Applying novel solutions to existing and heightened AMR challenges

The AMR Global Health Academy Newsletter

February 2025

The **AMR Global Health Academy** serves the global health professional and antimicrobial steward in low- and middle-income countries with a free online educational curriculum designed to advance AMR knowledge and best practices. Every month, via the Newsletter, we share important updates from the AMR field, especially as it relates to AMR testing, diagnostics, and surveillance. We also present AMR problem-solving case studies and AMR champions battling real-world AMR problems.

News Story

Patient and public involvement and engagement to improve impact on antimicrobial resistance

In late January, an open access **comment** was published by five prominent authors highlighting the importance of citizen awareness of the global antimicrobial resistance health crisis. They identified several ways in which to improve public knowledge and advocacy:

- Raising awareness to promote behaviour change, including through sharing of personal storytelling
- Catalysing innovative collaborations to maximise impact, including across the cultural, creative, advocacy and entertainment sectors

- Moving beyond awareness to patient and public involvement in research, healthcare, and policymaking
- Enabling a culture where patient and public voices are valued and actively included in shaping policy and research priorities and methodologies
- Localising approaches to address this global health crisis, including online social listening strategies and working with local communities to adapt messaging

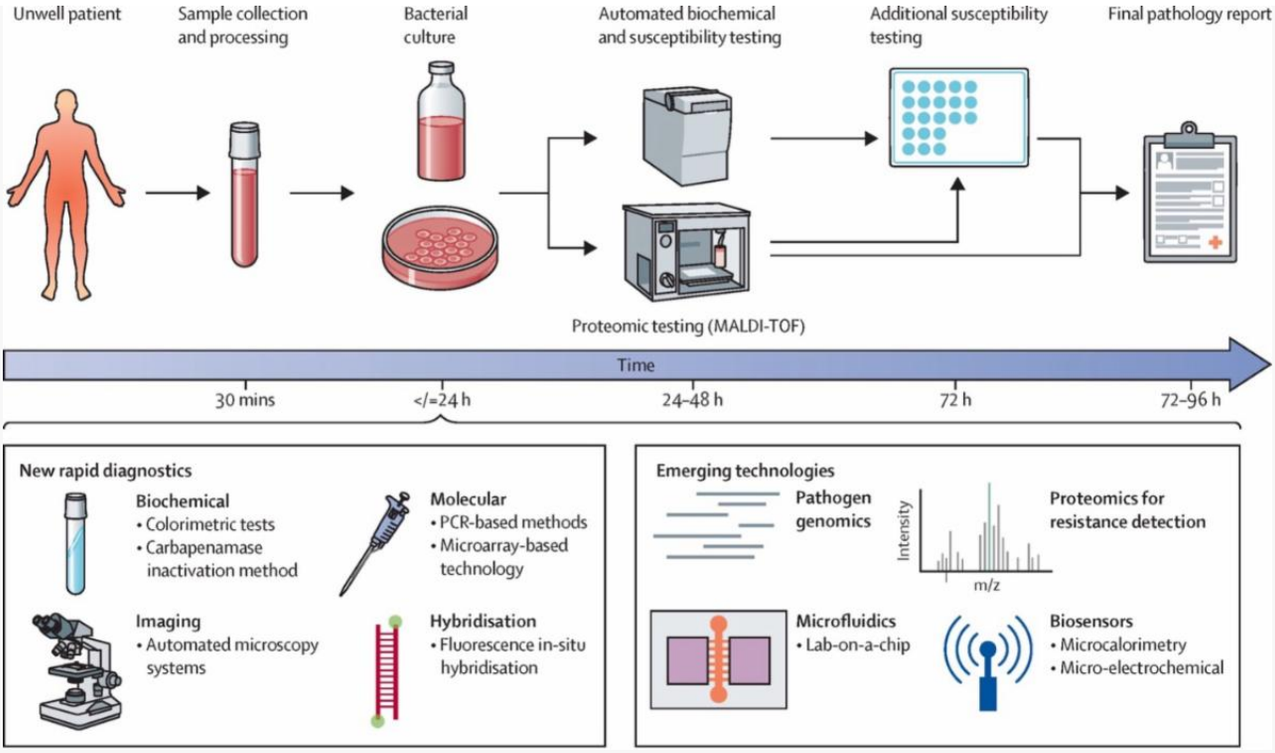
The AMR Academy will soon be launching this year's GHCPD series of AMR problem solving cases. The first case focuses on AMR at the Community-Hospital Interface - *Breaking the Cycle of Antimicrobial Resistance: The Role of Community Practices and Hospital Referrals in Recurrent Urinary Tract Infections in Rural Tanzania*. Stay tuned for our announcement.

Article Spotlight

Multidrug-resistant Gram-negative bacterial infections: new innovations to tackle significant morbidity and mortality

A recent review of ***multidrug-resistant Gram-negative bacterial infections*** highlights a group of bacteria that cause considerable morbidity and mortality. These include third-generation cephalosporin-resistant and carbapenem-resistance Enterobacterales, multidrug-resistant *Pseudomonas aeruginosa*, and carbapenem-resistant *Acinetobacter baumannii* – all priority pathogens. Fortunately, several new diagnostic innovations are now available to rapidly detect AMR. Additionally, new antibiotics have changed the treatment landscape. This review provides an exhaustive overview of the challenges and novel solutions.

We apologize highlighting an article that has not been made open access to all, especially to LMICs. It is unfortunate when journals limit dissemination of valuable information. The Lancet is collaborating with **Research4Life** to improve access to LMICs, yet, inequities to access remain and should be addressed. We hope that you might be able to access this article through a colleague or academic affiliation.



Source: Macesic et al. Multidrug-resistant Gram-negative bacterial infections. Lancet 2025.

Figure 2: **Diagnostic testing of multidrug-resistant Gram-negative bacteria:** Diagnosis of multidrug-resistant Gram-negative bacterial infections involves both species identification and antibiotic susceptibility testing. Although clinical microbiology laboratories have undergone automation of these processes and have seen the introduction of proteomic methods, such as MALDI-TOF, delays in turnaround time remain and might affect patient outcomes. New biochemical, molecular (eg, PCR), automated microscopy, and hybridisation-based rapid diagnostics now allow faster detection of antimicrobial resistance, including by testing clinical samples directly. Emerging technologies are seeking to improve both the speed of testing and provide more detailed information regarding the underlying mechanisms of antimicrobial resistance. This figure was created with BioRender. com. MALDI-TOF=matrix-assisted laser desorption/ionisation time-of-flight.

Creating AMR awareness

The AMR Global Health Academy has launched its latest AMR course – **Building Capacity for Antimicrobial Resistance (AMR) in Low- and Middle-Income Countries**. This free, online 2-week course addresses why AMR surveillance is a critical component of the AMR response and shows the learner how to contribute to stronger surveillance systems through practical critical thinking exercises. The course is available in English, French, Portuguese, and Spanish and already has >1000 enrolled learners from 90 countries.

In Case You Missed It

The Indian Council of Medical Research published a guidance document on the ***Validation of rapid diagnostics for pathogen identification and antimicrobial susceptibility testing (AST)***.

WHO published the **2025 AMR Resource Pack**. This update provides useful resources for the development and implementation of national action plans (NAPs) on AMR.

The US Presidential Advisory Council for Combating Antibiotic-Resistant Bacteria scheduled for Tuesday, January 28 and Wednesday, January 29 was cancelled. See this **link** as updates or changes are provided.

Don't Miss

The 9th AMR Conference 2025 is 25-26 February 2025 in Basel, Switzerland. Click **here** to register.

GARDP REVIVE webinar entitled "In vitro and in vivo correlations for prediction of human pharmacokinetics and dose of antimicrobials" will be held on 27 Feb 2025. Click **here** to register.

The annual meeting of the European Society for Clinical Microbiology and Infectious Diseases is 11-15 April 2025 in Vienna, Austria. See **here** for details.

ICARe (Interdisciplinary Course on Antibiotics and Resistance) will be held 11-19 October 2025 in Annecy, France. See **here** for details. Applications will open in March.

IDWeek 2025, the annual meeting of the Infectious Diseases Society of America will be held 19-22 October 2025 in Georgia, USA. See **here** for details.

The journal *Antibiotics* is planning for a special issue entitled, "Antibiotics: Utilization, Resistance, and Infection Prevention". The editors are inviting submissions for this special issue that addresses various aspects of AMR, including its mechanisms, transmission dynamics, and global impact. Manuscript submissions are due 31 October 2025. Please see **here** for more information.

To join the AMR Global Health Academy, enroll in the Global Health Continuing Professional Development (GHCPD) free online AMR courses **here**.

Our courses and educational activities are developed by expert faculty who also bring their experiences from the field to ensure information is relevant and engaging to learners. This month we would like to introduce you to two of our faculty members - **Dr. Carl Boodman and Dr. Nitin Gupta**.

Dr. Boodman has contributed to numerous GHCPD courses and educational activities, including the **AMR Problem Solving Case Studies** series. Most recently, Dr. Boodman directed the AMR ***Building Capacity for Antimicrobial Resistance (AMR) in Low- and Middle-Income Countries (LMICs)*** course (now live). He will also be co-developing a new course with Dr. Gupta to be released later this year – *Antimicrobial Life Support Course*.

Dr. Carl Boodman, MD, FRCPC, DTM&H, CTropMed® is a Canadian infectious diseases physician, a medical microbiologist and a PhD Candidate at the Institute of Tropical Medicine/ University of Antwerp (Belgium). He is a Clinical Investigator Program Candidate at the University of Manitoba (Canada) and a member of the International Diagnostics Network. His work focuses on bacterial infections in low-resource settings. He is active in the field providing technical assistance and numerous trainings to

AMR programs and participated in designing courses on AMR surveillance and healthcare-associated infections, with an emphasis on the value of micrology diagnostic tools to mitigate the global spread of AMR.

Dr. Nitin Gupta, MBBS, MD, DM, DTM&H, CTropMed, DipRCPath, AAHIVS, PGPE, FRSPH, CIC, MTM is an Associate Professor of Infectious Diseases at Kasturba Medical College, Manipal, India and Coordinator at the Centre for Tropical Febrile Illness, MAHE, Manipal, India. Dr. Gupta is a physician-scientist specialising in infectious diseases, tropical medicine, and clinical microbiology. With extensive epidemiology and global health training, one of his primary interests is combating antimicrobial resistance (AMR) through research, education, and policy development. He is actively involved in managing drug-resistant infections in a high-AMR burden tertiary care setting. He is an avid researcher with over 150 publications and has published extensively on AMR-related infections, antibiotic stewardship, and emerging resistance patterns. His ongoing research focuses on optimising antimicrobial use, rapid diagnostics, and treatment strategies for multidrug-resistant infections. He routinely organises certificate courses on Antimicrobial therapies in resource-limited settings for medical doctors. He also holds key editorial roles, including Executive Editor for Oxford Medical Case Reports and Associate Editor for Transactions of the Royal Society of Tropical Medicine and Hygiene. He is a member of the Emerging Infections Subcommittee of ESCMID. Dr. Gupta continues to drive AMR awareness, surveillance, and policy advancements in India and globally through his clinical, academic, and research contributions.

What's Next

As the global public health and foreign aid spaces are being challenged by recent decisions by the US government, the time is right for more public collaboration and advocacy as well as new innovations and solutions. Coming together as one community to support global health and combat AMR remains a critical priority for all of us.

Support for this initiative has been provided through an unrestricted educational grant from bioMérieux.