

DELIBERATIVE POLLING[®] ON ANTIMICROBIAL RESISTANCE

COUNTRY REPORT

NIGERIA 

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Executive Summary

In collaboration with The Trinity Challenge, the Stanford Deliberative Democracy lab conducted a Deliberative Poll on Antimicrobial Resistance (AMR) with a focus on antibiotics. This poll was conducted to understand the opinions of citizens in six selected middle-income countries (MICs) regarding key policy proposals aimed at combating AMR.

Nigeria's post-deliberation "considered opinions" clustered around two complementary priorities: prevention-oriented public health norms and systems-level measurement/accountability. In their top 10 proposals, participants strongly endorsed hygiene-based prevention while also elevating multiple proposals that would strengthen the country's ability to track AMR and respond strategically. A second defining feature of Nigeria's results was pragmatism about access to antibiotics, especially through the informal sector. Nigeria's top 10 included proposals to regulate informal sellers and to monitor informal antibiotic sales, indicating participants were not simply calling for tighter restrictions; they were endorsing managed access approaches that reduce misuse without collapsing access in a setting where informal provision is common. Notably, Nigerian participants also showed the largest knowledge gains among the six countries, with a 30.6% average increase across six AMR knowledge questions; their biggest improvement was on the meaning of "superbug". These shifts are consistent with a deliberation process that moved participants toward more technically informed, systems-focused policy preferences.

Top 5 Policy Proposals Supported by Participants in Nigeria

Rank	Policy Proposal
1	Add hygiene to school curriculum. Hand hygiene and infection prevention should be part of the standard curriculum in schools from the start of schooling through to graduation.
2	Global target to reduce deaths. There should be a global target to reduce human deaths from antibiotic resistance.

3	Integrate rapid testing into surveillance. Data from point of care rapid diagnostic tests should be incorporated into routine national surveillance reporting.
4	Farm biosecurity and infection control. Farms should ensure strict infection prevention and biosecurity measures to stop the spread of resistant bacteria.
5	Establish national One Health surveillance. National surveillance programs should be in place to monitor - infection rates, bacterial types, antibiotic use, and antibiotic resistance – in humans, animals (including fish) and water systems.

Section I: Introduction and Methodology

A. Introduction

Nigeria's status as Africa's largest nation by population makes it a de facto leader in the public health and economic landscape of a continent facing the highest burden of antimicrobial resistance. This role is compounded by a healthcare system already strained with high rates of infectious diseases like malaria and tuberculosis, alongside bacterial infections like typhoid fever and pneumonia. Nigeria's healthcare infrastructure is characterized by a heavy reliance on the private sector, which delivers 70% of services despite remaining weakly regulated. Patent and Proprietary Medicine Vendors (PPMVs) serve as the first point of care for the majority of the population, but often dispense antibiotics without prescriptions.

This practice encourages antibiotic misuse, developing antibiotic resistance as doses are used for viral diseases that require other treatments entirely. With an estimated 60% of antibiotics inappropriately prescribed, Nigeria stands with 227,000 deaths associated with AMR in 2021. This crisis is further exacerbated by Nigeria's economic state; as Nigeria faced a 34% inflation rate in 2024, the price of medicine, especially antibiotics,

has likewise shot up. Some antibiotics rising to 1,100% of their price from 2019 have led to rationing and the use of poor-quality antibiotics, which further increases AMR.

B. Deliberative Polling Methodology

Given Nigeria's vast population, the deliberative poll was designed to provide a platform where citizens across different socioeconomic backgrounds could weigh AMR policies. Random Dynamic Resources, a leading survey organization in Sub-Saharan Africa and MENA, recruited the sample for Nigeria. RDR, knowing the target population and the level of commitment required for this event, chose to employ address-based probability sampling in-person and by phone to ensure a high turnout, even though it is more time and resource-intensive. This process achieved a sample size of 210 participants in the treatment group and 203 in the control group. The final treatment group was more educated (74.2% tertiary education or more) and urban (97.8%) than the general population.

Participants engaged in the Deliberative Polling process, alternating between small group discussions conducted on the Stanford Deliberation Online Platform and plenary sessions where participants would ask questions to experts. The agenda consisted of 45 policy proposals covering the following topics: equity and access, awareness and education, stewardship, food security, infection prevention, global targets, and surveillance. The proposals included background materials and a set of pros and cons outlining trade-offs participants should consider.

Section II: Participant Demographics

The Nigerian deliberative poll successfully gathered a diverse cross-section of the country's population, though with notable skews in education and urbanicity. Table 2 presents key demographics of the participants who took part in the deliberation (treatment group).

Distribution of Deliberation Participants by Gender

Gender	Amount	Percentage
Male	104	51.4%
Female	99	48.6%

Distribution of Deliberation Participants by Age

Age Group	Amount	Percentage
18–24	42	20.5%
25–34	76	37.5%
35–44	37	18.0%
45–54	17	8.5%
55+	31	15.5%

Distribution of Deliberation Participants by Education Level

Education Level	Amount	Percentage
Primary or less	0	0.0%
Secondary	14	7.0%
Post-secondary/Vocational	38	18.8%
Tertiary (Bachelor+)	151	74.2%

Distribution of Deliberation Participants by Urbanicity

Location	Amount	Percentage
Urban/Suburban	199	97.8%
Rural	4	2.2%

The gender split of participants was well-balanced, closely reflecting Nigeria's population. The age distribution of participation skewed younger, with the largest group being adults aged 25-34 (37.5%), and over half of deliberation participants (58%) being under the age of 35. The Nigerian sample was significantly more educated than the general population, with 74.2% receiving a tertiary education, while only 7% had a secondary education or less as their highest level of education. Finally, the sample was more urban or suburban, with 97.8% of participants residing in these areas.

Section III: Deliberation Analysis

A. Top 10 Proposals in Nigeria

In the post-deliberation survey, Nigerian participants rated 45 policy proposals on a 0–10 scale (from “strongly oppose” to “strongly support”). These represent the initiatives that participants most robustly endorsed once they had discussed and learned about AMR.

Nigeria's Top 10 Supported Proposals (Post-Deliberation)

1. Add hygiene to school curriculum (Infection Prevention): Hand hygiene and infection prevention should be part of the standard curriculum in schools from the start of schooling through to graduation.
2. Global target to reduce deaths (Targets for Antibiotics): There should be a global target to reduce human deaths from antibiotic resistance.
3. Integrate rapid testing into surveillance (Surveillance and Monitoring): Data from point of care rapid diagnostic tests should be incorporated into routine national surveillance reporting.
4. Farm biosecurity and infection control (Infection Prevention): Farms should ensure strict infection prevention and biosecurity measures to stop the spread of resistant bacteria.

5. Establish national One Health surveillance (Surveillance and Monitoring): National surveillance programs should be in place to monitor - infection rates, bacterial types, antibiotic use, and antibiotic resistance – in humans, animals (including fish) and water systems.
6. Regulate informal drug sellers (Access to Antibiotics): Informal antibiotic sellers such as Patent and Proprietary Medicine Vendors and informal drug shops should be regulated and monitored to dispense a limited number of basic oral antibiotics for specific infections under strict guidelines but still without a prescription.
7. Mandate publishing hand hygiene rates (Infection Prevention): Hospitals should be mandated to publish their hand hygiene rates annually.
8. Incentivize antibiotic-free food supply (Food Security): Large-scale food suppliers – supermarkets, restaurant chains, intensive farming etc., – should be incentivized to promote the use of food produced without routine antibiotics.
9. Monitor informal antibiotic sales (Access to Antibiotics): Governments should develop monitoring (and evaluation) mechanisms to include informal sales of antibiotics.
10. Report surveillance data internationally (Surveillance and Monitoring): Surveillance data should be reported nationally, regionally, and to the World Health Organization, Food and Agriculture Organisation, and the World Organisation for Animal Health.

B. Proposal Analysis

1. Add Hygiene to School Curriculum

Integrating hand hygiene and infection prevention into the standard curriculum is a proactive measure to promote public health from an early age. Support for this proposal remained a top priority for Nigerian participants post-deliberation. Participants viewed the education system as a vehicle to correct normative hygiene practices that may be neglected at home. One participant noted, "I would like to talk about washing of hands in schools because we all know that some parents don't really prioritise a personal hygiene for their children. But when these children [go] to school... the teachers teach them how to wash their hands... and this prevents a lot of infections". Though some participants note that parents "should start [hygiene] at home" others bring up that "some parents... don't have time for their children" and a school curriculum could go a long way. In the Nigerian context, where public health law enforcement is challenging, many view hygiene and infection prevention curriculum as a more sustainable bottom-up approach.

2. Global Target to Reduce Deaths

This proposal seeks to establish a global target to reduce deaths linked to antibiotic resistance by facilitating progress-tracking and promoting the efficacy of interventions. Seeing the global prevalence of AMR, Nigerian participants found international cooperation as an effective solution to mobilize government action. Participants strongly supported this measure, as deliberation increased support for all proposals to build on existing global health targets to reduce the threat of antibiotic resistance. The comparison to other global crises was brought up in the discussions. One participant argued, "Since we have a target for climate change and everything... this is a serious issue ravaging the world. Governments nationwide should come together and put up a Global target and start walking towards it". For a nation that is often guided by international policy, signing on a global target is seen as a way to lock in political action and secure resources.

3. Integrate Rapid Testing into Surveillance

Participants endorsed incorporating data from point-of-care rapid diagnostic tests into routine national surveillance reporting. Participants discussed how this proposal would advance patient care and advance medical research. Notably, participants highlighted how this can "improve holistic intervention to antibiotic resistance" and can result in more immediate interventions. Though the participants generally supported this proposal, a few were cautious about confidentiality regarding their personal information, but ultimately conceded that public health outweighs.

4. Farm Biosecurity and Infection Control

Support for requiring farms to ensure good infection prevention and biosecurity standards remained very high. Their reasoning was rooted in an understanding of disease transmission citing that "if hygiene [education] is being carried in this farming... they will not require much of these antibiotics." Given the prevalence of farming in Nigeria, participants possessed an understanding of agriculture and understood that preventing infection is cheaper than treating it. Connecting animal health and safety, participants emphasized how these proposals would reduce antibiotic use.

5. Establish National One Health Surveillance

Nigerian participants stood out in its support of national surveillance programs. Participants pointed out that "you cannot manage what you do not measure." Participants vocally expressed the need for a holistic view of the issue, continuing that there should be proper monitoring of "the infection rate, the type of bacteria... in humans, in animals, and the water system." Another participant emphasized the

long-term utility of this data in “tracking a resistance pattern and making informed decisions about future treatment.” This prioritization of data infrastructure is a distinct feature of the Nigerian response, suggesting a population that values informed policymaking.

6. Regulate Informal Drug Sellers

Participants notably supported the regulation rather than the ban of Patent and Proprietary Medicine Vendors (PPMVs). The participants recognized that for low-income Nigerians living in rural areas, these vendors are often the only accessible healthcare providers, and a ban would effectively inhibit them from treatment. Nonetheless, participants noted PPMVs role in amplifying AMR. As participants underscored, there exists a disparity in access to doctors, but they still emphasized the significance of “monitoring the [dispensing] of antibiotics” to prevent misuse. This approach highlights the Nigerian perspective’s pragmatism as it comes to informal drug sellers.

7. Mandate Publishing Hand Hygiene Rates

Support for a proposal requiring hospitals to publicly report their hand hygiene compliance rates is driven by a desire for transparency and consumer choice within Nigeria’s largely private healthcare industry. Participants felt that access to this information would incentivize hospitals to compete on safety. One respondent emphasized that with transparent data, patients can avoid “hospitals where the hygiene standard is very low, [where you are] bound to infect yourself.” Another participant highlighted that current hygiene reporting standards lack accountability, pointing that some facilities neglect basic protocols, such as those that do not “even change the bed sheets after discharging a patient.”

8. Incentivize Antibiotic-Free Food Supply

Nigerian participants welcomed the idea of large-scale food suppliers leveraging their market influence to promote antibiotic-free food production. One participant observed, “food providers have pulling power and large consumer following [and] therefore able to act as a driver for change.” As the formal retail sector in Nigeria grows, this policy becomes a more strategic approach to improve food safety standards nationwide as individual farmers remain more difficult to police.

9. Monitor Informal Antibiotic Sales

Adjacent to the regulation of informal drug sellers, participants backed the development of a monitoring system for antibiotic dispensaries beyond doctors and veterinarians.

Support for this proposal was driven by widespread misuse and inappropriate dispensing of antibiotics by PPMVs. Participants hope that if monitoring is implemented, people will be aware of the increased government oversight, potentially deterring inappropriate dispensing of drugs. Another participant emphasized the expanded capability this data provides: “if they report any sales of informal drugs to the government. It will enable the government [to] give help.” Nonetheless, while some participants recognized the value of the proposal, they questioned the practical efficacy of the monitoring system.

10. Report Surveillance Data Internationally

Consistent with participants’ support for surveillance and international cooperation, participants expressed their support for reporting antibiotic resistance data to international bodies. Participants emphasized the need for global coordination in addressing AMR. A participant highlighted that “international bodies can work in conjunction with local and national bodies” to address AMR. International reporting is also said to “help the surveillance of the use of antibiotics” especially in regards to transborder transmissions. This willingness to share data internationally suggests that Nigerian citizens prioritize the consolidation of information to holistically address issues.

C. Distinctive Patterns in Nigeria’s Results

Nigeria’s deliberative polling results showed several distinctive patterns compared to the other five countries in the project:

- Surveillance-and-measurement proposals were unusually prominent: Nigeria was one of the two countries (alongside Tanzania) that stood out for heightened interest in surveillance and monitoring proposals relative to the other four countries. A plausible interpretation is that participants saw AMR as impossible to manage without visibility—tracking infections, antibiotic use, and resistance across humans/animals/water is framed as the prerequisite for targeting interventions effectively. This helps explain why Nigeria’s list blends prevention proposals with proposals that strengthen the state’s ability to measure whether prevention and stewardship are working.
- Nigeria emphasized “managed access” to antibiotics rather than simplistic restriction, especially for the informal market. Compared to the other countries, Nigeria (again alongside Tanzania) was more oriented toward access-to-antibiotics proposals. In the top 10, two proposals directly focus on the informal antibiotic economy: regulating informal sellers (PPMVs/informal drug shops) to dispense a limited set of antibiotics under strict guidelines, and

building monitoring mechanisms that explicitly include informal sales. This pattern matters because it implies participants were balancing two constraints at once: (1) misuse and non-prescription dispensing can accelerate resistance, but (2) informal provision is a real pathway through which many people access care.

Section IV: Knowledge Gains

Participants were tested on six knowledge questions about antibiotics and AMR before and after deliberation. Nigerian participants demonstrated substantial knowledge gains post-deliberation, with an average increase of 30.6% in correct responses across all knowledge questions tested. This represented the largest increase in knowledge gains, with India having an average increase in correct responses of 17.5%, while Tanzania, Colombia, Brazil, and Indonesia had more modest average increases in correct responses, ranging from 3.6% to 7.1%. Nigerians saw their largest increase in correct responses for the question asking what does a superbug mean, a significant 44.1% increase.

Section V: Political Efficacy

The deliberative poll measured political efficacy by asking participants how much they agreed with statements about their ability to influence public policy and the responsiveness of government. In general, after deliberation, there was an increase in agreement with statements such as “Public officials care a lot about what people like me think,” “I have opinions about policy issues that are worth listening to,” and “I have the ability to create change in my community.” This implies that participants generally gained confidence in their policy opinions following deliberation.

Before deliberations, participants from Nigeria expressed a near majority support for the proposal, “Public officials care a lot about what people like me think,” at 47.7%. This level of support remained consistent post-deliberation, with a slight rise to 49.2%. This contrasts with the 25.3% increase in support in Tanzania post-deliberation.

Participants expressed overwhelming agreement with the statements “I have the ability to create change in my community” and “I have opinions about policy issues that are worth listening to,” at 84.2% and 82.1%, respectively. Following deliberations, these figures remained consistent, showing a similar upward shift to 88.7% and 87.0%. This high baseline and subsequent increase indicate a population with high internal political efficacy.

Additionally, certain questions asked about participants' views on how much they agreed with negatively worded statements such as, "People like me don't have any say about what the government does," and statements specific to the topics discussed in deliberation, such as, "People like me can't do much about antibiotic resistance," and "People like me can't do much about food security." The majority of participants agreed they lack influence on government decisions, and increased 3.6% in this sentiment post-deliberation. This shift occurred despite a 1.5% increase in participants agreeing that public officials value their opinions a lot.

Nevertheless, the deliberation improved participants' perceived self-efficacy regarding the specific topics discussed. Participants agreed with the statements, "People like me can't do much about antibiotic resistance," and "People like me can't do much about food security," at 64.0% and 66.3%, respectively. While deliberation weakened agreement with these negative statements, a majority still agreed they lacked agency, at 58.0% (-6.0 percentage points) for antibiotic resistance and 61.6% (-4.7 percentage points) for food security, respectively.

Section VI: Demographic Differences

Overall, Nigerians were relatively unified in their views across ages and genders. However, there are a few observations worth noting across education levels and urbanicity:

A. Gender

Gender was not a significant factor in the average proposal rating before or after deliberation for Nigeria. While women and men gave different average ratings for various proposals, the differences were not statistically significant. Participants from Nigeria tended to support the proposals before and after deliberation.

B. Age

Age was not a statistically significant factor in mean proposal rating among Nigerian participants before or after deliberation.

C. Education

Before deliberation, education was statistically significantly associated with higher average ratings for almost half of the proposals (22 out of 45). In eight of these cases, college education or advanced degrees were associated with high average ratings compared to those with high school education or lower, while in the remaining fourteen

cases, post-secondary education and college or advanced degrees were both associated with higher average ratings compared to those with high school education or lower. The differences ranged from 0.876 to 2.65 (on a 0 to 10 scale), indicating that they were substantive.

After deliberation, a higher level of education was statistically significantly associated with higher average ratings for only one proposal, “Informal antibiotic sellers such as Patent and Proprietary Medicine Venders and informal drug shops should be regulated and monitored to dispense a limited number of basic oral antibiotics for specific infections under strict guidelines, but still without a prescription.” Participants with college or advanced degrees rated this proposal 1.18 points higher on average than participants with a high school education or lower.

For four other proposals after deliberation, post-secondary education was statistically significantly associated on average with lower ratings compared to high school education, and lower with differences ranging from 0.62 to 0.79. Finally, a higher level of education was statistically significantly associated on average with lower ratings for the proposal, “Influenza vaccination should be incentivized for patient-facing healthcare workers.” Participants with post-secondary education tended to rate this proposal lower than participants with high school education or less by 1.0 points on average, while participants with college or advanced degrees rated it lower than participants with high school education or less by 1.1 points on average.

This disparity in policy ratings across education levels indicates that access to education can bridge the divide between initial perceptions and evidence-based perspectives. The process of deliberation can reduce the educational gap across policy preferences.

D. Rural vs. Urban

Before deliberation, Nigerian participants from rural areas rated 10 out of 45 proposals higher on average than urban residents, with average differences ranging from 1.06 to 2.24. Rural residents also rated two proposals an average of 2.2 points lower than urban residents on a 0 to 10 scale. The two proposals were, “Large-scale food suppliers – supermarkets, restaurant chains, intensive farming etc., – should be regulated to promote the use of food produced without routine antibiotics” and “Surveillance data should be reported nationally, regionally, and to the World Health Organization, Food and Agriculture Organisation, and the World Organisation for Animal Health.”

After deliberation, rural participants rated 11 out of 45 proposals higher on average than urban residents with differences ranging from 0.97 to 1.7. There was some overlap with

the ten proposals from before deliberation but not a clear pattern. For one proposal, “Governments should incentivise informal sellers to use only quality-assured antibiotics,” rural residents provided a 1.56-point lower rating on average than urban residents.

Section VII: Event Evaluation

Nigerian participants rated the Deliberative Polling process very positively, giving the event a 9.197/10 rating. This suggests that Nigerian participants deeply valued the opportunity to discuss public health issues. When looking at their evaluation of different components of the process, a clear preference emerged for live, interactive discussions over written materials. The expert panels were found to be the most valuable, with an 8.687/10 rating, outperforming the written briefing materials, which received the lowest comparative rating of 7.874/10. The small group discussions also performed well with an 8.153/10 rating. The event evaluation results suggest that dialogue and discussion were the primary drivers for the participants’ high overall satisfaction rating of the Deliberation event.

Beyond general satisfaction, the results indicate that the quality of the deliberation was successful in expanding participants’ perspectives. Participants affirmed that the process led to a better understanding of other people’s views, rating their improved understanding post-deliberation an 8.602/10. While the briefing materials were rated relatively lower (7.860/10), the expert panels were successful in introducing a range of different viewpoints with a rating of 8.610/10. The overall high ratings suggest that the deliberation process was effective in facilitating an exchange of ideas through dialogue and expert-led discourse.

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