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Comprehensive Review: Governance of Antimicrobial Resistance in Nigerian Healthcare Settings

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Abstract

The governance of antimicrobial resistance (AMR) in Nigeria represents a critical intersection of public health urgency, systemic challenges, and emerging leadership within global health security. This comprehensive review examines the current state of AMR governance in Nigerian healthcare settings, analyzing the institutional frameworks, policy responses, implementation challenges, and innovative approaches that characterize Nigeria's national response. With a staggering burden of 64,500 direct AMR-attributed deaths in 2021 and associated economic losses including a 7% reduction in GDP and an 11% decline in livestock productivity, Nigeria's governance response has significant implications for both national development and global health security . This review synthesizes evidence from policy documents, institutional reports, and research studies to analyze Nigeria's evolving governance architecture, particularly in light of its upcoming role as host of the 5th Global High-Level Ministerial Conference on AMR in June 2026—the first such meeting on African soil . The analysis reveals a governance landscape marked by progressive policy development but challenged by implementation gaps, fragmented coordination, and financing constraints. Despite these challenges, Nigeria has demonstrated leadership through multisectoral institutional coordination, groundbreaking surveillance initiatives including its first nationally representative AMR survey, and emerging innovations in stewardship and community engagement. This review identifies key priorities for strengthening Nigeria's AMR governance, including sustainable financing mechanisms, integrated One Health implementation, enhanced accountability frameworks, and strategic leveraging of the 2026 conference to advance equitable, evidence-based governance approaches that address the specific challenges of low- and middle-income countries. The findings underscore the urgent need for Nigeria to translate its growing political commitment into concrete, funded actions that can effectively contain the spread of AMR and protect essential medicines for future generations.

Keywords: Antimicrobial Resistance, AMR Governance, Nigeria Healthcare Systems, One Health Approach, National Action Plans

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1. Introduction

Antimicrobial resistance (AMR) has emerged as one of Nigeria's most pressing public health threats, representing what global health experts have termed a "silent pandemic" with profound implications for health security, economic development, and social stability. The burden of AMR in Nigeria is staggering in both human and economic terms: in 2021 alone, 64,500 deaths were directly attributed to drug-resistant infections, with 263,400 associated deaths, making AMR a leading cause of mortality that surpasses many traditional infectious diseases. Beyond its devastating health impacts, AMR imposes severe economic costs, reducing Nigeria's gross domestic product by an estimated 7% and livestock productivity by 11%. This dual burden of health and economic consequences creates a complex governance challenge that intersects with multiple sectors beyond healthcare, including agriculture, environment, trade, and national security. Nigeria's specific context as Africa's most populous nation with a rapidly growing pharmaceutical market, extensive livestock production systems, and significant challenges in water, sanitation, and hygiene infrastructure creates unique vulnerabilities to the emergence and spread of resistant pathogens. These contextual factors are compounded by health system weaknesses, including limited diagnostic capacity, inconsistent regulation of antimicrobial

sales, and fragmented surveillance systems that complicate effective governance responses.

The governance of AMR in Nigerian healthcare settings operates within this challenging context, requiring coordinated action across multiple levels—from national policy formulation to clinical practice in individual healthcare facilities. The significance of effective AMR governance extends beyond Nigeria's borders, given the country's strategic position in West Africa and its role as a major economic and demographic force on the continent. Nigeria's announcement in July 2025 that it will host the 5th Global High-Level Ministerial Conference on AMR in Abuja in June 2026 represents a watershed moment for AMR governance both nationally and globally. As the first such meeting to be held in Africa, this conference positions Nigeria as a leader in shaping global AMR responses and provides an unprecedented platform to advocate for governance approaches that address the specific challenges of low- and middle-income countries . This review examines the current state of AMR governance in Nigeria, analyzing the institutional frameworks, policy instruments, implementation mechanisms, and emerging innovations that define the country's response. By synthesizing evidence from multiple sources, it provides a comprehensive assessment of progress, identifies persistent challenges, and offers recommendations for strengthening Nigeria's governance of this critical threat to public health and sustainable development.

The data reveals the profound and multi-dimensional impact of Antimicrobial Resistance (AMR) in Nigeria. According to the World Health Organization (2025, November 25), AMR was directly responsible for 64,500 deaths in Nigeria in 2021, with an additional 263,400 associated deaths linked to the crisis, representing a leading cause of mortality within the country. The economic consequences are equally severe, with AMR reducing Nigeria's national Gross Domestic Product by an estimated 7% and causing an 11% decline in livestock productivity, undermining both national development and food security (World Health Organization, 2025, November 25). When viewed in a global context, the scale of Nigeria's challenge is part of a worldwide emergency; in 2025, global AMR direct deaths were reported at 1.27 million annually, with associated deaths reaching 5 million each year (World Health Organization, 2025, November 25). These statistics underscore the silent pandemic of AMR as a critical threat to public health and economic stability both within Nigeria and across the globe.

2 Global and Continental Governance Frameworks Influencing Nigeria's Approach

Nigeria's governance of antimicrobial resistance is significantly shaped by global and continental frameworks that establish norms, targets, and accountability mechanisms for national action. At the global level, several key instruments have emerged in recent years that influence Nigeria's governance approach. The Muscat Ministerial Manifesto of 2022 established ambitious targets to reduce antimicrobial use in agrifood systems by 30–50% by 2030, preserve critically important antibiotics for human medicine, and ensure that Access group antibiotics comprise at least 60% of consumption. These targets were further reinforced by the Jeddah Commitments of 2024, which noted that while 178 countries have developed national AMR action plans, only 52% have functional coordinating mechanisms and 68% implement their plans. The Jeddah Commitments also warned of the devastating potential consequences of inaction, projecting that without control, AMR could cause over 39 million deaths between 2025 and 2050, with enormous economic costs including US$412 billion in health expenses and US$1–3.4 trillion in annual GDP losses by 2030. These global commitments create both expectations and pressure for Nigeria to develop robust governance mechanisms that can translate international targets into national action.

At the continental level, the African Union has been developing version 2.0 of its Framework for AMR (2026–2030), which represents a significant evolution from the previous framework by emphasizing implementation and country-level action. During a continental consultation in October 2025, Africa CDC officials noted that while nearly 47 African countries have developed national AMR action plans, "most of the time these are not funded," highlighting the critical gap between policy development and resourced implementation . The new AU Framework 2.0 focuses on five strategic areas: surveillance and laboratory capacity; stewardship and access to countermeasures; infection prevention and control; governance, leadership and financing; and advocacy and behaviour change. This framework is particularly significant for Nigeria as it targets an April 2026 launch, just ahead of the Global Ministerial Meeting on AMR scheduled for June 2026 in Abuja. The alignment of these continental and global governance processes creates a unique opportunity for Nigeria to position itself as a leader in advancing African perspectives on AMR governance, particularly regarding sustainable financing mechanisms, equitable access to new antibiotics and diagnostics, and governance approaches that address the specific challenges of low-resource settings. The continental emphasis on "owning" AMR responses by embedding them within domestic budgets and systems rather than relying on aid cycles aligns with Nigeria's growing emphasis on domestic resource mobilization for health security.

3 National Policy and Institutional Landscape for AMR Governance

Nigeria's national governance architecture for antimicrobial resistance has evolved significantly in recent years, characterized by progressive policy development, institutional strengthening, and increasing political commitment at the highest levels. The cornerstone of Nigeria's formal governance response is the National Action Plan (NAP) on AMR, which is now in its second iteration (NAP 2.0) for 2024-2028. This strategic document provides a comprehensive framework for multisectoral action, aligning with global targets while addressing Nigeria-specific challenges. The NAP 2.0 reflects Nigeria's strengthened commitment to AMR surveillance and governance, as evidenced by its partnership with the World Health Organization (WHO) on a national AMR survey—making Nigeria only the third country globally to undertake such a comprehensive WHO-backed initiative. Institutionally, Nigeria has established a robust governance structure led by

the Nigeria Centre for Disease Control and Prevention (NCDC), which serves as the technical lead agency for AMR surveillance and response coordination. The NCDC works in close collaboration with other key institutions including the Federal Ministry of Health and Social Welfare, Federal Ministry of Environment, and the newly created Federal Ministry of Livestock Development, reflecting the multisectoral "One Health" approach that recognizes the interconnectedness of human, animal, and environmental health.

A significant development in Nigeria's institutional landscape has been the establishment of the Ministerial Advisory Committee for planning the 2026 Global AMR Conference, which brings together high-level representatives from multiple ministries and sectors. This committee, inaugurated in July 2025 by the Coordinating Minister of Health and Social Welfare, Professor Muhammad Ali Pate, represents a "whole-of-government" approach to AMR governance that transcends traditional ministerial silos. The committee's composition includes not only government officials but also respected Nigerian experts in global health, such as former Health Minister Professor Onyebuchi Chukwu (a member of the Global Leaders Group on AMR) and Dr. Ayoade Alakija, who was appointed Nigeria's Ministerial Global Envoy on AMR. This institutional architecture is further strengthened by Nigeria's active participation in continental governance mechanisms through the Africa Centres for Disease Control and Prevention (Africa CDC), which has emphasized the need for country-level ownership and implementation of AMR strategies. However, despite these progressive institutional developments, significant challenges remain in translating policy commitments into effective implementation across Nigeria's complex federal system, with 36 states and a Federal Capital Territory that vary considerably in technical capacity, resource availability, and governance structures. The effectiveness of Nigeria's national AMR governance will ultimately depend on its ability to bridge these implementation gaps and ensure consistent action across all levels of the health system.

Nigeria's multi-faceted governance of antimicrobial resistance (AMR) relies on a complex institutional framework with specialized roles. The Nigeria Centre for Disease Control and Prevention (NCDC) serves as the central technical lead, coordinating AMR surveillance and response, notably through the implementation of a national AMR survey and providing guidance to states (Nigeria Centre for Disease Control and Prevention, 2025; African Leadership Magazine, 2025). The Federal Ministry of Health and Social Welfare provides overarching policy leadership, spearheading the development of the National Action Plan (NAP 2.0) and planning for major international events like the 2026 Global AMR Conference (Federal Ministry of Information and National Orientation, Nigeria, 2025). Specialized sectoral ministries are also critical: the Federal Ministry of Livestock Development governs antimicrobial use in animals and livestock surveillance, while the Federal Ministry of Environment handles the environmental dimension, integrating water, sanitation, and hygiene (WASH) and pollution control into the One Health strategy (Federal Ministry of Information and National Orientation, Nigeria, 2025). To ensure high-level coordination across these diverse sectors, a dedicated Ministerial Advisory Committee has been established, which is tasked with multisectoral advocacy and planning for the pivotal 2026 conference (Federal Ministry of Information and National Orientation, Nigeria, 2025).

4. Implementation Challenges in Translating Policy to Action

Despite progressive policy development and institutional strengthening, Nigeria faces significant challenges in translating AMR governance commitments into effective implementation at all levels of the health system. One of the most persistent implementation gaps is the chronic underfunding of AMR action plans, a challenge that mirrors broader trends across Africa. As noted during the Africa CDC consultation on the AU Framework 2.0, while nearly 47 African countries have developed national AMR action plans, "most of the time these are not funded". This financing gap severely constrains Nigeria's ability to implement critical components of its NAP 2.0, including expanding laboratory capacity, strengthening surveillance systems, implementing antimicrobial stewardship programs in healthcare facilities, and integrating water, sanitation, and hygiene (WASH) interventions as foundational AMR prevention measures. The reliance on external funding sources creates additional vulnerabilities, as demonstrated by the warning from AMREF Health Africa's Director of Programmes, Jackline Kiarie, that "It is crucial that we keep the AMR agenda at the centre, even as external funding declines". This financing challenge is compounded by broader health system weaknesses, including infrastructure gaps, human resource constraints, and fragmented supply chains for essential medicines and diagnostics.

Beyond financing, Nigeria faces significant implementation challenges related to multisectoral coordination and governance fragmentation. While the establishment of the Ministerial Advisory Committee represents progress in high-level coordination, translating this coordination into operational integration across human health, animal health, and environmental sectors remains challenging. The complex federal structure of Nigeria's governance system, with responsibilities divided between federal and state governments, creates additional implementation barriers, particularly in ensuring consistent application of AMR policies across all 36 states. Regulatory enforcement represents another critical implementation challenge, as antibiotic sales remain largely unregulated despite policies requiring prescriptions. This regulatory gap contributes to inappropriate antibiotic use, a key driver of resistance emergence and spread. Surveillance capacity, while improving through initiatives like the national AMR survey, remains limited in scope and geographic coverage, particularly at the subnational level and in community settings. The integration of AMR stewardship into routine healthcare delivery faces barriers related to clinical workflows, prescriber behavior, and competing priorities in overstretched health facilities. These implementation challenges collectively create a significant gap between policy aspirations and on-the-ground impact, highlighting the need for Nigeria to develop more effective implementation strategies that address systemic constraints

while leveraging the upcoming 2026 conference to mobilize resources and strengthen accountability mechanisms.

5. Innovations and Advances in AMR Governance

Despite significant challenges, Nigeria has demonstrated notable innovations and advances in its governance of antimicrobial resistance, particularly in surveillance systems, multisectoral coordination, and capacity building. One of the most significant advances is Nigeria's launch of its first nationally representative AMR survey in December 2025, conducted in partnership with the World Health Organization (WHO) and the Nigeria Centre for Disease Control and Prevention (NCDC). This groundbreaking initiative, which makes Nigeria only the third country globally to undertake such a comprehensive WHO-backed survey, represents a major advancement in evidence-based governance. The survey spans 12 to 15 months and covers 40 to 45 randomly selected health facilities across the country, focusing on patients with suspected bloodstream infections. By establishing a national baseline on AMR prevalence and generating robust data on geographic and demographic distribution of resistance, this survey will provide critical evidence to guide targeted interventions, monitor the impact of the National Action Plan (NAP 2.0), and strengthen Nigeria's contribution to global AMR surveillance. Beyond data collection, the survey represents a strategic investment in health system resilience, enhancing laboratory capacity, strengthening diagnostic and referral systems, and providing a model for integrating scientific evidence into public health decision-making.

Another significant innovation in Nigeria's AMR governance is the successful implementation of targeted research projects that demonstrate how improved diagnostics and stewardship can deliver measurable health impacts. A research project led by the Ineos Oxford Institute for antimicrobial research (IOI), conducted across 12 clinical hospital sites including three in Nigeria, showed that access to blood culture diagnostics enabled earlier identification of bacterial infections and more appropriate antibiotic use . In one Nigerian hospital, this intervention resulted in an almost 50% decline in infant mortality from sepsis, from approximately 33% to 17% over the study period. This project not only delivered life-saving impacts but also built local capacity through laboratory upgrades, hands-on training in molecular microbiology for staff, and community engagement through research assistants recruited locally. While the project highlighted sustainability challenges when external funding ends, it demonstrated the potential impact of governance approaches that combine technical innovation with local capacity building. Nigeria has also advanced its governance through strengthened multisectoral coordination mechanisms, exemplified by the joint ministerial announcement and unified press release signed by the Ministries of Health and Social Welfare, Environment, and Livestock Development—a powerful symbol of Nigeria's commitment to multisectoral leadership and the One Health approach. These governance innovations position Nigeria as an emerging leader in developing context-appropriate approaches to AMR containment that balance technical rigor with implementation feasibility in resource-constrained settings.

6 Strategies for Sustainable Governance and Financing

Developing sustainable governance and financing mechanisms represents one of the most critical challenges and opportunities for Nigeria's long-term containment of antimicrobial resistance. The current reliance on external funding and fragmented financing approaches creates vulnerability and limits the scalability of interventions. To address these challenges, Nigeria needs to implement a comprehensive strategy for sustainable AMR governance and financing that integrates multiple approaches. First, there is an urgent need for domestic resource mobilization through explicit AMR budget lines in national and state fiscal cycles, integrated into Medium-Term Expenditure Frameworks as recommended during the Africa CDC consultation. This domestic financing should be complemented by innovative financing mechanisms such as the proposed African AMR financing facility, which could be co-financed by development banks and matched by domestic resources to underwrite laboratory upgrades, stewardship training, and WASH expansion. The financing strategy should prioritize outcome-based approaches that reward measurable results such as reduced infections, appropriate antimicrobial use, and shorter hospital stays, moving beyond traditional input-based funding. Importantly, Nigeria should avoid launching new, short-term "catalytic funds" that fade with grant cycles, instead focusing on aligning partner investments with nationally owned roadmaps and co-financing joint programmes with outcome-based tranches.

Beyond financing, sustainable governance requires institutionalizing accountability mechanisms that ensure transparency and drive performance improvement. The proposed annual AMR scorecard, with a short list of comparable metrics reported by all countries, represents a promising accountability tool that could be pioneered by Nigeria. This scorecard should include metrics such as the share of Access group antibiotics in human use, overall antibiotic consumption in defined daily doses, prescription-only enforcement in retail sales, veterinary sales of highest-priority critically important antibiotics, and environmental surveillance coverage. Each metric should have specific targets for 2027 and 2030, with independent verification mechanisms to ensure credibility. Sustainable governance also requires mainstreaming AMR stewardship into existing health and agricultural programmes rather than creating parallel systems, as exemplified by the World Health Organization's approach to integrating non-communicable disease and mental-health care with HIV services. For Nigeria, this means integrating AMR stewardship into primary care, maternal and child health programmes, *tuberculosis* control, and agricultural extension services, creating efficiencies and increasing sustainability. Finally, sustainable governance requires investing in interoperable data systems and analytical capacity that can strengthen investment cases for AMR action and enable evidence-based decision-making at all levels of the health system. By implementing these integrated strategies for sustainable governance and financing, Nigeria can build a

resilient AMR containment system that delivers lasting impact beyond the current political and funding cycles.

Conclusion

Nigeria's governance of antimicrobial resistance (AMR) stands at a critical juncture, marked by notable progress but facing persistent challenges. The country has established a robust policy framework with its National Action Plan 2.0, enhanced institutional coordination, launched pioneering surveillance like the national AMR survey, and positioned itself for global leadership as host of the 2026 Global AMR Ministerial Conference (Adepoju et al., 2025; African Leadership Magazine, 2025; Federal Ministry of Information and National Orientation, Nigeria, 2025). However, a significant implementation gap persists, undermined by insufficient financing, weak regulatory enforcement, and limited subnational capacity. The severe human and economic toll of AMR, including 64,500 direct deaths in 2021 and substantial GDP loss, underscores the urgent need for governance that effectively translates political commitments into tangible impact (World Health Organization, 2025, November 25).

Recommendations

To strengthen its AMR governance, Nigeria must act decisively on several fronts. Foremost, it should leverage its hosting of the 2026 Global AMR Conference to champion a measurable "Abuja Outcome Document" and a transparent annual AMR scorecard for accountability (Adepoju et al., 2025). Concurrently, it must develop a sustainable financing strategy that mobilizes domestic resources and explores mechanisms like an African AMR financing facility (Adepoju et al., 2025). Implementation requires integrating stewardship into existing health and agriculture programmes, investing in subnational laboratory and human resource capacity, and institutionalizing One Health coordination beyond high-level committees to operational levels. These actions are essential to transform Nigeria's AMR governance from aspiration into an effective, actionable system.

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