GSL Policy Brief

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Design to Delivery: Structuring IPEA's Scientific Work to Meet Policy Needs

Executive Summary

The Draft 1 of the founding document for establishing the Independent Panel on Evidence for Action against Antimicrobial Resistance (IPEA) has been prepared by the Quadripartite Joint Secretariat on AMR (WHO, FAO, WOAH, UNEP) for Consultation by Member States.

In the Draft 1 proposed governance structure, an independent Expert Committee of 30 members represent human, animal, plant and environmental health sectors, and other relevant fields. The Expert Committee would be the decision-making body of the IPEA. The governance structure in Draft 1 is less complex than in the Draft Zero but also has less direct engagement of representatives from Member States (governments).

In this policy brief, the European Society of Clinical Microbiology and Infectious Diseases (ESCMID) and the Global Strategy Lab suggest the IPEA take a public health focused approach to inform country level policy design and implementation. Concurrent evidence synthesis work streams could focus on antimicrobial resistance (AMR) drivers and trends, the impact of AMR and future interventions, and policy design and shared learning. Rapid assessments with direct relevance to National Action Plans (NAPs) on AMR could help to engage policymakers early, for example an evidence synthesis of optimal antimicrobial use across Quadripartite sectors.

A wide range of expertise will be needed to inform the work of the Panel, including economic, financial, social and data sciences, supported by scientific societies and multiple civil society networks and organizations. Setting realistic goals that provide practical help to countries for tackling AMR now, will be key for achieving the long-term support that the IPEA will need.

Introduction

At the United Nations General Assembly (UNGA) 2024 High-Level Meeting on AMR, Member States mandated the Quadripartite organizations to establish an IPEA. The goal of IPEA is to facilitate the generation and use of multisectoral, scientific evidence to support Member States in their efforts to tackle AMR. To support the establishment of IPEA, the Quadripartite developed a comprehensive set of guidance documents, including *Draft Zero* (1) and *Draft 1* (2) of IPEA's founding document which provide a basic outline of the organizational elements and procedures for IPEA, as well as *Rules for Procedures for the IPEA* (3) and *Process for Determining the Work Process of IPEA* (4).

This policy brief is produced by the Global Strategy Lab and ESCMID. It discusses the key decisions included in the founding documents, reflects on how these decisions will shape IPEA's scientific outputs and suggests an approach and timeline to structure IPEA's scientific program of work. It also proposes topics for scientific assessments that IPEA could tackle in its first years of operation to maximize the relevance and credibility of its knowledge synthesis efforts and to ensure they respond to Members States' policy needs. It will be crucial for IPEA's credibility to demonstrate progress in supporting Member States leading up to the High-Level Ministerial Meetings in 2026 and 2028, and the UNGA High-Level Meeting on AMR in 2029.

Key Takeaways

IPEA represents a unique opportunity to equitably mitigate AMR and close the gaps on AMR evidence, coherence, and salience that persist globally

IPEA should prioritize producing public health benefits by framing AMR as a population-level, systems-based, and equity-sensitive One Health biosphere problem that requires interdisciplinary collaboration and multi-sectoral engagement

IPEA could adopt a work plan that simultaneously advances its workstreams through rapid and systematic assessments to accelerate the production of knowledge synthesis outputs

IPEA should produce a range of scientific outputs, including methodological guidance, regular scientific assessments, synthesis reports and policy summaries

Why Do We Need IPEA?

IPEA represents an important addition to the AMR global governance system. The current landscape is fragmented, AMR evidence and policy advice are not closely connected, and existing data remain siloed across the human, animal, and plant health, and agricultural and environmental sectors. To support Member States' efforts to effectively tackle AMR, policymakers need to evaluate, prioritize, and implement interventions. Yet, significant gaps in evidence persist (5), especially in low-and middle-incomes countries (LMICs) which are disproportionately impacted by AMR (6). Key questions remain unanswered to guide country-level policymakers in selecting the most cost-effective, high-impact, and contextually relevant interventions. By producing regular scientific assessments and reviews, IPEA can:

- produce policy-relevant recommendations, integrating the evidence generated across One Health sectors, and support real-time knowledge translation to inform policymaking, reducing the duplication of efforts and investment in research;
- promote policy uptake and implementation by embracing innovative policy implementation tools that facilitate the prioritization of context-specific and cost-effective interventions;
- ensure LMIC perspectives are effectively represented, and that recommendations are cost-effective in, and sensitive to, the unique social and institutional contexts that drive AMR in LMICs;
- unite the One Health AMR community and help consolidate the AMR evidence-base to help reach high-level decision makers and the public and make the case for investment in AMR; and
- facilitate tracking of global progress (or lack thereof) on mitigating AMR, building on recent global AMR targets such as the 10% mortality reduction and 70% access targets for AMR by 2030, to create soft accountability in global AMR governance.

As laid out in Draft 1, IPEA will be designed around four core functions: **assessment** – to conduct assessments of current AMR issues and identify potential evidence-based intervention options to solve them; **horizon scanning** - to identify emerging or overlooked AMR issues and propose evidence-based options to address these gaps and policy needs; **knowledge management and information sharing** - to synthesize and disseminate evidence, identify and highlight research and evidence gaps, and raise public awareness; and **policy support** - to provide tools, methodologies, and options for governments and stakeholders to use in policy formulation and implementation.

This brief will mainly focus on how to organize the scientific work program of IPEA.

BOX 1. Bringing a Public Health Lens to IPEA

AMR is often framed as a biomedical and/or technical problem, with a focus on how AMR manifests in healthcare settings, and with solutions centred on new drug development and/or changes in clinical practices. Introducing a public health lens into IPEA will ensure that AMR is understood and addressed as a population-level, systems-based, equity-sensitive, and interdisciplinary global health challenge, which includes:

- Framing AMR as a public health problem, emphasizing prevention, population-level surveillance, and health promotion interventions as solutions;
- Prioritizing interventions that demonstrably promote public health benefits, as well as benefits for animal and environmental health;
- Integrating clinical, biological, behavioural, and social sciences, to study antimicrobial use behaviours and community-level facilitators and barriers to the uptake of AMR interventions across sectors through an interdisciplinary approach;
- Prioritizing equity and access, including highlighting uneven access to existing antimicrobial drugs and treatments and documenting the inequitable impacts of AMR globally;
- Strengthening human and animal health systems, and data quality and analysis, to facilitate cross-sectoral governance and coordinated health-systems level responses; and
- Measuring progress using a range of metrics from public health, including reductions in infection burden, antibiotic overuse, and inequities in health outcomes related to AMR.

Governance of the Scientific Work Program

To be effective, the work program of the Panel should be informed by requests and inputs from Member States and multilateral agencies and by needs identified in international agreements, with outputs tailored to the decision-making needs of various stakeholders (7). In Draft 1 of the IPEA founding document, the governance structure has changed significantly from the earlier Draft Zero and only retains a Secretariat and EC as IPEA's main organizational structures. The EC will comprise 30 independent experts representing human, animal and plant health, agri-food and environment sectors and other relevant fields. It will be led by two Co-Chairs and two Vice Co-Chairs and meet twice annually, operating by consensus (3). Members of the Panel will be selected through an open and transparent, merit-based process, participating in their individual capacity. The EC will also include one representative from each of the Quadripartite organizations (WHO, FAO, WOAH, UNEP). Meetings of the IPEA will be open to a wide group of Observers, and Observers may contribute to EC meetings directly, if such participation is approved by the EC.

The EC will lead the development, approval and implementation of the Panel's work program and its budget. The EC will establish, select members, define the work plan, open and close the subsidiary groups of the Panel, including ad hoc expert groups. The EC will also be expected to engage the wider scientific community, including in capacity building, driving communications, and outreach and dissemination of the Panel's deliverables and outputs. The Panel's Secretariat will be jointly facilitated by the Quadripartite organizations and hosted by UNEP.

The Quadripartite has also released the Draft Zero of the Process for Determining the Work Programme of the IPEA, where Governments, UN entities, Specialized Agencies, and a wide range of bodies may make requests inviting the Panel to work on specific issues. Submissions from a range of stakeholders is encouraged (4). The Secretariat, Co-Chairs and Co-Vice Chairs will then develop a draft work program for approval by the EC. The scope, objective and functions of the Panel will be focused on the generation and use of multi-sectoral policy relevant scientific evidence to support Member States to tackle AMR. In Draft 1, the main decision body is the EC, composed of 30 independent scientific experts. This arrangement - which differs from the inter-governmental plenary decision-making body proposed in Draft Zero – allows for a broad representation of AMR-relevant scientific disciplines. Member States may submit requests to invite the Panel to work on specific issues, and observe EC meetings, but ultimately, the EC decides the work IPEA will undertake. While this arrangement allows for scientific independence, it may result in an IPEA that lacks legitimacy, policy relevance and salience (8).

The scientific outputs of the Panel and the engagement of the scientific community will fall under the purview of the EC. To be credible, the EC must oversee a transparent peer-review process, where a mechanism for contestability of the scientific findings will be key for producing scientific outputs that are methodologically rigorous, and that the findings are inclusive of multiple disciplines and perspectives (8). In addition, the EC will have to ensure the selection process of ad hoc experts is transparent, open and inclusive of the broader AMR scientific community, and that the work conducted by the ad hoc expert groups is rigorous, interdisciplinary, sustainable, and engages the right sets of expertise. This should include recruiting scientists from LMICs across all relevant disciplines and sectors.

Consideration will need to be given to how to engage effectively with the wider scientific community, which covers multiple diverse areas. The Multi-Stakeholder Partnership Platform already includes around 50 research and academic groups and 100 civil society networks and organizations. It will be important to actively engage the major relevant scientific professional societies in this process, who can encourage experts to actively engage voluntarily in the work of the IPEA. ESCMID has for example, set up a new AMR Action Committee, which now organizes an annual Science Policy Forum (SPF) held as part of ESCMID Global in collaboration with the Quadripartite and other key Partners. The SPF seeks to engage a wide range of researchers and policy makers from LMICs and high-income countries (HICs) to discuss the scientific basis for future policy interventions.

AMR Evidence Gaps and Science Workstreams for IPEA

IPEA's assessments should build on existing global efforts to identify priority research questions and evidence gaps in AMR, including WHO's Global Research Agenda for AMR in human health (5), and the Quadripartite's One Health AMR Priority Research Agenda (9). However, there is only limited discussion on how to structure the scientific work plan within IPEA in both the Draft Zero and Draft 1. For instance, there is little reflection on the essence of key questions that should guide IPEA's work program, or the type of engagement needed from scientists across disciplines. Calling upon scientists on an ad hoc basis runs the risk of excluding key disciplines and expertise and contributing to a lack of sustainability and continuity in IPEA's work program. To effectively and sustainably guide global and national AMR policy responses, **multiple AMR scientific areas and experts may need to be organized into a feasible number of standing workstreams (WSs)**, building on research priorities identified in key global documents and responsive to policy needs.

Workstream Content

IPEA's deliverables **could be organized under the following three WSs**: (1) developing a basic understanding of AMR drivers, trends and mechanisms; (2) providing a comprehensive assessment of the public health and economic impacts of AMR interventions, and (3) identifying policy design and One Health implementation challenges.

WS1: The Trends, Drivers, and Risks of AMR

In line with WHO's priorities on mapping the AMR burden, transmission pathways, and antimicrobial use (AMU) drivers, WS1 would summarize key trends, transmission pathways, drivers, and risks of AMR and AMU, in the following order of priority:

- Key patterns and trends in AMU and AMR across One Health sectors and contexts;
- Dominant transmission pathways and how they relate to local context;
- Biological and ecological mechanisms driving AMR emergence and spread within and between sectors;
- Impact of structural, social and behavioural, and health system factors on AMR dynamics across settings;
- Interaction between AMR and AMU trends and major global drivers such as climate change, demographic shifts, and migration.

WS1 will require a combination of scientific skills sets, including from biomedical and life sciences, public health, epidemiological, human, animal, plant health and the environment, data and systems sciences, and the social sciences.

A crucial first task for IPEA will be to define the initial scope of scientific focus through a rapid exercise, determining what bacteria, viruses, fungi, and protozoa to include in evidence synthesis. There is a clear need to develop a broad inclusive program of work across the range of resistant pathogens. Equally, it may be pragmatic to initially prioritize bacterial resistance with high relevance to public health, building the structure for future work streams.

Two interdisciplinary WS1 sub-groups could initially focus on: (1) AMR transmission dynamics, mechanisms, and risk assessment; and (2) AMU patterns, drivers, current policy and stewardship practices. Each sub-group would produce methodological and analytical reports incorporating an equity lens, ensuring attention to populations with heightened AMR vulnerabilities. WS1 should also assess future risks by integrating external change—such as demographic, structural, and health system trends—that could alter AMR trajectories. To engage policymakers early, **IPEA could initiate a series of rapid assessments with direct relevance to national AMR action plans**, starting with a rapid synthesis of data on antibiotic manufacture, use, exposure, and spread across human, animal, agriculture, and environmental sectors, including where feasible national estimates of optimal current and future levels of use.

WS2: Assessment of Public Health and Economic Impacts of AMR

WS2 could first assess, and when possible, quantify, the health and socio-economic consequences of the AMR and AMU trends identified under WS1 across socio-economic contexts and provide a basic stock take of the public health, socio-economic and One Health impacts across geographic and socio-economic settings. It could examine:

- Public health impacts of AMR (prevalence, incidence, morbidity, mortality, disability, and access);
- Distributional and equity effects across income, gender, geography and vulnerable groups;
- Socio-economic outcomes, including productivity losses across human, animal and environmental sectors, healthcare costs, and impacts on national income, employment, and trade;
- Public health benefits, costs, and effects of unnecessary or inappropriate AMU.

WS2 would synthesize existing economic models and impact assessments, identifying both the direct health effects of AMR and the broader systemic implications for health systems, economies, and development. To do this, scientific expertise from public and animal health, the clinical, economic and social sciences, environmental and climate sciences, and statistical and data sciences would be required. The evidence produced under WS2 could form the basis for prioritizing cost-effective and equitable policy responses in WS3.

WS3: Implementing, Evaluating, and Strengthening AMR Policy and Governance

WS3 could provide a comprehensive assessment of implementation and governance of the recommended AMR interventions. It would focus on identifying what works, under what conditions, and how policy responses can be sustained in different contexts and scaled for better impact.

Key areas of evidence synthesis could include:

- Evaluating multiple AMR policy interventions (including prevention, diagnostics, treatment, and awareness) for their cost-effectiveness, contextual feasibility, and public health, and animal, agri-food sector, and environmental sector impact;
- Assessing interventions aimed at improving access and rational use of effective antimicrobials, across high and low-resource settings, with a focus on inequities;
- Synthesizing evidence on effective implementation strategies and governance models that promote sustainable AMR control;
- Reviewing how existing regulatory frameworks and financing mechanisms enable or hinder broad public, animal, and environmental health focused adoption and enforcement;
- Developing and applying robust monitoring and accountability methods, including indicators and targets to assess progress in AMR responses and AMU optimization.

To implement WS3, a combination of different scientific expertise will be needed, including economics and financing, as well as political, social and behavioural sciences, to be able to assess the cost-effectiveness, feasibility, and equity of AMR interventions across diverse contexts. While experts in evaluative and data science would be needed to support the development of robust accountability frameworks and indicators to track progress in AMR policy implementation and sustainability.
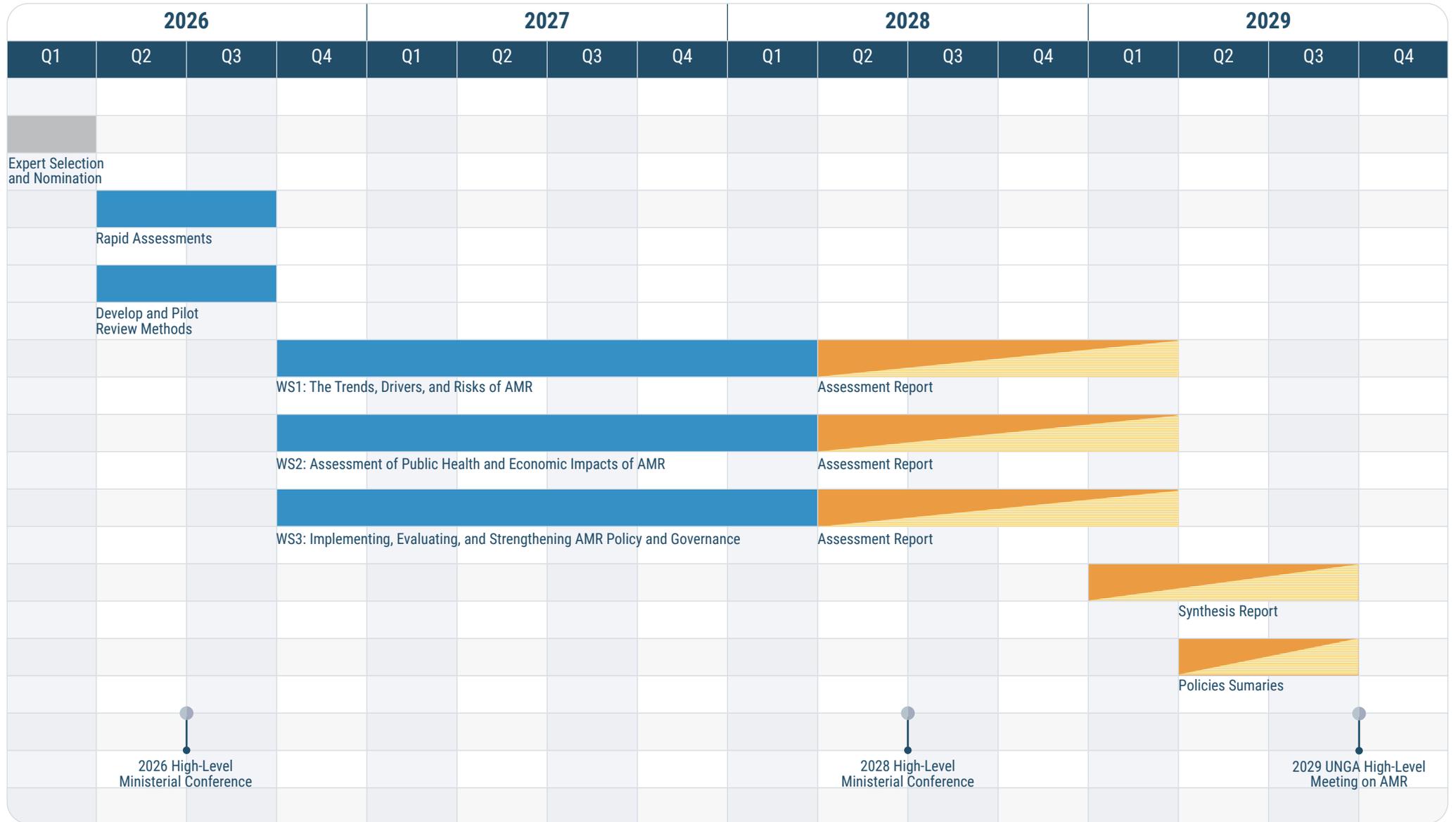
Figure 1 Timeline of Proposed IPEA Activities

Figure 1 maps potential WS activities onto a timeline from its inception to the next UNGA High-Level Meeting on AMR to take place in 2029.

IPEA's Scientific Outputs

IPEA should establish a robust method to estimate strength of evidence and levels of confidence in the evidence base that underlie the recommendations of the Panel. It must further build on a truly interdisciplinary knowledge synthesis methodology and ensure engagement by all relevant sectors and disciplines. Coordinating the work of each WS could play a central role in ensuring methodological consistency and integration, within each WS and across its sub-groups, overseeing the quality and coherence of the assessments, and facilitating collaboration between disciplines and sectors. The **strength of evidence and levels of confidence in informing AMR interventions will need to be systematically assessed by each WS**, based on methodological guidance established by the EC. This information will need to be clearly communicated to inform prioritization and policy decision-making. The WSs would further be tasked with writing IPEA's scientific reports in a manner that provides clear guidance on potential policy interventions, implementation considerations in different contexts, and the capacity building required to ensure policy implementation is optimal.

The three WSs could work in parallel with close collaboration and shared technical support, each running its assessment over a two-year cycle, followed by the production of a final synthesis report by the EC (see Figure 1).

The scientific outputs of the Panel could be structured into four categories:

- **Methodology Reports** standardizing the metrics, certainty, and grading of evidence. The group could develop technical documents on defining the burden of AMR and the metrics of AMU across sectors;
- **Assessment Reports** (one by each WS) presenting the evidence on burden, impact, and intervention implementation within each and across WSs;
- **Synthesis Report** consolidating the work done through the different WSs in time for the UNGA High-Level Meeting on AMR in 2029; and
- **Policy Summary** translating the findings into clear, actionable, policy-relevant, but not policy-prescriptive, strategies.

References

1. Quadripartite. Independent Panel on Evidence for Action against Antimicrobial Resistance (IPEA) Founding Document, draft 0 [Internet]. Quadripartite; 2025 [cited 2025 Nov 2]. Available from: https://www.qjsamr.org/publications/m/item/independent-panel-on-evidence-for-action-against-antimicrobial-resistance-(ipea)-founding-document-draft-0

2. Quadripartite. Independent Panel on Evidence for Action against Antimicrobial Resistance (IPEA) Founding Document, draft 1 [Internet]. Available from: https://www.qjsamr.org/docs/librariesprovider25/ipea-documents/founding-document-ipea-draft-193853352-fa5c-4baf-abb0-b1bf936eadd8.pdf?sfvrsn=4b188321_3

3. Quadripartite. Rules of procedure of the Independent Panel on Evidence for Action against Antimicrobial Resistance [Internet]. 2025 p. 9. Available from: https://www.qjsamr.org/docs/librariesprovider25/ipea-documents/rules-of-procedure-for-the-ipea-draft-0-final.pdf?sfvrsn=b5eb0593_2

4. Quadripartite. Process for Determining the Work Programme of IPEA [Internet]. 2025 p. 1. Available from: https://www.qjsamr.org/docs/librariesprovider25/ipea-documents/process-for-determining-the-work-programme-of-ipea-draft-0.pdf?sfvrsn=6145477a_3

5. Bertagnolio S, Dobreva Z, Centner CM, Olaru ID, Donà D, Burzo S, et al. WHO global research priorities for antimicrobial resistance in human health. Lancet Microbe [Internet]. 2024 Nov 1 [cited 2024 Dec 11];5(11). Available from: https://www.thelancet.com/journals/lanmic/article/PIIS2666-5247%2824%2900134-4/fulltext#app-1

6. Mendelson M, Laxminarayan R, Limmathurotsakul D, Kariuki S, Gyansa-Lutterodt M, Charani E, et al. Antimicrobial resistance and the great divide: inequity in priorities and agendas between the Global North and the Global South threatens global mitigation of antimicrobial resistance. Lancet Glob Health. 2024 Mar 1;12(3):e516–21. Available from: https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(23)00554-5/fulltext

7. Edwards S, Goh M. What the Independent Panel for Evidence for Action Against AMR Can Learn from Other Health Panels. In Washington DC: Centre for Global Health; 2025 [cited 2025 Nov 2]. Available from: https://www.cgdev.org/publication/what-independent-panel-evidence-action-against-amr-can-learn-other-health-panels

8. Ruckert A, Shafaque S, Wallace LJ, Boily-Larouche G, Poirier MJ. Science Policy Interfaces in Global Environmental Governance. In Toronto: Global Strategy Lab; 2025 [cited 2025 Nov 2]. Available from: https://amrpolicy.org/resources/ipea-design-report/

9. Quadripartite. A one health priority research agenda for antimicrobial resistance [Internet]. Quadripartite; 2025 [cited 2025 Nov 2]. Available from: https://www.who.int/publications/i/item/9789240075924

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**.

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