



# **ADVANCING ANTIMICROBIAL STEWARDSHIP: A CALL TO ADOPT ANTIMICROBIAL SUSCEPTIBILITY TESTING (AST) IN NIGERIA'S NATIONAL HEALTH INSURANCE SCHEME (NHIS)**

Formative Evidence Brief for Policy from the RADAAR (IVI)–EVIPNet (WHO) Initiative

## Formative Evidence Brief for Policy

# Advancing Antimicrobial Stewardship: A Call to Adopt Antimicrobial Susceptibility Testing (AST) in Nigeria's National Health Insurance Scheme

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## **ACRONYMS AND ABBREVIATIONS**

|         |   |
|---------|---|
| AMR     | Antimicrobial Resistance  |
| AST     | Antimicrobial Susceptibility Testing  |
| BHCPF   | Basic Health Care Provision Fund  |
| CRF     | Consolidated Revenue Fund   |
| EVIPNet | (WHO) Evidence-informed Policy Network  |
| GRAM    | Global Research on Antimicrobial Resistance Project                               |
| HCPAN   | Healthcare Providers Association of Nigeria                                       |
| HMOs    | Health Maintenance Organizations  |
| LMICs   | Low- and middle-income countries  |
| MDAs    | Ministries, Departments, and Agencies   |
| NAP     | National Action Plan  |
| NCDC    | Nigeria Center for Disease Control and Prevention                                 |
| NHIA    | National Health Insurance Authority   |
| NHIF    | National Health Insurance Fund  |
| NHIS    | National Health Insurance Scheme  |
| NPHCDA  | National Primary Healthcare Development Agency                                    |
| RADAAR  | Regional Antimicrobial resistance Data Analysis for Advocacy, Response and policy |
| SHIF    | Social Health Insurance Act   |
| UHC     | Universal Health Coverage   |

## **KEY MESSAGES**

Nigeria must urgently integrate Antimicrobial Susceptibility Testing (AST) into the National Health Insurance Scheme (NHIS) and ensure sustainable funding for diagnostic services across all accredited health facilities and institutions. This is essential to reduce and control irrational use of antibiotics, and can be achieved by strengthening antimicrobial stewardship (AMS) and surveillance, which help curb the rising burden of antimicrobial resistance (AMR) and protect Nigerian citizens from avoidable health and economic losses.

## **EXECUTIVE SUMMARY**

Antimicrobial resistance (AMR) is a rapidly escalating public health emergency in Nigeria, responsible for an estimated 64,000 deaths attributable to AMR and over 263,000 associated deaths in 2019. The country's low insurance coverage, financial barriers to testing, and the widespread pattern of empirical antibiotic treatment have collectively fueled misuse, overuse, and the spread of resistant pathogens.

Despite the critical value of Antimicrobial Susceptibility Testing (AST) in guiding proper treatment, it remains underutilized due to high out-of-pocket costs, inadequate laboratory infrastructure, and its absence from Nigeria's National Health Insurance Scheme (NHIS). Currently, NHIS covers less than 5% of Nigeria's population and provides no structured financing and policy direction for AMR diagnostics, forcing most patients to resort to out of pocket payments for tests. This creates a harmful cycle of self-medication, and delayed diagnosis for patients, which in turn worsens the patients health condition, prolongs illness, and increases healthcare expenditure.

Countries such as Ghana and Kenya have expanded health insurance financing structures to include broader diagnostic coverage, demonstrating that strong government commitment and diversified financing mechanisms can significantly increase health service uptake and improve population health outcomes.

In Nigeria, weak political prioritization, low budgetary allocation to health, workforce shortages, poor accountability mechanisms, and unreliable supply chains further compound the AMR challenge. Without action, the consequences will include higher disease burden, rising treatment costs, longer hospital stays, increased mortality, and substantial economic losses.

To address these gaps, this brief recommends the full inclusion and funding of AST within NHIS as a central policy action. Complementary measures include effective implementation of the National Action Plan on AMR (NAP 2.0), enforcement of mandatory health insurance under the National Health Insurance Authority Act (2022), and strengthening of oversight, accountability, and workforce capacity.

By integrating AST into NHIS and ensuring its nationwide availability, Nigeria can reduce out-of-pocket payments, improve appropriate antibiotic use, strengthen surveillance, and significantly reduce the burden and cost of AMR, transforming health outcomes and advancing the country toward Universal Health Coverage.

## **RECOMMENDATIONS**

To achieve the adoption of the Antimicrobial Susceptibility Testing (AST) in Nigeria's National Health Insurance Scheme, the following critical steps and actions are hereby recommended;

- Integrate Antimicrobial Susceptibility Testing (AST) into the NHIS as a fully covered diagnostic service.
- Establish a dedicated and sustainable funding to support AST availability across all accredited health institutions and facilities.
- Implement clear NHIA policy directives ensuring AST reimbursement and inclusion in diagnostic benefit packages.
- Strengthen procurement and supply-chain systems to ensure continuous availability of AST reagents, consumables, and quality-assured laboratory materials.
- Full implementation of the National Action Plan on AMR (NAP 2.0) to strengthen and improve stewardship, surveillance, and responsible antibiotic use.
- Increase workforce capacity through training, continuous professional development, and recruitment of qualified laboratory personnel.
- Enhance oversight and accountability mechanisms to monitor provider compliance, improve service quality, and prevent misuse of funds.

# 1. PROBLEM

## 1.1 Problem statement

Antimicrobial resistance (AMR) is a silent pandemic, an emerging plague which poses a critical threat to global public health. According to the Global Research on Antimicrobial Resistance Project (GRAM) report 2019, an estimated 4.95 million deaths were associated from various forms of drug resistance - associated bacterial infections, with 1.27 million of those deaths directly attributable to bacterial AMR. Low- and middle-income countries (LMICs) like Nigeria particularly, face disproportionate and heightened threats from the AMR pandemic, given the nature of their diagnostic infrastructures which remain largely underdeveloped (Murray et al., 2022; Rolfe et al., 2021).

Nigeria recorded 64,000 deaths attributable to AMR and 263,400 deaths associated with AMR in 2019. A study cited by Nigeria's Centre for Disease Control revealed that AMR contributes to over 250,000 excess hospital days each year in Nigeria, leading to billions of Naira in additional healthcare expenditures<sup>1</sup>. Treating infections caused by resistant pathogens was further found to be up to ten times more expensive than treating non-resistant infections. Cumulatively, Nigeria has the 185<sup>th</sup> overall highest age-standardized mortality rate per 100,000 population associated with AMR across a 204 country survey.

In LMICs and particularly Nigeria, AMR is fueled largely by financial constraints arising from weak economic capacity as patients are often made to pay out of pocket for diagnostics and ASTs that the majority of the population cannot easily afford.

Despite its vital role in guiding diagnosis and effective antibiotic use, AST still remains underutilized in Nigeria due to its high costs, inadequate funding mechanisms, poor laboratory infrastructure, as well as limited awareness among healthcare providers (Adekanye et al., 2020; Huang & Eze, 2023). Importantly, this challenge is further exacerbated by the poor coverage of AST diagnostics under Nigeria's National Health Insurance Scheme (NHIS), which currently covers mainly beneficiaries in the formal sector, (accounting for less than 10% of the population), leaving a large proportion of the population as out-of-pocket patients.

Specifically, the National Health Insurance Program in Nigeria currently *does not provide consistent financial coverage or structured policy guidance for AST services, creating a significant barrier to scaling up antimicrobial stewardship interventions* (Egwuenu et al., 2022; NCDC, 2017). This funding and policy gap undermines efforts to curb the irrational use of antibiotics, encourages self-medication, and accelerates the spread of resistant

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<sup>1</sup> <https://sciencenigeria.com/experts-highlight-economic-burden-of-amr-on-nigerias-healthcare-system>

pathogens, thereby exacerbating morbidity, mortality, and economic losses across the health system (O'Neill, 2016; WHO, 2020).

This policy brief examines this national problem, its scope and underlying factors, analyses the socio-economic as well as health implications of the trend on the country and its population, and provides evidence-informed options for addressing the same.

## **1.2 Nigeria and it's National Health Insurance (NHIS)**

Nigeria's National Health Insurance Scheme (NHIS) was established by an Act of Parliament – the National Health Act of 2014 – which created the Basic Health Care Provision Fund (BHCPF) from which the NHIS draws the bulk of its funding. The Fund, designed to guarantee fair and equal access to a fundamental set of healthcare services for vulnerable populations, represents a critical step toward advancing the country's progress in achieving Universal Health Coverage (UHC). Additionally, under its core charter, it is mandated to establish fully operational primary healthcare facilities in every political ward, and functional secondary healthcare facilities in each state in the country. It also aims to strengthen emergency medical response services, reduce the financial burden of out-of-pocket healthcare expenses, and ultimately improve health outcomes for the country's citizens.

The NHIS's BHCPF is funded through three main sources: an annual grant from the Federal Government of Nigeria, equivalent at present to at least 1% of the Consolidated Revenue Fund (CRF); contributions from international donor partners; and funds from various other sources, including the private sector. There have, however, been calls to increase the allocation to at least 2% of the CRF. Specifically, key organizations such as the World Health Organization (WHO), have called on Nigeria to increase its public health spending to at least 20% of total health expenditure, pointing out that sustainable healthcare financing remained the backbone of resilient health systems. The WHO has stressed that increased investment would reduce out-of-pocket payments, protect households, and strengthen pooling and prepayment mechanisms<sup>2</sup>.

Although the revised National Health Insurance Authority Act of 2022 makes health insurance mandatory for all Nigerians, uptake remains low, with only about 16.8 million people enrolled in the NHIS as of 2023, with a marginal increase to 20 million enrollees in 2025. While this may seem like incremental progress, it however still falls well below Universal Health Coverage Goals<sup>1</sup>, as it represents only about 5% of Nigeria's population, consistent with long-standing low uptake estimates (below 5%)<sup>2</sup>.

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<sup>1</sup> <https://sciencenigeria.com/experts-highlight-economic-burden-of-amr-on-nigerias-healthcare-system>

<sup>2</sup> [WHO Urges Nigeria: Allocate 20% Budget to Public Health](#)

Low awareness about the program, especially within the informal sector, accounts largely for the low uptake. In 2021, the informal sector constituted over 65% of Nigeria's total employment, presenting a significant potential funding source, if effectively harnessed.

In September 2025, Nigeria's president directed the compulsory implementation of health insurance across all Ministries, Departments, and Agencies, in line with the National Health Insurance Authority Act, 2022. The President's directive requires all MDAs to enroll their employees in the NHIA plan, mandates the use of valid NHIA-issued Health Insurance Certificates for procurement and licensing processes, and compels the development of verification systems to ensure accountability. The president's directive emphasized that its intent is the expansion of health coverage in the country, safeguarding of workers, reduction of out-of-pocket expenditure, and promotion of accountability in both public and private sector engagements. While this again still largely targets the formal sector, the expansion of the directive to include entities that do business with government, marks a significant policy shift that could see positive demographic movement in health insurance coverage in Nigeria.

### **1.3 Health insurance and financing approaches in two other African countries**

In Ghana, the primary sources of financing for the NHIS comprise a National Health Insurance Levy on selected goods and services, a 2.5% contribution from the National Social Security Scheme, individual premiums (mainly from informal sector workers), and miscellaneous funds from investment returns, grants, donations and gifts from international donor partners and agencies. This increased government subsidy along with diversified funding streams brought about a remarkable positive impact with enrolment and access to healthcare increasing to 41% according to data from the country's Ministry of Health.

Since its inception, Ghana's NHIS has been considered one of Africa's model health insurance systems. The benefit package of the NHIS covers the cost of treatment for more than 95% of the disease conditions in Ghana. The range of services covered includes but are not limited to outpatient care, diagnostic services, inpatient care, pre-approved medications, maternal care, ear, nose and throat services, dental services and all emergency services. Excluded from the NHIS benefit package however, are procedures such as dialysis for chronic renal failure, treatments for cancer (other than cervical and breast cancers), organ transplants, and cosmetic surgery. Child immunization services, family planning and treatment of conditions such as HIV/AIDS and tuberculosis are also not covered, although, these services are provided under alternative government programs (Anaba et al., 2022). In July 2025, Ghanaian health authorities,

announced that 15.65 million Ghanaians are enrolled in the NHIS, making it an above-average uptake for the country (Etefe & Abilla., 2025).

For the east African country of Kenya, research shows that it had long been implementing the National Health Insurance Fund (NHIF), which was reported to have been the most common type of health insurance in Kenya, but enrolment remained low. Governed by the Social Health Insurance Act (SHIA) of 2023, the SHIA operates and is funded through three sources: the Primary Healthcare Fund; the Social Health Insurance Fund (SHIF); and the Emergency, Chronic, and Critical Illness Fund. These funds receive resource allocations via appropriations by the National Assembly, grants, gifts, donations, bequests, fees, levies, and funds from other relevant sources. Unlike its predecessor, the NHIF, the SHI scheme aims to remove limitations on specific medical expenses, such as pre-treatment blood work and certain CT scans, and includes coverage for congenital conditions and preventive measures not previously covered.

Data, however, indicate that about 6.2% of Kenyans spend at least 40% of their non-food income on healthcare, owing to out-of-pocket spending, which is a pointer to a state of unsustainable health expenditures in Kenya (Okadia, 2024).

**Table 1. Health insurance systems comparison**

| Country | Insurance Scheme      | Funding Sources   | Coverage & Benefits   | Key Statistics / Notes  |
|---------|-----------------------|---|---|---|
| Nigeria | NHIS                  | Formal sector contributions, minimal coverage for informal sector                             | Limited coverage; diagnostic infrastructure   | AST poor<br>64,000 deaths attributable to AMR (2019); <10% formal sector coverage |
| Ghana   | NHIS                  | Health insurance levy, 2.5% formal sector contribution, individual premiums, grants/donations | Covers >95% of disease conditions; outpatient, diagnostics, inpatient, maternal, emergency care | 15.65 million enrolled (2025); ~41% population access                             |
| Kenya   | SHIF (replacing NHIF) | 2.75% gross salary, Primary Healthcare Fund, Emergency &                                      | Covers pre-treatment diagnostics, congenital  | Informal workers contribution reduced from Ksh 500 → Ksh 300;                     |

|  |  |                                      |
|--|--|--------------------------------------|
|  | Chronic Illness conditions, Fund, Grants/Donations preventive services | 83% of population in informal sector |
|--|--|--------------------------------------|

**1.4 Consequences of inaction**

Antimicrobials are prescription-only medications. Financial constraints, exacerbated by poor funding encourages empirical, rather than targeted treatment, the purchase of over-the-counter antimicrobials, antimicrobial misuse and overuse, as well as the potential purchase of poor quality antimicrobials. All of which drive resistance, resulting in increased morbidity, length of hospital stay, cost of treatment, and mortality.

Despite the high burden of AMR in Nigeria, where common pathogens such as *Staphylococcus aureus*, *Escherichia coli*, *Klebsiella pneumoniae*, and others show escalating resistance to first- and second-line antibiotics, routine AST remains scarce in clinical practice (Mba et al., 2014; Suleiman et al., 2022).

The NHIS, now under the National Health Insurance Authority (NHIA), has been shown to improve antibiotic prescribing patterns toward WHO-recommended standards, yet *AST is not systematically integrated into the diagnostic workflows funded by the scheme* (Obadare et al., 2024).

This gap undermines AMS and contributes to treatment inefficiencies, as laboratories face barriers such as insufficient funding, shortage of skilled personnel, and low AST utilization, posing a critical challenge to embedding AST within NHIS-supported healthcare delivery (Huang & Eze., 2023;Temitope et al., 2024).

**1.5 Underlying causes of the problem**

|                           |   |
|---------------------------|---|
| <b>System arrangement</b> | <p><b>Governance arrangements</b></p> <ul style="list-style-type: none"> <li>• <b>Limited political commitment and prioritization.</b> Politics plays a crucial role in shaping public health initiatives aimed at addressing widespread health concerns, such as infectious diseases, chronic conditions, and environmental health hazards<sup>3</sup>. However, Nigeria faces a significant problem with mustering the necessary political will required to prioritize, and act in regard to vital issues such as health insurance, given that it is not seen as providing immediate political gains for policymakers. For example, a particular case in point was the National Health Insurance Bill, (which later translated to NHIA 2014): for a legislative instrument as important as it was, it took 10 years for the bill to be</li> </ul> |
|---------------------------|---|

<sup>3</sup> Political Influence and Health Regulation: Challenges Facing Healthcare in Nigeria – Intelligence by Mandate4

passed into law in Nigeria, and an additional five years for the Authority and its operational Scheme to be set up, making a cumulative fifteen years to pass and operationalize health insurance in Nigeria<sup>4</sup>. This is in stark contrast to bills of far less importance, which are often given expeditious hearing, with some passing in as little as two or three months.

- **Budgetary constraints and competition for funding with other priorities as well as weak evidence to policy translation.** Nigeria allocates between 3.5% and 6.24% of the total budget to healthcare financing. These low budgetary allocations continue to undermine healthcare financing in Nigeria and result in low expenditure on health. Consequently, the majority (69%) of the healthcare financing in Nigeria comes from out-of-pocket payments made by the patients to the healthcare provider. With a weak and unstable economy, average GDP at US\$243 billion and poverty index at 47.6% according to the World Bank, this places significant burden on the population to effectively finance their health, with areas such as diagnostic tests, being among the firstline casualties in order of priority within the economic context, for the citizenry. It is noteworthy to observe that Nigeria's low health budgetary allocation persists in spite of the existence of the *2001 Abuja Declaration* and the *2013 Abuja+12 Declaration*, in which African leaders committed to allocating at least 15% of national budgets to health (with Nigeria being a Signatory to these Declarations).
- **Poor integration of AMR services into insurance benefit package.** Evidence has shown, that AMR-related infections often require longer hospital stays, intensive diagnostic testing, and sometimes complex interventions such as surgery or ICU care. These AMR treatments are significantly more expensive than non-resistant infections. Insurance providers aim to minimize financial risk while maximizing coverage efficiency. Therefore, the disproportionately high cost of AMR management discourages insurers from fully integrating AMR-specific services into benefit packages. As a result, many patients face out-of-pocket expenses for AMR-related care, which further limits access and worsens health outcomes, as these additional costs tend to be enormous, and sometimes overwhelming for both families and the healthcare system.
- **Inadequate involvement of healthcare professionals in health insurance design.** Despite being the primary stakeholders in healthcare delivery, healthcare professionals are not actively included or involved in policy formulation processes in Nigeria, leading to critical gaps in healthcare policies,

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<sup>4</sup> Nigerian television Authority, (NTA), "Good morning Nigeria" 5/6/25

programming and implementations in the country. Decisions regarding healthcare are often made by bureaucrats and politicians with little or no consultations from those working within the system. According to the Director, Research and Innovations at Cheetahs Policy Institute, Awaje Caleb “Healthcare professionals are central to the formulation and implementation of effective health policies. As frontline workers, they experience firsthand the challenges within healthcare systems and understand the needs of patients and communities. Despite their critical role, many African countries, including Nigeria, have historically failed to integrate healthcare professionals into policy decision-making processes, hindering the development of comprehensive and effective health policies”<sup>5</sup>.

- This exclusion of healthcare professionals from policy formulation continues to constitute a barrier to effective health policies’ implementation. For example, the [National Health Act of 2014](#), which aims to establish a framework for UHC, faced (and continues to face), significant implementation challenges due to minimal inputs from healthcare professionals during its development.

## **II. Financial arrangements**

- Enrollment in the NHIS is impacted by burdensome premium requirements for enrollees who are discouraged from adopting health-seeking behaviors, such as enrollment in health insurance owing to weak financial capacity. While the Health Insurance Authority has announced projected enrollees into the scheme to 44 million by 2020, this target goal, if not backed by the requisite financing, may be hampered by weak economic capacity. According to the World Bank 2024 Poverty & Equity Brief, an estimated 84 million Nigerians are living below the poverty line: the world’s second largest poverty population after India<sup>6</sup>.
- Inadequate and delayed reimbursements, along with poor financial incentives, discourage healthcare providers from prioritizing AST before prescription. A key barrier to the development and use of new stewardship interventions, particularly diagnostic tests, has been the difficulty in demonstrating their value, which requires comprehensive economic evaluations<sup>7</sup>. Stakeholders have argued that medical consumables sometimes determine the level and quality of medical response that some HMO patients get as it often counts for losses to the providers. A pint of intravenous fluid has, for instance, skyrocketed, rising

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<sup>5</sup> [The Critical Role of Healthcare Professionals in Shaping Health Policies Across Africa - Cheetahs policy institute](#)

<sup>6</sup> World bank, (2024), Poverty & Equity Brief [World Bank Document](#)

<sup>7</sup> [\(PDF\) Antimicrobial Stewardship Implementation in Nigerian Hospitals: Gaps and Challenges](#)

from about N150 to between N650 and N800. Unfortunately, most HMOs reimburse the provider facilities with between N250 and N350, and the same applies to drugs.

- Under the current NHIS *Capitation Model* – whereby healthcare providers receive a fixed monthly payment per patient regardless of the service volume – providers have argued that Nigeria’s inflationary trend (which stands at 20.88% as of July 2025 according to Nigeria’s Bureau of Statistics (NBS) Economic Outlook for Q3) strongly weakens their capacity to procure and maintain supplies of the relevant consumables required for the ASTs and other health services under the financing arrangement. This point was brought to the fore in January 2025, when providers the country over announced a sudden decision to jettison all existing contracts with health insurance companies across Nigeria, over poor tariffs and huge backlogs of debts. The Healthcare Providers Association of Nigeria (HCPAN) in announcing the decision, explained that they bore the larger portion of risks in what they described as a faulty model of financing, insisting that the valuation of health services was based on an inappropriate pricing tool<sup>8</sup>. According to them “... *it now seems that HMOs have proven effective at consistently supplying large numbers of patients that keep hospitals busy and necessarily profitable*”.

### III. Delivery arrangements

- **Analogue manual systems.** Analogue manual systems persist in many hospitals across Nigeria, particularly in semi-urban and rural areas. Processes such as filing and record-keeping and retrieval are all still largely done manually, making health-seeking both cumbersome and time-consuming. Poorly integrated delivery arrangements discourage health-seeking behaviour compared to electronic systems, which simplify the process, making enrollment more appealing.
- **Supply chain issues.** AST faces issues related to reagent cost inflation, availability, and quality assurance. These challenges range from cost/inflation to steady sources and availability, and quality assurance, as quality assurance and regulatory entities such as the NAFDAC continue to raise alarm and battle fake products and consumables by unscrupulous importers/elements in the country. A report by the National Primary Health Care Development Agency (NPHCDA) in 2022 revealed that about 70% of drugs in Nigeria were substandard or counterfeit. Similarly, NAFDAC found that 41% of

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<sup>8</sup> [Hospitals to drop HMOs over debts, poor tariffs - Businessday NG](#)

pharmaceuticals were counterfeit, while 14.7% were outright fake<sup>9</sup>. The statistics highlight the gravity of the situation, particularly as the nation struggles to maintain quality healthcare services. Additionally, tariffs and trade policies, etc., form some of the factors that interplay at the supply chain that potentially affect AST services.

- **Dearth of skilled manpower.** Nigeria's health sector faces severe shortages of skilled personnel. According to the National Association of Resident Doctors (NARD), in 2024 alone a total of 3,974 doctors left the country<sup>10</sup>. Similarly, in 2023, about 3,122 doctors also left the country requesting letters of good standing from the Medical and Dental Council of Nigeria (MDCN). This represents approximately 68% of the trained workforce exiting the system. According to the the Nigeria Medical Association, as at 2022, Nigeria had a ratio of 1:10,000: approximatly 10,000 persons to one doctor. This is against the WHO recommended standard of 1:600, i.e., 600 persons to one doctor. An Inadequate number of skilled personnel strongly impacts quality service delivery.

## 1.6 Degree of implementation of an agreed upon course of action

- Low degree of implementation of previously agreed upon national and international strategies on AMR containment; a gap in implementation of the National Action Plan (NAP) on AMR.
- Gaps between policy formulation and execution due to weak institutional oversight and weak accountability mechanisms. This has fueled corruption, plagued the health sector and compromised healthcare delivery in Nigeria. In September 2025, for instance, the Director General of the National Primary healthcare Development Agency, NPHCDA, Dr Muyi Aina, announced that government's analysis showed that between 15% and 25% of non-campaign vaccines in Nigeria cannot be accounted for<sup>11</sup>.

<sup>9</sup> [NAFDAC intensifies war on fake drugs amid rising health concerns](#)

<sup>10</sup> [Nearly 19,000 doctors left Nigeria in 20 years - NARD](#)

<sup>11</sup> [Nigeria Disburses N192bn to Primary Healthcare Since 2019](#)

## 2. POLICY OPTIONS AND ELEMENTS TO ADDRESS THE PROBLEM

Table 2. Four policy options/elements to address the problem

|                         |   |
|-------------------------|---|
| <b>Option/Element 1</b> | Include AST in NHIS and Ensure Availability of Funding to Cover AST Testing in all Facilities |
| <b>Option/Element 2</b> | Implementation of Nigeria’s NAP 2.0   |
| <b>Option/Element 3</b> | Full implementation/operationalization of the National Health Insurance Act                   |
| <b>Option/Element 4</b> | Oversight and accountability mechanisms   |

### 2.1 Option/Element 1: Include AST in NHIS and Ensure Availability of Funding to Cover AST Testing in all Facilities

There is a critical need to adopt ASTs into the coverage list of NHIS Diagnostic Tests and ensure sustainable funding for them across all healthcare facilities. This will strengthen diagnostic capacity, promote evidence-based treatment, and reduce the misuse of antibiotics in Nigeria.

Experts have held that allocating dedicated funding for routine testing of antimicrobial resistance (AMR) will protect public health and save lives, emphasizing that routine AMR testing was critical to tackling rising drug resistance and preventing needless deaths, adding that Nigeria’s battle against AMR would remain reactive and largely ineffective without deliberate investment in diagnostics<sup>12</sup>.

### 2.2 Option/Element 2: Implementation of Nigeria’s NAP 2.0

The effective implementation of Nigeria’s National Action Plan on Antimicrobial Resistance (NAP 2.0) is necessary to coordinate multi-sectoral efforts, strengthen surveillance, improve infection prevention and control, and promote rational use of antibiotics. It is also vital in scaling up awareness (which is one of the five pillars of the National Action Plan).

The NAP 2.0, a country-level multi-sectoral framework, “establishes the Nigerian government’s commitment to tackle AMR over five years from 2024 to 2028. Designed to build upon and sustain the achievements made in the AMR NAP 1.0, which was implemented from 2017 to 2023, the AMR NAP 2.0 aligns with and supports the fulfilment of other national strategic plans including the Health Sector Renewal Investment Initiative

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<sup>12</sup> [Nigeria Should Allocate Funds For AMR Testing To Save Lives – Expert | Science Nigeria](#)

Agenda and the National Action Plan for Health Security (NAPHS) of the Federal Ministry of Health; the National Agricultural Technology and Innovation Policy 2022–2027 of the Federal Ministry of Agriculture and Food Security; and the National Policy on AMR and its corresponding Strategic Plan of the Federal Ministry of Environment<sup>13</sup>.

While experts have acknowledged Nigeria’s policy-level commitment through the NAP on AMR, it has however been observed, that practical implementation, especially in testing and stewardship, still relies heavily on donor support.

As expressly stated in the NAP 2.0 document, effective implementation of the AMR NAP 2.0 will contribute to achieving the AMR prevention and containment goal of ensuring, for as long as possible, continuity of successful treatment and prevention of infectious diseases with effective and safe medicines that are quality-assured, used responsibly, and accessible to all who need them.

### **2.3 Option/Element 3: Full implementation/operationalization of the National Health Insurance Act**

While the National Health Insurance Act (NHIA) 2022 makes health insurance mandatory in Nigeria, enforcement has been low, as the population are still largely poorly informed about this. There has not been adequate sensitization as well as enforcement actions from the Health Insurance Authorities, leaving a bulk of the population seeking healthcare still as ‘paying patients’. By achieving the full operationalization of the stipulations of the National Health Insurance Act/scheme, a significantly larger proportion of the population will be covered, thereby reducing out-of-pocket expenses for AMR treatment and improving access to essential healthcare services.

Already, some signals to this effect appear to be emerging, with the recent change of Nigeria’s president in this regard, as well as the uptake by the Permanent Secretary of the Ministry of Health, Kachollom Daju who has on 5 September 2025, announced the indication of commencement of enforcement of mandatory health insurance as required by the NHIA 2022, emphasizing that all vendors working with the Ministries and its Agencies must comply<sup>14</sup>.

While this indicates some degree of government commitment to ensuring that more Nigerians are brought into the National Health insurance net, there is a need to follow up

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<sup>13</sup> Federal Ministries of Agriculture and Food Security; Environment; and Health and Social Welfare, (2024), *One Health Antimicrobial Resistance National Action Plan 2.0 2024–2028*, Nigeria Centre for Disease Control and Prevention (NCDC). [https://ncdc.gov.ng/themes/common/docs/protocols/353\\_1729270476.pdf](https://ncdc.gov.ng/themes/common/docs/protocols/353_1729270476.pdf)

<sup>14</sup> [Nigeria's path to universal health coverage hinges on sustainable financing — Minister - Tribune Online](#)

with the necessary actions to ensure that the step is not left at the level of pronouncement alone.

#### **2.4 Option/Element 4: Oversight and accountability mechanisms**

A lack of confidence in the system owing to previous poor experience by the population around the health insurance mechanism in the country is a major contributor to negative perceptions of the scheme. With evidence of systemic leakages and weak regulatory oversight and non-accountability, health insurance service delivery in the country has not been effectively optimized.

To change this situation, there is a need to put in place strong and effective accountability measures, backed by active regulatory oversight. Service-level KPIs developed and implemented will ensure that health service providers operate under a standard and transparent service charter and that infractions are promptly and effectively addressed.

### 3. POLICY OPTIONS AND ELEMENTS

**Include AST in NHIS and ensure Availability of Funding to Cover AST Testing in all Facilities;**

| Category  | Selected Option/Element:<br>Cover Antimicrobial Sensitivity Test (AST) under the NHIS and ensure sustainable funding to support AST testing across all facilities.   |
|---|--|
| <b>I. Benefits</b>  | All stakeholders would benefit: government, HMOs, healthcare facilities, patients/the citizenry, the economy.  |
| <b>II. Potential harms</b>  | Possibility of increased premium for citizens – economic burden.<br>No guarantees that providers will meet patient’s needs, even if premiums are paid.   |
| <b>III. Cost and/ or cost effectiveness in relation to status quo</b> | <p>Premiums for health insurance are usually high and unaffordable for most of the population. However, using the instrumentality of the health insurance laws and the health insurance scheme that removes the burden of financial cost to the patient, Nigeria’s poorest and most vulnerable populations can effectively access health care services without suffering undue financial hardship.</p> <p>This approach has been demonstrated in an Economic Case Model implemented by Imo State, with the technical support of the WHO-UCH Partnership Programme and the Imo State Health Insurance Agency. It is providing mass health coverage for the population of the state in line with the principles of Universal Health Coverage (UHC). Currently, the Imo State Health Insurance Agency has instituted one of the most effective and responsive referral systems in Nigeria<sup>15</sup>.</p> <p>Building on this initiative, the WHO developed an economic investment model for health in Imo State which showed that increased investment in health, particularly through health insurance, can generate substantial economic returns. Under the model, it showed an up to 200% increase in real GDP and 200% increase in the number of jobs created over five years<sup>16</sup>. The WHO in the model, affirmed health as a human right and therefore a core duty of the state.</p> |
| <b>IV. Uncertainty</b>  | Government ability to sustain funding in key areas such as this, sometimes suffers from budget cuts and/or non-prioritization. In view of its importance, the  |

<sup>15</sup> UHC-Partnership: Nigerians in Imo State are protected from financial hardship when accessing health services

<sup>16</sup> UHC-Partnership: Nigerians in Imo State are protected from financial hardship when accessing health services

|  |  |
|--|--|
| <p><b>regarding benefits and potential harms</b></p> | <p>WHO, during a Policy Dialogue on Health Financing in Nigeria in September 2025, advised the country to look towards areas such as equity and investment units, as well as parliamentary engagement through the Legislative Network for Universal Health Coverage, as models that could inspire African countries, particularly Nigeria<sup>17</sup>.</p> <ul style="list-style-type: none"> <li>• Possibility of diversion of funds to other prioritized areas <i>instead of AST diagnostics</i>.</li> </ul>  |
| <p><b>V. Stakeholders' views</b></p>                 | <ul style="list-style-type: none"> <li>• <b>NHIA, regulators:</b> Positive, as it increases universal coverage</li> <li>• <b>Healthcare facilities (service providers):</b> Positive, as this policy option is in their interest because revenue will increase</li> <li>• <b>Health Maintenance Organizations (HMOs):</b> Supportive, as policy options will reduce the financial burden that they would have had to bear</li> <li>• <b>Enrollees:</b> More willingness to enroll if they are properly informed and convinced that benefits outweigh risks</li> <li>• <b>Policy Makers:</b><br/>AMR is considered a silent pandemic, as a result, it does not command the necessary attention as a healthcare priority.<br/>Increasing budget to support AST by NHIS appropriate legislation can be considered for increased funding towards AST.</li> </ul> |

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<sup>17</sup> WHO Urges Nigeria: Allocate 20% Budget to Public Health

## 4. IMPLEMENTATION CONSIDERATIONS

Potential barriers to successful policy implementation and counterstrategies to overcoming them.

| Level   | Barriers   | Counterstrategies   |
|---|--|---|
| <b>1. Patient</b><br><b>Ensure availability of funding to cover AST in all Accredited Healthcare Facilities</b> | <p>Burdensome premium</p> <p>Cumbersome manual systems rather than electronic</p> <p>Lack of confidence in the scheme for quality service delivery</p>           | <p>Subsidize the premium</p> <p>Adopt user friendly and interoperable electronic systems in healthcare facilities.</p> <p>Instill confidence in the system through implementation of strict oversight of health insurance and enforcement of penalties for contractual breaches</p> |
| <b>2. Professional</b>  | <p>Insufficient knowledge and skills to carry out AST</p> <p>Lack of motivation due to poor remuneration</p> <p>Excess workload due to insufficient manpower</p> | <p>Education, training, workshops and continuous professional development of healthcare workers</p> <p>Increase remuneration</p> <p>Recruit more skilled personnel, improve welfare and conditions of service to discourage 'brain drain' or health workforce migration.</p>        |
| <b>3. Organization</b>  | <p>Fear of reimbursement of funds for AST</p> <p>Challenges with supply chain for reagents and consumables</p>   | <p>Ensure institutional accountability (HMOs); adequate and continuous reimbursement of funds</p> <p>Ensure sustained, functional procurement system for availability of reagents and consumables.</p>  |

|                  |   |   |
|------------------|---|---|
| <b>4. System</b> | Weak and fragmented health insurance system; weak implementation strategies, poor accountability, fueled by compromise in enforcement of regulations and oversight mechanisms | Strengthen policy implementation strategies, enhanced accountability frameworks and enforce robust regulatory oversight mechanisms. |
|------------------|---|---|

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## ANNEXES

### Annex 1. Problem statement

| Name of databases searched   | Search terms used  | Number of relevant studies retrieved |
|--|--|--------------------------------------|
| <b>PubMed/MEDLINE + PubMed Central (PMC)</b>   | National Health Insurance, NHIS, NHIA, NHIF, Social Health Insurance, SHIF, Antimicrobial, antibiotic, antimicrobial resistance, AMR, antimicrobial stewardship, or AMS  | 6                                    |
| <b>African Journals Online (AJOL)</b>  | National Health Insurance, NHIS, NHIA, NHIF, Social Health Insurance, SHIF, Antimicrobial, antibiotic, antimicrobial resistance, AMR, Antimicrobial stewardship  | 4                                    |
| <b>Google Scholar</b>  | National Health Insurance, Ghana antibiotics prescribing NHIS list, antimicrobial stewardship, Nigeria NHIS NHIA antibiotics reimbursement, antimicrobial stewardship, Kenya NHIF benefit package, antibiotics reimbursement AMR financing                     | 7                                    |
| <b>Government and Multilateral sites: including Ministries of Health, NHIA/NHIF, WHO, UN</b> | antimicrobial and NHIS, antimicrobial and insurance, AMR and NHIS, AMR and insurance, NHIA and antimicrobial, NHIS and antibiotic, NHIF and antimicrobial, SHIF and antimicrobial, resource mobilization for antimicrobial resistance in Ghana, Nigeria, Kenya | 8                                    |
| <b>Google</b>  | Non-food income, National Health Insurance Fund, National Health Insurance Scheme, NHIS Enrolment and Management, high health expenditures, population, Doctors, departing Nigeria, HMOs   | 8                                    |

## Annex 2. Policy Options and Implementation Considerations

| Name of databases searched                   | Search terms used  | Number of relevant systematic reviews retrieved |
|--|--|---|
| <b>PubMed/MEDLINE + PubMed Central (PMC)</b> | National Health Insurance, NHIS, NHIA, NHIF, Social Health Insurance, SHIF, Antimicrobial, antibiotic, antimicrobial resistance, AMR, antimicrobial stewardship, AMS, systematic review, meta-analysis, scoping review   | 10  |
| <b>African Journals Online (AJOL)</b>        | National Health Insurance, NHIS, NHIA, Antimicrobial, antibiotic, AMR, antimicrobial stewardship, systematic review  | 1   |
| <b>Google Scholar</b>                        | Ghana National Health Insurance antimicrobial resistance systematic review, Nigeria NHIS antimicrobial stewardship systematic review, Kenya NHIF antimicrobial resistance systematic review  | 4   |
| <b>Google</b>                                | BHCPF, Basic Health Care Provision Fund, the National Health Act 2014, healthcare services, The National Health Insurance Levy, SHIF, Social Health Insurance Fund, Social Health Insurance Act (SHIA) of 2023, Universal Health Coverage and National Health Insurance Authority, NHIA and Funding, National Health Insurance Authority Act 2022, National Health Financing Dialogue, Funds Allocation, NAFDAC, World Bank, World Health Organization, National Action Plan (2.0) | 8   |