Webinar Report

Asian Strategies to Tackle AMR Across Human, Animal, and Environmental Health

Date: 19 November 2025
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Event Series: World Antimicrobial Awareness Week (WAAW) 2025
Organizer: The AMR Knowledge Hub and Community of Practice, The Global Health Network
Language: English
Objective: To showcase regional strategies for addressing antimicrobial resistance through the One Health approach, emphasizing the interconnectedness of human, animal, and environmental health systems

Event Leadership

Chair and Opening Remarks
Godwin Pius Ohemu, Graduate Assistant, AMR Knowledge Hub and Community of Practice, The Global Health Network, University of Oxford

Closing Remarks
Dr. Hamsadvani Kuganantham, Consultant, The Global Health Network, University of Oxford

Scribe
Nana Osei Bonsu, AfOx Ubuntu Fellow, The Global Health Network

Expert Panel

- Dr. Anuj Sharma, Technical Focal Point for AMR and IPC, WHO India
- Prof. Geetanjali Kapoor, AMR Consultant, India and Visiting Academic, University of Oxford
- Dr. Tine Rikke Jorgensen, Strategic Adviser, The Globe Institute, University of Copenhagen; Former WHO AMR Programme Coordinator

Session Overview

This webinar brought together leading experts from policy, clinical practice, and equity perspectives to examine antimicrobial resistance responses across Asia. The session highlighted innovative approaches to AMR containment through decentralized governance, infection prevention strategies, and gender-responsive policy frameworks.

Technical Note: The webinar was recorded for sharing on The Global Health Network platform. To maximize focus and minimize distractions, participant microphones and

cameras were disabled except for active speakers. Participants engaged through chat for introductions and technical support, and utilized the Q&A feature for questions.

Participation and Engagement

The webinar demonstrated strong regional and global interest in AMR and the One Health agenda, with attendance from multiple Asian countries.

Key Presentations

1. AMR Commitments and Initiatives at the Sub-national Level in India

Presenter: Dr. Anuj Sharma, Technical Focal Point for AMR and IPC, WHO India

Federal Governance and Decentralized AMR Response

Dr. Sharma opened with an examination of India's federal governance structure and its implications for AMR containment. Given India's constitutional framework, state governments hold primary responsibility for critical AMR-related sectors including human health, animal health, fisheries, agriculture, water management, and sanitation infrastructure. This decentralized model positions state governments as the principal implementers of containment strategies, while national frameworks provide essential coordination and strategic alignment.

India's National Action Plan is structured around six strategic priorities that mirror the Global Action Plan on AMR, with enhanced emphasis on governance mechanisms, cross-sectoral coordination, and collaborative implementation approaches. This framework recognizes that effective AMR response requires synchronized action across multiple jurisdictions and sectors.

State Action Plan Development and Implementation

Dr. Sharma provided a comprehensive overview of state-level AMR initiatives across India. Kerala emerged as a pioneering state, becoming the first to officially adopt a State Action Plan. Subsequently, Madhya Pradesh, Delhi, Andhra Pradesh, Sikkim, Gujarat, Rajasthan, and Punjab have developed their own action plans, with several additional states making substantial progress in plan formulation.

Kerala: A Best-Practice Model

Kerala's approach was highlighted as exemplary, characterized by strong political leadership extending from the Chief Minister through the Health Secretary. The state has established robust monitoring mechanisms including quarterly reviews and annual evaluations that ensure accountability and continuous improvement. The Kochi Declaration represents a significant milestone, strengthening One Health commitments across diverse sectors within the state and creating a formal framework for intersectoral collaboration.

Surveillance Networks and National System Integration

A substantial portion of Dr. Sharma's presentation focused on AMR surveillance infrastructure. He described the coordinating role of the National Centre for Disease Control (NCDC) in managing both the National Antimicrobial Resistance Surveillance Network and the National Antimicrobial Consumption Network. These systems provide critical data for understanding resistance patterns and antimicrobial usage trends.

Through strategic partnerships with state governments, surveillance networks have been established in Maharashtra, Kerala, Delhi, Gujarat, Rajasthan, and Puducherry. Kerala and Gujarat were specifically highlighted for advancing their surveillance systems beyond pilot projects into formalized, sustainable programmes integrated within state health infrastructure.

Gujarat's Innovation in Genomic Surveillance

Gujarat has demonstrated leadership by integrating genomic surveillance within its One Health framework, a state-led innovation that enhances the capacity to track resistance mechanisms at the molecular level and understand transmission dynamics across human, animal, and environmental interfaces.

Policy Leadership and Multi-stakeholder Engagement

Dr. Sharma emphasized that political leadership represents a critical success factor for AMR programmes. He highlighted governance innovations such as the Bhopal Charter in Madhya Pradesh, which provides a formal framework for AMR action, and Kerala's designation of over 15 AMR focal points spanning various technical and administrative sectors, ensuring coordinated implementation across government departments.

While AMR governance mechanisms exist across all Indian states, systematic monitoring and evaluation remain limited outside Kerala. This highlights the importance of institutionalizing accountability structures to ensure sustained programme effectiveness.

National Coordination Architecture

National-level coordination involves extensive stakeholder engagement across multiple government ministries, professional councils, academic institutions, civil society organizations, and international agencies. The Food and Agriculture Organization (FAO) and the United Nations Environment Programme (UNEP) work collaboratively through India's Quadripartite Collaboration framework, ensuring that AMR responses integrate perspectives from human health, animal health, agriculture, and environmental sectors.

Key Takeaways

- State governments serve as primary implementation drivers for AMR strategies in India's federal system

- Surveillance networks are transitioning from pilot projects to institutionalized programmes with sustainable funding
- Political leadership at the highest levels significantly impacts programme effectiveness and resource allocation
- Kerala provides a replicable model for intersectoral governance and systematic monitoring
- Genomic surveillance represents an emerging frontier in AMR monitoring and response

2. Setting Up Infection Prevention and Control (IPC) Programmes in Low-Resource Settings

Presenter: Prof. Geetanjali Kapoor, AMR Consultant, India and Visiting Academic, University of Oxford

IPC as a Foundational AMR Mitigation Strategy

Prof. Kapoor introduced infection prevention and control as a central pillar of antimicrobial resistance mitigation efforts. She contextualized the importance of IPC by explaining how healthcare-associated infections (HAIs) serve as major drivers of resistant organism transmission, particularly within hospital environments where vulnerable patients, invasive procedures, and antimicrobial use converge.

Historical Evidence Base

The presentation referenced the landmark SENIC (Study on the Efficacy of Nosocomial Infection Control) conducted in the 1970s, which provided foundational evidence for structured infection control programmes. This research demonstrated that the presence of trained infection control personnel, implementation of active surveillance systems, and establishment of clearly defined hospital procedures consistently reduce infection rates across diverse healthcare settings.

Prof. Kapoor positioned IPC not merely as a clinical responsibility but as a comprehensive system-wide intervention that directly influences antimicrobial prescribing patterns and resistance development. This framing emphasized IPC's relevance across both resource-rich and resource-limited settings, presenting it as fundamental to health system strengthening.

Standard and Transmission-Based Precautions

The presentation delineated two complementary categories of infection prevention measures:

Standard Precautions

These universal measures apply to all patients regardless of infection status and include hand hygiene protocols, appropriate use of personal protective equipment (PPE), respiratory

hygiene and cough etiquette, safe injection practices, and environmental cleaning procedures. Standard precautions form the baseline for infection prevention in all healthcare encounters.

Transmission-Based Precautions

These additional measures target specific transmission routes and are implemented based on infection type:

- **Airborne precautions:** Applied for infections like tuberculosis and measles, requiring specialized ventilation systems and respiratory protection
- **Droplet precautions:** Used for infections such as influenza, requiring surgical masks and spatial separation
- **Contact precautions:** Implemented for infections transmitted through direct contact or contaminated surfaces

Prof. Kapoor specified ventilation standards, recommending six air changes per hour for older healthcare facilities and twelve air changes per hour for newly constructed facilities to adequately dilute airborne contaminants.

Infrastructure, Engineering Controls, and Environmental Safety

IPC was framed as fundamentally multidisciplinary, requiring coordinated involvement from hospital administration, engineering departments, facility management, and clinical teams. Prof. Kapoor outlined critical infrastructure components:

- **Ventilation systems:** Properly designed and maintained to reduce airborne transmission risk
- **Environmental decontamination protocols:** Regular cleaning and disinfection of healthcare environments
- **Waste management systems:** Safe segregation, handling, and disposal of healthcare waste
- **Sterilization and disinfection systems:** Central sterile supply departments and point-of-use processing
- **Engineering controls:** Negative pressure rooms, airflow management, and physical barriers

She further emphasized the importance of Water, Sanitation, and Hygiene (WASH) infrastructure as foundational to infection prevention, along with food safety systems to prevent foodborne transmission of resistant organisms within healthcare facilities.

Surveillance and Impact Measurement

Prof. Kapoor explained that rigorous impact measurement transforms IPC from a checklist activity into an evidence-driven programme. Comprehensive surveillance systems monitor:

- Healthcare-associated infection rates across different facility units
- Antimicrobial resistance patterns among HAI pathogens
- Compliance with IPC protocols through structured audits
- Healthcare worker knowledge, attitudes, and practices

She described surveillance implementation within high-risk hospital units including intensive care units (ICUs), neonatal units, surgical wards, and transplant units, where continuous data collection enables targeted preventative strategies and early outbreak detection.

Emerging Research Frontiers

Prof. Kapoor identified several advancing research areas that will shape future IPC practice, including environmental sampling to understand reservoir dynamics, investigation of airborne transmission mechanisms beyond traditional respiratory pathogens, and examination of particulate matter's role in facilitating infection spread within healthcare settings.

Key Takeaways

- IPC programmes demonstrably reduce healthcare-associated infections and slow AMR development
- Hand hygiene remains the single most effective and cost-efficient intervention across all settings
- Sustainable IPC systems require both adequate infrastructure and committed leadership with dedicated budgets
- Systematic surveillance converts IPC from a compliance activity into an evidence-based, continuously improving programme
- Multidisciplinary collaboration across clinical, administrative, and engineering teams is essential for effective implementation

3. Gender Inequalities in National AMR Action Plans

Presenter: Dr. Tine Rikke Jorgensen, Strategic Adviser, University of Copenhagen and Former WHO AMR Programme Coordinator

Gender as a Structural Determinant of AMR

Dr. Jorgensen opened with conceptual clarification between sex and gender, distinguishing biological differences (sex) from socially constructed roles, behaviors, power dynamics, and resource access patterns (gender). She explained that biological variations influence infection susceptibility and pathogen exposure, while social roles profoundly shape healthcare access, care-seeking behaviors, treatment adherence, and antibiotic use patterns.

This framing positioned AMR as inherently a gendered issue within health systems, requiring explicit attention to how gender dynamics influence both AMR drivers and intervention effectiveness.

Critical Gaps in Current National Action Plans

Dr. Jorgensen presented findings from a comprehensive WHO review of national AMR action plans. Of 145 national action plans examined in 2023, 125 made no reference whatsoever to sex or gender considerations. This systemic omission was characterized as a fundamental structural weakness in current AMR strategies, creating significant blind spots in surveillance design, research priorities, policy formulation, and governance structures.

She elaborated that gender disparities manifest across multiple AMR domains, including antimicrobial prescribing patterns, access to diagnostics and treatment, health outcomes (particularly in maternal health contexts), occupational exposure risks, and participation in decision-making processes. The absence of gender analysis in policy development means these disparities remain unaddressed and often invisible to policymakers.

WHO Guidance Framework for Gender-Responsive AMR Action Plans

Dr. Jorgensen introduced the WHO's 2024 guidance document on integrating gender considerations into AMR policy and programming. This comprehensive framework is structured around five interconnected pillars:

1. Governance and Leadership
Ensuring gender-balanced representation in AMR decision-making bodies and policy development processes

2. Education and Awareness
Designing gender-sensitive communication strategies that address different patterns of information access and health literacy

3. Surveillance and Research
Implementing systematic collection and analysis of sex-disaggregated data across all AMR surveillance activities

4. Healthcare Access and Quality
Addressing gender-based barriers to accessing diagnostics, treatment, and preventive services

5. Diagnostics and Stewardship
Developing context-appropriate diagnostic approaches that account for gender-specific disease presentations and care-seeking patterns

Theory of Change

The framework articulates a clear theory of change connecting gender-disaggregated data collection, inclusive governance structures, targeted communication strategies, equitable healthcare access, and regulatory reform as interconnected pathways to improved health outcomes and more effective AMR containment.

Priority Recommendations for Action

Dr. Jorgensen emphasized three primary recommendations for immediate implementation:

1. Mandatory Sex-Disaggregated Data Collection
Requiring systematic collection of age- and sex-disaggregated data across all AMR surveillance systems, research studies, and programme monitoring activities. This represents the minimum standard for evidence-informed policy.

2. Review and Revision of Existing Action Plans
Conducting systematic gender analysis of current national AMR action plans and revising them to explicitly address gender dimensions in all strategic priorities and implementation approaches.

3. Expansion of Gender-AMR Research
Investing in research that examines how gender influences AMR exposure, transmission, treatment outcomes, and intervention effectiveness across diverse contexts.

Dr. Jorgensen stressed that the absence of sex-disaggregated data fundamentally weakens policy design by obscuring important patterns, reduces intervention efficiency by preventing targeted approaches, and perpetuates health inequities by rendering gender-based disparities invisible to decision-makers.

Key Takeaways

- Gender differences significantly influence AMR exposure pathways, infection risks, and treatment outcomes

- Current national AMR strategies inadequately reflect gender dimensions, with 86% making no reference to sex or gender
- Sex-disaggregated data collection represents the minimum requirement for effective, evidence-informed policy development
- Gender inclusion in programme design improves targeting, enhances effectiveness, and promotes health equity
- Gender-responsive AMR strategies require action across governance, surveillance, education, healthcare access, and research domains

Interactive Question and Answer Session

The webinar concluded with an extensive Q&A session addressing practical implementation challenges and research priorities.

Closing Remarks

Dr. Hamsadvani Kuganantham delivered the closing address, framing AMR as a present global crisis rather than a future risk, with particularly severe impacts in Asia and Africa. She referenced the recent United Nations General Assembly resolution calling for coordinated international action on AMR, highlighting the urgency of collective response.

Dr. Kuganantham noted critical inequities in antibiotic access and use patterns. While India represents the world's largest consumer of antibiotics in absolute terms, per capita consumption remains relatively low, a pattern reflecting profound inequalities in access across socioeconomic groups, geographic regions, and healthcare sectors. This creates the dual challenge of antibiotic overuse in some populations contributing to resistance, while undertreatment in other populations leads to preventable morbidity and mortality.

She emphasized that children are among the most severely affected populations by both inadequate access to antibiotics and by antimicrobial resistance, reinforcing the importance of age- and sex-disaggregated data to understand differential impacts and design appropriate interventions.

Dr. Kuganantham concluded by calling for enhanced collaboration across research institutions, policy development processes, advocacy initiatives, and healthcare delivery systems under the comprehensive One Health framework. She invoked the WHO's 2025 World AMR Awareness Week campaign theme: **"Act now, protect our present, secure our future"**, emphasizing that AMR demands immediate action rather than delayed response.

Key Takeaways

Governance and Implementation

- Decentralized governance models enable context-appropriate AMR responses in federal systems
- Political leadership and dedicated governance structures are critical success factors
- Kerala's model demonstrates the effectiveness of systematic monitoring, intersectoral coordination, and public-private partnerships

Infection Prevention and Control

- IPC represents a high-impact, cost-effective intervention for reducing AMR
- Hand hygiene remains the single most effective measure across all resource settings
- Sustainable IPC requires committed leadership, adequate infrastructure, and systematic surveillance

Gender and Equity

- 86% of national AMR action plans fail to address sex or gender considerations
- Sex-disaggregated data is essential for evidence-informed policy and targeted interventions
- Gender dynamics influence antibiotic use patterns, healthcare access, and treatment outcomes

Research Priorities

- Economic burden studies are critical for securing political commitment
- Alternative therapeutics including bacteriophages require increased research investment
- Electronic health information systems are essential for effective surveillance and data-driven decision-making

Regional Context

- Asia faces dual challenges of antibiotic overuse in some populations and inadequate access in others
- Children are disproportionately affected by both antimicrobial resistance and access barriers

- Coordinated action across the One Health framework is essential for effective AMR response