

DELIBERATIVE POLLING® ON ANTIMICROBIAL RESISTANCE

COUNTRY REPORT
INDONESIA 

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.

Throughout the deliberations, Indonesian participants prioritized infection prevention proposals the most, with seven out of the 10 top-supported proposals among Indonesian participants being categorized as “infection prevention.” Participants saw the awareness and increasing implementation of infection prevention methods, particularly hand-washing and vaccinations, through government policies and school curriculums. With the agriculture sector accounting for a major part of the Indonesian economy, Indonesian participants supported proposals that involved the increase of increased infection prevention awareness and strategies on farms and distinguishing foods that were produced with the presence of antibiotics.

Top 5 Policy Proposals Supported by Participants in Indonesia

Rank	Policy Proposal
1	Everyone should have access to clean water and safe sanitation (WASH) in their community and health system.
2	Specific government funding should go to healthcare facilities to ensure that all have access to clean water for hand hygiene.
3	Hand hygiene and infection prevention should be part of the standard curriculum in schools from the start of schooling through to graduation.
4	National governments should prioritise infection prevention tools (clean water, safe sanitation and vaccination) to reduce the burden of infectious diseases.

5	Immunization for WHO-recommended childhood vaccination should be scaled up towards universal/full coverage, to capture all children.
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The post-deliberation consensus in Indonesia reflects extreme public desire for long-term investments in public health infrastructure. Participants linked hygiene, sanitation, and education as core to reducing AMR, and repeatedly emphasized the importance of government responsibility. The education system, in particular, was seen as a practical venue for building lifelong habits—especially in rural and lower-income areas.

Participants also backed regulatory and consumer-facing solutions for antibiotic use in agriculture. They favored informed choice and better oversight over blanket bans. One participant noted, *“The important thing is education... to raise awareness for farmers about what is dangerous and what is not,”* reinforcing a preference for capacity-building over punishment. Collectively, the Indonesian results indicate strong public demand for AMR policies that are preventative, practical, and participatory.

Section I: Introduction and Methodology

A. Introduction

Antimicrobial resistance (AMR) poses a significant challenge for Indonesia, which is projected to be among the top five countries with the highest percentage increase in antibiotic consumption by 2030. This crisis is a result of the country’s weak regulations against the misuse of antibiotics in healthcare and the agricultural sector. AMR has taken the lives of over 40,000 Indonesians each year, with a significant proportion of them being aged 70 and older.

The agriculture sector makes up a substantial portion of Indonesia’s overall economy, with the country standing as a leading global exporter of palm oil, coffee, cocoa, and spices. Livestock production plays a crucial role in maintaining food security, particularly in rural environments. However, widespread overuse and misuse of antibiotics in this sector have led to growing concerns about antibiotic residues in food products, posing direct health risks to consumers.

Indonesia has a mixed healthcare system. Citizens are enrolled into the Jaminan Kesehatan Nasional, the government-run universal healthcare system funded by

employer contributions. Wealthier citizens can purchase private healthcare to receive better coverage and priority in treatment. Citizens living in rural areas have a harder time receiving timely and quality treatment due to their geographic isolation. In some areas, citizens may need to take 8-hour boat rides to travel to their nearest hospital. There are also disparities in the amount of doctors in different specialties, with certain areas facing severe shortages.

B. Deliberative Polling Methodology

For Indonesia's deliberative poll, the recruitment was handled by Alvara, an Indonesian research and consulting company that specializes in conducting online surveys using probability-based sampling. The sample was split into a treatment group that participated in the deliberation and a control group that did not deliberate but answered the same questions for comparison. In Indonesia, 198 people participated in the deliberative event (treatment group), while 200 people comprised the control sample. Participants in the treatment group engaged in moderated discussions conducted in Indonesian over multiple sessions in mid-2024. The deliberation agenda included expert presentations on AMR and breakout discussions on specific proposals, ensuring that participants could ask questions and consider various perspectives. The process spanned a full weekend, with an introductory session, three thematic discussion sessions, and a concluding plenary. This format mirrored the approach used in the other five countries participating in the global project, adjusted for local context.

Section II: Participant Demographics

The tables below present key demographics of the participants who took part in the Indonesian AMR deliberation (treatment group). For reference, we also note the control group demographics; however, the focus here is on the deliberating participants.

Distribution of Deliberation Participants by Gender

Gender	Amount	Percentage
Male	100	50.6%
Female	98	49.4%

Distribution of Deliberation Participants by Age

Age Group	Amount	Percentage
18–24	36	18.2%
25–34	67	33.8%
35–44	49	24.8%
45–54	45	22.7%
55+	1	0.5%

Distribution of Deliberation Participants by Education Level

Education Level	Amount	Percentage
Primary or less	2	1.0%
Secondary	67	33.7%
Post-secondary/Vocational	0	0.0%
Tertiary (Bachelor+)	129	65.3%

Distribution of Deliberation Participants by Urbanicity

Location	Amount	Percentage
Urban/Suburban	188	95.0%
Rural	10	5.0%

The Indonesian deliberative poll sample was nearly gender-balanced, with 50.6% male and 49.4% female participants. The age distribution skewed toward working-age adults, with the largest group aged 25–34, followed by 35–44 and 45–54; younger adults 18–24 comprised 18.2%, while adults 55+ were minimally represented.

In terms of education, the Indonesian sample was highly educated, with 65.3% reporting tertiary education and 33.7% reporting secondary education, while primary education or less was rare and no participants reported post-secondary/vocational education. Geographically, the sample was overwhelmingly urban/suburban, with limited rural representation.

Section III: Deliberation Analysis

A. Top 10 Proposals for Indonesia

In the post-deliberation survey, Indonesian 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.

The following are the top 10 proposals at post-deliberation among Indonesian participants:

1. Farm workers hand hygiene (Infection Prevention): Teach and enforce proper hand hygiene for farm workers to reduce the spread of infections between animals and from animals to humans.
2. Prioritize infection prevention nationally (Infection Prevention): The government should prioritize tools like clean water, safe sanitation, and vaccination in national policy to reduce infectious disease burden.
3. Universal clean water & sanitation: WASH (Infection Prevention): Ensure everyone has access to clean water and safe sanitation in their community and healthcare facilities.
4. 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.
5. Antibiotic manufacturing waste standards (Environmental Controls): There should be national certification standards for the manufacture of antibiotics in all countries for safe waste/outflow disposal, with penalties if standards are not met.

6. Universal childhood immunization (Infection Prevention): Scale up immunization for all WHO-recommended childhood vaccines to reach full coverage of all children.
7. Publish hospital hand hygiene rates (Infection Prevention): Hospitals should be mandated to publish their hand hygiene rates annually.
8. International label for antibiotic-produced food (Food Security): Food produced with the routine use of antibiotics should be identified by an international standard, such as a hazard-warning symbol or label.
9. Farm biosecurity and infection control (Infection Prevention): Farms should ensure good infection prevention and biosecurity measures.
10. Hygiene in school curriculum (Awareness & Education): Hand hygiene and infection prevention should be part of the standard curriculum in schools from the start of schooling through to graduation.

B. Proposal Analysis

1. Farm Workers Hand Hygiene

Support for teaching farm workers hand hygiene was high post-deliberation (91.7%) and remained largely stable from pre- to post-deliberation. The agricultural sector in Indonesia plays a large pivotal role in maintaining food security and a healthy economy and employs a substantial 29% of the nation's total workforce. Given the centrality of agriculture to livelihoods and food supply, participants described hygiene training and enforcement as a practical, preventive intervention that could be implemented without major infrastructure. Overall, this proposal aligned with a broader prevention-first orientation in Indonesia's discussions.

2. Prioritize Infection Prevention Nationally

Desire for national prioritization of infection prevention tools was similarly high (91.6%) and largely unchanged from pre- to post-deliberation. Participants repeatedly returned to vaccination as a concrete prevention tool, noting that vaccines could prevent the spread of infectious and viral diseases like malaria. One participant noted that vaccinations would not only limit the impact of the infection, but also "limit the chances of contracting it at home." Others focused on implementation, arguing that in order to comprehensively increase vaccinations, the government "must truly educate and also provide [full attention to vaccination]." Indonesia has been battling high rates of infectious and viral diseases such as tuberculosis, malaria, influenza, and HIV/AIDS. Participants framed infection prevention as a long-term strategy to reduce illness and, by extension, antibiotic demand.

3. Universal Access to Clean Water and Sanitation (WASH)

The proposal “everyone should have access to clean water and safe sanitation (WASH) in their community and health system” received support from 90.2% of Indonesian participants. Support mostly stayed the same from pre to post-deliberation. Indonesia continues to face challenges pertaining to clean water access, with at least half of the nation’s population lacking access to clean water. Only a small amount of wastewater is treated, with the rest being open to contamination, opening up to health issues such as diarrhea, cholera, and childhood stunting. A participant noted that while many Indonesians reside in urban areas, it is difficult for such areas to get enough clean water. Another participant noted that untreated water is rich in bacteria, which “[increase the] need for antibiotics, so the government should strictly distribute water with good quality.” Many treated WASH as foundational: without reliable clean water and sanitation, hygiene practices and infection control measures become difficult to sustain, with one participant pointing to the practice and effectiveness of safety measures such as hand-washing taken during the COVID-19 outbreak. Participants understood the current state of clean water access in Indonesia and stressed the importance of clean water to human health and sanitation, therefore giving support to this proposal.

4. Clean Water Funding for Healthcare Facilities

Providing specific government funding so healthcare facilities have clean water for hand hygiene received a high level of support post-deliberation (91.7%) and remained stable. Participants emphasized that water access is not just a community infrastructure issue but also a health system requirement for basic infection control. A participant stated that the main reason why implementation of clean water is unrealistic today is because of “the low level of funding, lack of money to pay for the inspectors, and the country may have other projects that may not want to.” Others argued that action is still required, stressing “the [Indonesian] government should take steps in order to [expand clean water access].” Participants’ emphasis on resourcing and implementation suggests they viewed this proposal as a practical mechanism to operationalize broader WASH goals in clinical settings.

5. Antibiotic Manufacturing Waste Standards

The proposal “There should be national certification standards from the manufacture of antibiotics in all countries for safe waste/outflow disposal, with penalties if standards are not met” was supported by 91.4% of Indonesian participants. Participants raised concerns about environmental pathways of resistance and described improper disposal as a risk to both ecosystems and human health. One participant warned that improper disposal can “damage the environment and the health of the body.” While the policy is framed internationally (“in all countries”), participants treated environmental controls as

directly relevant to domestic exposure and long-run AMR emergence. The post-deliberation increase suggests deliberation strengthened understanding of environmental drivers of AMR beyond clinical misuse.

6. Universal Childhood Immunization Coverage

Universal childhood immunization was extremely desired post-deliberation (91.2%) and increased from pre-deliberation (88.2%). While Indonesia does offer free childhood vaccinations for its population, geographical barriers and skepticism of vaccines have been a challenge for the government in effectively carrying out such a program. One participant had noted that it is important for those living in Indonesia to be aware of the benefits of vaccinations, where “although it is [seen as] taboo to [receive] immunization, it is also very important to increase the immunity of the body.” Many other participants spoke on challenges relating to vaccination hesitancy, advocating for more efforts to bring awareness into the importance of vaccination and its benefits in protecting the human body from infections and diseases.

7. Publish Hospital Hand Hygiene Rates

The proposal “Hospitals should be mandated to publish their hand hygiene rates annually” was supported by 95.8% of Indonesian participants. This was an increase from the pre-deliberations, where 89.9% of participants supported the proposal. While there are certain regulations for hospitals in Indonesia to implement hand-washing hygiene programs, there aren’t any policies for them to publish data related to hand hygiene rates. Participants mentioned the importance of transparency and safety as reasons for implementing such policies, mentioning that doing so would “provide a reduction in the spread of infection for the patient and anyone who is sick in the environment.” Participants mentioned other ideas that added to the proposals, such as establishing a “safety training for accreditation on hospital hygiene.” Participants have consistently supported proposals involving the increase of hand hygiene and other infection prevention methods, therefore favoring the idea of giving more hospitals pressure to provide transparency on their hand hygiene rates and to promote the practice.

8. International Label for Food Produced with Routine Antibiotics

An international label for food produced with routine antibiotics received high support post-deliberation (90.8%) and remained stable across waves. Risks from antibiotics involved in food production have been a major contributing factor to AMR, where residues of antibiotics left on foods can cause health issues. This has particularly been a risk for poultry foods, which accounts for a large portion of the agricultural economy in Indonesia. Participants reasoned that these labels would allow consumers to “make

more informed decisions,” and could possibly “create greater opportunities for meat, fish, and agricultural products that are free from unnecessary antibiotics.” A participant also mentioned that having “a clear international framework that leads to consistent policies and a good level of awareness of antibiotic resistance is quite good,” given that the proposal would be governed by an international standard.

9. Farm Biosecurity and Infection Prevention Measures

Farm biosecurity and infection prevention was supported by 90.0% post-deliberation and increased from pre-deliberation (87.5%). Though farms in Indonesia practice infection prevention tactics, knowledge and implementation still varies by farm and area, making awareness and effectiveness the challenge in doing so. A participant noted the significance of the livestock industry as a contributor to the agricultural economy in Indonesia, and advocated for “having government regulations on livestock farming that advocate for mapping and teaching vaccination practices...as it can improve food security because everything begins with preventing problems at the source, or at least from the producers in the livestock sector.” Another participant mentioned that “in addition to education and training for farm workers and animal health routines, collaboration between farm governments and health organizations is very important.” Overall, participants viewed biosecurity as requiring coordination, and many supported partnerships between farms and the Indonesian government to accomplish infection prevention goals.

10. Hygiene and Infection Prevention in the School Curriculum

The proposal “hand hygiene infection prevention should be part of the standard curriculum in schools from the start of schooling through to graduation” was supported by 89.7% of Indonesian participants. Participants framed schools as a delivery mechanism for early habit formation and long-term cultural change, especially where household hygiene education is uneven. While Indonesia does have hand hygiene prevention integrated into school curriculums through government initiatives and partnerships with other non-governmental organizations, widespread implementation has been a challenge. The high support for this proposal is consistent with the participants’ opinions for other proposals relating to hand hygiene. A participant noted that hand hygiene education in schools is crucial as “it is a strategic step to build awareness since the day.” This proposal’s extreme desire was consistent with Indonesia’s broader emphasis on education-driven prevention.

C. Distinctive Patterns in Indonesia's Results

As noted, 7 of the top 10 Indonesian proposals were prevention-oriented (the highest alongside Brazil). This was more than in countries like Tanzania or Nigeria, which had fewer prevention proposals at the very top. Rather than emphasizing downstream responses (like surveillance systems or antibiotic-access expansion), Indonesian participants converged on upstream prevention: clean water and sanitation, hand hygiene, and vaccination. This is reflected directly in the top-ranked list, where the first four proposals are all WASH/hand-hygiene and health-system hygiene measures. Another distinctive feature of Indonesia's list is how consistently hygiene is treated as a cross-setting norm across sectors. Participants elevated hand hygiene for farm workers (#1), transparency and clean water for healthcare facilities (#4 and #7), and hygiene education in schools (#10). This pattern suggests Indonesian deliberators viewed AMR prevention as something that has to be consistent throughout the places where people routinely get exposed to infection risk.

Section IV: Knowledge Gains

Indonesian participants showed substantial knowledge gains post-deliberation, with an average increase of correct responses ranging from 3.6% to 7.1% across the six knowledge questions tested. Among the questions with the most increase in correct responses were about ways to prevent infection and reduce antibiotic resistance. This is similar to the results of the polls on the proposals, where proposals on infection prevention had the highest support. Because participants were able to extensively discuss issues pertaining to infection prevention, this may have allowed participants to gain more knowledge about the topic.

Section V: Political Efficacy

Political efficacy increased post-deliberation among Indonesian participants. Particularly, the statements "I have opinions that are worth listening to" and "I have the ability to create change in my community" had the highest increase in agreement and had the second highest agreement compared to participants from other nations, following behind Tanzanian participants. Compared to the other countries, Indonesia had moderate increases in political efficacy, as participants were less confident on having the ability to increase food security and acting on antimicrobial-resistance. This is explained by Indonesia's struggles with maintaining widespread food security and

water access for all and implementing steps to increase awareness and usage of infection prevention methods, as explained by the participants. Although awareness of these issues and the desire to solve them existed during deliberations, Indonesian participants may have acknowledged that these are major issues that they themselves aren't able to tackle on their own. At the same time, Indonesia's efficacy profile is best described as mixed rather than uniformly optimistic. Many Indonesian respondents simultaneously agreed that officials care (58.1% post) and agreed that "People like me don't have any say about what the government does" (66.5% post). That combination suggests participants may distinguish between perceived goodwill from officials and real leverage over outcomes. On issue-specific efficacy, the report notes that agreement with "People like me can't do much about antibiotic resistance" generally decreased post-deliberation for Indonesia, while agreement with "People like me can't do much about food security" showed a moderate increase for Indonesia.

Section VI: Demographic Differences

A. Gender

Prior to deliberation, there were no statistically significant differences in the average proposal ratings of women and men. Following deliberation, women rated a number of proposals more highly than men, though the differences were only statistically significant for two proposals. Women rated "Everyone should have access to clean water and safe sanitation (WASH) in their community and health system" and "Hospital accreditation should be linked to infection prevention, such as using hand washing rates as a factor" by about 0.6 points higher than men, though both women and men supported the proposals on average at 7.9 or higher (on a scale of 0 to 10).

B. Age

Before deliberation, age was a statistically significant factor among Indonesian participants for only one proposal, "Governments in low- and middle-income countries should ensure appropriate access to antibiotics for all citizens including those who have difficulty in accessing the health system." A year increase in age was associated with a 0.034 decrease in mean rating. Age was not a statistically significant factor in mean proposal rating after deliberation.

C. Education

For Indonesia, higher level of education was statistically significantly associated with higher average ratings for 9 out of 45 proposals before deliberation. These differences

were statistically significant for participants with college education or higher when compared to participants with high school education or lower. The differences ranged from 0.56 to 0.97 (on a 0 to 10 scale). After deliberation, having a college education or higher was statistically significantly associated on average with a higher rating than having a high school education or lower for four proposals with differences ranging from 0.6 to 0.64.

D. Rural vs. Urban

Urbanicity was not associated with statistically significant differences in urban and rural participants' average ratings of proposals in Indonesia before or after deliberation.

Section VII: Event Evaluation

Participants were asked to rate the specific components of the deliberation and the deliberation as a whole. Indonesian participants rated the deliberation process very positively. The event as a whole received a 8.543/10 rating. When it came to individual parts of the event, briefing materials received a 8.427/10 rating, the expert panels received a 8.391/10 rating, and the small group discussions received a 8.269/10 rating.

Participants were also asked to consider specific thoughts on the different parts of the deliberation. Indonesian participants gave a 8.334/10 rating for the statement "I understand a lot more about other people's views on this topic after the discussions." Additionally, Indonesian participants gave a 8.185/10 for the statement "the experts presented a range of different viewpoints." Finally, they also gave a 8.06/10 rating for the statement "the briefing materials presented a range of different viewpoints."

Overall, Indonesian participants highly valued their experiences in this deliberation, highlighting its abilities to present a diverse array of viewpoints whether that was through discussion, briefing materials, or plenary sessions run by experts.

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