WHO Strategic and Technical Advisory Group for Antimicrobial Resistance (STAG-AMR)

Report of the third meeting
13-15 June 2023
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<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>AMC</td>
<td>Antimicrobial consumption</td>
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<td>AMR TEAM</td>
<td>AMR Technical Assistance Mechanism</td>
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<td>AMU</td>
<td>Antimicrobial use</td>
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<td>AWWaRe</td>
<td>Access, Watch, Reserve (classification of antibiotics)</td>
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<td>CIA</td>
<td>Critically important antimicrobial</td>
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<td>EML</td>
<td>Essential Medicines List</td>
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<td>EQA</td>
<td>External quality assurance</td>
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<td>FAO</td>
<td>Food and Agriculture Organization</td>
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<td>GAP</td>
<td>Global action plan (on antimicrobial resistance)</td>
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<td>GLASS</td>
<td>Global AMR and antimicrobial consumption and use surveillance system</td>
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<td>GLG</td>
<td>Global Leaders Group on Antimicrobial Resistance</td>
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<td>HEPR</td>
<td>Health emergency preparedness and response</td>
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<td>HIA</td>
<td>Highly important antimicrobial</td>
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<td>HPCIA</td>
<td>Highest Priority Critically Important Antimicrobials</td>
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<td>IA</td>
<td>Important antimicrobial</td>
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<td>IHR</td>
<td>International Health Regulations</td>
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<td>IPC</td>
<td>Infection Prevention and Control</td>
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<td>LMICs</td>
<td>Low- and Middle-Income Countries</td>
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<td>MDR-TB</td>
<td>Multidrug-resistant tuberculosis</td>
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<td>MPTF</td>
<td>Multi-partner Trust Fund</td>
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<td>NAP</td>
<td>National action plan (on antimicrobial resistance)</td>
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<tr>
<td>Abbreviation</td>
<td>Definition</td>
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<td>PCF</td>
<td>People-centred framework</td>
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<td>PHC</td>
<td>Primary health care</td>
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<tr>
<td>Quadripartite</td>
<td>Includes FAO, UNEP, WHO and WOAH</td>
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<td>QJS</td>
<td>Quadripartite Joint Secretariat</td>
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<td>R&amp;D</td>
<td>Research and Development</td>
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<td>SMG</td>
<td>(Quadripartite) Senior Management Group</td>
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<td>TrACCS</td>
<td>Tracking AMR country self-assessment</td>
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<td>UHC</td>
<td>Universal health coverage</td>
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<td>UNEP</td>
<td>United Nations Environment Programme</td>
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<td>UNGA</td>
<td>United Nations General Assembly</td>
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<td>WAAW</td>
<td>World AMR Awareness Week</td>
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<td>WHO BPPL</td>
<td><em>WHO Bacterial Priority Pathogens List</em></td>
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<tr>
<td>WHO MIA</td>
<td><em>WHO Medically Important Antimicrobials List</em></td>
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<td>WOAH</td>
<td>World Organisation for Animal Health</td>
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Introduction and summary

Addressing antimicrobial resistance

The World Health Organization (WHO), through the Antimicrobial Resistance Division, is leading, guiding, and facilitating WHO’s global response to antimicrobial resistance (AMR), which is based on the Global Action Plan on AMR, the thirteenth WHO General Program of Work and the Sustainable Development Goals (SDGs). Its major tasks include the establishment and coordination of global mechanisms needed to drive political and systemic change and supporting Member States in building national capacities to implement their national action plans.

Mission and functions of the Strategic and Technical Advisory Group on AMR (STAG-AMR)

The mandate of the STAG-AMR is to advise the WHO Director-General and the AMR Division on global policies and strategies to address AMR within the context of human health, considering relevant World Health Assembly (Health Assembly) resolutions and decisions. The STAG-AMR reports to the Director-General, who appoints its members. The Terms of Reference for the STAG-AMR are provided at: https://www.who.int/groups/strategic-and-technical-advisory-group-onantimicrobial-resistance.

The STAG-AMR has the following functions:

1. To review progress and make recommendations, consistent with WHO’s mandate, relevant Health Assembly resolutions and decisions, and the strategic objectives of the Global Action Plan on AMR, for the implementation of WHO’s priority activities to tackle AMR;

2. To provide an independent evaluation of the major strategic, scientific, and technical challenges and opportunities to be addressed by WHO in order to enhance progress in addressing AMR in the context of human health;

3. To review and make recommendations regarding the adequacy of WHO’s response to emerging national and global public health risks with regards to AMR;

4. To review and make recommendations on the status of linkages between AMR and other health interventions, and other relevant sectors;
5. To review and make recommendations on WHO’s engagement in partnerships to enhance the achievement of global AMR goals.

Meeting participation

The third meeting of the STAG-AMR took place at WHO Headquarters, Geneva, from 13-15 June 2023. Twelve members of the STAG-AMR attended the meeting in person, with four members not present who sent their regrets: Dr Tim Eckmanns, Professor Samuel Kariuki, Dr Nandini Shetty and Dr Viroj Tangcharoensathien. The meeting was organized by the Assistant Director-General’s Office of the AMR Division (ADGO), in close collaboration with the AMR Division’s Department of Global Coordination and Partnership (GCP) and Department of Surveillance, Prevention and Control (SPC).

The meeting was chaired by the Vice-Chair for the STAG-AMR, Professor Sabiha Essack. Professor Gunnar Kahlmeter had been appointed as the Chair by the WHO Director-General for the period of 2020-2023 and chaired the first and second meetings of the STAG-AMR. Professor Kahlmeter stepped down as Chair, however, in April 2023, and the role of Chair was passed to Professor Essack. Professor Essack is the South African Research Chair in Antibiotic Resistance and One Health and is a professor in Pharmaceutical Sciences at the University of KwaZulu-Natal.

The STAG-AMR members were joined by WHO staff from AMR Division technical units and other related technical areas from WHO headquarters, AMR Regional Focal Points from all six WHO regional offices and colleagues from the WHO country offices of Armenia, Egypt, El Salvador, Ethiopia, Fiji, India, Indonesia, Jordan, Kyrgyzstan, Nigeria, Philippines, and Sudan.

Joining the meeting via Zoom were 57 invited observers, who were able to follow the presentations and discussions throughout the meeting and contribute comments when time allowed. See Annex 1 for the list of participants. The WHO Secretariat reminded all participants that the meeting was being recorded, for internal use only, and would remain strictly confidential. All observers attending virtually had also agreed to respect this confidentiality. English/French simultaneous translation was available during the meeting.

Meeting objectives, agenda and format

At this third meeting, WHO requested the STAG-AMR to review and advise on several areas of the WHO global AMR work. In addition, special sessions were included during which STAG-AMR members heard from WHO regional and country office colleagues about public health initiatives to address AMR in countries in each of WHO’s six regions. A series of presentations was also given by WHO colleagues working in technical areas of cross-cutting relevance to AMR.

The overall context and framing of the meeting were how WHO can best support its Member States to accelerate progress in addressing AMR, especially in the context of preparations for the United Nations General Assembly (UNGA) High-level Meeting on Antimicrobial Resistance which is expected to take place in September 2024. The agenda items are summarized below:

Day 1
- Opening
- Updates from the Secretariat: Headquarters, African Region, Western Pacific Region
- Topic 1. Evidence-based commitments on the Road to UNGA 2024
- Updates from the Secretariat: European Region, South-East Asia Region
Day 2
• Topic 2. Our programmatic approach to accelerate impact in countries
• Topic 3. Strengthening global capacity for bacteriology and mycology laboratory services and diagnostics
• Updates from the Secretariat: Eastern Mediterranean Region, Region of the Americas
• Topic 4: Prioritizing pathogens and products

Day 3
• Updates from the Secretariat: cross-WHO work
• Discussion and agreement of observations and recommendations
• Closure

Each topic discussion session began with an introductory presentation by WHO staff. Comments and suggested recommendations were provided by two STAG-AMR members serving as session discussants, followed by a discussion among participants and moderated by the Chair. The STAG-AMR members serving as session discussants developed draft observations and recommendations, assisted by WHO technical focal points and the Chair. The draft observations and recommendations were shared with STAG-AMR members for discussion, editing, and agreement during Session J on the final day of the meeting.

STAG-AMR report

This consolidated report of the third meeting of the STAG-AMR provides a summary of the meeting presentations, discussions, and conclusions, including recommendations of the STAG-AMR to the WHO Director-General. The report was reviewed by the STAG-AMR Chair on behalf of STAG-AMR Members.

For clarity of presentation of related topics and updates, the report does not always follow the sequence of the meeting agenda.

The report is submitted by the Chair of the STAG-AMR and the Assistant-Director General of the Antimicrobial Resistance Division to the WHO Director-General.
Session summaries

1. Opening session

Assistant Director-General Dr Hanan Balkhy opened the third meeting of the STAG-AMR by welcoming STAG-AMR members present in-person and observers online. She conveyed a message from WHO Director-General Tedros Adhanom Ghebreyesus, who was unable to join the meeting on this occasion. The Director-General thanked Professor Kahlmeter for his tenure as Chair and expressed his appreciation for the wisdom, humour, and expertise that he brought to his role. The Director-General also expressed his thanks to Professor Essack for chairing the third meeting. Dr Balkhy welcomed WHO colleagues from the six regional offices and twelve country offices who travelled to Geneva for the meeting, and expressed her strong appreciation for the ongoing collaboration at all levels of WHO. She conveyed her thanks to staff of the AMR Division at WHO headquarters for their work organizing the meeting. She articulated her sincere gratitude to the partners and donors who have been providing continued support for WHO’s work on AMR in a financially constrained period throughout the COVID-19 pandemic. She thanked WHO’s Member States who have demonstrated leadership and prioritized AMR despite the demands of COVID-19, and who have understood the overlap and interconnection between the two health priorities and their respective responses.

Dr Balkhy provided an overview of events at the recent Health Assembly in May and drew STAG-AMR members’ attention to the Director-General’s Progress Report to Member States. She summarized the key priorities for WHO’s work on AMR noted in the Progress Report: helping Member States to shape and prepare the commitments to be discussed and agreed upon at the United Nations General Assembly (UNGA) High-level Meeting in September 2024, accelerating the implementation and monitoring of national action plans, and developing a strategic and operational framework with targets to address resistant bacterial infections in humans. She highlighted the strong support expressed by Member States for these priorities during the Health Assembly. Dr Balkhy presented a road map of the key global strategic, technical, and political fora in the year ahead that will feed into the UNGA High-level Meeting and the Fourth Ministerial Conference on Antimicrobial Resistance, to be hosted by the Kingdom of Saudi Arabia in November 2024. She stressed the importance of WHO’s role in ensuring coherence and progressive communication throughout these events. She concluded by handing the floor to the Chair, Professor Sabiha Essack.

Professor Essack welcomed all participants and expressed her personal thanks to the former Chair, Professor Kahlmeter. Those present in the room were invited to introduce themselves.

Mr Richard Gregory, Executive Officer, AMR Division, thanked all STAG-AMR members for confirming their declarations of interest in advance of the meeting. Two members had provided recent updates: Dr Sujith Chandy has been appointed Executive Director of the International Centre for Antimicrobial Resistance Solutions (ICARS) and Ms Vanessa Carter has undertaken consultancy contracts. Following review by the WHO Ethics Office, it was decided that neither of these updated interests represent a conflict with the meeting agenda. STAG-AMR members were reminded that they were participating in their individual capacities, without representing their affiliated institutions or any interest groups.
2. Updates from the WHO Secretariat: AMR Division, Headquarters

2.1 Department of Surveillance Prevention and Control, AMR Division

Dr Kitty Van Weezenbeek, Director, Department of Surveillance Prevention and Control, AMR Division, highlighted the latest *Global AMR and antimicrobial consumption and use surveillance system (GLASS) report 2022*, which includes updated content and enhanced web-based features. It incorporates, for the first time, antimicrobial consumption (AMC) data, AMR rates in the context of testing coverage, AMR trend data, information on laboratory quality assurance, and user-friendly web-based access to country profiles.

As expected, reported AMR rates are significantly higher in countries with low testing coverage, which are often Low- and Middle-Income Countries (LMICs). Reliance is typically on data collected in small convenience samples from referral hospitals, which underscores the significant risks of selection bias (inclusion of the sickest patients who have been treated previously with antimicrobials). This finding supports the WHO decision to introduce representative, national AMR prevalence surveys in countries where the routine collection of clinical specimens does not (yet) produce representative data for national policy development. Hence, WHO will follow a two-pronged approach to strengthen and expand routine surveillance, while introducing nationally representative prevalence surveys. The latter will serve to collect robust baseline and trend data, which can serve as the standard for monitoring SDG indicators and future targets. Dr Van Weezenbeek highlighted the efforts to prepare for the first surveys, which come with major capacity building at country level specifically in the areas of laboratory networks, referral systems, supply chains, and diagnostic stewardship.

She presented analysis of antimicrobial consumption data, based on the AWaRe classification of antibiotics ("Access, Watch, Reserve") and defined daily dosages (DDD) per 1000 inhabitants per year. This combined analysis shows the importance of a comprehensive picture of antimicrobial consumption to guide policy development and action. In addition, an initial mapping of survey protocols on antimicrobial use (AMU) and antimicrobial consumption (AMC) in primary health care (PHC) in LMICs was presented. This analysis represents WHO’s ambition to intensify AMC and AMU surveillance at lower levels of health systems, including within communities.

The country support workstream and related guidance documents; policy briefs, such as the *WHO AMR National Action Plans (NAP) costing tool*; and the *WHO AMR NAP implementation handbook* were presented, as well as new resource mobilization opportunities under the Global Fund and the Pandemic Fund. This is of great importance as only 10% of 170 countries report to have allocated funding to NAP implementation in the 2022 *Tracking AMR country self-assessment survey (TrACSS)*. Dr Van Weezenbeek highlighted the need for integration of AMR interventions in all health systems strengthening efforts, including for PHC, universal health coverage (UHC), and health emergency preparedness and response (HEPR) while ensuring robust AMR governance (sector-specific and multi-sectoral One Health) and collection of strategic information to guide this integrated approach. The People Centred Approach\(^1\), that was presented as a separate STAG-AMR agenda item, shows opportunities and practical steps for integrating core AMR interventions. However, she stressed the demand for technical assistance from countries and the need to establish high quality technical assistance capacity. Therefore, WHO is establishing the AMR Technical Assistance Mechanism (AMR TEAM) which will take the form of consultant rosters and systems to link country demand with specialized and quality-assured providers.

\(^1\) Note: This was presented to the STAG-AMR as the ‘People-Centred Framework’, but re-named soon after the meeting for purposes of clarity and avoiding potential confusion with other “frameworks”.
Dr Van Weezenbeek further focused on the development of the first ever prioritized human health research agenda for AMR, which was developed following a rigorous procedure, consisting of four steps. The first step was a thorough scoping review, which identified 2300 detailed knowledge gaps across three themes (prevention, diagnosis, care/treatment) and four research domains. A WHO steering group and WHO expert group, at least 40% of whom had an LMIC focus, consolidated the identified gaps, resulting in a list of 175 research topics. The expert group then scored the topics against 5 criteria. This resulted in a list of 40 prioritized AMR research topics, of which 7 are related to drug-resistant tuberculosis. STAG-AMR members were encouraged to attend the virtual launch event on 22 June 2023.

2.2 Department of Global Coordination and Partnerships, AMR Division

Dr Haileyesus Getahun, Director, Department of Global Coordination and Partnership, AMR Division, outlined the work of the Department. Following nearly a decade of implementing the Global Action Plan (GAP) on AMR and the experience garnered, and in response to calls by various Member States and stakeholders, as well as the imperative created by the anticipated 2024 UNGA High-level Meeting on AMR, the Quadripartite is undertaking an update of the GAP. Recognizing that most of the GAP remains relevant and serves as a backbone for National Action Plans (NAPs), the update will focus on key areas including, but not limited to: the environmental dimensions of AMR; role of diagnostics and laboratory systems for humans, animals, and plants; the need for sector-specific strategies while working in a One Health approach; specific financing approaches and investment cases; and accountable global and national AMR Governance. The update will involve discussions with Member States across the four organizations.

The UNGA 2016 political declaration on AMR played a pivotal role in generating global commitment to address AMR and prompted the creation of various initiatives supporting countries. The Quadripartite in expanding the global response to AMR at global, regional and national levels. The 2024 UNGA High-level Meeting on AMR presents a unique opportunity to build on the lessons learnt since 2016 and secure bold global commitments to accelerate the international response to AMR. The Muscat Manifesto, resulting from the 2022 High-level Ministerial Conference and signed by over 40 Member States, highlights such commitment by setting specific targets. The Quadripartite and the Global Leaders Group on AMR (GLG) are making concerted efforts towards raising awareness and intensifying advocacy for the 2024 UNGA meeting. Early GLG suggestions for consideration in the envisaged political declaration of the UNGA meeting encompass AMR financing, accountable governance, surveillance for action, transformed systems, environment, and AMR’s intersection with pandemic preparedness and response (PPR), as well as AMR targets across sectors.

During its sixth meeting in Barbados on 7-8 February 2023, the GLG noted that the world faces a serious antibacterial research and development (R&D) pipeline and access crisis that requires innovative and disruptive measures. A GLG position paper is being developed to support future GLG engagement and advocacy, building towards specific and bold commitments around financing in the UNGA political declaration in 2024.

2 The research agenda was developed using the Child Health and Nutrition Research Initiative (CHNRI) method, an established approach for prioritizing research ideas to maximize potential health impact.

3 The international system’s response to AMR is collectively lead and coordinated by the ‘Quadripartite’, which is a collaboration of the Food and Agriculture Organization (FAO), the World Health Organization (WHO), the World Organisation for Animal Health (WOAH) and the United Nations Environment Programme (UNEP).
WHO, in partnership with the Global AMR R&D Hub, has released a report for the G7 outlining progress and remaining gaps in incentivizing the development of new antibacterial treatments and ensuring equitable access to antibiotics. The report supported commitments included in the G7 Hiroshima Leaders’ Communiqué, as well as those of the G7 Health and Finance Ministers, to accelerate R&D of antimicrobials and promote antimicrobial access and stewardship.

“World Antimicrobial Awareness Week” (WAAW) will be rebranded as “World AMR Awareness Week”, following global consultations to find better ways to capture the public imagination about AMR. It is important to emphasize the central idea of AMR, rather than just “Antimicrobials” as in the previous formulation. The idea is to popularise the acronym “AMR” so it gains global recognition like “HIV” and “TB”: recognizable even if each constituent word is not always known. Other efforts to communicate “AMR” will include giving it a human face by creating a WHO Taskforce of AMR Survivors who can share their personal experiences more widely, harnessing the energies of youth as advocates for AMR, and engaging the media more systematically in covering AMR.

With the support of the WHO and Quadripartite Joint Secretariat (QJS), the GLG has undertaken high-level consultative efforts, including holding AMR side events at the Commonwealth Heads of Government Meeting (22 June 2022) and at the Seventy-seventh UN General Assembly (22 September 2022), briefing Ministers of Health of the Community of Portuguese Language Countries (CPLP) (09 March 2023), engaging with the New York Group of Friends on Tackling AMR (11 April 2023), and hosting a reception at World Health Assembly 2023 (22 May 2023). In addition, on 14 April 2023, the GLG and the European Society of Clinical Microbiology and Infectious Diseases (ESCMID) co-hosted a high-level event in Copenhagen at which government leaders, policymakers, and scientists from around the world discussed the need for strong partnerships between policymakers and researchers in response to AMR.

The GLG continues to advocate for including AMR in the WHO convention, agreement or other international instrument on pandemic prevention, preparedness, and response (“WHO CA+”). With the support of the GLG secretariat, hosted by WHO, the GLG reached out to Member States and provided a summary of references of AMR in the WHO CA+ and suggestions on how AMR and One Health could be enhanced in the draft of the WHO CA+. 
3. Updates from the WHO Secretariat: Regional and Country Offices

3.1 WHO Regional Office for Africa (AFRO)

Dr Ali Yahaya Ahmed, AMR Regional Advisor and Team Leader, WHO Regional Office for Africa, provided an update on development and implementation of national action plans on AMR. Almost all countries in the region now have a national action plan. There are six countries with professionals trained to use the WHO Costing and Budgeting Tool, with Tanzania completing the costing of its 5-year operational plan which is now approved by national authorities. Six countries have also undergone leadership training to improve governance and multisectoral coordination. There are good examples of Quadripartite regional collaboration, with Gambia and Tanzania involving all sectors in the costing process. The Multi-Partner Trust Fund has provided further opportunities to collaborate to address AMR. Dr Ahmed touched on ongoing challenges including political commitment, limited funding, and leveraging existing relevant programmes such as Infection Prevention Control (IPC) and laboratory strengthening. Priorities now include advocacy for NAP implementation, strengthening links with other programmes, capacity building for multisectoral collaboration and promotion of One Health structures, dissemination of best practice for decision making, and integrating the People Centred Framework into NAPs 2.0.

Dr Ahmad Hussen Tarez, AMR Technical Officer, WHO Country Office Ethiopia, presented on the challenges of antimicrobial stewardship and surveillance in Ethiopia. He gave an overview of the country’s progress in addressing AMR since 2009, and the current governance structure for AMR. Laboratory surveillance capacity remains limited. The country’s approach to antimicrobial stewardship has been scaled up since a baseline survey in 2018, despite challenges due to conflict in the north of the country. Capacity building in hospitals integrates stewardship, IPC, and surveillance and covers use of the AWaRe categorization and antimicrobial use. Also, AMR has now been incorporated within the national health strategy. He summarized the major achievements of the AMR country-programme and touched on the ongoing challenges, particularly shortages in supplies and strengthening monitoring and evaluation. Priorities now are focused on resource mobilization, including by integrating AMR activities in pandemic funding and support for PHC, and scaling up cost-effective interventions such as hand hygiene for IPC.

Dr Laxmikant Chavan, Technical Officer for AMR WHO Country Office Nigeria presented on three key areas: WHO support to the government for NAP 2.0 development, resource mobilization, and coordination within the Country Office. He provided an overview of Nigeria’s AMR profile from the Global Research on Antimicrobial Resistance (GRAM) Study; the progress since the initial NAP of 2017 to the revised NAP 2.0, including improvements in costing; and One Health governance and political commitment, which has strengthened significantly since the Muscat Declaration. He highlighted the particular value of the WHO three-level approach, together with available handbooks, tools and workshops in enabling the Country Office to support the development of NAP 2.0. The NAP 2.0 is in final drafting stage and will be launched in December 2023. Priorities now include high-level advocacy by the WHO Representative and dialogue with global funding streams, including the Pandemic Fund, the Global Fund and bilateral country cooperation programmes. He noted that WHO’s funding from Kingdom of Saudi Arabia is supporting integration of high-impact interventions based on the People Centred Framework.
3.2 WHO Regional Office for the Western Pacific (WPRO)

Dr Takeshi Nishijima, Technical Officer (AMR), WHO Regional Office for the Western Pacific, introduced the presentation from the region that focused on three key areas: advocating for prioritization of AMR at country level leading to action in the build-up to UNGA 2024 (experiences from the Regional Office); prioritizing WHO resources to support human health while collaborating with other sectors under the One Health approach (experiences from the Philippines); and supporting sustainable action and funding for NAP implementation, evaluation and updating (experiences from Fiji). Dr Nishijima gave an overview of advocacy efforts in recent years by the Regional Office to make AMR a priority, including the launch that day of the first WHO report on the economic impact of AMR in the region. He described the key activity areas of the WPRO AMR strategy as antimicrobial consumption surveillance, antimicrobial stewardship, AMR pathogen surveillance, and AMR outbreak response.

Ms Jiani Sun, Technical Officer (AMR), WHO Regional Office for the Western Pacific, described the Regional Office awareness raising, advocacy, and communications activities, including the five-year communication strategy and events to convene high-level “champions” from government, parliament, policy-makers, media, and civil society organizations. Future plans are to work with political champions to develop and convey evidence-based messages leading up to UNGA 2024 and to engage young people in innovative AMR messaging. She also described the wide-ranging AMR coordination mechanism within the Regional Office designed to leverage technical expertise across multiple areas and disciplines.

Mr Juan Paolo Tonolete, Technical Officer (Essential Medicines), WHO Country Office Philippines, focused on the strengths and limitations of One Health coordination in the country, and how the country had used the COVID-19 pandemic to build capacity for antimicrobial stewardship. He began with an overview of the AMR response by the Philippines Government since 2014, the country’s NAPs (1.0 and 2.0) and the Government coordination mechanisms that have been established. He highlighted the limitations that are hampering One Health coordination, including the lack of integrated systems, monitoring mechanisms, communication channels, and other resource constraints. Antimicrobial stewardship training had been advancing throughout the country, but was impacted by the COVID-19 pandemic that diverted resources and restricted activities. Training aimed at the primary healthcare level will be scaled up now through training hubs.

Mr Asaeli Babiau Raikabakaba, Technical Officer, WHO Country Office Fiji, described the progress of Fiji since 2015 in developing, implementing, and reviewing their national action plan resulting in the NAP 2.0 in 2022. He outlined the governance and oversight structure within the Government, with dedicated AMR professional staff, that successfully coordinates AMR work areas with external stakeholders. The national AMR committee benefits from a broad membership drawn from multiple sectors, partners, disciplines, and expertise. He spoke of the areas that are key to the sustainable implementation of the NAP in Fiji, including political commitment, health systems, multisectoral coordination, capacity building, quality data, resource shortages, and awareness and behaviour change.
3.3 WHO Regional Office for Europe (EURO)

Dr Danilo Lo Fo Wong, AMR Regional Advisor, WHO Regional Office for Europe, presented the AMR roadmap for the European Region. He began with an overview of the challenges facing countries in the region revealed by the TrACSS survey: 48 out of 53 Member States have a national action plan for AMR, of which 38 are officially endorsed, but 80% do not have a dedicated budget. Leadership and governance are lacking and access to laboratory supplies remains a major challenge for many countries. The new regional AMR road map builds on the current GAP for AMR with a focus on country-level implementation and progress. It aims to integrate AMR into a wider approach embracing health security, UHC and PHC and to align with other relevant action plans and governance structures. The roadmap includes a framework for stepwise implementation and monitoring and evaluation and has been developed in consultation with experts, Member States and partners. He described the overall vision, the outcomes, the five action areas, the six enablers, and the 51 high-impact interventions of the roadmap. Further explained were the guiding principles of the One Health lens, a health-systems view and a people-centric approach. To facilitate country uptake and implementation of the roadmap, the Regional Office has developed an ‘AMR Compass’, a diagnostic tool to assess national AMR capacity, facilitate consensus on priorities, set national targes and enable measurement of progress. WHO regional and countries offices are supporting countries in the region to operationalize the roadmap building on existing surveys and programmes. The Regional Office is building a network of AMR focal points with communication platforms and a community of practice to share experience of ‘what works,’ and is considering potential regional targets.

Ms Gayane Ghukasyan, Country Programme Officer, WHO Country Office Armenia, described the country’s experience in moving from (sole sector) “health” to (multi-sectoral) “One Health” governance for AMR. She described the situation of AMR in Armenia in 2015 prior to developing its first AMR strategy which, while developed in consultation with other sectors, was principally a human health strategy. She gave an overview of multisectoral collaboration around AMR in Armenia and highlighted the importance of dialogue and active collaboration among sectors. She spoke of the challenges that remain, including cost of supplies and lack of established mechanisms for cooperation, and she described the plans towards a multi-sectoral national AMR strategy in the country.

Mrs Saltanat Moldoisaeva, National Professional Officer, WHO Country Office Kyrgyzstan, presented on strengthening capacities for laboratories and surveillance through the AMR prevalence surveys pilot. She explained the rationale for introducing prevalence surveys in central Asia due to limitations in routine surveillance. She described the overall objectives of the survey and the specific context of Kyrgyzstan that led to its selection as a pilot country. She outlined the methodology for the survey and the progress to date in preparing to implement the survey which is expected to be launched in October 2023.
3.4 WHO Regional Office for South-East Asia (SEARO)

Dr Ben Sihombing, Technical Officer AMR, WHO Regional Office for South-East Asia, began with an overview of the estimated AMR burden in the South-East Asia Region. AMR has been a flagship programme area for this regional office since 2014. He described progress in AMR response in the region with all countries having a NAP, of which 6 are developing a revised NAP 2.0. The Regional Office collaborates with WHO headquarters in training and strengthening of surveillance, monitoring and multisectoral coordination. Support from WHO collaborating centres in the region is strong. The AMR Multi-partner Trust Fund (MPTF), European Union and Fleming Fund support AMR activities in most countries in the region. Challenges remain in governance, multisectoral collaboration, awareness, data and evidence.

Dr Anuj Sharma, Senior Technical Officer, WHO Country Office India, presented the lessons learnt from AMR containment in India. The country has a high burden and also multiple AMR stakeholders within the national and state governments, public and private sectors, and other partners. Under the NAP state-led responsibility and action is mandatory. He described the many networks, task forces, and partnerships that have been established to work on different AMR areas.

Dr Mukta Sharma, AMR Focal Point, WHO Country Office Indonesia, presented on the situation of AMR in Indonesia, pointing to the data from GLASS and how multisectoral actions are being implemented. Priority has been given to generating quality data, particularly from the environment, looking at wastewater from health care units. A roadmap has been developed for engagement with the environment sector. The “Tricycle” project for integrated surveillance of extended spectrum beta-lactamase (ESBL) E.Coli has been rolled out. Indonesia is decentralized to district level, so data from that level is necessary. Realizing a widespread lack of awareness across the country, the Regional Office worked closely with the media to improve awareness and understanding. Dr Sharma described the process of building collaboration with communities and affected individuals and working with “agents of change” within communities to change behaviour. Student groups have proved invaluable as influencers on social media for AWaRe, as have TB patients affected by resistance. Challenges remain around overall leadership and coordination that require funding and human resources. National and regional data is important for political leverage.

3.5 WHO Regional Office for the Eastern Mediterranean (EMRO)

Dr Liz Tayler, Regional Advisor a.i., WHO Regional Office for the Eastern Mediterranean, provided an overview of progress in tackling AMR in key areas of intervention in the region, while noting the variations between countries due to issues such as variable income levels, ongoing conflict, and fragility of health systems. She noted that the COVID-19 pandemic has heightened attention on IPC measures through extensive training. She spoke of the complexity of national health systems and ministries in identifying decision-makers and effecting long-term and sustainable change. She highlighted the particular value that national professional officers bring through their understanding of the national health structure. She noted that while resources for AMR are insufficient, funding opportunities exist linked to health security and health emergencies (for example, the Pandemic Fund), and efficiencies and savings can be found through better use of antibiotics in hospitals. She concluded by requesting STAG-AMR guidance on moving from data gathering to improving action and from awareness raising to behaviour change.

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Dr Lora Alsawalha, Antimicrobial Resistance Officer, WHO Country Office Jordan, described the successful establishment of the AMR surveillance system in Jordan achieving all targets. Questions now revolve, however, around how the country should be using the data as evidence to guide interventions. Bassim Zayed, Technical Specialist, WHO Country Office Jordan, provided an overview of on-going interventions to improve governance, enforce regulations, integrate AMR into curricula, improve WASH in healthcare facilities, and updating national IPC guidelines. Persistent challenges remain around government leadership and resource allocation, sustainability, and addressing behaviour change.

Dr Yara Khalaf, WHO Country Office Egypt, described the scale-up of training in AMR stewardship across the country. This is targeting multiple sectors and audiences through online training courses, a point prevalence survey of antibiotic use involving 250 hospitals, support to hospitals in routine monitoring of consumption, baseline studies and point prevalence surveys of antibiotic use in primary care, and active dissemination of the WHO AWaRe antibiotic book. Dr Engy Hamed, Technical Adviser (AMR), WHO Country Office Sudan, described the collaboration with the health insurance fund to analyse antibiotic use in primary care facilities.

3.6 WHO Regional Office for the Americas (PAHO)

Dr Pilar Ramon-Pardo, Chief, AMR Special Program and AMR Regional Advisor, WHO Regional Office for the Americas, focused on the public health actions in response to the prioritization of pathogens. She described the different ways that the WHO Bacterial priority pathogen list and the WHO Fungal priority pathogen list had been used to stimulate interventions in the region, such as scaled up procurement of related medicines, diagnostics and laboratory equipment; improved laboratory and surveillance capacities; increased information dissemination and early detection and response to outbreaks.

Dr Daniel Reyes Gutiérrez, AMR National Consultant, WHO Country Office El Salvador, presented on the experience in El Salvador of integrating AMR. He provided an overview of El Salvador’s recent history in scaling up its response to AMR, and the epidemiological situation and trends in the country. He described the current structure of government response with partners, how surveillance is expanding across the country and how targets are being reached – and opportunities to further expand surveillance, strengthen governance and accelerate the AMR response.

3.7 STAG-AMR comments and questions on regional and country presentations

Priority issues raised by STAG-AMR members included how countries can manage long-term AMR commitment in the context of short-term turnover of political leadership; opportunities for Regional and country offices to share lessons about shared challenges (such as sub-optimal supply chains for laboratory equipment and supplies) and potential good practice solutions that may be adapted and adopted by countries in the region; the economic impact of AMR, including relative to other diseases; and policy and economic impact analysis and assessment of interventions.

In summary, the presentations from the regional and country offices provided examples of good practice and described clearly the lessons learnt, the enabling factors, and the barriers and challenges. Building on the STAG-AMR’s questions and discussions, it was suggested that further discussions could focus on evidence-based solutions and ways to scale up in different countries and country contexts, securing domestic funding and the potential value and feasibility of national targets.
4. Topic presentations, discussions and STAG-AMR observations and recommendations

4.1 Topic 1: Evidence-based commitments on the Road to UNGA 2024

4.1.1. One Health updates to the Global Action Plan on Antimicrobial Resistance

Dr Kefas Samson, Technical Officer, Quadripartite Joint Secretariat on AMR, presented the ongoing effort by the Quadripartite towards updating the current GAP on AMR. The GAP was adopted by Member States at the Sixty-eighth World Health Assembly in 2015, in resolution WHA68.7. In support of coordinated and multisectoral efforts to address the threat posed by AMR globally, and in the spirit of the Quadripartite alliance, the GAP was subsequently endorsed by the Conference of the Food and Agriculture Organization of the United Nations (FAO), in resolution 4/2015; the World Organisation for Animal Health (formerly OIE) during the 83rd General Session of OIE in 2015, Resolution 26; and the third session of the United Nations Environment Assembly of the United Nations Environment Programme (UNEP) in 2017, EA.3/Res.4.

Recognizing the tremendous progress and lessons learnt in the implementation of multi-sectoral AMR national action plans since the adoption of the GAP; findings of the Comprehensive Review of the GAP conducted in 2021 by WHO and FAO; and calls by Member States, the Global Leaders Group, and other stakeholders, including Civil Society, the quadripartite considered it timely to take stock and identify critical gaps that will inform an update of the GAP. This is aimed at recalibrating the global AMR response towards greater and sustainable impact, including by informing the political declaration anticipated for the 2024 UNGA High-level Meeting on AMR.

Recognizing that most of the GAP remains valid and relevant as a backbone for NAPs in most countries, the Quadripartite Senior Management Group (SMG) envisaged a focused review with emphasis on key areas including:

- Environmental dimensions of AMR
- Role of diagnostics and laboratory systems for humans, animals, and plants.
- The need for sector-specific strategies while applying the One Health approach
- Specific financing approaches and investment cases
- Accountable global and national AMR Governance

At the time of the STAG-AMR meetings it was envisaged that this will be a non-negotiated Member State process, with the Quadripartite organizations undertaking separate member state discussion sessions and consultations to enable inputs from critical stakeholders, with the goal of completing the GAP update within the first quarter of 2024.

Note: subsequent to the STAG-AMR meetings, WHO’s Governing Bodies Department advised that the 2015 Global Action Plan could not be updated without going through the governing bodies, which would require a mandate from a resolution. Therefore, the Quadripartite have agreed to develop a “Quadripartite joint policy/technical brief on AMR priorities”, which will be coordinated by the Quadripartite Joint Secretariat on AMR ahead of the UNGA High-level Meeting on AMR in 2024.
**Discussion question**

- Are there specific considerations from the human health sector perspective that STAG-AMR would recommend to WHO for the GAP update, noting plans to also develop a costed strategic and operational framework, and targets, for drug-resistant bacterial infections in the human health sector?

Discussants provided both public health and patient’s perspectives. Ms Vanessa Carter highlighted the need for patient’s perspectives on how to improve diagnostics and antibiotic stewardship, as well as patient-related costs and other consequences of AMR. From a Public Health perspective, Professor Mukesh Kapila acknowledged the importance of updating the GAP with the One Health approach, but cautioned this should not compromise individual, sectoral interventions necessary to comprehensively address AMR.

STAG-AMR members discussed how to ensure the GAP and related guidance is aligned with current realities of addressing AMR at the human, animal, plant and environment interface. They especially noted challenges and learning for effective One Health and sector-specific governance and financing as countries plan, implement and monitor action on AMR. STAG-AMR members welcomed the Quadripartite’s efforts to maximize One Health collaboration and support countries to drive impact on AMR, while emphasizing these collective efforts should support and enable sector-specific actions and interventions at all levels to address public health and patients’ needs.

**STAG-AMR Observations**

- STAG-AMR welcomes the ongoing Quadripartite efforts to update the GAP AMR with emphasis on the One Health approach – while recognizing the need to achieve a balance between collective vision and mere integration.
- The One Health approach requires collaborative as well as sector-specific strategies and actions which are essential for comprehensive systems strengthening towards broader impact within each sector.
- Systems strengthening across sectors is not adequately reflected or addressed in the current GAP AMR.
- Broader stakeholders’ involvement in line with the One Health approach is critical to the GAP Update process. Learning from the Covid-19 Pandemic, uninterrupted access to, availability of, and optimal use of appropriate and quality services and commodities to prevent, diagnose and treat infections could be strengthened.
- To secure the desired attention, commitment and accountability, AMR targets are essential and should underpin the asks for the UNGA High-level Meeting on AMR in 2024. Compelling targets are necessary to galvanize political as well as public support for AMR actions.
- Various stakeholders have set AMR targets for their own purposes, for example the European Union. WHO should be aware of the range of these targets that can be synthesized or refined to be used for the UNGA HLM.
- STAG-AMR noted the insufficient clarity in some provisions of the GAP AMR 2015, particularly as it relates to accountability for the proposed actions and commitments; this lesson needs to be considered in the ongoing update.
**STAG-AMR Recommendations: One Health updates to the Global Action Plan on Antimicrobial Resistance**

- Consider all stakeholders in addition to the Quadripartite in the GAP update process, in the context of the One Health approach including the private sector, and tailor communications regarding the update to the various target audiences while being sensitive to health literacy levels.

- Compile all existing and potential targets for AMR from various sources. Create a repository and develop appropriate high-level targets to be included in the updated GAP and to inform the UNGA 2024 HLM political declaration.

- Ensure alignment of the GAP with sector-specific strategies and incorporate systems strengthening across sectors in the updated GAP.

- Ensure that the GAP update articulates clear and unambiguous actions, commitments, targets, and explicit responsibilities and accountability assembled in consultation with Member States and relevant stakeholders.

- Incorporate the concept of affordable uninterrupted access to, availability of, and optimal use of appropriate and quality services and commodities to prevent, diagnose, and treat infections, and engage relevant stakeholders to address the challenges of intellectual property rights.

- Align the GAP with broader health system and health security imperatives such as UHC, PHC, and pandemic preparedness and response including the International Health Regulations.

*See note above; the Quadripartite now plans to produce a “Quadripartite joint policy/technical brief on AMR priorities” rather than an update to the Global Action Plan.*

### 4.1.2. Building the AMR economic and investment case across sectors

Dr Jean-Pierre Nyemazi, Technical Officer, AMR Division, presented the work of the Quadripartite organizations in making the economic case for tackling AMR. The purpose of this work is to determine the cost and benefits of the AMR response across all relevant sectors to inform global, regional, and country prioritization, and, crucially, to support resource mobilization efforts. Indeed, despite almost all countries having national action plans for AMR, only a very small number have secured funding to implement such plans, and many countries highlighted that providing a convincing case to financing institutions including Ministries of finance has been a persistent issue.

To achieve this goal, the Quadripartite AMR economics work will deliver the following four outputs:

- **An estimate of AMR economic impact** across sectors (cost of inaction)

- **A package of Key AMR interventions** across sectors

- **An estimate of the cost of action (investment) and return on investment** of AMR action across sectors

- **A toolbox for developing a country investment case** to support multisectoral NAP implementation
In the first instance this work is geared towards helping global leaders gauge the importance of AMR relative to other political and economic priorities. It examines the economic burden imposed by AMR individually within sectors as well as across sectors given the numerous flows and relationships that impact the global economy; these many relationships are mapped out in a One Health AMR systems map that frames the economic analyses. Economic losses averted due to AMR interventions are then assessed to understand the expected returns of action. In the second instance the work focusses on how countries can conduct their own setting-specific analyses. Findings will support political prioritization and budget allocation nationally and sub-nationally, as well as efforts to attain funding from external sources where internal ones are insufficient.

### Discussion question

- What would STAG-AMR suggest as the optimal approaches and mechanisms to finance sector-specific and multisectoral AMR interventions?

In her discussant presentation, Ms Carter raised the importance of analysing and including the direct and indirect costs to patients – principally out-of-pocket health care expenditures and loss of productivity due to AMR – in economic estimates. Professor Kapila emphasized the need to consider and provide guidance to countries on budgeting and potential domestic and international funding for AMR activities. An example would be the inclusion of AMR interventions in wider health systems strengthening efforts and in countries’ applications for external financing from the Pandemic Fund, Global Fund, and others. Together with economic estimates of AMR inaction and action, these will better equip countries to mobilize resources to implement NAPs.

In their wider discussion the STAG-AMR members welcomed the Quadripartite work in developing the AMR economic and investment case. They emphasized the relevance of considering environmental and socio-economic costs if the data and resources are available. The STAG-AMR members also recommended accompanying the AMR investment case report with an inventory of external financing opportunities for AMR and guidance for countries to access those resources.

### STAG-AMR observations:

- STAG-AMR welcomes and supports the Quadripartite work to determine the cost and benefits of the AMR response across sectors.
- Economic analyses, including cost-benefit and cost-utility analyses, are powerful tools to make a convincing case for investing in the AMR response.
- The economic and investment case report should be accompanied by a financing framework including potential financing sources and pathways to guide the country’s resource mobilization efforts.
- The return-on-investment estimation considers the investment cost and the savings realized through implementing the AMR package of interventions across sectors.
- It is highly relevant to show the AMR impact within the sector-specific and disease areas to strengthen the collaboration of stakeholders under One Health approach.
- It is important to consider local context including data on health financing arrangements such as insurance schemes and out-of-pocket expenses.
• Funding sources do exist, but awareness and capacity development is needed for countries to be able to tap into these funds.
• There is potential in innovative collaboration strategies – for instance, twinning HICs and LMICs to share experiences and expertise.
• There is need to establish an AMR financial/resource tracking system to enhance transparency and resource mobilization processes.

**STAG-AMR Recommendations:** *Building the AMR economic and investment case across sectors*

- Expedite completion of current work to build the AMR economic and investment case, to inform the UNGA political declaration.
- Include environmental outcomes in the economic and investment case for tackling AMR.
- Include the societal cost and the financial and other impacts on the patient in the estimation of the costs of AMR.
- Provide sector-specific perspectives, in addition to the One Health perspective, in the economic and investment case.
- Make a toolbox to support countries in developing their own economic and investment cases adaptable to different governing levels.
- Set a target for the number of countries with the appropriate funding to implement NAPs.

### 4.2 Topic 2: Our programmatic approach to accelerate impact in countries

**The People Centred Framework for AMR and priority AMR interventions package**

Mr Anand Balachandran, Unit Head, National Action Plan and Monitoring, AMR Division, and Dr Nienke Bruinsma, Senior Technical Officer, National Action Plan and Monitoring, AMR Division, presented on progress of developing the WHO People-centred framework (PCF) for addressing AMR in human health and its essential package of AMR interventions. The presentation covered the methodology for the development of the PCF, including a recent global consultation, and the essential package of interventions and considerations for enhancing country implementation of the framework. The PCF and essential package of interventions were developed based on the recommendations from the STAG-AMR in 2021. It aims to inform the revision and prioritization of AMR interventions in the human health sector that places people and system needs and challenges at the centre of the response. In addition, the framework promotes community, civil society, and private sector engagement in the AMR response. And finally, the PCF promotes integrating AMR interventions with health systems strengthening and HEPR plans and budgets. The framework encompasses an essential package of 13 core AMR interventions that span across two foundation steps and four pillars. Five core interventions belong to two foundation steps on effective governance, awareness and education; and strategic surveillance and research information. The remaining eight core interventions span the four pillars of the framework that reflect the AMR people journey: prevention of infections, access to essential health services, timely and accurate diagnosis, and appropriate and quality-assured treatment.
Discussion questions

- **Changing the AMR narrative:** Will policy makers be more receptive to AMR mitigation efforts at country level if the “AMR narrative” focuses on the needs and health system barriers faced by people and key vulnerable populations, and promotion of access and equity?

- **AMR and health systems integration:** How can AMR interventions be integrated in health systems strengthening, pandemic preparedness and response, and related national plans and budgets?

- **Community and private sector engagement:** How can civil society, private sector and the community engage in implementing the AMR interventions at country-level?

In his discussant presentation, Dr Sujith Chandy focused on the “people challenges” along the “AMR people journey”, and the role of the community, civil society, and the private sector in rolling out the PCF and the essential package of interventions. He discussed that the PCF helps to humanize AMR and provides a people-centred approach to address the people needs as illustrated through an example of an AMR patient story. He highlighted the importance of community buy-in and the role of civil society for advocating for the community in the development, implementation, and monitoring of AMR interventions. And, finally, he emphasized the important role of the private sector and levers to engage private sector at the country level.

To complement this, Professor Kirsty Buising discussed health system challenges along the AMR people journey and the need to build systems to support access to quality health care to prevent, diagnose, and treat (AMR) infections. She highlighted the important interlinkage of actions across the four pillars of the PCF and the importance of the foundation interventions, including clinical governance, regulations, and behaviour change amongst others for sustainable implementation of the essential package of interventions. She also stressed the need to partner with patients and patient groups to ensure that their views and needs are reflected in the AMR interventions.

In the discussion that followed the presentations, STAG-AMR members expressed their strong support for the PCF to address AMR in the human health sector. They noted the importance of putting people at the center of the AMR response to humanize AMR and promote access to quality health services to prevent, diagnose and treat AMR infections. They highlighted the need for strengthened commitment and accountability from national authorities, and greater engagement of civil society and the private sector in the implementation of the PCF at all levels. The members stressed that the PCF should be concise and complement the GAP on AMR to guide countries in prioritizing the package of interventions in the human health sector for their NAPs on AMR.

**STAG-AMR Observations:**

- STAG-AMR endorses the framework, recognizes the strong links with strengthening health systems, and highlights the need for it to be more concise and supported by a user-friendly implementation guidance.

- STAG-AMR endorses placing people, persons, and patients and their lived experience at the centre of the AMR response and highlights the critical need for ensuring equitable access to quality AMR interventions and health services.

- Robust governance of AMR NAPs in countries is needed, including effective clinical governance with accountability at all levels.
• Active engagement with and representation of relevant stakeholders is needed; including but not limited to communities, civil society, professional organizations and the private sector, and the media to mobilize action and maintain sustainability in AMR mitigation efforts.

• There is critical need to engage the private sector on all aspects of the PCF and its implementation, including: issuing standards, for example for good manufacturing practices; accreditation of facilities; provision of appropriate education and professional development for all healthcare workers; and the involvement of professional associations, etc.

STAG-AMR Recommendations: The People Centred Framework for AMR and priority AMR interventions package

• Use the PCF to guide the human health sector response and inform the updates of the AMR GAP and NAPs. The framework should include clear guidance that can be used at the country level to prioritize interventions, strengthen coordination within the health sector, mobilize domestic and external financing, and support implementation and monitoring of the essential package of interventions.

• Promote implementation of the PCF that is aligned and integrated with broader health initiatives at the national level (UHC/PHC, health security, and communicable and non-communicable diseases), within WHO at all three levels and with external stakeholders.

• Highlight access, equity and quality of services within the AMR essential package of interventions and include specific interventions to promote effective governance, including clinical governance, accountability, and a culture of continuous quality improvement.

• Assist countries to engage effectively with civil society and the private sector to implement the essential package of interventions, including to delineate specific roles, contributions and outputs.

• Guide the development of a robust communication and advocacy strategy to humanize the AMR narrative.

Note: Subsequent to the STAG-AMR meeting, the PCF for AMR has been re-named the People-centred approach to addressing AMR in human health. This was published by WHO in October 2023.

4.3 Topic 3: Strengthening global capacity for bacteriology and mycology laboratory services and diagnostics

The AMR Diagnostic Initiative

Dr Silvia Bertagnolio, Unit Head, Control and Response Strategies, AMR Division, presented the AMR Diagnostic Initiative being developed by WHO to strengthen bacteriology and mycology diagnostic capacity, laboratory systems, and service delivery with a specific focus on countries with limited resources or capacity.

This initiative is in response to World Health Assembly resolution WHA76.5 endorsed at the Seventy-sixth World Health Assembly in 2023 for strengthening diagnostics capacity which urges WHO to develop or strengthen national, regional, and global laboratory networks and diagnostics initiatives and to support Member States in developing and strengthening systems to ensure safe, affordable, accessible diagnostic services and quality assured diagnostics.

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Reliable and timely laboratory testing results are crucial for decision-making in health services, and ensuring access to appropriate diagnostic services should be a key component of efforts towards UHC. Almost half of the global population, however, has little or no access to diagnostics. Availability and access to diagnostics and laboratory services for bacteriology and mycology is even more precarious, as only a small fraction of medical laboratories in Sub Saharan Africa undertake bacteriology testing. Access to susceptibility testing, to establish whether a bacterial (or fungal) infection is drug-resistant, is even more limited.

The AMR Diagnostic Initiative will encompass four building blocks:

1. Strategic and operational framework for strengthening bacteriology and mycology diagnostic capacity, laboratory systems, and service delivery
2. Standardized assessment tools for monitoring and reporting global capacity on AMR, bacteriology, and mycology diagnostics and laboratory services
3. Global AMR laboratory network
4. Research and innovation in AMR diagnostics.

Dr Bertagnolio’s presentation focused on the first building block of the initiative, a strategic and operational framework that provides guidance to support Member States in strengthening bacteriology, mycology and AMR capacity and laboratory services across their health systems. It will support Member States by setting out strategic goals, accompanied by achievable objectives and key activities required to establish a well-functioning country-wide system of clinical bacteriology and mycology laboratories. It also proposes a toolkit/package of resources, standard operating procedures (SOP), and protocols to support operationalization of the strategic framework.

**Discussion questions**

- What priority actions, interventions or strategies would the STAG-AMR suggest to enhance implementation of the AMR Diagnostic Initiative and ultimately improve country capacity?
- How should WHO strengthen advocacy efforts to enhance the use of diagnostic services in response to AMR at both national and global levels?
- What is the recommended “narrative” for WHO to promote the responsible adoption and use of diagnostics for bacterial and fungal infections, and for AMR, in countries, noting that the cost of diagnostic tests may exceed the cost of treatment in some settings/contexts?

The STAG-AMR discussants, Dr Dawn Sievert and Professor Hanene Tiouiri Bennaisa, considered the role of diagnostics in tackling AMR from multiple angles. They suggested that an investment case for diagnostics should be developed to demonstrate the benefits of using diagnostics for managing bacterial and fungal infections and for mitigating AMR. Policy advocacy for country leadership is needed to recognize the importance and cost savings of strengthening microbiology laboratory system with domestic funds. Additionally, a coordinated global network of laboratories should be established to increase access and quality of detection and AMR testing supported by a standardized process for accreditation by WHO.

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In their discussions, the STAG-AMR members acknowledged the critical role that bacteriology and mycology diagnostic services play in achieving all the strategic objectives of the GAP on AMR. They emphasized the need to bring attention to strengthening these services to the highest levels of governance in line with the World Health Assembly resolution WHA76.5 “Strengthening diagnostics capacity”. The members commended the development of the WHO AMR Diagnostic Initiative with its four building blocks aimed at strengthening bacteriology and mycology diagnostic capacity, laboratory systems and service delivery. They also expressed their support for the provision of the strategic and operational framework to provide guidance on strengthening governance, ensuring equitable access and quality, and optimal utilization of diagnostic services. Furthermore, they highlighted the importance of addressing cost barriers by collaborating with industry and partners to ensure equitable access and uninterrupted supply chains. The central role of diagnostics should be emphasized in relevant advocacy efforts and in key strategies, plans and frameworks including any updates to the GAP, a strategic and operational framework for addressing drug-resistant infections in the human health sector, and the PCF for AMR.

STAG-AMR Observations

- Diagnostic infrastructure and services for bacteriology and mycology are vital for the prevention, diagnosis, and appropriate management of bacterial and fungal infections.
- These diagnostic services have a central role in achieving all the strategic objectives of the GAP to combat antimicrobial resistance. Attention to diagnostic services needs elevating to the highest levels of governance, in line with World Health Assembly resolution WHA76.5 “Strengthening diagnostics capacity”.
- STAG-AMR commends the WHO AMR Diagnostic Initiative and its four building blocks, aimed to strengthen bacteriology, mycology and AMR diagnostic capacity, laboratory systems and service delivery.
- Comprehensive norms and standards are needed on diagnostic processes and procedures.
- It is necessary to regularly monitor national capacity of bacterial and mycology laboratory services, with a roadmap for incremental progress and continuous quality improvement.
- The quality of diagnostic infrastructure and services in national reference and clinical laboratories needs monitoring by Member States, by the provision of external quality assurance (EQA) and audits to promote continuous quality improvement.
- Equitable access to safe, effective, and quality assured diagnostic services in low resource settings is sub-optimal. Targeted efforts are needed to address the key barriers, including supply shortages.
- The high costs of diagnostic tests, often borne by the patients, limit their use, particularly in low resource settings.
- In some situations, the lower cost of a course of antimicrobial treatment compared to diagnostic tests could contribute to the inappropriate use of antimicrobials.
- It is important to invest in research and development and innovative solutions for improved and novel diagnostics, including rapid and affordable point-of-care tests to increase access to and use of diagnostics at the lower levels of the health system.
- The laboratory workforce with required competencies is limited in most low resource settings.
- In some countries significant volume of tests is performed in private laboratories, requiring the inclusion of the private sector in national strategic plans.
STAG-AMR Recommendations: The AMR Diagnostic Initiative

- Develop and implement the AMR Diagnostic Initiative with its four building blocks, in line with World Health Assembly resolution WHA76.5 “strengthening diagnostics capacity”.
- Develop and support implementation of a package of norms and standards to support the appropriate use of quality assured tests for bacterial and fungal infections.
- Gather and document global data on the capacity and cost of essential bacteriology and mycology diagnostic services; and build a strong economic case to advocate with Member States on the importance of increased investment in diagnostic infrastructure and services.
- Develop the strategic and operational framework building block of the AMR Diagnostic Initiative to provide guidance on strengthening governance; ensuring equitable access and quality and optimal utilization of laboratory results.
- Establish and sustain a Global AMR Laboratory Network, aimed at strengthening global capacity both for AMR surveillance and patient management, with EQA programmes and a standardized WHO accreditation process.
- Provide and facilitate technical assistance to Member States to assess diagnostic capacity and improve the required competencies, including leveraging stakeholders and partners.
- Work with donors, implementing partners, and Member States to prioritize funding of AMR surveillance and laboratory strengthening activities and support development of applications and grant proposals.
- Urgently support countries to address cost barriers to diagnostic services, including working with industry and partners to establish pricing and pooled procurement agreements to ensure equitable access and uninterrupted supply chains.

4.4 Topic 4: Prioritizing pathogens and products

4.4.1. WHO Bacterial Priority Pathogens List, 2023 update and implementation

Dr Hatim Sati, Technical Officer, Impact Initiatives and Research Coordination, GCP Department, AMR Division, presented the 2023 updates of the WHO Bacterial Priority Pathogens List (WHO BPPL). The presentation covered the background, rationale, and objectives of the updates. Initially developed in 2017, the list included 25 antibiotic-resistant bacterial phenotypes categorized into priority tiers. In addition, multidrug-resistant tuberculosis (MDR-TB) was added as a top priority. The list has had a significant impact influencing investments in antibacterial and anti-TB drug R&D, while also raising awareness of AMR. It has been instrumental in informing prevention and control programs, including activities related to surveillance and stewardship.

Dr Sati presented the scope of the 2023 updates, emphasizing the goal of addressing evolving challenges posed by antibiotic resistance and incorporating new evidence. The updated list aims to guide resource allocation for R&D and inform AMR program work. The update focused on utilizing burden data to identify highest-priority pathogens and acute bacterial infections with high mortality and morbidity risks, including a comprehensive assessment of drug-resistant tuberculosis. The presentation highlighted the use of the Multiple Criteria Decision Analyses (MCDA) methodology and the global participatory approach pursued in developing the updated list. Key findings, knowledge gaps, unmet needs, and implementation considerations were shared.
The two discussants, Dr Laura Barcelona and Dr Constance Schultz examined the utilization of the BPPL, sharing experiences from Argentina, and considerations for implementation, respectively. In addition, Dr Barcelona stressed the BPPL’s relevance to AMR surveillance, IPC, and stewardship in Argentina. Dr Schultz concurred and recognized the value of the WHO BPPL in guiding R&D investments and informing programs, actions, and strategies related to bacterial resistant pathogens in terms of surveillance, prevention, control, and stewardship.

STAG-AMR members recognized the valuable role of the BPPL in informing and guiding research and development of new antibiotics, and public health programs related to AMR. They highlighted how the BPPL influences efforts on vaccines, diagnostics, surveillance, infection prevention, and antimicrobial stewardship. STAG-AMR noted the increased focus in the 2023 BPPL update on pathogens commonly found in communities, particularly relevant for LMICs. They also emphasized the need to consider potentially differing global and local priorities and to explore strategies to support BPPL implementation and monitoring based on regional and local contexts and needs.

STAG-AMR Observations:

- The WHO BPPL is a valuable tool for informing both R&D and AMR public health programmatic work.
- The utility of the list extends beyond the R&D of antibiotics, influencing the development of other interventions like vaccines and diagnostics, as well as AMR programmatic activities such as surveillance, IPC measures, and antimicrobial stewardship.
- The use of the list for public health, advocacy or other objectives beyond its stated R&D aim, alongside other similar WHO tools, is often valuable but requires clear communication of what the BPPL is and is not, to mitigate risks of potential confusion.
- The emerging data on the AMR burden has improved, resulting in an increased emphasis on pathogens that commonly circulate in communities, and the relevance of these pathogens in LMICs especially, in the 2023 update.
- Priorities may vary between global and local settings, highlighting the need to consider different contexts.
STAG-AMR Recommendations: *WHO Bacterial Priority Pathogens List, 2023 update and implementation*

- Clearly communicate the objectives and scope of the BPPL, emphasizing its additional utility for AMR programmatic work.
- Utilize the list strategically to maximize its value, such as supporting the development of concrete targets and advocacy for affordable access to, and appropriate use of, new and existing antibiotic medicines, vaccines, and diagnostics.
- Provide user guidance and tools, including a methodology protocol, to facilitate adaptation to local settings. This will help mitigate the risk of misinterpretation that could impact existing R&D and/or programmatic activities (for example, GLASS).
- Continue working with funders to prioritize funding for R&D, addressing the WHO BPPL and the FPPL.
- Ensure dissemination and uptake of the list to funders and researchers, including in the Human Health Research Agenda.

4.4.2. *WHO Medically Important Antimicrobial List, Seventh Revision*

Dr Jorge Matheu, Technical Officer, Impact Initiatives and Research Coordination (IRC), GCP Department, AMR Division, presented the seventh revision of the *WHO Medically Important Antimicrobials List* (WHO MIA List), previously known as the WHO List of Critically Important Antimicrobials. The presentation covered the context and background of the List, the methodology for the seventh revision including categorization of drug classes, and the intended uses of the List.

The WHO MIA List is a risk management tool that can support risk-based decision making to minimize the impact on antimicrobial resistance in humans from the use of antimicrobials in non-human sectors. Antibacterial classes are ranked into one of three categories using the following criteria: their relative importance for human medicine, the risk of developing resistance, and the implications for human health from their use in non-human sectors. The categories are: (1) critically important antimicrobial (CIA); (2) highly important antimicrobial (HIA); and (3) important antimicrobial (IA) to human medicine. Antimicrobials classes under the CIA category are additionally assessed with two prioritization factors (PF). The class of antimicrobials that met both prioritization factors are categorized as the Highest Priority Critically Important Antimicrobials (HPCIA). To protect all classes of MIAs, WHO is assisting efforts to eliminate the use of MIAs for non-veterinary medical purposes, such as growth promotion, and in crop production and agri-food systems for non-phytosanitary purposes. WHO provides guidance through the WHO MIA to the prudent use of antimicrobials and assists with policies to limit the use across sectors of MIAs, especially HPCIAs.

The presentation included a summary of the new approaches and changes in the seventh revision, and intended uses of the List. It highlighted the role of national regulators and policymakers in ensuring the prudent and responsible use of antimicrobials in non-human sectors. The *WHO MIA List, Seventh Revision* is currently being finalized and will be published in the coming months.
**Discussion questions**

- What actions, interventions or strategies would the STAG-AMR suggest for supporting the implementation of the WHO MIA List at regional and national levels?
- How should WHO track, monitor, and evaluate the implementation and application of the WHO MIA List?

The discussants, Dr Barcelona and Dr Schultz, presented their perspectives on the List and considerations for implementation. Dr Barcelona presented activities and experiences in the different sectors in Argentina. She highlighted the importance of this list for taking action to ensure the prudent use of antimicrobials, as the country did to ban the use of colistin in food producing animals. Dr Schultz agreed and considered that the WHO MIA List is a useful instrument for countries to establish actions for the prudent use of antimicrobials in non-human sectors.

STAG-AMR members welcomed the revised WHO MIA List and highlighted its importance for prudent use of medically important antimicrobials in non-human sectors. They noted the roles and actions for non-human sectors in using and implementing this WHO tool in countries. The STAG-AMR also highlighted the critical participation of the human health sector in adapting this WHO tool and monitoring the impact of its implementation to preserve medically important antimicrobials. They stressed the need to align and harmonize tools developed by other international organizations and improve advocacy, communication, awareness, and mutual understanding of their use and application.

**STAG-AMR Observations:**

- STAG-AMR recognizes the MIA List as a valuable tool to preserve antimicrobials for both humans and animals and to demonstrate the value of the One health approach.
- Although the MIA List should be applied by non-human sectors, the role of the human sector is key in the adaptation and monitoring of the impact of its implementation.
- The current impact of the MIA List shows the challenges in different sectors to preserve antimicrobials.
- Advocacy efforts are needed to recognize the importance of antimicrobials in non-human health sectors.

**STAG-AMR Recommendations: WHO Medically Important Antimicrobial List, Seventh Revision**

- Continue making efforts on the alignment and harmonization of tools on the prudent use of antimicrobials in different sectors
- Improve advocacy and communication on the use and application of the WHO MIA list in all sectors
- Promote awareness and mutual understanding of antimicrobial resistance in both human and animal health, through awareness and education campaigns aimed at regulators, healthcare and veterinary professionals and the general public.
- Establish normative frameworks and regulations that promote collaboration between the human and animal health sectors in the management of antimicrobials.
- Consult the Quadripartite to include an indicator in TrACSS on the restriction of the highest priority critically important antimicrobials (HPCIA) as growth promoters.
5. Updates on cross-WHO areas of work

5.1 AWaRe antibiotic handbook and its roll-out

Dr Benedikt Huttner, Team Lead, Essential Medicines, WHO, presented on the history of the development and roll-out of the WHO AWaRe antibiotic handbook within the context of the WHO Essential Medicines List (EML). He described the categorization process and stressed how it is a dynamic system, now independent of the EML. He gave further detail on how the first and second choice of antibiotics for each infection were defined, including the option of no antibiotic prescription. Key messages are that while Access category poses much lower risk, the use of any antibiotic in any category raises the risk of resistance. He touched on the variation of use per category by country and the possible reasons behind the deviations. The AWaRe antibiotic handbook is available in different formats and with accompanying infographics targeted at prescribers. Further translations are being planned.

5.2 Environmental dimensions of antimicrobial resistance

Ms Kate Medlicott, Team Lead for Sanitation and Wastewater and focal point for AMR and Environment, WHO, highlighted three key areas: outcomes of the Multi-partner Trust Fund (MPTF) project on AMR and the environment, AMR aspects of WASH in health-care facilities, and inception of new guidance on pharmaceutical waste in collaboration with UNEP. She described the aims, outputs, and impact of the MPTF project; the respective roles of the Quadripartite organizations; and the ongoing challenges. She presented the new global report on WASH in health-care facilities developed by WHO and UNICEF, and highlighted the gaps revealed by the report as well as the practical steps towards progress. She summarized the key insights from the report, the actions and resources needed – including that on average, it will cost USD $0.60 per person per year in LICs to provide universal access to WASH in health care facilities9 – and the way forward. Two new guidance documents are being developed on pharmaceutical waste. Firstly, on effluent from antimicrobial manufacturing and, secondly, on the safe disposal of unused medicines, which will update old guidance from emergency settings to include AMR and embrace the wider health sector settings.

5.3 AMR and vaccines

Dr Mateusz Hasso-Agopsowicz, Technical Officer, Vaccine Product and Delivery Research, Department of Immunization, Vaccines and Biologicals, WHO, presented on the role of vaccines in reducing AMR. He described the overall goals of the programme, convincing key stakeholders that vaccines play a key role in reducing AMR. The programme has three workstreams within an overall action framework to leverage vaccines against AMR and antimicrobial use: identification of vaccines in pre-clinical and clinical development against priority pathogens, and of pathogens against which no vaccine exists; defining the role of vaccines in averting antibiotic use and thus preventing AMR using specific criteria; and generating data on health and economic burden and loss of productivity due to AMR which could be averted by vaccines.

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5.4 Health systems for health security

Dr Nirmal Kandel, Unit Head, Evidence and Analytics for Health Security Unit, Health Security Preparedness, WHO, presented on breaking the “panic and forget” cycle as part of strengthening health systems for health security. He spoke of the experience of COVID-19 and how key a pre-existing, functioning health system proved for health security. The Health Systems for Health Security Framework was published in 2021 and describes the pre-requisite capacities and components of the health system as well as the involvement of other sectors. The Framework contains benchmarks for International Health Regulations (IHR) capacities – which include AMR – and associated training and orientation, and a review of the national health strategic plan and case studies. He described the outcomes at community, intermediate, national, and supranational levels.

5.5 Global strategy for infection prevention and control

Dr Benedetta Allegranzi, Technical Lead, Infection Prevention and Control (IPC) Hub and Task Force, WHO, presented the key elements of the global strategy that was adopted at the World Health Assembly in May 2023, and how this will be translated into the action plan and monitoring framework for IPC by 2024. She outlined the global strategy, the overarching vision and the key objectives, and the process going forward. She described the eight key strategic directions that embrace political commitment, programmes, integration and coordination, professionalism, data, advocacy and communications, research and development, and collaboration with stakeholders. A global action plan is now being developed to take forward these strategic directions with global and national indicators and targets, with an accompanying monitoring framework. Discussions are ongoing on how existing targets can be adopted and which new indicators and targets would be needed. She concluded by asking the STAG-AMR to reflect on the practical actions needed to integrate IPC and AMR programmes, the indicators that would be most suited for the AMR agenda and the targets that would be most relevant.

5.6 STAG-AMR comments and questions

STAG-AMR members welcomed the opportunity to engage with WHO colleagues from the different technical units across WHO, and expressed strong interest in how AMR was being integrated into other related fields and disciplines. They welcomed the simplicity of the AWaRe book for practitioners and encouraged advocacy efforts to increase the uptake of vaccines. They considered existing process and outcome indicators and targets for AMR, which could prove relevant for IPC going forward. They raised the specific issue of safe disposal of waste and medicines, and how this can help prevent AMR, and broader considerations of how AMR is positioned in efforts to strengthen health security, including associated planning and financing. The Chair encouraged the Secretariat to consider further opportunities for the STAG-AMR to engage with these and other technical units relevant to AMR, and for working with these units to disseminate their work more widely with AMR stakeholders. ADG-AMR noted that collaborative work on AMR is also taking place with other technical teams including migrant and refugee health, maternal health, sexually transmitted infections, substandard and falsified medicines, among others.
6. STAG-AMR conclusions and next steps

In addition to agreement of the STAG-AMR observations and recommendations for each substantive discussion topic, the Chair noted several additional recommendations that had emerged during the meeting. STAG-AMR members agreed to these.

**Additional STAG-AMR Recommendations**

- AMR should be included and emphasized in the Pandemic Accord. The STAG-AMR will write specifically to the WHO Director-General and to the Inter-governmental Negotiation Body to recommend this.

- The Secretariat should organize a dedicated STAG-AMR session on target-setting as part of early preparations for the UNGA high-level meeting on AMR.

- The Secretariat should consider an interim STAG-AMR virtual meeting focused on AMR financing, and/or include this as a focus of the next in-person STAG-AMR meeting.

The Assistant Director-General of the AMR Division noted several additional follow-up actions which the WHO Secretariat would take forward following the meeting.

**Follow-up actions for the Secretariat to take forward**

- Organize a virtual STAG-AMR meeting within 6 months, to include an update on the outcomes of the three UNGA health high-level meetings in September 2023.

- Identify specific opportunities for the STAG-AMR members to individually and collectively assist WHO in between formal STAG-AMR meetings; for example, by supporting identification and training of experts for the planned AMR Technical Assistance Mechanism (AMR TEAM).

- Engage the STAG-AMR earlier in preparations for future meetings, for example by organizing a virtual meeting one month in advance of in-person meetings, to review the agenda and key directions.

- Identify and communicate specific opportunities for STAG-AMR members to advocate for the broader AMR public health agenda, including to help communicate WHO’s role and priority activities.

In bringing the meeting to its close, both the STAG-AMR Chair and the Assistant Director-General thanked all the STAG-AMR members and other meeting participants for their contributions, and the WHO Secretariat team for organizing the meeting.
Annex 1: Meeting Agenda

Meeting of the strategic and technical advisory group for antimicrobial resistance (STAG-AMR), 13-15 June 2023
Venue: Salle T, B building, WHO headquarters, Geneva, CH

Agenda day 1. 13 June 2023

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Lead</th>
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<tbody>
<tr>
<td>8.00-8.45</td>
<td>Registration at the main building</td>
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<tr>
<td>8.30-8.55</td>
<td>Coffee in front of Salle T</td>
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<tr>
<td>9.00</td>
<td>Closed session: STAG administrative matters (30 min)</td>
<td>Hanan Balkhy, ADG, AMR Division</td>
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<td>9.30</td>
<td>Opening remarks:</td>
<td>Hanan Balkhy, ADG, AMR Division</td>
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<td>Opening remarks:</td>
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<td>Hanan Balkhy, ADG, AMR Division</td>
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<td>Sabiha Essack, Chair, STAG-AMR</td>
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<td>Meeting proceedings including declarations of interest</td>
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<tr>
<td>10.00</td>
<td>Updates and Progress on STAG-AMR recommendations</td>
<td>Sabiha Essack, Chair, STAG-AMR</td>
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<td></td>
<td>Kitty van Weezenbeek, Director, Department Surveillance,</td>
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<tr>
<td></td>
<td>Prevention and Control (20 min)</td>
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<td>Haile Getahun, Director, Department Global Coordination</td>
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<td></td>
<td>and Partnership (20 min)</td>
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<td>Q&amp;A (20 min)</td>
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<td>11.00</td>
<td>Coffee break (30 min)</td>
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<tr>
<td>11.30</td>
<td>Updates from Regions and Countries (1):</td>
<td>Lead: Ali Yahaya Ahmed (AFRO), Ahmad Tareq, Laxmikant Chavan (25 min)</td>
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<td></td>
<td>WPRO – Takeshi Nishijima (WPRO), Asaeli Raikabakaba, Juan Paolo Tonolete (25 min)</td>
<td>Lead: Takeshi Nishijima (WPRO), Asaeli Raikabakaba, Juan Paolo Tonolete (25 min)</td>
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<tr>
<td></td>
<td>Discussion (25 min)</td>
<td>Lead:</td>
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<tr>
<td>12.45</td>
<td>Lunch (75 min)</td>
<td>Lead:</td>
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**Session C. Topic 1. Evidence-based commitments on the Road to UNGA 2024**

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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>14.00</td>
<td>Session introduction – Haile Getahun, WHO (5 min)</td>
<td>Sabiha Essack, Chair, STAG-AMR</td>
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<tr>
<td></td>
<td>One Health updates to the Global Action Plan on AMR – Kefas Samson &amp; Farai Manwa, WHO (15 min)</td>
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<td>Building the AMR economic and investment case across sectors – Jean-Pierre Nyemazi, WHO (15 min)</td>
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<td></td>
<td>Presentations from STAG-AMR members:</td>
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<tr>
<td></td>
<td>Discussant 1 – Vanessa Carter, South Africa (10 min)</td>
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<td>Discussant 2 – Mukesh Kapila, United Kingdom (10 min)</td>
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<td>Discussion (50 min)</td>
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<td>15.45</td>
<td>Coffee break (30 min)</td>
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**Session D. Updates from the Secretariat (continued).**

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<tbody>
<tr>
<td>16.15</td>
<td>Updates from Regions and Countries (2):</td>
<td>Sabiha Essack, Chair, STAG-AMR</td>
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<tr>
<td></td>
<td>EURO – Danilo Lo Fo Wong (EURO), Saltanat Moldoisaeva, Gayane Ghukasyan (25 min)</td>
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<td>SEARO – Benyamin Sihombing (SEARO), Anuj Sharma, Mukta Sharma (25 min)</td>
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<td></td>
<td>Discussion (25 min)</td>
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<tr>
<td>17.30</td>
<td>Day 1 meeting wrap-up</td>
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<tr>
<td>17.30</td>
<td>Group photo followed by Reception at the WHO cafeteria-restaurant (B building)</td>
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*Note: Topic leads and discussants to prepare draft observations and recommendations for Topic 1 immediately after Day 1 close (either in Salle T or B building cafeteria).*
Agenda day 2. 14 June 2023

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<thead>
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<th>Time</th>
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<tbody>
<tr>
<td>9.00</td>
<td>Opening and proceedings of the day by Chair</td>
<td>Sabiha Essack, Chair, STAG-AMR</td>
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<tr>
<td>9.05</td>
<td>The People-Centred Framework for AMR and priority AMR intervention package – Anand Balachandran &amp; Sarah Paulin-Deschenaux, WHO (25 min)</td>
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<td></td>
<td>Presentations from STAG-AMR members:</td>
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<tr>
<td></td>
<td>Discussant 1 – Sujith Chandy, India (10 min)</td>
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<td>Discussant 2 – Kirsty Buising, Australia (10 min)</td>
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<td></td>
<td>Discussion (40 min)</td>
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<td>10.30</td>
<td>Coffee break (30 min)</td>
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<tr>
<td>11.00</td>
<td>The AMR Diagnostic Initiative – Silvia Bertagnolio, WHO (30 min)</td>
<td>Sabiha Essack, Chair, STAG-AMR</td>
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<td>Presentations from AMR STAG members</td>
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<td></td>
<td>Discussant 1 – Dawn Sievert, United States of America (10 min)</td>
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<td></td>
<td>Discussant 2 – Hanene Tiouri Beniassa, Tunisia (10 min)</td>
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<td></td>
<td>Discussion (40 min)</td>
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<tr>
<td>12.30</td>
<td>Lunch (90 min)</td>
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<tr>
<td>14.00</td>
<td>Updates from Regions and Countries (3)</td>
<td>Sabiha Essack, Chair, STAG-AMR</td>
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<td></td>
<td>EMRO – Liz Tayler (plus Engy Hamed, Bassim Zayed, Lora Alsawalha, Yara Khalaf) (25 min)</td>
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<td>AMRO – Pilar Ramon-Pardo (plus Daniel Reyes Gutierrez) (25 min)</td>
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<td>Discussion (25 min)</td>
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<tr>
<td>15.15</td>
<td>Coffee Break (30 min)</td>
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### Session H. Topic 4: Prioritizing pathogens and products

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<th>Time</th>
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<tbody>
<tr>
<td>15.45</td>
<td>Session introduction – Alexandra Cameron, WHO (5 min)</td>
<td>Sabiha Essack, Chair, STAG-AMR</td>
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<td></td>
<td>Bacterial Priority Pathogens List, 2023 Update – Hatim Sati, WHO</td>
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<td>WHO Medically Important Antimicrobials List, Seventh Revision –</td>
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<td></td>
<td>Jorge Matheu Alvarez, WHO (20 min)</td>
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<td>Presentations from STAG-AMR members:</td>
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<td></td>
<td>Discussant 1 – Laura Barcelona, Argentina (10 min)</td>
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<td>Discussant 2 – Constance Schultsz, Netherlands (Kingdom of the)</td>
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<td>Discussion (45 min)</td>
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**Day 2 meeting wrap-up**

*Note: Topic leads and discussants to prepare draft observations and recommendations for Topics 2, 3 and 4 immediately after Day 2 close (in Salle T or B building cafeteria).*

### Agenda day 3. 13 June 2023

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<thead>
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<tr>
<td>9.00</td>
<td>Opening and proceedings of the day by Chair</td>
<td>Sabiha Essack, Chair, STAG-AMR</td>
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### Annex 1: Meeting Agenda

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Lead</th>
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<tbody>
<tr>
<td>9.05</td>
<td><strong>Updates on cross-WHO work:</strong></td>
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<tr>
<td></td>
<td>(i) AWaRe antibiotic handbook and its roll-out – Benedikt Huttner,</td>
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<td></td>
<td>WHO (10 min)</td>
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<td></td>
<td>(ii) Global Strategy for Infection Prevention and Control –</td>
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<td></td>
<td>Benedetta Allegranzi, WHO (10 min)</td>
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<td>(iii) WaSH in health facilities – Kate Medlicott, WHO (10 min)</td>
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<td>(iv) AMR and vaccines – Mateusz Hasso-Agopsowicz, WHO (10 min)</td>
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<td>(v) Health Systems for Health Security – Nirmal Kandel, WHO (10 min)</td>
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<td></td>
<td>Discussion (25 min)</td>
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<tr>
<td>10.20</td>
<td><strong>Coffee break (15 min)</strong></td>
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#### Session J. Discussion and agreement of STAG-AMR observations and recommendations.

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<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>10.35</td>
<td><strong>Topic 1</strong></td>
<td>Sabiha Essack, Chair, STAG-AMR</td>
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<td>i. Kefas Samson, WHO (5 min)</td>
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<td>Agreement on observations &amp; recommendations (15 min)</td>
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<td>ii. Jean-Pierre Nyemazi, WHO (5 min)</td>
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<td>Agreement on observations &amp; recommendations (15 min)</td>
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<td></td>
<td>Anand Balachandran, WHO (5 min)</td>
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<td>Agreement on observations &amp; recommendations (20 min)</td>
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<td><strong>Topic 3</strong></td>
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<td>Silvia Bertagnolio, WHO (5 min)</td>
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<td><strong>Topic 4</strong></td>
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<td>i. Hatim Sati, WHO (5 min)</td>
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<td>Agreement on observations &amp; recommendations (15 min)</td>
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<td>ii. Jorge Matheu, WHO (5 min)</td>
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<td>Concluding STAG-AMR observations (10 min)</td>
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#### Session K. Final STAG-AMR Recommendations and Meeting closure

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<td>12.55</td>
<td><strong>Final STAG-AMR Recommendations –</strong></td>
<td>Hanan Balkhy, ADG, AMR Division</td>
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<td>Sabiha Essack, Chair, STAG-AMR (10 min)</td>
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<td>Closing remarks – Hanan Balkhy, WHO (10 min)</td>
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<td>13.15</td>
<td><strong>Closure of meeting</strong></td>
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Annex 2: List of participants

STAG members + observers verified their declarations of interest were current and updated.

STAG-AMR Members

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Ghada Zoubiane, ICARS
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Dr Laxmikant Chavan, Nigeria Country Office
Ms Gayane Ghukasyan, Armenia Country Office
Dr Engy Hamed, Sudan Country Office
Dr Yara Khalaf, Egypt Country Office
Dr Danilo Lo Fo Wong, Regional Office for Europe
Mrs Saltanat Moldoisaeva, Kyrgyzstan Country Office
Dr Takeshi Nishijima, Regional Office for the Western Pacific
Mr Asaeli Raikabakaba, Fiji Country Office
Dr Pilar Ramon-Pardo, Regional Office for the Americas
Dr Daniel Reyes Gutierrez, El Salvador Country Office
Dr Anuj Sharma, India Country Office
Dr Mukta Sharma, Indonesia Country Office
Dr Benyamin Sihombing, Regional Office for South-East Asia
Ms Jiani Sun, Regional Office for the Western Pacific
Dr Ahmad Tareq, Ethiopia Country Office
Dr Liz Tayler, Regional Office for the Eastern Mediterranean
Mr Juan Paolo Tonolete, Philippines Country Office
Dr Bassim Zayed, Jordan Country Office

WHO headquarters

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