



Advocacy to Drive AMR Policy: A Country Guide

International Vaccine Institute RADAAR Project ‘Advocacy to Drive AMR Policy: A Country Guide’
© International Vaccine Institute 2023

All rights reserved. Publications of the International Vaccine Institute can be obtained from:
International Vaccine Institute SNU Research Park, 1 Gwanak-ro, Gwanak-gu, Seoul, 08826 Korea
(Tel: +82-2-872-2801/E-mail: iviinfo@ivi.int. Requests for permission to reproduce or translate IVI
publications – whether for sale or for noncommercial distribution – should be addressed to: e-mail:
iviinfo@ivi.int).

You may copy, redistribute and adapt the work for non-commercial purposes, provided the work is
appropriately cited, as indicated below. In any use of this work, there should be no suggestion that IVI
endorses any specific organization, products, or services. The use of the IVI logo is not permitted.

Suggested citation. IVI-RADAAR ‘Advocacy to Drive AMR Policy: A Country Guide’. Seoul, Republic of
Korea: International Vaccine Institute; 2023.

General disclaimers. The designations employed and the presentation of the material in this publication
do not imply the expression of any opinion whatsoever on the part of IVI concerning the legal status of
any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or
boundaries.

The mention of specific companies or of certain manufacturers’ products does not imply that they are
endorsed or recommended by IVI in preference to others of a similar nature that are not mentioned.

All reasonable precautions have been taken by IVI to verify the information contained in this publication.
However, the published material is being distributed without warranty of any kind, either expressed or
implied. The responsibility for the interpretation and use of the material lies with the reader. In no event
shall IVI be liable for damages arising from its use.

“

*Not everything that can be counted counts,
and not everything that counts can be counted*

(Attributed to multiple sources)

”

Table of Contents

i	Preface	5
ii	Acknowledgements	6
iii	Acronyms and abbreviations	8
	Introduction and User Guide	10
	The AMR dichotomy	10
	A 'One Health' approach	12
	Gender equality and social exclusion (GESI)	13
	Who should use the 'Country Guide'?	14
	How to use the Guide	15
1	Step 1: Policy prioritization	20
1.1	Assessment of policy implementation	20
1.2	Evidence for policy	21
1.3	Policy prioritization and objectives	28
1.4	Policy frameworks	30
2	Step 2: Policy development	34
2.1	The policy and political process	34
2.2	The policy-makers	38
2.3	The policy stakeholders and influencers	40
2.4	Private sector	42
2.5	Advocacy tools	47
3	Step 3: Governance and resource mobilisation	51
3.1	Governance	51
3.2	Finance and resource mobilization	57
4	Step 4: Community engagement	61
4.1	Engaging and mobilizing civil society and communities	61
4.2	Catalysing the health sectors	62
5	Step 5: Framing and communicating AMR	69
5.1	Reframing AMR	69
5.2	Ensuring access without excess	70
5.3	Reframing AMR communication	71
5.4	Communication planning	72
5.5	Audience mapping	75
5.6	Developing key messages	76
5.7	Messengers and channels	79
5.8	Media guide	82
5.9	Advancing social science research on AMR	85
6	Step 6: Policy implementation	90
6.1	Policy implementation	90
6.2	Monitoring and evaluation	92
6.3	Vaccines and AMR	94
	Annexes	96
	Annex A. 'Advocacy to Drive AMR Policy: A Country Guide' development process	96
	Annex B. RADAAR Policy Brief Template	97
	Annex C. Sample Workplan	99
	Annex D. RADAAR Policy Brief Template	100

Preface

Antimicrobials - antibiotics, antivirals, antifungals, and antiparasitics – are the bedrock of modern medicine. However, antimicrobial resistance (AMR), also known as the ‘silent’ or ‘faceless’ pandemic, is a rapidly escalating global concern that threatens the effectiveness of these antimicrobials in treating infections. AMR occurs when pathogens, such as bacteria, viruses, parasites, and fungi, develop resistance to these medicines. This resistance can lead to untreatable infections and pose serious risks to medical procedures like surgery and chemotherapy. In 2019, infections causing an estimated 1.27 million deaths worldwide were *attributable* to bacterial AMR, with the highest impact in Sub-Saharan Africa and South Asia; and 4.95 million deaths were *associated* with bacterial AMR¹. By 2050, mortality rates due to AMR in Africa are projected to be nearly 10 times that of North America and Europe², and it could reduce the gross domestic product (GDP) in low-income economies by up to 5.6 percent³.

Drug resistant microbes can be found in various sources such as people, animals, food, water, soil, and air. They spread through direct contact between people, animals, and contaminated food and water. The misuse and overuse of antimicrobials in human and animal healthcare, as well as in agriculture and the environment, contribute to the development and spread of resistance. Antibiotics are increasingly used inappropriately to treat viral infections, and are also used for disease prevention and growth promotion in animals⁴ ⁵. Antimicrobials – and resistant bacteria – are also found in aquaculture, in feed for example; and in the environment, as additives in disease prevention, and through agricultural wastewater, human sewage, and pharmaceutical waste products⁶. Agriculture overall accounts for 75 percent of antimicrobial consumption (AMC) in the European Union (EU) and United States (US), while countries such as China, US, India, and Brazil account for almost 50 percent of consumption⁷.

Addressing AMR requires effective policy advocacy, but limited guidance exists, particularly for low- and middle-income countries (LMICs)⁸. The **‘Advocacy to Drive AMR Policy: A Country Guide’** is the RADAAR project and the International Vaccine Institute’s response to an expressed need of Fleming Fund priority countries. This Guide is a systematic distillation of good practices from the large body of policy advocacy literature, and key insights from national, regional, and global AMR experts and stakeholders through a series of consultations, focus group discussions, and key informant interviews. The Guide offers a step-by-step approach to raising AMR on the policy agenda, engaging policymakers, and supporting the introduction and enforcement of policies and National Action Plans (NAPs) related to AMR. It aims to be adaptable to the specific contexts of different countries and focuses on societal, community, and individual-level policy advocacy interventions. While national AMR stakeholders and leadership can directly use the Guide to advance the AMR policy agenda in their respective countries, the RADAAR project also envisions translating the Guide into training and capacity-building workshop modules, embellished with additional case-studies on the effective use of data and evidence to drive policy and advocacy. We trust that countries will find the Guide useful and adapt it to their context in responding to AMR.

¹ IHME (2022). Global burden of bacterial antimicrobial resistance in 2019: a systematic analysis. *The Lancet*. 20 January 2022.

² Wellcome Trust (2017). <https://wellcome.ac.uk/sites/default/files/sustaining-global-action-on-antimicrobial-resistance.pdf>.

³ World Bank (2021). <http://pubdocs.worldbank.org/en/440641493730169238/1708276-AMR-Report-Summary-Web.pdf>.

⁴ World Organisation for Animal Health-OIE (2020). OIE Annual Report on Antimicrobial Agents Intended for Use in Animal.

⁵ Ayukekbong, J.A., Ntemgwa, M., and Atabe, A.N (2017). The threat of AMR in developing countries: causes and control strategies. *Antimicrobial Resistance and Infection Control* 2017, 6:47.

⁶ Ibid.

⁷ OECD (2016). Antimicrobial resistance Policy insights.

⁸ World Bank Group (2021). Landscape Analysis of Tools to Address Antimicrobial Resistance, World Bank, Washington, U.S.A.

Acknowledgements

The International Vaccine Institute Regional AMR Data Analysis for Advocacy, Response, and policy (RADAAR) Project would like to thank the following contributors for their commitment and time:

Case study contributors

- Bangladesh:** 1. Nitish Debnath/Zobaidul Haque Khan, DAI Global
2. Moudud Ahmmed Sujan, The Daily Star
- Ghana:** Solomon Asante-Sefa, Ghana Health Service, Ministry of Health
- Indonesia:** Dyah Setyowati/Christina Retna Handayani Directorate General of Aquaculture, MMAF
- Lao PDR:** Bounlom Douangneun, FAE ECTAD
- Nepal:** 1. Ritu Amatya, FHI 360.
2. Ritu Amatya, FHI 360
- Nigeria:** Aaron Aboderin, Obafemi Awolowo University, Ile-Ife, Nigeria
- Pfizer:** Bruce Altevogt, Gemma Buckland-Merrett
- Tanzania:** Kauke Bakari Zimbw, The Benjamin Mkapa Hospital
- Timor-Leste:** Antonino Do Karmo, Ministry of Agriculture and Fisheries

Technical consultation and focus group contributors

Vikas Aggarwal, Stan Fenwick, Antoinette Brigitte Ngandjio, and Luna Parry (**Mott MacDonald**); Sujith Chandy (**ReAct**); Sabiha Essack (**University of KwaZulu-Natal**); Terence Fusire, Lianne Gonsalves, and Tanja Kuchenmueller (**WHO**); Tabitha Kimani (**FAO**), Angkana Lekagul and Wimonrat Tanomsridachchai (**International Health Policy Program**); Catrin Moore (**University of Oxford**); Robert Skov and Ghada Zoubiane (**ICARS**); Olafur Valsson and Jing Wang (**OIE**).

Bangladesh: Md Shafiul Alam (Dept. Fisheries), Nitish Debnath (DAI Global), Zakir Habib and Saima binte Golam Rasul (IEDCR), Aninda Rahman (CDC, MOHFW), Sangjukta Roy (Mymensingh Medical College), Moudud Ahmmed Sujan (The Daily Star), S M Sabrina Yesmin (Directorate General of Drug Administration). **Denmark :** Lina Cavaco (Statens Serum Institut). **Eswatini :** Vusie Sukati (MNRE). **Ghana:** Solomon Asante-Sefa (Ghana Health Service). **Indonesia:** Christina Retna Handayani and Dyah Setyowati (MMAF). **Kenya:** Revathi Gunturu (Aga Khan university), Arshnee Moodley, Dishon Muloi, and Simon Kamau (ILRI), Eunice Omondi (Directorate of Veterinary Services). **Lao PDR:** Bounlom Douangneun (FAO), Souphatsone Houatthongkham (MoH). **Malawi:** Watipaso Kasambara (MoH). **Nepal:** Bikash Devkota (Province MHP) Pan Bahadur Kshetry (MHP), Shraavan Mishra (Province Public Health Laboratory), Bhagawan Shrestha (FHI 360). **Nigeria:** Aaron Aboderin (Obafemi Awolowo University), Mabel Aworh, Charles Emejuru, and Mwapu Ndahi (Federal MARD), Abiodun Egwuenu (Nigeria CDC), Milliscent Nnwoka (Channels Television). **Pakistan:** Muhammad Athar Abbas (NRLPD), Ayesha Farooq (National Institute of Health). **Papua New Guinea:** Gabriella Ak (Port Moresby General Hospital), Marjorie Elijah (National Dept. of Health) Stenard Hiasihri (Burnet Institute). **Senegal:** Ahmadou Niang (FAO), Abdoulaye Thiam (PATH). **Sierra Leone:** Mohamed Bah and Samuel Alie Konteh (MAF), Joseph Sam Kanu (MoH). **Sri Lanka:** Sujeewa Ariyawansa (National Aquatic Resources Research and Development Agency), Roshan Madalagama (Veterinary Research Institute), Shalindra Ranasinghe (University of Sri Jayewardenepura), Darshana Wickramasinghe (Government). **Tanzania:** Kauke Zimbwe (The Benjamin Mkapa Hospital). **Thailand:** Cheewarat Kaewsangkwan (Mott Macdonald). **Timor-Leste:** Antonino Do Karmo and Frederico Amaral (MAF). **Uganda:** Michael Kimaanga (MoA). **United Kingdom:** Terri Collins (Mott MacDonald). **Vietnam:** To Nhu Nguyen (PATH). **Zambia:** Otridah Kapona (Zambia National Public Health Institute), Purity Mayembe (MFL), Daniel Ndambasia (Zambia Medicines Regulatory Authority), David Ojok (CIDRZ). **Zimbabwe:** Peter

Katsande (Central Veterinary Laboratory), Anna Maruta (WHO), Agness Farai Nhidza (BRTI), Kudzaishe Vhoko-Tapesana (DVS).

International Vaccine Institute (RADAAR Team): Satyajit Sarkar, Anthony Burnett, Giyoung Paing, Chaelin Kim, Holy Akwar, Prerana Parajulee, and Alice Kim (RADAAR Intern, LSHTM).

Reviewers

- Mirfin Mpundu, Director, ReAct Africa
- Katinka de Balogh, Consultant (formerly Senior Animal Health and Production Officer, FAO Investment Centre)
- Satyajit Sarkar, International Vaccine Institute

The ‘Advocacy to Drive AMR Policy: A Country Guide’ was written by Anthony Burnett (IVI-RADAAR AMR Policy and Advocacy Consultant), with design by Grace Jun (IVI Graphic Designer) and Giyoung Paing (IVI-RADAAR Workshops and Webinar Coordinator), under the leadership of Satyajit Sarkar (IVI-RADAAR Project Technical Lead). Additional inputs from Chaelin Kim (IVI-RADAAR Research Assistant) and Alice Kim (Intern, London School of Hygiene and Tropical Medicine).

Note: Institutional affiliation of contributors has been retained as what it was at the time of their inputs.

Funding Support

The RADAAR project and this Guide is funded by the Department of Health and Social Care’s Fleming Fund using UK aid. The views expressed in this document are solely those of the authors and not necessarily those of the International Vaccine Institute (IVI), the UK Department of Health and Social Care, or its Management Agent, Mott MacDonald.

Acronyms and abbreviations

AMC	Antimicrobial consumption
AMR	Antimicrobial resistance
AMS	Antimicrobial stewardship
AMU	Antimicrobial use
ASLM	African Society for Laboratory Medicine
ATLAS	Antimicrobial Testing Leadership and Surveillance
AU	African Union
CDC	Centre for Disease Control
CSO	Civil society organization (CSOs)
EU	European Union
EVIPNet	Evidence-informed Policy Network
FAQ	Frequently-asked questions
GAP	Global Action Plan
GCMON	Global Chief Medical Officers' Network
GESI	Gender Equality and Social Inclusion
GDP	Gross Domestic Product
GLASS	Global Antimicrobial Resistance Surveillance System
HIC	High-income country
IFRC	International Federation of the Red Cross/Crescent
IHR	International Health Regulations
INGO	International non-governmental organization
IPC	Infection prevention and control
IVI	International Vaccine Institute
KAP	Knowledge, attitudes, and practices
LMIC	Low- and middle-income country
M&E	Monitoring and evaluation
MP	Member of Parliament
MSF	Médecins Sans Frontières
NAP	National Action Plan
NGO	Non-governmental organization
OIE	World Organisation for Animal Health
PPP	Public-private partnerships
PSA	Public service announcement
R&D	Research and Development
RADAAR	Regional Antimicrobial resistance Data Analysis for Advocacy, Response, and policy
SADC	Southern African Development Community
SDG	Sustainable Development Goal
SEDRIC	Surveillance and Epidemiology of Drug Resistant Infections Consortium
SMART	Specific, Measurable, Achievable, Relevant, Time-bound
SPIDAAR	Surveillance Partnership to Improve Data for Action on Antimicrobial Resistance
SURE	Supporting the Use of Research Evidence
TB	Tuberculosis
TOC	Theory of Change
TOR	Terms of Reference
US	United States
WHO	World Health Organization

Introduction and User Guide



The Antimicrobial Resistance (AMR) dichotomy



When we talk about access, we must also talk about appropriate use: you cannot drive access without ensuring the systems are in place to enable the appropriate use of these medicines

- Regional expert

Access to quality-assured antimicrobials is part of the human right to health. Yet access is particularly limited in low- and middle-income countries (LMICs) due to financial, infrastructural, and human resource limitations⁹. Antimicrobials are also needed in the animal health sector, for example, antibiotics are legitimately used to treat sick animals, but also used in healthy animals to prevent disease and to promote growth¹⁰. In LMICs, both the burden of infectious diseases and prevalence of multi drug-resistant pathogens are higher¹¹, causing an increase in extreme poverty and a disproportionate impact on economies¹². Access must be scaled up for LMICs which cannot obtain or afford antimicrobials, with an emphasis on equitable pricing/licensing models^{13 14}. But unrestricted access has led/contributed to the emergence and spread of AMR, due to:

- Burden of infectious disease, due to limited access to clean water and sanitation, and poor hygiene and infection control at hospitals and in communities¹⁵.
- Ineffective and/or over-prescribing by clinicians/physicians, including through financial incentives and/or influence from medical representatives in some countries^{16 17}, and pressure from patients¹⁸.
- Retail pharmacy over-the-counter/Internet sales without prescription.
- Limited access to diagnostic tools and laboratory services to guide treatment (and prioritization of medicine over testing).
- Substandard or counterfeit drugs due to limited regulatory and enforcement capacity, and unregulated supply chains.
- Lack of awareness on AMR among patients, farmers, communities.
- (Over)Use of antimicrobial drugs in agriculture (and transfer of resistant bacteria to humans) and aquaculture.
- Lack of adequate guidance, supervision and surveillance by authorities in the use of antimicrobials in livestock.
- Insufficient implementation and promotion of biosecurity measures to reduce antibiotic use for animals.
- New antibiotics being insufficiently developed¹⁹.

⁹ Marc Mendelson *et al* (2015). Antimicrobials: access and sustainable effectiveness. Maximising access to achieve appropriate human antimicrobial use in low-income and middle-income countries.

¹⁰ World Organisation for Animal Health [OIE] (2020). OIE Annual Report on Antimicrobial Agents Intended for Use in Animals.

¹¹ Goran Tomson and Ioana Vlad (2014). The need to look at antibiotic resistance from a health systems perspective.

¹² FAO (2018). AMR Policy review and development framework (from World Bank, 2016).

¹³ Steven Hoffman *et al* (2015). An international legal framework to address antimicrobial resistance.

¹⁴ Alison Holmes (2015). Antimicrobials: access and sustainable effectiveness. Understanding mechanisms and drivers of AMR.

¹⁵ Interagency Coordination Group on AMR (2019). No time to wait: Securing the future from drug-resistant infections.

¹⁶ Pearson, M., and Chandler, C. (2019). Knowing antimicrobial resistance in practice: a multi-country qualitative study with human and animal healthcare professionals. *Global Health Action* 2019, Vol.12, 1599560.

¹⁷ Ayukekbong, J.A., Ntemgwa, M., and Atabe, A.N (2017). The threat of AMR in developing countries: causes and control strategies. *Antimicrobial Resistance and Infection Control* 2017, 6:47.

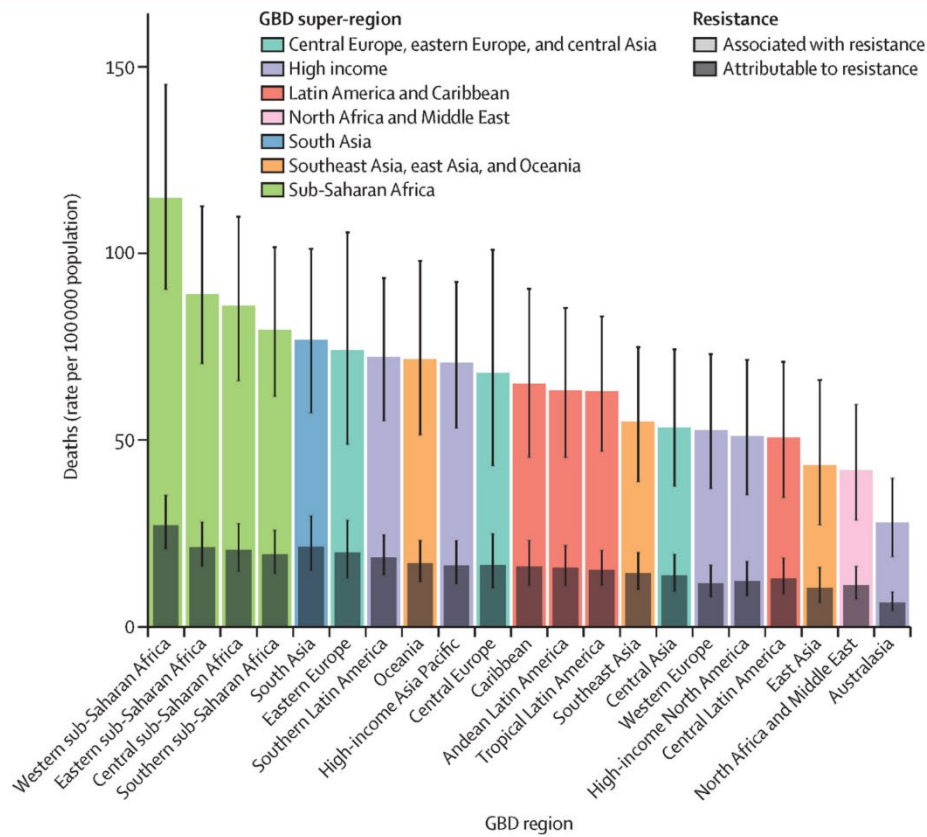
¹⁸ Huttner, B. *et al* (2019). How to improve antibiotic awareness campaigns: findings of a WHO global survey. *BMJ Global Health*

¹⁹ Othieno, J. *et al* (2020). Opportunities and challenges in AMR behaviour change communication. *One Health* 11, 100171.

Antimicrobial use (AMU) and consumption (AMC) both contribute to AMR, but in many LMICs are lower than in high-income countries (HICs). AMU refers to how antimicrobials are ‘actually’ used – and whether appropriately – such as, for individual level data on what conditions are being treated, and routes of administration; whilst AMC refers to volumes of ‘estimated’ consumption, i.e., what and how much is used, such as aggregated data based on sales, import, procurement of antimicrobial medicines. In global data, there is weak evidence to support correlation between AMC and AMR. Limited health expenditure, governance issues, poverty, and education levels also contribute to AMR prevalence. Infrastructural deficiencies, such as poor sanitation and water quality – leading to contagion – can have an effect than AMC on AMR levels^{20 21 22 23}.

Figure 1. Deaths attributable to or associated with bacterial AMR²⁴

All-age rate of deaths attributable to and associated with bacterial antimicrobial resistance by GBD region, 2019



²⁰ Collignon, P. *et al* (2018). Anthropological and socioeconomic factors contributing to global AMR: a univariate and multivariable analysis. *The Lancet*, Vol 2, September 2018.

²¹ Makuta I, O'Hare, B (2015). Quality of governance, public spending on health and health status in sub-Saharan Africa: a panel data regression analysis. *BMC Public Health*; 15: 932.

²² Holmes A.H *et al* (2016). Understanding the mechanisms and drivers of antimicrobial resistance. *The Lancet*. 387:176-187.

²³ Bell B.G *et al* (2014). A systematic review and meta-analysis of the effects of antibiotic consumption on antibiotic resistance. *BMC Infect Dis*. 14: 13.

²⁴ IHME (2022). Global burden of bacterial antimicrobial resistance in 2019: a systematic analysis. *The Lancet*. 20 January 2022.

A 'One Health' approach



AMR is a clear 'One Health' issue and it's been said many times: but we must get away from our silos and collaborate if we are to restrict AMR

- Country stakeholder, Asia

AMR prevention and control requires strong linkages between epi-surveillance and socio-behavioral data, including on the complex link with livelihoods, and prescribing habits, consumer and patient demands, and farming practices. Antimicrobials used to treat infectious diseases in animals may be the same or similar to those used in humans (whilst 62% of countries – 94% in Africa – have no tracking system for AMU in animals²⁵). Resistant bacteria arising in humans, animals or the environment may spread from one to the other – through direct contact with animals or indirectly through contaminated food, water, and animal waste from livestock operations reentering the food chain – and from one country to another. Hence, action is required by a range of multisectoral partners from the medical, agriculture/livestock, veterinary, and environment sectors – together with politicians, academia, civil society, the private sector, and the general public – at local, national, regional, and global levels^{26 27}, with a 'One Health' approach. The approach should also be multiple disease-focused. Within health systems themselves, there is generally a prioritization on clinical care over health promotion and disease prevention²⁸. Through the One Health approach, AMR can be utilized to initiate health system strengthening, particularly improved laboratory and diagnostic capacity, for example, implementation of a National Diagnostic Policy and Laboratory Policy.

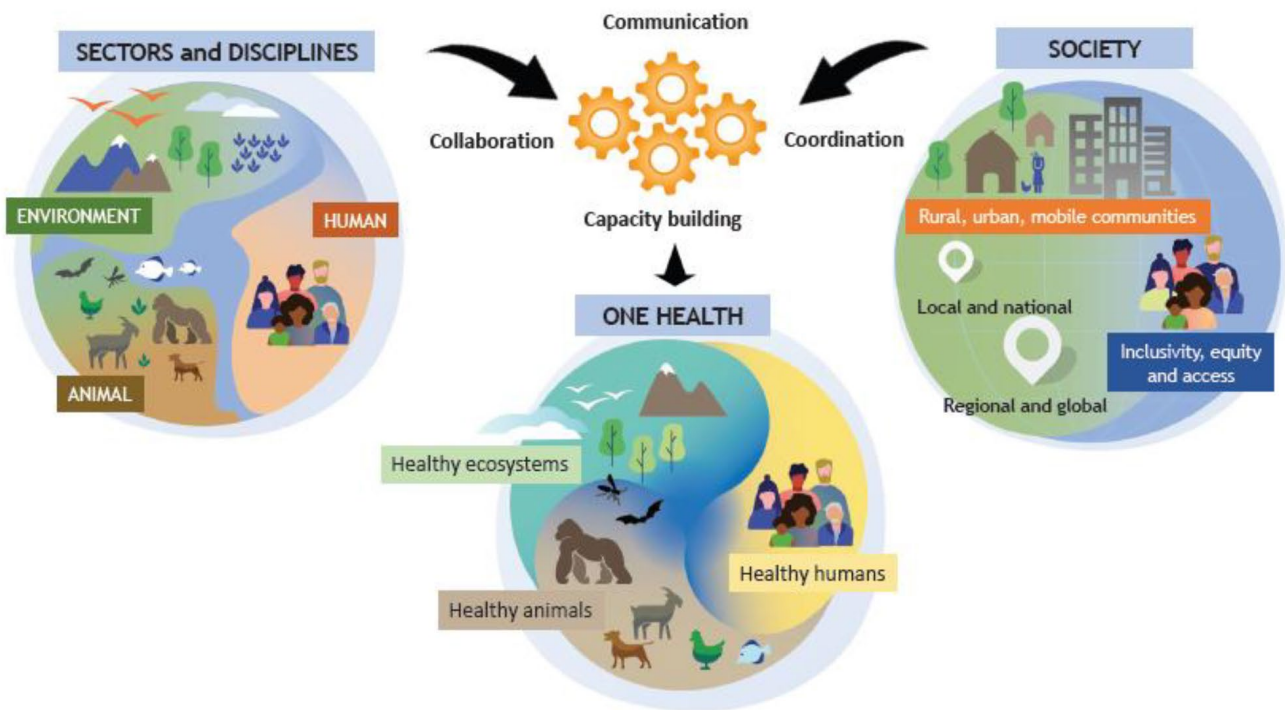
²⁵ Osman Dar, A. *et al* (2015). Exploring the evidence base for national and regional policy interventions to combat resistance. *The Lancet*, November 2015. From OIE (2013). AMU in animals: analysis of the OIE survey on monitoring the quantities of antimicrobial agents used in animals.

²⁶ James Ayukekbong *et al* (2017). The threat of antimicrobial resistance in developing countries: causes and control strategies.

²⁷ Osman Dar, A. *et al* (2015).

²⁸ De Leeuw, E (2017). Engagement of sectors other than health in integrated health governance, policy, action. *Annual Review of Public Health* 2017. 38:329-49.

Figure 2. One Health linkages²⁹



Gender equality and social inclusion (GESI)

Incorporating Gender Equality and Social Inclusion (GESI) into the process of advocating for AMR policy is vital for a lasting and sustainable change. The GESI approach takes into account the vulnerability and marginalization caused by social identities such as gender, wealth, age, disability, and race.³⁰ A gender equality approach fosters the engagement of men and boys as well as women and girls. A social inclusion approach ensures the participation of disadvantaged populations at risk of exclusion. There are various advantages to incorporating the GESI approach into the policy advocacy process.³¹ First and foremost, a comprehensive evaluation of the GESI during the policy advocacy process would reduce the possibility of omitting vulnerable populations. Participatory tactics and procedures would not only enable underrepresented individuals to exercise their rights and express their opinions in policy-making but would also foster ownership among those engaged. Second, employing the GESI approach and engaging a diverse set of groups in AMR policy advocacy and the policy-making process would allow a broader range of perspectives to be considered. This may lead to more credible and effective AMR policy-making by allowing the realities of the real context to be fully reflected in the discussion and reducing the chances of the policy or interventions being rejected by the community.

²⁹ United Nations Environment Programme (2021). Joint Tripartite (FAO, OIE, WHO) and UNEP Statement Tripartite and UNEP support OHHLEP's definition of "One Health. <https://wedocs.unep.org/20.500.11822/37600>.

³⁰ Integrity Action, 'Gender Equality and Social Inclusion Strategy (GESI)' (2016). <http://www.ids.ac.uk/files/dmfile/Wp417.pdf>

³¹ THET (2016). Gender Equality and Social Inclusion (GESI) Toolkit for Health Partnerships. <https://www.thet.org/resources/gender-and-social-inclusion-toolkit/>.

The GESI approach can be integrated into the policy advocacy process in a variety of ways. To begin, official or informal meetings or conversations can be encouraged to include the GESI method in the AMR policy-making process. Evidence on GESI derived from studies or personal stories could be helpful for effective conversation. Second, more efforts can be undertaken to include women and other groups at risk of exclusion and marginalization in AMR policy advocacy. Even though the extent of community engagement required can vary based on the type of AMR policy, policy advocacy and development should be conducted in an inclusive manner that includes active community engagement. If the advocacy policy seeks to raise awareness and influence people's behaviour, or if the policy directly affects distinct groups of people, it is critical that their viewpoints be included at each stage of the policy-making process. Third, a monitoring and evaluation (M&E) system of GESI can be employed for the AMR policy advocacy and policy-making using pre-sets of GESI indicators³².

Who should use the 'Country Guide'?

The 'Advocacy to Drive AMR Policy: A Country Guide' (hereafter the 'Guide') is aimed at – primarily national and subnational – AMR stakeholders who can influence policy-makers to adopt and/or develop policies to address AMR, in line with NAPs (see Figure 1):

- Policy stakeholders (e.g., ministry staff, policy civil servants, elected officials, MPs, political appointees, Fleming Fund Policy Fellows); and technical stakeholders (e.g., health, livestock, veterinary experts, Fleming Fund Professional Fellows, technical working group members) – who have access to policy-makers/politicians – can utilize the Guide to present research, evidence, policy briefs to policy-makers, through formal structures and informal meetings.
- Patient groups, professional associations, and academics can use the Guide to highlight the AMR threat, using access to policy-makers through formal structures and professional networks.
- Non-governmental/civil society organizations (NGOs/CSOs) can utilize the Guide in building coalitions of stakeholders, and gathering a groundswell of support for addressing AMR.
- The private sector – including pharmaceutical companies, private hospitals, veterinarians, livestock industry, farmers – can use the Guide to explore potential public-private-partnerships (PPP).
- The media can use the Guide to enhance public awareness and influence opinion, and influence and encourage policy-makers.

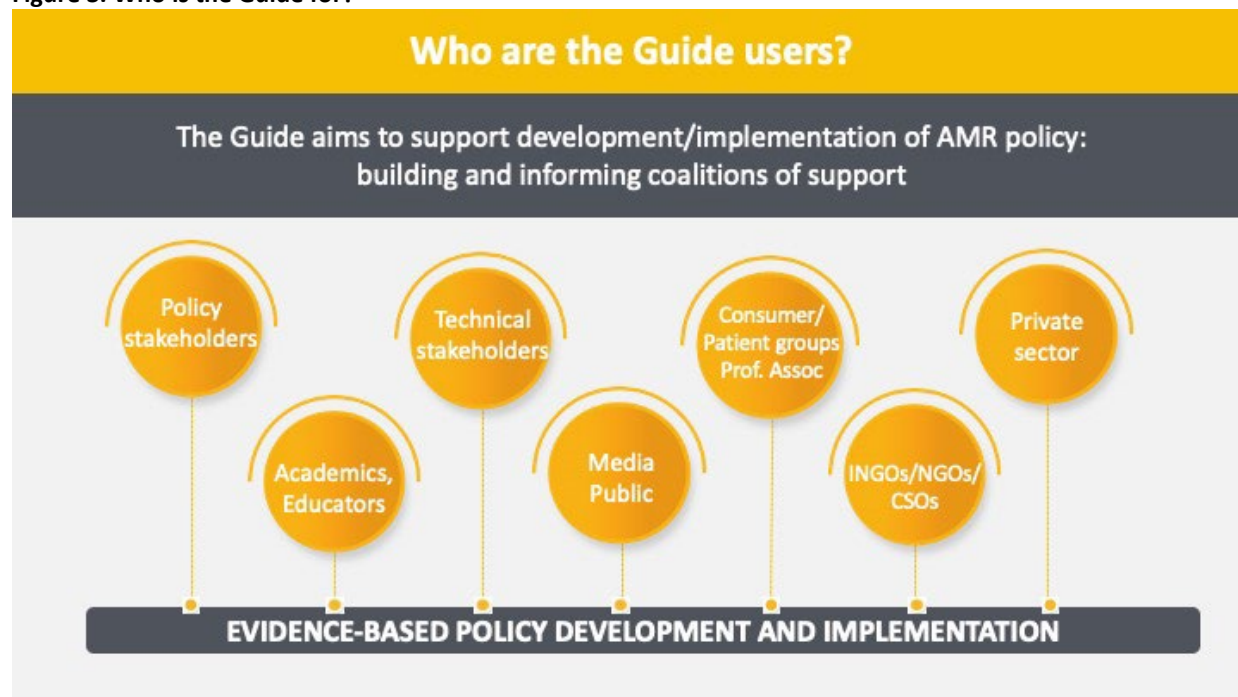


I think this type of guideline is very useful to us, to guide us, to compare or promote our NAPs.

**-Policy Fellow,
Asia**

³² THET (2016). Gender Equality and Social Inclusion (GESI) Toolkit for Health Partnerships.

Figure 3. Who is the Guide for?



How to use the Guide

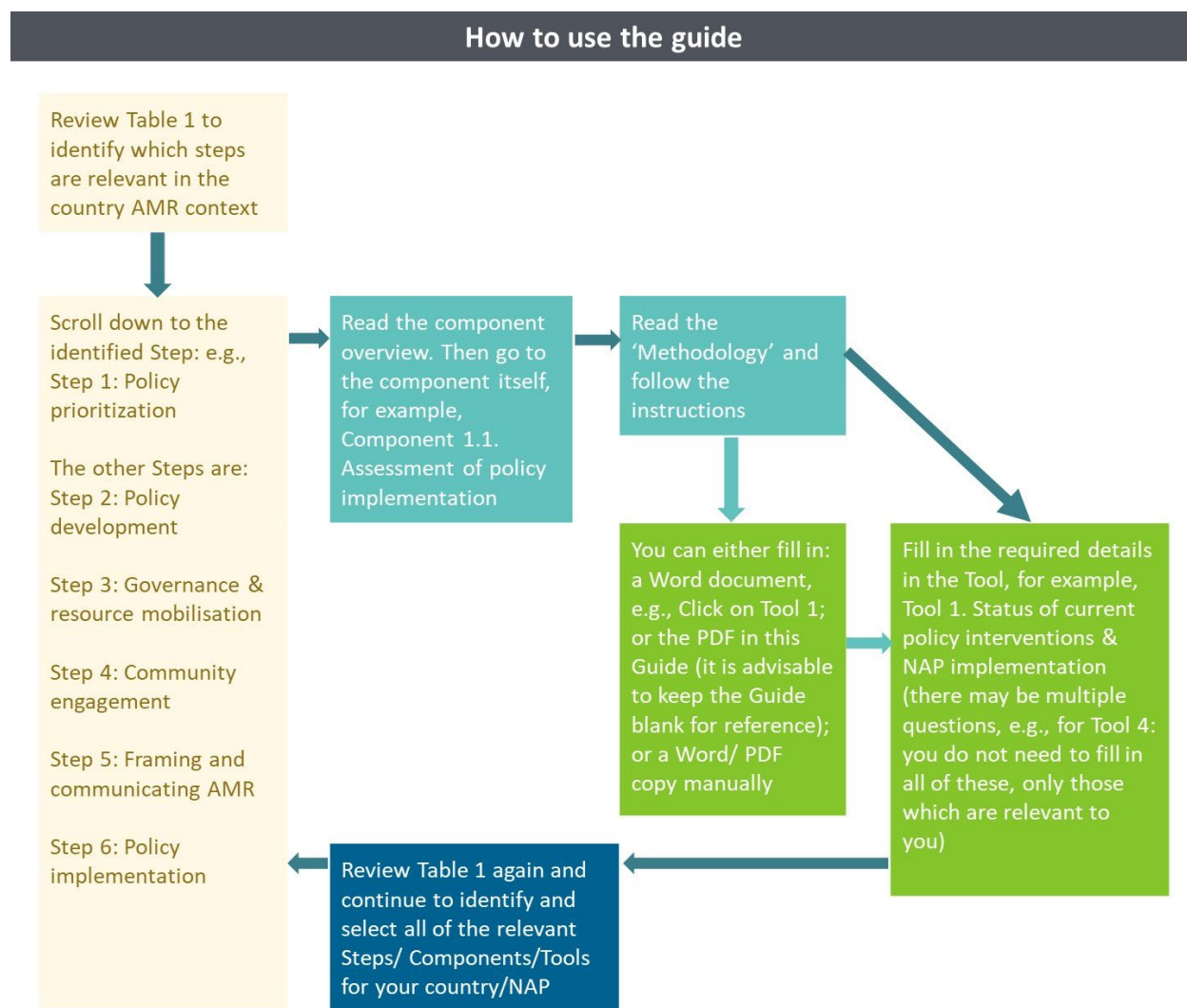
The Guide follows a 'step-by-step' approach comprising six 'Steps' (see Table 1 for an outline of the steps) – identified through a participatory co-development process with national, regional, and global AMR stakeholders (see Annex A for stakeholder details) – to plan and implement policy advocacy initiatives and strategies: and support AMR-related policy development and NAP implementation.

Each Step is divided into several components, each comprising (see also Figure 4. How to use the Guide):

- An overview of the component (e.g., '1.1 Assessment of policy implementation') and its purpose.
- Methodology and instructions on how to use the Tool/template that follows.
- The Tools, templates, Tips', which enable Guide users to develop policy advocacy interventions.
- Each Component includes a link to a Word document version of the Methodology/Tool for completion externally to the Guide itself (the PDF version of the Guide can be kept blank for reference).

Utilization of the Components and Tools will depend on the needs and priorities of the user/stakeholder/country. Users do not need to go through every Step: Table 1 below summarises each Step and its Components, the accompanying Tools/templates/'Tips' available for each component, and the expected result of using the Tool. Users can review Table 1 and select those Steps that are most pertinent and relevant to the country context and priorities. Within the Tools there may be multiple questions, e.g., in Component 1.3 (Policy prioritization and objectives, page 28), the Tool 4. Prioritization of policy interventions and NAP implementation there are multiple questions: you do not need to fill in all of these, only those which you think are helpful in prioritizing policy areas.

Figure 4. How to use the Guide



Within each Step, Country 'Case Studies' are included, highlighting the key aspects of the Step.

Click here for all Word document versions of the [Tools](#)

Table 1. Summary of 'step-by-step' approach and corresponding tools, templates and tips

STEP/Components	TOOLS/templates and 'Tips'	EXPECTED RESULT
Step 1. Policy prioritization:		
1.1 Assessment of policy Implementation	Tool 1. Status of current policy interventions and NAP Implementation	Assessment of current policy interventions and NAP implementation
	Tool 2. Analysis of current laws/regulations related to AMR	Assessment of current laws and regulations related to AMR
1.2 Evidence for policy	Tool 3. Matrix for research/evidence to inform policy Prioritization	Identification of research and evidence available to inform policy development/NAP

		implementation; and further research and evidence required
1.3 Policy prioritization and Objectives	Tool 4. Prioritization of policy interventions and NAP implementation	Determination of priority areas for policy development and NAP implementation
1.4 Policy frameworks		
Step 2. Policy development:		
2.1 The policy and political Process		
2.2 The policy-makers	Tool 5. AMR policy- and decision-maker analysis	Identification of key policymakers to engage for AMR policy interventions
2.3 The policy stakeholders and Influencers	Tool 6. Policy stakeholder and influencer analysis	Identification of key policy stakeholders that can influence policy-makers
2.4 Private sector	Tool 7. Private sector partner Analysis	Identification of private sector partners currently or potentially engaged on AMR policy issues
2.5 Advocacy tools	Tool 8. information and advocacy needs	Identification of sources of information and needs of policy-makers and policy stakeholders
Step 3. Governance and resource mobilization:		
3.1 Governance	Tool 9. Governance structures	Assessment of governance Structures/mechanisms in place and/or needed for policy development/NAP implementation
3.2 Finance and resource mobilization	Tool 10. Resource mobilization/ Funding	Assessment of existing and potential funding sources for AMR policy development/NAP implementation
Step 4. Community engagement:		
4.1 Engaging and mobilizing civil society, faith groups and communities		
4.2 Catalysing the health sectors	Tool 11. Analysis of civil society, Community, health sector, and faith-based engagement	Identification of civil society/faith-based community engagement stakeholders to mobilise for policy action on AMR
Step 5. Framing and communicating AMR:		
5.1 Reframing AMR		
5.2 Ensuring 'access without excess'		
5.3 Reframing AMR communication		
5.4 Communication planning	Tool 12. Adapted 'SWOT' analysis for communication	Assessment of communication challenges and opportunities.
	Tool 13. Sample communication strategy	Clarification of communication objectives, outcomes and activities
	Tool 14. Sample Communication Action Planning Sheet	Summary of audiences, required actions, barriers to actions, key

		messages, and channels
5.5 Audience mapping	Tool 15. Public audiences	Identification of audiences, their knowledge, influences, and the expectations of them
5.6 Developing key messages	Tool 16. Tips on message Development	
	Tool 17. Messaging	Crafting of primary and secondary messages to increase resonance on AMR
5.7 Messengers and channel	Tool 18. Tips on messenger and channel selection	
	Tool 19. Selecting messengers and channels	Identification of channels and messengers to reach AMR target audiences effectively
5.8 Media guide	Tool 20. Tips on media engagement and management	
	Tool 21. Media mapping	Identification of media channels and contacts– and characteristics – to develop relationships with
5.9 Advancing social science research on AMR		
Step 6. Policy implementation:		
6.1 Policy implementation	Tool 22. Example of Workplan	Development of a Workplan/‘road map’ for policy implementation
	Tool 23. Policy implementation	Summarised key factors for policy Implementation
6.2 Monitoring and evaluation	Tool 24. Monitoring and Evaluation	Identification of M&E indicators for the policy advocacy plan
6.3 Vaccines and AMR		



Step 1

Policy prioritization

1.1 Assessment of policy implementation

Most countries have developed National Action Plans (NAPs) as guiding frameworks to address AMR, based upon the WHO Global Action Plan (GAP) identified priorities and the country context, analysis and local priorities. NAPs define the policy advocacy goals and objectives. NAP implementation has been hindered by issues relating to funding, systems, governance, infrastructure, coordination, partnerships and political commitment^{33 34}. Hence, the process of policy advocacy begins by assessing the status of current policy interventions and NAP implementation and documenting what has been accomplished, what has not, and why it has not. Analysis of current laws and regulations related to AMR, and what shortfalls and/or gaps exist is also critical to understand what worked and what did not.

Component 1.1 Assessment of policy implementation

Read the 'Methodology' below and use Tool 1 to assess the current status of AMR policy interventions and NAP implementation; and use Tool 2 to identify current laws or regulations relating to AMR/AMU/AMC already in place and those further required.

Click here for the Word document version of [Tool 1](#)

Click here for the Word document version of [Tool 2](#)

METHODOLOGY:

In the Tool 1 template below: In Column 1 enter the NAP area/Policy intervention. In Column 2 enter who is responsible for implementation and timeline. In Column 3 enter the current status of the NAP area/Policy intervention, for example, is a NAP objective being developed; has it been endorsed; is it being implemented? In Column 4 enter the barriers to implementation of that intervention.

Tool 1. Status of current policy interventions and NAP implementation

Title of NAP area/ Policy intervention	Responsible parties for implementation; and Timeline	Status: Developed? Endorsed? Implemented?	Barriers to policy development/ Implementation

³³ Anderson, M. *et al* (2019). A governance framework for development and assessment of national action plans on antimicrobial resistance. *The Lancet Infectious Diseases*, 19 (11). From AMR Framework for Action. UN interagency Coordination Group on Antimicrobial Resistance (2017)

³⁴ Interagency Coordination Group on AMR (2018). AMR: National Action Plans. June 2018.

METHODOLOGY:

In the Tool 2 template below*: In Column 1 enter the name or title of the law/regulation. In Column 2 enter who is responsible for introduction/implementation of the law. In Column 3 enter the current status of the law/regulation, for example, has it been developed; has it been endorsed; is it being implemented? In Column 4 enter the barriers to introduction/implementation of that law/regulation.

* This Tool is applicable for introduction of new – or enforcement of existing – laws.

Tool 2. Analysis of current laws and regulations related to AMR

Name/title of the law/regulation	Responsible parties for implementation	Status: Developed? Endorsed? Implemented?	Barriers to development/implementation of the law/regulation

1.2 Evidence for policy



"If we do not have good evidence that government can act on, we cannot force the implementation, so we really need to generate a more systematic approach to evidence, so that we can move forward."

-Country Stakeholder, Africa

Policy advocacy is informed by research to determine the most effective policy interventions to address AMR. The aim of using the latest science, data, evidence – including systematic reviews and meta-analysis – is to: highlight AMR as a policy priority; provide evidence to policy-makers on why addressing AMR makes health and economic sense (and the potential impact of inaction); inform the development of policies and NAP implementation to address AMR; identify resource use and costs, and allocate resources; and provide the benchmark for measuring and monitoring the impact of interventions. This includes analytical evidence and statistical modelling on the health and economic burden of AMR. Evidence for policy-makers is best received in condensed form, with clear narratives, and concise key messages and summaries³⁵.

Evidence must be contextualized and applicable for the specific circumstances of LMICs, taking into consideration inequities and disparities. Hence, local data is crucial: it is at this level where the infections are, where the hygiene issues are, and where specific policies are needed. There are challenges in terms of data quality: the persons who collect and enter data may not be well-trained, and/or may have insufficient time due to multiple responsibilities; it may be descriptive, and potentially biased; it may not be representative of the overall population; it may exclude certain groups of the population due to existing inequalities or stigmatization; and it may not be comparable across the country due to

³⁵ Rosenbaum, S. *et al* (2010). Evidence summaries tailored to health policy-makers in low- and middle-income countries. *Bull World Health Organization* 2011; 89:54-61.

differences in collection methods and lack of a systematic approach³⁶. However, it is important to recognize that even collecting poor quality data helps in understanding, enables feedback, and improves data quality over time: it does not need to be published as surveillance, or for treatment guidelines, but collected with the aim of improving capacity³⁷. Capacity – both within organizations promoting evidence and policy-makers receiving it – must also be enhanced for appraising, analyzing, and applying evidence to inform policy³⁸.

The collection and utilization of socio-behavioural data is also important – but neglected – in understanding perceptions and behaviours in relation to AMU/AMC (see Step 5: 5.9 below). Establishment of systems for collection of social data would also be beneficial in addressing AMR. It can include qualitative data, and supplemented by qualitative research. Evidence is also useful on alternative/opposing views on AMR to further justify the need for policy action.

Component 1.2 Evidence for policy

Read the ‘Methodology’ below and use **Tool 3** to identify what AMR research and evidence exists and what is required in the country to inform policy development and NAP implementation.

Click here for the Word document version of [Tool 3](#)

METHODOLOGY:

In the Tool 3 template below: In Column 1 enter the research area or title of research. In Column 2 the NAP or policy area that the research aims to inform. In Column 3 enter the source of/type of data/research (e.g. surveillance data? economic data? Provide links to the research if possible. In Column 4 enter details of who will use the data? How it should be used? How it will be collected? Who will collect it. This can be done for both existing and required research/data.

Tool 3. Research and evidence to inform policy prioritization

Existing research area or issue	NAP strategy/policy area that research will inform	Source/type of research (surveillance, economic, behavioural). Provide links to the data/research	Who is the data for/ how should it be used? Who will collect it? How?
		Links to the data/research:	

Case Studies are included below from Tanzania, highlighting the importance of AMR, AMU, and AMC surveillance for policy-makers; and Bangladesh, highlighting important economic research and evidence can be used to help in policy prioritization.

³⁶ Lewin, S. *et al* (2009). Finding and using evidence about local conditions. *Health Research Policy and Systems* 2009, 7 (Suppl 1): S11

³⁷ Stelling, J (2021). IVI-RADAAR Policy webinar 2. AMR Surveillance: Past, Present and Future. 23 September 2021, Seoul.

³⁸ Oxman, A. *et al* (2009). Improving how your organization supports the use of research evidence to inform policymaking. *Health Research Policy and Systems* 2009, 7 (Suppl I) S2.



RADAAR CASE STUDY 1. EVIDENCE AND DATA FOR POLICY-MAKERS Tanzania: AMR surveillance data to establish institutional antibiograms

The Issue: effective surveillance data for policy-making

Antibiograms are the overall profile of antimicrobial susceptibility testing results of a specific microorganism concerning antimicrobial drugs used, specifically antibiotics. The data used to develop antibiograms must be of high quality (as per WHO standards), and sufficient to conclude AMR in certain antibiotics. AMR surveillance data are important in developing direct treatment guidelines of many bacterial infectious diseases. Data on AMC, AMU, and susceptibility testing are important for antimicrobial stewardship (AMS) policies and guidelines, and used as selection criteria of antibiotics in the National Essential Medicines List, as well as categorizing of antibiotics in AWaRE groups based on country data.

Strategy and methodology

The key partners were: Benjamin Mkapa Hospital (BMH), responsible for generating high-quality data; Ministry of Health (MoH), for policy guidance and legal advice; Central Lab for technical assistance in data analysis; academic institutions for provision of expertise and information, and NGOs for dissemination of findings.

High-quality surveillance data has aided the development of antibiograms to inform policies on the prescribing of AMR and in One Health policies. Samples were collected from urine, pus and blood to obtain data to understand resistance patterns, and the antibiotics used, and to develop internal prescribing policies for the hospital itself, together with procurement policies and protocols on intravenous medicine. The data helped to reflect the overall AMR situation in Tanzania, as the BMH is one of the major referral hospitals. The data is utilized to develop policy on prescribing, procurement of medicine, development of treatment guidelines, and the essential medicines list, specifically for antibiotics. Data also guides training, including for medical students, continuous professional development and continuous medical education. AMR surveillance is also taking place in 10 hospitals under a USAID-MTaPS project and four hospitals are under a USAID-IDDS project. The BMH is included in both projects as partner in AMS, as for AMR surveillance. The process in Tanzania is to collect data, develop guidelines, organize meetings, focus group discussions, and Technical Working Group (TWG) meetings to share information and develop policy, develop indicators to assess the implementation of policies, and if they are being understood: by government, academia, other stakeholders.

Challenges and enablers in data collection and translation to policy

Data collection and translation to policy faces numerous challenges:

1. On-the-job training and continuous medical education are needed for effective AMS.
2. Training is being undertaken, but trained staff leave: so a high number of staff must be trained to compensate for turnover.
3. AMS is not mandated in medical staff job descriptions, and not undertaken systematically.
4. 20 hospitals must be visited every three months for prevalence surveys, and for daily defined doses every month: but such technical issues are not well trained in schools, academic depts.
5. There is limited capacity for data analysis: including to write, inform, and enforce policy.
6. The government spends resources purchasing antimicrobials, data and evidence is needed on:
 - Antimicrobials/antibiotics which may already face resistance.
 - The economic impact of AMR.

- AMC and AMU nationwide.
- 7. IPC procedures are insufficient: patients can die even from having a wound.

There are important factors which have enabled progress:

8. A 'One Health' approach is followed, for example:
 - TWG includes: politicians to provide input on how to develop, implement, enforce policy; experts from different sectors; and FAO, World Food Programme, and UNICEF.
 - Business is engaged: those which import antimicrobials, and develop disinfectants.
 - Academia is involved: to review curricula with the aim of including AMR, surveillance, stewardship. Where the curriculum cannot be changed, AMR seminars are arranged.
 - Civil society has a role: NGOs, student clubs, are involved, such as disseminating information on AMS in the country. Media are an important channel of information.
 - In hospitals, patients are involved, through provision of information/awareness materials.
9. A senior staff member is a:
 - Fleming Fund Fellow, thereby gaining valuable experience and mentorship.
 - Technical consultant in the MoH, participating in the development of medical policy, including on AMS: hence, AMS and surveillance are included in the NAP for 2022-2027; the standard treatment guidelines and essential medicines list for 2021; the medicines policy guidelines for 2021; the national pharmaceutical action plan for 2021-2026; and the Medicines and Therapeutics Committee (MTC) guidelines for 2020.
 - Member of the national MTC, and AMS TWG chaired by the Chief Medical Officer, under the Chief Secretary of the MoH, thereby enabling influence on policy-makers.
 - Hospital formulary development national consultant, trainer In clinical pharmacy services, and on ethical prescribing/dispensing, MTC roles and revitalization, standard treatment guideline and essential medicines list dissemination and hospital formulary development (working under the MoH national Chief Pharmacist Office).
10. The hospital is very positive: conducting testing, well-equipped, and with skilled personnel who are willing to engage in AMS, and in policy-making.
11. The MoH has staff who are very well-informed on AMS, and willing to propagate AMS policy guidelines.

Key results and outcomes

The data and surveillance intervention has proved beneficial, with some key results and outcomes:

- Translation of key lab results to be integrated in policy-making and dissemination.
- Advocacy on rational diagnostics, prescribing, and use of antibiotics in health institutions, and community support.
- Sharing of institution testing results to the national lab for repositories necessary for national policy guidance and retesting.
- Training conducted on:
 - Antimicrobial surveillance, AMU, and AMC for human health in 14 hospitals, including for: doctors, pharmacists, nurses, medical lab scientists.
 - Data quality and presentation.
 - Techniques for susceptibility testing of antimicrobials of clinical importance.
 - Quality samples (urine, blood, and pus) collection, preservation, and testing.
- Establish an AMS committee and IPC that work under the MTC.

Financial support from the BMH regarding training, travel, and advocacy activities in the institution and community.



RADAAR CASE STUDY 2. ECONOMIC EVIDENCE FOR POLICY

Bangladesh: Political Economic Analysis for AMR containment advocacy

The Issue: estimating the economic burden of AMR for evidence-based planning

There is little data generated at the country level on the economic burden of AMR. Political economic analysis (PEA) on AMR was conducted in Bangladesh for the first time, with three objectives: (i) Estimate economic impact and value-for-money ('VfM') for investment in AMR containment; (ii) Identify factors that could influence the sustainability of AMR containment; and (iii) Identify key issues and messages for developing an AMR advocacy strategy, tools, and communication materials.

Strategies and methodology

The study was conducted through desk reviews, stakeholder consultation, key informant interviews (KIIs), and secondary data analysis. For the economic analysis, secondary data was used to estimate selected impact-level indicators. In the absence of some required data, VfM was analysed using qualitative data, with efforts made to identify potential sources of efficiency gains and effective investments for AMR, to ensure 'best buys' in the current context. Key strategies included the involvement of:

- **Expert consultants.** Two consultants conducting the study were experts in their domains: a former director at Communicable Disease Control, and a professor of economics at the University of Dhaka.
- **Relevant stakeholders.** Selected from organisations with a vested interest or who influence the AMR situation in Bangladesh: identified through a process of reviewing the AMR NSP/NAP.
- **Multisectoral stakeholders.** A 'One Health' approach was used, with 28 key stakeholders consulted from: government institutions (human/animal health, fisheries, and environment sectors), private sector institutions, professional associations, external development partners, media, and academia.

Challenges and enablers for PEA

Determining the economic impact of AMR is a challenge due to multiple variables and factors:

- Some KIIs could not be completed due to the ongoing COVID-19 pandemic: senior officials had busy schedules and were engaged in pandemic-related duties/activities.
- The pandemic allowed only limited face-to-face contact with informants: establishing a rapport/trust leads to more meaningful discussions, especially as PEA aims to gauge AMR awareness, priorities, and existing and future investments.
- Limited contact with the Department of Fisheries, and Ministry of Environment: hence, the research did not have a complete understanding of all key AMR dynamics.
- Some organisations were too busy or unwilling to share information on budgets/resources: resources allocated from the government's revenue budget could not be calculated, hence there are gaps in the data on financial, human, and other resources.
- Specific resource gaps could not be calculated as the NAP for AMR containment was not fully costed.

There were also enabling factors, including:

- Analysis of AMR budgets for 2019-22, showed that of total expenditure (of approximately £14.8 million), the Government of Bangladesh mobilized the largest share of funds, compared to donors.

- There are ‘champions’ in Bangladesh, known for their long-term AMR work within the upper echelons of the public sector: they are best positioned to influence/champion the AMR cause with their peers.
- Bangladesh’s Prime Minister is a prominent AMR/containment (ARC) champion/advocate – and Co-Chair of the Global Leader’s Group on AMR – this has created opportunities and momentum for prioritizing AMR in policy and practice in Bangladesh.
- The One Health approach promotes coordination across sectors – and across departments/units within sectors – and shared responsibilities and ownership in policy formulation, planning, implementation.
- WHO/FAO were involved in the planning of and support for the study, providing inputs to the interview process, implementation, and dissemination of the study.

PEA results

For the first objective, in terms of the potential economic impact of AMR:

- It is estimated that by 2050, Bangladesh could face a £68 billion decrease in GDP, with an additional 0.58 million people living in extreme poverty.
- AMR is leading to increases in the cost of drugs, and the duration/cost of hospital stays- e.g., the estimated cost of treatment of Urinary Tract Infection (UTI), Typhoid, and Malaria has increased in the last 20 years by up to fourfold (from BDT50 to 200), twentyfold (BDT50 to 100), and fiftyfold (BDT10 to 500), respectively.
- In the animal health sector, the cost of treatment of Foot and Mouth Disease (FMD), Peste des Petits Ruminants (PPR) and Mastitis may increase up to fivefold (BDT400 to 2500), tenfold (BDT70 to 700) and two-and-a-half-fold (BDT975 to 2600), respectively.
- The cost of treatment of animals is estimated to increase between fivefold to tenfold, and the livestock/poultry sector may face a loss of £184 million, with 325,000 jobs lost.
- The fisheries/aquaculture sector could lose £316.5 million with job losses of one million.

For VfM for investment in AMR containment:

- A case study of VfM analysis on multi-drug resistant TB (MDR-TB) over a 10-year period revealed potential savings of £1,118 million to £2,237 million, if drug-resistance could have been avoided through appropriate use of antibiotics among TB patients (based on £95,000 per MDR-TB patient).

Key lessons and outcomes of the study

The PEA study was a pioneering initiative, with potential for further research, including: to look at impact in different sectors of the economy; to include case studies in different settings within the study, for example, specific examples of multidrug resistance or ‘superbugs’; and utilizing face-to-face interviews.

- The ‘best buy’ interventions identified are affordable/effective and can be expected to make significant contributions to ARC: but only if they are supported with adequate financial and human resources.
- The study methodology is replicable in other LMICs.
- The study has generated demand: not yet formally from policy-makers, but informally in discussions.
- The study has been provided to the National Technical Committee (NTC): an important body in the policy/political process, with influence at high-level, e.g., providing recommendation to the Steering Committee, chaired by the Minister of Health; and engagement at community level, e.g., being the implementing partner down to health centre, hospitals level.

- The study produced a 'Policy brief': a 2-page document summarizing the key points for policy-makers.
- The study is being used to mobilise resources for AMR, and inform/support NAP implementation.

For the second objective, key interventions/investments identified for sustainability of AMR containment are:

In the human health sector:

- Detailed costing of the NAP to identify gaps between current resources and resources: the study is being used in developing the plan.
- Further evidence needs to be generated to estimate the economic burden of AMR for selected indicators: mortality, morbidity, treatment cost due to increased costs of drugs/hospital stays, and productivity loss.
- Increased investment in IPC, including medical waste management, hygiene and sanitation: the study makes a strong case for this, and how it impacts on public health.
- Increased engagement with private sector, such as hospitals, labs: the study has been shared with the sector and well received. Action points are being developed including involvement of the private sector in AMR reporting.
- Increased access to quality microbiological laboratory services; developed/implemented standard treatment guidelines to ensure judicious use of antimicrobials based on laboratory diagnostic methods.
- Assessment of marketing practices of pharmaceutical companies; regulations for (and enforcement of) production, marketing, and waste management.
- Accreditation of pharmacies and enforcement of laws to stop sale and use of antibiotics without prescription.
- Availability of adequate human resources to implement IPC and standard treatment protocols, and to run well-equipped modern surveillance laboratories, must be ensured, along with appropriate infrastructure, and data management systems.

In the animal health sector:

- Increased investment in biosecurity relating to livestock, and fish farms, including waste management.
- Increased human/financial resources for AMR containment in fisheries and aquaculture.
- Strengthened routine surveillance of AMU and AMC in the commercial poultry industry.
- Regulations introduced and enforced in feed production and processing.

In the environment sector:

- Engagement of the Ministry of Environment in AMR programmes, including monitoring of environmental contamination by antibiotic residues.

For the third objective – identification of key issues/messages for developing an AMR advocacy strategy, and materials – a separate Case Study is included in Section 6. Framing/re-framing communication and advocacy.

1.3 Policy prioritization and objectives

Policy prioritization is based on the NAP and informed by global and local data, research, and evidence. It must also take into consideration the cost and cost effectiveness of policy implementation – including if funding is already or will be allocated – together with the cost and consequences of inaction³⁹, and the expected impact of interventions. Having identified the priority NAP areas and policy goals, and the research and evidence needed to inform them; policy advocacy is based upon objectives that are specific, measurable, achievable, relevant, and time-bound (SMART). The development of policy objectives is informed by:

- The policy-makers: if AMR is on their agenda, and who ('brokers') influences their decisions.
- The desired policy action required of policy-makers.
- Obstacles to policy change/development: government bureaucracy, the opponents, and their arguments.
- The partners and stakeholders, resources, and tools: the support needed to advance the policy process.
- Public opinion: the resonance of, urgency for action and support (or lack of) for AMR, and barriers to/facilitators for action.
- Planned interventions: timeline, scale, expected outcomes, health impact.
- The framing of AMR: so that it is prioritized on the government agenda.
- The external environment: political (in)stability, public accountability.
- The cost of monitoring: if indicators are already established and tracked or can be added to the existing M&E system⁴⁰.



We are being told that to impress on this issue of AMR, to attract some funding by the state, we are supposed to make a good economic case because the ministers really don't get impressed by anything else.

- Country Stakeholder, Africa

Based on policy goals and objectives, key strategies are developed to influence policy-makers – through direct engagement and interaction – to take action on policy development and NAP implementation. Strategies include: providing policy support, developing or enhancing government structures, packaging evidence, building coalitions of support including engaging media and civil society, and seeking insights from the public through qualitative research. Interaction between researchers and policy-makers – and timely provision of evidence that is perceived to be relevant – increases the likelihood that evidence will be utilized⁴¹.

The NAP covers a wide range of potential interventions, the implementation of which is dependent upon country capacity, resources and funding, and potential events and opportunities. Whilst all are priorities, analysis – including potentially using a ranking system (see below) – can help determine which interventions are viable and can be addressed.

³⁹ US CDC (2013). CDC's Policy Analytical Framework. US Department of Health and Human Services.

⁴⁰ Ibid.

⁴¹ Lavis, J. et al (2006). Assessing country-level efforts to link research to action. *Bulletin of the WHO* August 2006; 84:620-628.

Component 1.3 Policy prioritization

Read the ‘Sample policy ranking’ and ‘Methodology’ below and use Tool 4 to identify the priority areas for policy development and NAP implementation.

Click here for the Word document version of [Tool 4](#)

Sample policy ranking for policy prioritization

Rank each ‘Consideration’ on a scale from 1 to 4: where 1 is ‘Low’ and 4 is ‘High’*.

For example: Is it on the policy/political agenda? Is it likely to progress?

1=Low likelihood of progressing; 2=Moderate; 3=High; 4=Very high likelihood of progressing.

For example: Does it have momentum/resonance with policy-makers?

1=Low degree of momentum; 2=Moderate degree; 3=High degree; and 4=Very high degree.

An overall ranking – based on the average ranking across all ‘Considerations’ or the most frequent ranking – can provide a ‘guide’ for potential policy prioritization. The ranking is not definitive, but interventions with the most (or an overall average of) “2”-to-“4”s are more likely to be implementable than those with “1”s.

*** Not all the ‘Considerations’ can be or need to be ranked.**

METHODOLOGY:

In the Tool 4 template below: In Column 1 the considerations for prioritization are listed (in three sections: ‘1. Getting started’, ‘2. Implementation’ and ‘3. Potential impact’). In Column 2 answer ‘YES’ or ‘NO’ to the question in Column 1. In Column 3 use the ‘Sample policy ranking’ above to rank the likelihood of achievement (not all consideration can/need to be ranked). In Column 4 enter any explanatory descriptions or comments.

Tool 4. Prioritization of policy interventions for NAP implementation

Considerations for developing NAP/Policy interventions	YES/NO	Rank (1-4)	Description/comments
1. Getting started			
Is a NAP area being addressed? If ‘YES’ which NAP area?			
Does it require a new or amended policy/law/regulation?			
Does it require enforcement of an existing policy/law/regulation? If ‘YES’, which policy/law?			
Does it have momentum/ resonance with policy-makers?			

Is it on the policy/political agenda?			
Is the intervention SMART: Specific? Measurable? Achievable? Relevant? Time-bound?			
Are there identifiable policy-makers responsible for implementation?			
Is there a critical mass of supportive ministers/civil servants?			
Are there identifiable stakeholders/influencers to assist?			
Are there policy advocacy entry points/windows of opportunity?			
Are there opponents/interest groups?			
Does AMR have public support?			
Is the intervention compatible with socio-cultural norms?			
2. Implementation			
Is the intervention costed?			
Is funding available/allocated?			
Is the intervention cost effective?			
Is the timeline feasible?			
Do partners/stakeholders have funds that can be utilized for AMR?			
Do partners/SHs have additional resources? What are they?			
3. Potential impact			
Can it be monitored/ evaluated?			
Are indicators established? If 'NO' can they be added?			
Are monitors/evaluators in place?			
Will it have an impact on reducing AMR/AMU/AMC?			
What is the expected impact?			

1.4 Policy frameworks

Policy advocacy is aided through a framework that identifies multiple causes, rather than only symptoms and effects. A framework helps to understand and build on the 'knowledge nexus': how research, data, and evidence becomes part of the policy development process. Moreover, it provides a roadmap: from highlighting the issue, identifying the policy and political aspects, engaging coalitions of support, and understanding the policy, legal, regulatory and institutional environment; to developing policy options, and policy actions and outputs, such as draft legislation and regulations.

The Guide uses a framework (referencing others such as the ‘Multiple Streams’ model, ‘Advocacy Coalition Framework’) to capture a range of diverse factors^{42 43 44 45} and assist the AMR policy process through support in implementing NAPs and policy initiatives (see Figure 5 below). The framework assumes that stakeholders are highly specialized: experts, scientists, legislators, policy analysts, researchers, UN agencies, interest group leaders, with strong beliefs, and are motivated to translate beliefs into policy. The framework highlights the need for and availability of scientific/technical information, data, and evidence: hence, researchers – including scientists, policy analysts, social scientists – are key participants.

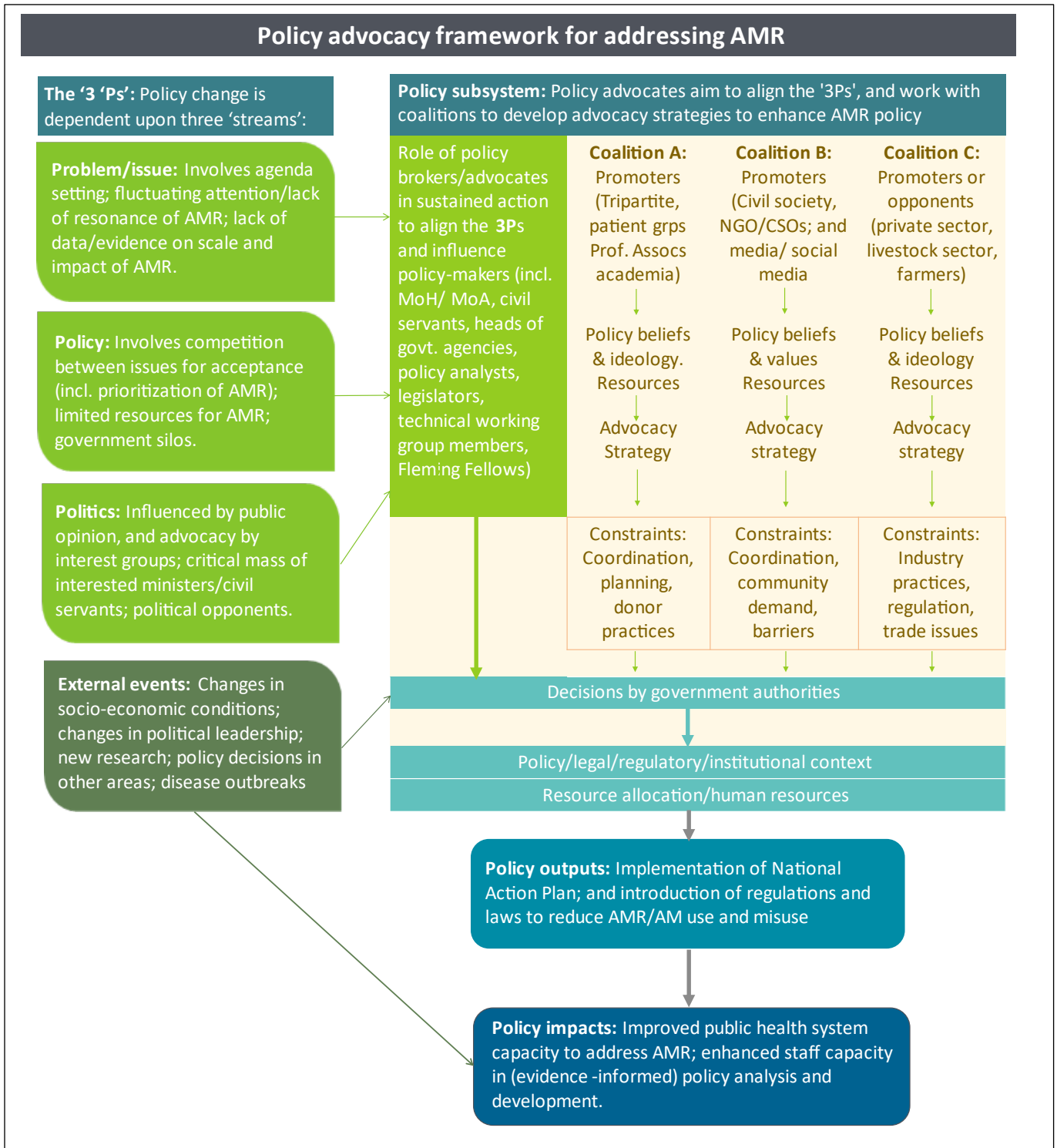
⁴² Kingdon (1984). Multiple Streams model.

⁴³ Béland, D. & Howlett, M. (2016). The Role and Impact of the Multiple-Streams Approach in Comparative Policy Analysis.

⁴⁴ Peel Public Health (2012). The use of policy frameworks to understand public health-related public policy processes.

⁴⁵ Anderson, M *et al* (2019). A governance framework for development and assessment of national action plans on antimicrobial resistance. *The Lancet Infectious Diseases*, 19 (11).

Figure 5. Policy advocacy framework for addressing AMR





Step 2

Policy development

2.1 The policy and political process

Understanding the policy-making process, cycles, timing, structure, and environment, and which decision-makers and influencers to target is key to achieving policy objectives. The policy-making process (see Figure 6 below) includes: those persons and/or government agencies involved in the process and/or making decisions; the formal structures and mechanisms in place, i.e., committees, working groups; the rules relating to different levels and subsystems of government; and the role of – and relationships between government stakeholders and – policy stakeholders, influencers, and civil society.

Figure 6. The policy-making process



We need groups hold governments accountable. We see AMR in electoral campaigns...if they say they are doing this and that, we must question why these things are not being done
-Dr. Yewande Alimi Africa CDC

Understanding the political landscape enables the use of strategies on when to engage, intervene, and influence policy-makers, at what stage of the policy development process (see also Step 3: Governance), and how to frame evidence to be useful to policy-makers. Familiarity with the policy process and access to policy-makers enable the advocacy strategies of lobbying, briefing, and negotiating: both formally and informally through meetings and/or individual discussions. Policies are contextual and cultural⁴⁶: hence, it is necessary to understand policy-makers’ positions on policy objectives, together with political – including electoral – imperatives, and to anticipate likely opposition or vested interests. Policy-making is not necessarily always rational, and evidence alone may be sufficient to influence policy-makers⁴⁷. Policy-making can be based on goals and evidence, but may also combine ideology, values, or “moral or emotional judgements based on their [policy-makers] well-established beliefs”⁴⁸. Hence, policy influencing strategies can combine “facts with emotional appeals” and “evidence with simple stories” to

⁴⁶ De Leeuw, E (2016). From research to policy and practice in public health.

⁴⁷ Greer, S. *et al* (2017). Policy, politics and public health. *European Journal of Public Health*, Vol. 27, Supplement 4, 2017, 40-43.

⁴⁸ Cairney, P, *et al* (2016). To bridge the gap between evidence and policy: reduce ambiguity as much as uncertainty. *Public Administration Review*, 76: 399-402. 26 Jan 2016.

appeal to the – emotional and ideological – biases, beliefs, and priorities of policymakers”⁴⁹.

The likelihood of political progress and policy adoption and implementation is enhanced if policy and/or political windows of opportunity can be utilized^{50 51}: arising from new technologies or trends, changes in political leadership, events and emergencies, and from new agenda-setting research. Identification of influential ‘brokers’ – who are part of the government structure, such as senior Ministerial personnel – assists the process of policy adoption and implementation.

Highlighting and leveraging political commitments, such as the International Health Regulations (IHR), can bring AMR to the political agenda: the IHRs could provide a legal framework for detection and control⁵², or could be applied to AMR, identifying as reportable diseases under the IHR⁵³, and a cause of death on death certificates.

AMR and the SDGs

There are two identified indicators on AMR as part of SDG3 (good health and wellbeing):

- SDG indicator 3.d.2, Percentage of bloodstream infections due to selected antimicrobial resistant organisms; and
- SDG indicator 3.b.3, Proportions of health facilities that have a core set of relevant essential medicine available and affordable on a sustainable basis (where antibiotics will be disaggregated from the core set of data used in the metadata).

AMR is also relevant to: SDGs 1 (and 8) surrounding poverty and economic growth as increasing resistance will lead to higher cost of treatment and increased mortality and morbidity; SDG2 concerning ‘Zero hunger’, whereby inappropriate use of veterinarian medicine in livestock impacts on animal health, food production, livelihoods and food security; SDG6, concerning water and sanitation, whereby pharmaceutical/microbial hazard waste can contaminate groundwater, soil, food crops, with the potential for the generation of antibiotic resistant bacteria; SDG12 where global consumption of antimicrobials in food and animal production, and the use of antibiotics in agriculture are expected to rise significantly according to the World Bank; and SDG14 concerning the overuse of antibiotics in fish-farming and the infectious drug-resistant pathogens.

A Case Study is included below from Lao PDR, showing the process of policy development on AMU in the animal health sector, based on surveillance data and capacity building.

⁴⁹ Cairney, P, *et al* (2016). To bridge the gap between evidence and policy: reduce ambiguity as much as uncertainty.

⁵⁰ Shiffman, Jeremy/Center for Global Development (2007). Generation of Political Priority for Global Health Initiatives: A Framework and Case Study of Maternal Mortality. Working Paper Number 129 October 2007.

⁵¹ Oxman, A.D. *et al* (2010). A framework for mandatory impact evaluation to ensure well informed public policy decisions

⁵² Osman Dar, A. *et al* (2015). Exploring the evidence base for national and regional policy interventions to combat resistance. *The Lancet*, November 2015.

⁵³ Ruckert, A *et al* (2020). Governing antimicrobial resistance: a narrative review of global governance mechanisms. *Journal of Public Health Policy* 41:515-528.



RADAAR CASE STUDY 3. ONE HEALTH POLICY DEVELOPMENT

Lao PDR: Strengthened AMR/AMU surveillance for animal health

The Issue: animal health sector surveillance capacity

The capacity of the animal health sector for conducting AMR surveillance in animals in Lao PDR is insufficient. Animal health sector data and information on AMR is needed – in combination with the human health sector and other stakeholders – to support policy advocacy towards improving understanding on, and collaborative efforts to minimize AMR.

Strategies and methodology

The National Strategic Plan (NSP) on AMR – developed and endorsed by the Ministries of Agriculture and Forestry, and Health in 2019 – initiated collaborative efforts between the human and animal health sectors to enhance evidence on AMR/AMU in the animal health sector, towards optimizing the use of antimicrobials for the treatment of animal disease and averting negative consequences from AMR in animals. This intervention focuses on the second of five NSP objectives: to strengthen the AMR surveillance system (whilst simultaneously covering the first objective, to improve awareness and understanding of AMR; the fourth, appropriate use of antimicrobials; and the fifth, to improve coordination and budget support). Key strategies include:

- Ensuring sufficient funding and resource mobilization, including budget support from the Fleming Fund: to build capacity for AMR surveillance in the animal health sector.
- Working collaboratively with a One Health approach, e.g., evidence on AMR bacteria found in animals shared with the human health sector: particularly on the extended-spectrum beta-lactamase (ESBL) AMR bacteria found in animals.
- Developing the surveillance capacity of the National Animal Health Laboratory (NAHL)/ Provincial Animal Health Laboratories (PAHL) of five provinces.
- Utilizing FAO/partner expertise in technical assistance, capacity building, and management.
- Establishing legal frameworks for policy development and introducing laws/regulations to minimize AMR in the animal health sector.

Challenges and enablers for NSP implementation

1. Difficulties in mobilizing national/local funding to implement the NSP: consequently, implementation relies on support from international donors.
2. COVID-19 restrictions and refocusing of efforts to prevent and control the spread of the virus, resulted in conflicting schedules of (AMR) implementing bodies, irregular meetings and sharing of AMR information, and limitations in training implementation (moved 'online').
3. The development of an AMR teaching module for veterinary schools has not yet been achieved: due to lack of resources/capacity.
4. Systematic M&E has not yet been conducted: due to lack of resources/qualified personnel.
5. Engaging and mobilizing communities and civil society to support the process of policy development and implementation has not started: committee/sub-committee members, departments, divisions, university, and hospitals are all from the public sector.
6. Pharmaceutical companies/private sector stakeholders are engaged with importation and/or distribution of medicines, but expansion of their responsibilities has not yet been realised.

However, the above and other issues are being addressed through:

1. The work of the Antimicrobial Resistance Surveillance and Control Committee (ASCC) to enhance multisectoral cooperation in implementing the NSP including: Sub-committees for

overall (e.g., finance), and technical (e.g., data, surveillance) matters; and a Secretariat, which oversees the sub-committees.

2. Working collaboratively with a One Health approach to address AMR issues: efforts to include the environment sector; regular sharing of findings on AMR surveillance; regular meetings/events to share information (One Health Symposium, World Antimicrobial Awareness Week).
3. Support and guidance from the Department of Livestock and Fisheries – in terms of funding and resource mobilization – helped mobilize the human resources needed to fulfil the aims.
4. FAO technical assistance – in collaboration with partners – and mobilization and management of the resources to help build capacity for AMR surveillance: including ‘hands-on’ training.
5. Collaborative development – through workshops, stakeholder meetings – of communication strategies and materials, focused on increasing understanding of AMR and AMU.
6. Building coalitions with academia: e.g., working with the College of Agriculture of the National University of Lao to develop training curricula on AMR for veterinary students/related fields.
7. Fleming Fund support for capacity building for AMR surveillance in the animal health sector.

Key results/outcomes of the intervention to date

- Initiation of an active, collaborative One Health partnership to address AMR, including: MOH/MOAF; FAO/WHO; National Centre for Laboratory and Epidemiology; NAHL/PAHL of five provinces; and the livestock sector. The environment sector has been included, and increased efforts to engage with academia and the private sector are taking place.
- Evidence developed to support policy-makers: sharing of findings on AMR surveillance in both animal and health sectors, such as salmonella serotyping and *e.coli* testing; published results in ‘Antibiotics’ journal^{54 55} and websites of AMR surveillance in animals during 2018-2021.
- Training manuals/SOPs developed with CU-VET (in Thailand) – with FAO technical assistance – on field sampling, sample handling, bacterial culture/identification, and antimicrobial susceptibility testing (AST).
- Enhanced capacity for AMR surveillance in the animal health sector through training for PAHL staff: enabling them to perform field sampling, submission of quality data to NAHL. PAHL staff in Louangprabang, Savannakhet, Champasak can conduct basic bacterial isolation, following training on bacterial culture/identification, and submit isolates to NAHL for confirmation/AST.
- Improved surveillance facilities (human resources, equipment, reagents, data management).
- Increased knowledge on appropriate AMU through communication strategies/materials among: veterinary/health professionals, farmers, drug sellers, private sector stakeholders, and public. Communication materials translated into the languages of ethnic groups.
- Promulgation and implementation of legal/regulatory environment to minimize AMR in the animal health sector: e.g., Prime Minister’s Decree on the Veterinary Drug No.199/gov (13/03/2020); and Ministerial Regulation on Antimicrobials for Terrestrial and Aquatic Animals No. 0545/MAF (12/05/2021).

Self-assessment of NAP implementation has been conducted through the FAO Progressive Management Pathway: based on awareness, evidence, good practices, and governance. Activities in the first three had taken place, but more work required on the latter. A mid-term review on NSP implementation was conducted (in 2020), focused on monitoring the five objectives, concluding that further efforts are needed to achieve the targets on AMR⁵⁶.

⁵⁴ Inthavong, P. *et al* (2022). Antimicrobial Resistance Surveillance of Pigs and Chickens in the Lao People’s Democratic Republic, 2018–2021. *Antibiotics* 2022, 11, 177. See <https://www.mdpi.com/2079-6382/11/2/177/pdf>.

⁵⁵ Food and Agriculture Organization of the United Nations (fao.org).

⁵⁶ See <https://www.fao.org/antimicrobial-resistance/resources/tools/fao-pmp-amr/ar/>

2.2 The policy-makers

Key areas of policy-making are strategic and technical^{57 58}, with different priorities and needs – including for evidence – which must be bridged. Strategic policy-makers, such as politicians, and appointed or elected officials, are concerned with high-level priorities/strategies: they need to be convinced that AMR is a priority, and that there are viable policy options. They often have extensive briefs, a limited focus on specific issues, and a need to make decisions quickly⁵⁹. They require data and evidence to plan, implement, and monitor interventions^{60 61}. Technical policy-makers are responsible for translating priorities and strategies into costed implementation plans: they must understand the nature of AMR and its causes, and develop – cost-effective – policy options to address the issue, current gaps, and key implementation considerations. They need country-level surveillance data, based on laboratory work, and to understand clinical, epidemiological, and scientific issues. Hence, whilst technical policy-makers aim for scientifically-proven evidence; strategic policy-makers look for that which “seems reasonable, has a clear message, and is available at the right time”⁶² and is ‘packaged’ “to make it easy to understand, framed in a way that is attractive to policymakers”⁶³.

Table 2. Policy-makers’ objectives

Strategic policy-makers
<ul style="list-style-type: none">• Define public health priorities and resource needs according to disease burden.• Establish high-level objectives, strategies, and M&E metrics for programme success.• Allocate financial and human resources.• Develop regulatory and legislative agenda for AMR containment.• Establish coordination mechanisms and communication pathways.• Strengthen organizational structures and capacity.• Advocacy to highlight AMR risks.
Technical policy-makers
<ul style="list-style-type: none">• Translate high-level objectives and strategies into implementation plans.• Detect and contain emerging resistant pathogens, including outbreaks, in real time.• Assess and update standard treatment guidelines.• Benchmark AMU, infection control, and laboratory test practices across healthcare facilities and communities with investigation and guidance on improvements.• Benchmark resistance findings.• Develop advocacy and educational materials



What drives policy or where policy comes from, is an issue or a problem that is clearly identified. What I'm seeing with AMR in most cases is a technical problem, a problem made only by technical people, only they who appreciate it.
- Policy Fellow, Africa

⁵⁷ Adapted from Big Data Institute (2021). Oxford, United Kingdom.

⁵⁸ WHONet (2021), Boston, United States.

⁵⁹ Davidson, B (2017). Storytelling and evidence-based policy: lessons from the grey literature. Palgrave communications 3: 17093

⁶⁰ The Wellcome Trust (2020). The Global Response to AMR: Momentum, success, and critical gaps, p.vi.

⁶¹ Cairney, P, et al (2016). To bridge the gap between evidence and policy: reduce ambiguity as much as uncertainty. *Public Administration Review*, 76: 399-402. 26 Jan 2016

⁶² Davidson, B (2017). [from Davies (2005). Evidence-based policy and democracy. *Open Democracy* [in Young & Mendizabal, 2009].

⁶³ Cairney, P, et al (2016).

Component 2.2 Policy makers

Read the 'Methodology' below and use Tool 5 to identify and engage the key policy-decision-makers involved in policy development and NAP implementation.

Click here for the Word document version of [Tool 5](#)

METHODOLOGY:

In the Tool 5 template below: Column 1 provides the factors to consider in identifying key AMR policy-makers to engage. In Columns 2/3/4 enter the key policy-makers in Line 1 (add additional columns as required for more policy-makers) and answer the questions from Column 1, in the following lines of the template.

Tool 5. AMR policy- and decision-maker analysis

Policy-makers	Policy-maker 1	Policy-maker 2	Policy-maker 3*
Who are key AMR policy-/decision-makers in this policy/NAP area?			
Are policy-makers 'Strategic' or 'Technical'?			
Which Govt. depts/agencies/committees are involved with AMR policy/NAP implementation?			
What are the required (specific) actions of policy-makers?			
Do they have the capacity for the actions? What more capacity is needed?			
Do they have resources for AMR (staff, funds, IT)?			
What is the approval process? Who has the final approval?			
What is the position/level of interest of policy-makers on AMR? Is it a priority?			
Who are the opponents of the policy/NAP area? Why?			
Considerations for policy	Comments	Comments	Comments
Who has/is there access to policy-makers (see also 3.3. below)?			
At which stage of the policy process can policy-makers be engaged/influenced: Prioritisation? Development? Implementation?			
What are other entry points to engage/influence policy-makers?			

What/when are the lobbying/briefing/negotiating opportunities?			
Who are policy-makers accountable to?			
What is the knowledge level of policy-makers on AMR?			
Are policy-makers linked/allied with other AMR-related policy actors/groups?			
Do policy-makers have vested or other (conflicting) interests?			

* Add additional columns as required for more policy-/decision-makers

2.3 The policy stakeholders and influencers



We don't do a good job of providing a sense of urgency to politicians, government officials, so that they understand that this is a problem today. And it's going to get a lot worse, have a bigger impact on the health of your community, economy, if it isn't addressed now
 -Regional expert, RADAAR focus groups

Prioritization for policy-makers can depend on whether the issue is advocated by cohesive, well-led institutions, networks or interest groups which position AMR/NAP issues for the attention of political elites: directly through lobbying, or indirectly through public influence. Coalitions, partnerships, and alliances with key stakeholders are necessary to develop and demonstrate support for addressing AMR. Hence, identifying a core group of organizations that will work together to drive policy advocacy forward is crucial. Initiatives are more likely to generate political support if they link with coalitions which support the AMR policy objectives, such as civil society, NGOs, community leaders, health providers, pharmacists, professional groups and associations (see Step 4 below on 'Community engagement'), academia, business and private sector (see Step 2/Component 2.4 below), media, and the public (see Step 6 on 'Framing and communicating AMR')^{64 65}. Influential and respected brokers, leaders and 'champions' (hereafter 'influencers') are important in the process of policy development and implementation, including Fleming Fund Fellows. Influencers play a key role in engaging governments on AMR issues; assisting them in translating data and evidence into policy recommendations; providing support in drafting policies; interacting between policy-makers and government AMR structures; and monitoring implementation. They can also play a wider role in facilitating engagement between policy, practice, and general communities⁶⁶. Utilising existing high-level structures is also important in influencing policy-makers, such as the Global Leaders Group.

Component 2.3 Policy stakeholders and influencers

Read the 'Tips for mapping country policy stakeholders' and 'Methodology' below, and use Tool 6 to identify and map the key policy stakeholders that can influencers policy-makers on AMR policy development and NAP implementation.

⁶⁴ Shiffman (2007). Generation of Political Priority for Global Health Initiatives.

⁶⁵ Oxman (2010). A framework for mandatory impact evaluation to ensure well informed public policy decisions

⁶⁶ De Leeuw, E (2016). From research to policy and practice in public health.

Click here for the Word document version of [Tool 6](#)

Tips for mapping country policy stakeholders/influencers

Identify the following:

- Name of stakeholder: Is it National, Regional or Local? Government, Political, Commercial, Non-governmental, Civil society or Donor-international?
- Stakeholder description: primary purpose and/or affiliation.
- Potential role in the policy process: vested interests, roles, and responsibilities.
- Level of knowledge of the issue: specific areas of expertise. What knowledge is needed?
- Preferred format in which they receive information/knowledge.
- Level of commitment: support or oppose the issue? To what extent, and why?
- Available resources: staff, volunteers, money, technology, information or influence.
- Constraints and limitations: need funds and personnel, political or other barriers.

METHODOLOGY:

In the Tool 6 template below: Column 1 provides the factors to consider in identifying key policy stakeholders and influencers to engage. In Columns 2/3/4 enter the key stakeholders/influencers in Line 1 (add additional columns as required for more influencers) and answer the questions from Column 1, in the following lines of the template.

Tool 6. Policy stakeholder and influencer analysis

Stakeholder/Influencer	SH/Influencer 1	SH/Influencer 2	SH/Influencer 3*
Who are influential brokers/leaders to assist in this AMR policy/NAP area ('influencers')?			
What are the required (specific) actions of influencers?			
Do they have the capacity to achieve the actions? What extra capacity is needed?			
What is their link to/interest in AMR? Is it a priority?			
Considerations for policy	Comments	Comments	Comments
What access do influencers have to policy-makers?			
What could strengthen access?			
How do influencers engage policy-makers? What are the mechanisms for engagement?			

What are policy/political windows of opportunity for influencers?			
Do influencers have: Political-Economic-Social power? How can they use it?			
At which stages of the policy-making process can influencers be best involved: Prioritisation? Development? Implementation?			
What do influencers bring: expertise/data-evidence/support/resources/credibility?			
Who are influencers accountable to?			
Do influencers have civil society/public support on AMR?			
Are influencers linked/allied with other groups? Is there a shared vision/goal? Are there clear responsibilities/roles?			
Do influencers have vested or other interests?			

* Add additional columns as required for more stakeholders/influencers

2.4 Private sector



So we can get the private sector on board, is it possible to make the private sector also come forward in financing some research activities or other activities?

-Country Stakeholders, Asia

The private sector – including pharmaceutical companies, agriculture/aquaculture sectors, private hospitals, and private pharmacists and veterinarians – plays a major role in AMR, and can be both supporter or opposer in addressing– or unwitting contributor to – AMR. The informal private sector may be particularly difficult to regulate or influence in LMICs⁶⁷. Greater engagement of and collaboration with the sector is crucial to advance the policy agenda. The sector accounts for 90 percent of jobs globally, and has the capability of reaching large employee audiences at the workplace with awareness of AMR and promotion of AMS, including on: IPC, hand hygiene, responsible use of antibiotics, immunization, and support to remain at home if they have an infection. For example, pharmaceutical companies are: promoting responsible use of antimicrobials, patient advocacy and engagement in health literacy; advising farmers on ruminant herd and poultry health; training sales representatives in AMS principles; conducting surveillance and research of resistance trends; and investing in water infrastructure⁶⁸.

⁶⁷ Interagency Coordination Group on AMR (2018). AMR: national Action Plans. June 2018.

⁶⁸ Hermsen, E.D. *et al* (2020). The Role of Pharmaceutical Companies in Antimicrobial Stewardship: A Case Study. *Clinical Infectious Diseases*, 2020;71(3):677-81.



...we have seen the benefits [of the private sector] when it comes to handling the pandemic on the continent. Our success...has not been due to domestic national financing but leveraging on private sector philanthropies driving the interest
-Dr Yewande Alimi, Africa CDC

Companies in the Global Chief Medical Officers' Network (GCMON) focus on the health and well-being of employees and their communities through signing a pledge on commitment to AMS, and conducting a regular gap analysis on best practices⁶⁹. Information can include: guidance on common infections; education programmes; orientation packs for new employees; provision of vaccination on site; and flexible working, so employees can work at home if necessary; food hygiene measures in work food outlets; and provision of hand sanitation/washing facilities.

Public-private partnerships (PPP) are a potential means of innovation in developing treatments, antimicrobials, and vaccines at the global level. At the national level, private sector engagement can strengthen surveillance, support supply chains⁷⁰, and enhance the collection and utilization of data and evidence, such as through the Pfizer-Wellcome Trust SPIDAAR initiative (see Case Study below)⁷¹.

Component 2.4 Private sector

Read the 'Methodology' below, and use Tool 7 to identify private sector partners currently engaged in the country, the gaps, and what potential partners can potentially be engaged on AMR policy development and NAP implementation.

Click here for the Word document version of [Tool 7](#)

METHODOLOGY:

In the Tool 7 template below: Column 1 provides the factors to consider in identifying key private sector partners. In Columns 2/3/4 enter the potential private sector partner in Line 1 (add additional columns as required for more potential partners) and answer the questions from Column 1, in the following lines of the template.

⁶⁹ Hermsen, E.D. *et al* (2021). The Role of the Private Sector in Advancing Antimicrobial Stewardship: Recommendations from the Global Chief Medical Officers' Network. *Population Health Management*, Volume 24, Number 2.

⁷⁰ Interagency Coordination Group on AMR (2018). AMR: national Action Plans. June 2018.

⁷¹ Pfizer-Wellcome Trust (2020). Antimicrobial Testing Leadership and Surveillance (ATLAS) project; and Surveillance Partnership to Improve Data for Action on Antimicrobial Resistance (SPIDAAR) project.

Tool 7. Private sector partner analysis

Private sector partner	Partner 1	Partner 2	Partner 3*
Which private sector partners are currently engaged on AMR?			
What other potential private sector partners must be engaged?			
Are they from the: human, animal, or environment sector?			
From what private sector area: pharma, medicine, agriculture, etc?			
What are the required actions of the private sector partner?			
Do they have resources for AMR (staff, funds, IT)?			
What is the level of interest of private sector partners on AMR? Is it a priority?			
Considerations for policy	Comments	Comments	Comments
What do private sector partners bring: expertise/data/support/resources/credibility?			
Do partners have: Political-Economic-Social power? How can they use it?			
What access do private sector partners have to policy-makers?			
How do they engage policy-makers? What are the mechanisms?			
Do private sector partners have shared goals/objectives (with govt)?			
Do private sector partners have vested/conflicting interests?			

A Case Study highlighting how AMR public-private partnerships can be effective is provided below.



RADAAR CASE STUDY 4. PUBLIC-PRIVATE PARTNERSHIPS

Pfizer/Wellcome Trust: Progress through collective action

The Issue: effective surveillance, data, and evidence

Effective surveillance and timely data feedback are critical for slowing the spread of AMR. AMR surveillance – which is difficult to establish without strong laboratory and data management systems – improves the availability of data and information on levels and patterns of resistance, and enables the opportunity to introduce evidence-based policies and interventions that reduce disease burden, lower treatment costs, and save lives⁷². Sub-Saharan Africa and other LMICs have a high burden of infectious diseases but limited surveillance capacity, making them areas of concern for the development and spread of AMR: as recently as 2017, nearly half of the countries on the African continent did not have comprehensive local AMR data⁷³.

In June 2020, **Pfizer** and **Wellcome Trust** launched the Surveillance Partnership to Improve Data for Action on Antimicrobial Resistance (SPIDAAR), a novel multi-year, public-private research collaboration with the governments of Ghana, Kenya, Malawi, and Uganda: to track resistance patterns and better understand the burden of AMR on patients living in LMICs. SPIDAAR leverages the capabilities of Pfizer's existing Antimicrobial Testing Leadership and Surveillance (ATLAS) platform⁷⁴ to provide governments/health authorities with comprehensive data in the four countries. While there is a high infectious disease burden in these countries, there remains an urgent need to improve data collection and analysis and increase capacity to implement IPC programmes (WHO-stipulated NAPs on AMR)^{75 76}.

SPIDAAR strategy and methodology

Through SPIDAAR, Pfizer supports the strengthening of 'diagnostic stewardship' at sites: the appropriate use of microbiological diagnostics to guide stewardship decisions. The programme provides education, training, and support to improve AMR testing and surveillance. Findings aim to bridge existing AMR knowledge and practice gaps, informing awareness-raising in countries where data are currently insufficient and helping integrate infection prevention as well as diagnostic and antimicrobial stewardship. It will also enable impact evaluation of stewardship interventions to inform local policy and clinical practice.

Pfizer/Wellcome/U.S CDC worked in consultation with the Surveillance and Epidemiology of Drug Resistant Infections Consortium (SEDRIC) to identify Ghana, Kenya, Malawi and Uganda as partners, due to their:

- Strong commitment to tackling AMR through NAPs; but limitations in data/surveillance.
- Specific microbiology laboratory capacity.
- Existing enrollment in WHO's Global Antimicrobial Resistance Surveillance System (GLASS).
- Geographical location/country size.

⁷² <http://documents.worldbank.org/curated/en/323311493396993758/pdf/final-report.pdf>

⁷³ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5594539/>

⁷⁴ The only industry-led, public-access platform that includes both antifungal/antibiotic resistance data. It includes more than 700,000 bacterial and fungal isolates from 900-plus sites across more than 80 countries worldwide. The database includes nine of the 13 WHO priority pathogens considered the greatest threat to human life (<https://www.pfizer.com/science/focus-areas/anti-infectives/antimicrobial-surveillance>).

⁷⁵ <https://academic.oup.com/jpubhealth/article/39/1/8/3065721#113663770>

⁷⁶ <https://www.sciencedirect.com/science/article/pii/S0924857917302741>

- Existing research contacts with local ministries/hospitals.
- Fleming Fund priority LMIC status (UK Aid Programme to develop AMR surveillance capabilities).

PPP challenges and enablers

Public-private partnerships face various challenges to effective programme implementation:

1. There are currently very limited standing activities that convene stakeholders from all sectors to align on projects and seek opportunities for partnerships.
2. Mechanisms need to be put in place to ensure sustainability of efforts when the partnerships are complete. This requires a focus and commitment to sustainability from all partners from the beginning of the partnership.
3. As with other public-private partnerships, they are generally set up for specific periods of time.
4. Countries face competing priorities that impact upon resource availability (including managing the health security associated with COVID-19).

To overcome such challenges requires:

5. Shared goals and objectives, which are critical to the development of sustainable and impactful multi-sector public-private partnerships.
6. That each stakeholder approaches the partnership with an emphasis on trust: without trust, partnerships will not overcome the challenges that may arise.
7. Commitment from stakeholders to align surveillance activities, and work together to aid sustainability and avoid duplication.

Key results/outcomes of the intervention to date

SPIDAAR has been successful in establishing a ‘first-of-its-kind’ surveillance partnership:

- All partners are focused on ensuring data are available to improve public health policy and patient outcomes.
- Data is to be posted on Pfizer’s open-access ATLAS platform.
- The partnership provides additional healthcare capacity building through advanced laboratory technique and data analysis and use training for national and local laboratory teams.
- Surveillance capabilities have been expanded in four countries, providing public health authorities and doctors information about resistance patterns.
- The programme includes a separate, prospective real-world data study, conducted in each of the four sub-Saharan countries to assess AMR rates, as well as clinical and associated costs among patients with hospital-acquired infections.

The Pfizer/Wellcome partnership

Pfizer and Wellcome share a common goal of working collaboratively to combat the growing threat of AMR.

The partnership is part of longstanding and comprehensive efforts by both partners to redefine the way we tackle infectious disease, create sustainable solutions that address health challenges, reduce health disparities around the world, and help vulnerable and underserved populations: through innovative collaborations and partnerships.

2.5 Advocacy tools



"[It is] often assumed that evidence, once it's available, is automatically shaping policy and there will be a linear process by which research findings seep into policy and whether they have some kind of impact. And in reality, we know that this process – the evidence to policy process – is very complex, multifactoral, multilevel, and cross-cutting with multiple actors"

- Tanja Kuchenmüller,
WHO

Key advocacy tools – for informing and influencing decision-/policy-makers – include: lobbying, negotiating, briefings, policy reports, petitions, conferences, workshops, seminars/webinars, and 'Policy Briefs'. Lobbying, leading to negotiating is potentially an effective tool, although this assumes familiarity with the policy process and access to policy-/decision-makers. 'Face-to-face' opportunities benefit from there being accompanying materials available. Policy briefs in particular are an effective means of framing AMR as a policy priority and influencing policy-makers. Policy briefs create a link between policy-makers – who ideally should be involved in their development – researchers, research users, and civil society, to facilitate policy development and implementation. The starting point of the policy brief development process is the issue, rather than the data available, and includes identification of:

- The context and policy priority: based on the NAP.
- The author(s) and capacity and/or competencies, and support required.
- Sources and availability of evidence to address the various aspects of the issue.
- The nature of the issue or root causes of AMR.
- The key decision-/policy-makers.
- The key policy brokers, influencers, and other stakeholders with a focus on or interest in AMR.
- Policy interventions already being implemented – including through NAPs – and strategies for implementation.

Evidence briefs for Policy (EBP) are an innovative approach to packaging research evidence for policy-makers; they are prepared by synthesizing and contextualizing the best available evidence about a problem, viable solutions to address it, and key implementation considerations through the involvement of content experts, policy-makers and stakeholders. EBPs are a crucial tool for AMR due to: conflicting health priorities; differing or opposing views of the issue, with justification needed for policy action⁷⁷; there being more than one viable policy option, for example, implications for both health and the economy; and significant consequences of inaction. To inform deliberations about health policies and programs, EBPs bring together: global research evidence from systematic reviews, local evidence from primary studies, reports and indicators, and context-specific knowledge from key informant interviews. It is important to note that EBPs do not provide recommendations for actions as its purpose is to inform deliberations about health policies and programs for policy-makers to create their own recommendations. The timing of the EBP is geared towards catalyzing action and can be linked to political windows of opportunity. They will describe^{78 79}:

- The specific AMR policy/NAP issue and its impact.
- The intended users of – and justification for – the brief.

⁷⁷ US CDC (2013). CDC's Policy Analytical Framework. US Department of Health and Human Services.

⁷⁸ WHO EVIPNet (2021): <https://www.who.int/news/item/03-10-2021-tackling-antimicrobial-resistance-in-long-term-care-facilities-with-evidence-informed-policy-making-in-slovenia>

⁷⁹ WHO-EVIPNet: <https://www.who.int/initiatives/evidence-informed-policy-network/tried-and-tested-tools---the-evipnet>

- Policy options: three or four options, based upon evidence and research.
- The costs and consequences/benefits of options, and of inaction.
- Implementation strategies: (i) to identify and address the barriers to implementing the options; and (ii) to identify the strategies for implementing the options.
- Monitoring and evaluation: clarifying uncertainties, and need for M&E.

A typical format of an EBP comprises: a one-page summary of the key points/messages; a three-page executive summary; and a full 10-20-page report. See panel below for tools and resources for developing Evidence-informed policy briefs; and Annex B for RADAAR's Policy Brief Template (based upon the EVIPNet [Evidence-informed Policy Network]/SURE [Supporting the Use of Research Evidence]) methodology.

The WHO Evidence-informed Policy Network (EVIPNet) provides tools and resources for developing policy briefs:

- SURE Guides for Preparing and Using Evidence-Based Policy Briefs:
https://epoc.cochrane.org/sites/epoc.cochrane.org/files/public/uploads/SURE-Guides-v2.1/Collectedfiles/sure_guides.html
- Guide to qualitative evidence synthesis: evidence-informed policy-making using research in the EVIPNet framework:
<https://www.who.int/publications/i/item/WHO-EURO-2021-2272-42027-57819>
- Evidence-informed Policy Network (EVIPNet) Europe: Success stories in knowledge translation
<https://www.who.int/publications/i/item/10665-325029>

Component 2.5 Advocacy tools

Read the 'Methodology' below, and use Tool 8 to identify the key sources of information and information needs of policy-/decision-makers and policy stakeholders to inform policy development and NAP implementation.

Click here for the Word document version of [Tool 8](#)

METHODOLOGY:

In the Tool 8 template below: Column 1 provides the factors to consider in terms of the information needs of policy-makers. In Columns 2/3/4 enter the policy-makers in Line 1 (add additional columns as required for more influencers) and answer the questions from Column 1, in the following lines of the template. Follow the same process for stakeholders and influencers in the second section of the tool.

Tool 8. Information and advocacy needs of: 1. Policy-makers; and 2. Stakeholders/influencers

Policy-makers	Policy-maker 1	Policy-maker 2	Policy-maker 3*
List the key policy-/decision-makers (from Component 2.2/Tool 5)			
Considerations for information	Comments	Comments	Comments
What is the level of knowledge of policy-makers on AMR?			
What additional information/knowledge do policy-makers need on AMR?			
Where do policy-makers usually get information on AMR from?			
What formats are preferred by policy-makers? What are the most effective: Policy briefs/briefings? Personal meetings/negotiations? Petitions/letters/emails? Public meetings/events? Social media/blogs/'tweets'? Media events?			
Have Policy Briefs been developed? If 'YES', who were they for? With what results?			
Stakeholder/Influencer	SH/Influencer 1	SH/Influencer 2	SH/Influencer 3*
List the stakeholders/influencers (from Component 2.3/Tool 6)			
Considerations for information	Comments	Comments	Comments
What is the level of knowledge of stakeholders/influencers?			
What additional information do stakeholders/influencers need?			
What are their usual sources of information?			
What formats are preferred by stakeholders: Personal meetings/negotiations Public meetings/events/rallies Social media/blogs/'tweets' Media events/news conferences			

* Add additional columns as required



Step 3

Governance and resource mobilization

3.1 Governance



I would give priority to governance – and political will and endorsement – because I think we spend too much time on planning, prioritizing without taking any serious or concrete action.

-Policy Fellow, Asia

AMR policy development and NAP implementation requires effective governance, at national and sub-national levels, and with a One Health collaborative approach involving multiple stakeholders, including: policy-/decision-makers and regulatory authorities; the medical, veterinary, livestock/animal feed and environmental sectors; and the pharmaceutical industry and private sector stakeholders⁸⁰. This is also a source of potential political obstacles and conflict, due to the competing priorities and interests of different stakeholders⁸¹.

Effective governance requires: coordination, responsibility, accountability, sustainability, and equity⁸². Governance structures/mechanisms for AMR can include: National Intersectoral/One Health/Multisectoral Committees, AMR/NAP Steering Committees, National Technical/Technical Coordinating Committees, Technical Working Groups – including on advocacy/ communication, surveillance, IPC, AMU/AMC/AMS – and AMR Focal Points (see Diagram 5 below for sample Governance structure for AMR); and with established criteria for membership and Terms of Reference (TOR)⁸³.

There is limited research evaluating aspects of governance in implementation of NAPs and policy priorities for AMR. Analysis in Southeast Asia highlighted that coordination between sectors is vital, whereby institutions or individuals have specific responsibilities and defined goals; surveillance for AMU must include the environment sector, and private hospitals; antimicrobial stewardship programmes should be in place, together with regulations, laws, penalties, and law enforcement, to reduce AMU; enhanced IPC policies are needed for human, animal, and environmental sectors; sustained educational for health professionals, and evidence-based public awareness programmes are implemented; and research and socio-economic impact studies, conducted⁸⁴.

Component 3.1 Governance

Read the ‘Methodology’ below, and use Tool 9 to identify governance structures currently in place in the country, and what additional structures and mechanisms are required. A sample ‘Governance structure for AMR’ is also provided below in Figure 4.

Click here for the Word document version of [Tool 9](#)

⁸⁰ Quija Chua, A. *et al* (2021). An analysis of national action plans on antimicrobial resistance in Southeast Asia using a governance framework. *The Lancet Regional Health – Western Pacific* 7.

⁸¹ Legido-Quigley, H. *et al* (2018). Something Borrowed, Something New: A Governance and Social Construct Framework to Investigate Power Relations and Responses of Diverse Stakeholders to Policies Addressing AMR. *Antibiotics* 2019, 8, 3.

⁸² Anderson, M *et al* (2019). A governance framework for development and assessment of national action plans on antimicrobial resistance. *The Lancet Infectious Diseases*, 19 (11).

⁸³ See WHO implementation handbook for national action plans on antimicrobial resistance: Guidance for the human health sector (2022) for sample TOR for coordination committees, technical working groups, etc.

⁸⁴ Quija Chua, A. *et al* (2021).

METHODOLOGY:

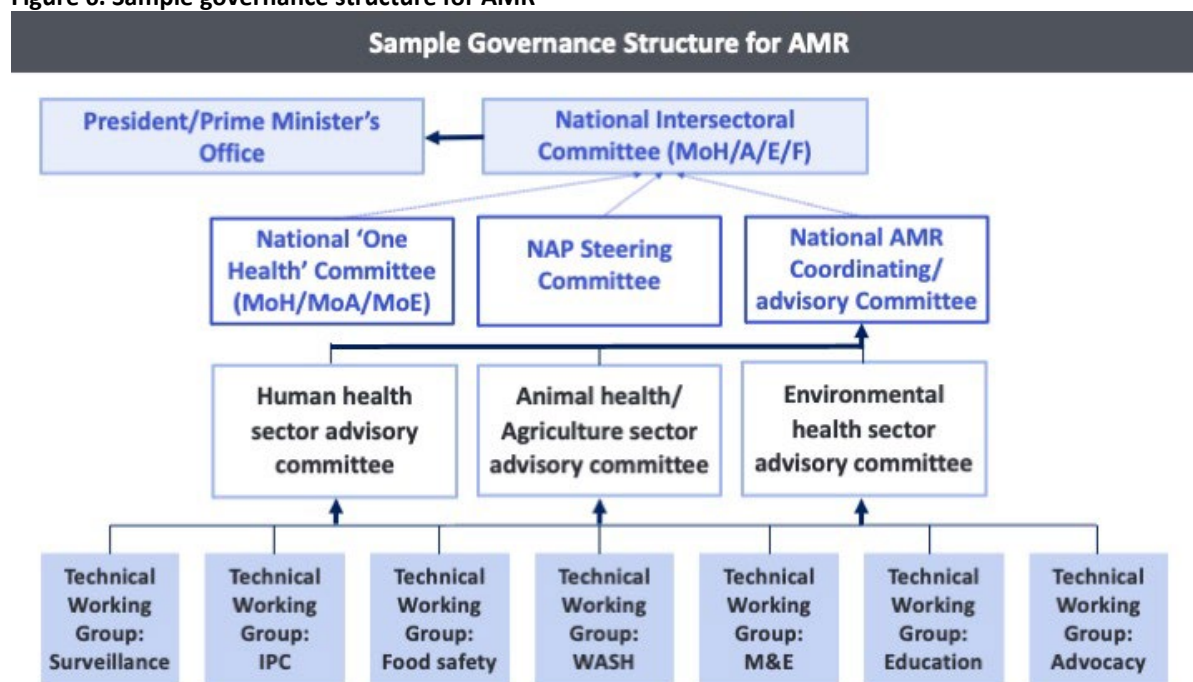
In the Tool 9 template below: Column 1 contains the considerations for governance. In Column 2 answer 'YES' or 'NO' to the question in Column 1. In Column 3 enter any explanatory description or comments.

Tool 9. Governance structures and mechanisms for AMR

Considerations for governance	Yes/No	Description/comments
Is NAP implementation 'One Health' collaborative/multi-sectoral?		
Are all sectors involved: Human? Animal? Environment?		
Are governance/coordination structures in place (Intersectoral/ One Health committee? National AMR committee? Technical Working Groups? AMR Focal Point?) <u>If 'YES':</u> What is their role/responsibilities. Do they have decision-making status?		
Do they include all sectors?		
Are there clearly defined members of the committees/working groups?		
Are civil society/NGOs represented in committees/working groups?		
Is the criteria for membership of committees established/formalized?		
Have TORs been developed?		
Are additional governance structures needed?		

Case Studies from Nigeria, Lao PDR, and Nepal highlighting country AMR governance initiatives are also provided below.

Figure 6. Sample governance structure for AMR⁸⁵



RADAAR CASE STUDY 5. GOVERNANCE

Nigeria: securing government response and ownership of AMR

Strategy and methodology

Until late-2016, there was no official government engagement with and response to the threat of AMR in Nigeria. Dr. Chikwe Ihekweazu (currently Assistant Director General, Health Emergency Intelligence at WHO) was appointed DG of Nigeria Centre for Disease Control (NCDC), and under his leadership, NCDC championed the national response on AMR. The starting point was to establish appropriate governance structures:

- A key group of stakeholders constituted to participate in preliminary meetings and engagement, in January 2017, funded by the NCDC, including representatives from the: Federal Ministry of Health (including NCDC, National Agency for Food and Drug Administration and Control [NAFDAC], National Institute For Pharmaceutical Research and Development, National Institute for Medical Research), Federal Ministry of Agriculture, WHO, US-CDC, academia and NGOs (the Federal Ministry of Environment, and regulatory agencies that were not present, were subsequently engaged).
- The group metamorphosed into the National Multisectoral Technical Working Group (TWG) for AMR.
- The NCDC provided the Secretariat for the activities of the TWG, comprising: a Director, a full-time staff member, and staff on attachment.

⁸⁵ Adapted from WHO 'Generic template for a national AMR governance structure (from 'WHO implementation handbook for NAPs on AMR) and country examples

- Dr. Iheakweazu directed priorities for support with partners, including WHO, Public Health England (UK Health Security Agency), US-CDC and (later) the Fleming Fund.
- The initial task of developing a NAP – for 2017-2022 – on AMR for Nigeria was completed in April 2017.

Enabling factors for governance

- The establishment of the NCDC/TWG and NAP followed a ‘One Health’ approach, that ensured multisectoral collaboration, including the health, agriculture, and environment sectors.
- During 2017-2019, TWG activities and meetings were coordinated and directed by the Secretariat at NCDC, under the leadership of Director for Prevention Programmes and Knowledge Management, Dr Joshua Obasanya, guided by Obafemi Awolowo University (Professors Iruka Okeke/Oladipo Aboderin).
- The TWG conducts strategic planning for AMR prevention activities, and implements multisectoral AMR/AMU activities to ensure effective prevention and response efforts. In August 2018, the functioning of the TWG was formally devolved into five sub-groups: awareness, surveillance, stewardship, IPC, and investment case (which report to the central TWG).
- Each sub-group has a lead that coordinates activities across sectors, including: NCDC; Federal Ministries of Health, Agriculture, Environment; national regulatory agencies for doctors, nurses, pharmacist, lab scientists, vets, environmental health officers; NAFDAC; universities and teaching hospitals; and development partners (WHO, OIE, FAO, Fleming Fund).
- An AMR Coordination Committee was established in September 2020, which: convenes meetings to plan policies to improve AMR response; guides the appropriate use of antimicrobials; oversees implementation and M&E of the NAP, and resource mobilization.

Key governance results and outcomes

- The TWG implemented the designation of national reference and sentinel laboratories across sectors, banning the use of multi-molecule antibiotics in animal production; and made progress towards the inclusion of ‘Access’, ‘Watch’, ‘Reserve’ categories of antibiotics in the national Essential Medicine List.
- A governance manual for AMR finalized for wider dissemination in 2022, and which documents the workings of the TWG in Nigeria.
- The TWG has commenced dialogue and discussions on the 2023-2028 NAP for AMR in Nigeria.

Lao PDR: One Health governance for AMR

Strategy and methodology

The Government of Lao PDR endorsed the establishment of the Antimicrobial Resistance Surveillance and Control Committee (ASCC) in 2015, to enhance multisectoral cooperation to support implementing the National Strategic Plan (NSP) on AMR. The ASCC oversees:

- Sub-committee for overall matters: provides overall guidance and support in terms of technical and financial resources needed to implement activities for the surveillance and control of AMR, and to consolidate data and information according to their own area of responsibility, as well as to conduct meetings periodically for sharing lessons learned
- Sub-committee for technical matters: consolidates data/information from implementation, research findings related to AMR, performs surveillance and control of AMR, provides technical support in each own responsible area, collaborates with concerned parties, organizes and participates in training, conducts meetings in response to ongoing situations, report on implementation of AMR activities to the Secretariat for consolidating and further reporting.

- Secretariat: supportive body which manages the activities of the sub-committees.

Enabling factors for governance

- Close collaboration and coordination between the different sectors is an important factor in the development and implementation of the NSP.
- Regular sharing of findings on AMR surveillance between human and animal sectors continues to improve.
- Close collaboration between the ASCC and WHO, FAO, and partners in organizing events and meetings to facilitate, collect, and share AMR information.
- Building and supporting AMR coalitions within the animal health sector has strengthened capacity for AMR surveillance in animals: e.g., through building capacity for provincial animal health laboratories (PAHL) in field sampling, storage, submission of samples to the national animal health laboratory (NAHL) for bacterial culture and identification, and performing AST.
- Support and guidance from the Department of Livestock and Fisheries to mobilize human resources
- Technical assistance and management from FAO.

Key governance results and outcomes

- Introduction of policy/regulations on AMU in animals.
- Strengthened capacity for AMR surveillance in animals: e.g., through building capacity for provincial animal health laboratories (PAHL) in field sampling, storage, submission of samples to the national animal health laboratory (NAHL) for bacterial culture and identification, and performing AST.
- Efforts to develop training curriculum on AMR for veterinary students and related fields: e.g., coalition with academia, particularly the College of Agriculture of the National University of Lao (NUOL).
- Further strengthening of the function of the multi-sectoral AMR Committee is needed to oversee the finalization and implementation of the NSP.

Nepal: Governance and capacity development on AMR, AMU, and AMC

Strategy and methodology

A multisectoral coordinating committee for Antimicrobial Resistance (AMR) is headed by the secretary at the Ministry of Health and Population (MoHP), and there is also a National Technical Working Committee. Multisectoral Technical Working Groups (TWGs) have been established: on AMR in human health, animal health and food sectors; and on AMU and AMC in human and animal health, and regular meetings held. The TWGs oversee activities on AMR surveillance, containment, and AMU and AMC. They are also responsible for planning, implementing and monitoring activities, and guiding on data analysis and dissemination. AMR TWGs are also the technical platform to review and endorse major technical documents such as protocol, standard operating procedures (SOP) and activity plan.

Enabling factors for governance

- Structures are in place for NAP implementation: The National Public Health Laboratories (NPHL) is the national coordinating centre, and there is the Central Veterinary Lab (CVL) for animal health. The food and environment sectors are also engaged. The Quality Standard and Regulation Division (QSRD) of MoHP is leading the program in coordination with all sectors.
- Intersectoral sharing of experiences and emulation of good practices has been possible: TWGs have been formed and operational in One Health approach, with representations from the other sectors. For example, the food TWG has members from the human health, animal health,

and environment sectors: each sector shares their progress and experience with the other sectors, and learn from each other.

- TWGs have TORs and meet every quarter. Their composition includes government officials, and subject matter experts from academia, private sectors from human health, animal health, food and environment sectors. For example, the human health TWG includes representatives from: NPHL, government-run hospitals (microbiologist), universities, CVL, Department of Environment, and Department of Food Technology and Quality Control.
- All plans, activities, policies are reviewed and endorsed, by TWGs: they provide feedback, and are involved in monitoring and supervision.
- There is One Health unit in the Ministry of Agriculture and Livestock Development: a similar unit or secretariat would be beneficial in other sectors for coordination purposes.
- The Fleming Fund support has been crucial in establishing quality data for analysis. A further role for TWGs can be proposing and facilitating economic analysis, such as burden of disease, return on investment.
- In-house and on-the job/hands-on training was effective, as staff are hard-pressed for time and activities, facing difficulties in travel to off-site training. At the same time, one-week placements at the NPHL enabled observation of good practices, as well as training.
- After initial training of trainers (ToT), further training on sample collection, storage and transport for bacteriologic investigations was conducted at three hospitals, using the trainers from within the hospital. This helped to impart knowledge and skills to a large number of nurses within a short time and significantly improved the quality of clinical specimen being sent for microbiologic investigations.

Key governance results and outcomes

The benefits of an appropriate and effective governance are widespread:

- Trainers from the NPHL provided 'hands-on' training for staff at AMR surveillance sites: including processing clinical samples for bacterial isolation, identification and AST. Frequent transfers of trained hands and staff attrition is a major risk for continuous data for AMR surveillance. Hence staff from six different laboratory were training in a 'real-life' context.
- Laboratory-clinic interface (LCI), strengthened in the context of rational drug use: with nurses, lab personnel, and clinicians building capacity, and sampling techniques and AST improved. Hence clinicians can rely on lab reports, and the treatment or prescription based on lab findings and evidence.
- Staff coached on AST data entry for sharing with the National Coordinating Center.
- Support for creating a pool of skilled manpower within the system has helped sustainability. A smooth handover of bacteriology-related tasks and responsibilities to newly trained staff has been possible (when staff departed): there was no break in data-sharing which would otherwise have been inevitable.
- Training modules and materials developed, resulting in training being independent of external trainers and sustainable.
- Staff incorporated good practices they observed during their placement, for example, documentation of internal quality control procedures, preserving and maintaining bacterial stock, and observation of biosafety and security measures.

3.2 Finance and resource mobilization

Sustainable funding and resource mobilization are essential to assist the process of AMR policy development and NAP implementation. Despite many countries having well-developed NAPs, globally, only around 20 percent of countries have fully financed the NAP⁸⁶. Where there is funding, there is a question of sustainability, as the funding is often short-term and project-based from donors⁸⁷. Hence, governments may develop the NAP primarily because donors have given funding to do so. Countries must continue to leverage donor prioritization of governance, agriculture/livestock/trade, disease prevention, IPC, and WASH, universal health coverage, and maternal and child health, emphasizing the inter-relationships with, and impact on and consequences for AMR, on these areas. This requires review of the NAP and mapping of: the key policy-makers and stakeholders in the human, animal, environmental health sectors; current and potential donors and development partners; and the entry points for AMR, and potential integration into current and future programmes.



Political will doesn't automatically translate to funding and that's why there has to be a deliberate effort to advocate for sustained financing locally
-Policy Fellow, Africa

It is essential that there is political commitment, government oversight, and financial and human resources for implementation of NAPs. Governments – including finance/treasury – must know how much money is needed to implement the NAP and where it is coming from⁸⁸. An advocacy plan can help to portray AMR – to national policy-makers, and donors/development partners – as a threat to national interests: healthcare, food security, and economic development⁸⁹. Hence, evidence is needed to make the case for investment in AMR. AMR can be framed as ‘value added’ to existing programmes – rather than as a separate programme – and a part of overall health system (and agricultural and environmental sector) strengthening. Existing resources can be leveraged in coordination, instead of in competition for funds. There is the potential to target mainly low cost-high yield AMR interventions, including WASH aspects, and tackle the many ‘low hanging fruits’.

Through a One Health approach, AMR can aim to build on existing budgets, resources, and services, including identifying cross-sectoral opportunities, and mainstreaming into ministerial budgets. The fulfillment of the SDGs also offer opportunities to integrate AMR interventions, thereby potentially accessing additional funding (see ‘AMR and the SDGs’ in Component 2.1 [page 32]).

⁸⁶ WHO (2022). Tripartite AMR Country Assessment Survey (TrACSS) [https://www.who.int/publications/m/item/tripartite-amr-country-self-assessment-survey-\(tracss\)-2020-2021](https://www.who.int/publications/m/item/tripartite-amr-country-self-assessment-survey-(tracss)-2020-2021)

⁸⁷ The Wellcome Trust (2016). Antimicrobial Resistance in Low and Middle Income Countries: An analysis of Surveillance networks and Educational Resources, p.1.

⁸⁸ IVI-RADAAR Project (2020). Key informant interviews (WHO, ILRI, Wellcome).

⁸⁹ Interagency Coordination Group on AMR (2018). AMR: national Action Plans. June 2018.

ReAct Africa options for mobilizing domestic resources:

- Leverage the experience of other multi-sectoral action plans
- Linking with SDGs
- Synergizing programs which can be AMR sensitive
- Vertical programs
- Role of media and CSOs can make AMR more relatable
- Budgetary allocations
- New taxes
- Prioritize funding based on stakeholder consultations

The limited funding applies specifically to surveillance systems for monitoring AMR in LMICs, which require a long-term commitment. Where there is surveillance data, it is rarely utilised in informing policies, interventions, and actions. There is a sense that AMR data is being collected because funding has been received to collect it⁹⁰, whilst NAPs do not necessarily translate into action and impact^{91 92}. Funding gaps also apply to research.

Public-private partnerships (PPP) can be developed to support surveillance, data collection/utilization, supply chains and stewardship programmes (see Step 2/Component 2.4 on the Private Sector above). The private sector can further be expected to contribute to addressing AMR, including those sectors which may have contributed to AMR, such as the pharmaceutical, food, and livestock industries; and the private health sector⁹³.

WHO provides guidance and resources for costing and budgeting AMR NAPs, including:

- Tools:
<https://www.who.int/teams/surveillance-prevention-control-AMR/who-amr-costing-and-budgeting-tool>
- Webinars:
[https://www.who.int/news-room/events/detail/2021/10/13/default-calendar/webinar-launch-of-the-who-costing-and-budgeting-tool-for-national-action-plans-on-antimicrobial-resistance-lessons-learned-from-the-americas-region-\(16-00-cet\)](https://www.who.int/news-room/events/detail/2021/10/13/default-calendar/webinar-launch-of-the-who-costing-and-budgeting-tool-for-national-action-plans-on-antimicrobial-resistance-lessons-learned-from-the-americas-region-(16-00-cet))
- Country lessons learned:
[https://www.who.int/news/item/26-10-2021-the-use-of-the-who-costing-and-budgeting-tool-for-national-action-plans-on-antimicrobial-resistance-\(amr\)-in-sierra-leone-lessons-learned](https://www.who.int/news/item/26-10-2021-the-use-of-the-who-costing-and-budgeting-tool-for-national-action-plans-on-antimicrobial-resistance-(amr)-in-sierra-leone-lessons-learned)

⁹⁰ OIE Annual report (2020)

⁹¹ The Wellcome Trust (2020). The Global Response to AMR: Momentum, success, and critical gaps.

⁹² BDI1 (2020).

⁹³ Interagency Coordination Group on AMR (2018). AMR: national Action Plans. June 2018.

Component 3.2 Finance and resource mobilization

Read the ‘Methodology’ below, and use Tool 10 to identify the current and potential sources of funding for AMR policy development and NAP implementation.

Click here for the Word document version of [Tool 10](#)

METHODOLOGY:

In the Tool 10 template below: Column 1 contains the considerations for funding and resource mobilization. In Column 2 answer 'YES' or 'NO' to the question in Column 1. In Column 3 describe in more detail the current funding environment for AMR. In Column 4 describe in more detail the future funding environment for AMR.

Tool 10. Resource mobilization: current and future funding for NAPs

Considerations for funding/ resource mobilization	Yes/ No	Comments: current funding	Comments: future funding
Is the NAP fully costed? If 'YES', was the WHO costing tool utilized?			
Are there specific funds available for NAP implementation? If 'YES', for what?			
Can additional funds/resources can be mobilized by policy-makers for NAP implementation? From where?			
Has donor mapping been conducted?			
Is funding short-term/donor project-based? From:			
<ul style="list-style-type: none"> • Fleming Fund • Tripartite • World Bank/ADB/AU • Other development partners 			
Are/can cross-sectoral funding opportunities be used for AMR?			
Have/can funds/resources be mobilized by stakeholders? e.g. NGOs			
Can/does the private sector provide funding?			
Has COVID-19 had an impact on AMR/NAP funding?			



Step 4

Community engagement

4.1 Engaging and mobilizing civil society and communities

In the AMR sphere, participation in policy implementation is generally ‘top-down’: hence, there is a need to engage and incorporate the ideas, interests, and needs of civil society and communities. Policy advocacy campaigns must mobilize and engage with civil society, citizens, and communities – those who are affected by AMR, have the potential to raise the profile of the issue, and can catalyze change – and utilize them as supporters and allies to encourage change⁹⁴.

There is broader scope to engage civil society organizations (CSOs) – including community-based organizations (CBOs), faith-based organizations (FBOs) and NGOs – which are often excluded from AMR activities in LMICs, not integrated into decision-making processes, and often with limited understanding of AMR advocacy issues⁹⁵. They represent the voices of the vulnerable, the farmer, the community, the hospital, with a role to play in bridging the gap between government and local beneficiaries, and translating AMR policies at the community level, in terms of AMU and AMC.



We should include civil society. When there are calls from all those arenas, then government will feel pressure and they will go for the policy and prioritize it.

-Country Stakeholders, Asia

Civil society can influence legislators in terms of agenda-setting and policy formation⁹⁶. CSOs/FBOs might act as a 'pressure group' to divert policy attention through lobbying or by appealing to social justice or norms. Their active participation can assist policy-makers in gathering insight about public interests and societal demand, thereby contributing to a policy's legitimacy⁹⁷. They can also collect evidence and provide policy-makers with evidence-based knowledge as well as testimony from their own experiences, to influence decision-makers⁹⁸. CSOs can contribute to the development of policies to address AMR nationally, including drafting of policies; sitting as members of working groups/committees; and working with the government to encourage accountability through monitoring policy implementation and enforcement⁹⁹. Governments (or international donors) can also contract with CSOs/FBOs for the delivery of public programmes, and play an active role in health service provision¹⁰⁰. To provide such inputs, CSOs themselves highlight the importance of and need for training and education in principles of AMR, data analysis, and effective advocacy skills¹⁰¹.

⁹⁴ De Leeuw, E (2017). Engagement of sectors other than health in integrated health governance, policy, action.

⁹⁵ Fraser, J. *et al* (2021). AMR control efforts in Africa: a survey of the role of Civil Society Organisations. *Global Health Action* 2021, Vol. 14.

⁹⁶ Gómez, E. J. (2018). Civil society in global health policymaking: A critical review. *Globalization and Health*, 14(1), 73. <https://doi.org/10.1186/s12992-018-0393-2>

⁹⁷ How to engage civil society in policymaking. *Apolitical*. Retrieved December 2, 2021 (from <https://apolitical.co/solution-articles/en/how-to-engage-civil-society-in-policymaking>).

⁹⁸ Mendizabal, E., Osborne, D., & Young, J. (2006). Policy engagement: How civil society can be more effective. Overseas Development Institute.

⁹⁹ Smith, J., & Buse, K. (2016). Civil society: The catalyst for ensuring health in the age of sustainable development. *Globalization and Health*, 12(1), 1–6.

¹⁰⁰ Clayton, A., Oakley, P., & Taylor, J. (2000). Civil society organizations and service provision. *Citeseer*.

¹⁰¹ *Ibid*.

Community dialogue – as opposed to education and awareness campaigns – has shown positive outcomes, bringing together AMR stakeholders and the public – including community/youth/religious leaders, teachers, health workers, farmers, and media – to develop AMR solutions based on the local context and realities¹⁰². Community engagement approaches encourage community evidence and experience, and also help to develop trust, which is crucial when the public are expected to undertake actions to reduce AMU, AMC, and AMR¹⁰³.

4.2 Catalyzing the health sectors



I think there is a need to better inform and engage the provider community so that they understand what this problem means and how it's impacting the provision of care for their patients
-Regional expert

Policy advocacy crucially involves the health sector: including prescribing (doctors), dispensing (pharmacists), administering (nurses) and consuming (public). Community health workers are key actors, with access to and influence over community members, and also potential collaboration with patient and other community groups. Health professionals can benefit from education and/or information, and enhancement of skills and competencies, including the incorporation of AMR into formal teaching curricula. Medical representatives, often play a major role in health information in LMICs, with influence over health professionals, but with conflicts of interest in terms of their profit motivations.

There is scope to engage INGOs/NGOs, such as the International Federation of the Red Cross/Crescent (IFRC) and Medicin Sans Frontiers (MSF); and similarly with influential advocacy groups such as those focused on cancer and TB. Professional associations – National Pharmacy Associations, National Medical Associations, Health Professional Associations – can contribute to policy development through: supporting access not excess; promoting public awareness of misuse and overuse and the threat of AMR; and promoting patient safety. It is crucial to change the behaviour of patients and professionals in all sectors¹⁰⁴.

In the animal health sector ‘top down’ approaches – such as laws and regulations – have limited effectiveness in LMICs due to a lack of animal health services and insufficient regulatory capacity. Stewardship interventions can be effective, with enhanced animal health services¹⁰⁵. ‘Bottom-up’ approaches can be appropriate in addressing AMU/AMR – including with the input of farmers – using knowledge and awareness dissemination through local professional and social networks¹⁰⁶, including support for prohibiting the use of antibiotics in agriculture and food-producing animals. Unregistered health workers, such as ‘agrovets’ (shops which

¹⁰² Poomchaichote, T. *et al* (2021). “AMR Dialogues”: a public engagement initiative to shape policies and solutions on AMR in Thailand. *Wellcome Open research* 2021, 6:188.

¹⁰³ Mitchell, J. *et al* (2019). The values and principles underpinning community engagement and approaches to tackling AMR. *Global Health Action*, 12:sup 1.

¹⁰⁴ Portillo, M. A. (2020). How civil society action can contribute to combating antimicrobial resistance. Research Paper.

¹⁰⁵ OECD (2016). Antimicrobial resistance policy insights.

¹⁰⁶ Caudell M.A. *et al* (2020). Towards a bottom-up understanding of antimicrobial use and resistance on the farm: a knowledge, attitudes, and practices survey across livestock systems in five African countries. *PLoS ONE* 15(1).

sell animal health products) are the main prescribers/dispensers in many LMICs and can benefit from enhanced AMR knowledge¹⁰⁷.

Component 4.1 Engaging and mobilizing civil society and communities

Component 4.2 Catalyzing the health sectors

Read the ‘Methodology’ below, and use **Tool 11** to identify the civil society, community and health sector(s) stakeholders that can play a role in mobilizing action and coalitions for policy action on AMR; and their information needs to accomplish this.

Click here for the Word document version of [Tool 11](#)

METHODOLOGY:

In the Tool 11 template below: Column 1 shows factors to consider in identifying key civil society, community and health sector stakeholders to engage. In Columns 2/3/4 enter the key stakeholders in Line 1 (add additional columns as required for more stakeholders) and answer the questions from Column 1, in the following lines of the template. The second part of the tool is for identifying the information needs of civil society and health stakeholders.

Tool 11. Analysis of civil society, community and health sector engagement

CSO/community stakeholders	CSO/SH/health 1	CSO/SH/health 2	CSO/SH/health 3
Which CSOs/community groups/ FBOs health sector groups can assist AMR policy development/NAP implementation?			
What is their link to AMR?			
What are the required actions of CSOs/stakeholders?			
Do they have the capacity to achieve the above actions?			
Do they have resources for AMR (staff, funds, IT)?			
What can CSOs/civil society do realistically? For example: Organize petitions/letters? Organize public meetings/ events? Utilise social media/ blogs/email? Engage media/organize events? Build coalitions of support?			
Considerations for policy	Comments	Comments	Comments
Are CSOs involved in AMR/ policy development? How?			

¹⁰⁷ Osman Dar, A. *et al* (2015). Exploring the evidence base for national and regional policy interventions to combat resistance. *The Lancet*, November 2015

At which stages of the policy-making process can civil society be best involved: Prioritization? Development? Implementation?			
What do they bring, for example: expertise/data-evidence/popular support/resources/credibility?			
Do they have: Political-Economic-Social power?			
How can these powers be used?			
How do CSOs/community groups engage policy-makers?			
What are the policy/political windows of opportunity for CSOs/community groups?			
How do CSOs/community groups engage with the public? For example, through: Influencers/peers? Community events/activities? Social media/blogs/Twitter? Information booths? Fundraising events?			
Do CSO/community groups have vested or other interests?			
Information needs	Comments	Comments	Comments
What is the level of knowledge of CSOs/community groups/FBOs?			
What information will help?			
What formats are preferred by CSOs/community groups/FBOs?			
What are their usual sources of information?			
What advocacy materials have been developed already for CSOs/FBOs?			
What training and education is available on AMR? What is needed?			

Case Studies from Nepal, Ghana, and Nigeria highlight the importance of community and civil society engagement in the human health sector; and another from Timor-Leste emphasizes the importance of farmer action in the animal health sector to reduce AMU and AMR.



RADAAR CASE STUDY 6. CIVIL SOCIETY/HEALTH SECTOR ENGAGEMENT Nepal, Nigeria, and Ghana: Catalyzing health sector engagement

Professional Associations

Professional stakeholders can be mobilized by CSOs to advocate for AMR containment and action. The **Commonwealth Pharmacists Association (CPA)**, a network of national pharmacy associations within the Commonwealth, works to combat the AMR burden by supporting pharmacists to improve AMS through pharmacy. CPA provides resources, tools, and experience to assist governments in designing and implementing AMR NAPs. It collaborates on the Commonwealth Partnerships for Antimicrobial Stewardship (CwPAMS) programme with the Tropical Health Education Trust (THET), to promote and enhance capacity for effective antimicrobial prescribing and AMU surveillance through evidence-based decision-making. The 'CwPAMS community' encourages partners to share expertise and good practices, and has created a toolkit – including AMS education, and local quality improvement initiatives – with strategies and projects that healthcare institutions can adopt (1).

In **Nepal**, the focus of AMR activities has largely been on the laboratory. Since it is established that the misuse of antimicrobials is a major driver in emergence of multidrug resistant bugs, it is essential to engage prescribers to ensure ownership and effective AMR containment programmes. Nine professional associations– representing some specialist fields which use antibiotics – were engaged in the planning and implementation of the Lab-Clinic Interface, strengthening activities for better utilization of laboratory data. The associations also came up with ways in which they can contribute to AMR containment. The findings from the national AMR surveillance and AMU point prevalence survey were disseminated to the wider medical community utilizing the platform of the **Nepal Medical Association**, an umbrella organization for the medical professions, with branches in different areas of the country. The draft of the revised National Antimicrobial Treatment Guidelines is under review by experts from different medical associations (2). The **Nepalese Association of Clinical Microbiologists** is another channel of influence, over prescribers of antibiotics. Utilizing the associations is also a way of involving the private sector, as significant numbers of doctors are in the associations, and most are private practitioners.

Civil society organizations

The **Antimicrobial Resistance Coalition (ARC)** facilitates CSO engagement in cross-sectoral communication and collaboration to tackle AMR. ARC participates actively in national/global AMR health policy-making processes: including urging member states to have AMR issues prioritized at the World Health Assembly. ARC actively participates in the work of the Tripartite agencies, issuing statements to guide the direction in addressing AMR and advocating guidance materials; and is directly involved in the global policy-making process through participating in or providing public consultations as part of UN IACG.

In **West Africa**, the **Dr Ameyo Stella Adadevoh Health Trust (DRASA)** recognizes the crucial role of CSOs in boosting community awareness, and provides training, community education, and outreach to students to enhance awareness and engagement on AMR. Moreover, DRASA lobbies and advocates for good AMR policy, and works to increase demand for high-quality data (3). In partnership with WHO, DRASA develops and mobilizes youth ambassadors within local communities to transmit knowledge on hygienic behaviours and antibiotic practices among students, school staff, and their family members and communities. In 2018, DRASA established 'Health and Hygiene Clubs' in secondary schools across

Lagos State, Nigeria, and trained 320 student ambassadors in innovative approaches and engagement in combatting AMR.

In **Ghana**, the **Ministry of Health** collaborated with diverse stakeholders, including CSOs, in the development and implementation of the NAP. In particular, the ministry worked with civil society to raise community awareness and provide education on AMR issues: for example, CSOs reached out to individuals and groups in the community, such as opinion leaders and farmer groups (4).

1. Commonwealth Pharmacists Association. See <https://commonwealthpharmacy.org/> [cited 21 December 2021].
2. RADAAR Case Study Template submitted/interview conducted with Dr Ritu Amatya, FHI 360 Nepal [February 2022].
3. Dr. Ameyo Stella Adadevoh (DRASA) Health Trust. Our Work. See <https://www.drasatrust.org/our-work/>. [cited 21 December 2021]
4. Opintan J.A (2018). Leveraging donor support to develop a national antimicrobial resistance policy and action plan: Ghana's success story. *Afr J Lab Med*. De 6;7(2):825.



RADAAR CASE STUDY 7. COMMUNITY ENGAGEMENT

Timor-Leste: Prudent antimicrobial use in community farming

The issue: antibiotics are in widespread use in the poultry industry in Timor-Leste

Antibiotics are widely used: in the commercial industry, where chickens are largely imported from Indonesia, and at the village level, where the government provides veterinary services, including antibiotics when poultry are sick, such as with Newcastle Disease. Village poultry farming in Timor-Leste is important to improve nutrition and contribute to livelihoods: there are opportunities to adopt improved agricultural practices.

Strategy and methodology

The 'Timor Chickens' initiative was started in 2017 (by Dr Antonino Do Karmo, former DG, and staff member at the Ministry of Agriculture and Fisheries [MAF]) to establish a replicable organic village chicken development farm without the use of antibiotics. Improvement of poultry husbandry through the introduction of free range, roaming chickens – raised without the use of antibiotics – is an initiative to improve poultry production and provide organic and healthy nutrition. Poultry diseases such as Newcastle disease, pullorum, and coryza are also minimized – through application of biosecurity measures on feeding, breeding and management – thereby further reducing AMU.

Challenges and enablers on reducing AMU

Reducing antimicrobial use in farming faces certain challenges in Timor-Leste:

- Most farmers in Timor-Leste use antibiotics when their animals are sick.
- Lack of knowledge of the use of antibiotics in the animals creates resistance to new ideas.
- The farming system faces difficulties in feed management; and human resources and capacity are limited.
- Poultry disease – and testing for disease – is a constant threat and challenge.
- Antibiotics are cheap: compared to introducing or enhancing biosecurity measures.
- Schemes explore improvement of vaccination by providing fees for vaccinators: but it is expensive and unsustainable.

However, there are enabling factors to mitigate some of these issues:

- Encouraging good agricultural practices through improvement of village chickens farming systems.
- Avoiding using antibiotics at the farm and regulation of farming.
- The initiator of the 'Timor Chickens' project is a Senior Veterinarian in MAF.
- The Fleming Fund support country initiatives on AMR surveillance and improving laboratory capacities.
- The Veterinary Medical Association/MAF/Veterinary Directorate/Dr Karmo collaborate to increase training and capacity for local veterinarians for: disease investigation, prevention, and treatment.
- Small-scale biosecurity initiatives are implementable: such as using simple nylon fencing to keep chickens within premises; rearing chickens and limiting the introduction of new chickens (with quarantine for 14 days before entering the premises).

Key results and outcomes

The 'Timor Chicken's' initiative has shown some positive effects:

- Mentoring of and providing training to a local NGO and young farmers from rural areas to gain experience on village chicken farm development without the use of antibiotics: a farmer in Baucau Municipality has successfully implemented the project after receiving training from the initiative and is now producing eggs and chickens.
- Highlighting the 'proof of concept' and replicability: the farmer above has already gained government support on the farm.
- Emphasizing the economic, livelihood, and nutritional benefits at the community level.
- Providing case evidence to influence decision-/policy-makers and show the potential for policy adoption by MAF, and implementation of policy into good agricultural practice.
- Highlighting ways in which local knowledge and practice – including of biosecurity measures – can result in poultry not needing vaccination or antibiotics to prevent or respond to disease.
- Increasing public awareness and community knowledge on AMR, AMU.



Step 5

Framing and communicating AMR

5.1 Reframing AMR

Effective communication underpins successful advocacy. The question has been asked: Why isn't AMR obvious to everyone? What is the evidence, or lack of, and how is it framed that restricts wider awareness? AMR is generally framed and characterised in several ways¹⁰⁸ (see panel below):

Framing/Re-framing AMR

AMR has been characterized in a variety of frames:

- Healthcare issue. Focuses on the healthcare sector, including: reducing disease burden through promotion of early diagnosis and treatment through rational/prudent use of antimicrobials; a focus on IPC; and antimicrobial stewardship in drug prescription.
- Development issue. Presents AMR as a sustainable development issue, impacting on achievement of the Sustainable Development Goals (SDGs): the burden of infectious diseases and lack of awareness in LMICs drives overuse/misuse of antimicrobials. Universal and equitable access to quality antimicrobials are seen as a right to health.
- Innovation issue. Considers that research and development (R&D) for new compounds/diagnostics has not kept up with resistance: due to market failure, low return on investment, high risks, and lack of incentives in the pharmaceutical sector. Incentivization of R&D through new mechanisms is
- Security issue. AMR seen as a threat to individual and national (health) security resulting from globalization and imperiling the 'global North': focused on systematic surveillance, capacity building, and containment of AMR 'at source', i.e., largely the 'global South'.
- One Health issue. Developed in the context of and as a response to rising incidences of zoonoses and the large-scale overuse/misuse of antibiotics in food animal production, requiring multisectoral engagement. A globally-endorsed overarching approach for containing AMR, requiring – despite operationalization challenges – improved coordination and collaboration between human/animal/environmental sectors as the policy response.

While each frame is coherent, they are not necessarily suitable for LMICs in AMR response. There is limited recognition of the dilemma for policy-makers to reconcile access to antimicrobials to fight disease with potential overuse/misuse. Moreover, there is a lack of incorporation of those people who are affected by

¹⁰⁸ IVI-RADAAR Project (2020). Rapid policy landscape analysis, p.13; and Wernli *et al* (2017). Mapping global policy discourse on antimicrobial resistance, p.8.

AMR policies and interventions to respond to AMR – ‘target’ populations, such as health workers/doctors and prescription practices, private suppliers of antibiotics, livestock farmers – and how they are affected; and what incentives there are to cooperate with policy interventions^{109 110 111}.

5.2 Ensuring access without excess

The RADAAR project proposes a reframing – one that recognizes the social and ecological dimensions – to accelerate policy in LMICs. The reframing aims to:

- Establish: **‘Retaining and Sustaining Country Antimicrobial Efficacy’** as the overarching Strategic Goal of NAPs; and
- Reconfigure: NAPs as a **Progressive Pathway to ‘Retaining and Sustaining Country Antimicrobial Efficacy’**, with a robust ‘Theory of Change’ and time-bound numerical targets.

The principle of the reframing is that every country is able to treat infectious diseases of the highest burden with effective and safe antimicrobials in an affordable and equitable manner: by preventing the emergence and spread of AMR, and thereby reducing the impact of those diseases on the human, animal, environmental, and economic health of the country¹¹². The reframing aims to create demand for data and catalyze policy actions to address AMR in LMICs: combining access to antimicrobials to fight infectious disease burdens, and promoting prudent use of drugs/medicines to conserve their efficacy and reduce AMR¹¹³. AMR requires an inclusive policy process which engages all stakeholders that influence policy-makers in LMICs – including civil society, the media, and the wider public – and consideration of the political factors that shape their opinions and determine their support for or rejection of policies¹¹⁴. The reframing considers:

- Which diseases or pathogens have become, or are becoming, resistant to the antimicrobials available and being used in the country?
- Which antimicrobials have become, or are danger, of becoming ineffective in the country due to resistance/sub-standard quality?
- Access to which important antimicrobials is being denied due to costs or availability?
- Which infectious diseases have the highest burden and economic impact?
- What are the AMC/AMU levels and patterns (including professional and social behaviours and practices) driving emergence and spread of AMR?
- What impacts can and need to be reduced, by how much, and by when?
- Do the benefits outweigh the costs? Which sector needs the highest investments? Which will bring the maximum and quickest benefits? Are the required investments affordable?



What does this mean to the patient? We talk about access and excess, but we can't talk about those without talking about appropriate use...we need to link this back to the patient population we're trying to serve
-Regional expert

¹⁰⁹ IVI-RADAAR Project (2020). Rapid policy landscape analysis, p.13.

¹¹⁰ Wernli *et al* (2017). Mapping global policy discourse on antimicrobial resistance, p.8.

¹¹¹ Legido-Quigley, H., Khan, M. S., Durrance-Bagale, A., & Hanefeld, J. (2019). Something borrowed, something new: A governance and social construction framework to investigate power relations and responses of diverse stakeholders to policies addressing antimicrobial resistance. *Antibiotics*, 8(1), 3, p.4.

¹¹² IVI-RADAAR Project (2020), p.14.

¹¹³ Wernli *et al* (2017).

¹¹⁴ Legido-Quigley, H. *et al* (2019), p.7.

5.3 Reframing AMR communication

Communicating AMR is challenging due to the complexity of the issue, the multi-sectoral nature of it, and the different interests of stakeholders. How AMR is framed and described influences how it is perceived or understood by audiences. In addition to the framing above, multiple terms are used to describe it: ‘antimicrobial resistance’, ‘AMR’, ‘antibiotic resistance’, ‘drug-resistant infections’, and ‘superbugs’¹¹⁵. Evidence suggests that the framing has not been successful in communicating AMR risk and enhancing policy implementation (although the term ‘drug-resistant infection’ is largely understood)^{116 117}. There is limited public knowledge on AMR – to the extent that AMR is perceived only as a minor risk¹¹⁸ – and little public support to hold governments and other stakeholders to account, or for political action¹¹⁹. There is minimal attention from media/social media, other than a focus on specific issues such as MRSA in hospitals or resistant TB, and generally in high-income countries (HICs). Education and public awareness programmes have been/are being implemented, with varying results: studies suggest they can lead to reductions in antibiotic prescribing¹²⁰, or targeted at providers/consumers, can contribute to reducing AMU¹²¹. Others show that it does not necessarily lead to reduced prescription rates or AMU among livestock farmers¹²². Knowledge among health workers is limited^{123 124 125}: although studies also show that health professionals are knowledgeable on AMR/AMU, but prescribing practices are affected by the social and economic context¹²⁶.



A very serious problem that we understand, but in general what we hear, in these countries that the awareness is not there

-Regional expert

Regarding the animal health sector, whilst animal health professionals may have AMR/AMU knowledge, their input is minimal in LMICs, due to staff shortages, limited resources, and insufficient regulatory capacity (e.g., to enforce regulations on prescriptions for antimicrobials). Decisions on AMU are generally made at the farm level and antimicrobials sourced through local, private ‘agrovets’ (shops which sell animal health products), without prescription¹²⁷. Agrovets generally are aware

¹¹⁵ The Wellcome Trust (2019). Reframing resistance: How to communicate about antimicrobial resistance effectively, p.8.

¹¹⁶ Mendelson, M. *et al* (2017). Antibiotic resistance has a language problem. *Nature* volume 545, pp. 23-25.

¹¹⁷ WHO (2015). AMR Survey

¹¹⁸ Cross, Elizabeth L.A. *et al* (2016). Systematic review of public-targeted communication interventions to improve antibiotic use. *Journal of Antimicrobial Chemotherapy* 2017; 72:975-987.

¹¹⁹ The Wellcome Trust (2019), p.6.

¹²⁰ Cross, Elizabeth L.A. *et al* (2016). Systematic review of public-targeted communication interventions to improve antibiotic use. *Journal of Antimicrobial Chemotherapy* 2017; 72:975-987.

¹²¹ Zellweger, R. *et al* (2017). A current perspective on AMR in Southeast Asia. *Journal of Antimicrobial Chemotherapy* 2017; 72: 2963-2972 (see Holloway, K.A. *et al* [2015] and [2016]; and Huttner, B. *et al* [2010]).

¹²² Osman Dar, A. *et al* (2015). Exploring the evidence base for national and regional policy interventions to combat resistance. *The Lancet*, November 2015.

¹²³ European Centre for Disease Prevention and Control (2019). Survey of healthcare workers’ knowledge, attitudes and behaviours on antibiotics, antibiotic use and antibiotic resistance in the EU/EEA: Technical Report Stockholm: ECDC

¹²⁴ Mendelson, M. *et al* (2017). Antibiotic resistance has a language problem. *Nature* volume 545, pp. 23-25.

¹²⁵ WHO (2015). AMR Survey.

¹²⁶ Pearson, M., and Chandler, C. (2019). Knowing antimicrobial resistance in practice: a multi-country qualitative study with human and animal healthcare professionals. *Global Health Action* 2019, Vol.12, 1599560.

¹²⁷ Caudell M.A. *et al* (2020). Towards a bottom-up understanding of antimicrobial use and resistance on the farm: a knowledge, attitudes, and practices survey across livestock systems in five African countries. *PLoS ONE* 15(1).

of AMR and are an important source of information for farmers, but as private businesses, they have conflicts of interest in relation to profit motivation. Farmers are themselves aware of biosecurity measures to prevent disease (and use of antimicrobials), but often unable to implement measures for economic reasons¹²⁸. Communicating AMR/AMU risk is necessary and influential. There are opportunities to address AMU through ‘bottom-up’ approaches focused at the farm-level, but audiences must also be able to take the necessary actions¹²⁹.

5.4 Communication planning

Determining the overall policy advocacy objectives is described in Steps and above. As with policy objectives, the communication objectives should be SMART. The AMR threat must be communicated clearly, in ways that can be understood, are unambiguous, and can be supported and acted upon. Framing and communicating AMR aims to aid advocacy for policy change that addresses AMR more effectively, by emphasizing that it can lead to common infections/routine surgery becoming riskier, that it can affect everyone, that it is happening now and will become increasingly severe if immediate action is not taken¹³⁰.

Component 5.4 Communication planning

Read the ‘Methodology’ below, and use Tool 12 to assess the communication environment and capacity of stakeholders, and develop a communication plan. SWOT (strengths, weaknesses, opportunities, and threats) analysis is helpful. Here the SWOT analysis has been adapted to COT (challenges, opportunities, threats). Tool 13 provides a ‘Sample communication strategy’ which can be adapted to the specific local context and objectives. Tool 14 provides a ‘Sample communication plan’.

Click here for the Word document version of [Tool 12](#)

Click here for the Word document version of [Tool 13](#)

Click here for the Word document version of [Tool 14](#)

METHODOLOGY:

In the Tool 12 template below: Column 1 shows the ‘COT’ area. In Column 2 write a few sentences highlighting the key issues in the country regarding AMR communication.

Tool 12. Adapted ‘SWOT’ analysis for communication

‘SWOT’-‘COT’ area	Description
Challenges: internal capacity and motivation of the organization/ department, and the external communication environment in	

¹²⁸ Caudell M.A. *et al* (2020). Towards a bottom-up understanding of antimicrobial use and resistance on the farm.

¹²⁹ Eva Garmendia *et al* (2021). Making sense of antibiotic resistance: Communicate for change. Uppsala Antibiotic Center, Uppsala University/ReAct.

¹³⁰ The Wellcome Trust (2019). Reframing resistance, p.2.

the country, such as policy and political issues	
Opportunities: enabling factors within the organization/dept. and the external opportunities for effectively communicating AMR to audiences	
Threats/barriers: internal barriers to effective communication on AMR; and the external environment in which communication is not resonating amongst audiences	

The reframing begins with development of a Communication Strategy/Action Plan to define rationale, behavioural objectives, audiences, messages, messengers/channels (described below in Components 5.5 to 5.9), timelines, and indicators. Some of these steps will have already been undertaken, in which case it is important to map what has and what gaps remain.

METHODOLOGY:

In the Tool 13 template below: Column 1 is the strategy level (objective, outcome, activity). In Column 2 enter the corresponding description/details of the outcome, activity, etc. In Column 3 enter the indicator for that outcome, activity. A full example is provided in Annex B.

Tool 13. Sample Communication strategy

Strategy level	Description	Indicator
Objective:	For example: <i>To prevent and control infection at health care and animal health settings</i>	
Outcomes:		
Outcome 1:	For example: <i>Hand hygiene in health care and animal waste will be strengthened</i>	For example: # of training sessions # of workshops # of hand hygiene stations improved/constructed
Outcome 2:		
Outcome 3:		
Outcome 4:		
Outcome 5:		
Activities:		
Activity 1		
Activity 2		
Activity 3		
Activity 4		
Activity 5		
Activity 6		

METHODOLOGY:

In the Tool 14 template below: Enter the 'Objective'. Then in A1 Identify the audiences to be reached. In A2 Describe the actions that audiences should take. In A3 Describe the barriers to taking action. In B1 Describe the messages to convey to audiences. In B2 Describe additional information needed to help messages resonate. In B3 outline the channels to reach audiences

Tool 14. Sample Communication Action Planning Sheet

A. Communication issue
Objective: For example: <i>To prevent and control infection at health care and animal health settings: strengthen hand hygiene in health care and animal waste.</i>
1. Audience: Who are we communicating to? Note. See Component 5.5 'Audience mapping', for example, doctors, farmers, pharmacists
2. Action: What action do we want the audience to take? Note. The behaviour to change, for example, farmers not to use antibiotics as growth promoters
3. Barriers: What can prevent audiences from taking action? Note. See Tool 12 above 'COT analysis', for example, do they have sufficient information about AMR?
B. Communication solution
1. Messages: What do we want to communicate to audiences? Note. See Component 5.6 'Developing key messages': the information to convey to address barriers and link to objectives, for example, "Protect antibiotic effectiveness: do not prescribe unless essential"
2. Justification: Why will audiences believe the message? Note. What or who we can include in communication to persuade audiences, for example, scientific proof, delivered by experts or influencers.
3. Channels: How will messages reach the audiences? Note. See Component 5.8 'Messengers and channels', for example, the most effective ways of delivering messages and proof points

5.5 Audience mapping



We would like the people, farmers, and other stakeholders to be involved more in AMR control. We would like this type of stakeholder to be more involved in our plans.

-Policy Fellow, Asia

The ‘Advocacy audiences’ – including policy-makers, government officials – have been described in Step 2.2 above, and the ‘Social mobilization’ audiences – including NGOs/CSOs, community leaders – in Step 2.3. This section describes specifically the ‘behaviour and social change’ audiences, including the general public and specific groups, such as doctors, pharmacists, veterinarians, farmers, and livestock producers. Human behaviour is responsible for the spread of disease and infections, and the overuse and misuse of antimicrobials: humans are prescribers, dispensers, and users of antimicrobials¹³¹. Audiences also include farmers, livestock producers in the animal health sector, and media/social media from the health, economic, and scientific sectors. Audience mapping is conducted to define audiences and their characteristics, and to understand their information needs, interests, and concerns. In LMICs in particular, however, there has been limited research into knowledge, attitudes, and practices (KAP) in relation to AMR. Studies are needed to enhance audience mapping and messaging (see Section 6.9 below).

Component 5.5 Audience mapping

Read the ‘Methodology’ below, and use Tool 15 to map and identify public audiences, and specific groups such as farmers and health workers, and their knowledge, perceptions, characteristics, in relation to AMR, and the expectations of them.

Click here for the Word document version of [Tool 15](#)

METHODOLOGY:

In the Tool 15 template below: In Line 1, describe the intervention/NAP area. In Line 2, describe the ‘Advocacy objective’. Column 1 provides the factors to consider in identifying/ defining public audiences. Enter the intended audience. In Column 2 answer questions from Column 1, in the following lines of the template. In Column 3 provide any additional details.

Tool 15. Public audiences

Considerations for defining audiences	Description	Further comments
1. Intervention/NAP area: Prevent and control infection at health care/animal health settings		
2. Advocacy objective: Strengthen hand hygiene in health care and animal waste		
Who are the public audiences?		
What are the required actions of the public?		
What can audiences do: Campaign/write letters		

¹³¹ Othieno, J., Njagi, O., Azegele, A. (2020). Opportunities and challenges in antimicrobial resistance behaviour change communication. *One Health* 11 (2020) 100171, Elsevier.

Protest/rally/organize events Donate money		
Are the public aware of AMR? To what extent?		
Is the language of AMR clear and understood?		
Have KAP studies been conducted to understand behaviours in relation to AMR?		
What more information do public audiences need?		
What sources are most trusted?		
Does the media play a role in AMR awareness? What role?		
Are policy-makers influenced by public interest in AMR?		

5.6 Developing key messages

AMR has failed to resonate publicly. Messages are part of the framing of AMR, to ensure that it resonates with the public (and policy-makers). They are based on overall objectives. The public do not need a detailed understanding of AMR, but they do need to know how certain behaviours will help reduce AMR (and AMU/AMC) and to be motivated to adopt such behaviours. Resonance can be improved through more personalized messages: but supported by evidence, and behavioural insights.

Component 5.6 Developing key messages

Read **Tool 16 (Tips on message development)** and the 'Methodology' below, and use **Tool 17 (below)** to identify the primary and secondary messages to increase resonance on AMR amongst various audiences. Develop different messages for each intervention as appropriate.

Click here for the Word document version of [Tool 17](#)

Tool 16. Message development



Tips on message development

Message structure. Effective messages contain key elements:

- Main idea/statement: the issue and why action/change is necessary
- Evidence: to support the idea, including facts/statistics
- Aim: what is expected to be achieved
- Required action: what audiences are expected to do in support of the aim
- 'Human interest' examples: for resonance amongst audiences

Secondary messages are important: similarly with – and reinforcing – the above; with more detail; designed for specific audiences, based on what they know and need; and describing specific actions that address AMR. They may also include statistics in (moderation), and 'soundbites', and quotes.

Message content. Consider the following in developing messages:

- Conduct testing with different stakeholder groups and audiences to determine appropriate language to use: the terms ‘antimicrobial resistance’, ‘AMR’, ‘microbes’, ‘pathogens’ are largely not understood by the public, and often untranslatable into local languages. Consider ‘resistant infections’, ‘drug-resistant infections’, ‘superbugs’, ‘antibiotic resistance’, ‘drug resistance’, ‘germs’, ‘bacteria’, etc. instead (although ‘antibiotic resistance’ for example, is understood, it is not the whole picture, and is often untranslatable).
- Use KAP analysis to understand perceptions, cultural context, behaviours.
- Tailor messages to specific groups, based on sectors, region/geography, interests, affiliations.
- Promote actionable messages: ones that audiences can enact in their own communities.
- Decide on a single terminology: based on local dialects, language, culture, knowledge, perceptions, and attitudes.
- Use clear, concise, unambiguous language, free of jargon and/or medical terminology, and that will resonate with public, media, and non-medical policy-makers.
- Make them short, easy-to-understand, relevant, credible and accurate.
- Include personalised stories to aid resonance: statistics less so, but can support stories.
- Emphasise that AMR is*:
undermining modern medicine, potentially resulting in common infections and routine surgery becoming fatal.
a universal issue that can affect all: oneself, family, friends, not just vulnerable groups.
happening now, not in the distant future (1.27 mln deaths estimated in 2019: NOT 10 million by 2050, which does not resonate as it is not seen to need immediate action).
will become increasingly severe if immediate action – clear, specific – is not taken.
- Give careful consideration to the balance between negative/positive messages:
references to war, tsunami, catastrophe, apocalypse, may resonate among audiences but can also be counterproductive, as viewed as exaggerated.
the specific infection/antimicrobial and local context: messages may be problematic, e.g., ‘Complete the course’ may be appropriate for TB, but not when antimicrobials may have been prescribed unnecessarily**.
- Consider the balance between and emphasizing individual and social responsibilities.
- Emphasise that AMR refers to the pathogen/bacteria being resistant to antibiotics, NOT the individual: if people think the latter they may regard AMR as focused on individuals, rather than requiring collective action, and low-priority and/or low risk.
- Refer to AMR as cross-cutting rather than single disease-specific/focused, and use common disease/injuries/surgery examples for illustration: cancer will be harder to treat; injuries can lead to sepsis and death; TB was under control through antibiotics, but is no longer.
- Make messages specific to the local context; and to different demographics/age groups: messages about hip replacement won’t resonate with younger audiences, nor TB references in countries where TB is rare.

* The Wellcome Trust (2019). Reframing resistance:

** Huttner *et al* (2019). How to improve antibiotic awareness campaigns: findings of a WHO global survey.

Click here for the Word document version of [Tool 17](#)

METHODOLOGY:

In the Tool 17 template below: In Line 1, describe the NAP area or policy intervention that messages will relate to. In Line 2, describe the ‘Advocacy objective’. Column 1 provides the potential audiences who will be receiving AMR messages. In Column 2 enter details of the main message to get across to that audience. In Column 3 enter details of secondary messages (which are often based upon evidence, data, statistics, etc). In Column 4 provide details of where, what, and how to get the evidence required for Column 3.

Tool 17. Messaging

Audiences	Primary message	Secondary message	Evidence/comments
1. Intervention/NAP area:			
2. Advocacy objective:			
Overall			
Policy-makers/government/MP			
Strategic policy-makers			
Technical policy-makers			
Donors/development agencies			
Influencers/leaders/brokers			
INGOs/NGOs/CSOs/FBOs			
Media/social media			
General public			
Human health sector			
Ministry of Health/Dept. PH			
Drug administration			
Medical professionals			
Pharmacists			
Nurses			
Community health workers			
Professional Associations			
Academics			
Specialist media			
Animal health/food sector			
Ministry of Agriculture/Acqua. Dept. Livestock/Trade/			
Veterinarians (public/private)			
Paraprofessionals			
Community animal health workers			
Agrovets			
Livestock producers/exporters			
Farmers			
Food producers			

Food consumers			
Academics			
Specialist media			
Environment sector			
Ministry of Environment			
Academics			
Specialist media			

5.7 Messengers and channels

Appropriate communication messengers/channels can be identified to reach audiences, in a timely manner, with targeted, compelling messages. AMR framing and messaging is conveyed to and through media/social media engagement, influencers, and advocates to inform, enhance knowledge, increase resonance, and develop a groundswell of public and societal support to advance the AMR response. Messengers are those persons or groups who have influence – but not necessarily direct – over identified audiences, and are credible and trusted. Some have been already categorized and described here as stakeholders and influencers, such as NGOs/CSOs, community leaders, community health workers. Different formats are used for different audiences. Crucially, the message must be heard to be influential. This means identifying the opportunities that arise in the policy-/decision-making process and the potential entry points for engagement with policy-makers and/or policy and/or political windows of opportunity^{132 133}, including at the prioritization, development and implementation stages.

Component 5.7 Messengers and channels

Read **Tool 18 (Tips on messenger and channel selection)** and the ‘Methodology’ below, and use **Tool 19** to identify the key AMR messengers and channels

Click here for the Word document version of [Tool 19](#)

Tool 18. Messenger and channel selection



Tips on messenger and channel selection

- Conduct a mapping of messengers and their perceived trustworthiness:
 - Select trusted message deliverers to convey knowledge and information, and avoid misinformation and potential conspiracy theories.
 - Messengers should command respect, and are more effective when they share characteristics or are part of the same group as the audience, such as health workers, community organisations, faith leaders, and CSOs.

¹³² Shiffman, Jeremy/Center for Global Development (2007). Generation of Political Priority for Global Health Initiatives: A Framework and Case Study of Maternal Mortality. Working Paper Number 129 October 2007.

¹³³ Oxman, Andrew D. *et al* (2010). A framework for mandatory impact evaluation to ensure well informed public policy decisions

- Trust is based upon the credibility and transparency of the messenger, and whether they are perceived to be fair, competent, and honest. With AMR, expertise and knowledge is regarded as important.
- Conduct a mapping of communication channels and their reach (including the ‘hard-to-reach’), availability, accessibility, timeliness and perceived trustworthiness: assess the appropriate channels for reaching multiple audiences:
 - Media (television, radio, newspapers): see Section 6.8 below for media engagement tips.
 - Social media (Facebook, WhatsApp, Twitter, Instagram, YouTube, blogs)
 - Printed media (including posters, leaflets, billboards)
 - Mobile phone/texts
 - Government websites, social media and email
 - ‘Small’ media (drama, music)
 - Reports/letters
- For effective media engagement:
 - Assess the cost-effectiveness of channels: messages should be communicated regularly.
 - Utilise a variety of different messengers, channels, and formats simultaneously.

Tools and materials

Messengers may utilize tools and materials to get messages across, which should be:

- Tested with technical staff/experts for accuracy.
- Reviewed and tested amongst sample audiences, such as at health facilities, to ensure that they are understood and resonate.
- Visual, colourful, clear, such as infographics: visuals are more effective than text alone in attracting and holding attention¹³⁴.
- Translated into local languages.

Click here for the Word document version of [Tool 19](#)

METHODOLOGY:

In the Tool 19 template below: In Line 1, describe the NAP area or policy intervention that messengers/channels relate to. In Line 2, describe the ‘Advocacy objective’. Column 1 provides the potential channel of information/communication for AMR messages. In Column 2 enter details of the audience that you want to reach. In Column 3 describe the potential size of audiences for the channel (known as ‘reach’). In Column 4 describe if the channel is credible among audiences. In Column 5 describe if the channel can influence audiences.

¹³⁴ Langdrige, D. *et al* (2019). A visual affective analysis of mass media interventions to increase antimicrobial stewardship amongst the public. *British Journal of Health Psychology*, 24, 66-87.

Tool 19. Selecting messengers and channels

Messenger/channel	Audience	Potential audience (reach)	Credibility with audience	Influence on audience
1. Intervention/NAP area:				
2. Advocacy objective:				
Overall				
Influencers/leaders				
NGOs/CSOs/CSOs/FBOs				
Television				
Radio				
'Small' media (drama, performance, etc.)				
Social media				
Print media				
Mobile phone/texts				
PSAs				
Billboards/posters				
Leaflets/brochures				
Government web-sites/social media/email				
Media kits/FAQ/release				
Press conf./briefings				
Human health sector				
Ministry of Health				
Medical professionals				
Pharmacists				
Nurses				
Community health Workers				
Professional Associations				
Experts/academics				
Specialist media				
Animal health sector				
Ministry of Agriculture				
Veterinarians				
Paraprofessionals				
Community animal health workers				
Agrovets				
Livestock producers/exporters				
Farmers				
Food producers				

Professional Associations				
Experts/academics				
Specialist media				
Environment sector				
Ministry of Environment				
Experts/academics				
Specialist media				

5.8 Media guide

It is important to identify and involve media support in addressing AMR, as an effective (and cost-effective) way of disseminating information, but more importantly as a way of catalyzing action. Moreover, without timely information and transparency, media can become a negative force, generating negative stories, based on rumours and misinformation. Relationships should be continually developed with media practitioners, to develop mutual trust, and knowledge and capacity enhanced through briefings, interviews, and training. It is necessary to recognize media priorities, the ‘Six Ws’: WHAT happened? WHO is affected? WHERE, WHEN and WHY it happened? WILL it happen again? The media look for stories that are new, different, of interest to the public, have a ‘human’ angle, or are controversial (or even sensational). Hence, before involving media, it is important to establish: who is to be reached, with what message, and with what aim and intention. Social media engagement and presence is also crucial. It can be utilized in terms of disseminating factual information through infographics, posts, articles, videos, interviews. It is also important to monitor – and engage with/respond to – social media, including on inaccurate and/or negative posts. Social media influencers are important channels for AMR information, as well in negating inaccuracies and conspiracy theories, and hence should be engaged as early as possible (including with training and capacity building on AMR).

Component 5.8 Media guide

Read Tool 20 (Media engagement and management) and the ‘Methodology’ below, and use Tool 21 to identify the key media channels and contacts – and their characteristics – to develop relationships with and effectively spread AMR messages; and what additional media engagement is required.

Click here for the Word document version of [Tool 21](#)

Tool 20. Media engagement and management



Tips on media engagement and management

- Conduct a mapping of media channels and contacts.
- Establish/develop relationships with media practitioners to develop mutual trust
- Enhance media knowledge and capacity on AMR, through briefings/information updates, and interviews with senior officials.

- Understand media needs: the ‘Six Ws’; What, Who, Where, When, Why, Will (it happen again).
- Engage with local media to talk to communities, as they use a more accessible language.
- Organise media visits to communities to collect ‘human stories’/photographs.
- If negative stories are written, address the source of negative stories or rumours and utilise the same channels with positive, accurate stories.

Click here for the Word document version of [Tool 21](#)

METHODOLOGY:

In the Tool 21 template below: In Column 1 provide the name of the media channel/contact or social media influencer. In Column 2 enter the potential audience/followers of that channel/influencer. In Column 3 enter details of the message you want to give to audiences. In Column 4 provide details of what you want to use the audiences to do as a result of receiving the message. In Column 5 describe the particular method of reaching audiences.

Tool 21. Media mapping

Media/social media channel/contact	Reach/audience of media channel	Message to convey	Aim of media engagement	Method (news release, briefing)
1. Intervention/NAP area: <i>Prevent and control infection at health care/animal health settings</i>				
2. Advocacy objective: <i>Strengthen hand hygiene in health care and animal waste</i>				

A Case Study highlighting media engagement and the role of the media in influencing policy and informing populations on AMR is also provided below



RADAAR CASE STUDY 8. COMMUNICATING AMR

Bangladesh: Media engagement for policy advocacy

The issue: shedding light on antibiotic issues and actions by the government

'The Daily Star' newspaper in Dhaka, Bangladesh, with help from microbiologists and physicians at various hospitals, on 8th April 2019, published a comprehensive report¹ on the AMR situation in Bangladesh. AMR had previously not been covered in the media in Bangladesh. The UK-based 'The Telegraph' newspaper published a corresponding report² quoting The Daily Star.

Strategies and methodology

Daily Star reporter Moudud Ahmmed Sujun covered an event marking Public Health Day in January 2019 at the International Centre for Diarrheal Disease Research, Bangladesh (ICDDR, B) in Dhaka, featuring a presentation on AMR by Professor Sayedur Rahman, Chairman of the Pharmacology Department at Bangabandhu Sheikh Mujib Medical University (BSMMU). Following meetings with Professor Rahman, Professor Ahmed Abu Saleh, Chairman of the Microbiology and Immunology Department at BSMMU – which provided data and insights on the AMR situation based on laboratory experience – and Dr Razib Hossain Sarker – who helped to interpret the data – Sujun began writing an article on AMR. The article was complete once Sujun identified an AMR-caused death: a newborn at Dhaka Shishu (child) Hospital and Institute. Daily Star Executive Editor, Syed Ashfaul Haque, a believer in AMR as a major issue published the article, entitled 'A big cause for health concern' (see <https://www.thedailystar.net/frontpage/news/big-cause-health-concern-1726648>).

Reading the articles, Syed Sayedul Haque Suman, 52, a High Court barrister, politician, social activist, and public figure in Bangladesh – with a following on social media through which he speaks out against social inequality, corruption and social problems – filed a writ/petition with the High Court on 24 April 2019³. The court issued a ruling to ban over-the-counter sales of antibiotics countrywide⁴. In Bangladesh, over-the-counter sales of antibiotic drugs are prohibited, but it is not a punishable act. The Directorate General of Drug Administration (DGDA) directed drug stores not to sell antibiotics without a prescription and conducted a year-long awareness campaign. The draft 'Drug Act 2021' is on the table, but it has not been passed as law yet, so the DGDA cannot take punitive measures. In the meantime, AMR was eclipsed by COVID-19 as a priority.

AMR challenges in Bangladesh

Antibiotic misuse is increasing in Bangladesh, due to marketing policies of some pharmaceutical companies, and irrational and unnecessary prescribing by many physicians, including resulting from commissions from drug companies. Annual antibiotic consumption in the human health sector is worth around USD 408.13 million, 16% of the total pharmaceutical market, and the second-largest therapeutic segment after gastric medicine. Usage is increasing by around 13% to 16% annually. Cephalosporins and macrolides are the most used sub-classes with around a 50% and 16% share of the market respectively: in many cases they are used as first-line treatment options⁵.

According to the Health Economics Unit at the Ministry of Health and Family Welfare, around 64% of out-of-pocket expenditure in Bangladesh goes on medicine compared to 28% in India⁶. As many as 60% of patients self-medicate through prescription by informal providers, such as drug sellers, whilst 25% of patients are prescribed costly non-listed drugs.

The government response

The overuse/misuse of antibiotics are consequences of the absence of effective – or limited enforcement of – laws and regulations. The government is committed to addressing AMR, for example, through the proposed ‘Drug Act 2021’. There is a National Strategic Plan (NSP) and NAP on AMR Containment (ARC) for 2017-2022. The Prime Minister Sheikh Hasina was appointed Co-Chair of the Global Leader’s Group on AMR in November 2020. The Institute of Epidemiology, Disease Control and Research (IEDCR) – the government research organization on public health – shared research findings on AMR, which also had media coverage.

Media advocacy

The media has a major role in AMR containment, by encouraging policy-makers to frame policy, and the government to take actions. Initiatives have been taken in publishing news articles, opinion pieces, and multimedia content on AMR. Progress has been made and the AMR issue is well-known now in Bangladesh. The key strategy is simple: telling a story, with data, that connects to and resonates with the public, professionals and policy-makers.

There is a need for more systematic engagement and collaboration with the media, especially health reporters, and newsroom leaders. Journalists must be empowered with comprehensive AMR knowledge. Continuous media coverage can help in making people, policy-makers and other stakeholders more aware of AMR. There are works in progress, but greater collaboration among researchers, experts, civil society and journalists is needed to push the policy-makers into taking more rigorous action.

References:

1. <https://www.thedailystar.net/frontpage/news/big-cause-health-concern-1726648>
2. <https://www.telegraph.co.uk/global-health/science-and-disease/superbugs-linked-eight-10-deaths-bangladeshi-icus/>
3. <https://www.thedailystar.net/city/high-court-writ-petition-seeks-prescription-mandate-on-antibiotics-1734067>
4. <https://www.thedailystar.net/city/take-steps-to-stop-sale-of-antibiotics-without-prescriptions-1734625>
5. <https://www.tbsnews.net/thoughts/antibiotic-resistance-major-public-health-challenge-354640>
6. <https://www.thedailystar.net/news/bangladesh/news/health-expenses-people-dig-deeper-their-pockets-2235411>

5.9 Advancing social science research on AMR

In LMICs in particular, there is limited social science and behavioural research related to AMR. That which has been conducted suggest that AMU is often a replacement for healthcare and hygiene¹³⁵ ¹³⁶. Infrastructural, economic, and social aspects – including shortages of medical staff and services, lack of diagnostic capacity, limited health facilities, inadequate nutrition, livestock disease, and low

¹³⁵ Chandler, C., Hutchinson, E., & Hutchison, C. (2016). Addressing antimicrobial resistance through social theory: An anthropologically oriented report.

¹³⁶ Pearson, M., and Chandler, C. (2019). Knowing antimicrobial resistance in practice: a multi-country qualitative study with human and animal healthcare professionals. *Global Health Action* 2019, Vol.12, 1599560

hygiene/sanitation standards in community/clinical settings – result in misuse and/or over-use¹³⁷. AMR is driven by social aspects and human behaviours, hence research is essential to understand the factors and practices associated with AMU/AMC and the prevention of AMR, including: among health professions and pharmacists (the majority of antimicrobials are prescribed for outpatients, where the benefit is marginal^{138,139}; the veterinary and livestock professions (provision of antimicrobials for growth promotion in animals, and over-the-counter sales, where legislation may exist but is not implemented)¹⁴⁰; and the public (whose knowledge and attitudes influence AMU through self-medication or pressure on physicians)^{141 142}. Studies in HICs suggest that “socially motivated interventions” can significantly reduce inappropriate prescribing, whereas those without a social component may not¹⁴³; other studies highlight the potential effectiveness of behavioural-based interventions on AMU^{144 145}. Further behavioural insights studies should be conducted to understand social, cultural, economic and other factors associated with AMU/AMC in the human and animal health, livestock and food sectors^{146 147}. Such research can also add a “human dimension”, including practitioner experiences¹⁴⁸. Research should include studies to support effective AMS programmes; and economic research, including models to assess the cost of AMR¹⁴⁹. It is also useful to look at the meanings of medicines for patients/providers; what constitutes 'rational', 'irrational' or 'prudent' use of antibiotics in different settings, and how and why this changes; cultural ideas and beliefs about illness; scientific practices; legal frameworks and regulations; and the infrastructures related to AMR¹⁵⁰. Policy-makers are impacted by psychological factors, so research on cognitive science, behavioural economics, and psychology is beneficial¹⁵¹.

See Case Study below which highlights how research – economic research in this case – can be used to develop an advocacy strategy on AMR, which aims to influence stakeholders and policy-makers.

¹³⁷ Chandler *et al* (2016), p.22.

¹³⁸ Huttner, B. *et al* (2019). How to improve antibiotic awareness campaigns: findings of a WHO global survey. *BMJ Global Health*

¹³⁹ IVI-RADAAR Project (2020). KIIs (GRAM)

¹⁴⁰ OIE (2020), Annual Report on Antimicrobial Agents Intended for Use in Animals, p.8.

¹⁴¹ Smith, R/LSHTM (2015). Antimicrobial resistance is a social problem requiring a social solution. *BMJ*:2015: 350:h2682.

¹⁴² Zellweger, R. *et al* (2017). A current perspective on AMR in Southeast Asia. *Journal of Antimicrobial Chemotherapy*.

¹⁴³ Meeker, D., *et al* (2016). Effect of behavioral interventions on inappropriate antibiotic prescribing among primary care practices. *JAMA*. 2016 February 09; 315(6): 562-570.

¹⁴⁴ Price, L., *et al* (2018). Effectiveness of interventions to improve the public’s antimicrobial resistance awareness and behaviours associated with prudent use of antimicrobials: a systematic review. *J. of Antimicrobial Chemotherapy* 73:1464-1478.

¹⁴⁵ Smith, R.A. *et al* (2015). Preparing for antibiotic resistance campaigns: A person-centred approach to audience segmentation. *Journal of Health Communication*, December 2015, 20(12): 1433-1440.

¹⁴⁶ Cross, Elizabeth L.A. *et al* (2016). Systematic review of public-targeted communication interventions to improve antibiotic use. *Journal of Antimicrobial Chemotherapy* 2017; 72:975-987

¹⁴⁷ Broom, A. and Doron, A (2020). AMR, Politics, and Practice in India. *Qualitative Health Research* 2020, Vol.30(11) 1684-1696.

¹⁴⁸ De Leeuw, E (2016). From research to policy and practice in public health.

¹⁴⁹ Meeker, D., *et al* (2016).

¹⁵⁰ Chandler *et al* (2016).

¹⁵¹ Davidson, Brett (2017). Storytelling and evidence-based policy: lessons from the grey literature. *Palgrave communications* 3:



RADAAR CASE STUDY 9. COMMUNICATING AMR: Bangladesh: Using economic evidence for policy advocacy

The issue: utilising economic evidence for advocacy and communication

The Political Economic Analysis (PEA) for AMR containment advocacy conducted in Bangladesh (see Section 2.2. Evidence for policy 'Case Study') had a third objective, to: Identify key issues/messages for developing an AMR advocacy strategy, tools, and communication materials.

Strategies and methodology

The analysis was conducted by **Expert consultants**, through desk reviews, stakeholder consultation, and KIIs. **Stakeholders** included 28 participants from government across all sectors, the private sector, professional associations, development partners, media, and academia. The research on economic impacts of AMR is being used to develop an AMR advocacy strategy and communication products, tailored for different audiences.

Challenges and enablers

Challenges were described in the Section 2.2 Case Study, for example, in relation to advocacy/communication:

- Face-to-face interviews were limited due to COVID-19 restrictions: which are particularly important for establishing trust and rapport and gaining insights and perceptions necessary for advocacy messages.

On the enabling side:

- Bangladesh's Prime Minister is a key advocate on AM resistance/containment; and there is a potential opportunity to create momentum for prioritizing AMR in policy and practice in Bangladesh.
- AMR 'champions' – known for their long-term AMR work within the upper echelons of the public sector – have a key role in influencing peers/policy-makers, e.g., through formation of an AMR activist group.

Key results and outcomes

The economic impacts identified through the study can be/are being translated into an AMR advocacy strategy:

- 'Advocacy brief' prepared by the Fleming Fund Country Grant to Bangladesh (FFCGB) for stakeholders to better understand the AMR burden on Bangladesh: in support of resource mobilization for AMR.
- Advocacy to high-level policy-makers utilising evidence on economic/political impacts:
 - Messaging to health policy-makers identified to be focused on impacts of increasing morbidity, mortality, and health care costs.
 - Incidence of multi-drug resistance (MDR) and pan-drug resistance (PDR) infections.
 - Improving AMR scores on the Joint External Evaluation (JEE) and achieve AMR-related SDGs.
 - Messaging to animal health policy-makers highlighting losses in poultry production and export earnings, and increased prices of animal protein.
- Setting up of Public Health group in the Prime Minister's office (PMO) to pass messages through; and inclusion of the PMO in the NTC.
- Dialogue with the pharmaceutical industry to enhance AMR awareness and their responsibilities for containment: including reporting to DGDA on antimicrobials production,

import and marketing; and the importance of waste management to prevent spill over of antimicrobials/residues into the environment.

- Media partnerships established: with communication materials to be provided to increase their AMR understanding, and facilitate promotion of appropriate use of antimicrobials, and prevention of self-medication/use of antimicrobials without prescription.
- Development of advocacy tools and materials with tailored messages for specific stakeholders:
 - Ministry of Fisheries and Livestock: on their role in containing AMR; and how they can utilise biosafety and biosecurity without relying on antibiotics/antimicrobials.
 - Ministry of Environment: on their role in addressing and restricting AMR.
 - Health professionals (including GPs/specialists/professors): on providing standard treatment guidelines to promote rational use of antimicrobials.
 - Community members: on their responsibilities in preventing over-the-counter sale of antimicrobials or by non-accredited health workforce
- Farmers: highlighting that excessive use of antimicrobials is not beneficial for poultry farming, aquaculture, etc.



Step 6

Policy implementation

6.1 Policy implementation

Whilst most countries have developed their NAPs, research shows that despite this, progress on implementation is insufficient. In some countries, policy documents have been generated by donor-funded expert groups after consultations and meetings, then printed, launched, but subsequently remaining as documents, with implementation of policies not occurring. The next stages of NAPs require enhanced efforts towards multisectoral collaboration¹⁵². This requires effective governance. The NAP should identify resources, responsible persons, and a timeline. It should be reviewed regularly and updated as the political landscape changes. The advocacy process is dynamic, and it is necessary to be able to respond to unanticipated events, changing decision-makers and new opposition.

Analysis of AMR policies show that a majority have targeted healthcare workers, healthcare workers and communities; or only communities¹⁵³. Amongst policy options, the most common are: information and awareness campaigns and guidelines to inform healthcare workers/general public about AMR, often in waiting or consultation rooms or pharmacies. These include educational materials (guidelines, lectures, workshops), and feedback on antibiotic prescribing practices. This has not proved to be sufficient in addressing AMR. Policy domains and options include enhanced national surveillance systems, stewardship programmes including national guidelines on AMU, and IPC guidelines – across human and animal health sectors – as well as education for human and animal health professionals and awareness amongst different audiences¹⁵⁴ (specific resources are available from WHO on the five areas of GAP/NAP implementation¹⁵⁵).

The previous sections of the Guide provide suggestions and tools to prioritize and develop feasible policy objectives and areas of the NAP for implementation, with support from AMR coalitions. This can be summarized in an overall strategy and action plan including identification of:

- Policy objectives and outcomes
- Policy-/decision makers or initiators
- Policy stakeholders and influencers
- Civil society and private sector stakeholders
- Governance facilitation mechanisms
- Policy advocacy strategies to influence policy-makers
- Opponents or vested interests
- Policy process timeline

The strategy is accompanied by a detailed Workplan, including:

- Communication plan (audiences, channels, messages)
- Planned activities and timeline
- Responsible persons and organizations
- Resources
- Monitoring indicators, and evaluation/impact indicators

¹⁵² Quija Chua, A. et al (2021). An analysis of national action plans on antimicrobial resistance in Southeast Asia using a governance framework. *The Lancet Regional Health – Western Pacific* 7.

¹⁵³ Rogers Van Katwyk, S. (2019). Government policy interventions to reduce antimicrobial use.

¹⁵⁴ Anderson, M et al (2019). A governance framework for development and assessment of national action plans on antimicrobial resistance. *The Lancet Infectious Diseases*, 19 (11).

¹⁵⁵ See Annex 5 and 8 of the 'WHO implementation handbook for national action plans on antimicrobial resistance: Guidance for the human health sector' (2022), WHO.

Component 6.1 Policy implementation

Read the 'Methodology' below and use Tool 22 to combine all of the above sections into a detailed Workplan, which will be used as a 'roadmap' for policy implementation. The 'Example of a Workplan' can be adapted to the local context and NAP.

Click here for the Word document version of [Tool 22](#)

METHODOLOGY:

In the Tool 22 template below the example can be updated to reflect the country context: In Line 1, describe the NAP area. In Line 2 describe the policy intervention to be implemented. In Column 1 describe the activities to be conducted to achieve the intervention described in Line 2. In Column 2 enter details of who/which organization is responsible for conducting the activity. In Column 3 enter details of the resources needed for implementation. In Column 4 provide details of the expected timeline/completion date. In Column 5 provide details of the indicator, that will enable assessment of whether the activity has been completed according to plan.

Tool 22. Example of a Workplan

Activity	Responsible persons/ organization	Resources needed	Timeline	Indicator
1. NAP/WHO GAP area:				
2. Name of policy intervention:				

Read the 'Methodology' below and use Tool 23 to identify and clarify the key considerations and factors that will impact upon policy development and NAP.

Click here for the Word document version of [Tool 23](#)

METHODOLOGY:

In the Tool 23 template below: Column 1 contains the considerations for implementation of NAP areas/policy interventions. In the first section, answer the questions in relation to Column 1. In the second section answer 'YES' or 'NO' to the question in Column 1. In Column 3 describe in more detail how implementation of the action plan/NAP area will be achieved.

Tool 23. Policy implementation

Considerations for implementation	Description/comments	
What conditions must exist to implement the policy intervention?		
Who has the authority to authorize and/or implement the policy?		
What bottlenecks/resistance/vested interests must be overcome to achieve the intervention?		
What is the timeframe?		
Considerations for action plan	Yes/No	Description/comments
Has a NAP implementation/action plan and timeline been developed:		
Are there clearly defined goals?		
Are there identified resources? Where from?		
Are there identified responsible persons stakeholders? What are their roles and responsibilities?		
What other stakeholders are/can be involved in implementation? What can they do?		
Does the plan include drafting of the actual policy/legislation/regulations, early in the process?		
Are there lawyers/policy experts available as a resource? (to help analyse strengths/weaknesses of existing or emerging policies)		

6.2 Monitoring and evaluation

Monitoring and evaluating (M&E) implementation of policy advocacy interventions to enhance NAP implementation is critical, but often overlooked: only 20 per cent of countries with NAPs indicate that they are monitoring progress (16 LMICs¹⁵⁶). Progress must be reviewed regularly, including to boost transparency and accountability amongst policy-makers and partners for planned actions; allocate resources and ensure effective utilization of resources; show progress towards accomplishing objectives; and/or reassess and adjust plans to enhance progress. The NAP should include details of the methods for M&E of policy implementation and effectiveness: ideally, this should be multisectoral, sufficiently costed and resourced, and with dedicated staff and clear roles and responsibilities.

Monitoring is based upon SMART indicators – both quantitative (numeric) and qualitative (descriptive) – to assess progress, and which should be: relevant, feasible, reliable, acceptable (to all parties), and

¹⁵⁶ WHO (2022). Tripartite AMR Country Assessment Survey (TrACSS).

adjustable to change. Indicators may involve systematic collection and analysis of relevant, timely data or based numerically on events or activities taking place. They can relate to inputs, and activities (process indicators), and outputs, (in terms of the immediate results obtained), connecting them to the outcomes (in terms of whether the aims/objectives are achieved), and/or impacts¹⁵⁷ (also see WHO AMR M&E framework¹⁵⁸).

Evaluation focuses on overall outcomes and impact, measuring if overall objectives were achieved:

- Process evaluation: processes, and operations to understand if an intervention is being delivered effectively.
- Outcome/impact evaluation: including to assess if any impact/change can be attributed to the intervention.

Some factors to consider before setting targets include: baseline values; prior and ongoing trends; level of resources available; stakeholder expectations; and the timeframe of the intervention.

Component 6.2 Monitoring and evaluation

Read the ‘Methodology’ below and use Tool 24 to assess the current monitoring and evaluation system in the country for AMR, and highlight the gaps and where improvement is needed.

Click here for the Word document version of [Tool 24](#)

METHODOLOGY:

In the Tool 24 template below: Column 1 contains the considerations for monitoring and evaluation. In Column 2 answer ‘YES’ or ‘NO’ to the question in Column 1. In Column 3 the M&E context. In Column describe the action needed or how any issues will be resolved.

Tool 24. Monitoring and evaluation

Considerations for M&E	Yes/No	Comments/description	Action/solution
Is there an existing AMR/NAP monitoring process? Is a new system required? Can existing monitoring systems be adapted to include AMR/NAPs?			
Who monitors progress on AMR/NAP policy interventions? Are the responsibilities for monitoring clear?			

¹⁵⁷ SURE/EVIPNet/REACH (2010). What does policy implementation monitoring entail?

¹⁵⁸ See WHO ‘Monitoring and evaluation framework of the global action plan on AMR: framework and recommended indicators’ (2019), WHO (<https://apps.who.int/iris/handle/10665/325006>); and Annex 7 of the ‘WHO implementation handbook for national action plans on antimicrobial resistance: Guidance for the human health sector’ (2022), WHO.

Is there an 'M&E Unit'/Focal Point?			
Are there other groups that would strengthen monitoring?			
Is technical/staffing/financial resources for monitoring policy implementation provided? By whom?			
Are these resources adequate?			
Do tools/technical competencies exist to monitor policy implementation/NAPs?			
Are indicators in place to monitor policy implementation/NAPs? Are they feasible, reliable? How often will it occur?			
Is baseline data available? Are regular data sources available? What are they? What other sources would help?			
Who will reporting be to?			

6.3 Vaccines and AMR

Good governance structures and a One Health collaborative approach support AMR policies and implementation, but competing priorities often hinder this. Including AMR into the agendas of a wide range of multisectoral actors, means that multiple interventions with varying objectives are competing. Armed with evidence, AMR advocacy requires persuasive case-making and demonstrating the value of investing in specific interventions. Timely provision of well-packaged evidence must be presented at a relevant time to increase the likelihood of receiving funding and prioritization. An understanding of policy-making's contextual details, including relevant structural power relations, helps advocates understand when to utilise policy windows.

This is relevant to vaccination. There is considerable evidence that vaccines are an important tool for AMR because: they prevent the emergence of diseases caused by resistant pathogens and help build immunity; they reduce infections in the population through herd immunity; they prevent infections where antimicrobials are incorrectly prescribed; they reduce the use of antimicrobials for secondary infections; and resistance to vaccines are rare¹⁵⁹. Vaccines are also important for animal health.

A static proportional impact model used 2019 estimates to show that primary vaccinations of specific age groups could avert 0.49 (0.47 - 0.51) million deaths and 28 (27 - 29) million DALYs associated with bacterial

¹⁵⁹ World Health Organization. Global Action Plan on Antimicrobial Resistance (2015).

AMR, and 0.15 (0.14 - 0.16) million deaths and 7.5 (7.0 - 7.9) million DALYs attributable to AMR¹⁶⁰. In 2020, the WHO Action Framework ‘Leveraging Vaccines to Reduce Antibiotic Use and Prevent AMR’ stated that the increased uptake of Influenza, Pneumococcal vaccines (PCV), Typhoid vaccines (TCV) and Haemophilus Infuenzae type B (Hib) vaccines should be prioritized for their impact on AMU and AMR¹⁶¹. Evidence suggests that influenza and pneumococcal vaccination can reduce antibiotic use in risk groups including young children, older adults and people with chronic medical conditions¹⁶², and that vaccination could help prevent secondary bacterial infections which often require antibiotic treatment, such as Streptococcus pneumoniae¹⁶³, responsible for almost 600,000 deaths in 2019 and one-in-five deaths attributable to bacterial AMR occurred in children under-5 years¹⁶⁴.

The evidence exists, yet investment in future vaccines development and increasing coverage for existing bacterial pathogen vaccines have faced significant funding challenges¹⁶⁵. The prioritisation efforts of COVID-19 vaccine development demonstrated the possibilities for accelerated vaccine production and brought unprecedented attention to vaccine technologies. Vaccines can be a part of the solution to AMR. With the mission to discover, develop and deliver safe, effective, and affordable vaccines for global health, IVI focus primarily on vaccines that protect against infectious diseases that disproportionately affect LMICs. IVI’s work on vaccines for priority pathogens include: Group A Strep, Typhoid, non-typhoidal Salmonella, Shigella, Tuberculosis, and Staphylococcus aureus.

Insufficient advocacy in vaccine solutions for AMR has been done, and potential have not generally been prioritized. But taking advantage of this ‘relevant timing’ of vaccine interest, the Guide provides tools that ask practical and relevant questions to guide strategy; this could be useful for vaccine solutions. Four tools in the Guide are explicitly centred around prioritization, helping to identify current interventions, legal frameworks, existing and required evidence, and the important considerations for intervention viability.

¹⁶⁰ Kim C, Holm M, Frost I, Hasso-Agopsowicz M, Abbas K. Global and regional burden of attributable and associated bacterial antimicrobial resistance avertable by vaccination: modelling study. *medRxiv* [Internet]. 2022 May 10 [cited 2022 Jul 18].

¹⁶¹ World Health Organization. Leveraging vaccines to reduce antibiotic use and prevent antimicrobial resistance: an Action Framework (2020).

¹⁶² van Heuvel *et al.* *Globalization and Health* (2022) 18:85 (original source: Doherty TM *et al.* Effect of vaccination on the use of antimicrobial agents: a systematic literature review. *Ann Med.* 2020;52(6):283–99; and Buckley BS *et al.* Impact of vaccination on antibiotic usage: a systematic review and meta-analysis. *Clin Microbiol Infect.* 2019;25(10):1213–25).

¹⁶³ van Heuvel *et al.* *Globalization and Health* (2022) 18:85 (original source: Klein EY *et al.* The frequency of influenza and bacterial coinfection: a systematic review and meta-analysis. *Influenza Other Respir Viruses.* 2016;10(5):394–403; and Jansen KU, Anderson AS. The role of vaccines in fighting AMR. *Hum Vaccin Immunother.* 2018;14(9):2142–9).

¹⁶⁴ van Heuvel *et al.* *Globalization and Health* (2022) 18:85 (original source: Antimicrobial Resistance Collaborators. Global burden of bacterial antimicrobial resistance in 2019: a systematic analysis. *Lancet.* 2022;399(10325):629–55

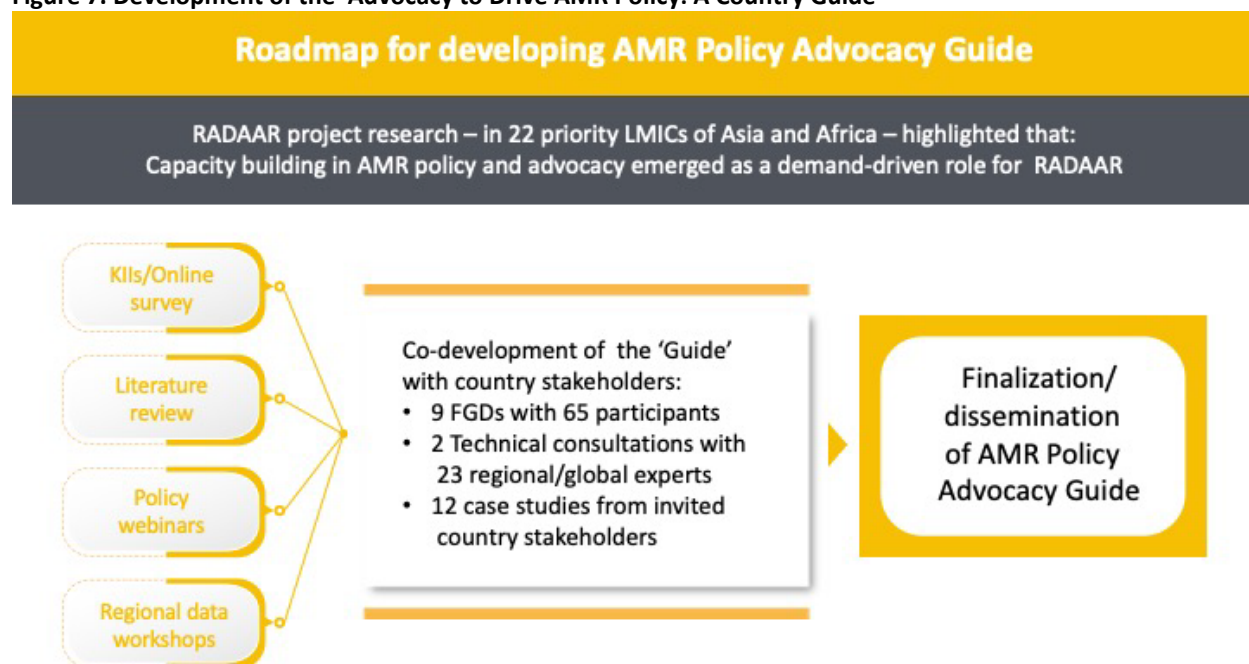
¹⁶⁵ Heymann DL, Kieny M-P, Laxminarayan. Adding to the mantra: vaccines prevent illness, death, and preserve existing antibiotics. *Lancet Infect Dis* [Internet]. 2022 June [cited 2022, Jul 18].

ANNEXES

ANNEX A. 'Advocacy to Drive AMR Policy: A Country Guide' development process

IVI's RADAAR project responded to the demand for policy advocacy guidance – expressed through literature reviews, key informant interviews, workshops, and webinars – from country, regional, and global AMR stakeholders. The Guide was co-developed involving these stakeholders.

Figure 7. Development of the 'Advocacy to Drive AMR Policy: A Country Guide'



Country and regional feedback from RADAAR research and the co-development process identified essential policy advocacy themes to include in the Guide (consolidated into six sections – with capacity development as a cross-cutting issue across some of the themes):

- (a) Policy prioritization: identifying and prioritizing evidence-based policy areas
- (b) Policy development: identifying policy objectives
- (c) Governance: political will and endorsement
- (d) Resource mobilization: sustainable local funding
- (e) Collaboration and coordination: building AMR coalitions and capacity
- (f) Engagement and mobilization: catalyzing community and civil society engagement
- (g) Communication: framing and reframing and communicating AMR
- (h) Policy implementation: planning and strategy
- (i) Monitoring and evaluation: of the impact of policy on health

The co-development process also identified **Case Studies** submitted by participants which illustrate the above sections. The case studies demonstrate: key strategies and methods that led to successful interventions; challenges and enablers that hindered or enhanced implementation; results and outcomes of interventions to date; and potential replicability, scalability, and sustainability.

ANNEX B. Sample Communication strategy

Strategy level	Description	Indicator
Objective:	For example: <i>To enhance understanding of AMR causes, effects and solutions among public audiences – including prescribers, dispensers, and consumers – with a view to encourage and influence appropriate use of antimicrobials</i>	
Outcomes:		
Outcome 1	<i>Health community prescribers will increase knowledge of AMR risks and reduce prescription of antimicrobials</i>	<i># of persons reached # of persons with enhanced knowledge # of persons adopting new practices</i>
Outcome 2	<i>Health community dispensers will increase knowledge of AMR risks and reduce dispensation of antimicrobials</i>	<i># of persons reached # of persons with enhanced knowledge # of persons adopting new practices</i>
Outcome 3	<i>Farmers will understand AMR risk and reduce use of antimicrobials in food/ livestock production</i>	<i># of farmers reached # of farmers with enhanced knowledge # of farmers adopting new practices</i>
Outcome 4	<i>Public audiences (e.g. patient groups, consumers, communities) will increase knowledge/adopt practices to reduce antibiotic use/ misuse (patient groups, communities)</i>	<i>#/type of persons reached # of persons with enhanced knowledge # of persons adopting new practices</i>
Outcome 5	<i>Mobilised new ‘champions’/leaders will create groundswell of public support to address AMR.</i>	<i>#/type of new leaders #/type of events #/type of persons reached by new leaders</i>
Outcome 6	<i>New coalitions/partnerships will create groundswell of public support to address AMR.</i>	<i>#/type of new partners #/type of events #/type of persons reached by new coalitions</i>
Outcome 7	<i>Media training will enhance capacity to report on AMR</i>	<i># of training events # of personnel attending # of media personnel/ articles addressing AMR</i>
Activities:		
Activity 1	Media engagement	<i>#/frequency of broadcast items/responses #/type of media partners</i>

Activity 2	Social media engagement	# of messages/'Tweets'/ blogs/responses #/type of viewers/ followers/responses
Activity 3	Print media: billboards, leaflets	# of articles/press releases/ replies #/type of readers/ responses
Activity 4	Public service announcements	# of PSAs # of viewers/responses
Activity 5	Briefings/presentations/policy briefs	# of briefings/briefs/ presentations #/type of viewers/ attendees/responses
Activity 6	Drama/culture	# of performances # of viewers/attendees
Activity 7	Partnerships/coalitions/interest groups	#/type of partner/partner events #/type of group members # of partner events
Activity 8	Civil society/community engagement	#/type of CSOs engaged # of outreach events
Activity 9	Training/curriculum development	# of training events # of attendees/qualifiers

ANNEX C. Sample Workplan

1. Policy implementation strategy

2. Name of intervention: *Example. Optimize the use of antibiotics in human/animal health, livestock production and food processing.*

3. NAP/WHO GAP area: *Example. Stewardship*

Activity	Responsible persons/organisation	Resources needed	Timeline	Indicator
Regulation on antibiotic prescription, use and sales in the health system	Nat. Comm MoH/MoA WHO/FAO			
Treatment guidelines for infectious diseases	Nat. Com MoH WHO/FAO			
Develop TOR for/establish AMS committees	Nat. Com MoH WHO/FAO			
Provide training for clinicians in hospitals and nurses on infectious disease treatment guidelines	Nat. Com MoH WHO/FAO			

ANNEX D. RADAAR Policy Brief Template

Page 1

Evidence-based Policy Brief	
PART 1. Summary Report	
Date	
Time	
Short description of the policy issue	
Who is this policy brief for?	
Key decision/policy-makers, including parliamentarians, public officials, civil servants, and legislators; and key policy brokers/influencers, and other stakeholders with a focus/interest on AMR, such as international organizations, NGOs, and health researchers.	
Why was the policy brief developed?	
The brief aims to inform discussion, dialogue and decisions around policy related to AMR by providing details on the issue, the evidence, and the options and solutions. Stakeholders can be informed by the brief; consulted in the preparation; or involved in the preparation.	

Page 2

Key messages
A summary (one page) – in bullet points – of the main messages from the full policy brief:
The issue/problem (ADD: Problem heading)
<i>Short description – 1-2 sentences – of: the nature of the problem/issue and its impact, including the scale/extent of the problem, how it is framed, underlying factors, and why it needs to be addressed.</i>
Policy options
<i>Short descriptions – a sentence – of: the policy options to address the issue, including cost of implementation (if available), and expected outcomes/health impact:</i> <ul style="list-style-type: none">• Policy option 1• Policy option 2• Policy option 3• Policy option 4
Implementation strategies
<i>Short descriptions – a sentence or two – of: strategies for implementing policy options; and barriers to implementing the policy options.</i> <ul style="list-style-type: none">• Strategies for implementing policy options, including advantages and disadvantages of each.• Barriers to/challenges in implementing the policy options.• Considerations in addressing the barriers.

Key messages	
Executive summary Description (three pages) of the overall takeaways in more detail, summarizing each section of the report (problem/policy options/implementation strategy).	
The issue/problem (ADD: Problem heading)	
Nature/framing of the issue/problem	<i>Summary description of the nature of the issue/problem and how it is framed</i>
Impact of the issue/problem	<i>Summary description of the impact of the issue/problem</i>
Scale/extent of the issue/problem	<i>Summary description of the scale/extent of the issue/problem and of the consequences</i>
Underlying factors of the problem/issue and potential solutions	<i>Summary description of the factors underlying the issue/problem, why it needs to be addressed, and potential solutions</i>
Policy options	
Policy option 1	<i>Summary description of policy option 1: including cost of implementation (if available), and expected outcome/health impact</i>
Policy option 2	<i>Summary description of policy option 2: including cost of implementation (if available), and expected outcome/health impact</i>
Policy option 3	<i>Summary description of policy option 3: including cost of implementation (if available), and expected outcome/health impact</i>
Policy option 4	<i>Summary description of policy option 4: including cost of implementation (if available), and expected outcome/health impact</i>

Implementation strategies

Summary descriptions of (see also Table 1 below):

- Strategies for implementing policy options, including advantages and disadvantages.
- Barriers to implementing the policy options.
- Considerations in addressing the barriers.

Table 1. Policy Implementation strategy and considerations

Implementation strategy	Barrier to implementation	Strategy to address barriers
Strategy 1	Barrier 1	Strategy 1
Strategy 2	Barrier 2	Strategy 2
Strategy 3	Barrier 3	Strategy 3

Next steps

The Policy Brief aims to catalyze/stimulate dialogue on AMR policy and provide viable, cost-effective policy options. Follow-up actions include:

- **Action 1**
- **Action 2**
- **Action 3**
- **Action 4**

PART 2. Full report

Full details (10-20 pages), including:

Section 1. The problem

This section describes the nature of the problem/issue, and its impact. This can include how the issue is framed/perceived, whether it resonates with policy-makers (and the public), the scale of the problem, the underlying factors, and potential solutions. It can include policy interventions already being implemented (through NAPs), such as new regulations/legislation or enhanced implementation or enforcement of policies, whether they are on track (or not), and the factors responsible.

Summary: Clarifying the problem

1. Describe the issue/problem in 2 or 3 sentences.
2. How is the problem framed?
3. How is the problem perceived among stakeholders: Does it resonate with policy-makers? General public?
4. What are the underlying factors/causes of the problem?
5. What is the scale/extent of the problem? What are the indicators for measurement? What data is available?
6. What are the consequences of the problem? What are the indicators for measurement? What data is available?
7. What are potential solutions to the problem?

Section 2. Policy options

This section outlines the various policy options (generally two to four) to address the issue, based upon its causes and effects: with descriptions, details of advantages of each option, cost of implementation/cost effectiveness, the expected outcomes/health impact. The policy brief must be evidence-based: informed by research that determines which policy change is the most effective way to address AMR.

Summary: Identifying policy options

1. Identify the different policy options.
2. Reduce the options to three or four clear options and describe them.
3. Why were these options selected? What others were not selected?
4. What are the advantages/disadvantages of each option?
5. What are the expected outcomes/impact of policy options? (and potential negative/unexpected outcomes, including on equity).
6. How likely are the expected outcomes/impacts*?
7. What evidence is available as the basis for options? Data sources?
8. What is already known about impacts of policy options? Are there similar examples from within/other countries to learn from?
9. What is the cost of implementation of the different options*?
10. Have funding/resources already been allocated?
11. What financial/governance arrangements/changes will be needed?

* For further details on the GRADE system for assessing the quality of systematic reviews/evidence; and economic analysis¹⁶⁶.

Section 3: Implementation strategies

This section identifies the strategies for – and effects of – implementing policy options, together with the advantages and disadvantages of each strategy; and identifies and addresses the barriers to and challenges in implementing policy options. It can include the likelihood of political progress/adoption/implementation, for example, whether there is a political window or government champion behind the issue. The details can be represented in tabular form (see Table 1 below).

Table 1. Policy Implementation strategy and considerations

Implementation strategy	Barrier to implementation	Strategy to address barriers
Strategy 1	Barrier 1	Strategy 1
Strategy 2	Barrier 2	Strategy 2
Strategy 3	Barrier 3	Strategy 3
Strategy 4	Barrier 4	Strategy 4
Strategy 5	Barrier 5	Strategy 5
Strategy 6	Barrier 6	Strategy 6

¹⁶⁶ https://epoc.cochrane.org/sites/epoc.cochrane.org/files/public/uploads/SURE-Guides-v2.1/Collectedfiles/sure_guides.html

Summary: Implementing strategies

1. Describe the strategies for implementing policy options.
2. What are the advantages/disadvantages of each strategy?
3. What are the expected outcomes of implementation strategies?
4. What evidence is available as the basis for strategies? Data sources?
5. What are the barriers to/challenges in implementing policy options?
6. What are the strategies/enablers to address the barriers?
7. What evidence is there for the effectiveness of strategies to address barriers*?
8. What organization, governance, behavioural changes are necessary for implementation?
9. What is already known about impacts of strategies/barriers/enablers? Are there similar examples from within/other countries to learn from?

* See above for assessing the quality of systematic reviews/evidence

Section 4. Monitoring and evaluation (M&E)

This section provides details of the requirements for M&E. M&E is vital in assessing whether policy implementation is progressing according to plan; whether adjustments are needed to meet expectations; and whether sufficient funds/resources are available. A 'pilot evaluation or study' can be undertaken before full implementation of policy to assess investment and likely benefits, i.e. in terms of cost effectiveness and opportunity costs of particular policies.

Monitoring identifies indicators to measure:

- Inputs/activities: such as financial and human resources and how they are used, with the aim of making adjustments if necessary to keep the budget/resources on track.
- Outputs: such as the services provided/activities undertaken, with the aim of assessing the effects and whether they are actually effective.
- Impacts: such as whether the outputs are achieving expectations and aims and if they require readjustment or discontinuation.

Indicators are based on the availability of data as a measure of the above. The data must be affordable, reliable, regular, and consistent. Although the policy brief will not focus in significant detail on M&E, it is included to emphasise its importance and the need to plan ahead in data collection and measurement.

Monitoring is an ongoing process that does not necessarily explain overall changes that have taken place. Hence, an evaluation may be necessary after completion of an intervention, in terms of the impact, and in relation to the expectations. An impact evaluation considers all factors that influence the outcome/impact of interventions, including outcomes without an intervention. This will depend on whether an evaluation is feasible, the aims were clear, the necessary data can be obtained cost effectively, and whether the evaluation will be utilized by policy-makers. When assessing it is also useful to compare those who have experienced the intervention with those who have not. This can be achieved through randomized control trials or before-after studies (which may not be reliable).

Summary: Monitoring and evaluation

1. Describe the aims of the M&E process.
2. Should a 'pilot evaluation/study' be conducted prior to policy implementation?
3. Is there an existing M&E system in place?
4. What should be monitored?
5. What is the cost of monitoring?
6. Is there an existing M&E system in place?
7. Are indicators already established/being tracked?
8. Will monitoring findings be used, for example, by policy-makers, civil society, funders?
9. What should be evaluated?
10. Is evaluation feasible?
11. Who will use the evaluation?