

ANTIMICROBIAL RESISTANCE IN ASIA: AN URGENT AND ESCALATING THREAT

Despite significant global investment over the past decade, antimicrobial resistance (AMR) is outpacing antibiotic development and has reached a critical tipping point. In 2021 alone, 4.71 million deaths worldwide were linked to AMR, with mortality increasing sharply among older populations. Projections suggest that AMR-related deaths will rise by more than 70% by 2050, with Asia expected to experience the largest absolute increase compared with any other region.

Drug-resistant infections are rising rapidly across the continent, driven in particular by highly resilient and difficult-to-treat Gram-negative bacteria. The economic consequences are severe: AMR-related costs in Asia are projected to reach US\$550–700 billion by 2050, consuming close to 1% of regional GDP.³ Together, these trends pose a direct threat to health security in Asia and beyond.

At the same time, there are strong grounds for optimism. Asia is uniquely positioned to change the trajectory of the AMR crisis, with world class scientific expertise, a dynamic R&D ecosystem, extensive clinical trial networks and a strong pharmaceutical manufacturing base.

AMR in the world

- 4.71 million lives** linked to AMR worldwide in 2021¹.
- Deaths attributable to AMR globally **increased by more than 80% in adults over 70 years old (1990–2021)**².
- US \$550-700 billion** projected AMR-related costs by 2050, consuming nearly 1% of Asia's GDP³.

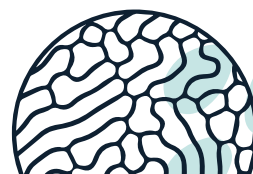
¹ Naghavi, M., Vollset, S. E., Ikuta, K. S. et al. (2024). Global burden of bacterial antimicrobial resistance 1990–2021: a systematic analysis with forecasts to 2050. *The Lancet*, Volume 404, Issue 10459, p1199–1226.

² *Global AMR burden of bacterial antimicrobial resistance 1990–2021: a systematic analysis with forecasts to 2050 - The Lancet*.

³ L.E.K. Consulting. (2021). *Asia-Pacific in the Eye of AMR Storm: Nurturing Innovation To Fight Antimicrobial Resistance*.



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GARDP'S ROLE IN REDUCING THE AMR BURDEN IN ASIA

Through close collaboration with governments, researchers, regulators, manufacturers and public health institutions, GARDP is advancing new antibiotic treatments and accelerating equitable access in Asia. GARDP focuses on developing treatments targeting World Health Organization (WHO) priority pathogens by leading integrated drug development programmes—from clinical research and formulation to regulatory approval, licensing, manufacturing and access strategies.

GARDP's work in Asia currently spans the following three critical areas of unmet need, as well as discovery and exploratory research:

Serious Bacterial Infections

Carbapenem-resistant infections are becoming an increasingly serious concern across Asia, with pathogens such as *Klebsiella pneumoniae* showing very high prevalence in parts of the region. To address this growing threat, GARDP is working to bring forward effective treatment options and ensure they are accessible where the burden is greatest.

GARDP has secured the rights to cefiderocol, an innovative antibiotic, and is accelerating its availability in countries most affected by carbapenem-resistant infections. In parallel, GARDP is supporting a technology transfer to an Indian manufacturer, enabling local production and helping to improve affordability and long-term supply security. Preparations are underway to support its initial launch in India, ahead of broader regional access.

Sexually Transmitted Infections: Drug-resistant gonorrhoea

Resistance to existing gonorrhoea treatments is particularly high in Asia, creating an urgent need for new therapeutic options. GARDP is developing zoliflodacin, a new first-in-class treatment and the first new antibiotic in decades designed specifically to treat drug-resistant gonorrhoea.

GARDP has led a phase 3 clinical trial in Thailand, working with local stakeholders and clinical sites, and is preparing for rapid registration of zoliflodacin in the country following U.S. approval. To help address future patient needs across the region, GARDP has also put in place a compassionate use programme to support access while regulatory pathways are finalized.

Neonatal Sepsis

Neonatal sepsis remains a leading cause of death among newborns in Asia, yet effective and appropriate treatments are limited. GARDP is working to close this gap by supporting the development of improved antibiotic combinations tailored to the needs of newborns.

GARDP is funding the NeoSep1 clinical study in Asia and beyond to identify better treatment options for neonatal sepsis. In parallel, GARDP is working with local manufacturers to ensure that successful treatments can be produced and made available across the region at scale, addressing both access and affordability.

Strengthening access and sustainability

Across all programmes, GARDP works with partners in Asia to address systemic barriers to antibiotic access, including supply shortages, affordability constraints, weak diagnostics and gaps in disease surveillance. In some cases, this is made possible through the unique way in which GARDP makes use of manufacturing and commercialization licensing agreements to improve people's access to antibiotics and bring new treatments to low- and middle-income countries (LMICs) potentially within months after its approval in a high-income country, rather than years.

Part of this work is also delivered through SECURE, a joint initiative created by GARDP and WHO in 2020 to support sustainable and equitable access to priority antibiotics in LMICs. Over time, the goal is for countries and regional bodies to lead the development and implementation of tailored access mechanisms for their populations.

GARDP's Discovery and Exploratory Research programme in Asia

GARDP's Discovery and Exploratory Research programme works to deliver innovative preclinical antibiotic candidates, acting through untapped bacterial vulnerabilities, that can become next-generation treatments for drug-resistant infections. This includes recent positive outcomes in the use of AI in discovery and exploratory research. Here the aim is to identify and develop novel antibiotic preclinical candidates targeting the most difficult-to-treat Gram-negative pathogens such as *Klebsiella pneumoniae* and *Acinetobacter baumannii*.

In Asia, GARDP is working with Institut Pasteur Korea on multiple projects, including screening compound libraries against drug-resistant bacteria. GARDP is also working with the Institute of Science Tokyo, in Japan, to utilize protein crystallography to optimize advanced compounds in GARDP's discovery portfolio into new antibiotics to treat drug-resistant bacterial infections.

Learn more about GARDP at
www.gardp.org