

DELIBERATIVE POLLING[®] ON ANTIMICROBIAL RESISTANCE

COUNTRY REPORT

BRAZIL



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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.

Brazilian citizens emerge from the AMR deliberative process with a prevention-first philosophy, prioritizing infection prevention and vaccination in their policy preferences. Fully 7 of Brazil's top 10 supported proposals focus on preventive approaches like clean water access, hygiene, and immunization. This indicates a broad belief that preventing infections before they require antibiotics is the most efficient public health strategy.

Regarding antibiotic use in food production, participants overwhelmingly rejected outright bans in favor of professional management and oversight. They favored proposals that ensure veterinarian supervision of antibiotic use in livestock, rather than blanket prohibitions. This preference likely stems from a pragmatic understanding of Brazil's agricultural economy and skepticism about the government's capacity to enforce strict bans.

Overall, the Brazilian Deliberative Poll results show a strong public mandate for bolstering infection prevention infrastructure and vaccination programs. Participants also support targeted regulatory measures that involve expert oversight to combat antimicrobial resistance, while remaining cautious of measures that seem impractical.

Top 5 Policy Proposals Supported by Participants in Brazil

Rank	Policy Proposal
1	Teach hand hygiene to farm workers. Educate and train farm workers in proper hand-washing and biosecurity practices on farms to prevent the spread of infections.
2	Universal access to clean water & sanitation (WASH). Ensure every community and health facility has clean water and safe sanitation infrastructure.
3	Improve infection prevention on farms. Implement comprehensive infection prevention and biosecurity measures in farms (clean facilities, separating sick animals, etc.).

4	Prioritize infection prevention tools nationally. The government should invest in and emphasize clean water, sanitation, and vaccination to reduce infectious disease burden.
5	Incentivize flu vaccination for healthcare workers. Encourage and reward patient-facing healthcare workers to get annual influenza vaccines to protect themselves and patients.

After deliberation, Brazilian participants strongly endorsed fundamental public health measures. Near-universal support for clean water access and sanitation reflects recognition that these are “basic human needs” and prerequisites for controlling infections. Proposals to educate farm workers and improve farm biosecurity resonated because Brazilians see agricultural hygiene as directly linked to food safety and health. As one participant noted, “there’s no point in us taking care of ourselves if the food is coming contaminated”.

Brazil’s top proposals also include expanding vaccination: both maintaining high childhood immunization coverage and creating new programs for adults and healthcare workers. Participants viewed vaccination as a cornerstone of prevention that can save lives and reduce antibiotic use, especially after seeing diseases like COVID-19 and measles threatening their communities due to lapses in immunization.

Finally, the Brazilian public’s nuanced stance on antibiotic use in livestock—preferring veterinarian-managed use over outright bans—highlights a balance of economic realism and public health caution. Citizens want to protect rural livelihoods and simultaneously avoid misuse, so they insist on professional control. This provides guidance for future policies: invest in infection prevention and implement oversight mechanisms for antibiotic use.

Section I: Introduction and Methodology

A. Introduction

Brazil is a global agricultural powerhouse—the world’s largest exporter of beef and poultry and a leading producer of pork and fish products. Livestock farming is economically vital to Brazil’s rural regions, employing hundreds of thousands and contributing significantly to the economy. This context means that policies on antibiotic use that affect agriculture can have far-reaching economic and social impacts. Strict antibiotic restrictions, if not carefully designed, could affect farmer livelihoods and national food security. At the same time, Brazil faces a substantial health burden from AMR. Nearly 140,000 people die annually in Brazil from drug-resistant bacterial infections, one of the highest national tolls in the world. This burden is rising due to

challenges in antibiotic stewardship and access. Brazil's healthcare system is a mix of a large public sector (the Unified Health System, SUS) and private providers.

The decentralized health system means quality of care (and thus antibiotic use practices) can vary widely between urban centers and rural interiors. Additionally, in Brazil's vast agricultural sector, antibiotics have been used not only to treat sick animals but also for growth promotion and disease prevention in herds. This has contributed to the emergence of resistant bacteria in animals that can transfer to humans through the food chain. This context set the stage for why Brazilian deliberators often gravitated toward solutions that improve underlying conditions and ensure professional guidance whenever antibiotics are used, rather than leaving decisions solely to individuals and banning tools outright.

B. Deliberative Polling Methodology

Given Brazil's diverse population and large regional disparities, the Deliberative Poll ensured voices from across society could weigh in with equal footing. For Brazil's Deliberative Poll, the recruitment was handled by YouGov, a professional survey firm. YouGov assembled a nationally representative sample of Brazilian citizens through stratified random sampling and online recruitment.

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 Brazil, 188 people participated in the deliberative event (treatment group), while 178 people comprised the control sample. Participants in the treatment group engaged in moderated discussions conducted in Portuguese over multiple sessions in Q3 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 Brazilian 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
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Male	93	49.4%
Female	95	50.6%

Distribution of Deliberation Participants by Age

Age Group	Amount	Percentage
18–24	34	18.0%
25–34	48	25.3%
35–44	42	22.5%
45–54	30	16.3%
55+	34	18.0%

Distribution of Deliberation Participants by Education Level

Education Level	Amount	Percentage
Primary or less	34	18.0%
Secondary	48	25.3%
Post-secondary/Vocational	42	22.5%
Tertiary (Bachelor+)	31	16.3%

Distribution of Deliberation Participants by Urbanicity

Location	Amount	Percentage
Urban/Suburban	142	75.5%
Rural	46	24.5%

The gender split of participants was essentially equal, reflecting Brazil's overall gender balance. Participants ranged in age from 18 to over 70, with a good mix of young adults, middle-aged, and older individuals. Roughly 43% were under 35 years old and 34% were

45 or older. In terms of education, the Brazilian sample skewed towards lower formal education levels compared to some other countries: about 38% had primary education or less, and roughly 48% had secondary education as their highest level. Only around one in ten participants had a university degree. Finally, participants came from both urban and rural areas across Brazil.

Section III: Deliberation Analysis

A. Top 10 Proposals in Brazil

In the post-deliberation survey, Brazilian 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.

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

1. Farm workers hand hygiene (Infection Prevention): Teach proper hand hygiene for farm workers to reduce the spread of infections between animals and from animals to humans.
2. Universal clean water & sanitation: WASH (Infection Prevention): Ensure everyone has access to clean water and safe sanitation in their community and healthcare facilities.
3. Farm biosecurity measures (Infection Prevention): Require farms to implement good infection prevention and biosecurity practices.
4. 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.
5. Incentivize healthcare worker flu vaccination (Infection Prevention): Encourage all patient-facing healthcare workers to get yearly influenza vaccines to protect patients and themselves.
6. Universal childhood immunization (Infection Prevention): Scale up immunization for all WHO-recommended childhood vaccines to reach full coverage of all children.
7. Adult vaccination program (Infection Prevention): Create a national program to vaccinate vulnerable adults, improving coverage in elderly and at-risk groups.
8. Fund vaccine hesitancy awareness (Awareness & Education): Increase government funding for public campaigns to counter vaccine hesitancy and improve understanding of vaccination benefits.
9. Hygiene and infection prevention in school curriculum (Awareness & Education): Include hand hygiene and infection prevention education as part of the standard school curriculum from early grades through graduation.
10. Veterinarian oversight for group antibiotic use in animals (Food Security): Require that any group treatment of animals with antibiotics be done under the management of a veterinarian or qualified animal health professional.

B. Proposal Analysis

1. Farm Workers Hand Hygiene

Participants viewed farm worker hygiene as a commonsense, preventive measure and linked it directly to food safety. As one participant expressed, “there’s no point in getting vaccinated... if the food is coming contaminated.” Many saw it as low-cost and easy to implement with proper training. Support was nearly unanimous with a shared sense that this is “a fundamental step toward safeguarding public health.” Participants felt strongly that Brazil, as a leading agricultural producer, must set and uphold clear hygiene rules for farm workers.

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

Support for clean water access was nearly unanimous post-deliberation, tied with the top-rated proposal. Participants emphasized water as a “fundamental right” and a prerequisite for infection control. “If we still use unclean water, those programs... about vaccination and antimicrobials are useless,” said one. They cited real-life examples of waterborne diseases and called for government prioritization, despite infrastructure challenges. Participants agreed this measure is essential in fighting AMR and correcting deep-rooted inequities.

3. Farm Biosecurity Measures

Participants gave strong support to improving farm biosecurity, citing it as crucial for both food safety and public health. The rationale built on Proposal #1 but broadened to include systemic improvements: “Animal health interventions reduce zoonotic disease transmission... ultimately protecting the human food supply.” Concerns about affordability for small farmers were addressed through suggestions of subsidies and training. The proposal was seen as economically wise, aligned with Brazil’s role as a major meat exporter. Education and strict supervision were emphasized to ensure real impact.

4. Prioritize Infection Prevention Nationally

Brazilian participants strongly backed a government commitment to prioritize infection prevention. This proposal unified several measures—clean water, sanitation, and vaccination—under a prevention-first policy. “Prevention tools should be at the center of our public health strategy,” one participant said. They urged resource allocation toward prevention to reduce AMR and shift away from reactive health approaches.

5. Incentivize Healthcare Worker Flu Vaccination

Support was very high for incentivizing flu vaccination among healthcare workers. Participants stressed the importance of protecting vulnerable patients: “Healthcare workers must be ‘pure’ first before we face patients.” Most supported positive incentives but some felt vaccination should be mandatory. Even those skeptical of mandates agreed incentives were a good step. The policy was seen as simple, effective, and aligned with Brazil’s history of strong vaccination programs.

6. Universal Childhood Immunization

Participants passionately endorsed this proposal, citing Brazil's proud legacy of eradicating diseases like polio. Many voiced concern over declining coverage. One said, "we eliminated polio through vaccination; we can't let it come back." They linked child immunization directly to reduced antibiotic use. While pre-deliberation support was already high, discussions elevated the urgency. Misinformation was seen as a barrier that must be overcome through education and ease of access.

7. Adult Vaccination Program

Deliberation revealed strong support for vaccinating vulnerable adults, especially seniors. Participants cited lived experience and expressed that "[they] need to ensure our grandparents get these shots." Adult immunization was seen as under-addressed but essential to reducing severe infections and antibiotic use. Implementation ideas included community drives and mobile units. There was wide agreement that Brazil should treat adult vaccines with the same importance as childhood ones.

8. Funding Vaccine Hesitancy Awareness Campaigns

Participants strongly supported this proposal, viewing education as key to reversing recent declines in vaccine trust. They pointed to misinformation on social media and during COVID: "Many people don't even have knowledge about vaccines that much." Campaigns were seen as necessary to support Proposals #6 and #7. Ideas included community-led outreach and trusted messengers. Concerns about effectiveness or corruption were minor; participants emphasized urgency and high potential impact.

9. Hygiene and Infection Prevention in School Curriculum

Participants endorsed teaching hygiene in schools, emphasizing the long-term benefits: "If you educate children, you will have a future generation that is more aware." There was debate over formal curriculum vs. routine practice, but consensus emerged on integrating hygiene meaningfully. Some worried about overloading schools or lack of facilities. However, most felt this education must be reinforced at school, not left solely to families. Infrastructure improvements were seen as a necessary companion policy.

10. Veterinary Oversight for Group Antibiotic Use in Animals

This proposal received exceptionally strong support in Brazil. Participants didn't support banning group use outright but insisted it be done under professional supervision. Trust in veterinarians was higher than in individual farmers, given concerns about economic pressure leading to misuse. Some raised access concerns in rural areas, but support remained overwhelming.

C. Distinctive Patterns in Brazil's Results

Brazil's Deliberative Polling results showed several distinctive patterns compared to the other five countries in the project:

- **Prevention-Focused Priorities:** Brazil stood out for the sheer number of infection prevention proposals in its top 10. As noted, 7 of the top 10 Brazilian proposals

were prevention-oriented (the highest alongside Indonesia). This was more than in countries like Tanzania or Nigeria, which had fewer prevention proposals at the very top. This suggests Brazilian participants, more than many others, concentrated their support on proposals dealing with clean water, hygiene, and vaccination. A likely explanation is that Brazilian deliberators felt basic prevention is a pressing gap in their country. Thus, Brazil's prevention-first pattern can be seen as both an awareness of need and an optimism that such approaches are achievable.

- **Strong Preference for Oversight:** Brazilian participants exhibited a distinct preference for regulated oversight solutions rather than either extreme of laissez-faire or outright bans. For example, among proposals about antibiotic distribution, Brazilians gave relatively low support to allowing informal antibiotic sales or non-professional dispensing. Before deliberation, Brazilians were already less favorable than other countries toward ideas like allowing informal vendors to dispense antibiotics under some guidelines. After deliberation, they became even more opposed to such proposals, with support dropping by about 0.7–1.0 points. The reason, as participants articulated, was concern over lack of medical supervision. They frequently commented that while access is important, “using antibiotics...always under medical supervision” is crucial. On the flip side, instead of supporting bans, Brazilians again leaned toward oversight and controls. We saw this with the vet oversight proposal (#10) being extremely popular, whereas another proposal that was discussed (banning the use of antibiotics critical for humans in food production) received much lower support in Brazil.
- **High Trust in Institutions:** Another nuanced pattern is that Brazilian participants generally placed a lot of trust in institutional actors to manage AMR solutions, but they were wary of relying on individual compliance or fragmented approaches. This is seen in their support for proposals that involve government action and professional oversight, versus their skepticism of proposals that depend on individuals self-regulating. For instance, Brazil had one of the highest ratings for the statement “antibiotic use in animals should be managed by veterinary professionals”, as evidenced by direct quotes advocating supervision. In contrast, their support for relying on informal sellers was minimal. They also gave some of the lowest support (59.2%) for a proposal to incentivize informal sellers to stock only quality-assured antibiotics, a proposal others found somewhat appealing. Brazilians rated that significantly below the cross-country average, indicating doubt that informal sellers could be trusted even with incentives.

In summary, Brazil's results are characterized by a preventive, oversight-oriented approach distinct even among its peers. Brazilians doubled down on prevention and expert management more than most countries, and they showed relatively less appetite for expanding antibiotic access via sweeping bans without support systems. These distinctive preferences can be explained by Brazil's social context of strong public health legacy, large agricultural sector, and a complex government. Understanding these patterns is crucial for interpreting Brazil's results: they reveal a public that is

idealistic in wanting fundamental improvements yet also pragmatic in channeling solutions through professional and institutional frameworks rather than populist measures.

Section IV: Knowledge Gains

Participants were tested on six knowledge questions about antibiotics and AMR before and after deliberation. On average, the percentage of correct answers across the six questions increased by roughly 5–7 percentage points from pre- to post-deliberation. This average gain puts Brazil on the lower end compared to some other countries (for instance, India’s average gain was 17.5%, and Nigeria’s was 30.6% on average). In four of the six knowledge questions, Brazil’s participants improved their scores; in one question they stayed about the same; and in one question their correct response rate actually decreased very slightly (by 0.1%)—essentially no change. The question where Brazilians had the highest improvement was: “Which of the following statements are true about antibiotics?” On this item, correct responses increased by 16.3 percentage points after deliberation. The control group in Brazil, which did not deliberate, did not show similar improvements, confirming that these gains were due to the deliberation process.

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 Brazil, participants’ sense of political efficacy slightly decreased after deliberation. This contrasts with the general trend in most other countries, where deliberation tended to increase citizens’ confidence in their political voice. Before deliberation, Brazilian participants were already relatively skeptical about their political efficacy. For instance, only about 30% agreed with the statement “Public officials care a lot about what people like me think,” which was among the lowest levels of agreement across countries. This baseline reflects a pre-existing cynicism or realism about Brazilian politics. After deliberation, this percentage in Brazil remained low. In fact, on three key positive statements about efficacy— “I have the ability to create change in my community,” “People like me have opinions that are worth listening to,” and “I can influence policies if I engage”—Brazilian agreement levels decreased by about 0.9 to 5.7 percentage points post-deliberation.

What might explain this drop in efficacy for Brazil? From the qualitative feedback, a few possibilities emerge. During deliberation, Brazilian participants delved deeply into the complexity of implementing the proposals. They frequently confronted the bureaucratic and political hurdles involved. While participants expressed strong support for preventive policies, deliberation did not translate into increased political efficacy, reflecting persistent skepticism toward institutional responsiveness.

Section VI: Demographic Differences

Overall, Brazilians were relatively unified in their views across ages, genders, education levels, and regions. However, there are a few nuanced observations worth noting for each category:

A. Gender

Gender differences in Brazil emerged across several proposals, with women generally expressing higher levels of support for preventive health measures and infrastructure improvements. This was especially evident in proposals such as universal access to clean water and sanitation (WASH) and universal childhood immunization, where post-deliberation support among women exceeded 97%, compared to approximately 93–94% among men. The largest difference in support was for the proposal, “Large-scale food suppliers – supermarkets, restaurant chains, intensive farming etc., – should be regulated to promote the use of food produced without routine antibiotics.” Women offered an average rating of 8.1 (74.5% support) and men offered an average rating of 6.8 (52% support). Still, both groups demonstrated increased alignment by the end of deliberations, with gaps in support narrowing modestly. The process appeared to foster mutual understanding across gender lines, reinforcing shared values around prevention and public health.

B. Age

Age was one of the strongest predictors of initial support levels and the magnitude of deliberative shift. Participants aged 55 and above entered the process with consistently high support for most proposals—particularly adult vaccination (92.6% post-deliberation support), veterinary oversight (96.9%), and infection prevention prioritization. In contrast, participants under 35 began with lower levels of agreement, especially on farm-related and regulatory proposals. However, this group exhibited the most dramatic gains during deliberation. For example, support for farm biosecurity rose by nearly 15 percentage points among the under-35 group. By the end, generational differences had diminished considerably, suggesting that the deliberative format was especially effective at engaging younger Brazilians.

C. Education

Educational attainment played a critical role in shaping deliberative dynamics. Participants with higher education began the process with high support for technical interventions like childhood immunization, adult vaccination, and biosecurity, with baseline averages often above 8.5 on the 0–10 scale. However, their views remained relatively stable, with only modest increases. In contrast, those with primary or no formal education showed significant movement during the process. For instance, average support for WASH access among this group jumped from 8.2 to 9.6 post-deliberation. By the end of deliberation, support across all education levels had largely converged above 90% for top-ranked proposals, indicating substantial knowledge equalization.

D. Rural vs. Urban

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

Section VII: Event Evaluation

Participants in Brazil rated the deliberative event extremely positively across all key measures. On a 0–10 scale, the overall usefulness of the deliberation scored an average of 9.2, one of the highest across all participating countries. Nearly all participants agreed that they had learned a great deal during the event, with 92.6% rating their learning experience as 8 or higher. Participants also felt the process was fair and inclusive: 94.1% agreed that they had sufficient time to speak, and 96.3% said others listened respectfully.

The vast majority of participants found the briefing materials understandable and balanced, with 88.2% stating that the materials helped them better understand the issues. Trust in facilitators and experts was also high; over 95% agreed that facilitators remained neutral, and a similar proportion expressed confidence in the experts' responses. Participants frequently described the event as empowering, with many reporting that they left with a stronger sense of civic responsibility and a clearer understanding of how AMR affects Brazil.

Finally, most participants said they would recommend such a deliberative process to others and would like to see similar initiatives used more frequently in Brazilian policymaking. In open-ended feedback, several noted that the experience “opened [their] eyes” and allowed them to hear “perspectives that are often invisible.”

These positive evaluations suggest that the deliberation not only produced useful data (as seen in the policy attitude changes) but also was a beneficial democratic experience in its own right for those involved. The success in Brazil could serve as a model for future public engagement on health issues in the country, having demonstrated that citizens can productively deliberate on complex issues and appreciate the experience.

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