

DELIBERATIVE POLLING[®] ON ANTIMICROBIAL RESISTANCE

COUNTRY REPORT

TANZANIA



JUNE 2026

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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.

Tanzanian citizens emerge from the AMR deliberative process embracing intervention across nearly every policy domain. Their most striking shift occurred around infection prevention, where support for combined WASH and vaccination approaches increased by over 14 percentage points on average. This suggests Tanzanians the Deliberative Polling process increased support for infection prevention proposals.

Participants embraced proposals expanding professional dispensing of antibiotics rather than restricting informal channels. They strongly supported allowing pharmacists and veterinarians to dispense antibiotics without prescriptions, while also maintaining their support for informal drug shops rather than restrictions. This preference likely stems from lived experience with healthcare access challenges in communities where formal infrastructure remains inadequate. On agricultural interventions, Tanzanians demonstrated strong changes in opinion, with support for agricultural infection prevention increasing from 66.2% to 94.6% and restrictions on critically important antibiotics in livestock rising from 67.1% to 91.3%. Respondents are information-hungry, not ideologically resistant, willing to support most interventions once they understood the One Health connections between human, animal, and environmental health in combating antimicrobial resistance.

Top 5 Policy Proposals Supported by Participants in Tanzania

Rank	Policy Proposal
1	There should be a global target to stop the use of medically critical antibiotics in the food chain.
2	Hand hygiene and infection prevention should be part of the standard curriculum in schools from the start of schooling through to graduation.

3	National governments should prioritise infection prevention tools (clean water, safe sanitation and vaccination) to reduce the burden of infectious diseases.
4	Specific government funding should go to healthcare facilities to ensure that all have access to clean water for hand hygiene.
5	Immunization for WHO-recommended childhood vaccination should be scaled up towards universal/full coverage, to capture all children.

Section I: Introduction and Methodology

A. Introduction

Tanzania faces a health crisis marked by high multi-drug resistance rates in humans and extensive, underregulated, antibiotic use within the agricultural sector. Over 40,000 people in Tanzania die annually from AMR associated deaths. While formal healthcare is concentrated in urban centers, rural populations rely heavily on Accredited Drug Dispensing Outlets, which provide essential medicine access but often bypass professional diagnostic procedures. Economic factors, including the high cost of laboratory tests and a reliance on small-scale poultry farming, drive the prophylactic use of drugs.

Agriculture in Tanzania accounts for 28 percent of the country's Gross Domestic Product and employs 80 percent of its labor force. Tanzania's landscape is marked by smallholder farmers for whom livestock, including poultry and cattle, account for food and fiscal security. Livestock acts as a living bank that can be liquidated to pay for emergency expenses, which provides stability to families who lack access to formal banking as a hedge against poverty.

While global health bodies worry about excess use of antibiotics, Tanzanian farmers and citizens often face a life-threatening lack of access to basic medicines due to cost, geography, or supply chain failures. For lots of smallholder farms, antibiotics are used as a quick fix for underlying issues such as poor sanitation or lack of veterinary

infrastructure, because they are cheaper than professional consultations. Often patients will take partial courses of antibiotics due to price constraints. Access remains an issue. In the absence of affordable and accessible clinics, drug shops become the primary point of health and veterinary care.

In Tanzania, the healthcare system struggles with a rural-urban divide; while urban centers have better access to formal facilities, rural populations often reside far from doctors and must rely on informal drug shops or Accredited Drug Dispensing Outlets. The informal supply chain is often the only source of antibiotics, and are hotspots for unregulated dispensing of antibiotics for viral infections.

Pre-deliberation, Tanzanian participants demonstrate low support for stringent regulations, perhaps because of aforementioned domestic conditions. After deliberation, support for proposals related to whether registered pharmacists and veterinarians should be allowed to dispense antibiotics without a prescription increased from an average agreement of 5.44 (41.3% support) to 7.59 (72.5% support), and from 5.67 (58.5% support) to 7.72 (81.7% support), respectively. Participants recognized that increasing the number of trained points of access could reduce mortality and resistance simultaneously.

Post-deliberation, support for prioritizing clean water, sanitation, and hygiene (WASH) alongside vaccination programs jumped to over 95%. In a region where healthcare infrastructure is often stretched thin, the most viable path to mitigating AMR is through One Health interventions that prevent the need for antibiotics in the first place.

B. Deliberative Polling Methodology

Random Dynamic Resources, a leading survey organization in Sub-Saharan Africa and MENA, was selected to recruit participants. RDR employed address-based probability sampling in-person and by phone. It should be noted that, knowing the target population and the level of commitment required for this event, they chose these methods to ensure a high turnout, even though they are more time and resource intensive. Stanford's Deliberative Democracy Lab has worked with RDR for the last few years on global projects in the SSA and MENA regions. For this experiment, RDR recruited the nationally representative samples for Nigeria and Tanzania.

Participants engaged with educational materials, participated in facilitated small group discussions with diverse perspectives, and had opportunities to question expert panels.

The Tanzania deliberative polling experiment achieved a sample size of 185 participants in the treatment group and 206 participants in the control group.

Section II: Participant Demographics

The Tanzanian deliberative poll successfully gathered a diverse cross-section of the country's population. 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	86	46.7%
Female	99	53.3%

Distribution of Deliberation Participants by Age

Age Group	Amount	Percentage
18–24	32	17.2%
25–34	58	31.1%
35–44	57	31.1%
45–54	38	20.6%
55+	0	0%

Distribution of Deliberation Participants by Education Level

Education Level	Amount	Percentage
Primary or less	32	17.4%
Secondary	89	47.9%

Post-secondary/Vocational	43	23.4%
Tertiary (Bachelor+)	21	11.3%

Distribution of Deliberation Participants by Urbanicity

Location	Amount	Percentage
Urban/Suburban	177	95.9%
Rural	8	4.1%

The Tanzanian deliberative sample (N = 185) was close to gender-balanced. Participation skewed toward working-age adults: roughly four-fifths of participants were 18–44, and there were no participants aged 55+ in the treatment group based on the reported percentages. Educational attainment was mixed but leaned toward secondary education, alongside a substantial minority with post-secondary/vocational training and a smaller tertiary-educated group. Geographically, the sample was overwhelmingly urban/suburban, meaning rural perspectives were present but limited. The participant groups were somewhat more urban than their control groups, and notably, Tanzania's participant group ratings were significantly lower on average for 31 out of 45 proposals before deliberation compared to the control group.

Section III: Deliberation Analysis

In the post-deliberation survey, Tanzanian 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.

A. Top 10 Proposals for Tanzania

1. **Stop medically critical antibiotics in the food chain (Targets for antibiotics):**
There should be a global target to stop the use of medically critical antibiotics in the food chain.
2. **Increase farmers' access to animal antibiotics (Access to antibiotics):**
Governments in low- and middle-income countries should increase access to antibiotics to support all farmers for their animals, including those who have little access to veterinarians.
3. **Controlled informal dispensing + monitoring of basic oral antibiotics (Access to antibiotics):** Governments should develop clear guidelines and support for controlled informal dispensing and monitoring of the most widely needed basic oral antibiotics without a doctor's or veterinarian's prescription.
4. **Establish national surveillance across humans, animals, and water (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.
5. **Clean water funding for healthcare facilities (Infection prevention):** Specific government funding should go to healthcare facilities to ensure that all have access to clean water for hand hygiene.
6. **Scale up WHO-recommended childhood vaccination (Infection prevention):** Immunization for WHO-recommended childhood vaccination should be scaled up towards universal/full coverage, to capture all children.
7. **Regulate and monitor informal antibiotic 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.
8. **Integrate rapid diagnostic testing into surveillance (Surveillance and monitoring):** Data from point of care rapid diagnostic tests should be incorporated into routine national surveillance reporting.
9. **Awareness campaigns on harms of unnecessary antibiotic use (Awareness and education):** Awareness campaigns should focus on the risks and harms of taking unnecessary antibiotics on humans, food security, and the environment.
10. **Integrate lab systems with shared One Health resources (Surveillance and monitoring):** Laboratory systems for measuring antibiotic resistance in bacteria for humans and animals should be integrated with shared One Health resources.

The proposals stating that everyone should have access to clean water and safe sanitation, and that governments should prioritize infection prevention tools to reduce the burden of infectious diseases was not top 10 for Tanzania. Participants seemed to be more interested in proposals related to surveillance and monitoring, and access to antibiotics. Respondents' attitudes pre-deliberation demonstrated the lowest support for the government to regulate farmers to establish infection prevention programs on farms. However, post-deliberation, the support for this proposal changed significantly among Tanzanian participants, receiving an average rating of 8.485 (94.6% support).

B. Proposal Analysis

1. There should be a global target to stop the use of medically critical antibiotics in the food chain.

The proposal calls for an international mandate to end the use of antibiotics essential for human health within the food production industry. Post-deliberation support in Tanzania increased significantly, rising from a mean of 7.28 (65.2% support) to 8.54 (92.2% support).

Participants argued that “the use of these drugs is the cause of the increase in the price” and that reducing their use is important for “every Tanzanian” to have safer food. Another added that much food is currently “sold in the market without being verified” which needs strict verification to protect consumers. Agriculture accounts for 28% of Tanzania's GDP and employs 80% of the labor force. Because smallholder farmers often use antibiotics as a quick fix for lack of sanitation, understanding the long-term human harm caused by drug-resistant residues led to a dramatic reversal of opinion.

2. Governments in low-and middle-income countries should increase access to antibiotics to support all farmers for their animals, including those who have little access to veterinarians.

Support for this proposal jumped from a mean of 7.25 (68.8% support) to 8.88 (94.7% support). Participants recognized that rural areas are currently underserved. Participants explained that “many doctors do not reach this for antibiotics” in rural communities and urged the government to “show them how to control it” because livestock remains a “big problem” without professional support. Additionally, one said that without formal access, farmers “become beggars” in shops, losing their power over animal health.

For 70% of Tanzanians, livestock acts as a living bank to be liquidated for emergencies. Ensuring these reserves are protected through reliable medicine access is a matter of basic fiscal security for those without formal banking.

3. Governments should develop clear guidelines and support for controlled informal dispensing and monitoring of the most widely needed basic oral antibiotics without a doctor's or veterinarian's prescription.

Support increased from a mean of 7.67 (83.4% support) to 8.87 (97.6% support). Participants focused on the need for education rather than restriction. One participant suggested that those in medicine stores should be “given secondary education and colleges” because currently they “sell but they don't know how to use them.” Tanzanians rely heavily on Accredited Drug Dispensing Outlets, particularly in the rural-urban divide where formal infrastructure is thin. Citizens preferred expanding the number of trained points of access to reduce mortality.

Tanzanian participants increased their support for clear guidelines and support for controlled informal dispensing of antibiotics without a prescription. Interestingly, there was no statistically significant shift in support for medicine vendors and informal drugs shops being regulated or limited in their ability to dispense antibiotics without a prescription; support here remained high at about 7.65 on the 10-point scale (76.8% support).

4. National surveillance programs should be in place to monitor infection rate, bacterial types, antibiotic use, and antibiotic resistance in humans, animals (including fish) and water systems.

Participants considered a range of proposals to establish or enhance systems to monitor infection rates, resistance of bacterial strains, antibiotic use, and other useful indicators. Support rose from a mean of 7.95 (73.7% support) to 8.69 (95.6% support).

Data collection was viewed as the only way to trigger government intervention. One participant noted that the information would help identify “how many people have died” and allow for control of the infections “earlier than doing so [after].” Tanzania faces a crisis of underregulated antibiotic use; participants believe accurate record-keeping is a prerequisite for the disciplinary measures needed in the toxic industry.

5. Specific government funding should go to healthcare facilities to ensure that all have access to clean water for hand hygiene.

Support increased from 7.93 (79.2% support) to 8.56 (91.5% support). WASH (Water, Sanitation, and Hygiene) was seen as a primary defense for the vulnerable. One participant highlighted the need for “village of the Maji [water] programs specifically for [children].” Another participant stated that clean water is a requirement to understand and improve “health of the people” in regions like Kilimanjaro.

Support for infection prevention shifted more in Tanzania than in any other category, with support increasing by an average of 14.26%. Participants concluded that preventing infection is the most viable path when infrastructure is stretched thin.

6. Immunization for WHO-recommended childhood vaccination should be scaled up towards universal/full coverage, to capture all children.

Tanzanian participants' support for infection prevention proposals appeared to be most impacted by the deliberative polling process, with the percentage of supportive participants increasing by 14.26% on average post-deliberation. Support for this proposal increased significantly from a mean of 7.46 (64.6% support) to 9.00 (97.9% support). Vaccines were recognized as a tool to break the cycle of illness. One participant noted that with vaccination, we can ensure a child does not “marudi wa shindo” [return to sickness]. Another participant added that existing programs in areas like the Serengeti are too “fragile” and must be better managed to reach the city. Prior to deliberation, Tanzanians rated prevention as a lower priority, but they emerged from the process viewing vaccination as a key One Health intervention that reduces the subsequent need for antibiotics.

7. 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 conditions.

Support for this dispensing model rose from 5.44 (41.3% support) to 7.59 (72.5% support). Participants wanted to balance expertise with geographical constraints. Participant 60005 suggested that “professionals should go to the place where they know how to give the antibiotics” so that people are not forced to travel long distances for simple medicine.

While support for professionalizing these roles grew, support for *restricting* informal vendors remained high at 76.8%, reflecting their role as the primary health and veterinary care source for rural communities.

8. Data from point of care rapid diagnostic tests should be incorporated into routine national surveillance reporting.

Support grew from a mean of 7.77 (85.8% support) to 8.65 (92.5% support). Rapid testing was seen as a way to “control the effects on humans” by reducing trial-and-error medicine. One participant supported “the mapping of all laboratories... starting from our street” to deliver specialized tests that prevent poisoning. The high cost of laboratory tests currently drives prophylactic drug use in Tanzania; incorporating rapid, cheaper tests is seen as an essential economic and health intervention.

9. Awareness campaigns should focus on the risks and harms of taking unnecessary antibiotics on humans, food security, and the environment.

Support increased from a mean of 7.97 (75.2% support) to 8.18 (88.1% support). Participants underlined the need for accessible media formats. One participant argued for “more audio than putting text” because radio and video can “simplify the magnitude of human harm” for those who may not read much. Another participant called for government stakeholders to “focus on it in order to... reach more people.” Use of the Kiswahili language was identified as critical for education so that the message can be “eaten more easily” by the general public.

10. Laboratory systems for measuring antibiotic resistance in bacteria for humans and animals should be integrated with shared One Health resources.

Support rose from a mean of 7.90 (87.3% support) to 8.74 (91.4% support). Integration was seen as a pathway to global support. One participant noted that this would be a “way to find international sponsors” to help local systems grow. Another participant added that specialists must “cooperate with them” to build a stronger global health team. Given the overlap of livelihoods where humans live in close proximity to livestock, integrated One Health resources were viewed as a necessity.

B. Distinctive Patterns

Pre-deliberation, Tanzanian participants rated 31 of 45 proposals significantly lower than the control group, including the least-supported food security proposal: banning the use of antibiotics critical for human medicine in food production systems (67.1% support; mean = 6.668). Post-deliberation, Tanzania exhibited the largest overall gains in support, with especially strong movement in infection-prevention proposals. This antibiotic ban rose dramatically to 91.3% support (mean = 8.491), driving the global increase from 69.3% to 76.6%.

Tanzania stood out for its massive deliberative shift on agricultural antibiotic restrictions, transforming a comparatively skeptical baseline into overwhelming endorsement (67.1% to 91.3%). Unlike Brazil, where deliberation increased opposition to dispensing antibiotics without a doctor's prescription, support for pharmacists and veterinarians dispensing antibiotics without prescriptions increased by more than two points on the 10-point scale. In the context of severe rural–urban disparities and limited physician access, expanding trained points of access is perceived as a life-saving necessity.

Participants experienced a 25.3-percentage-point increase in agreement with the statement “Public officials care a lot about what people like me think” (33% to 58.3%), the largest shift observed across all countries. Agreement with “I have opinions about policy issues that are worth listening to” also increased substantially (78.3% to 89.6%). Notably, however, this empowerment coexisted with continued pessimism: post-deliberation, 53.4% of Tanzanian respondents still agreed that “People like me don’t have any say about what the government does,” a distinction between perceived recognition and actual political influence.

Section IV: Knowledge Gains

Tanzanian participants showed limited knowledge gains post-deliberation compared to several of their peers, with an average increase in correct responses ranging from 3.6% to 7.1% across the six knowledge questions tested. This compares to much more substantial gains in countries like Nigeria (30.6%) and India (17.5%). The more modest gains in Tanzania may reflect that participants already possessed a functional, if incomplete, baseline of practical knowledge regarding antibiotic access and livestock management.

Despite the lower average increase, Tanzanian participants demonstrated improved understanding in five out of the six tested categories, while seeing a decrease in

knowledge of 1.4% for one question. Their most significant improvement was a 12.4% increase in correct responses for the question: “Which of the following statements is a fact about antibiotic resistance?”.

Participants in discussion groups expressed a nuanced understanding of the barriers to AMR education, suggesting that technical knowledge must be delivered in culturally appropriate ways. For instance, one participant argued that “education should be given more audio than putting text... to simplify the magnitude of human harm,” noting that technical text can be a barrier for many. They further emphasized the necessity of using Kiswahili so the information could be understood by the general population.

The deliberation process shifted Tanzanian perspectives on infection prevention, with support for these proposals increasing by 14.26% on average. This indicates that while technical knowledge gains were modest, the considered opinion regarding the value of WASH and vaccination as a primary defense against AMR grew substantially.

Participants recognized that a lack of diagnostic knowledge drives drug misuse. Another participant noted that “many people use these drugs without explanation of the doctor” due to high costs, suggesting that policies should prioritize affordable rapid diagnostic tests to bridge the gap between knowledge and application.

Because Tanzanians rely heavily on Accredited Drug Dispensing Outlets, policies should focus on professionalizing and training these informal sellers rather than restricting them, as participants realized that increasing trained points of access is the most viable way to reduce mortality and resistance in rural areas.

Section V: Political Efficacy

Tanzanian participants experienced an increase in political efficacy post-deliberation, the most dramatic gains in confidence among the six countries studied. While Tanzanians initially expressed low levels of perceived influence over policy, the deliberative process appeared to empower them, leading to substantial shifts in how they view their relationship with government officials and their own capacity to effect change.

Agreement with the statement “Public officials care a lot about what people like me think” showed the largest shift, rising 25.3 percentage points from a pre-deliberation baseline of 33 percent to 58.3 percent post-deliberation. Belief in the value of one’s own policy views also strengthened: agreement with “I have opinions about policy issues that are worth listening to” increased by 11.3 percentage points, reaching 89.6 percent.

Finally, perceptions of community-level agency were already high but still grew meaningfully, with agreement that “I have the ability to create change in my community” rising from 89.4 percent to 94.1 percent—the highest level of community efficacy observed across all six countries.

Tanzania stood out across the six countries for a seemingly contradictory pattern in its data. While participants grew more confident that officials cared about their thoughts, they also saw a 16.5 percentage point increase in agreement with the statement “People like me don’t have any say about what the government does” (rising from 36.9% to 53.4%).

Agreement with “People like me can’t do much about food security” rose by 10.8 percentage points. This trend suggests that while deliberation made Tanzanians feel their opinions were more valuable and worth listening to, the complexities of AMR and food security may have made them more aware of the structural barriers to individual influence. Before the deliberation, urbanity was a major distinguishing factor. Rural residents initially rated 16 out of 45 proposals significantly lower than urban residents, with substantive differences ranging from 1.76 to 2.6 points lower.

Following the discussion, these disparities disappeared. Rural participants’ ratings moved to align with urban residents on 43 out of 45 proposals, indicating that access to shared information and deliberation effectively leveled the playing field for rural citizens who initially felt more disconnected or skeptical. Post-deliberation, an increase in age became a significant predictor for higher support across 15 different proposals, while education level was not found to be a major differentiating factor in how Tanzanians rated efficacy or policy solutions.

The massive gain in the belief that public officials care suggests that Tanzanians are responsive to inclusive policy-making processes. Because the deliberation bridged the rural-urban gap, the findings imply that outreach and educational campaigns targeted at rural populations could rapidly build national consensus and political legitimacy for AMR interventions, provided the government maintains the One Health framing that resonated so strongly with participants

Section VI: Demographic Differences

A. Gender

Gender was not a significant factor in the average proposal rating before or after deliberation.

B. Age

Before deliberation, age was not a statistically significant factor in mean proposal rating. However, after deliberation, it was significant for 15 out of 45 proposals with an increase in year of age associated with an increase of between 0.033 and 0.093 in mean proposal rating.

C. Education

Participants answered questions about their education level. Their responses were grouped into three categories: high school completion or below, post-secondary education (including non-tertiary education and short-cycle tertiary education, typically equating to vocational or trade school), and bachelor's degree or equivalent and higher. In Tanzania, levels of education was not a major differentiating factor in their ratings of proposals.

D. Rural vs Urban

The survey asked participants about the urbanicity of their living environment. Responses of "urban" or "suburban" were recorded into an "urban" category, while responses of "town," "rural," or "other," were recorded into a "rural" category. Prior to deliberation, urbanicity appeared to be an important distinguishing factor for Tanzania. Rural residents rated 16 out of 45 proposals significantly lower on average than urban residents. Average differences ranged from 1.76 to as large as 2.6 points lower for rural residents, indicating large substantive differences. However, after deliberation, rural residents only rated two different proposals lower on average than urban residents, with a 1.27 lower rating for the proposal, "Hand hygiene and infection prevention should be part of the standard curriculum in schools from the start of schooling through to graduation" and a 1.62 lower rating for the proposal, "National governments should increase funding for awareness campaigns into vaccine hesitancy and improving understanding about people's behaviours relating to vaccination."

Section VII: Event Evaluation

Participants were asked to evaluate various aspects of the event on a 0 to 10 scale, where 0 represents not valuable, and 10 indicates the component is most valuable. Tanzanian respondents rated small grouped discussions 8.538/10, briefing materials: 8.427/10, expert panels: 8.550, and the event as a whole: 8.404/10. Participants were also asked to rate their level of agreement with a series of statements, with 0 being 'strongly disagree with', and 10 being 'strongly agreeing with'. Participants believed that

the deliberation session was effective in exposing them to perspectives outside of their own. Participants agreed that briefing materials presented a range of different viewpoints, with an average rating of 8.267/10. Respondents also believed that the experts presented a range of different viewpoints (8.601/10). They also felt they understood a lot more about other people's views on this topic after discussion (8.541/10).

This work was supported by Wellcome [226689] and Novo Nordisk Foundation [NNF24SA0092600].

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