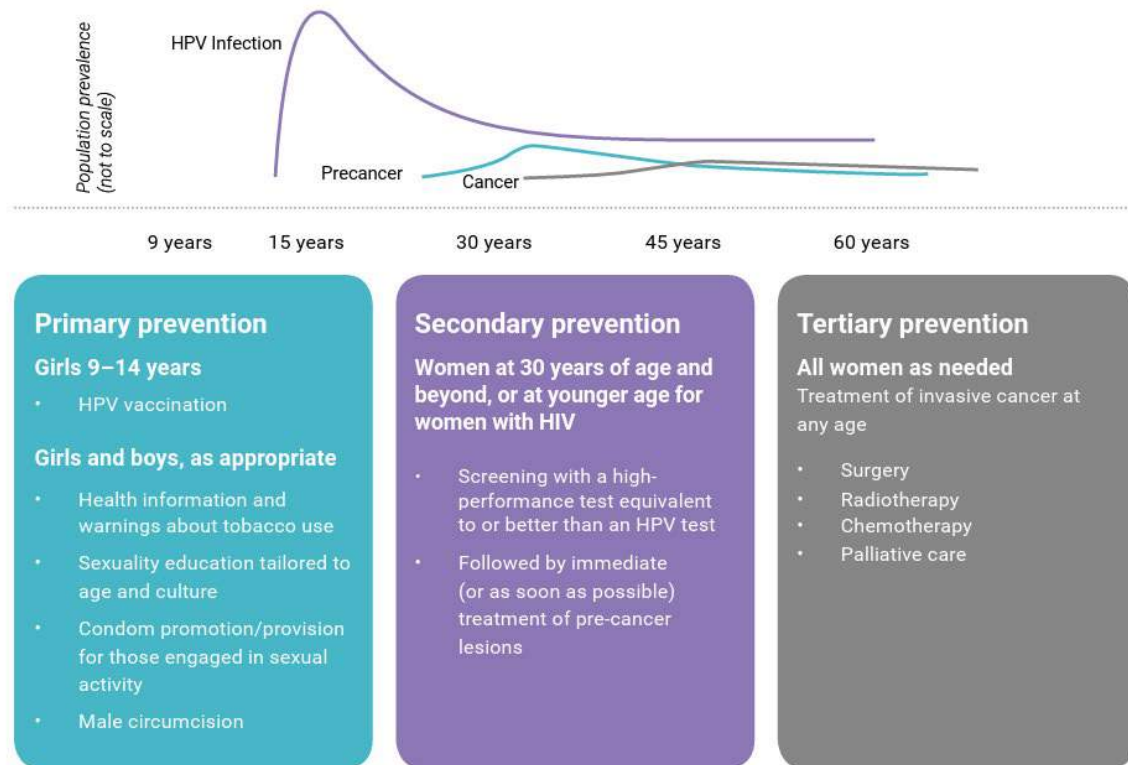


Figure 1: The natural history of cervical cancer and the opportunities for intervention to prevent cervical cancer

Source: WHO 2020⁽¹³⁾

The long natural history of HPV-related cervical cancer provides several key opportunities for intervention. The 10–20-year progression period allows for multiple screening opportunities. Screening can identify and treat precancerous lesions before cancer develops, thereby preventing progression to invasive cancer. This understanding of HPV's central role in cervical carcinogenesis forms the foundation for evidence-based screening recommendations. It emphasises the importance of regular screening participation among eligible women (See Figure 1).^(13,14)

1.4 Screening Methods.

The traditional method for screening women for cervical cancer has been cytology (Pap smear). A positive cytology result is confirmed by colposcopy, and suitable treatment is determined by biopsy of suspicious lesions for histological diagnosis.⁽¹⁴⁾ Unfortunately, this screening method has not been successful in low- and middle-income countries for several logistical reasons. These reasons include workforce shortages (histopathologists and cytopathologists), technical requirements (complex cytology infrastructure), and health system capacity (recall and follow-up systems).

Effective cervical cancer screening requires the careful selection of appropriate screening methodologies based on available evidence, infrastructure, target population characteristics, and programme objectives.⁽¹³⁾ Currently, three main categories of

screening methodologies are available: molecular testing, cytological methods, and visual inspection techniques. Some of the technologies in these categories are under development/validation.⁽¹⁵⁾ Table 1 shows the screening methods currently available and those undergoing validation.

Table 1: Cervical Cancer Screening Methods

Screening Method	Technology/Approach	Advantages	Limitations
Molecular Methods	- HPV DNA testing - High-risk HPV genotyping - mRNA - DNA methylation assays^{&} - Oncoprotein detection^{&}	- Superior accuracy - Eliminates interpretation variability - Enables self-sampling - Long screening intervals are possible - Cost-effective	- Higher cost - Some platforms require molecular lab infrastructure - Lower specificity (more false positives), so may need triage testing
Cytological Methods	- Conventional Pap smear - Liquid-based cytology (LBC) - p16/Ki-67 dual staining	- Long track record of effectiveness - Well-established protocols - Can detect various abnormalities - Improved efficiency with LBC	- Requires extensive infrastructure - Needs highly trained personnel - Subject to interpretation errors - Lower sensitivity than HPV testing
Visual Inspection Methods	- Visual inspection with acetic acid (VIA) - Enhanced VIA with magnification - Digital imaging/colposcopy - AI-based automated visual evaluation^{&}	- Minimal infrastructure needed - Immediate treatment decisions - Cost-effective - Suitable for screen-and-treat programmes in low-resource settings.	- Subjective and Provider variable - Lower accuracy than molecular methods - Requires constant training and quality control - Limited by operator experience - Storage/handling of acetic acid may lead to false results - High false-positive rates

[&] HPV tests that are still being validated.

Source: WHO, 2021⁽¹⁵⁾

1.5 The World Health Organisation's Global Strategy for cervical cancer elimination.

Adopted by the World Health Assembly in August 2020, the World Health Organisation's Global Strategy for cervical cancer elimination provides a comprehensive framework to eliminate cervical cancer as a public health problem by achieving an incidence rate below 4 per 100,000 women by the end of the century. The strategy states that to achieve



this target, countries should reach the 90-70-90 targets by 2030 and maintain them thereafter.⁽¹⁶⁾

These targets are to ensure that:⁽¹⁶⁾

- 90% of girls are fully vaccinated with the HPV vaccine by the age of 15;
- 70% of women are screened with a high-performance test by the age of 35, and again by the age of 45 (i.e. at least twice in their lifetime, a maximum of 10 years apart), and
- 90% of women with identified cervical disease receive treatment (i.e. 90% of women with precancer treated and 90% of women with invasive cancer managed).

Screening serves as the critical middle pillar of the WHO's global elimination strategy and is crucial to cervical cancer elimination because it identifies and treats pre-cancerous lesions before they progress to invasive cancer, provides the most significant mortality reduction of all three elimination pillars, and is the only intervention that can immediately impact cancer rates in women already beyond vaccination age.

1.6 Nigeria's current Screening Landscape.

Nigeria has many policy documents and training manuals on cervical cancer prevention, but currently lacks a implemented government-backed, organised national cervical cancer screening programme.⁽¹⁷⁾ Instead, screening services currently operate through opportunistic encounters at healthcare facilities, small-scale pilot projects supported by donors and non-governmental organisations, and limited services concentrated in tertiary care centres and urban areas. This fragmented approach has resulted in severely inadequate population coverage.

Lifetime screening uptake remains below 12% nationally, with substantial urban rural disparities creating approximately a threefold gap in access to services.⁽¹⁷⁾ Most women never receive screening within WHO-recommended age intervals, and those who do access services often encounter them outside of evidence-based protocols. Available screening methods include visual inspection with acetic acid, which is the primary approach in many centres, cytology services with limited availability, mainly in tertiary institutions and urban settings, and HPV DNA testing, which is currently confined to small-scale pilots without national implementation.

The absence of organised screening reflects broader health system challenges, including inadequate infrastructure, insufficient human resources, limited financing mechanisms, and weak linkages between primary healthcare and specialised services⁽²⁾. These systemic barriers perpetuate the cycle of late-stage presentation and poor outcomes that characterise Nigeria's cervical cancer burden.



1.7 Purpose of these guidelines.

These guidelines have been developed to provide evidence-based recommendations for cervical cancer screening in Nigeria to reduce cervical cancer incidence and mortality among Nigerian women.

These guidelines will:

- Establish standardised screening protocols that are tailored to the Nigerian healthcare context, taking into account available resources, infrastructure, and healthcare workforce capacity.
- Define target populations for screening, including age ranges, risk categories, and special populations such as women living with HIV.
- Specify screening methods and intervals that balance effectiveness with feasibility.
- Provide clear guidance on management pathways for positive screening results, including triage, treatment, and referral systems for suspected invasive cancer.
- Support quality assurance by establishing standards for healthcare provider training, laboratory services, and programme monitoring and evaluation.
- Facilitate integration of cervical cancer screening into existing health services, particularly reproductive health programmes and HIV care services.

1.8 Target Readership for These Guidelines.

These guidelines are designed for multiple stakeholders involved in cervical cancer prevention and control in Nigeria:

- Primary Healthcare Providers
 - General practitioners in primary health centres
 - Nurses and midwives providing reproductive health services
 - Community health workers and community health extension workers
 - Healthcare providers in private clinics and hospitals
- Specialist Healthcare Providers
 - Gynaecologists and obstetricians
 - Oncologists and radiation therapists
 - Pathologists and laboratory specialists
 - Gynaecological oncologists
- Health System Managers and Policymakers
 - State and local government health officials
 - Programme managers for reproductive health and non communicable diseases
 - Health facility administrators and supervisors
 - Quality assurance, monitoring, and evaluation specialists



- Public Health Professionals
 - Epidemiologists and surveillance specialists
 - Health promotion and education specialists
 - Community mobilisation coordinators
- Training and Academic Institutions
 - Medical and nursing schools
 - Public health training institutions
 - Professional associations and continuing education providers
 - Research institutions and universities
- Development Partners and NGOs
 - International organisations supporting health system strengthening
 - NGOs focused on cancer prevention and women's health
 - Faith-based organisations providing health services
 - Civil society organisations involved in women's health
- Community-based organisations and advocacy groups
 - Women and Communities
 - Women of screening age and their families
 - Traditional rulers
 - Community and religious leaders and influencers
 - Men as partners in supporting women's health

The success of cervical cancer screening in Nigeria depends on coordinated action across all these stakeholder groups, working together to overcome barriers and ensure that every eligible woman has access to quality screening services.



2 Guidelines Development Methodology

2.1 Overview: Systematic Adaptation Approach.

The Screening and Early Detection Subcommittee of Nigeria's Task Force on Cervical Cancer Elimination (NTFCCE) developed these guidelines by adapting international evidence-based recommendations to the Nigerian healthcare context, using established methodological frameworks to ensure both scientific rigour and practical applicability. Rather than undertaking the resource-intensive process of developing guidelines de novo, the subcommittee chose to adapt existing high quality international guidelines while incorporating Nigeria-specific evidence and contextual considerations.

2.2 Source Guideline Selection and Assessment.

With technical assistance from the Clinton Health Access Initiative (CHAI) and the Roche Diagnostics Division, Roche Products Limited, the guideline development process began with a comprehensive search to identify high quality, recent guidelines on cervical cancer screening from reputable international organisations.

2.3 Search Strategy.

Multiple sources were searched to identify relevant guidelines:

2.3.1 Primary Databases:

- WHO Guidelines Database
- PubMed
- Cochrane Library
- Google Scholar

2.3.2 Supplementary Sources:

- Targeted Google web searches for organisational guidelines and grey literature
- Direct website searches of prominent health organisations
- Professional society guideline repositories

2.3.3 Search Parameters.

- Search Keywords included "cervical cancer screening guidelines," "HPV testing guidelines," "cervical cancer prevention," "cervical screening recommendations"
- Guidelines and updates published between 2015 and 2025



2.3.4 Guidelines Identified and Assessed.

This systematic search identified six major guidelines for detailed assessment:

1. WHO Guidelines for Screening and Treatment of Cervical Pre-cancer Lesions (2nd Edition, 2021)
2. Australian Cervical Cancer Screening Guidelines (2024)
3. US Preventive Services Task Force Draft Recommendation: Cervical Cancer Screening (2024)
4. UK National Health Service: NHS Cervical Screening Programme (2020)
5. South African Cervical Cancer Screening Guidelines (2023)
6. Kenya Screening Guidelines 2024

Each guideline underwent preliminary assessment for methodological quality, relevance to low-resource settings, comprehensiveness of recommendations, and applicability to the Nigerian healthcare context.

2.4 Primary Source Selection: WHO Guidelines 2021.

Following systematic evaluation, the WHO Guidelines 2021⁽¹⁵⁾ were selected as the primary source based on several factors that demonstrated their suitability for adaptation to the Nigerian context:

1. Methodological Excellence: The WHO guidelines demonstrated methodological excellence through their rigorous use of GRADE methodology with comprehensive systematic reviews and meta-analyses, ensuring transparent evaluation of evidence quality and strength of recommendations.
2. HIV Population Considerations: The guidelines include specific recommendations for HIV-positive populations, which are particularly relevant given Nigeria's substantial HIV burden and the need for integrated screening approaches.
3. Resource-Appropriate Design: Particularly relevant to the Nigerian context, the WHO guidelines were specifically designed for implementation across diverse healthcare settings, including low-resource environments like Nigeria.
4. Current Evidence Synthesis: The WHO guidelines incorporated the most current evidence synthesis available through 2020, provided practical guidance for programme implementation and scale-up, and offered resource-stratified recommendations that acknowledge varying levels of healthcare system capacity.



5. Authoritative Support: The guidelines carried the authority of an official World Health Organisation endorsement, accompanied by technical and implementation support, ensuring credibility and ongoing assistance for adaptation efforts.

This selection provided access to evidence synthesis that would be prohibitively resource-intensive to replicate at the national level while maintaining the highest standards of evidence-based medicine and ensuring relevance to the Nigerian healthcare context.

2.5 ADAPTE Methodology and Systematic Adaptation Process.

The subcommittee employed the internationally recognised ADAPTE methodology, which provides a systematic and transparent approach to adapting existing high quality guidelines to local contexts while rigorously maintaining evidence-based principles.⁽¹⁸⁾ The ADAPTE framework was selected because it offered several critical advantages over alternative approaches:

1. Leveraged existing high-quality evidence synthesis rather than duplicating effort
2. Optimised resource utilisation by focusing on contextual adaptation rather than comprehensive evidence review
3. Provided quality assurance through proven international methodology
4. Ensured complete transparency through systematic documentation of all adaptation decisions

2.5.1 ADAPTE Process Implementation.

The ADAPTE process, consisting of three distinct phases, nine comprehensive modules, and twenty-four detailed procedural steps, provided the methodological structure that guided the entire development effort from initiation through final endorsement.

Phase 1 (Set-up): Completed in March 2025, this foundational phase involved the formal establishment of the Screening and Early Detection Subcommittee by the NTFCCE, comprising members with diverse expertise spanning clinical practice, public health, policy development, and community engagement. Working in collaboration with technical partners, the subcommittee defined the scope and focus specifically for the Nigerian healthcare context and conducted a systematic assessment of implementation barriers and facilitating factors that would influence successful adaptation and implementation.

Phase 2 (Adaptation): Started in March 2025 and completed in August 2025, this intensive adaptation phase involved the identification of six international guidelines and selection of the WHO guidelines as the primary source of adaptation, systematic



extraction of recommendations and supporting evidence, and development of draft adapted guidelines with comprehensive documentation providing a clear rationale for all modifications made to original recommendations.

Phase 3 (Finalisation): Conducted from August through September 2025, this concluding phase focused on validation and endorsement activities. It encompassed extensive stakeholder consultation, including a comprehensive two-day stakeholder consultative meeting on cervical cancer screening guidelines held in August 2025, which brought together healthcare providers, policymakers, community representatives, and implementing partners (see the list of participants in Annexe II). The process culminated in September 2025 with the formal endorsement of the guidelines during another two-day consultative meeting of all stakeholders and development partners (see the list of participants in Annexe III).

2.6 Contextualisation of Screening in Nigeria.

To ensure appropriate and effective adaptation to the Nigerian healthcare context, the subcommittee conducted comprehensive assessments using multiple complementary methodological approaches that captured both quantitative (a review of literature that examined studies published between 2015 and 2024, focusing on Nigerian cervical cancer epidemiology studies, health system capacity assessments, implementation research from similar settings, and cultural and social barrier studies) and qualitative (from stakeholders at the Cervical Cancer Screening Guidelines Consultative workshop) insights into the Nigerian healthcare environment.

Multiple studies have identified complex, interconnected barriers that prevent Nigerian women from accessing cervical cancer screening services. Factors such as poor awareness, low risk perception, poverty, lack of female providers, fear of positive screening results, and deep-rooted sociocultural norms all significantly contribute to the low utilisation of cervical cancer screening services among Nigerian women. Additional barriers include financial constraints, geographical access issues, and systemic problems such as inadequate healthcare infrastructure, outdated equipment, and limited laboratory services. Traditional beliefs, religious considerations, and gender-related barriers also heavily affect women's health-seeking behaviour, necessitating culturally sensitive approaches that respect local values while promoting evidence-based care. Many women also do not return to collect their screening results for various reasons.

2.6.1 Knowledge and Awareness Barriers.

Poor knowledge and awareness are one of the primary barriers to screening uptake in Nigeria. Many women have never heard of cervical cancer or screening services, with 77.4% citing lack of information as their main reason for not screening and 64.2% reporting lack of awareness of screening methods.^(19–21)



Widespread misconceptions compound knowledge barriers, including attributing cervical cancer to wizardry or multiple sexual partners, or believing that screening causes sexually transmitted diseases.^(22–24) These misconceptions create barriers by fostering fatalistic attitudes and preventing women from understanding their actual risk factors and prevention options. Common reasons for perceived non-susceptibility included having only one sexual partner and spiritual protection, reflecting fundamental misunderstandings about cervical cancer risk factors.

2.6.2 Healthcare Infrastructure and Workforce Challenges.

Nigeria faces a severe shortage of health personnel, with an estimated density of only ~1.9 health personnel (doctors, nurses, midwives) per 1,000 population—well below the WHO-recommended threshold of 4.45 per 1,000.⁽²⁵⁾

Service delivery challenges, such as poor access due to high screening costs, location issues, unprofessional attitudes and long waiting times, discourage women from seeking care.^(22,24,26)

These significant gaps necessitate a primary care-based approach to cervical cancer screening that leverages the skills of general practitioners, nurses, and community health workers. Consequently, the guidelines emphasise screening methods that can be implemented by non-specialist healthcare providers with appropriate training.

2.6.3 Resource Constraints and Economic Considerations.

Financial barriers represent one of the most significant obstacles to cervical cancer screening uptake in Nigeria. While many Nigerian women face financial barriers to accessing healthcare, the healthcare system also struggles with inadequate funding for essential equipment, supplies, and human resources.^(21,24,26,27)

Studies consistently show that a lack of money is a primary concern. The cost burden extends beyond the screening test itself to include transportation expenses and lost income from time away from work or business. The situation is worsened by Nigeria's high poverty levels, making screening services unaffordable for many women who need other necessities.^(28–30)

Resource constraints at the healthcare level present persistent challenges, including limited laboratory infrastructure for advanced diagnostic procedures, unreliable electricity supply and transportation networks, particularly affecting rural areas, significant financial barriers affecting both individual patients and health system sustainability, and competing health priorities operating within constrained funding environments that require strategic prioritisation of interventions.⁽³¹⁾

These guidelines prioritise cost-effective screening strategies and emphasise the importance of integrating cervical cancer screening into existing health services to maximise efficiency and sustainability.

2.6.4 Cultural and Social Context Analysis.

Socio-cultural barriers greatly influence the uptake of screening in Nigeria. Traditional beliefs, religious considerations, and gender-related barriers also heavily affect women's health-seeking behaviour, necessitating culturally sensitive approaches that respect local values while promoting evidence-based care. Many women also do not return to collect their screening results for various reasons, including fear of a positive result, which may lead to social stigma.

Social stigma and fear of discrimination create powerful psychological barriers to screening participation. The stigma associated with cervical cancer diagnosis stems from its connection to sexually transmitted infections, leading to fears that screening or diagnosis will result in being labelled as promiscuous.⁽³²⁾ Women expressed concerns about negative reactions from spouses, partners, and community members, fearing separation and abandonment if diagnosed.⁽²²⁾ The shame associated with reproductive health issues and the fear of breach in confidentiality of results further discourage women from seeking screening services.^(22,23)

Gender-related cultural constraints create additional screening barriers, particularly in relation to modesty requirements and a preference for female healthcare providers.^(23,33) The need for spousal approval represents another cultural barrier; women often require permission from their husbands to access screening services.^(23,33,34)

2.6.5 Geographic and Economic Diversity.

Nigeria has a vast geographic expanse and a diverse economic landscape, which creates significant variations in healthcare resource availability across its 36 states and the Federal Capital Territory.

Rural women face particular challenges because screening facilities are concentrated in secondary and tertiary health facilities, requiring them to spend additional money and time on transportation to reach these distant locations, which have poor road network coverage and limited public transportation options, further limiting access.^(31,35)

Due to this uneven geographical distribution of resources, a one-size-fits-all approach to cervical cancer screening is neither feasible nor equitable. Therefore, these guidelines adopt a resource-adapted implementation framework that ensures every Nigerian woman has access to cervical cancer prevention, regardless of her geographic location or local economic circumstances.

2.6.6 Opportunities for Integration.

The assessment also identified substantial opportunities for successful integration and implementation, including well-established reproductive health service platforms that could accommodate cervical screening services, existing HIV care programmes with



trained staff and established infrastructure that could be leveraged, robust women's organisations, cancer advocacy groups and community networks that could facilitate outreach and education. There is also demonstrated government commitment to cancer control initiatives at both the federal and state levels.

2.7 Alignment with Nigeria's Policy Documents and WHO Guidelines.

Nigeria has developed cervical cancer prevention policy documents over the years, with more recent documents including the NICRAT National Strategic Plan for the Prevention and Control of Cervical Cancer in Nigeria (2023-2027),⁽³⁶⁾ and the National Plan for Cervical Cancer Prevention in Nigeria (Volumes 1 and 2).⁽³⁷⁾ These documents recognise the critical importance of implementing evidence-based, standardised cervical cancer screening practices to address the country's substantial disease burden. In alignment with global best practices and to ensure optimal resource utilisation, this guideline serves as the primary foundation for Nigeria's national screening programme. By implementing standardised, evidence-based approaches, Nigeria aims to transform its cervical cancer prevention efforts from isolated clinical encounters into a coordinated, effective public health programme capable of achieving the WHO 90-70-90 elimination targets.

The alignment with the WHO guidelines offers three key benefits to Nigeria's cervical cancer screening programme. First, it establishes uniform screening standards nationwide, which reduces inconsistencies in how screening is conducted and facilitates easier tracking and assessment of programme effectiveness. Second, it promotes efficient use of healthcare resources by offering evidence-based recommendations on optimal screening techniques, which populations to target, and how frequently to screen. Third, it promotes stronger health system capacity by linking screening with timely treatment and follow-up, thereby improving survival, reducing complications, and ensuring that women diagnosed with precancer or cancer receive appropriate care. Other international guidelines were also referenced in the preparation of this guideline.

2.8 Update and Maintenance Framework.

Recognising that clinical practice guidelines must remain current and relevant in the face of evolving evidence and changing healthcare contexts, the subcommittee has established a systematic approach for ongoing updates and maintenance of these guidelines. This framework ensures that the guidelines will continue to reflect the best available evidence while remaining appropriately adapted to the evolving Nigerian healthcare environment.

The planned update schedule incorporates multiple review mechanisms:

1. Annual light reviews will assess new evidence publications and implementation experiences to identify any immediate concerns or opportunities for improvement



2. Comprehensive reviews every three years or coinciding with new WHO guideline versions will undertake a systematic reassessment of all recommendations
3. Emergency updates will be implemented as needed in response to significant new evidence or safety concerns that may arise.

Guideline maintenance is essential to ensure that these recommendations will continue to provide reliable, evidence-based guidance for cervical cancer screening in Nigeria while remaining responsive to new evidence and evolving healthcare system capabilities.

3 Recommendations on the Screening

3.1 Recommendation on the Screening Test: Primary HPV Testing with Partial Genotyping.

This guideline recommends **primary HPV testing** as the preferred cervical cancer screening method for eligible women in Nigeria.

3.1.1 Rationale for Recommending Primary HPV Testing.

This aligns with the WHO recommendation, highlighting the superior sensitivity of HPV testing, its high negative predictive value, and the ability to detect precancerous lesions earlier and more effectively than cytology or Visual Inspection with Acetic Acid (VIA). This makes it the most efficient tool for preventing cervical cancer and related morbidity.^(15,38) The increased sensitivity reduces the likelihood of missing precancerous lesions during screening, enabling earlier intervention and improved patient outcomes.

Equally important is the high negative predictive value (NPV) of HPV testing, which provides strong reassurance when results are negative.⁽¹⁵⁾ Women with negative HPV tests have an extremely low risk of developing significant cervical lesions in the near future, allowing healthcare providers to extend intervals between screening tests safely.

This approach offers multiple advantages for healthcare systems. Extended screening intervals reduce both the overall burden on medical facilities and the need for unnecessary follow-up procedures. Unlike VIA (Visual Inspection with Acetic Acid), HPV testing delivers objective, standardised results that eliminate provider inconsistencies.

Perhaps most significantly, HPV testing can be performed on self-collected samples. This self-sampling capability addresses critical barriers to screening access, particularly in low- and middle-income countries (LMICs), promoting more equitable healthcare delivery and expanding screening reach to underserved populations.^(15,39)

3.2 Recommendations for Screening Women in the General Population.

Beginning at the age of 30, women in the general population should undergo screening twice: first by the age of 35 and again by the age of 45, with an interval of 10 years between screenings.

3.2.1 Rationale for screening twice.

This primary approach aligns with the WHO's global strategy to eliminate cervical cancer, which establishes the target of screening 70% of eligible women at least twice in their lifetimes.⁽¹⁵⁾



The selection of two screening time points between ages 30 and 49 for Nigeria's primary screening strategy is supported by WHO modelling data, which demonstrate that HPV screening at these ages provides substantial public health benefits while minimising resource requirements.⁽³⁸⁾ This approach balances effectiveness with feasibility, recognising that many Nigerian women have never been screened and that achieving broad population coverage with minimal screening is superior to intensive screening of limited populations. WHO modelling further shows that twice-in-a-lifetime HPV testing at ages 35 and 45 can avert more than 60% of cervical cancer deaths in low-resource settings, as it coincides with women's highest risk period and ensures early detection before progression.⁽⁴⁰⁾ The twice-in-a-lifetime approach represents a feasible, cost-effective foundation that can be scaled nationwide while building toward more intensive and enhanced screening programmes in higher-resource areas.

3.2.2 Primary Target Population.

All women aged 30-49 years in the general population

3.2.3 Age at Initiation.

Age 30

3.2.4 Age at Discontinuation.

Age 50 (after two negative screening results)

3.2.5 Screening Intervals.

Ten (10) years

3.3 Recommendations for Screening Women 50 to 65 years.

This guideline recommends that:

- Women should not be denied screening based on age alone.
- Screen immediately, regardless of when they present
- Second screen in 5-10 years
- Discontinue at age 70 years

3.3.1 Rationale for screening older women.

Given Nigeria's lifetime screening coverage of less than 12%, the majority of women over 45 years have never been screened for cervical cancer. This represents a critical public health emergency requiring urgent, targeted intervention. These unscreened older women face substantially higher cervical cancer risks and often present with advanced disease.

Studies have shown that unscreened women over 50 face a cervical cancer risk of 49 per 10,000 compared to 8 per 10,000 in adequately screened women.⁽⁴¹⁾ The benefit of



screening previously unscreened older women was demonstrated in a Swedish cohort study, which showed that screening women in their 60s who were previously unscreened provides substantial risk reduction, lasting into their 80s.⁽⁴²⁾

The WHO Guidelines Development Group explicitly acknowledged that "in countries where cervical cancer screening may not have been widely available, women who were older than 50 years would be at greater risk of CIN2/3 and cervical cancer".⁽¹⁵⁾ Therefore, with Nigeria's late-stage presentation rate exceeding 70% and lifetime screening coverage below 11%, there is a substantial epidemiological likelihood that many older women currently harbour undetected precancerous or early invasive cervical lesions. Early detection and treatment of these lesions through catch -up screening could prevent progression to advanced, untreatable disease and significantly reduce cervical cancer mortality in this high-risk population.

3.4 Recommendations for Women Living with HIV (WLHIV).

3.4.1 Age Range:

Ages 25 to 65 years

3.4.2 Age at Initiation:

Age 25 years

3.4.3 Screening Intervals:

Every 5 years

3.4.4 Age at Discontinuation:

At age 65, if a woman has had two previous negative screening results. Otherwise, extend to 70 years.

3.4.5 Rationale for recommendations for WLHIV.

Women living with HIV (WLHIV) require modified screening protocols that reflect their substantially elevated cervical cancer risk, with HIV infection conferring approximately six-fold increased risk compared to HIV-negative women.⁽¹¹⁾ The WHO 2021 guidelines provide specific evidence-based recommendations for this ~~high~~ population, recognising that HIV-positive women face unique challenges, including higher HPV prevalence, increased risk of persistent infections, accelerated progression to precancerous lesions, and higher rates of cervical cancer at younger ages.⁽¹⁵⁾

In alignment with the WHO, this guideline suggests starting regular cervical cancer screening at age 25 years among women living with HIV. This represents a five-year earlier start compared to the general population, based on evidence that HIV-positive women develop cervical cancer at younger ages and have accelerated disease progression. The



recommendation applies to women living with HIV regardless of when they first tested positive for HIV, recognising that immune suppression effects begin early in HIV infection.⁽¹⁵⁾

Even though the effects of immunosuppression start early in the infection, evidence showed that initiating screening at age 20 versus 25 years showed only marginal additional cancer prevention benefit while substantially increasing pre-cancer treatments and associated harms, including increased risk of preterm deliveries.^(15,43) The balance of benefits and harms supports age 25 as the optimal starting age for routine screening in HIV-positive women.

WHO suggests screening cessation after age 65 years only after two consecutive negative screening results, applying the same criteria to both WLHIV and HIV-negative women. However, another document, The IARC Handbook, notes that women with immunosuppression, including HIV, may need to continue cervical cancer screening for life due to their persistently elevated cancer risk.⁽¹⁴⁾

For this guideline, the recommendations for discontinuing cervical cancer screening in the general population of women apply to WLHIV. The recommendation is that screening may be discontinued after age 65 for women who have an adequate screening history. Women over 65 with an inadequate screening history are advised to continue screening until they achieve a proper negative screening history, typically two additional screening tests over 10 years.

In agreement with the WHO guideline, this guideline recommends screening intervals of every 3 years for HIV-positive women, given the higher risk of persistent HPV infections and more rapid progression to clinically significant disease in HIV-positive women.

3.5 Recommendations for Special Groups.

3.5.1 Women who had a Previous Total Hysterectomy.

1. Previous Total Hysterectomy for Benign Conditions

Women who have had a hysterectomy with removal of the cervix for benign indications and no history of high-grade precancerous lesions or cervical cancer on histopathology are not at risk for cervical cancer and should not be screened. However, women with a subtotal or supracervical hysterectomy (cervix not removed) should continue screening according to standard guidelines.⁽⁴⁴⁾

2. A Previous hysterectomy was performed for high-grade cervical intraepithelial neoplasia (CIN) or cervical cancer.

HPV testing surveillance of the vault should continue in cases where the hysterectomy was performed for CIN or cervical.



3.5.2 Other special considerations.

3.5.2.1 Recommendations during Pregnancy and Postpartum.

3. Pregnant women requiring cervical screening can undergo HPV testing using either clinician-collected or self-collected samples.
4. It is generally safe to screen for cervical cancer during pregnancy, postpartum or after abortions. It is recommended to offer HPV screening in pregnancy and in the immediate postpartum and post-abortion periods.
5. Cervical biopsy during pregnancy carries unnecessary risks and should be reserved only for cases where invasive cervical cancer is strongly suspected based on clinical findings.
6. High-grade cervical intraepithelial lesions diagnosed during pregnancy do not require immediate intervention and can be managed expectantly until 2 weeks postpartum, allowing for safer definitive treatment after delivery. Only invasive cervical cancer requires immediate treatment during pregnancy and must be referred to specialists.

3.5.2.2 Recommendations during Heavy Menstrual Bleeding.

Heavy menstrual bleeding can interfere with adequate cervical visualisation and compromise sample quality. Each case should be individualised.

3.5.2.3 Recommendations for Women with Previous Radiation Therapy.

Previous radiation therapy may alter cervical tissue characteristics, potentially affecting the interpretation of screening tests. Consult a specialist gynaecologic oncologist and oncologist.



4 HPV Test Sampling Options, HPV Testing Terminology and Reporting

4.1 Recommendations for Sampling Options.

4.1.1 Recommends both self-sampling and provider-sampling.

This guideline recommends that anyone eligible for cervical screening should be offered the choice of HPV testing on either:

- **Provider-collected cervical sample.**
- **Self-collected vaginal sample.**

Both sample collection methods have equivalent sensitivity for detecting HPV and CIN2+/adenocarcinoma in situ (AIS).⁽⁴⁵⁾

4.1.2 Recommendations regarding Self-Sampling.

- Self-sampling is an alternative to provider-sampling in primary screening in women with no previous cervical pathologies.
- Self-sampling can take place in any setting as described below.
- An adequate explanation of how to take the test must be clear and may include diagrams to describe the process.
- Healthcare providers should be ready to collect vaginal swabs for HPV testing when women prefer self-sampling but lack confidence in the self-collection process. This clinician-assisted sampling is performed with the patient in a supine position (lying on their back) and without the use of a speculum.
- Each setting must devise ways to ensure that women who self-collect a sample can access the clinic promptly for further assessment and appropriate treatment.

4.1.2.1 Settings where self-collection can be performed.

- Community-Based self-sampling
- Facility-Based Self-Sampling

Community-based self-sampling (CBSS) can be effectively introduced through health posts (HPs). Health posts serve as trusted community hubs, where CHWs provide instructions on self-collection and linkages to referral care. This ~~mod~~^{enhances} accessibility, particularly for rural women, and reduces barriers such as ~~the~~^{the} of speculum exams or long travel distances. Samples collected at health posts can then be integrated into the national sample referral transport systems, ensuring timely analysis and result return. Embedding CBSS in health posts creates a sustainable and scalable platform that bridges community- and facility-based cervical cancer prevention services.



Where feasible, programmes should also explore door-to-door delivery of self-sampling kits by CHWs, leveraging existing outreach platforms such as routine immunisation (RI) services or HIV community-based programmes. This approach could further extend coverage to hard-to-reach populations, provided issues of confidentiality, counselling, and linkage to care are safeguarded.

4.1.2.2 Recommended Self-Collection Devices.

There is no evidence to suggest that any vaginal sampling device is superior to another. The following platform-agnostic product categories may be used, provided they are validated for HPV testing in Nigeria:

- Polyester/Dacron swabs with transport media
- Dry-flocked swabs with collection tubes
- Other devices as recommended by the manufacturers of the testing platform

4.1.3 Recommendations regarding Provider-Sampling.

- All eligible screening participants should be informed about clinician collected cervical sampling as an alternative to self-collected HPV testing.
- When available, use pelvic models and anatomical diagrams to help participants understand what the procedure involves.
- Before the procedure, obtain informed consent from the participant, confirming they understand the purpose, process, possible discomforts, and their right to decline or stop at any time.
- Preparation: Ask the participant to empty their bladder before beginning and direct them to undress from the waist down in the private area behind the clinic curtain, then position themselves lying on their back on the examination bed. Provide a sheet or blanket for coverage and comfort.
- During the Procedure: Maintain clear communication throughout each step of the process, explaining what is happening as you proceed. Ensure the participant understands they have the right to request that the procedure be stopped at any point.

4.2 Preparation, storage and transportation of HPV Samples.

- Please verify that all collection devices, reagents, and consumables are within their expiry dates before use.
- Apply the first expiry, first-out (FEFO) principle when commodities are nearing expiry to minimise wastage.
- Record lot numbers and expiry dates where possible, following national laboratory quality assurance standards.
- Label the samples and request forms with the participant identifier.
- Ensure that the identification details on the samples and request forms match.



- Suspend the flocked swab in the container with preservative fluid or use any other sampling device that follows the preparation manual provided by the manufacturer.
- Tighten the cap to prevent spillage or contamination.
- Follow the manufacturer's instructions for storing and transporting samples. However, for most HPV testing platforms, the samples can be stored at room temperature for up to 3 weeks and in the refrigerator for up to 3 months.

4.2.1 Sample transport process.

- In facilities where the POC HPV test is available, samples are processed and tested on-site.
- Where a POC test is not available, centralised testing requires transporting samples to laboratories for testing.
 - All samples are collated at a designated pickup point, from where authorised couriers collect the samples and deliver them to the laboratories.
 - It is recommended that, where transportation of samples is required, it is integrated into existing national systems, such as the Nigeria Integrated Sample Referral Network (NiSRN), or other approved innovative logistics providers, to ensure the timely and quality-assured movement of samples to PCR laboratories.
 - To minimise delays caused by manual documentation, programmes should explore the use of remote sample login at designated collation sites, similar to systems already in place for HIV and TB programmes. Remote login enables the electronic pre-registration of samples into laboratory information systems before arrival, ensuring faster validation, reduced backlogs, and the prompt commencement of testing.

4.3 HPV Testing.

4.3.1 Request Form.

The HPV request form should contain detailed information about the patient's demographic details, the sample collection method, and a short clinical history, including HIV status, history of smoking, contraception and previous cervical cancer screening. Refer to the minimum information required on the form attached in Annexe IV

4.3.2 HPV Testing Results.

These guidelines include partial genotyping to identify HPV types 16 and 18. Commercial HPV testing platforms differ in their genotyping abilities. Some assays report HPV 18 and 45 together, whereas other platforms offer extended genotyping that covers additional high-risk types beyond 16 and 18.



When HPV testing uses assays that cannot differentiate between types 18 and 45, and results show "HPV 18/45 detected," clinical management should follow the same pathway as for participants with confirmed HPV 16 or 18 detection, given the similar high-risk profile of these types. Refer to the minimum information required on the attached form in Annexe V.

4.3.2.1 Essential components in the HPV report

- **Patient Information:**
 - **Patient demographics** Name, age, date of birth, medical record number/barcode
 - **Collection details:** Date of collection, specimen type (cervical/vaginal), collection method (clinician/self-collected)
 - Ordering provider/facility name
 - **Clinical indication:** Screening, follow-up, post-treatment surveillance
- **HPV Test Results:**
 - Primary Results**
 - Overall HPV status: Positive/Negative for high-risk HPV
 - Invalid/Indeterminate – repeat sample required
 - Specimen adequacy: Adequate/Inadequate (with internal control results)
 - Genotyping Results** (based on test platform . Platforms with extended genotyping report more genotypes individually or in combination)
 - HPV 16: Positive/Negative
 - HPV 18: Positive/Negative (or HPV 18/45 if combined)
 - Other high-risk HPV: Positive/Negative
 - Additional Information**
 - Test methodology: PCR platform used, assay name
 - Laboratory details: Performing lab, pathologist, contact information
 - Report date: Date of sample receipt , when results were finalised and dispatched

4.3.3 HPV Test Result Return.

- The result return must balance timeliness, confidentiality, and counselling needs to ensure women understand their results.
- In POC testing settings, results are returned within a short time (30 minutes to an hour) while the patient is still at the facility.
- In a centralised testing setting, it is recommended that results be transmitted from the laboratory to the facility through electronic systems. Where electronic result transfer to the facility is not yet available, programmes should ensure that paper-based results from laboratories/ collation sites are returned to the originating health facility.
- SMS or phone calls may be used to notify /track patients to come for result collection, but not to disclose positive results directly.



4.3.3.1 Documentation.

All result communications must be recorded in the client's health record/logbook, including the date, mode of communication, and follow-up actions.



5 Recommendations on Sample Analysis and Testing Platforms

5.1 Recommendations on Sample Analysis Approaches.

Depending on geographical location and available resources, HPV sample analysis can be performed using one of two approaches:

- 1. Point-of-Care Testing (POCT) / Near-Patient Testing Approach.**
- 2. Centralised Laboratory Approach.**

Point of Care Testing (POCT) / Near Patient Testing Approach is the recommended approach where available. In this approach, HPV POCT equipment will be strategically placed in selected healthcare facilities close to the communities and operated by authorised, trained personnel. This allows for immediate on-site sample analysis and release of results while the woman is still waiting. This approach minimises the number of visits required and reduces patient attrition between screening and treatment. It is particularly valuable in resource-limited settings where patients may have difficulty returning for multiple appointments.

In the Centralised Laboratory approach, samples are collected and sent to accredited laboratories for batch processing. All participating laboratories must maintain proper accreditation standards.

5.2 Recommendations for HPV Testing Platforms for Nigeria.

- This guideline recommends that Nigeria should prioritise WHO-prequalified HPV platforms.
- Suppliers must demonstrate regulatory approval, documented experience in resource-limited settings, and comprehensive service-level agreements that ensure adequate device uptime.⁽¹³⁾
- The all-inclusive pricing of the test must be affordable. This includes the cost of proprietary reagents and consumables, controls, instruments, service and maintenance, distributor margin, procurement and distribution costs.
- Operational considerations for selecting HPV platforms⁽¹³⁾:
 - Existing platforms in the country: The current number of existing HPV DNA platforms in Nigeria can be found in the National plan for cervical cancer elimination in Nigeria, volume 2.⁽³⁷⁾
 - Availability of in-country technical support.
 - Ease of use, particularly in POC/NPC instruments.
 - Data management capabilities and interoperability with laboratory information systems (LIMS)

- Utility for other uses like HIV viral load, STI testing, Infant HIV diagnosis, etc.

5.2.1 HPV Testing Technologies.

HPV testing technology options can be classified into three categories, each with distinct advantages and limitations:⁽⁴⁶⁾

- Manual
- Automated
- Point-of-care/Near-patient care. (see Figure 2 below)

Testing method	Manual	Automated	Point-of-care or near-patient testing
Manual steps	Maximum	Limited	Limited
Operator qualifications	Experienced in laboratory procedures	Trained for specific automation	No laboratory experience needed; focused device training
Throughput	Small to moderate batch testing	High volume batch testing, but random access available	Single specimen, but can combine multiple modules to increase volume
Infrastructure requirements	Vast majority of methods require reagent-grade water, continuous, reliable power supply Requires appropriate chemical and biohazard waste management	Reagent-grade water, continuous, reliable power supply, significant laboratory footprint Requires appropriate chemical and biohazard waste management	Continuous, reliable power supply Requires appropriate chemical and biohazard waste management
Advantages	Lower initial investment	High throughput, limited operator involvement	Facilitates "screen and treat" programmes, no laboratory experience needed to operate
Limitations	Labour-intensive	High initial investment; large footprint	Low throughput (though moderately scalable to increase capacity)

Figure 2: Comparison of different HPV nucleic acid testing technologies

Source: WHO, 2020⁽⁴⁶⁾

5.2.2 Rationale for prioritising platforms that have undergone the WHO prequalification process.⁽⁴⁷⁾

- WHO prequalification is a quality assurance system that establishes international standards for medical products and accelerates their access, particularly in low- and middle-income countries.
- It primarily serves to prequalify products for purchase through the WHO and other procurement channels, while also supporting national regulatory authorities through collaborative registration procedures.
- The system ensures products align with public health needs, fosters manufacturer competition leading to price reductions, and helps standardise test accuracy for equitable screening programmes globally.
- It is essential to note that WHO prequalification does not serve as direct regulatory approval, but rather facilitates procurement and may support national regulatory applications, acting as a bridge between product development and global access to essential medical products.

The WHO publishes the list of prequalified products on its website as soon as the data on such products has been assessed and evaluated by the WHO. This list can be found online at: [Prequalified In Vitro Diagnostics | WHO - Prequalification of Medical Products \(IVDs, Medicines, Vaccines and Immunisation Devices, Vector Control\)](#). Tables 2 and 3 below list the current and pending WHO prequalification HPV assays.



Table 2: HPV DNA Assays that the WHO has already prequalified.⁽⁴⁷⁾

Product name	Product Code	WHO Product ID	Manufacturer name	Year prequalification
Xpert HPV	GXHPV-CE-10	0268-070-00	Cepheid AB	2017
CareHPV Test	614015	0085-028-00	QIAGEN GmbH	2018
Abbott RealTime High Risk HPV	02N09-080	0455-180-00	Abbott GmbH	2019
Abbott RealTime High Risk HPV	02N09-092	0455-180-00	Abbott GmbH	2019
cobas HPV	6997511190, 6997538190 7460171190, 6997546190 7460155190, 6997503190 7002238190	0468-046-00	Roche Molecular Systems, Inc.	2023
cobas 4800 HPV Test	5235863190, 5235898190 5235871190, 5235855190 5235839190, 5235901190 5235910190, 5235812190 5235880190	0466-046-00	Roche Molecular Systems, Inc.	2024
Alinity m HR HPV	09N15-080	09308-027-00	Abbott Molecular Inc.	2025
Alinity m HR HPV	09N15-090	09308-027-00	Abbott Molecular Inc.	2025

Table 3: HPV DNA Assays that are currently in the WHO prequalification of IVDs assessment pipeline.⁽⁴⁷⁾

Product name	Product code(s)	Manufacturer
Aptima HPV Assay	302929, 303093, 302554	Hologic, Inc.
Aptima HPV 16 18/45 Genotype Assay	303236, 303235	Hologic, Inc.
BD Onclarity HPV Assay for the BD COR System	443982	Becton, Dickinson and Company, BD Biosciences (USA)
BD Onclarity HPV Assay for the BD Viper LT System	442946	Becton, Dickinson and Company, BD Biosciences (USA)
ScreenFire HPV RS	M5FHPV-96	Atila Biosystems
Human Papillomavirus (HPV) Nucleic Acid Detection Kit (Hybrid Capture-CLIA)	DH3-48, DH3-72, DH3-96 and DH3-192	Hangzhou Dalton BioSciences, Ltd



6 Recommended triage tests and treatment options.

6.1 Recommended Triage Tests.

In this guideline, the triage tests recommended include:

- **Partial genotyping**
- **Visual Inspection with Acetic Acid**
- **Colposcopy**

6.1.1 Partial Genotyping.

The guideline incorporates partial genotyping, recognising the clinical utility of identifying HPV 16 and 18 individually. This triage test is contained in the HPV test.

Partial genotyping refers to HPV testing that identifies some individual high-risk HPV types (usually HPV 16 and 18, sometimes HPV 45), while grouping the remaining oncogenic types (“other high-risk HPV”) as opposed to identifying all types individually. Partial genotyping improves upon the basic “high-risk HPV positive/negative” tests by identifying HPV 16 and 18, which cause approximately 70% of cervical cancers and have the highest oncogenic risk.^(14,46,48)

The main limitation of partial genotyping is its inability to distinguish between different ‘other’ high-risk HPV types, which have markedly different oncogenic potentials. This results in clinical blind spots, such as when HPV 35, a crucial carcinogenic driver in African populations, is grouped with HPV 59, which poses a considerably lower cancer risk.

Extended genotyping addresses these limitations by individually identifying additional high-risk HPV types beyond 16 and 18, or grouping them into smaller, risk-stratified categories.⁽⁴⁸⁾ The 2024 ASCCP guidelines were the first to incorporate extended genotyping.⁽⁴⁹⁾ As more evidence emerges demonstrating the benefits of extended genotyping for risk stratification and personalised management, future guideline updates should consider adopting extended genotyping approaches to optimise screening outcomes for Nigerian women. This is especially important as HPV 35 has been identified as the third most prevalent HPV genotype in cervical cancer in Sub-Saharan Africa.⁽⁶⁾

6.1.2 Visual Inspection with Acetic acid (VIA) triage.

Triage with VIA is incorporated into this guideline as a secondary screening method to help healthcare providers decide which women who test positive for “other” high-risk HPV need immediate treatment versus those who can be monitored with follow-up testing. VIA triage shows moderate accuracy in detecting cervical pre-cancer, but its performance varies significantly between different studies and healthcare settings.⁽¹⁴⁾ The method's effectiveness depends heavily on the training and experience of the



healthcare provider performing the examination. Compared to cytology triage, VIA performs similarly overall, though cytology tends to be more consistent across different settings. Using the VIA triage is a cost-effective approach, offering good value for healthcare investments.⁽¹⁵⁾

The primary challenges with VIA triage include its dependence on operator skill, variability in performance across different settings, and the necessity for continuous quality monitoring.⁽¹⁴⁾ These factors make it less reliable than laboratory-based methods when consistent infrastructure and training cannot be ensured.

While it shows promise as part of HPV-based screening strategies, successful implementation requires strong training programmes and quality assurance systems. When these elements are in place, VIA triage can contribute effectively to cervical cancer prevention while providing immediate results and enabling same-visit treatment decisions.

6.1.3 Colposcopy triage.

Colposcopy triage is a secondary screening method used following positive HPV test results, recognised by the WHO Guidelines Development Group as one of seven priority algorithms for low- and middle-income countries.⁽³⁸⁾

When used for triaging women with "other" high -risk HPV types (non-16/18), colposcopic examination helps determine whether immediate treatment is necessary or if continued surveillance is appropriate. Despite requiring higher initial resource investment than alternative triage approaches, economic modelling across 78 low- and middle-income countries demonstrates that the benefits, harms and programmatic costs of all triage options are similar.⁽³⁸⁾

Implementation requires substantial infrastructure, including specialised colposcopic equipment and comprehensive training programmes for healthcare providers. However, when implemented with appropriate quality assurance systems, colposcopy triage contributes effectively to global cervical cancer elimination efforts while providing superior diagnostic capabilities compared to simpler visual inspection methods.

6.2 Primary Treatment Recommendation.

- **Thermal Ablation - First-Line Treatment**
- **Loop Electrosurgical Excision Procedure (LEEP) - Second-line treatment and also for big/wide cervical lesions.**

6.2.1 Thermal ablation.

Thermal ablation is the recommended primary treatment option for women eligible for ablative treatment in Nigeria's cervical cancer screening programme.

6.2.1.1 Eligibility for ablative treatment (Visual Assessment for Treatment VAT).

This is a critical step that must be done for women who require immediate treatment (screen positive for HPV 16/18) with or without a visible lesion (or lesions), to determine who is eligible for ablation, and can receive an ablative treatment. (See Figure 3)

It is essential to understand that VAT differs from VIA. See Table 4 below for the distinction between VAT and VIA.

Table 4: Important distinction between VAT and VIA.⁽¹⁵⁾

Aspect	Visual Evaluation for Treatment Eligibility	Visual Inspection with Acetic Acid (VIA) as a Screening/Triage Test
Purpose	To confirm a woman's eligibility for immediate ablative treatment following a positive screening result.	To determine whether an HPV-positive woman should be treated.
Strategy	Used in a "screen-and-treat" strategy.	Used in a "screen, triage, and treat" strategy.
Process	After a positive HPV test, all women are candidates for treatment. Acetic acid is applied to the cervix to ensure the lesion meets the criteria for ablation visually.	After a positive HPV test, VIA is used as a triage test. A woman is treated only if both her HPV and VIA results are positive.
Outcomes	Women who are eligible for ablation are treated immediately. Those who are not are referred for excisional treatment or further evaluation.	Women who are HPV-positive but VIA-negative are not treated and are scheduled for follow-up. Women who are positive on both tests are treated or referred.
Decision-Making	The evaluation is a final check before treatment is applied.	The VIA result is a key decision point that determines whether treatment is warranted at all.

VAT is usually done by naked-eye examination (in places where colposcopy is available, it can also be used). The components of VAT include:⁽¹⁵⁾

- Applying 3-5% acetic acid to the cervix
- Identifying the transformation zone type (i.e. the visibility and position of the transformation zone)
- If a visible lesion is present on the cervix, define its location and size.
- Rule out suspected invasive cancer
- Determine suitability for ablative treatment
- Histological diagnosis is not required.

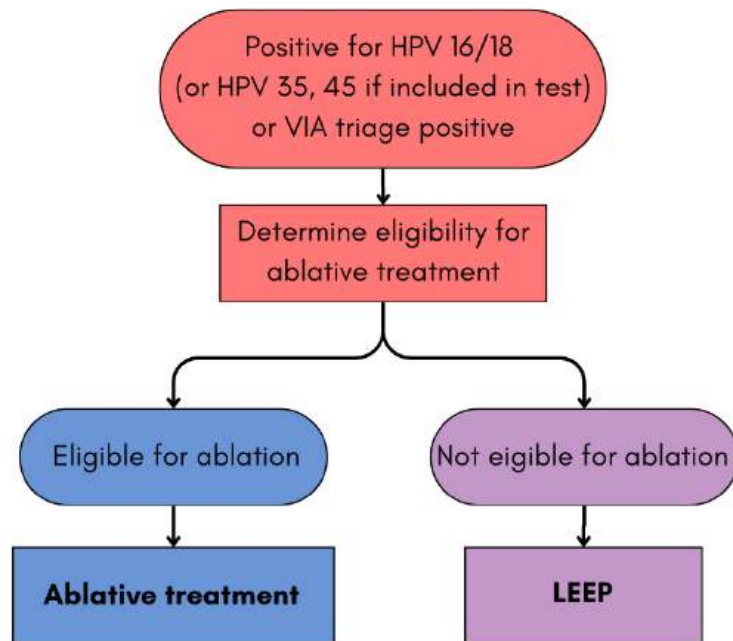


Figure 3: Pathway of Visual Assessment of the Cervix for Treatment

Source: WHO 2020

Types of Transformation Zone (TZ).

On evaluation, the visibility and position of the transformation zone can be described as shown in Figure 4 below:

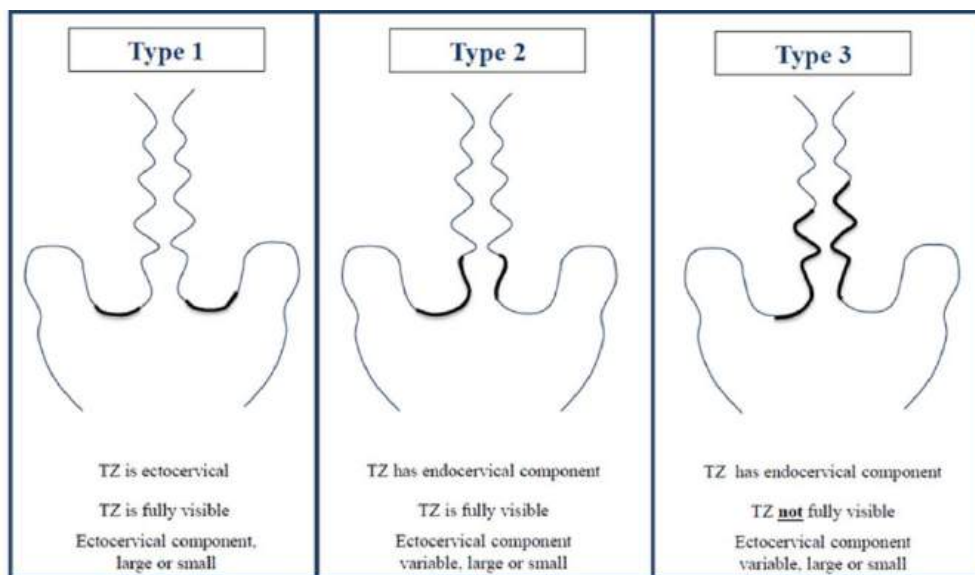


Figure 4: Types of Transformation Zones in the Cervix: ⁽⁵⁰⁾



1. Type 1: The entire transformation zone is visible. The transformation zone is entirely visible and only ectocervical.
2. Type 2: The entire transformation zone is visible. The transformation zone is entirely visible and has an endocervical component.
3. Type 3: The transformation zone is not entirely visible. The transformation zone extends into the endocervical canal and is not fully visible.

Criteria for eligibility for ablative treatment:⁽¹⁵⁾

- There is no suspicion of invasive cancer or glandular disease (i.e. adenocarcinoma or adenocarcinoma in situ, AIS).
- The transformation zone is **clearly visible, encompassing the entire lesion, which** does not extend into the endocervix. (Type 1 transformation zone or some Type 2 if the tip of the thermal ablation probe can reach the full extent, depth and upper limit of the transformation zone).

Criteria for referral/contraindications for ablation:⁽¹⁵⁾

- There is any suspicion of invasive cancer or glandular disease (i.e. adenocarcinoma or AIS).
- Type 3 TZ (TZ extends out of view up the endocervical canal)
- Type 2 TZ (if the TZ is out of reach of the probe tip)

Mechanism:⁽⁵¹⁾

- Heated probe destroys abnormal tissue at 100-120°C
- Causes coagulative necrosis of precancerous tissue

Procedure Protocol:⁽⁵¹⁾

- Apply probe at a minimum of 100°C for 20-30 seconds
- 20 seconds treatment + 20 seconds pause + 20 seconds treatment (may vary between products)
- Use multiple applications as needed to cover the entire transformation zone
- Apply in overlapping fields to ensure complete coverage

Equipment:⁽⁵¹⁾

- Electricity-powered device (AC or battery-operated)
- Various probe sizes available
- Portable options for field settings



6.2.2 Loop Electrosurgical Excision Procedure (LEEP).

LEEP is recommended for women not eligible for ablative treatment or when excisional treatment is preferred. It is also recommended for women who test positive after prior thermal ablation treatment.⁽¹⁵⁾

Mechanism:⁽¹⁵⁾

- Wire loop electrode powered by an electrosurgical unit
- Cuts and coagulates simultaneously
- Removes the entire transformation zone with abnormal tissue

Procedure Requirements:⁽¹⁵⁾

- Local anaesthesia required
- Electrosurgical unit with appropriate settings
- Various loop sizes for different cervical anatomy
- Trained personnel (physicians typically)

Advantages:⁽¹⁵⁾

- Provides tissue specimen for histological examination
- Can treat larger lesions adequately
- Suitable for all transformation zone types

6.2.3 Clinical assessment before treatment is administered.

Essential History:

- Previous cervical cancer screening results
- Previous treatment for cervical abnormalities
- Current symptoms (bleeding, discharge, pain)
- Pregnancy status
- Current medications and medical conditions, eg anticoagulants, coagulopathy

6.2.4 Post-Treatment Management.

Immediate Post-Treatment Care:

- Immediate Instructions (All Treatment Types):
 - Rest for 30 minutes post-procedure
 - Watery discharge (especially post-ablation) and mild cramping are expected.
 - Light bleeding for up to 2 weeks post excision
 - Return to normal activities immediately
 - Avoid sexual intercourse for 4 weeks
 - No tampons or douching for 4 weeks



- **Return immediately for Emergency Care:**
 1. Heavy bleeding (more than a standard menstrual period)
 2. Fever $>38^{\circ}\text{C}$ or signs of infection
 3. Severe pelvic pain not relieved by simple analgesics
 4. Foul-smelling discharge
- **Managing Complications:**
 - Minor Bleeding:
 1. Reassurance and observation
 2. Sexual abstinence until bleeding stops
 - If heavy bleeding
 1. Examine the patient, clean the wound and secure haemostasis
 - Infection:
 1. Antibiotic therapy

7 Cervical Cancer Screening Pathway in Nigeria.

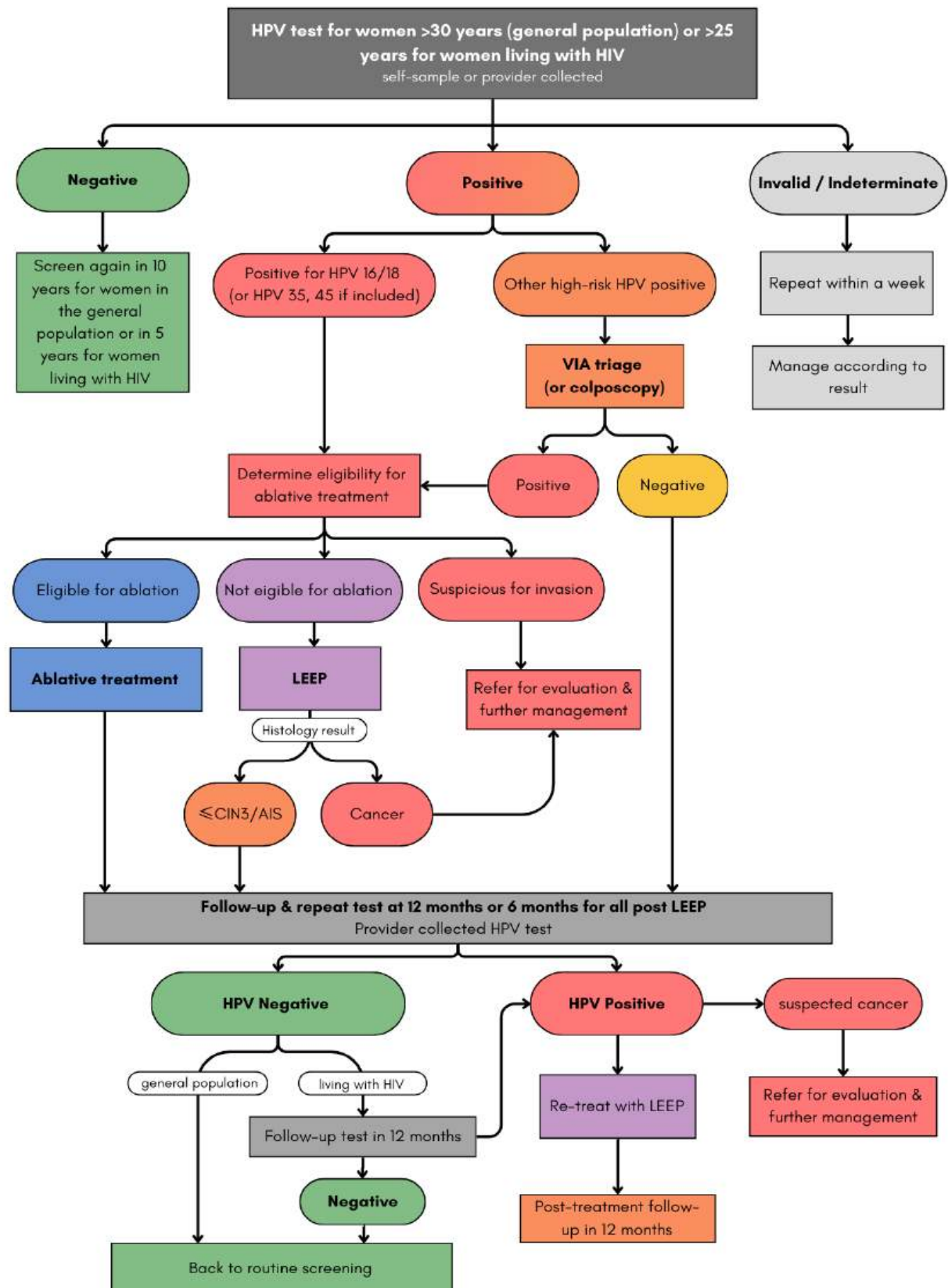


Figure 5 Cervical Cancer Screening Pathway in Nigeria

7.1 Recommendation for HPV Negative Result at Screening (Figure 6).

- When the HPV screen test result shows that HPV is not detected, women in the general population should rescreen in 10 years, and WLHIV should rescreen in 5 years.

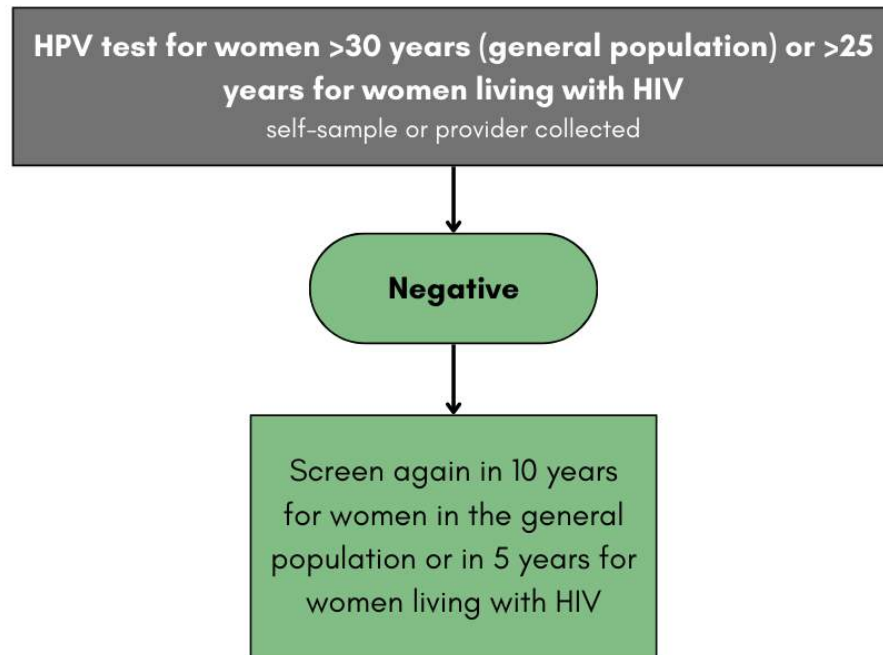


Figure 6: Management pathway for a negative HPV test

7.2 Recommendation for HPV Positive for Types 16,18 (45 and 35 if in the assay) (Figure 7).

- Participants who test positive for HPV types 16/18 (and type 45, if detectable by the assay) should receive immediate treatment without triaging. Given the high prevalence of HPV 35 in sub-Saharan Africa,⁽⁶⁾ including Nigeria, this guideline recommends immediate treatment for HPV 35-positive cases when testing platforms with HPV 35 detection capability are available.
- The suitability of the cervix for ablative treatment should be assessed by applying 3-5% acetic acid.
- If the cervix is suitable for ablative treatment, then thermal ablation should be administered.
- If the cervix is not suitable for ablation, the patient should be referred for a LEEP. The sample must be sent for histopathology assessment.

- All patients treated with thermal ablation or LEEP should be seen again within one year for follow-up.
- All patients treated with LEEP should be seen again at six months for follow-up.
- If at the assessment the cervix is suspicious for malignancy or if the histology report from the LEEP shows malignancy, refer the patient for evaluation and further management.

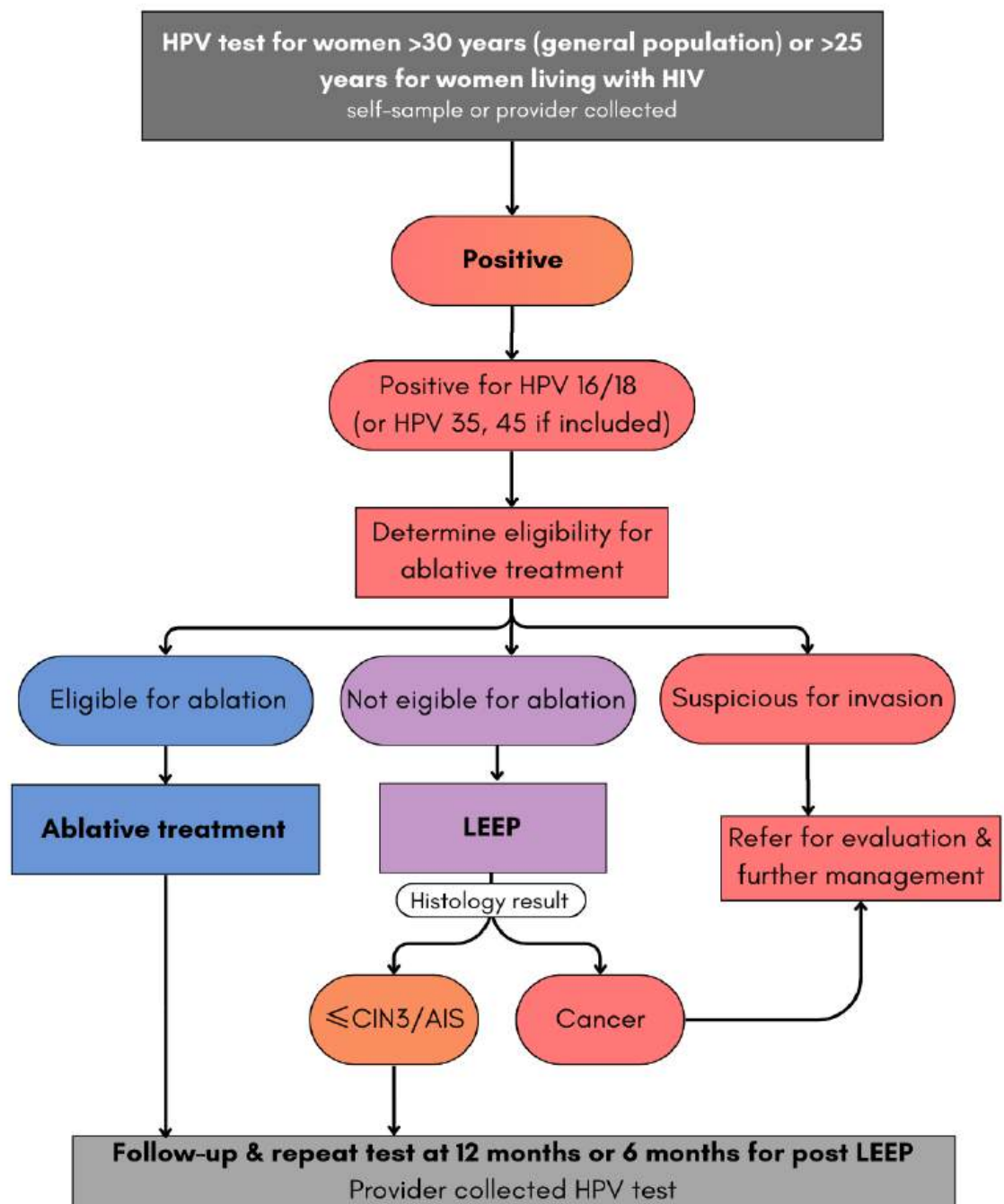


Figure 7: Management pathway for HPV test result positive for HPV16, HPV 18 or HPV 18/45



7.3 Recommendation for HPV positive for “other” types (Figure 8).

- Screening participants in whom “other” HPV types are detected should be triaged using visual inspection with acetic acid (VIA), by applying 3-5% acetic acid on the cervix **OR** colposcopy (where colposcopy service is available)
- All patients treated with either thermal ablation or LEEP should be seen again within one year for follow-up.

7.3.1 For patients with VIA triage.

- If the cervix is VIA negative, the participant is then asked to return in a year for a follow-up HPV test.
- If the cervix is VIA favourable and is suitable for ablative treatment, then thermal ablation should be administered.
- If the cervix is VIA positive and is not suitable for ablation, the patient should be referred for a loop electrosurgical excision procedure (LEEP).
- If at the assessment the cervix is suspicious for malignancy, refer the patient for evaluation, cervical biopsy and further management.

7.3.2 For patients with colposcopy triage.

- Further management based on colposcopy diagnosis or histopathology diagnosis.

7.4 Recommendation for Invalid HPV tests.

HPV tests can be invalid if the internal control fails to detect the presence of human DNA in the sample. In this case, the screening participant should be advised to return for a repeat HPV test (with either a self-collected or a provider-collected sample) as soon as possible, ideally within one week.

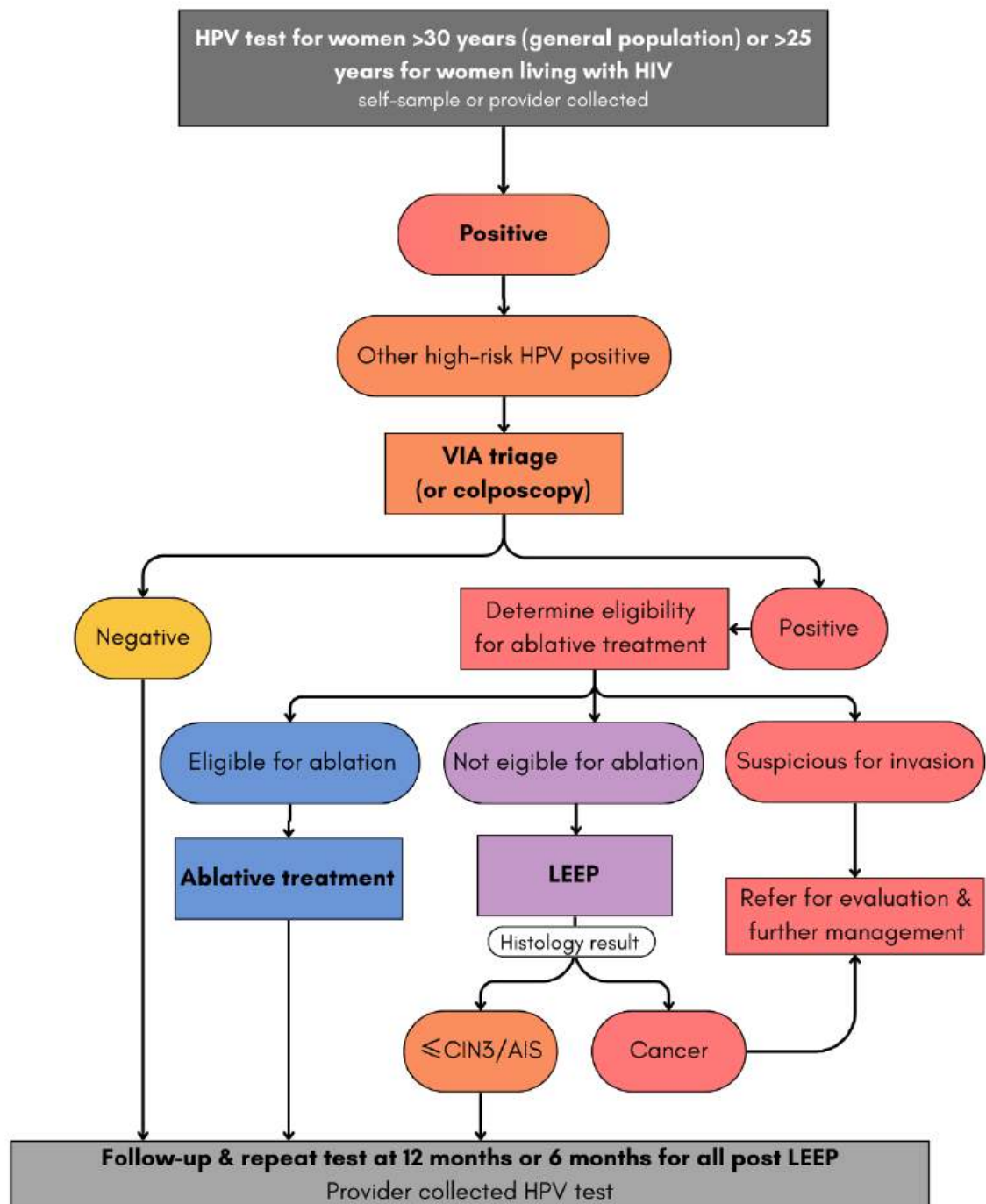


Figure 8: Management pathway for HPV test result positive for “other” high-risk HPV types

7.5 Recommendation for follow-up HPV test post-treatment.⁽¹⁵⁾

All participants who tested positive for HPV at primary screening, irrespective of the HPV genotype or treatment status, will have a follow-up visit 12 months after the screening visit. If they were treated with LEEP, they should have a follow-up at six months post-treatment.

7.5.1 Recommendation for post-treatment test for the general population of women (Figure 9).

- All women from the general population who tested positive for HPV and were treated with ablation or LEEP, or who were triaged negative, should have an HPV test post-treatment.
- If the test is negative, the patient should return to routine screening in 10 Years.
- If HPV positive, treat with LEEP (either on-site or refer). The patient should have another follow-up HPV test at 12 months
- If suspected cancer, refer for evaluation, biopsy and further management

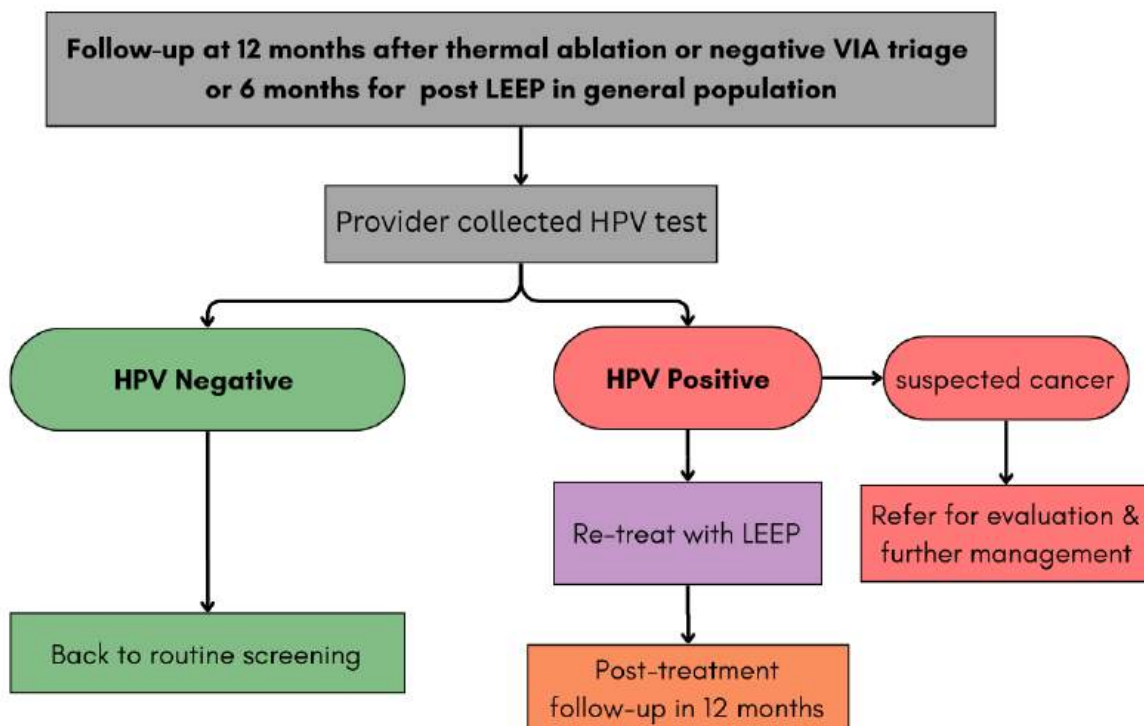


Figure 9: Management pathway for follow-up HPV test in women from the general population

Source: WHO, 2020

7.5.2 Recommendation for post-treatment test for WLHIV (Figure 10).

- All WLHIV treated who tested positive for HPV and were treated with ablation or LEEP, or who were triaged negative, should have an HPV test at 12 months post-treatment. If they were treated with LEEP, they should have a follow-up at six months post-treatment
- If HPV positive, treat with LEEP. The patient should have another follow-up HPV test at 12 months.
- If suspected cancer, refer for evaluation, biopsy and further management
- If the test is negative, the patient should return for another followup HPV test at 12 months.
 - If the test is negative, the patient should return to routine screening in 10 Years.
 - If HPV positive, treat with LEEP. The patient should have another follow-up HPV test at 12 months.

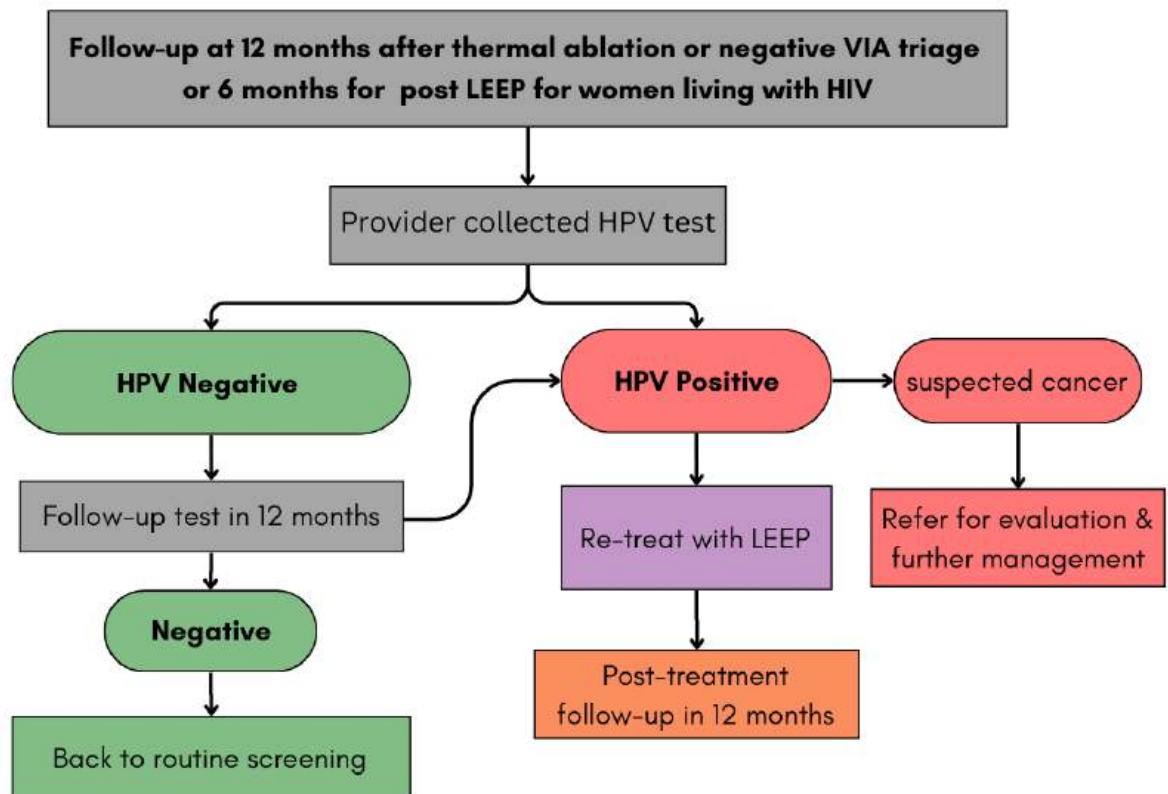


Figure 10: Management pathway for follow-up HPV test in WLHIV



8 Client Education and Counselling

This chapter is a comprehensive guide for healthcare providers to counsel women through the cervical cancer screening journey.

8.1 Pre-Screening Counselling.

Effective patient communication begins before the screening. Pre-screening education empowers women to make informed decisions, increases screening uptake, and reduces fear, stigma, and misinformation regarding screening.

8.1.1 Objectives:

- Increase cervical cancer and HPV awareness
- Explain the importance and effectiveness of HPV DNA testing
- Support informed decision-making
- Build trust and reduce fear/stigma

8.1.2 Core Education Topics.

What is Cervical Cancer?

- Simple Explanation: Cancer that develops in the cervix (the opening to the womb)
- Key Point: Almost always caused by HPV infection
- Reassurance: Preventable by vaccination against HPV, and when caught early through screening

What is HPV?

- Simple Explanation: Human Papillomavirus - a very common virus
- Transmission: Through intimate skin contact (not just sexual intercourse)
- Prevalence: Most people get HPV at some point in their lives
- Natural Course: Usually clears on its own within 2 years

HPV and Cervical Cancer Connection.

- Risk Factor: High-risk HPV types (HPV 16,18,45, and others) can cause cell changes
- Timeline: Takes 10-20 years for cancer to develop
- Prevention: Regular screening detects changes early

HPV DNA Testing Explained.

What it does:

- Detects DNA of high-risk HPV strains
- Identifies risk before symptoms appear
- More accurate than traditional Pap smears
- "The HPV test is simple, quick, and does not take long"



- "You might feel mild discomfort during the procedure, but it is generally painless"

8.1.3 Explain Sample Collection Options:

- Provider-collected: During pelvic exam
- Self-collected: Private, at home or facility

8.1.4 Important questions that must be asked before screening.

Before offering screening, the healthcare provider should take a history to determine whether the person has any symptoms suggestive of cervical cancer, including

- Unexplained postcoital bleeding
- Persistent intermenstrual bleeding
- Postmenopausal bleeding
- Unexplained persistent unusual vaginal discharge.

People with these symptoms are not eligible for screening and should instead be referred to a gynaecologist for further evaluation.

8.1.5 Explain Results Timeline:

Depending on the platform in that setting, the result can be available from within one hour to a couple of weeks.

8.2 Addressing Common Barriers.

8.2.1 Cultural & Religious Concerns.

- Engage community and religious leaders
- Address myths about promiscuity
- Emphasise the preventive nature regardless of sexual history

Key Messages:

"This test does not affect your ability to have children in the future"

"We respect your beliefs and will make sure you feel comfortable and informed at every step"

8.2.2 Fear & Anxiety Management.

Strategies:

- Explain that it is normal to have feelings of fear/embarrassment
- Provide a calming environment
- Ensure empathetic staff interactions
- Use step-by-step explanations

Reassurance Points:

- Screening is a quick and safe procedure



- Screening is low risk with minimal complications
- Provide professional, respectful care

8.2.3 Cervical Cancer Screening Misconceptions.

Give Corrective Messages:

- "Early detection does not mean cancer is present"
- "HPV infection is common and often clears on its own"
- "Testing positive for HPV is not a diagnosis of cancer, but a signal to monitor more closely"

8.3 Informed Consent Process.

8.3.1 Consent checklist to ensure women understand:

- The Procedure
- How the sample will be collected
- What the test detects
- Purpose and benefits
- Discomforts & Risks
- Mild discomfort during collection
- Rare severe complications
- Generally safe procedure
- Results Understanding
- What positive/negative results mean
- Possibility of further evaluation needed
- Timeline for receiving results
- Voluntary Nature
- Right to decline or stop
- No coercion
- Can ask questions anytime

Sample Consent Communication Script:

"I am going to explain exactly how this test works and what your results will mean. You are welcome to ask any questions, and you may choose not to proceed if you are uncomfortable. The benefits of early detection outweigh the minimal risks. You have the right to participate voluntarily and can stop at any time."

8.3.2 Results Communication.

8.3.2.1 Result Communication Approach.

- Results should preferably be communicated **in person at the health facility** to allow counselling, reduce misinterpretation, and address confidentiality.



- **SMS or phone calls may be used only to notify clients that their results are ready for collection at the facility**, not to disclose positive results directly.
- In exceptional circumstances (e.g. remote communities, difficulty returning to the facility), phone communication of results may be used, but must:
 - Ensure confidentiality (confirm correct client identity).
 - Be accompanied by counselling and referral instructions.
 - Be documented in the client record.
- Maintain complete privacy
- Use non-technical language and allow time for questions

8.3.2.2 HPV NEGATIVE Results.

Key Messages:

"Your result shows no high-risk HPV. That's good news"

"You are at very low risk for cervical cancer right now"

"You'll need to screen again as recommended by your healthcare provider"

Points to emphasise:

- Encourage the importance of routine rescreening (per guidelines)
- Emphasise the importance of continued screening importance
- Schedule next appointment

8.3.2.3 HPV POSITIVE Results

Initial Communication:

- "Your result shows high-risk HPV, but this does not mean you have cancer"
- "Further tests will help us check for any cell changes. Early action prevents cancer"
- "You are not alone—we will guide you every step of the way"
- "We are here to answer any questions you have about your results"
- "Follow-up is essential, and we will help you schedule your next steps"
- "Your results are confidential and will not be shared without your permission"
- Recommend HPV vaccination for young girls

Address Concerns:

- Relationship implications and stigma
- Fear of cancer diagnosis
- Next steps anxiety
- Explain clearly the 'next steps' in the screening process:



- Describe the treatment process if the patient is for treatment without triage
- Describe the triage process (colposcopy, VIA) if the patient is for triage.
- Reinforce early detection effectiveness
- Offer counselling/referral services
- Ensure ongoing support

8.4 Pre-Treatment Counselling:

- Explain Treatment Options:
- Use diagrams or models when available
- Goal: Remove abnormal cells before they become cancerous
- Usually outpatient procedures

8.4.1 Informed Consent Elements:

- The benefits of treatment must be explained to the patient including cancer prevention and the high success rates of treatment of precancerous disease of the cervix
- Even though complications are rare, the potential risks of bleeding and infection must be explained
- What to expect post-procedure must be discussed

8.4.2 Preparation Requirements:

- Clarify that treatment is usually outpatient and does not require overnight stay.
- Time off work considerations to be discussed, though usually only the day of the treatment is required.

8.4.3 Pre-Treatment Key Messages:

"The treatment is safe, effective, and helps remove abnormal cells before they become cancerous"

"We'll explain your options clearly and help you choose what's best for you"

"You will be supported throughout the process before, during, and after treatment"

"You'll receive all necessary instructions to prepare for treatment, including what to expect and how to care for yourself afterwards"

8.5 Post-Treatment Counselling.

8.5.1 Immediate Care Instructions:

8.5.1.1 Hygiene Guidelines:

Proper post-procedure hygiene:

- Restrictions on inserting anything into the vagina, like sexual activity, using fingers to clean inside the vagina, douching, tampons, etc.



- Patients may return to sexual activity four weeks after the procedure

8.5.1.2 Warning Signs/ When to Seek Immediate Medical Attention:

- Prolonged spotting for more than 2 weeks
- Foul-smelling discharge
- Fever
- Severe lower abdominal pain
- Follow-up Care Planning
- Emphasise the importance of return visits
- Schedule next screening

8.5.2 Post-Treatment Key Messages:

- "After treatment, you may feel mild discomfort. Follow our care instructions and reach out if you have concerns"
- "It is important to attend follow-up appointments to ensure the treatment worked"
- "Most women do not need to interrupt their normal activities"
- "You may experience a watery discharge or spotting of blood for a few days after the treatment. That is normal"
- "You are strong, and by taking this step, you have taken control of your health"
- "We are always available to support you on your journey to full wellness"

8.6 Quick Tips for Effective Counselling/Communication Best Practices:

- Use simple language: Avoid medical jargon
- Listen actively: Allow time for questions and concerns
- Validate feelings: Normalise fear and anxiety
- Provide written materials: Reinforce verbal information
- Respect cultural values: Adapt approach accordingly
- Maintain confidentiality: Always protect patient privacy



9 Patient Navigation

9.1.1 Overview of patient navigation.

Patient navigation is a patient-centred approach that guides individuals through complex healthcare systems. Navigators help ensure timely screening, follow-up of abnormal results, and treatment adherence, particularly for vulnerable-to or hard -reach populations.

9.1.2 Key Objectives:

- Increase screening uptake and completion.
- Reduce missed appointments and loss to follow-up.
- Improve emotional support and understanding of medical processes.
- Enhance treatment adherence and long-term surveillance.

9.1.3 Roles and responsibilities of a patient navigator.

Patient navigators can be nurses, trained community health workers, social workers, or lay health personnel. Their roles may vary depending on resources. It should include:

9.1.3.1 Pre-Screening Phase

- Identify and engage eligible women using community outreach, facility registries, or referral systems.
- Provide education on cervical cancer, HPV, and the importance of screening.
- Address cultural, religious, or logistical concerns (e.g., transport, childcare, work conflicts).
- Assist with scheduling appointments and sending reminders.
- Obtain informed consent or assist in guiding the process where applicable.

9.1.3.2 Screening Phase

- Accompany patients through the screening process when needed.
- Ensure comfort and privacy, especially during HPV DNA sample collection.
- Assist with completing forms and documentation, particularly for patients with low literacy.
- Track screening completion and ensure lab submission of samples.

9.1.3.3 Results Communication and Follow-up

- Supports the patient at the time of receiving the result from the health care provider (doctor, nurses, CHEW, depending on level of health care).
- Coordinate follow-up care such as colposcopy, VIA triage, or treatment for precancerous lesions.



9.1.3.4 Treatment and Post-treatment Phase

- Guide patients to treatment centres or coordinate referrals.
- Support treatment decision-making, helping patients understand procedures and options.
- Ensure post-treatment counselling is delivered and understood.
- Communicate and monitor follow-up visits, including HPV test-of-cure, where applicable.

9.1.3.5 Referral

- Ensure patients attend the referral appointment.
- Provide the information contact in the referral centre to help her navigate the processes of the referral centre.

9.1.4 Key Components of Effective Patient Navigation:

9.1.4.1 Tracking and Monitoring Tools.

- Navigation logs or registries: Track each patient's journey from entry to completion.
- Electronic Medical Records (EMR) integration (if available).
- Appointment reminders via calls, SMS, or home visits.
- Colour-coded files or checklists in paper-based systems.

9.1.4.2 Communication and Cultural Sensitivity.

- Use language appropriate to the community; provide translation where needed.
- Respect local norms, beliefs, and gender preferences.
- Maintain patient confidentiality at all stages.
- Employ motivational interviewing techniques to encourage adherence and address patients' concerns and fears.

9.1.4.3 Transportation and Logistical Support.

- Help patients access transport vouchers or escort services where available.
- Coordinate with local NGOs or health insurance schemes (e.g., NHIA)
- Create linkages to community support systems (e.g., women's groups, religious institutions).

9.1.4.4 Emotional and Psychosocial Support.

- Provide reassurance for patients with positive results or undergoing treatment.
- Refer to mental health or psychosocial support services where available.
- Offer peer support through survivor networks or group counselling.

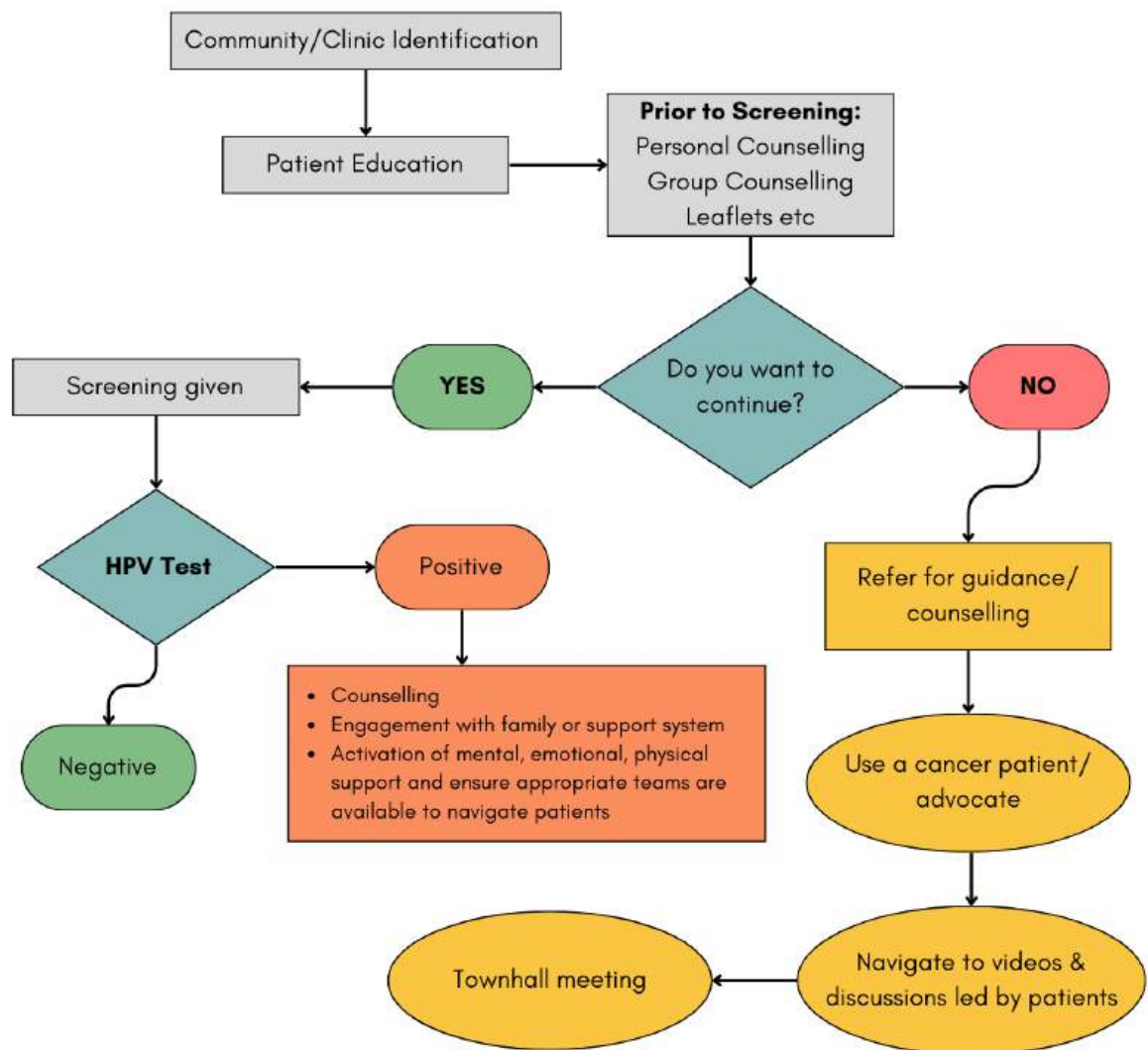


Figure 11: Pathway for Patient Navigation



10 Infection Prevention and Control.

This chapter serves as a valuable resource for all institutions, whether they have already established standard operating procedures (SOPs) for handling biological samples and processing instruments or are just starting to develop them. This guide reinforces essential safety measures, particularly in relation to cervical cancer screening.

10.1 Sample Processing .

10.1.1 Sample Types and Handling:

- HPV samples
- Tissue Specimens (if applicable, as in biopsy or LEEP samples)
- Laboratory Processing, either centralised or POC/NPC HPV test in the facility

10.2 Instrument Processing:

This section would establish procedures for cleaning, disinfection, and sterilisation of all equipment used in cervical cancer screening.

10.2.1 Equipment Categories and Processing.

Reusable Instruments:

- Speculums
- Colposcopes
- Thermocoagulators
- Treatment instruments: Sterilisation of cryotherapy probes, LEEP equipment

Single-Use Items:

- Disposable speculums
- Sampling devices: cytobrushes, spatula, self-collection devices
- LEEP consumables like loops, cautery balls, etc

10.2.2 Processing Procedures:

- Cleaning Protocols
- Disinfection Methods
- Sterilisation Procedures
- Quality Assurance:

10.2.3 Creating an SOP and safety manuals

- Hand hygiene
- Couch hygiene
- Instrument hygiene



- Waste disposal

10.2.4 Equipment maintenance:

- To be provided by the manufacturer of the machine used

10.3 Waste Management.

10.3.1 Waste Classification:

10.3.1.1 Infectious Waste.

- Contaminated gloves, gowns, or aprons.
- Swabs or specimen containers.

10.3.1.2 Pathological Waste.

- Biopsy samples: These are samples collected during HPV related procedures.
- Cervical tissues collected during colposcopy.

10.3.1.3 Sharps Waste.

- Syringes and Needles used for vaccinations.

10.3.2 Non-Infectious Waste:

10.3.2.1 General waste.

- Packaging materials, eg paper boxes, are used for packaging supplies.
- Paperwork and documents. Examples include consent forms, paper records, paper files, and other paper materials.
- Plastic containers are used during the activity.

10.4 Handling and Disposal.

- Segregation of waste into different classes.
- Biohazard bags.
- Autoclaving or incineration.
- Treatment and Disposal of Waste

10.5 Staff Safety.

To protect healthcare workers, patients, and the community from infectious waste while ensuring environmental protection

10.6 Personal Protective Equipment.

To adopt SOPs from partners in the cervical cancer space.



10.6.1 PPE Requirements by Activity:

- Screening and treatment activity
- Laboratory activity
- Cleaning and Sterilisation Activity

10.6.2 Maintenance and Storage of PPE:

- Regular inspection of the PPE for damage or wear out.
- Clean and disinfect reusable PPE according to the manufacturer's instructions
- Replace damaged or worn-out PPE.
- Train staff on storage and maintenance.

10.6.3 Storage of PPE:

- Store PPE in a clean, dry area.
- Keep PPE out of direct sunlight and away from moisture
- Organise PPE by type and size.
- Ensure easy access to PPE
- Quality Assurance of PPE



References

1. Ferlay J, Ervik M, Lam F, Laversanne M, Colombet M, Mery L, et al. Cancer today. 2024 [cited 2025 Sept 6]. Cancer Today. Available from: <https://gco.iarc.who.int/today/>
2. Lawson O, Ameyan L, Tukur Z, Dunu S, Kerry M, Okuyemi OO, et al. Cervical cancer screening outcomes in public health facilities in three states in Nigeria. BMC Public Health. 2023 Sept 1;23(1):1688.
3. Walboomers JM, Jacobs MV, Manos MM, Bosch FX, Kummer JA, Shah KV, et al. Human papillomavirus is a necessary cause of invasive cervical cancer worldwide. J Pathol. 1999 Sept;189(1):12–9.
4. de Sanjosé S, Brotons M, Pavón MA. The natural history of human papillomavirus infection. Best Pract Res Clin Obstet Gynaecol. 2018 Feb 1;47:2–13.
5. Wei F, Georges D, Man I, Baussano I, Clifford GM. Causal attribution of human papillomavirus genotypes to invasive cervical cancer worldwide: a systematic analysis of the global literature. Lancet Lond Engl. 2024 Aug 3;404(10451):435–44.
6. Denny L, Adewole I, Anorlu R, Dreyer G, Moodley M, Smith T, et al. Human papillomavirus prevalence and type distribution in invasive cervical cancer in sub-Saharan Africa. Int J Cancer. 2014 Mar 15;134(6):1389–98.
7. Emeribe AU, Abdullahi IN, Etukudo MH, Isong IK, Emeribe AO, Nwofe JO, et al. The pattern of human papillomavirus infection and genotypes among Nigerian women from 1999 to 2019: a systematic review. Ann Med. 2021 Dec;53(1):944–59.
8. Bouvard V, Wentzensen N, Mackie A, Berkhof J, Brotherton J, Giorgi-Rossi P, et al. The IARC Perspective on Cervical Cancer Screening. N Engl J Med. 2021 Nov 10;385(20):1908–18.
9. Stelzle D, Tanaka LF, Lee KK, Khalil AI, Baussano I, Shah ASV, et al. Estimates of the global burden of cervical cancer associated with HIV. Lancet Glob Health. 2021 Feb 1;9(2):e161–9.
10. Liu G, Mugo NR, Brown ER, Mgodhi NM, Chirenje ZM, Marrazzo JM, et al. Prevalent human papillomavirus infection increases the risk of HIV acquisition in African women: advancing the argument for human papillomavirus immunization. AIDS. 2022 Feb 1;36(2):257.
11. Kelly H, Weiss HA, Benavente Y, de Sanjose S, Mayaud P, ART and HPV Review Group. Association of antiretroviral therapy with high-risk human papillomavirus, cervical intraepithelial neoplasia, and invasive cervical cancer in women living with HIV: a systematic review and meta-analysis. Lancet HIV. 2018 Jan;5(1):e45–58.



12. Massad LS, Xie X, Burk R, Keller MJ, Minkoff H, D'Souza G, et al. Long-term cumulative detection of human papillomavirus among HIV seropositive women. *AIDS Lond Engl*. 2014 Nov 13;28(17):2601–8.
13. World Health Organisation. Introducing and scaling up testing for human papillomavirus as part of a comprehensive programme for prevention and control of cervical cancer: a step-by-step guide. Geneva; 2020.
14. IARC. Cervical Cancer Screening [Internet]. [cited 2025 Sept 6]. Available from: <http://publications.iarc.who.int/Book-And-Report-Series/Iarc-Handbooks-Of-Cancer-Prevention/Cervical-Cancer-Screening-2022>
15. World Health Organisation. WHO guideline for screening and treatment of cervical pre-cancer lesions for cervical cancer prevention, second. Second. Geneva;
16. World health Organisation. Global strategy to accelerate the elimination of cervical cancer as a public health problem. 2020.
17. O LQ, K LI, S CC, Salma K. Cervical Cancer Burden in Nigeria: Review of Current Situation. *Gynecol Reprod Health* [Internet]. 2023 Feb 28 [cited 2025 Sept 6];7(1). Available from: <https://www.scivisionpub.com/pdfs/cervical-cancer-burden-in-nigeria-review-of-current-situation-2608.pdf>
18. The ADAPTE Collaboration. The ADAPTE Process: Resource Toolkit for Guideline Adaptation. Version 2.0 [Internet]. 2009. Available from: <http://www.g-i-n.net/>
19. Amos A, Awolude O. Perceived Barriers to Uptake of Cervical Cancer Screening Among Women of Childbearing Age in a Gynaecological Clinic. *J Health Med Nurs*. 2019;
20. Olubodun T, Balogun M, Odeyemi AK, Odukoya O, Ogunyemi A, Kanma-Okafor O, et al. Barriers and recommendations for a cervical cancer screening programme among women in low-resource settings in Lagos Nigeria: a qualitative study. *BMC Public Health*. 2022;
21. Okunowo AA, Smith-Okonu ST. Cervical Cancer Screening among Urban Women in Lagos, Nigeria: Focus on Barriers and Motivators for Screening. *Niger J Gen Pract*. 2020 June;18(1):10.
22. Onyenwenyi A, Mchunu G. Barriers to cervical cancer screening uptake among rural women in South West Nigeria: A qualitative study. 2018;
23. Modibbo FI, Dareng E, Bamisaye P, Jedy-Agba E, Adewole A, Oyeneyin L, et al. Qualitative study of barriers to cervical cancer screening among Nigerian women. *BMJ Open*. 2016 Jan 1;6(1):e008533.



24. Mafiana JJ, Dhital S, Halabia M, Wang X. Barriers to uptake of cervical cancer screening among women in Nigeria: a systematic review. *Afr Health Sci*. 2022 Aug 1;22(2):295–309.
25. Olatunji G, Aderinto N, Kokori E, Abraham IC. Nigeria's new policy: solution for the health-care workforce crisis? *The Lancet*. 2024 Oct 5;404(10460):1303–4.
26. Irowa O, Chisom CG, Ademola A, Israel-Isah S, Adeyeye OS, Olukomogbon T, et al. Health workers' and women's perspectives on barriers to cervical cancer screening and treatment uptake in North-Central Nigeria. *J Clin Oncol*. 2025 June;43(16_suppl):e17508–e17508.
27. Olatona FA, Amu EO, Ndugba SC. Cervical Cancer Screening Uptake and Barriers to Screening among Females in Somolu, South Western Nigeria. 2017 [cited 2025 Sept 24]; Available from: <https://ir.unilag.edu.ng/handle/123456789/9228>
28. Abugu LI, Nwagu EN. Awareness, knowledge and screening for cervical cancer among women of a faith-based organization in Nigeria. *Pan Afr Med J*. 2021;
29. Ani O, Aimakhu C, Morhason-Bello I. Factors Associated with Intention to Utilize Cervical Cancer Prevention Strategies among Pregnant Women Attending Antenatal Clinics in Ibadan, Nigeria. *Eur J Med Health Sci*. 2022;
30. Akwaowo C, Vanni T. CerviCal CanCer sCreening: barriers to aCCess and potential solutions for nigeria. 2015;
31. Stewart K, Li M, Xia Z, Adewole S, Adeyemo O, Adebamowo C. Modeling spatial access to cervical cancer screening services in Ondo State, Nigeria. *Int J Health Geogr*. 2020;
32. Illevbare OE, Adegoke A, Adelowo CM. Drivers of cervical cancer screening uptake in Ibadan, Nigeria. *Heliyon*. 2020;
33. Oduwoye AO, Olabisi EO, Ojo EF, Dosumu T, Owofe MO, Tijani A, et al. Acceptance and barriers to cervical cancer screening among mothers in a state-capital city: a descriptive cross-sectional study. *ecancermedicallscience*. 2025;
34. Titiloye MA, Womitenren YT, Arulogun OS. Barriers to utilization of cervical cancer screening services among women of reproductive age in Ondo, southwest Nigeria. *Afr J Biomed Res*. 2017 Dec 5;20(3):229–35.
35. Nwobodo H, Ba-Break M. Analysis of the Determinants of Low Cervical Cancer Screening Uptake Among Nigerian Women. *J Public Health Afr*. 2015;
36. National Institute for Cancer Research and Treatment. National Strategic Plan for the Control of Cervical Cancer in Nigeria. 2023 - 2027. Nigeria: NICRAT; 2023.



37. National Taskforce on Cervical Cancer Elimination. National Plan for Cervical Cancer Prevention in Nigeria. 2024 Nigeria;
38. Simms KT, Keane A, Nguyen DTN, Caruana M, Hall MT, Lui G, et al. Benefits, harms and cost-effectiveness of cervical screening, triage and treatment strategies for women in the general population. *Nat Med*. 2023 Dec;29(12):3050–8.
39. Daponte N, Valasoulis G, Michail G, Magaliou I, Daponte AI, Garas A, et al. HPV-Based Self-Sampling in Cervical Cancer Screening: An Updated Review of the Current Evidence in the Literature. *Cancers*. 2023 Mar 8;15(6):1669.
40. Canfell K, Kim JJ, Brisson M, Keane A, Simms KT, Caruana M, et al. Mortality impact of achieving WHO cervical cancer elimination targets: a comparative modelling analysis in 78 low-income and lower-middle-income countries. *Lancet Lond Engl*. 2020 Feb 22;395(10224):591–603.
41. Castañón A, Landy R, Cuzick J, Sasieni P. Cervical Screening at Age 50–64 Years and the Risk of Cervical Cancer at Age 65 Years and Older: Population-Based Case Control Study. *PLOS Med*. 2014 Jan 14;11(1):e1001585.
42. Wang J, Andrae B, Sundström K, Ploner A, Ström P, Elfström KM, et al. Effectiveness of cervical screening after age 60 years according to screening history: Nationwide cohort study in Sweden. *PLOS Med*. 2017 Oct 24;14(10):e1002414.
43. Hall MT, Simms KT, Murray JM, Keane A, Nguyen DTN, Caruana M, et al. Benefits and harms of cervical screening, triage and treatment strategies in women living with HIV. *Nat Med*. 2023 Dec;29(12):3059–66.
44. US Preventive Services Task Force. Screening for Cervical Cancer: US Preventive Services Task Force Recommendation Statement. *JAMA*. 2018 Aug 21;320(7):674–86.
45. Saidu R, Kuhn L, Tergas A, Boa R, Moodley J, Svanholm-Barrie C, et al. Performance of Xpert HPV on Self-collected Vaginal Samples for Cervical Cancer Screening Among Women in South Africa. *J Low Genit Tract Dis*. 2021 Jan 1;25(1):15–21.
46. World Health Organization. WHO technical guidance and specifications of medical devices for screening and treatment of precancerous lesions in the prevention of cervical cancer [Internet]. Geneva: World Health Organization; 2020 [cited 2025 Sept 6]. Available from: <https://iris.who.int/handle/10665/331698>
47. WHO list of Prequalified In Vitro Diagnostic Products | WHO - Prequalification of Medical Products (IVDs, Medicines, Vaccines and Immunization Devices, Vector Control) [Internet]. [cited 2025 Sept 28]. Available from: <https://extranet.who.int/prequal/vitro-diagnostics/prequalified/in-vitro-diagnostics>
48. World Health Organisation. Target product profiles for human papillomavirus screening tests to detect cervical pre-cancer and cancer. Geneva; 2024.



49. Marcus JZ, Cason P, Downs LSJ, Einstein MH, Flowers L. The ASCCP Cervical Cancer Screening Task Force Endorsement and Opinion on the American Cancer Society Updated Cervical Cancer Screening Guidelines. *J Low Genit Tract Dis.* 2021 July;25(3):187.
50. Bornstein J, Bentley J, Bosze P, Girardi F, Haefner HK, Menton M, et al. 2011 IFCCPC colposcopic nomenclature. IFCCPC; 2011.
51. Soler M, Masch R, Saidu R, Cremer M. Thermal Ablation Treatment for Cervical Precancer (Cervical Intraepithelial Neoplasia Grade 2 or Higher [CIN2+]) [Internet]. 2022. 867 p. (Methods in Molecular Biology; vol. 2394). Available from: https://www.scopus.com/inward/record.uri?eid=2-s2.0-85123891819&doi=10.1007%2f978-1-0716-1811-0_46&partnerID=40&md5=9df6a8247d67f7b76ad52a18e6105ced



ANNEXES

I. List of NTFCCCE Subcommittee on Screening and Early Detection and Technical Partners on Guidelines Development

Chair:

Dr Amina Abubakar-Bello, MBBS; FWCS; MPH
Founder/CEO Raise Foundation, Niger State.
Email: amina@raisefoundation.org.ng

Co-Chair:

Professor Ima-Obong A. Ekanem, MBBS(Ib); FMCPATH; FWACP (Lab. Med); FICS
Department of Pathology, University of Calabar Teaching Hospital, Calabar. Cross River State.
Email: imaekanem2013@gmail.com

Secretary:

Dr Rakiya Saidu, MBBS; FMCOG; MPH; PhD
Department of Obstetrics and Gynaecology
University of Cape Town, South Africa
Email: rakiya.saidu@uct.ac.za

Members

Professor Ajenifuja Kayode Olusegun, MB; BS, FWACS, FMCOG, MPH, MD
Consultant Gynaecological Oncologist
Obafemi Awolowo University Teaching Hospital, Ile-Ife, Osun State.
Email: ajenifujako@yahoo.com

Dr Denise Ejoh, PhD, Education: Leadership, Policy and Change
Walden University, USA
CEO of the Cormode Cancer Foundation, Lagos, Nigeria
MD NFCR Educational Consultants Ltd
United Kingdom/Nigeria
Email: deniseejoh@me.com

Shehu Adamu Toro. R/N, RPON, BNSC (A. B. U. Zaria).
Public health nurse. Solina NGO, Fistula Foundation, and ProHealth International.
Email: sheadamutoroi@gmail.com

Pastor Imaobong Andrew-Essien, ACA
Founder/CEO, Only Believe Care Foundation, Uyo, Akwa Ibom State.
Email: imauwemobong01@gmail.com

Awopetu Philomina Ikuoyah, MSc, (Lag); CT(IAC); FMLSCN; ASLTN; MLS
Clinical cytologist, College of Medicine, University of Lagos, Lagos
Email: phil.awopetu@gmail.com

Dr Blessing Chidinma Unamba, FMCOG
Senior Associate, Clinton Health Access Initiative, Nigeria
Email: bunanba@clintonhealthasscee.org

Dr Aku Abubakar Haruna Okai, B.M, B. Ch; MPH; Diploma in Health System
Management.
Executive Director, Planned Parenthood Federation of Nigeria
Email: aoaku@ppfn.org

Technical Support for Guideline Development from CHAI

Dr Olufunke Fasawe, BDS, MSc, DrPH
CHAI Nigeria Country Director and Vice President of Integration
Email: Ofasawe@clintonhealthaccess.org

Ms Sophia Dunu, MPH; MSc
Associate, Clinton Health Access Initiative
Email: Sdunu@clintonhealthaccess.org

Ms Layo Lawson, Meng.
Senior Program Manager, Clinton Health Access Initiative
Email: Olawson@clintonhealthaccess.org

Technical Support Team from Roche

Dr Pelly Malebe, PhD
Product Manager - HPV,
Roche, South Africa.
Email: nelly.malebe@roche.com

Dr Chizi Kiti, MBBS.
Pan African Medical Lead, NCD
Roche, Kenya.
Email: chizi.kiti@roche.com

Louis Azubuike, BMLS, MMD.
Medical Clinical Science Liaison,
Roche, Nigeria.
Email: louis.azubuike@roche.com

Louis Ekome, B.pharm, MBA
Strategic Healthcare Consulting Partner
Roche, Nigeria.
Email: louis.ekome@roche.com

Michael Omeihe, B.pharm, MPIA.
Access and Government Affairs Lead,
Roche, Nigeria.
Email: michael.omeihe@roche.com



II. List of Participants at the Guidelines Development Workshop

5th & 6th August 2025

Abuja

Participants Full Name	Organisation	Email address
Pharm Ihya Sunday	ARFH	ihiyas@arfh.ng.org
Dr. Akinyemi Patrick	ARFH	akinyemi.p@arfh.ng
Layo Lawson	CHAI	olawson@clintonhealthaccess.org
Unamba Blessing	CHAI	bunanba@clintonhealthasscee.org
Hannatu F Dung	Chief midwife, Rotary International	hanydung68@gmail.com
Professor Usman Aliyu	DG/NICRAT	dg@nicrat.gov.ng
Victoria David	DKT	victoria@dktnigeria.org
Dr. Ishak Lawal	ECCNI	ishaklawal@gmail.com
Dr. Okai Haruna Aku	ED, PPFN	aoaku@ppfn.org
Favour Adama	Engender Health	fadams@engenderhealth.org
Kauthar Suleiman	Engender Health	
Helen Anyasi	FHI360	hanyasi@fhi360.org
Dr. Uche Nwoku	FMOH	uchenwoku@gmail.com
Giwa Omotayo	Gates Foundation	omotayo.giwa@gatesfoundation.org
Dr. Suleiman Lamorde	Head NCDs NPHCDA	drlamorde@gmail.com
Theodora Peterkin	Jhpiego	Tpeterkina@jhpiego.org
Dr. Victor A	Jhpiego	
Dr. George Ikaraoha	Jhpiego	George.ikaraoha@jhpiego.org
Aisha Adegbe	MSI Nigeria	aisha.adegbe@msichoices.org.ng
Dr. Chisa Ugboaja	MSI Nigeria	chisa.ugboaja@msichoices.org.ng
Abdulraham Salander	NCD/NPHCDA	
Eunice Ali	NCS	euniceali98@gmail.com
Dr. Juliet O. Offor	NCS	joluchioffor@yahoo.com
Dr. Fatima Kumo	NGF	fkumo@ngf.org.ng
Dr. Chinyere Okafor	NICRAT	chinyere.okafor@nicrat.gov.ng
Mohammed T	NICRAT	



Gwong Bwefuk	NICRAT	gwongjoy@gmail.com
Elizabeth Hassan	NPHCDA	elizabeth.hassan@nphcda.gov.ng
Eunice Okomudo	NTC-CCE	euniceokomudo1@gmail.com
Professor Isaac Adewole	NTF-CCE	ifadewole@gmail.com
Dr. Rakiya Saidu	NTF-CCE	rakiya.saidu@uct.ac.za
Dr. Amina Abubakar Bello	NTF-CCE/Rise Foundation	amina@raisefoundation.org.ng
Shehu Adamu Toro	NTF-CCE	shehuadamutoroi@gmail.com
Professor Imran Morhason Bello	NTF-CCE	imranmorhasonbello@gmail.com
Chimdinma Okpaleke	NTF-CCE	chimdi3004@gmail.com
Philomina Awopetu	NTF-CCE	phil.awopetu@gmail.com
Deloraine Dennis	NTF-CCE	dennisdeloraine@nicrat.gov.ng
Odugbesan Anjola	NTF-CCE	anjyodu@gmail.com
Imaobong Andrew	NTF-CCE/One Believe Foundation	imauwemobong01@gmail.com
Ojoma Akor	NTF-CCE	infoojoma@yahoo.com
Professor Ima-Obong Ekanem	NTF-CCE	imaekanem2013@gmail.com
Chief Moji Makanjuola	NTF-CCE	
Dr. Bakanawa G. Bello	NTF-CCE/NPHCDA	garbabakunawa@nphcda
Dr. Yinka Olaniyan	NTF-CCE/NSCCP	Ddocyinka@gmail.com
Professor Patrick Daru	NTF-CCE/West African College of Surgeons	phdaru@yahoo.com
Professor Ajenifuja Olesgun	OAUTHC/ Gynaecologic Oncology Society of Nigeria (GOSON)	ajenifujako@yahoo.com
Dr. Sakina Bello	Pathfinder International	SAminBello@pathfinder.org
Chizi Kiti	Roche	chizi.kiti@roche.com
Pelly Malebe	Roche	nelly.malebe@roche.com
Louis Azubuike	Roche	louis.azubuike@roche.com
Michael Omeihe	Roche	michael.omeihe@roche.com
Eze Nwokoma	SFH	inwokoma@sfnigeria.org
Professor Silas Ochjlle	SOGON	silasfriday@yahoo.com



Dr. Amalaachukwu Ukaere	SOLINA	amalachukwu.ukaeze@solinagroup.com
Falilat Raji	TACConnect	falilat.raji@taconnect.ng.org
Winifred Kwaknot	TCI	
Dr. Habiba I. Abdullahi	UATH	ibrahimhabib@yahoo.com
Dr. Musa Elisha	UNFPA	elisha@unfpa.org
Dr. Ayuba Hannatu Usman	Vice Chairman Screening Committee NCS	hannatuayuba@gmail.com
Oyare Oche	White Ribbon Nigeria	ooche@uranigeria.org
Mya Ngon	WHO	ngonm@who.ht
Mary Dewan	WHO	
Abass Fatai		bigabass25@gmail.com



III. List of Participants at the National Consultative Workshop that Endorsed the Guidelines

10th & 11th September 2025

Abuja

Participants Full Name	Organisation	Email address
Iliya Sunday	ARFH	iliyas@arfh
Dr. Akinyemi Patrick	ARFH	Akinyemi.p@arfhng.org
Mercy Moses	CC Survivor	verlumtheresa@gmail.com
Sophia Dunu	CHAI	sdunu@clintonhealthaccess.org
Layo Lawson	CHAI	olawson@clintonhealthaccess.org
Isaac Adewole	Chairman NTF	Ifadewole@GMAIL.COM
Dr. Adamu A. Umar	Chairman Oncology Cervical cancer NCS	
Abass Fatai	Chairmans PA	
Chris Chukwunyere	City Manager City Cancer Challenge	njoku@citycancerchallenfger.org
Dozie Ezechukwu	CR/MSH	cezechukwu@msh.org
Professor Usman Malami Aliyu	DG NICRAT	dgnicrat.gov.ng
Dr. Okai Hanina Aku	ED/PPFN	aoaku@ppfn.org
Afolabi Antonio	Engender Health	
Ifeyinwa Maureen Okeke	EPIN	ifeyinwaokeke2022@gmail.com
Chioma Osuji	EU	
Ukpong Helen	FMOH	helenukpong337@gmail.com
Ibrahim Isah	HPC	jambil@gmail.com
Temitope Olukomogbin	IHVN	
Ademola Ayobami	IHVN	
Ambi Ibrahim	IHVN	lambi@ihvnigeria.org
Dr. George Ikaeaoa	Jhpiego	George.Ikaeaoa@jhpiego.org
Janet Nsikan Akpakpan	Leah Foundation	janetnsikan21@gmail.com
Dr. Ayandipo Oluwayemisi	MSH	eyandipo@msh.org
Dr. Uzoma Ugochukwu	NCS	uzeque@gmail.com
Adegoke- Elijah Adenike	NCS	aadegokeelijah@gmail.com
Dr. Fatima Kumo	NGF	fkumo@ngf.org
Ibrahim Asiwaju	NICRAT	myasiwajuibrahim@gmail.com
Dr. Genevieve Ndukwu	NNPC Foundation	genevieve.ndokwu@nnpcgroup.com



Imran Miorhason-Bello	NTF-CCE	imranmorhasonbello@gmail.com
Odugbesan Anjola	NTF-CCE	anjyodu@gmail.com
Okpaleke Chimdinma	NTF-CCE	chimdi3004@gmail.com
Muktar A. Gadanya	NTF-CCE	gadanya@gmail.com
Olufemi Ogunbiyi	NTF-CCE	fogunbiyi@gmail.com
Eunice Okomudo	NTF-CCE	euniceokomudo10@gmail.com
Prof Rose Anorlu	NTF-CCE	rianorlu2004@gmail.com
Olaniyan Yinka	NTF-CCE	
Prof Ima-Obong Ekanem	NTF-CCE	imaekanem2013@gmail.com
Prof Okechukwu Ikpeze	NTF-CCE	ocikpeze@yahoo.com
Deloraine Dennis	NTF-CCE	dennisdeloraine@nicrat.gov.ng
Dr. Rakiya Saidu	NTF-CCE	rakiya.saidu@uct.ac.za
Dr. Ishak Lawal	NTF-CCE	
Prof Hassan Mairo	NTF-CCE	mayroh123@gmail.com
Prof Bala Audu	NTF-CCE	balamaudu@fuhsa.edu.ng
Prof Ajenifuja Olusegun	OUUTHC	ajenifujako@yahoo.com
Dr. Sakina Amin Bello	Pathfinder	SaminBello@pathfinder.org
Dr. Amina Aminu Dorayi	Pathfinder	adorayi@pathfinder.org
Dr. Anne Adah-Ogoh	PSHAN	aadah.ogoh@pschan.org
Louis Ekome	ROCHE	
Michael Omeihe	ROCHE	michael.omeihe@roche.com
Louis Azubike	ROCHE	Louis.azubike@roche.com
Professor Sani Malami	Secretary NTF-CCE	sanimalami@gamil.com
Akamagwuna Emeka	SFH	eakamagwuna@sfnigeria.org
Dr. Elisha	UNFPA	elisha@unfpa.org
Dr. Maimuna Babangida	UNICEF	mbabangida@unicef.org



IV. Partnership to Eliminate Cervical Cancer in Nigeria (PECCiN Partners)





V. List of Members of the National Task Force on Cervical Cancer Elimination

Prof. Isaac F. Adewole, FAS, FNAMed (Chairman)

Dr Zainab Shinkafi Bagudu (Vice Chair)

Prof Sani A. Malami (Secretary)

Prof. Ima-Obong Ekanem

Chief (Mrs) Moji Makanjuola MFR

Prof Imran Morhason-Bello

Dr Rakiya Saidu

Dr Yinka Olaniyan

Prof Okechukwu Ikpeze

Dr Modupe Elebute-Odunsi

Dr Usman Waziri Muhammad

Dr Lolade Adeyemi

Prof Mukhtar A. Gadanya MFR

Dr Garba Bello Bakunawa

Dr Nwamaka Lasebikan

Dr Kehinde Ololade



VI. *Minimal Information on an HPV Test Request Form*

PATIENT DETAILS

Full Name: _____

Date of Birth (DD/MM/YYYY): _____

Patient ID / Hospital No.: _____

Contact Phone Number: _____

SPECIMEN DETAILS

Date & Time of Collection: _____

Sample Collection Method: ☐ Clinician-collected cervical sample
☐ Self-collected vaginal sample
☐ Other: _____

CLINICAL HISTORY

Reason for Test: ☐ Routine Screening ☐ Follow-up
☐ Post-treatment ☐ Other: _____

Last Menstrual Period (LMP): _____

HIV Status: ☐ Positive ☐ Negative ☐ Unknown

History of Smoking: ☐ Current ☐ Former ☐ Never Smoked

Current Contraception: ☐ None ☐ Oral ☐ IUD ☐ Implant
☐ Injectable ☐ Other: _____

Previous Cervical Screening? ☐ No ☐ Yes

If Yes, Last Test Type: ☐ Pap Smear ☐ HPV

Test Date (MM/YYYY): _____ Result: _____

REQUESTING CLINICIAN

Clinician Name: _____

Signature: _____

Date of Request: _____



VII. *Minimal Information on an HPV Test Report Form*

Laboratory Accession No.: _____

Patient Name: _____

Date of Birth (DD/MM/YYYY): _____ Age: _____

Medical Record No. / ID: _____

Referring Provider / Facility: _____

Specimen & Clinical Details

Date & Time of Sample Collection: _____

Date & Time of Receipt of Sample: _____

Specimen Type: ☐ Cervical ☐ Vaginal

Collection Method: ☐ Clinician-Collected ☐ Self-Collected

Clinical Indication: ☐ Screening ☐ Follow-up ☐ Post-treatment Surveillance

HIV Status: ☐ Positive ☐ Negative ☐ Unknown

Test Methodology & Results

Test Assay / Platform: _____

Overall High-Risk HPV Status: ☐ NEGATIVE ☐ POSITIVE ☐ INVALID (Repeat test)

Genotyping Results

HPV 16: ☐ Negative ☐ Positive

HPV 18 (or 18/45): ☐ Negative ☐ Positive

Other High-Risk HPV Types: ☐ Negative ☐ Positive

Extended genotyping (If applicable)

Comments & Interpretation:

Report Authorization

Reporting Pathologist / Scientist:

Signature:

Date of Report (DD/MM/YYYY):