Novel Innovations to Tackle AMR

The AMR Global Health Academy Newsletter

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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 feature laboratories and AMR champions battling real-world AMR problems.

Creating AMR Awareness

The AMR Academy has numerous courses and educational activities designed to empower AMR stewards, particularly global health professionals from LMICs.

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

The GHCPD platform consistently presents new research and innovations in diagnostics and testing.

AMR GHCPD Faculty

Global Health Continuing Professional Development (GHCPD) faculty are global and regional experts in their field and drive the educational curriculum to ensure information is relevant, pertinent, and applicable to the needs of learners from low resource settings. Here we would like to profile some of our faculty members who generously continue to support the GHCPD

educational platform.

Dr. Noah Fongwen is a diagnostics access coordinator at Africa CDC and research fellow at LSHTM. He holds an MD (Doctor of Medicine) degree from the University of Buea, Cameroon, a Master of Public Health (MPH) from the University of Glasgow, UK. Dr. Fongwen completed a fellowship in infectious disease diagnostics at the Faculty of Infectious and Tropical Diseases of the London School of Hygiene and Tropical Medicine (LSHTM), and a Doctorate in Public Health (Dr.PH) at the Faculty of Infectious Diseases of LSHTM. At Africa CDC, he leads the Africa Collaborative Initiative to Advance Diagnostics (AFCAD). He is responsible for local manufacturing of diagnostics, biobanking, diagnostics development and evaluation, regulation through streamlining regulatory harmonization processes in collaboration with the AMDF and AMRH programme of AUDA NEPAD. He is also responsible for leading the engagements with policy makers to ensure diagnostic access policies are developed, adopted and implemented by African countries. Dr. Fongwen is now mainly based at the Africa CDC HQ, Addis Ababa, Ethiopia, where he is working with relevant partners to establish a continental regulatory pathway for Africa that will accelerate access to diagnostics to safeguard the health of Africans. As part of this work, he co-led the establishment of the Africa Biobanking Network and led the establishment of the Diagnostics Advisory Committee (DAC). As research fellow at LSHTM since 2016, Noah has co-directed courses on diagnostics for AMR, lectured in the NTD module, and facilitated the pandemic course at LSHTM. He has been PI and co-PI for grants. Currently, he is co-PI for an NIHR grant to develop diagnostics for vaccine preventable respiratory diseases. He has authored and co-authored more than 50 peer reviewed publications and book chapters.

News Story

Continuing to think about gender and women as a critical component of antimicrobial resistance

Source: Aditi Satyavrath Samantha Serrano Erta Kalanxhi. Women and Antimicrobial Resistance. One Health Trust March 08, 2023. https://onehealthtrust.org/news-media/blog/women-and-antimicrobial-resistance/.

This interesting news **story** from OneHealth Trust highlights the importance of continuing the study and understand the role of gender in the public health burden imposed by AMR. Unfortunately, due to a variety of biological, social, economic, and cultural factors, women are at an increased risk of contracting and spreading AMR. For example, women occupy two-thirds of the positions involving caregiving, social support, and frontline healthcare settings – all of which increase the risk of occupational exposure to any pathogen, AMR included.

Additionally, women seem to be faced with different prophylactic and treatment prescribing habits from their healthcare providers, less access to healthcare services particularly when gender inequality is prominent, and stigma around sexual activity and potential STIs. Further, the biology of women's bodies increases their risk of contracting AMR infections.

How AI can help us beat AMR

A recently published review highlights the power of utilizing artificial intelligence and computational power in exploring the application of AI in bacterial infection diagnostics, AMR surveillance, and antibiotic discovery. A wide variety of potential AMR applications for AI include:

- Clinical diagnostics
    - Sepsis prediction
    - Bacterial identification
    - AMR prediction
- AMR surveillance
    - Feature selection
    - Genomics-based AMR prediction
    - Metagenomics-based AMR prediction
- Antibiotic discovery
    - Virtual screening
    - Molecular generation
    - Natural product discovery
    - Biomolecular structure prediction

The full article is accessible and can be found **here**.

Article Spotlight

Zoliflodacin susceptibility prevails among Neisseria gonorrhoeae *isolates in eight EGASP countries*

WHO's EGASP (Enhanced Gonococcal Antimicrobial Surveillance Programme) recently published surveillance **findings** from eight EGASP countries: Indonesia, Thailand, Cambodia, The Philippines, Viet Nam, Malawi, South Africa, and Uganda. Nearly 3,000 isolates were collected across countries from 2021 and 2024. Key findings from the surveillance studies included:

- Resistance in Neisseria gonorrhoeae has emerged to the last treatment, ceftriaxone

- High zoliflodacin susceptibility among gonococci in three WHO regions, including against ceftriaxone- and azithromycin-resistant gonococcal strains

This article indicates that further development and use of zoliflodacin for gonorrhoeae treatment could be beneficial and should be coupled with ongoing surveillance activities.

An unfortunately inaccessible **article** has highlighted *Five engineering advancements that may help solve the growing threat of antimicrobial resistance.* Those advancements include the development of diagnostic wearable devices, antimicrobial surfaces, smart biomaterials, drug-free treatments, and advanced modeling approaches. A podcast highlighting this perspective piece and the innovations can be found **here**.

In Case You Missed It

Long-term engagement often makes the difference in the impact of public health programs.

For 10 years now, the **Global Point Prevalence Survey (Global-PPS)**, managed by the University of Antwerp and supported by bioMérieux, has made significant strides in the fight against antimicrobial resistance (AMR). On 11 April the annual meeting was held in Vienna, and online, just before **#ESCMIDGlobal**, and discussed results, strategies, and challenges in antimicrobial stewardship.

Walker et al conducted a systematic review to understand the application of a difficult-to-treat resistance index in gauging imbalance between countries' antibiotic resistance prevalence and access to antibiotics. See **here** for more. We apologies if this article is also inaccessible for many.

GARDP hosted a REVIVE webinar entitled, *Charting new frontiers in artificial intelligence for antibiotic design*on 3 April 2025. The recording can be found **here**.

UK health officials have developed and launched a cartoon character, "Andi Biotic", to advocate and educate the general public on AMR. See **here** for more.

Researchers at the University of Liverpool have launched a surveillance project to understand the prevalence of AMR in companion animals. This project is called VetCLIN AMR and more details can be found **here**.

The UN Environment Programme and five other organizations have launched a brief entitled, *Antimicrobial resistance prevention and education in schools: a brief for education policy-makers and school practitioners.* See **here** for more.

Don't Miss

On 30 April 2025, Sepsis Alliance is hosting a 1-day virtual discussion of AMR- and sepsis-focused diagnostics, therapeutics, and advocacy. See **here** for more details.

The Global AMR Innovators Conference (GAMRIC) – previously the ESCMID-ASM Joint Conference on Drug Development for AMR – will be held 1 – 3 Oct 2025 in Washington, DC. See **here** for initial 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.

The 10th AMR Conference 2026 will be held 3-4 March 2026 in Basel, Switzerland. Once available, details will be **here**.

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What's Next

As the global public health climate and related architecture undergoes changes and challenges, novel innovations that are cost-effective/cost-saving, easy to implement, and most importantly, effective will be critical. Research and development remain key to combating AMR.

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