



■ The SOGON 2024 Professor O. K. Ogan
Memorial Lecture

**Advancing the African Regional Framework for Cervical Cancer Elimination in Nigeria:
Enhancing Routine HPV Immunization and Defining the Next Steps
– The Professor O. K. Ogan Memorial Lecture**

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PREAMBLE

I wish to express my profound gratitude to the President and Council of the Society of Gynaecology and Obstetrics of Nigeria (SOGON) for granting me the honour of delivering the 2024 Prof. K. O. Ogan Memorial Lecture at the 58th Annual General Meeting and Scientific Conference in Uyo, Nigeria. As a staunch advocate for the global campaign to eliminate cervical cancer, I was immediately drawn to this critical area of women's health when asked to select the lecture title. I am passionate about the campaign, and I am happy that Nigeria is making progress. For the first time, the Ogan Memorial Lecture will be dedicated to cervical cancer – a preventable gynaecologic cancer. In this lecture, I will share my perspective on the way forward now that Nigeria has started routine human papillomavirus (HPV) immunisation.

About Prof Okoronkwo Kesandu OGAN (6th January 1919 – 24th August 1980):^{1,2} Prof. O. K. Ogan hailed from Item, Bende LGA, Abia state He attended the Methodist College Uzuakoli and Kings College Lagos where he distinguished himself academically and in sports. He obtained a licentiate in Medicine from Yaba Medical School in 1947 and trained as an Obstetrician and Gynaecologist (Ob-Gyn) in the UK where he got his MRGOG (1958) and FRGOG (1971). He was the first Nigerian Ob-Gyn and the first Nigerian lecturer/Consultant Ob-Gyn at UCH Ibadan (1959). He was the first Professor and Chair of the Obstetrics and Gynaecology department at the University of Nigeria (1967-75) and later served as Chairman of the Federal Civil Service Commission (1975-79). According to Prof V. E. Egwuatu, the 5th Ogan Memorial Lecturer,¹ Prof O. K. Ogan was “a gentleman of impeccable manners and amiable disposition that recognized and appreciated quality and excellence. He always expressed his thoughts, views, and feelings unapologetically. He would always truly and patiently listen to others. He abhors bribery and corruption, duplicity and ostentation.” Prof. O. K. Ogan was described as a citizen of the world, an affectionate husband and father, and a hardworking man who expressed unconditional love to his Item community, friends, and everyone who came across him.

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INTRODUCTION

Cervical cancer (CC) is a preventable malignant disease of the uterine cervix. With the current global burden of over 660,000 new cases and nearly 350,000 deaths per year,³ it remains a global health concern. Painfully, about 90% of these preventable deaths occur in low-and-middle-income countries (LMICs), especially in Sub-Saharan Africa. As shown in Figure 1, there is a comparatively high magnitude of CC incidence and deaths in Sub-Saharan Africa. Concerning incidence and mortality among women respectively, CC is the 4th and 3rd worldwide, 2nd and 1st in sub-Saharan Africa, but, in Nigeria, its incidence and mortality among women are second to breast cancer.³

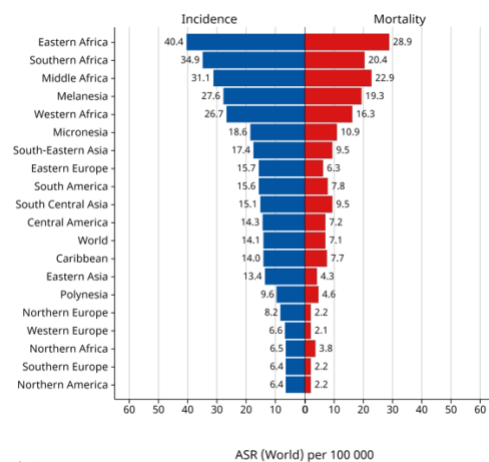


Figure 1: Global incidence and mortality rates of cervical cancer³

Cervical cancer is an entirely HPV-attributable cancer caused by sexually transmitted high-risk human papillomavirus (hrHPV) types. This aetiological link with hrHPV offers the opportunity for its primary prevention with HPV vaccination. Furthermore, infection with hrHPV alone does not translate to CC – often cofactors such as immunocompromise status e.g., HIV infection, tobacco use, etc are required to catalyse the malignant transformation. Thus, as demonstrated in the natural history of the disease in Figure 2, CC is a rare consequence of HPV infection which takes several years to manifest.⁴

The disease is usually preceded by a long course of pre-malignant lesions (i.e., cervical intraepithelial neoplasia) which offers an opportunity for secondary prevention via CC screening including low-performance tests such as visual inspection with acetic acid (VIA), Pap test; and high-performance tests such as HPV DNA testing.

Furthermore, the early-stage CC (FIGO stage ≤ IIA) is curable by radical surgery or radiotherapy thus presenting another opportunity for secondary prevention of the disease. However, the late stages of CC are

amenable to palliative care only (tertiary prevention). Unfortunately, about 80% of CC cases in Nigeria, present to hospitals at an advanced stage.⁵

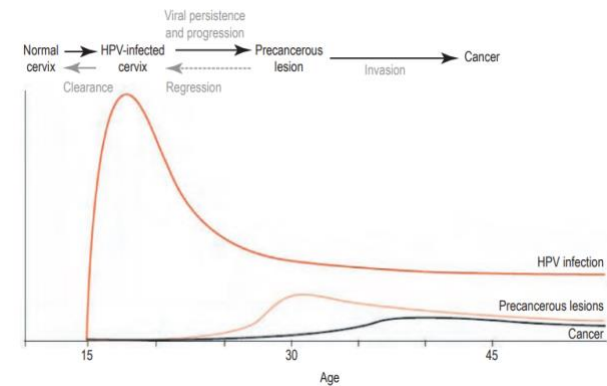


Fig. 2: Natural history of HPV & relationship with cervical pre-cancer & cancer⁴

Given the viral causation, natural course, and associated effective prevention options outlined above, the World Health Organization (WHO) developed a global elimination prevention strategy with three major targets (WHO-90-70-90) achievable by 2030.⁶

World Health Organization Cervical Cancer Global Elimination Strategy

In November 2020, the WHO launched a global strategy to accelerate the elimination of CC as a public health concern. The strategy's goal is to reduce global CC incidence to less than 4 per 100,000 women by the end of the century.⁶ To be on the path to achieving this global goal, each country should commit to achieving these three CC prevention targets by 2030:⁶

- Fully vaccinate 90% of girls by the age of 15 years
- Screen 70% of women using high-performance tests twice – by 35 years and 45 years of age
- Treat 90% of women identified with either pre-cancer and manage 90% of women identified with invasive disease

Considering that 2030 is a few years away, countries are accelerating their efforts toward achieving the set targets. Therefore, to channel the African region which bears a large burden of the CC toward the global CC elimination strategy and its targets, the WHO Africa's Regional Committee for Africa developed a framework in July 2021.⁷

The African Region Framework for Implementing the WHO-90-70-90 Strategy

The framework summarised the current ugly situation of CC burden and prevention strategy implementation in

Africa and presented the milestones for 2024, 2026, and 2028 under the following four key objectives.⁷

- i. Introduce and scale up the HPV vaccine in routine national immunization programmes.
- ii. Increase coverage of and access to screening and appropriate management of precancerous lesions.
- iii. Increase coverage of, and access to diagnosis and management of cervical cancer and palliative care as needed.
- iv. Strengthen capacity for monitoring and evaluation of cervical cancer prevention and control for performance tracking.

For each objective, the framework presents in a tabular format, the baseline status in 2020, the target by 2030, and the expected milestones by 2024, 2026, and 2028 (Annex 1). For example, by the end of 2024, the framework expected that at least 20 member countries would achieve 90% full HPV vaccination of girls 9 – 14 years; at least 10 member countries would achieve 25% CC screening coverage for women aged 30–49 years using the high-performance method, as well as 50% and 25% treatment rates for women identified with cervical precancer and CC respectively. The question is, how close were Nigeria and other African countries to achieving the 2024 milestone?

Initiation of Routine HPV Immunization in Nigeria – A Good First Step

HPV vaccination is critical to saving future generations of girls from CC, thus, it is believed to be the most effective of the three CC elimination interventions. The effectiveness of HPV vaccination is supported by an audit of the early effect of routine HPV immunisation programme on CC and pre-cancer registrations in the United Kingdom which concluded that the HPV vaccination had successfully almost eliminated CC in women born since Sept 1, 1995.⁸

On the 24th of October 2023, Nigeria took a bold step toward eliminating CC by launching the HPV vaccine into Nigeria's Expanded Programme on Immunization Schedule. The implementation was 2-phased (Fig. 3).⁹

The HPV Vaccine Rollout aims to vaccinate 17 million girls by 2025. Despite the massive anti-vax campaign that followed the introduction, Nigeria has done well, according to available information—by September 2024, over 12 million girls had been vaccinated.¹⁰ SOGON can assist in the project evaluation by surveying at least junior secondary school girls in Nigeria.

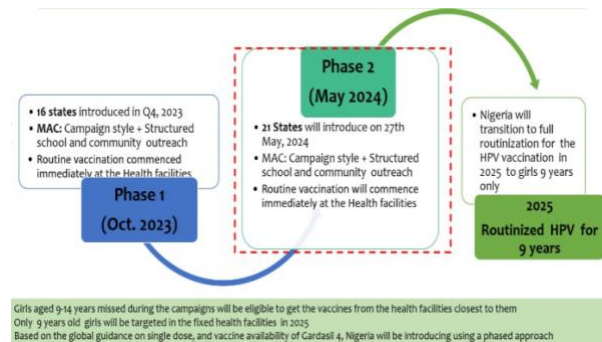


Figure 3: Nigeria HPV Vaccine Rollout Plan – Phasing of the States⁹

DEFINING THE NEXT STEPS

With the nationwide rollout of routine HPV immunisation for eligible girls, Nigeria must establish a comprehensive roadmap to enhance the program and expedite the implementation of the remaining two pillars of the cervical cancer elimination strategy. These next steps should include:

A) Enhancing Routine HPV Immunization

To accelerate the coverage of routine HPV immunisation, every effort should be channelled towards building trust regarding the safety and effectiveness of the vaccine. These can be achieved through continued education of parents and the girl child. The National Primary Health Care Development Agency (NPHCDA) and its partners are doing much in this area. Also, the efforts of professional bodies like the Medical Women Association of Nigeria (MWAN) and the Paediatric Association of Nigeria (PAN) are helpful. SOGON is encouraged to straighten its input in this respect. Education channels should include women's groups (religious, community), school clubs/societies, etc.

To sustain HPV vaccine education in the long term, vaccine-preventable reproductive cancer education should be incorporated into the junior secondary school curriculum and General Studies (GS) of universities in Nigeria. SOGON can champion these initiatives.

Also, to ensure the quality of the vaccine coverage data published by Nigerian agencies & partners, SOGON can be involved in the monitoring and evaluation (M & E) of routine HPV immunization in Nigeria – funding support is possible for that. Since professionals residing in Nigeria often face challenges in accessing people in power to offer their assistance to the government, SOGON serves as an excellent platform for engaging with the government and its agencies effectively. Outside M & E activities, SOGON can develop implementation research strategies that can improve the HPV vaccine uptake in Nigeria.

B) Self-Reliance in Vaccine Procurement and Production

While we are building trust among community members and expanding HPV immunisation coverage, self-reliance in HPV vaccine procurement (and possibly production) by Nigeria is very important for routine HPV immunisation sustenance. As shown in Figure 4, though the investments in HPV vaccination in LMICs rose substantially in 2023, 86% were from the funders of Gavi, the Vaccine Alliance while only 5% were self-funded by LMICs.¹¹ The obvious implication is that without support, LMICs including Nigeria cannot support routine HPV immunisation!

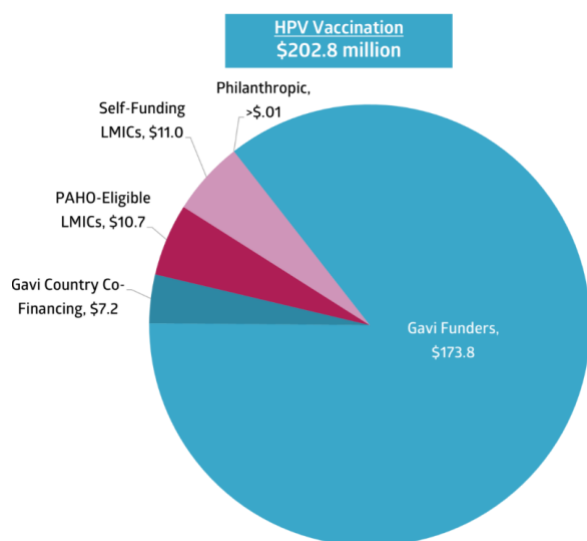


Figure 4: Cervical Cancer Prevention Funding in LMICs in 2023 ¹¹

C) Develop Routine Cervical Cancer screening

The second target of the WHO-90-70-90 calls for the screening of 70% of women at least twice (35 & 45 years) with high-performance screening methods, essentially HPV DNA testing; though HPV mRNA testing was recently approved.¹² Countries are encouraged to continue with quality-assured cytology while working to transition to HPV testing. However, “existing programmes using VIA as the primary screening test should transition rapidly because of the inherent challenges with quality assurance.”¹³ While vaccination is critical to saving future generations of girls from this disease, screening and early treatment can save lives today - both interventions are therefore critical for realizing the promise of CC elimination, now and in the future.¹¹

Unfortunately, in Nigeria, there is no national programme for CC screening as obtainable in the developed world, we are not screening enough with

either the VIA or Pap test and the effort to transition to high-performance tests is yet to take shape. To solve these problems, multi-faceted approaches are necessary including:

1. *Screening for CC should be routine like HPV immunisation:* this means that out-of-pocket payment should be removed to encourage a majority of healthy women to use it. The challenging economic situation forces citizens to prioritize their spending, and unfortunately, cancer screening for asymptomatic women ranks low on their list of priorities. This has exacerbated the prevalence of the “Not-My-Potion syndrome,”¹⁴ where individuals underestimate their risk of developing cancer. So, CC screening should be free through direct government sponsorship and funding by all existing health insurance. Unfortunately, the 2023 data suggests that though investments in HPV vaccination increased substantially, that for screening and pre-cancer treatment fell, creating a worrisome disproportionate response to CC prevention efforts.¹¹

Health is in the concurrent legislative list of Nigeria so, all tiers of government (i.e., federal, state, and local) must commit jointly and independently to the global call to eliminate cervical cancer. Budgeted planning for CC prevention by all tiers of government is encouraged – SOGON has a role in advocating for this to the government!

2. *Strengthening the Primary health care system to offer CC screening:* This is the only way CC screening can reach the communities effectively. Considering Nigeria’s weak health system and poor health financing system among other health sector challenges,¹⁵ the government should motivate the political will to effect change, especially at the PHCs. There should be a unity of purpose between the local government and State government agencies including the state’s Ministry of Health and Primary Health Care Development Agency to avoid retrogressive inter-agency turf wars.

Large-scale training of medical doctors and nurses in basic CC screening skills with appropriate monitoring/evaluation is critical to the success of the PHC strengthening. SOGON National and Chapters have roles in these areas. Health outreaches which we often organise are good but their long-term impact on public health may be limited without sustainable planning. Medical school curriculum should include cervical and breast cancer screening knowledge & skills as a must-know. Likewise, obstetrics and gynaecology residency curricula should ensure that every trainee gains proficiency in advanced CC screening and pre-invasive cervical disease treatment before graduation.

Very importantly, the strengthening of PHCs has a lot to do with paying the health staff a living wage. Their salary structure should be the Federal government scale (with additional rural allowance as appropriate) – this is the only way they can be retained as long as the ongoing emigration of medical and health workers (Japa syndrome) will allow.

- There should be a registry of CC screening and a system of inviting eligible women for CC screening and re-screening - the telecommunication companies in Nigeria can be mobilised to assist in this respect.

D) Scaling up Pre-cancer Treatment

Pre-cancer treatment goes with CC screening thus, the training and scaling up of the CC screening at the PHCs must include treatment of pre-cancerous cervical lesions – screening without the opportunity for treatment of screen-positive individuals is unethical. I recommend the see-and-treat and see-triage-treat approaches followed by ablative treatment in a single-visit approach for the general population. There should be a clear and functional system for referral and linkage for women ineligible for ablative treatment for further evaluation.

In the screen-and-treat approach, the decision to treat is based on a positive primary screening test only while in the “screen, triage and treat approach”, the decision to treat is based on a positive primary screening test followed by a positive second test (i.e., “triage” test), with or without histologically confirmed diagnosis.¹³ The triage tests include high-risk HPV DNA partial genotyping, cytology, dual-stain cytology, VIA and colposcopy (with or without biopsy for histological diagnosis). Details of the algorithms in the two approaches are shown in Figure 5. The “screen, triage and treat approach” is believed to give a more precise diagnosis thus reducing the overtreatment inherent in the screen-and-treat approach and is specifically recommended for the women living with HIV (WLHIV).

Screen-and-treat approaches:	
1	VIA as the primary screening test, followed by treatment
2	HPV DNA detection (self- or clinician-collected) as the primary screening test, followed by treatment
Screen, triage and treat approaches:	
3	Cytology as the primary screening test, followed by colposcopy triage, followed by treatment
4	HPV DNA detection as the primary screening test, followed by HPV16/18 triage (when already part of the HPV test), followed by treatment, and using VIA triage for those who screen negative for HPV16/18
5	HPV DNA detection as the primary screening test, followed by VIA triage, followed by treatment
6	HPV DNA detection as the primary screening test, followed by colposcopy triage, followed by treatment
7	HPV DNA detection as the primary screening test, followed by cytology triage, followed by colposcopy and treatment

Figure 5: Recommended Algorithm for CC Screening and Treatment¹³

As part of defining the next steps, Nigeria should adopt algorithms 2 (Figure 6) and 4 (Figure 7) and ablative treatment (for eligible women) in a single-visit approach at the PHCs. Both algorithms involve high-performance screening and are easy to set up and operate. The scale-up of PHCs' human and infrastructural resources required for the effective implementation of these algorithms is achievable if Local and State governments have the political will.

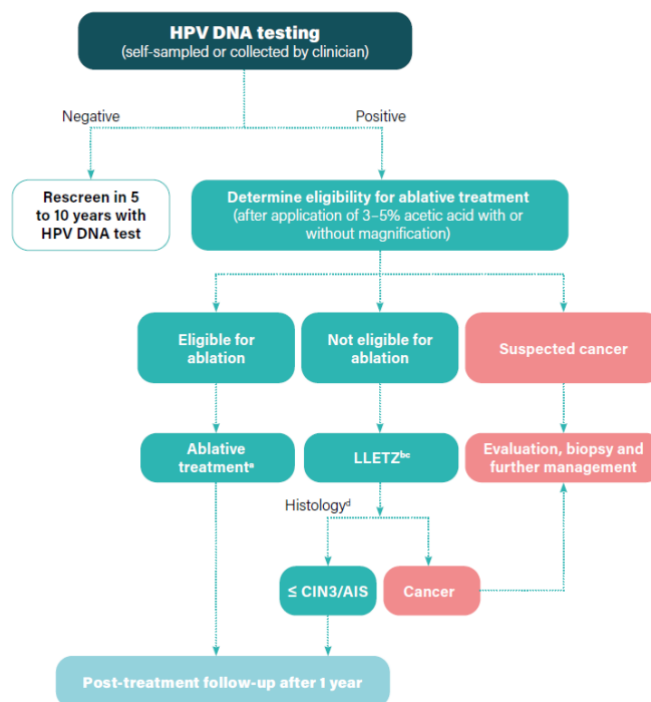


Figure 6: Algorithm 2 - Primary HPV DNA Test Screening (See & Treat Approach)¹³

Where to start is the PHCs and other health facilities with GeneXpert Instrument (or TB-LAMP) for TB evaluation as we did during the COVID-19 pandemic. The PHCs within each state will be grouped and linked to one or two referrals secondary or tertiary health facilities for the management of screen-positive women ineligible for ablative treatment or those with suspicious lesions. SOGON as a body has the capacity to assist such program planning, staff training, volunteer services, as well as program monitoring and evaluation.

E) Scaling up of cervical cancer treatment

The WHO-90-70-90 strategy hopes to treat 90% of cervical cancer as appropriate depending on the stage. Early-stage CC is curable by radical surgery or radiotherapy while the advanced stages can only be palliated - unfortunately, most CC cases in Nigeria and LMICs present late. In a study of 351 patients in a

teaching hospital in Kumasi, Ghana,¹⁶ 334 (95%) presented late, and the most common barrier was financial constraints (50%) – each increasing level of income was associated with a 51% decrease in late-stage presentation. Interestingly, of all late presenters, 99.1% never had a Pap test.

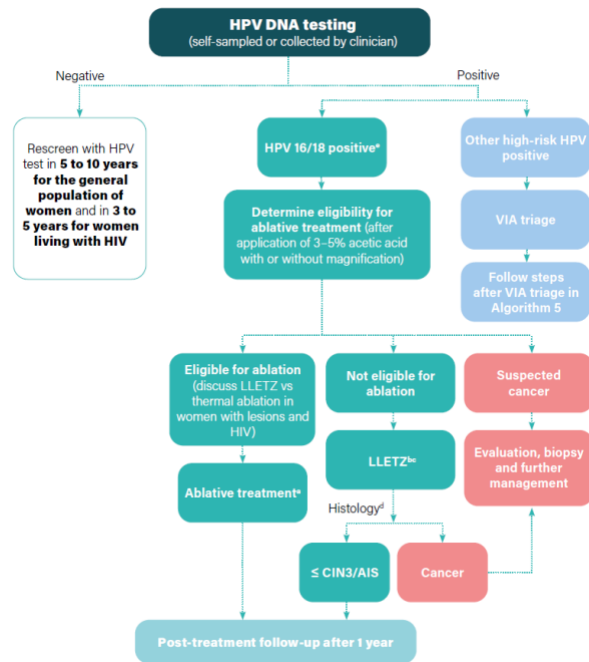


Figure 7: Algorithm 4 - HPV DNA Screening & HPV 16/18 Triage (Screen, Triage & Treat Approach)¹³

Therefore, because of the perennial poor resources, the focus of CC elimination in Nigeria and LMICs should be HPV vaccination and CC screening & pre-cancer treatment. Nevertheless, an effective routine CC screening system will assist in the early identification of cervical cancer with the opportunity for cure.

Unfortunately, there is an existing sub-optimal surgical capacity and radiotherapy services for CC treatment in Nigeria and LMICs. Gynaecologists with the skills for quality-assured radical pelvic surgeries for early CC disease are limited which is a big challenge to achieving the milestones for this target. Current efforts at narrowing the surgical capacity gap include:

- i. The National Postgraduate Medical College of Nigeria and West African College of Surgeons' subspecialty training programs in Gynaecologic oncology. The programs are just starting so; it is at best a medium to long-term intervention.
- ii. International Gynecologic Cancer Society (IGCS) Global Gynecologic Oncology Fellowship Program – a part of IGCS Mentorship and Training.¹⁷ This is a comprehensive two-year education and training

program designed for regions around the world that do not currently have formal training in gynaecologic oncology. Nigeria has four sites – Enugu, Lagos, Ibadan, & Kaduna. About 52 fellows have been graduated since 2019 – none from Nigeria. So, for the purpose of accelerating CC Elimination in Nigeria, I consider this programme as a medium to long-term intervention.

iii. Observership programs in Gynae-oncology in high-income countries: the lack of hands-on surgical activities during such programs is an obvious limitation of such training.

iv. Distance training using online lectures and video demonstrations such as the Gynecologic Didactic Training Lecture Series facilitated by Memorial Sloan Kettering Cancer Center through the African Research Group on Oncology (ARGO) hosted at the Obafemi Awolowo University, Ile-Ife, Nigeria.

The above approaches merit further development and expansion. However, they alone will not sufficiently accelerate the reduction of the suboptimal surgical capacity gap required to achieve a 50% treatment rate for women diagnosed with early cervical cancer by 2018. Therefore, a stopgap measure is urgently needed.

Focused Surgical Intensification Program

This is an innovative and competency-based program developed by a group of African-American Gynaec-oncologists in Zambia after trying out several live demonstration projects in other under-served environments).¹⁸ The program is focused because experienced gynaecologic oncologists train general gynaecologists to perform a single surgical procedure i.e., radical abdominal hysterectomy, bilateral pelvic lymphadenectomy. It is surgical intensification because it uses high-volume repetition (several cases/day) of the procedure over a short time interval. So, it can serve as the stopgap intervention needed to achieve the African regional milestone in 2028.

The African-American Gynae-oncologist group or other willing groups need invitation which is where SOGON and willing tertiary centers should come in to facilitate the program. It will work well if we can develop routine CC screening to ensure a high throughput of early CC cases for the focused training. The existing Cancer Health Fund (CHF) program of the Federal Ministry of Health can assist in funding the program.

Further Necessary Interventions To Improve Advanced Cervical Cancer Treatment

More regional radiotherapy centers need to be equipped, and the CHF program already developed by the Federal government should be expanded to make it more accessible. Private partnerships' involvement in radiotherapy services at our public hospitals should be streamlined to reduce costs and improve patients' accessibility. Histopathology services of secondary and tertiary health facilities should be strengthened to facilitate the see-triage and treat approach and CC diagnosis and treatment.

To avoid civil service bureaucracy, the CC elimination strategy at all tiers of government should be managed as a project within an agency or action committee coordinated by medical experts in CC prevention who should report directly to the chief executive. The Cervical Cancer Elimination Agency/Action Committee will align with the African Region Framework, guided by the established milestones for each priority intervention. The committee's activities will include robust monitoring and evaluation processes to ensure progress and accountability.

CONCLUSION

The cervical cancer burden in Nigeria is high and its elimination is achievable. The routine nationwide HPV immunization already established is the necessary first step. However, to achieve the African Regional Framework milestones and WHO 90-70-90 targets in Nigeria, the next steps should include enhancing routine HPV immunization, achieving self-reliance in vaccine procurement and production, developing routine cervical cancer screening, and scaling up cervical pre-cancer and cancer treatment.

If Prof. O. K. Ogan, the first Nigerian Ob-Gyn and founding President of SOGON, were alive today, he would undoubtedly urge the President, Council, and members of SOGON to collaborate with the government and other key stakeholders to implement these well-crafted strategies aimed at accelerating the elimination of cervical cancer in Nigeria.

Declaration

The 2024 Professor O. K. Ogan memorial lecture was delivered at the 54th Annual General Meeting and Scientific Conference of the Society of Gynaecology and Obstetrics of Nigeria (SOGON) in Uyo, on 27th November 2024

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Annexe 1: Summary of Objectives, Targets, & Milestones of African Region Framework ⁷

Objectives	Current status/baseline (2020)	Targets by 2030	Milestones		
			By 2024	By 2026	By 2028
To introduce and scale up HPV vaccine in routine national immunization schedules	☐ 33% of Member States have introduced HPV vaccine ☐ Three Member States (Ethiopia, Mauritius and Rwanda) have HPV coverage of 80% and above for girls 15-year old in 2019.	90% of girls are fully vaccinated with the HPV vaccine by the age of 15 years in all 47 Member States	90% full HPV vaccination of girls by the age of 15 years achieved in at least 20 Member States	90% full HPV vaccination of girls by the age of 15 years achieved in at least 30 Member States	90% full HPV vaccination of girls by the age of 15 years achieved in at least 40 Member
To increase coverage of, and access to screening and appropriate management of precancerous lesions	Data not available. Conduct regional survey	70% of women are screened with a high-performance test by the ages of 35 and 45 years in all 47 Member States	25% cervical cancer screening coverage using high-performance tests, for women aged 30-49 years achieved in at least 10 countries	40% cervical cancer screening coverage using high-performance tests, for women aged 30-49 years achieved in at least 20 Member States	50% cervical cancer screening coverage using high-performance tests, for women aged 30-49 years achieved in at least 30 Member States
To increase coverage of, and access to diagnosis and management of cervical cancer and palliative care as needed	Data not available. Conduct regional survey	90% of women identified with cervical precancerous lesions receive treatment in all 47 Member States	50% treatment rate for women identified with cervical precancer achieved in at least 10 Member States	60% treatment rate for women identified with cervical precancer achieved in at least 20 Member states	60% treatment rate for women identified with cervical pre-cancer achieved in at least 30 Member States
	Data not available. Conduct regional survey	90% of women identified with cervical cancer receive treatment in all 47 Member States	25% treatment rate for women identified with cervical cancer achieved in at least 10 countries	40% treatment rate for women identified with cervical cancer achieved in at least 20 Member states	50% treatment rate for women identified with cervical cancer achieved in at least 30 Member
To strengthen capacity for monitoring and evaluation and the health management information system (HMIS) for cervical cancer prevention and control for easy global, regional and national target tracking	Data not available. Conduct regional survey	Data collection and HMIS for cervical cancer prevention and control strengthened, ensuring regular monitoring and evaluation of activities under the framework	Monitoring and performance indicators identified, and quality control mechanisms defined for planned interventions in all 47 countries. Challenges and lessons learnt documented and utilized for decision-making in all Member States. Capacity to report and use cervical cancer data increased from 10% in 2019 to 50% in all countries	HMIS and data collection tools for cervical cancer prevention and control strengthened for easy global, regional and national target tracking	Strong data systems for cervical cancer available at the national and regional levels