World Health Organization India

sameeksha

ANTIMICROBIAL RESISTANCE (AMR) | Volume 42 | 19 February 2026

AMR *Sameeksha**

Highlights

- WHO Academy's online trainings on antimicrobial stewardship programmes and policy
- Tracking AMR in typhoidal *Salmonella* from Delhi
- Integrated antimicrobial stewardship framework for tertiary care hospitals in developing countries
- Quantum-dot-based enzyme biosensor for rapid screening of antibiotic susceptibility in urine samples
- WHO's global call to action to address AMR
- Mainstreaming AMR into primary health care
- Quotable quote on AMR by Dr Catharina Boehme, Officer-in-Charge, WHO South-East Asia

1) Awareness and understanding

Antimicrobial stewardship programmes in health-care facilities in low- and middle-income countries

- Online training on AMS programmes comprises of 7 learning modules – each focusing on a specific aspect of the WHO practical toolkit for AMS.
- Target audience includes antimicrobial stewardship team/committee members, health workers, health-care facility managers, technical experts/consultants in antimicrobial stewardship.

WHO Academy | Self-paced online training | 3 December 2025 | Online link

ARKbase: antimicrobial resistance knowledgebase

- Authors develop a new bioinformatics knowledgebase compiling antimicrobial resistance data – including genes, pathogens, and associated metadata – to support standardized access, interpretation, and analyses of AMR.
- Provides researchers and public-health professionals with a centralized platform to explore AMR patterns and mechanisms, support surveillance, and development of diagnostic or mitigation strategies.

Nucleic Acids Research | Journal article | 6 January 2026 | Online link

Commemorating the World AMR Awareness Week 2025: key insights and lessons from the International Society for Infectious Diseases' ProMED-AMR 2024 reporting

- ProMED-AMR provides global AMR content coverage, but gaps exist in coverage (geographic and sub-populations in particular) and under reporting for individual countries.
- The global electronic AMR reporting platform over the last four years demonstrates the value of unconventional data-sources in complementing traditional, laboratory-driven and government-led surveillance systems.

International Journal of Infectious Diseases | Editorial | February 2026 | Online link

WHO policy guidance on integrated antimicrobial stewardship activities

- Provides guidance on the structures, policies and systems that should be in place in order to enable and support antimicrobial stewardship efforts in different settings.
- Target audience includes policymakers, AMR coordinating committee members, and technical experts/consultants in antimicrobial stewardship.

WHO Academy | Self-paced online training | 3 December 2025 | Online link

Barriers and facilitators to the implementation of antimicrobial stewardship (AMS) in veterinary education: a scoping review

- Aims to identify the barriers and facilitators of implementing antimicrobial stewardship in veterinary education globally.
- Findings emphasize the need for AMS education reforms, as many curricula did not include components of responsible antimicrobial usage and future efforts must involve veterinary stakeholder collaboration.

Journal of Global Antimicrobial Resistance | Review | 5 February 2026 | Online link

2) Laboratories and surveillance

Tracking antimicrobial resistance in typhoidal *Salmonella*, 2020-2024: output from an antimicrobial resistance surveillance network in New Delhi, India

- Analysis of AMR in 10,689 *Salmonella* isolates over five years from 24 laboratories in Delhi's AMR surveillance network – finds improvement in susceptibility to traditional first-line agents and low-level multidrug resistance, but resistance to fluoroquinolones continues to be high.
- Highlights the need to complement antimicrobial stewardship with public health interventions, including scaling up typhoid conjugate vaccine coverage, and strengthening WASH infrastructure.

Indian Journal of Medical Microbiology | Original research article | 6 February 2026 | Online link

Aeromonas in South Asia: genomic insights into an environmental pathogen and reservoir of antimicrobial resistance

- Genomic analysis of 1,853 *Aeromonas* isolates reveals extensive species diversity, frequent mixing of clinical and environmental lineages, and widespread carriage of AMR genes, even to last-line drugs
- Surveillance, diagnostics, and One Health strategies must include this overlooked genus (commonly misidentified as *Vibrio cholerae* in environmental isolates) for tackling diarrhoeal disease and AMR spread.

Nature Communications | Article | 31 January 2026 | Online link

Digital infrastructure for antimicrobial susceptibility testing and surveillance: a CLSI and EUCAST-based model for resource-limited settings

- Develops and tests an enhanced standards-based Laboratory Information System (LIS) integrating antimicrobial susceptibility testing (AST) data with clinical workflows in a resource-limited setting.
- This scalable, web-based digital model offers a practical roadmap for national AMR stewardship programs in low-resource contexts, reducing data fragmentation and strengthening patient care and AMR surveillance.

JMIR Formative Research | Case report | 21 January 2026 | Online link

Virulence arsenal of *Acinetobacter baumannii*: mechanisms driving persistence and resistance

- Review the wide range of virulence factors used by *Acinetobacter baumannii* – including biofilm formation, immune evasion, surface adhesion, secretion systems, and stress-response traits.
- Understanding the complex virulence toolkit helps explain *A. baumannii*'s success as a multidrug-resistant pathogen – underscoring the need for targeted strategies to disrupt persistence, prevent infection and curb AMR spread in clinical and environmental reservoirs.

Archives of Microbiology | Article | 2 February 2026 | Online link

Genetic diversity of *Pseudomonas aeruginosa* isolated from clinical samples with ISSR molecular marker in a tertiary care teaching hospital

- Analysis of 100 clinical *Pseudomonas aeruginosa* isolates from a tertiary hospital in Eastern India shows high polymorphism, wide genetic similarity, multiple non-clonal clusters, and high AMR.
- The diversity indicates strong adaptability and ongoing evolution, meaning outbreaks may arise from multiple lineages rather than single-strain spread, and recommends molecular surveillance alongside routine AST.

Scientific Reports | Article | 16 January 2026 | Online link

Whole genome sequencing reveals environmental pathogen misidentification and potential for cross-phylum antimicrobial resistance gene transfer in bovine mastitis

- Authors study 330 bovine mastitis milk samples using whole genome sequencing (WGS) and traditional microbiology.
- Finds that environmental pathogens may be overlooked or misclassified in mastitis diagnostics, underscoring the need for genomic surveillance.

BMC Veterinary Research | Article | 14 January 2026 | Online link

Expanding AMR surveillance with the WHO's AWaRe classification: a nationwide occupational cohort study in Taiwan (2004–2020)

- Uses insurance claim records to assess resistant bacterial infection risk among a broad range of occupational settings.
- The novel passive surveillance method also identified agricultural and healthcare workers having a higher risk for AMR infections, as compared with other workers.

BMJ Public Health | Original research | 12 January 2026 | Online link

Description on the prevalence of *Proteus mirabilis* through an integrated sampling framework for health, food, and environment in Northeast India and an integrative review with reference to One Health context

- Studies the prevalence and distribution of *P. mirabilis* across human health, food and environmental sources in North-East India using routine microbiology, PCR, and whole genome sequencing.
- Findings emphasize *P. mirabilis* as a widespread pathogen with food and environmental links, reinforcing the need for coordinated One Health surveillance and interventions to manage its role in disease and AMR.

Frontiers in Microbiology | Original research article | 5 January 2026 | Online link

3) Infection prevention and control

Sameeksha – Infection Prevention and Control | volume 26

- Leadership experiences of IPC professionals
- Global landscape and professionalization of infection preventionist education
- Role of infection control nurse in prevention and control of hospital acquired infection in ICU
- WHO training on healthcare associated infection surveillance
- Infection prevention and control for multidrug-resistant organisms in adult social care settings

WHO India | Publication | 9 February 2026 | Online link

4) Optimise use of antimicrobials

An integrated antimicrobial stewardship approach in tertiary care hospitals in developing countries using a multi-domain framework ('PRESCRIBES' checkpoint)

- Summarizes rationale, structure and operational value of 42 integrated antimicrobial stewardship practice statements developed by Society of Antimicrobial Stewardship Practices (SASPI) in India.
- Aims to translate national and global AMR strategies into actionable checkpoints suitable for tertiary hospitals in LMICs, and emphasizes coordinated accountability across the hospital, diagnostics, and prescribers.

International Journal of Infectious Diseases | Perspective | 10 January 2026 | Online link

Burden of typhoid fever and AMR in India (2023): a modelling study

- Researchers estimated ~4.9 million typhoid cases and ~7,850 deaths in India in 2023, with ~730,000 hospitalisations, using a decision-tree model integrating national surveillance and AMR data.
- Majority of hospitalisations (~82%) and deaths were attributable to fluoroquinolone-resistant *Salmonella Typhi*, particularly affecting children under five and concentrated in three high-burden states – highlighting the need for introducing targeted typhoid conjugate vaccine, and broader age-group coverage.

The Lancet Regional Health Southeast Asia | Article | 7 January 2026 | Online link

Hygiene measures and antimicrobial use practices in households of a rural community in South India: a cross-sectional study

- In a cross-sectional survey of 400 households in rural Kerala – 16% reported using antimicrobials in the past year – all obtained with prescriptions, mainly for fever and respiratory/urinary symptoms.
- Lower antimicrobial use as compared with other LMIC settings suggests that improving community hygiene and sanitation can reduce infection burden and inappropriate antimicrobial demand.

Frontiers in Public Health | Original research article | 9 January 2026 | Online link

A multi-sectoral institutional action to boost integrated antimicrobial stewardship to curtail antimicrobial resistance: a WAAW initiative in North India

- Outlines the institutional action plan (IAP) on AMR of AIIMS Rishikesh based on the activities during WAAW 2024 –with participation of >3,000 healthcare workers (HCW) and public.
- The IAP includes training and its assessment, incentivization of HCW, and public, and community outreach.

Cureus | Technical report | 28 January 2026 | Online link

5) Research, innovations and finance

Quantum-dot-based enzyme biosensor for rapid screening of antibiotic susceptibility in urine samples

- Biosensor developed and tested to measure bacterial metabolic activity in clinical urine samples to provide antimicrobial susceptibility results in under 3 hours.
- This rapid, culture-free method could significantly speed up appropriate antibiotic selection and improve antimicrobial stewardship in urinary tract infections.

ACS Omega | Article | 6 January 2026 | Online link

Gamma irradiation crosslinked fluorescent nanocarbon based biodegradable hydrogel for controlled release of antibiotics

- Researchers engineer a biodegradable hydrogel – which demonstrates controlled, sustained release of loaded antibiotics and inherent fluorescence, allowing potential monitoring of drug delivery.
- This smart hydrogel could support targeted antibiotic delivery with reduced dosing frequency, improve treatment efficacy, and enable real-time tracking in biomedical and infection-control applications.

PLOS One | Research article | 16 January 2026 | Online link

Emerging terbinafine-resistant *Trichophyton indotineae* between 2018 and 2023: a multinational genomic epidemiology study

- Retrospective genomic study of 90 isolates as *T. indotineae* finds ~70% were resistant to terbinafine, with high genetic similarity among isolates supporting a single evolutionary lineage with rapid transcontinental spread.
- Highlights *T. indotineae* as a globally emerging, drug-resistant dermatophyte, underscoring the need for enhanced genomic surveillance, updated antifungal susceptibility and new treatment strategies.

The Lancet Microbe | Article | 22 January 2026 | Online link

Distribution of capsule and O types in *Klebsiella pneumoniae* causing neonatal sepsis in Africa and South Asia: a meta-analysis of genome-predicted serotype prevalence to inform potential vaccine coverage

- Meta-analysis of 1,930 neonatal *Klebsiella pneumoniae* blood isolates from Africa and South Asia identifies a set of prevalent antigens that could theoretically cover ~70–73% of infections, to inform vaccine design.
- Findings support the feasibility of maternal vaccination strategies targeting common K/O antigens to prevent neonatal *K. pneumoniae* sepsis, and its morbidity and mortality, especially in low-resource settings.

PLOS Medicine | Research article | 12 January 2026 | Online link

Harnessing silica-coated silver nanoparticles for combating multidrug-resistant *Pseudomonas aeruginosa*

- Silica-coated silver nanoparticles (SiO_2@AgNPs) effectively inhibited growth of multidrug-resistant *Pseudomonas aeruginosa* isolates and lowered MICs in synergy with meropenem or ceftazidime-avibactam.
- SiO_2@AgNPs could serve as novel adjunct antimicrobial agents to enhance antibiotic efficacy against resistant *P. aeruginosa* infections – offering a promising strategy to tackle difficult-to-treat clinical pathogens.

Applied Microbiology and Biotechnology | Article | 10 January 2026 | Online link

6) Collaborations

Global call to action to address antimicrobial resistance

- Outlines WHO's strategic and operational priorities to meet commitments and key targets of the 2024 United Nations political declaration on AMR.
- Calls on WHO Member States, donors and partners – to strengthen coordinated multi-sectoral action, increase efficiency, and help to secure US$ 85 million per biennium for WHO's work on AMR.

WHO | Publication | 7 October 2025 | Online link

Mainstreaming antimicrobial resistance into primary health care: international workshop report

- The workshop discussed integrating AMR actions into primary health care (PHC) systems, focusing on preventive care, early diagnosis, appropriate antibiotic use, and strengthening PHC-oriented AMR strategies.
- Embedding AMR interventions within routine PHC services can improve stewardship, surveillance, and equitable access to care, advancing health-system resilience against resistant infections.

WHO | Meeting report | 15 February 2026 | Online link

Global policy responses to antimicrobial resistance, 2021–22: a systematic governance analysis of 161 countries and territories

- Systematic governance analysis of AMR policies across 161 countries/territories finds that most nations have national action plans with some AMR governance structures, but there is substantial variation in implementation effectiveness and capacity across regions and income levels.
- Highlights the need for more equitable, well-resourced policy implementation, improved monitoring, and international support to bridge governance gaps – especially in LMICs to strengthen global AMR response.

The Lancet Infectious Diseases | Article | January 2026 | Online link

Deconstructing antimicrobial resistance national action plans: a gender-perspective driven mixed-methods analysis

- Analysis of NAP-AMR from multiple countries through a gender lens – shows that although women use antibiotics more and face disproportionate AMR impacts, gender considerations are largely absent from policy design and implementation.
- Integrating gender-responsive approaches into AMR governance could improve equity, tailor interventions, and enhance the effectiveness of global and national strategies to combat antimicrobial resistance.

Journal of Global Antimicrobial Resistance | Article | 2 February 2026 | Online link

(Un)intended consequences: a social sciences stocktake of a decade of Global Action Plan-inspired antimicrobial governance

- Examines how the WHO Global Action Plan on AMR influenced AMR governance over the past decade, highlighting both positive outcomes and unforeseen impacts – including policy mismatches, implementation gaps, and equity issues in stewardship and surveillance globally.
- Argues that effective AMR policy needs deeper engagement with social, economic, and political contexts, ensuring that global frameworks translate into equitable, realistic national actions to curb AMR.

The Lancet Microbe | Personal view | 14 January 2026 | Online link

State of systems for drinking-water, sanitation and hygiene: global update 2025

- The GLAAS 2025 report assesses national WASH systems in 105 countries – examining policies, planning, regulation, monitoring, workforce, and financing for safe drinking water, sanitation, and hygiene services – to evaluate progress towards Sustainable Development Goal 6 targets and implementation gaps.
- Findings emphasize the need for strengthened governance, investment, and community participation to protect health, accelerate WASH coverage, and support broader public health outcomes.

WHO-UNICEF | Global report | 26 January 2026 | Online link

Sustainable strategies for hospital wastewater treatment: bioremediation, phytoremediation, and hybrid approaches for emerging pollutants

- Reviews how hospital wastewater (HWW) contains pharmaceutical residues, antibiotic resistance genes (ARGs), and pathogens that conventional treatment systems often fail to remove.
- Examines bioremediation (using microbes) and phytoremediation (using plants) alongside integrated systems (membrane bioreactors, wetlands, advanced oxidation) to degrade contaminants and reduce ARGs – to treat HWW, lessen environmental pollution, and curb AMR spread.

Frontiers in Microbiology | Review article | 23 January 2026 | Online link

Quotable quote

Antimicrobial resistance (AMR) threatens the very foundations of modern medicine, jeopardizing decades of medical progress, as common infections are becoming harder to treat...

Together, we can preserve the life-saving power of antimicrobials for current and future generations. Let us act now, and let us act together."

– Dr Catharina Boehme
Officer-in-Charge, WHO South-East Asia

Sameeksha is a Hindi word, meaning review. This compilation of open access publications and resources on AMR include a bulleted summary (with an online link) and are grouped according to the strategic priorities of India's National Action Plan on Antimicrobial Resistance. Kindly note, inclusion of publications and resources in this review/compilation does not imply an endorsement by WHO.