



Cancer control policy implementation in West Africa: A comparative narrative review and the emerging role of Nigeria's NICRAT

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ABSTRACT

Background: West Africa faces a rising cancer burden marked by late diagnosis, limited treatment access, and persistent inequities. Despite national cancer control plans, implementation evidence remains fragmented. This narrative review compares cancer control policy implementation in Ghana, Senegal, Mali, Côte d'Ivoire, and Nigeria, highlighting shared health system challenges and emerging coordination mechanisms, including Nigeria's National Institute for Cancer Research and Treatment (NICRAT).

Methods: A structured narrative policy review was conducted using literature retrieved from PubMed and Google Scholar, and publicly available national cancer policy documents published between 2010 and 2025. Eligible sources included peer-reviewed articles, strategic plans, and policy reports addressing cancer control implementation. Data were thematically synthesized using a comparative health systems framework encompassing governance, financing, workforce capacity, service delivery, health information systems, and access to medicines and vaccines.

Results: All five countries have established national cancer control strategies. However, implementation challenges persist across multiple health system domains. Commonly reported constraints include inadequate financing, limited insurance coverage, workforce shortages, centralized oncology services, weak cancer registries, low screening uptake, and uneven HPV and hepatitis B vaccination coverage. Although some countries have expanded awareness initiatives, vaccination programs, and selected screening services, standardized evidence demonstrating sustained reductions in cancer incidence or mortality remains limited. NICRAT represents an emerging institutional approach to strengthening coordination and implementation oversight in Nigeria.

Conclusion: Despite policy adoption, weak health systems hinder cancer control in West Africa. Improved governance, sustainable financing, workforce development, modernized registries, and stronger regional collaboration are essential for better cancer outcomes.

1. Introduction

National cancer control policies provide a strategic framework for cancer prevention, early detection, timely diagnosis, effective treatment, survivorship, and palliative care [1]. Such policies are particularly important because cancer incidence, disease phenotypes, risk factors,

and treatment responses vary across regions due to complex interactions between genetic, epigenetic, environmental, and health system factors [2].

Emerging evidence indicates that certain cancers, particularly breast and prostate cancers, are associated with poorer outcomes among populations of West African ancestry, reflecting interactions among tumor

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biology, delayed presentation, inequitable access to care, and broader health system limitations [3,4].

At the continental level, the World Health Organization (WHO) adopted a regional framework for cancer prevention and control in Africa in 2008 to address the rising burden of cancer. Subsequently, the 2017 World Health Assembly resolution on cancer prevention and control called on member states to develop and implement comprehensive, evidence-based national cancer control plans [5]. In response, several West African countries formulated national cancer control strategies tailored to their epidemiological profiles. However, policy adoption has not uniformly translated into effective implementation.

Persistent systemic challenges continue to undermine cancer control efforts in the region. These include under-reporting due to weak or incomplete cancer registries, limited diagnostic and treatment infrastructure, shortages of trained oncology personnel, sociocultural beliefs that delay care-seeking, low coverage of vaccine-preventable cancer programs, particularly in rural areas, and inadequate or inconsistent financing for cancer services [4,6].

Although these challenges vary in magnitude across countries, they reflect broader structural constraints within West African health systems. This paper, therefore, provides a comparative narrative review of cancer control policy implementation in selected West African countries, synthesizing reported experiences, common systemic challenges, and emerging institutional responses using a health system-oriented framework. The analysis aims to inform ongoing policy and system-strengthening efforts across the region.

2. Methodology

A structured narrative policy review was conducted to examine cancer control policy implementation in selected West African countries. An initial scoping search was performed to identify countries within the region with publicly accessible national cancer control plans, or strategic cancer policy documents, as well as sufficient implementation-related literature to support comparative thematic synthesis. Based on this criterion, Ghana, Senegal, Mali, Côte d'Ivoire, and Nigeria were included in the review.

Relevant literature and policy documents published between 2010 and 2025 were retrieved from PubMed and Google Scholar using combinations of the following keywords: “cancer control policy,” “national cancer control plan,” “West Africa,” “Nigeria,” “Ghana,” “Senegal,” “Mali,” and “Côte d'Ivoire.” Reference lists of selected articles were also screened to identify additional relevant sources. Articles published prior to 2010 were excluded unless they provided foundational policy context.

Eligible sources included peer-reviewed articles, national cancer control plans, strategic health documents, institutional reports, and

policy publications addressing cancer policy development, implementation experiences, or health system challenges in the selected countries. Sources were screened for relevance to pre-defined thematic domains.

Data were synthesized thematically using a health systems-oriented comparative framework encompassing governance and policy coordination, financing, workforce capacity, service delivery, health information systems, and access to medicines and vaccines. Given the heterogeneity of available evidence and variations in reporting across countries, a standardized quantitative evaluation of policy performance or outcomes is not fairly achievable. Hence, we try to provide a comparative narrative synthesis of the existing data. Moreover, no formal quality assessment tool was applied because the review included heterogeneous policy documents and narrative implementation reports. Table 1 provides a summary of the included cancer policy documents and supporting evidence sources.

2.1. Country-level policy descriptions, implementation experiences, and health system challenges

The selected countries demonstrate varying levels of policy development and implementation capacity. However, several recurring challenges emerged across settings, including financing constraints, centralized oncology services, workforce shortages, weak cancer registries, and uneven screening and vaccination coverage. The following country-level summaries highlight key implementation experiences and system challenges.

2.1.1. Ghana

Ghana launched its five-year National Strategy for Cancer Control in 2011. The strategy aimed to strengthen cancer screening and early detection, improve diagnostic and treatment capacity, ensure equitable access to care, establish a national cancer registry to support data-driven policymaking, expand vaccination programs for preventable cancers, and increase public awareness.

The plan set measurable targets, including improving access to cost-effective diagnosis and treatment and addressing the psychosocial impact of cancer [7]. In 2017, Ghana updated its Cancer Control Plan, with continued emphasis on prevention through public education, organized screening, and vaccination scale-up.

Implementation of Ghana's policy has contributed to increased policy attention toward cancer prevention, public awareness, and HPV vaccination initiatives, including a pilot vaccination program conducted between 2013 and 2015 [8,9]. However, organized screening programs and sustained adherence to screening guidelines remain limited [10,11]. Additional barriers, including high treatment costs, limited insurance coverage, shortages of oncology-trained personnel, inadequate

Table 1
Summary of included national cancer policy documents and supporting evidence sources.

Country	National cancer policy/strategy included	Policy period	Main source types reviewed	Key health system domains reported
Ghana	National Strategy for Cancer Control	2011; updated 2017	National policy documents, peer-reviewed implementation studies, screening and vaccination reports	Governance and coordination, screening services, financing, workforce capacity, cancer registries
Senegal	National cancer control initiatives and HBV vaccination strategy	2018 onward	Policy reports, peer-reviewed studies, vaccination and oncology service reports	Vaccination programs, treatment access, workforce development, screening services
Mali	National Cancer Plan; National Strategy for Non-Communicable Diseases	2007; 2019–2023	Strategic policy documents, implementation studies, oncology access reports	Infrastructure, workforce capacity, screening programs, service delivery
Côte d'Ivoire	National Cancer Control Program; National Strategic Cancer Control Plan	2022–2025	National strategic plans, screening studies, oncology capacity-building reports	Workforce training, infrastructure development, access to medicines, screening uptake
Nigeria	National Cancer Control Plans; National Strategic Cancer Control Plan	2008; 2018–2022; 2023–2027	National policy documents, registry studies, implementation reports, institutional publications	Governance and coordination, financing, cancer registries, workforce capacity, service delivery

Abbreviations: HBV = Hepatitis B virus.

diagnostic infrastructure, and sociocultural beliefs, continue to affect timely diagnosis and treatment access, particularly in rural areas [7,12,13]. Reported breast cancer screening uptake remains low at 18.4%, with disparities between northern and southern regions [14]. These findings suggest that although policy frameworks have supported prevention and awareness efforts, broader health system constraints continue to limit implementation coverage and equitable access to care.

2.1.2. Senegal

Senegal has implemented several cancer control initiatives focused on vaccination, screening expansion, workforce development, and subsidized oncology services. For instance, in response to a high burden of HBV-associated liver cancer, the country launched a national HBV vaccination initiative in October 2018, which has contributed to reductions in HBV prevalence [15]. The cancer control initiatives implemented in Senegal have supported expansion of HBV vaccination, screening services, workforce development, and subsidized oncology treatment in selected public facilities [6,16]. Cervical cancer screening uptake has improved relative to earlier years, although overall coverage remains low at approximately 9.5% [17]. Persistent implementation barriers include shortages of specialized personnel, late-stage presentation, weak referral systems, inconsistent vaccination coverage, incomplete cancer registry data, and financial constraints affecting treatment access [16,18,19]. These challenges indicate that while service availability has expanded in some settings, implementation capacity remains uneven across regions.

2.1.3. Mali

Mali introduced its first national cancer plan in 2007 and later incorporated cancer control priorities into the 2019–2023 National Strategy for Non-Communicable Diseases. Key implementation efforts included the integration of cervical cancer screening using visual inspection with acetic acid (VIA) into the maternal and child health programs and the incorporation of HPV vaccination into routine immunization programs [20,21].

Implementation of Mali's cancer control initiatives has included expansion of HPV vaccination programs, VIA-based cervical cancer screening, and subsidized treatment services supported through international partnerships [22,23]. However, political instability, poverty, insecurity, limited oncology infrastructure, and concentration of services in Bamako continue to restrict access to timely diagnosis and treatment [20,24]. Weak cancer registries, shortages of specialized personnel, treatment discontinuation, and sociocultural barriers further limit implementation reach and continuity of care. Thus, while programmatic components exist, their population-level impact remains restricted by broader health system weaknesses.

2.1.4. Cote d'Ivoire

Côte d'Ivoire developed a National Cancer Control Program and a National Strategic Cancer Control Plan (2022–2025), aimed at expanding screening programs, strengthening oncology workforce capacity, improving infrastructure, and increasing access to essential cancer medicines. Budget allocations have been made to support early detection of breast, cervical, and prostate cancers.

Implementation of the National Strategic Cancer Control Plan (2022–2025) has supported expansion of screening services, oncology workforce training, and infrastructure development through national and international collaborations [25,26]. The establishment of a National Radiotherapy and Medical Oncology Center reflects ongoing efforts to strengthen domestic oncology capacity. Nevertheless, screening uptake for cervical and breast cancers remains limited, while financial barriers, sociocultural beliefs, limited insurance coverage, and uneven service distribution continue to affect equitable access to care [27,28]. Resource limitations have also contributed to continued reliance on low-cost screening approaches such as VIA in many settings. This implies that although incremental progress is evident, substantial

implementation gaps persist in achieving broad population coverage.

2.1.5. Nigeria

Nigeria launched its first National Cancer Control Plan in 2008, with objectives focused on reducing morbidity and mortality, strengthening data systems, improving diagnostic and treatment capacity, expanding vaccination, and increasing public awareness [29]. However, the 2008 plan experienced limited implementation, partly due to inadequate financing structures, limited stakeholder engagement, and weak institutional coordination.

A revised National Cancer Control Plan (2018–2022) was subsequently introduced, incorporating broader stakeholder input and emphasizing integration of HPV and hepatitis B vaccination into primary health care, improved resource mobilization, and strengthened data generation [30].

The current National Strategic Cancer Control Plan (2023–2027), developed under the coordination of the National Institute for Cancer Research and Treatment (NICRAT), identifies priority areas including prevention, diagnosis and treatment, supply chain management, hospice and palliative care, advocacy and social mobilization, data management and research, governance and finance, and survivorship care. The implementation of Nigeria's National Cancer Control Plans (2018–2022 and 2023–2027) has been associated with expanded national advocacy efforts, revisions to governance structures, and increased policy attention toward cancer prevention, data systems, and financing mechanisms. The establishment of NICRAT represents an emerging institutional mechanism intended to strengthen coordination, research integration, and implementation oversight within the national cancer control system [31]. NICRAT has supported vaccine-preventable cancer initiatives and facilitated the National Cancer Health Fund to improve financial access for selected cancers [32].

Despite these developments, major implementation barriers persist, including limited insurance coverage, inadequate oncology infrastructure relative to population demand, workforce shortages, regional disparities in service access, fragmented coordination between federal and state programs, sociocultural barriers, and inconsistent budgetary releases [32,33]. Although policy activity and institutional coordination have increased, standardized evidence demonstrating sustained population-level reductions in cancer incidence or mortality remains limited.

2.2. Comparative health system perspectives on cancer control implementation in West Africa

To align with a systems perspective, cancer control implementation across Ghana, Senegal, Mali, Côte d'Ivoire, and Nigeria was examined using six core health system domains: governance, financing, workforce capacity, service delivery, health information systems, and access to medicines and vaccines.

2.2.1. Governance and policy coordination

All five countries have adopted national cancer control plans or incorporated cancer into broader non-communicable disease strategies. However, policy adoption has not consistently translated into structured implementation oversight. In several contexts, weak coordination between national and subnational authorities, irregular monitoring mechanisms, and limited stakeholder engagement have constrained accountability. Nigeria's recent institutionalization of NICRAT represents an emerging institutional coordination mechanism aimed at centralizing coordination and strengthening implementation oversight, an institutional model not yet fully operationalized in other countries examined.

2.2.2. Financing and insurance coverage

Cancer financing across the region remains limited. Public health expenditure is constrained, and cancer care is frequently associated with

high out-of-pocket payments. Although national health insurance schemes exist in some settings, coverage for comprehensive oncology services, including advanced diagnostics, radiotherapy, and targeted therapies, remains inadequate. Financial barriers contribute to delayed diagnosis, treatment discontinuation, and catastrophic household expenditure. Sustainable and predictable financing mechanisms, therefore, represent a critical implementation bottleneck across the five countries.

2.2.3. Oncology workforce capacity

Workforce shortages are consistently reported throughout the region. Oncology specialists, radiotherapists, oncology nurses, pathologists, and pharmacists are concentrated in urban tertiary facilities, resulting in marked geographic inequities. Training programs remain limited in scale, and retention challenges persist. Although capacity-building initiatives are underway in countries such as Côte d'Ivoire and Nigeria, workforce density remains insufficient relative to population needs.

2.2.4. Service delivery and infrastructure

Cancer care services are predominantly centralized in major cities, restricting access for rural populations who face geographic, financial, and security-related barriers. Screening programs, particularly for cervical and breast cancer, have been introduced in varying forms but generally demonstrate low population coverage and inconsistent adherence. In resource-constrained settings, VIA remains widely used for cervical cancer screening, reflecting infrastructural and technological limitations.

2.2.5. Health information systems and cancer registries

Population-based cancer registries remain underdeveloped in much of the region. Under-reporting, incomplete documentation, and limited digital integration compromise accurate burden estimation and weaken evidence-informed policymaking. Strengthening registry systems is essential for tracking implementation progress and tracking implementation progress.

2.2.6. Access to medicines and vaccines

HPV and hepatitis B vaccination programs have been introduced in several countries, often supported by international partners such as Gavi. However, vaccination coverage remains uneven, particularly in

rural and underserved communities. Access to essential oncology medicines and radiotherapy services is further constrained by supply chain limitations, cost barriers, and infrastructural deficits.

Collectively, these findings indicate that while policy adoption is widespread across West Africa, systemic constraints across multiple health system domains continue to limit effective implementation and measurable improvements in cancer outcomes. A comparative summary of recurring implementation patterns across the reviewed health system domains is presented in [Table 2](#).

2.3. Policy and health systems considerations for strengthening cancer control implementation

Findings from the comparative review suggest several recurring health systems priorities relevant to strengthening cancer control implementation across West Africa. These interconnected areas reflect commonly reported implementation constraints across the reviewed countries. Here, we highlight five key recommendations that may help overcome the common barriers to policy implementation in the selected countries.

1. Sustainable and Ring-Fenced Financing

- Increase domestic budget allocations dedicated to cancer control
- Expand national health insurance benefit packages to include comprehensive oncology services
- Establish pooled procurement mechanisms and regional financing platforms
- Reduce out-of-pocket expenditure through targeted subsidy programs

2. Workforce Development and Retention

- Expand oncology training programs across medical and allied disciplines
- Incentivize rural deployment and long-term retention
- Develop regional fellowship programs and capacity-building partnerships
- Integrate oncology competencies into broader health workforce planning

3. Cancer Registry Modernization and Data Systems

- Strengthen and expand population-based cancer registries
- Digitize reporting systems and integrate surveillance platforms
- Standardize data collection methodologies across countries

Table 2

Comparative systems-level patterns in cancer control implementation across selected West African countries.

Health System Domain	Ghana	Senegal	Mali	Côte d'Ivoire	Nigeria
Governance and Policy Coordination	National cancer strategy updated in 2017; implementation coordination challenges persist	National cancer initiatives with partial public-sector oncology support	Cancer integrated into NCD strategy; implementation affected by political instability	National Strategic Cancer Control Plan (2022–2025)	Multiple national cancer control plans; NICRAT established to strengthen coordination
Financing and Insurance Coverage	Limited insurance coverage and high out-of-pocket costs	Subsidized chemotherapy in selected public facilities	Heavy reliance on external and partner-supported funding	Financial barriers and limited insurance coverage	National Cancer Health Fund introduced; broad oncology coverage remains limited
Workforce and Infrastructure Capacity	Oncology workforce and diagnostic infrastructure remain limited	Shortages of specialized oncology personnel	Oncology services concentrated in Bamako	Ongoing oncology workforce development and infrastructure expansion	Insufficient oncology workforce and infrastructure relative to population demand
Service Delivery and Screening	Low screening uptake with regional disparities	Expanded screening services, but low national coverage	VIA-based screening integrated into selected facilities	Screening expansion initiatives ongoing; reliance on VIA persists	Screening and prevention programs expanding, but access remains uneven
Health Information Systems and Registries	Registry strengthening remains incomplete	Incomplete registry coverage and referral system limitations	Weak cancer registry systems	Limited population-level cancer data infrastructure	Ongoing efforts to strengthen data systems and implementation monitoring
Access to Medicines and Vaccines	HPV vaccination initiatives implemented	HBV vaccination and subsidized oncology treatment programs	HPV vaccination supported through Gavi partnerships	Access to medicines improving through collaborations	HPV and hepatitis B vaccination initiatives expanding

Abbreviations: HPV = Human papillomavirus; HBV = Hepatitis B virus; VIA = Visual Inspection with Acetic Acid; NICRAT = National Institute for Cancer Research and Treatment.

- Link registry outputs to monitoring and evaluation frameworks
4. Prevention and Early Detection Scale-Up
 - Expand HPV and hepatitis B vaccination coverage, particularly in rural communities
 - Institutionalize organized, population-based screening programs
 - Deploy mobile and community-based screening services
 - Integrate cancer prevention and early detection into primary health care systems
 5. Regional Collaboration and Institutional Strengthening
 - Establish ECOWAS-level coordination mechanisms for cancer control
 - Share technical expertise and workforce training platforms
 - Develop regional centers of excellence
 - Support context-specific institutional coordination mechanisms, including emerging national models such as NICRAT.

These recommendations underscore that effective cancer control requires coordinated reform across interconnected health system domains rather than isolated policy adoption. Strengthening implementation capacity across these domains may improve the ability of national cancer control policy to achieve a broader population-level impact.

3. Limitations

This review has several limitations. First, the analysis was restricted to publicly available literature indexed in PubMed and Google Scholar, as well as accessible national policy documents. Consequently, countries with existing cancer control policies but limited published implementation data may not have been fully represented. For example, Burkina Faso adopted a national cancer control strategy (Plan Stratégique de Lutte Contre le Cancer 2013–2017) [34], published through the International Cancer Control Partnership portal; however, insufficient publicly available implementation data precluded its inclusion in the comparative analysis. Second, as a narrative policy review, this paper did not apply a formal systematic review protocol and, therefore, may be subject to selection bias. Third, the analysis relied on reported implementation indicators rather than standardized quantitative outcome measures, limiting the ability to directly assess policy effectiveness in terms of incidence, survival, or mortality reduction. The availability and depth of implementation-related evidence also varied substantially across countries, limiting direct comparability in some domains.

These limitations should be considered when interpreting the findings. Nevertheless, the review provides a structured synthesis of reported implementation experiences and recurring health system constraints across selected West African countries.

4. Conclusion

This review highlights that several West African countries, including Nigeria, Ghana, Senegal, Mali, and Côte d'Ivoire, have adopted national cancer control policies and initiated implementation efforts. However, the translation of policy commitments into measurable implementation outcomes remains inconsistent. Across the region, implementation gaps persist in financing, workforce capacity, infrastructure distribution, screening coverage, registry development, and insurance inclusion. The findings underscore that cancer control in West Africa is not solely a policy design challenge but fundamentally an implementation and systems-strengthening challenge. Strengthening governance accountability, ensuring sustainable financing, expanding workforce capacity, modernizing cancer registries, and scaling prevention programs are critical to translating national plans into measurable population-level impact. Institutional governance innovations, such as Nigeria's establishment of NICRAT, reflect emerging institutional approaches intended to strengthen coordination and implementation oversight. Continued

regional collaboration and structured implementation monitoring will be essential to advancing equitable and effective cancer control across West Africa.

Statements and Declarations

NA

CRediT authorship contribution statement

Pharmacy Abdurrahman Yusuf: Writing – original draft, Investigation, Conceptualization. **Joy Ndarake Iya-Benson:** Validation, Supervision, Project administration. **Gilead Ebiegbere Forcados:** Writing – original draft, Data curation, Conceptualization. **Aliyu Usman Malami:** Writing – review & editing, Resources, Methodology, Investigation, Data curation. **Mustapha Umar Imam:** Writing – review & editing, Methodology, Formal analysis. **Chinyere Nkiruka Okafor:** Writing – review & editing, Investigation, Data curation. **Waziri Usman Muhammad:** Writing – review & editing, Supervision, Resources. **Musa Ali-Gombe:** Writing – review & editing, Resources, Methodology, Data curation. **Deloraine Dennis:** Writing – review & editing, Validation, Resources, Formal analysis. **Faith Aihie:** Writing – review & editing, Validation, Methodology, Investigation. **Zainab Muhammad Nasir:** Writing – review & editing, Methodology, Investigation. **Joy Gwong Bwefuk:** Writing – review & editing, Resources, Methodology, Formal analysis. **Aliyu Muhammad:** Writing – original draft, Investigation, Data curation, Conceptualization.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper

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