April **2025**

Policy Brief

Rwanda's National Action Plan 2.0 on Antimicrobial Resistance (2025-2029): Priorities for Action

Key Takeaways

Alignment with Rwanda Vision 2050: Planned NAP 2.0 efforts to effectively combat AMR reaffirm the Rwanda Vision 2050 commitment to strengthen its healthcare system, improve universal health coverage, and advance health infrastructures.

Importance of multisectoral coordination: Combating AMR in Rwanda necessitates active communication, coordination and ownership across all ministers and departments beyond the health sector to prevent siloed responses.

Enhanced evidence-informed strategic planning and accountability: NAP 2.0 has introduced a new governance objective, a detailed monitoring and evaluation framework, and a prioritization process for high-impact interventions.

Need for improved sensitization of materials related to AMR: Strengthening existing communication mechanisms for better dissemination will help increase public awareness and understanding of AMR and facilitate informed decision-making.

Introduction

Addressing Antimicrobial Resistance (AMR) in Rwanda

AMR is a critical threat to global health and development. It is projected to cause over 10 million deaths globally per year by 2050; with low-resource settings bearing the brunt of this growing health crisis (1). In 2019, **AMR was associated with approximately 9,800 deaths in Rwanda, surpassing the number of total deaths attributed to respiratory infections, tuberculosis, neoplasms, maternal and neonatal disorders, digestive diseases, and enteric infections** (2). If Rwanda's AMR response remains at the current level, Rwanda could face a **5-7% GDP loss by 2050** as a result of the loss of labor productivity due to illness and premature death, a shrinking workforce, reduced food production, and rising healthcare costs (3). To support Rwanda's long-term development goals outlined in Rwanda Vision 2050—focused on promoting health, well-being, and sustainable development—it is crucial to prioritize AMR as a significant public health challenge and to adopt comprehensive strategies to tackle it effectively. **This policy brief outlines the progress achieved under NAP 1.0, highlights the strategic priorities emerging in NAP 2.0, and offers recommendations to support its implementation for sustained impact on AMR.**

Moving From National Action Plan (NAP) 1.0 to 2.0

Rwanda developed its first NAP on AMR in response to the WHO call for Member States to address AMR through the Global Action Plan. NAP 1.0 focused on five objectives: (i) improving awareness and understanding of AMR; (ii) strengthening surveillance and research; (iii) improving mechanisms for infection, prevention, and control (IPC); (iv) optimizing the use of antimicrobial medicines; (v) and fostering sustainable investment into new medicines, diagnostic tools, vaccines, and other interventions. Significant advancements were achieved during NAP 1.0 implementation (Box 1); however, only about 34% of planned activities were fully realized (4).

Valuable lessons learned from NAP 1.0 implementation challenges (5–9) include:

1. The need to **strengthen One Health (OH) governance mechanisms** to support accountability, transparency, and coordination across sectors for sustainable implementation.
2. The importance of **scaling up interventions from small-scale initiatives** to a comprehensive, nationwide approach to ensure broader impact and long-term sustainability. Public awareness programs, AMR training, pilot surveillance, and coaching on antimicrobial use (AMU) were limited to select hospitals and institutions.
3. Emphasis on **multisectoral coordination**, with enhanced integration of surveillance systems and improved IPC protocols across the OH sectors. Most efforts primarily focus on the human health sector, highlighting the potential for improvement in the animal, plant, and environmental health sectors.

BOX 1: NAP 1.0 KEY SUCCESSES

Awareness & Education

- Revised curricula for veterinarians and food and agriculture professionals to include AMR management and prudent AMU.

Surveillance

- Published the Nationwide AMR Surveillance Operation Plan.
- Structured an operation unit for surveillance and has been collecting AMR data from all labs, coordinated by the OH Directorate.

Infection, Prevention & Control

- Developed a Biosecurity Plan and guidelines in the aquaculture sector with regular inspections to ensure fish hatchery good practices.
- Conducted wastewater management in different settings by Rwanda Environment Authority.

Stewardship

- Enacted legislation banning the use of highest priority antibiotics for growth promotion and restricting antibiotic use in food animals to prescription-only, with a compliance system.
- Conducted point prevalence survey and end-user data collection on antibiotic use in the human sector.

Research & Development

- Launched Knowledge, Attitude and Practices surveys among the public, broiler producers, and livestock farmers.

Governance

- Set up a OH Multisectoral AMR Technical working group (AMR TWG) with a defined workplan and terms of reference.
- Established a designated unit under RBC, Division of Public Health Surveillance and Emergency Preparedness and Response (PHSEPR) for epidemiology.

Photo credit: The Smart Choice Process (SCP) facilitated the systematic and transparent prioritization of Rwanda's national action plan interventions to strengthen multisectoral engagement and decision-making.

National Action Plan 2.0: Development Process and Highlights

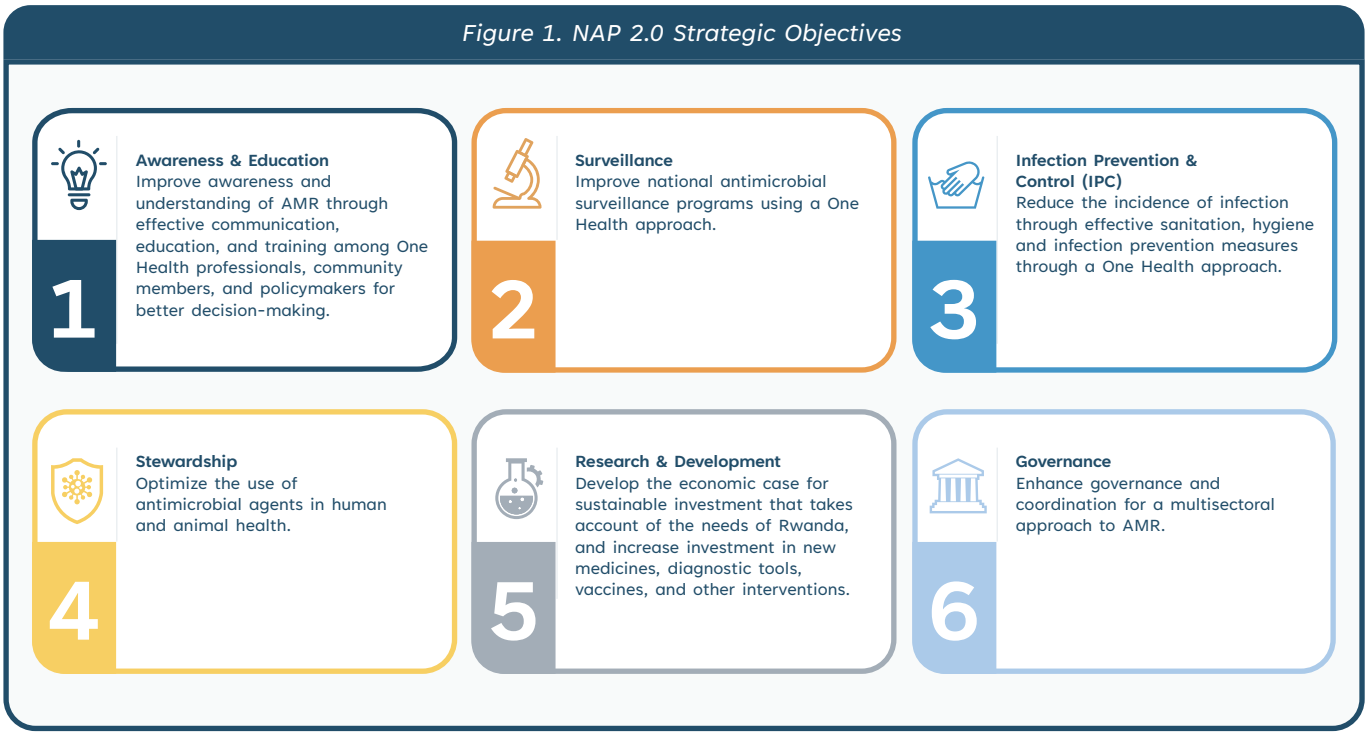
The NAP 2.0 development process was led by the Rwanda Biomedical Centre (RBC) and guided by national consultations across technical working groups of the **One Health Multi-sectoral Coordination Mechanism (OH-MCM)**, with continuous partner engagement at various stages. Collaborative partners included:

- *Food and Agriculture Organization (FAO)*, who conducted a situational analysis and supported NAP development.
- *The AMR Policy Accelerator*, who facilitated the Smart Choice Process (SCP) to methodically prioritize NAP interventions (10).
- *The World Health Organization (WHO)* who facilitated NAP costing.
- The East Central and Southern Africa Health Community (ECSA-HC) for their guidance in aligning NAP 2.0 with global and national guidelines.
- *ReAct Africa* for their support in developing Objective 6 on Governance and for facilitating the TWGs workshop on activity costing.
- *Partners in Health (PIH)* for their funding support of Smart Choice process
- *Clinton Health Access Initiative (CHAI)* for Monitoring and Evaluation, respectively.

Three highlights emerge in the NAP 2.0 to strengthen national efforts in addressing AMR (4):

1. Six strategic objectives are outlined (Figure 1), with the addition of a **sixth objective focused on governance** to improve cross-sectoral collaboration and monitoring.
2. A detailed **Monitoring and Evaluation framework** has been established to effectively monitor NAP intervention progress over the next 5 years. This framework includes indicators for measurement, baseline assessments referenced from 2024, interim targets for each year from 2025 to 2028, and a final target for 2029.
3. **Intervention priorities** have been identified through the SCP to prioritize high-impact interventions through a multi-sectoral, evidence-informed decision-making process.

Figure 1. NAP 2.0 Strategic Objectives



NAP 2.0 Intervention Priorities & Implementation Recommendations

The NAP 2.0. identifies a series of intervention priorities across each Strategic Objective. To support implementation, recommendations are proposed (Figure 2), informed by stakeholder discussions during the Smart Choice Workshop and the literature (11–14).

Figure 2. NAP 2.0 Strategic objective priorities and recommendations to guide implementation

Strategic Objective Intervention Priorities	Implementation Recommendations
1 Improving AMR public awareness through targeted education, research, and dissemination across OH sectors.	» **Bolster resources** for material development and personnel training to ensure effective AMR education and access. » **Strengthen community engagement and sensitization** to foster community buy-in through cross-sector outreach to schools, hospitals, and animal facilities (11). » **Expand communication channels** by leveraging media, digital tools, and community outreach to maximize AMR messaging.
2 Strengthening AMR surveillance and AMU monitoring through enhanced laboratory capacity, standardized testing, and integrated data-sharing across OH sectors.	» **Strengthen investment in regulatory frameworks, standardized protocols, and targeted training programs** to ensure consistent antimicrobial tracking, usage, and disposal across sectors. » **Advocate for increased funding** to optimize supply chain management and address resource shortages. » **Develop a centralized data system** and prioritize integration and dissemination of AMR surveillance data to inform decisions across all OH sectors (11).
3 Promoting biosecurity measures in agriculture, IPC programs and waste management systems across all OH sectors.	» **Prioritize funding and investment in waste disposal, IPC facilities, and sanitation** infrastructure and maintenance across OH sectors. » **Implement targeted IPC training programs** and behaviour change initiatives through OH workshops. » **Facilitate cross-sector coordination and standardization** of IPC infrastructure to ensure consistent IPC practices.
4 Promoting optimal antimicrobial prescribing, dispensing and use by improving AMU guidelines, supervision, and accessibility of antimicrobials through advancing pharmaceutical supply chain.	» **Establish monitoring and enforcement systems** through trainings and inspections to ensure adherence to standardized guidelines (12). » **Conduct regular stock audits and improve supply chain coordination** to ensure timely access to quality antimicrobials in all sectors. » **Encourage financial investment in antimicrobial research** through public-private partnerships and establish regulatory frameworks to fast-track antimicrobial approval.
5 Collaborating with international partners to promote research for identifying high-risk and high-burden resistant strains.	» **Secure funding for research on** advanced diagnostics and resistance mechanism studies. » **Support collaborative research** between academic institutions, public health agencies, and the private sector. » **Improve infrastructure for data collection** to track resistant strains and transmission patterns.
6 Enhancing governance and coordination mechanisms at both national and other administrative levels.	» **Sustain political momentum and stakeholder buy-in** through policy alignment with national goals (13). » **Create platforms for regular multisectoral dialogues**, such as joint task forces with clearly defined roles and responsibilities. » **Ensure consistent data monitoring and evaluation** across sectors to allow for progress tracking and impact assessment.

References

1. Murray CJL, Ikuta KS, Sharara F, Swetschinski L, Aguilar GR, Gray A, et al. Global burden of bacterial antimicrobial resistance in 2019: a systematic analysis. The Lancet. 2022 Feb 12;399(10325):629–55.
2. Institute for Health Metrics and Evaluation. The burden of antimicrobial resistance (AMR) in Rwanda [Internet]. [cited 2024 Aug 9]. Available from: https://ghsindex.org/wp-content/uploads/2021/12/Rwanda.pdf
3. Dadgostar P. Antimicrobial resistance: implications and costs. Infect Drug Resist. 2019;12:3903–10.
4. Rwanda: National action plan on antimicrobial resistance 2025-2029.
5. Bizimungu O, Crook P, Babane JF, Bitunguhari L. The prevalence and clinical context of antimicrobial resistance amongst medical inpatients at a referral hospital in Rwanda: a cohort study. Antimicrob Resist Infect Control. 2024 Feb 22;13(1):22.
6. OIE Report - Rwanda 2019 Follow-Up | Strategic Partnership for Health Security and Emergency Preparedness (SPH) Portal [Internet]. [cited 2024 Aug 9]. Available from: https://extranet.who.int/sph/oie-report-rwanda-2019-follow
7. Rwanda: National action plan on antimicrobial resistance 2020-2024 [Internet]. [cited 2024 Aug 9]. Available from: https://www.who.int/publications/m/item/rwanda-national-action-plan-on-antimicrobial-resistance-2020-2024
8. Gashegu M, Gahamanyi N, Ndayambaje FX, Munyemana JB, Ndahindwa V, Lukwago F, et al. Exploring Prescription Practices: Insights from an Antimicrobial Stewardship Program at a Tertiary Healthcare Facility, Rwanda. Antibiotics. 2024 Jun;13(6):548.
9. FAO Progressive Management Pathway for Antimicrobial Resistance Workshop Report. Food and Agriculture Organization of the United Nations; 2024.
10. The Smart Choice Process - [Internet]. [cited 2024 Nov 11]. Available from: https://amrpolicy.org/resources/smart-choice/
11. Stopping the Grand Pandemic: A Framework for Action - Addressing Antimicrobial Resistance through World Bank Operations. 2024 May 9 [cited 2024 Aug 9]; Available from: https://hdl.handle.net/10986/41533
12. Harant A. Assessing transparency and accountability of national action plans on antimicrobial resistance in 15 African countries. Antimicrob Resist Infect Control. 2022 Jan 24;11(1):15.
13. Ruckert A, Harris F, Aenishaenslin C, Aguiar R, Boudreau LeBlanc A, Carmo L, et al. One Health governance principles for AMR surveillance: a scoping review and conceptual framework. Research Directions: One Health. 2024 Feb 2;2.
14. World Health Organization. Global action plan on antimicrobial resistance [Internet]. Geneva: World Health Organization; 2015 [cited 2024 Aug 9]. 28 p. Available from: https://iris.who.int/handle/10665/193736

This policy brief was written by the AMR Policy Accelerator team comprised of Nicole Chung, Suzanne Garkay Naro, and Kadia Petricca, in consultation with partners in Rwanda, including Gashegu Misbah, Lambert Safari, Taofeek Tope Adegboyego, Candide Tran Ngoc, Denyse Niyoturamya, Carine Nyilimana, Rukundo Jean Claude, Ndikubwimana Adolphe, Edson Rwagasore, Mariska Kreuger, Cynthia Grace Mfuranziza, Alida Ngwije, Sabine Umuraza, Evelyn Wasangula, Julian Nyamupachitu, Marie Fausta Dutuze K., Claude Mambo Muvunyi.

Partner Acknowledgement

We would like to thank the following partners for their participation and support in the development of Rwanda's NAP 2.0. on Antimicrobial Resistance (2025-2029).

About the Global Strategy Lab (GSL): GSL undertakes innovative research to advise governments and public health organizations on how to design laws, policies, and institutions that make the world a healthier place for everyone. GSL is based at York University and the University of Ottawa. Its research division focuses on antimicrobial resistance, global legal epidemiology, and public health institutions and its **AMR Policy Accelerator** provides evidence-informed advisory services to governments, international organizations, and civil society organizations. For more information, visit www.globalstrategylab.org