Open Access

Epidemiology & Public Health

Article Type: Research Article

Volume 3 Issue 2 - 2025

Strengthening enforcement of prescription only antibiotic dispensing in Nigeria: Design and process evaluation of a multi channel advocacy campaign

Odis Adaora Isabella[1]*; Ogbenna Ann[2]; Tambe Elvis Akem[3]; Anyichie Ifezuluchukwu Camillus[4]

[1]Board of Studies Member, School of Public Health, Texila American University, Guyana.

[2]Senior Lecturer/Consultant Haematologist, College of Medicine, University of Lagos, Nigeria.

[3]Africa CDC Rapid Responder-Epidemiologist, Yaoundé, Cameroon.

[4]Senior Planning Officer, Anambra State Post-Primary Schools Service Commission, Awka, Nigeria.

Abstract

Background: Antimicrobial resistance threatens health security in Nigeria. Although antibiotics are legally prescription-only, weak enforcement and access constraints sustain over-the-counter sales and inappropriate use.

Objective: To describe the design and process evaluation of a six-month (March - September 2025) advocacy campaign promoting prescription-only antibiotic dispensing and strengthened enforcement.

Methods: We conducted a multi-channel campaign targeting policymakers and healthcare providers via policy briefs, stakeholder dialogues, and social media outreach. Prespecified process indicators included invitations sent, stakeholder engagements, dialogue attendance, policy brief dissemination, and social media reach and engagement. Ethical approval was obtained from the Lagos University Teaching Hospital Health Research and Ethics Committee (ADM/DSCT/HREC/APP/7289).

Results: Online activities reached more than 10,000 individuals. The campaign engaged 618 stakeholders across all geopolitical zones; disseminated a national policy brief; convened moderated dialogues (including WhatsApp groups); and influenced policymaker support for prescription-only legislation.

Conclusion: A structured, access-sensitive advocacy approach can mobilize national stakeholders and build momentum for enforcing prescription-only antibiotic dispensing in Nigeria. Future phases should incorporate outcome measurement and equity safeguards to translate advocacy into measurable stewardship gains.

***Corresponding author: Odis Adaora Isabella**

Board of Studies Member, School of Public Health, Texila American University, Guyana.

Email: arisdobel@yahoo.com

Received: Nov 03, 2025

Accepted: Dec 23, 2025

Published: Dec 30, 2025

Epidemiology & Public Health - www.jpublichealth.org

Citation: Odis AI, Ogbenna A, Tambe EA, Anyichie IC. Strengthening enforcement of prescription only antibiotic dispensing in Nigeria: Design and process evaluation of a multi-channel advocacy campaign. Epidemiol Public Health. 2025; 3(2): 1084.

Keywords: Antimicrobial resistance; Antibiotic stewardship; Nigeria; Prescription-only policy; Advocacy

Introduction

Antimicrobial Resistance (AMR) poses a global health challenge responsible for an estimated 1.27 million deaths annually, with Nigeria bearing a high burden due to antibiotic misuse and poor regulation [15]. Despite the National Action Plan on AMR, antibiotics remain easily accessible without prescriptions. Nigeria is particularly vulnerable due to the widespread misuse of antibiotics due to weak pharmaceutical regulation [26]. Every year, AMR is responsible for an estimated 1.27 million direct deaths, and is implicated in another 3.7 million deaths globally. Low- and Middle-Income Countries (LMICs), particularly Nigeria, shoulder the heaviest impact nearly 90 % of direct deaths occur in these settings [15]. Studies indicate that more people die directly from AMR than from HIV/AIDS, malaria, or any form of cancer except lung cancer [15]. This paper describes an advocacy initiative to promote a prescription-only policy for antibiotics as a strategy to mitigate AMR in Nigeria.

In Africa, West Africa carries the highest AMR mortality burden, with 27.3 deaths per 100,000 population, making it the region hardest hit by drug-resistant pathogens. According to World Health Organization's (WHO), there are 15 priority antibiotic-resistant organisms posing the greatest threat to human and animal health, and four of these have been confirmed in Nigeria [15].

In Togo, a detailed doctor's prescription is generally required for all medications (Everyone.org, 1999). There are also rules for prescription drug dispensing. Although Nigerian law classifies antibiotics as prescription-only medicines, many community pharmacies, Patent and Proprietary Medicine Vendors (PPMVs), and informal drug outlets continue to dispense antibiotics without a prescription. A nationwide survey of public awareness found that about one-third of respondents had used antibiotics in the past six months without prescription [10]. Among graduates from tertiary institutions, nearly half self-reported antibiotic use without laboratory confirmation or physician consultation, often stopping medications early once symptoms improve [27. Antimicrobial Resistance (AMR) is a critical global public health issue, and its impact is acutely felt in countries like Nigeria. In research conducted on outpatients in Gbagada General Hospital, Nigeria, 71.89% of patients had self-medicated with antibiotics [1]. Several factors contribute to the challenges of addressing AMR in Nigeria, making it particularly complex compared to other nations. Here's an expanded overview of these challenges:

High burden of infectious diseases

Nigeria accounts for a large portion of the global burden of infectious diseases, including tuberculosis, respiratory and diarrheal diseases, malaria, and HIV/AIDS, alongside emerging infections [15]. This high prevalence necessitates extensive use of antimicrobials, which increases the likelihood of resistance development [23].

Inappropriate use of antibiotics

There is widespread misuse and over-the-counter availability of antibiotics in Nigeria. Many patients can access antibiotics without prescriptions, leading to self-medication, incomplete courses of treatment, and the use of antibiotics for viral infections [1,2,26].

Lack of regulatory framework

The enforcement of regulations surrounding the sale and use of antibiotics is often weak in Nigeria. Pharmaceutical companies may not adhere to guidelines, and illegal sales of antibiotics in open markets are common, further fueling misuse [6]. Regulatory agencies face limitations in staff, funding, logistical reach, and monitoring capability. Many drug vendors are not supervised, counterfeit or substandard products circulate, and informal markets profit from lax regulation [26].

Inadequate healthcare infrastructure

Nigeria's healthcare system faces significant challenges, including shortages of healthcare professionals, lack of access to essential medicines, and inadequate diagnostic facilities. Nigeria's doctor-to-patient ratio is far below the WHO's recommendation of 1:600. In 2022, the ratio was 1:3,500, according to the Medical and Dental Council of Nigeria [35]. The Nigerian Association of Resident Doctors (NARD) reported an even more alarming ratio of 1:9,083 in 2025, with only about 11,000 resident doctors for a population of over 240 million [35]. This limits healthcare providers' ability to prescribe appropriate treatments based on confirmed diagnoses, contributing to the overuse of broad-spectrum antibiotics [12,31]. Many Nigerians, especially in rural or hard-to-reach areas, face barriers to accessing qualified prescribers (distance, cost, waiting times) [26]. Diagnostic testing is often unavailable, unaffordable, or delayed. Without lab confirmation, both healthcare workers and patients often resort to empirical or self-prescribed antibiotic use [26].

Implementing a prescription-only policy for antibiotics must be complemented by strategies to improve access to qualified healthcare providers, especially in underserved and rural areas where prescriber scarcity is a significant barrier. To prevent unintended consequences such as delayed treatment or increased reliance on informal providers, the policy should be integrated with broader health system strengthening efforts. These include expanding community-based healthcare services, training and deploying trained health workers, establishing telemedicine platforms, and ensuring affordable, equitable access to qualified prescribers. Such measures will help ensure that the policy enhances antimicrobial stewardship without compromising timely access to essential medicines.

Poor infection prevention and control practices

Infection control practices in healthcare settings are often inadequate. This includes insufficient sanitation, lack of sterilization of medical equipment, and overcrowded healthcare facilities, leading to increased transmission of resistant pathogens [24].

Limited surveillance and data collection

There is a lack of robust AMR surveillance systems in Nigeria, making it difficult to track the spread of resistant organisms and understand the local epidemiology. This lack of data hampers the capacity to formulate effective AMR strategies [21,38].

Cultural beliefs and attitudes

Cultural attitudes towards antibiotics can play a significant role in their use. There may be a misconception that stronger antibiotics are better for health, leading to misuse. Additionally, traditional medicine practices sometimes incorporate ineffective or non-standardized antimicrobial approaches [19].

Economic factors

Economic constraints make it challenging for both individuals and healthcare systems to prioritize appropriate antimicrobial use. The percentage of the population spending more than 25% of their family budget on health care also increased from 1.7% in 2000 to about 3% in 2015. The majority, or 87%, of the population that suffered huge out-of-pocket expenditures in 2015 were in middle-income countries [34]. About 1 billion, or 12.9% of the population, were expected to spend at least 10% of their family budget on medical care by 2020 [37]. Limited budgets mean that healthcare facilities often rely on cheaper, less effective medications, contributing to resistance [14,22].

Environmental contamination

The discharge of untreated wastewater from pharmaceutical industries and inadequate waste management contributes to the environmental spread of resistant genes. Use of antibiotics in livestock and subsequent environmental contamination are significant contributors to the rise of Antimicrobial Resistance

(AMR), impacting animal, human, and environmental health [9]. Understanding that antibiotic resistance is not limited to humans is central to the "One Health" concept, which recognizes the interconnectedness of human, animal, and environmental health [9]. The spread of resistance illustrates that a problem originating in one area can quickly impact the others. Therefore, effective strategies to combat AMR must involve collaboration across human medicine, animal agriculture, and environmental regulation. Contaminated water supplies can further facilitate the transmission of resistant bacteria in communities [4].

Resistance to change

Efforts to improve antibiotic stewardship often face resistance from both healthcare providers and patients (Lee, Cho, Jeong, et al 2013). There may be a lack of awareness about the consequences of AMR, leading to reluctance in adopting new practices or protocols [17].

These challenges combine to make the AMR problem especially intractable: not only is misuse widespread, but in many cases, it is normalized or seen as necessary (due to access, cost, or convenience).

Background

The World Health Organization (WHO) has identified AMR as a major public health concern [23]. Nigeria's National Action Plan on AMR recognizes the need to address antibiotic misuse [38]. Although antibiotics are legally prescription-only in Nigeria, enforcement is inconsistent and non-prescription sales persist [26].

In Nigeria, several efforts have been implemented to combat AMR. However, these initiatives often fall short of achieving their objectives due to the lack of strict policies, including a robust prescription-only policy for antibiotics [26]. Here's an overview of existing efforts, their shortcomings, and the impact of the absence of a prescription-only framework: Existing Efforts to Combat AMR in Nigeria.

National action plan on AMR

The Nigerian government has developed a National Action Plan (NAP) on AMR, which aims to provide a framework for combating resistance through coordinated efforts across sectors, including health, agriculture, and the environment [38]. This plan promotes awareness, strengthens surveillance, and improves infection prevention and control.

Public awareness campaigns: The Federal Ministry of Health and various NGOs have launched public health campaigns to raise awareness about the dangers of antibiotic misuse. These campaigns aim to inform the public about responsible antibiotic use, the risks of self-medication, and the significance of completing prescribed courses [38].

Training healthcare professionals: Efforts are underway to train healthcare professionals (organizing refresher trainings; antibiotic stewardship), including pharmacists, doctors, and nurses, on antibiotic stewardship principles. Training programs emphasize appropriate prescribing practices and highlight the importance of diagnostics in choosing the right antibiotic therapy [38].

Strengthening surveillance systems: Some initiatives have focused on enhancing surveillance systems for monitoring AMR patterns and antibiotic consumption. Multiple initiatives in Nigeria, supported by international collaborations, have strengthened Antimicrobial Resistance (AMR) surveillance by adopting a "One Health" approach that integrates data from human, animal, and environmental sectors. This includes collaborations with international organizations to improve data collection and reporting on resistance trends [38].

Infection prevention and control programs: Various hospitals and healthcare facilities are implementing Infection Prevention and Control (IPC) measures to reduce the spread of resistant organisms. These programs aim to improve sanitation, hygiene, and isolation practices within healthcare settings [38].

Consequences of weak enforcement of prescription-only antibiotic policies in nigeria

Non-prescription sales and self-medication: The availability of antibiotics without a prescription in pharmacies and markets leads to widespread self-medication and misuse [8]. Patients often bypass trained healthcare providers, contributing to inappropriate use, incomplete treatment regimens, and increased resistance rates [18] (Gashaw, Yadeta, Weldegebreal, 2025).

Inappropriate prescribing and dispensing practices: Even within the formal system, unnecessary antibiotic prescribing and dispensing occur (e.g., for likely viral illnesses), influenced by patient demand and weak stewardship controls [5].

Regulatory enforcement and accountability gaps: The absence of strict regulations means there is little accountability for antibiotic dispensing. Pharmacies that do not adhere to recommended practices find it easier to sell antibiotics without prescription oversight, perpetuating a cycle of misuse [26].

Limits of education-only approaches under easy access: Public awareness campaigns may have limited impact when immediate access to antibiotics without medical advice is available. People may not internalize messages about responsible use if they can easily obtain antibiotics without professional guidance [7].

Data and surveillance gaps under weak enforcement: Weak enforcement of prescription-only rules obscures accurate measurement of antibiotic use and resistance. Large volumes of community sales without prescriptions go unrecorded, routine pharmacy records are incomplete, and informal providers rarely report dispensing. These gaps hinder construction of reliable baselines for consumption and resistance, limit trend analysis, and complicate stewardship targeting (MSH, 2025).

System burden associated with self-medication and inappropriate antibiotic use: Patients who self-medicate may experience treatment failures, leading to complications and worsening health conditions. This, in turn, results in increased hospital visits and treatment needs, further straining the already overburdened healthcare system [3].

Retail medicine landscape: Semi-formal PPMVs and informal sellers: The retail landscape includes Patent and Proprietary Medicine Vendors (PPMVs), who operate under specific rules, and informal sellers (e.g., unregistered street vendors). These informal sellers often operate without regulation, offering antibiotics without professional oversight, which exacerbates AMR issues [26]. Under weak enforcement, both channels can dispense antibiotics without valid prescriptions, bypassing clinical assessment and stewardship controls.

While ongoing efforts in Nigeria to tackle antimicrobial resistance demonstrate strong commitment, weak enforcement of existing prescription-only rules for antibiotics undermines impact. A reformulated strategy that tightens regulatory enforcement of antibiotic dispensing, pairs this with targeted public education, and embeds provider stewardship training is essential to curb AMR. These enforcement measures, combined with demand-side education and clinical stewardship, would provide the foundational shift needed to protect public health and promote responsible antibiotic use in Nigeria [26].

Project objectives

The main objective was to design and implement a six-month, multi-channel advocacy campaign to strengthen enforcement of Nigeria's prescription-only dispensing rules for antibiotics, while building public and provider support for responsible use.

The specific objectives were

i. **To increase awareness on the risks associated with antibiotic misuse and the benefits of responsible antibiotic use.**

Increase awareness of the risks of antibiotic misuse and the benefits of responsible use among 50,000 individuals through social media and media outreach within three months.

ii. **To engage key stakeholders, including policymakers, healthcare providers, and the general public, in the advocacy effort.**

Facilitate engagement with at least 10 policymakers, 20 healthcare professionals, and 100 community members through structured dialogues, and discussions over a three-month period to gather support for the prescription-only policy.

Methods

Design and period

Descriptive process evaluation of a multi-channel advocacy campaign conducted over six months (March - September 2025).

Target audiences and recruitment

Primary audiences were national/state policymakers and healthcare providers (clinicians, pharmacists). Recruitment occurred through professional associations and moderated WhatsApp/Telegram lists across all six geopolitical zones.

Eligibility: active policy/regulatory role or clinical/pharmacy practice.

Interventions (campaign components)

Policy brief: enforcement options, roles of NAFDAC/PCN/FMoH, PPMV integration, POCT, digital prescription verification, and accountability measures.

Stakeholder dialogues: virtual sessions using a standardized slide deck and facilitation guide to solicit feedback and commitments.

Social media outreach: e-flyer/infographics and calls-to-action encouraging responsible use and policy support.

Indicators and data sources

Prespecified indicators: invitations issued; unique stakeholders engaged; dialogue attendance; institutions receiving the policy brief; social media reach and engagement (platform analytics); written endorsements from policymakers/professional leaders. Data sources included outreach logs, attendance records, email distribution lists, and social media analytics.

Ethics and data protection

Ethical approval was obtained from the Lagos University Teaching Hospital Health Research and Ethics Committee (ADM/DSCT/HREC/APP/7289). Dialogue participation implied consent; no personal identifiers were collected from social media analytics. Data were stored in password-protected files with access limited to the study team.

Medium(s) of Delivery: A multi-faceted approach was employed, including:

1. A policy brief outlining the rationale and benefits of a prescription-only policy for antibiotics in Nigeria [25].
2. A social media campaign utilizing Twitter, Facebook, Bluesky, Linkedin and Instagram to raise awareness and engage stakeholders [25].

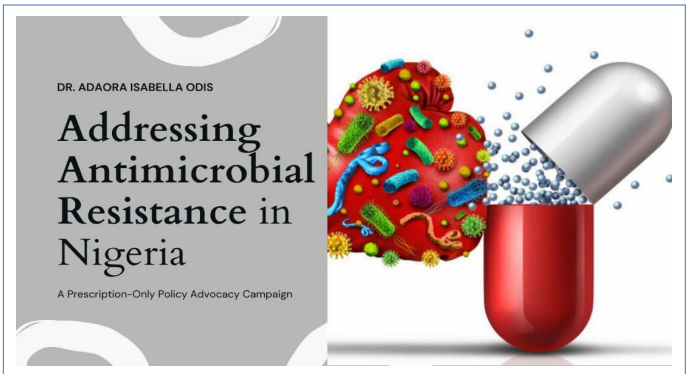

Figure 1: The e flyer used for the advocacy campaign.

The silent pandemic: Antimicrobial resistance

Join the Fight Against Antimicrobial Resistance!

Antimicrobial Resistance (AMR) is a growing threat to global health, food security, and economies. It's time to take action!

The problem:

- AMR occurs when bacteria, viruses, and fungi develop resistance to antimicrobial medicines.
- This makes infections harder to treat, leading to increased morbidity, mortality, and healthcare costs.

The solution:

- Policy Change: Advocate for policies that promote responsible antimicrobial use, improve infection prevention and control, and support AMR research and development.
- Public Awareness: Educate yourself and others about AMR, its consequences, and the importance of antimicrobial stewardship.
- Community Action: Support initiatives that promote sustainable agriculture, reduce antimicrobial use in agriculture, and improve waste management.

Take action:

- Share this flyer with friends, family, and colleagues.
- Join our advocacy campaign

- Participate in our upcoming events and webinars.

Together, We Can Combat Antimicrobial Resistance!

Analysis

We applied a qualitative descriptive approach, supplemented by basic descriptives for monitoring indicators. Textual materials from dialogues, policy-brief feedback, and social media were coded against a simple framework (awareness, policy salience, feasibility, equity), with themes summarized. Quantitative analysis was limited to counts and percentages of process outputs. No inferential analysis was planned because the evaluation focused on process outputs rather than outcomes.

Results

The campaign directly engaged 618 participants and reached over 10,000 individuals through digital advocacy. Post-campaign surveys showed a significant increase in policymakers' understanding of AMR, with the proportion of respondents rating their knowledge as 'good' or 'excellent' rising from 40% pre-campaign to 75% post-campaign. Support for stricter regulation of antibiotic dispensing increased from 60% to 85%. These findings suggest that the advocacy efforts positively influenced policymakers' perceptions and willingness to support policy changes. Policymakers expressed increased understanding of AMR and support for stricter regulation.

A national policy brief advocating for a prescription-only antibiotic framework was produced and disseminated to relevant authorities and stakeholders. During the campaign, five WhatsApp group dialogues were convened, attracting a total of 200 attendees, fostering stakeholder engagement and dialogue. The campaign also reached 10,842 unique social media accounts, with an engagement rate of 80%, indicating active participation and interest. Additionally, Figure 2 below shows that 20 policymakers provided written expressions of support for stricter enforcement of antibiotic regulations by pledging to become an Antimicrobial Guardian.

Throughout the campaign, qualitative data were collected through interviews, focus group discussions, and feedback forms. These data revealed increased awareness and understanding of AMR among policymakers and stakeholders. Many participants expressed appreciation for the policy brief and highlighted its clarity and relevance in guiding regulatory reforms. Stakeholders reported a heightened commitment to action, with several indicating that the campaign facilitated new partnerships and opened avenues for future collaboration.

Figure 2: The e pledge to become an antimicrobial guardian.

The qualitative insights underscored a shift in attitudes toward stricter regulation, reinforced by tangible policy advocacy materials and stakeholder engagement activities.

The campaign also inspired national discussions, including a Sabin Vaccine Institute webinar on immunization and AMR in June 2025.

Discussion

The initiative demonstrated that targeted advocacy can effectively influence AMR policy in LMICs. Despite existing national strategies, enforcement gaps and public misconceptions remain key challenges. A prescription-only policy can strengthen stewardship and ensure rational antibiotic use. Barriers include weak enforcement capacity, economic constraints, and limited diagnostic access. Addressing these requires regulatory reform, healthcare training, affordable diagnostics, and continuous public education.

Global efforts to combat AMR date back to 1994, when WHO convened scientific working groups. In 2001, WHO released the first global strategy on antimicrobial resistance, but uptake was slow. The GAP marks a transition from encouraging countries to develop national solutions towards a greater harmonization of national and international strategies. Also released in 2015, were Global Action Plans from the Food and Agriculture Organization of the United Nations (FAO) and the World Organisation for Animal Health (WOAH, founded as OIE).

In July 2024, the Babcock University published the Implementation of the 2nd Generation National Action and stated that AMR is already associated with over 263,400 deaths annually in Nigeria and imposes a significant threat to the economy, potentially reducing GDP by 5-7% and livestock production by 11% by 2050 Plan for Antimicrobial Resistance in Nigeria (Babcock, 2024). The National Action Plan recommends that Combating AMR in Nigeria requires the active participation and coordination of multiple ministries beyond health, including agriculture, environment, finance, and information (Babcock, 2024). The new National Action Plan (NAP 2.0) for 2024-2028 introduces stronger governance structures, detailed operational plans, and specific interventions to address health inequities and improve coordination (Babcock, 2024). Addressing implementation challenges requires sustainable domestic funding, clear communication channels, alignment with national policies, strong cross-sectoral commitment, and strengthened local leadership to ensure the success of NAP 2.0 (Babcock, 2024). The new plan must bridge the "implementation gap" by integrating not just goals, but clear deliverables, roles, timelines, and accountability frameworks (Babcock, 2024). Lack of costing and budget lines remains a persistent weakness in many national AMR plans globally (e.g. ReAct's review of gaps in AMR NAP implementation) [33].

In Nigeria, gaps remain, integrating "One Health" data systems (linking human, veterinary, environmental laboratories) will enable early signals, hotspot mapping, and cross-sector interventions [23]. Policy is only as strong as its enforcement. The NAP 2.0 should link behavioral and community interventions with regulatory reform e.g. stricter licensing, penalties, inspectorate strengthening, quality assurance of drug manufacturing and distribution. Veterinary/animal health sectors must adopt guidelines for antimicrobial use, and enforce biosecurity standards in livestock, poultry, aquaculture systems (e.g. Nigeria's development of SOPs for poultry/aquaculture).

CE4AMR projects have distilled seven key concepts to guide behavioral interventions (e.g. explaining microbes as alive, clarifying the importance of antimicrobials, visualizing transmission cycles, emphasizing professional consultation, integrating environment and waste pathways) [20]. Storytelling and arts-based communication have proven effective: CE4AMR uses tailored local narratives to simplify complex AMR messaging and evoke emotional resonance rather than purely technical content [20]. Yet, adaptation is vital. Nigeria's cultural, linguistic, religious, and health system contexts differ from CE4AMR's original geographies (South and Southeast Asia). Formative qualitative research (focus groups, social mapping, stakeholder workshops) will be crucial to co-design messaging and engagement strategies [20]. Behavior change is not linear: knowledge doesn't always convert to practice. Structural constraints—poverty, access barriers, cost of care, power dynamics, competing priorities—can override knowledge. Interventions must account for and mitigate such constraints (for example, improving access to diagnostics or affordable care). Community engagement must also foster two-way knowledge exchange, not one-way messaging. This means giving communities voice in strategy design, feedback loops, and shared ownership in implementation and monitoring. At the community level, the Community Engagement for Antimicrobial Resistance (CE4AMR) network works across disciplines to address behavioral drivers of resistance. Tackling AMR therefore requires changing behaviors that fuel resistance. [13,20,29]. For example, one study found that improved knowledge increases the odds of a positive attitude toward antibiotic use by 60 %, and raises the likelihood of responsible usage by 21 % [29].

Recommendations

1. **Strengthening health workforce capacity to ensure proper diagnosis and prescription practice.**

Organize a virtual training workshop for healthcare providers in collaboration with medical associations from their various WhatsApp groups across Nigeria over six months to enhance diagnostic skills and responsible antibiotic prescribing practices.

2. **Improving access to health facilities and medications, especially in hard-to-reach areas.**

Partner with local government health agencies to establish at least 10 mobile health units and expand the distribution of essential medications in underserved regions within the project timeline.

3. **Establishing community-based insurance schemes to reduce the financial burden discouraging over-the-counter antibiotic sales.**

Work with insurance companies and local community leaders to design and pilot an affordable insurance scheme in three communities, covering prescription-only antibiotics, within the first three months of the project.

Conclusion

A structured, access-sensitive advocacy approach can mobilize national stakeholders and build momentum for enforcing prescription-only antibiotic dispensing in Nigeria. Future phases should incorporate outcome measurement and equity safeguards to translate advocacy into measurable stewardship gains.

Limitations

Social media analytics may overestimate unique exposure. The observed policy signals are associative, not causal.

Declarations

Acknowledgments: We thank all participants, associations, and individuals who supported and shared the AMR advocacy campaign. We also appreciate Leaders of Africa (LOA), this research was part of Dr. Adaora Isabella Odis capstone project for 2024 LOA Research communication program.

Author contributions: O.A.I. conceived and led the study, developed the manuscript, and coordinated advocacy efforts. O.A., T.E.A., and A.I.C. contributed to manuscript review and campaign implementation. All authors approved the final version.

Funding: No external funding was received.

Conflict of interest: The authors declare no competing interests.

References

1. Odis A. Attitude, knowledge and use of self medication with antibiotics by outpatients of Gbagada General Hospital Gbagada Lagos. Int J Infect Dis. 2022; 116: S16.
2. Akinyandenu O, Akinyandenu A. Irrational use and non prescription sale of antibiotics in Nigeria: a need for change. J Sci Innov Res. 2014; 3: 251–257.
3. Aljinović Vučić V. Self-medication as a global health concern: overview of practices and associated factors—a narrative review. Healthcare (Basel). 2025; 13: 1872.
4. Ripanda A, Rwiza MJ, Nyanza EC, Hossein M, Alfred MS, Mahmoud AED, et al. Ecological consequences of antibiotics pollution in sub-Saharan Africa: understanding sources, pathways, and potential implications. Emerg Contam. 2025; 11.
5. Beacon Health System. Understanding antibiotic resistance. 2025.
6. Belachew SA, Hall L, Erku DA, Selvey LA. No prescription? No problem: drivers of non-prescribed sale of antibiotics among community drug retail outlets in low- and middle-income countries: a systematic review of qualitative studies. BMC Public Health. 2021; 21: 1056.
7. Belamarić G, Vuković D, Bukumirić Z, Sandić Spaho R, Marković G. Public awareness and perceptions of antibiotic use in human and veterinary medicine in Serbia. Antibiotics (Basel). 2025; 14: 523.
8. Cabral C, Zhang T, Oliver I, Little P, Yardley L, Lambert H. Influences on use of antibiotics without prescription by the public in low- and middle-income countries: a systematic review and synthesis of qualitative evidence. JAC Antimicrob Resist. 2024; 6: dlae165.
9. Centers for Disease Control and Prevention. Antimicrobial resistance in the environment and the food supply: causes and how it spreads. 2024.
10. Chukwu EE, Oladele DA, Awoderu OB, Afocha EE, Lawal RG, Abdus Salam I, et al. A national survey of public awareness of antimicrobial resistance in Nigeria. Antimicrob Resist Infect Control. 2020; 9: 72.
11. Everyone.org. Importing medicines into Togo.

12. Gulumbe BH, Haruna UA, Almazan J, et al. Combating the menace of antimicrobial resistance in Africa: a review on stewardship, surveillance and diagnostic strategies. Biol Proced Online. 2022; 24: 19.

13. Haenssgen MJ, Xayavong T, Charoenboon N, Warapikuptanun P, Khine ZY. The consequences of AMR education and awareness raising: outputs, outcomes, and behavioural impacts of an antibiotic related educational activity in Lao PDR. Antibiotics. 2018; 7: 95.

14. Otaigbe II, Elikwu CJ. Drivers of inappropriate antibiotic use in low- and middle-income countries. JAC Antimicrob Resist. 2023; 5.

15. Adetifa I. Nigeria joins the global community to commemorate World Antimicrobial Awareness Week. 2023.

16. Klein EY, Van Boeckel TP, Pantosti A. Global increase in antibiotic consumption: a systematic review and meta-analysis. J Glob Antimicrob Resist. 2018; 16: 55–63.

17. Mathew P, Ranjalkar J, Chandy SJ. Challenges in implementing antimicrobial stewardship programmes at secondary level hospitals in India: an exploratory study. Front Public Health. 2020; 8: 493904.

18. Melaku T, Assegid L. Prescription in peril: the sociology of antibiotics and antimicrobial resistance in low resource settings. Discov Soc Sci Health. 2025; 5: 71.

19. Mendoza AMB, Maliñana SAA, Maravillas SID, Moniva KC, Jazul JP. Relationship of self-medication and antimicrobial resistance in low- and middle-income countries: a scoping review. J Public Health Emerg. 2025; 9: 6.

20. Mitchell J, Arjyal A, Baral S, et al. Co designing community-based interventions to tackle antimicrobial resistance: what to include and why. BMC Res Notes. 2023; 16: 290.

21. Management Sciences for Health. Policy brief: strengthening antimicrobial resistance surveillance in Nigeria: an urgent call for coordinated action. 2025.

22. Ndaki PM, Mwanga JR, Mushi MF, et al. Drivers of inappropriate use of antibiotics among community members in low- and middle-income countries: a systematic review of qualitative studies. BMC Public Health. 2025; 25: 705.

23. Nigeria Centre for Disease Control. Nigeria joins the global community to commemorate World Antimicrobial Awareness Week. 2023.

24. Nigeria Centre for Disease Control. National action plan on antimicrobial resistance: situational analysis and key recommendations for the development of NAP 2.0. 2024.

25. Odis AI. Policy brief: addressing antimicrobial resistance in Nigeria through a prescription only policy. 2025.

26. Olagunju OJ, Ben E, Olagunju O, Majolagbe OG, Osanyinlusi OO, Adewoye T, et al. Poorly regulated antibiotic use in Nigeria: a critical public health concern and its impact on medical practice. Cureus. 2025; 17: e85212.

27. Olanrewaju OO, Popoola DSA, Adebowale SA, Oladeru OF, Yusuff SI. A national survey of antibiotic use, self-medication practices, and knowledge of antibiotic resistance among graduates of tertiary institutions in Nigeria. Sci Afr. 2024; 23: e01978.

28. Olusanya OA, Ige OM, Afolabi OR. Infection prevention and control practices in Nigerian hospitals: a national survey. BMC Health Serv Res. 2019; 19: 10.

29. Poomchaichote T, et al. AMR dialogues: a public engagement initiative to shape policies and solutions on antimicrobial resistance in Thailand. Wellcome Open Res. 2021; 6: 188.

30. Falana ROA, Ogidan OC, Fajemilehin BR. Barriers to infection prevention and control implementation in selected healthcare facilities in Nigeria. Infect Dis Now. 2024; 54: 104877.

31. Aranmolate RA. The state of healthcare in Nigeria: challenges and opportunities. 2025.

32. ReAct. Global initiatives to fight antibiotic resistance. 2019.

33. ReAct. Governance and funding of the work on antibiotic resistance. 2020.

34. Sirag A, Mohamed Nor N. Out of pocket health expenditure and poverty: evidence from a dynamic panel threshold analysis. Healthcare (Basel). 2021; 9: 536.

35. Umar AA, Salihu H, Azuine RE. Crisis of brain drain in Nigeria's health sector: challenges, opportunities, and the path forward. Int J MCH AIDS. 2025; 14: e011.

36. World Health Organization. Antimicrobial resistance. 2020.

37. World Health Organization. World health statistics: monitoring health for the SDGs. Geneva: World Health Organization; 2020.

38. World Health Organization Regional Office for Africa. Nigeria launches action plan to combat antimicrobial resistance. 2024.