



Antimicrobial Resistance:

Our future depends on what we do today

Together... taking action against drug-resistant infections



BD

Advancing the
world of health™



Since the introduction of penicillin in 1942, antimicrobials have transformed the treatment of infections and have saved millions of lives. But decades of misuse and outdated guidelines have driven a rise in the organisms that are resistant to these lifesaving drugs.

Antimicrobial resistance (AMR)—bacteria’s ability to overcome the effects of the drugs designed to kill or disarm them—is one of the world’s greatest public health threats. Today, at least 1.27 million deaths worldwide are attributed to resistant bacterial infections per year, and this number is growing.¹

According to the Centers for Disease Control and Prevention (CDC), in the United States alone, more than 2.8 million antibiotic-resistant infections occur each year; in fact, **someone dies every 15 minutes from drug-resistant infection.**²

As it continues to increase rapidly across the world, **AMR is considered a “silent pandemic,” which actually threatens modern medicine.** As the pathogens that cause infections become increasingly drug-resistant, common medical procedures—including surgery, childbirth and chemotherapy—will become increasingly life-threatening.

Put into perspective, **if left unabated, the effects of AMR could be worse than COVID-19.**³ Future projections suggest AMR could result in millions of deaths and trillions of dollars in lost global production.⁴

These projections are daunting and show that **AMR is a severe problem, right here, right now, and threatens every person on Earth.**

Our role in combating AMR

BD is leveraging its extensive global capabilities to meaningfully engage around five key strategies to reduce the burden of drug-resistant infections.

Our global public health efforts seek to expand access and drive capacity-building through partnerships with leading organizations and governments. We engage in advocacy with governments, funders and health agencies to advance innovations to address the world’s leading public health needs, including drug-resistant infections.

We possess important capabilities that are instrumental in containing AMR. We offer a wide range of medical products, platforms and offerings that can be used to prevent the spread of infection in healthcare facilities, such as diagnostic systems to screen, test and

diagnose infection, including drug-resistant strains, as well as state-of-the-art surveillance and reporting capabilities to monitor, track and predict AMR outbreaks.

Enabled by our innovative programs and technologies, BD country teams across the globe are directly engaging with AMR leaders in government, academia and professional societies to strengthen AMR awareness, health systems capacities and infection prevention and diagnostic practices.



Partner highlight

Providing sustainable solutions to **curb antimicrobial resistance**

• **But together, we can make an impact, now, today.**

“The severity has prompted the World Health Organization (WHO) to declare AMR as one of the top 10 global public health threats facing humanity.”⁵



Infection prevention and control practices and guidelines



Antibiotic stewardship



Surveillance



Innovation



Awareness

Multifaceted infection prevention is vital

Infection control practices, from simple handwashing to global vaccination, and the use of effective infection prevention measures, are key tools to combat AMR.



Handwashing



Global vaccination



Prevention measures

Preventing drug-resistant infections reduces the use of antibiotics and improves patient outcomes.



Partner highlight

Improving public health by **establishing infection prevention measures**

Antibiotic Stewardship and the importance of diagnostics

Antimicrobial stewardship programs in healthcare settings are designed to optimize antibiotic therapies, with the intention of slowing the emergence of drug-resistance.

Accurate and rapid diagnostic testing is a crucial element of stewardship. Diagnostic testing can identify the infection-causing organism, determine whether it is resistant and guide the appropriate therapeutic choice.

Essentially, antibiotic stewardship means being smarter—more discriminating and more appropriate—about how we (as a society) use them.



Partner highlight

Building the medical and economic case for **rapid diagnostics to fight AMR**



Infection prevention and control practices and guidelines

Partnering in prevention training and supporting infection control guidelines

BD is leveraging its expertise in diagnostics, vascular access, surgical preparation and critical care to support hospitals' infection prevention and control programs. BD is committed to helping clinicians improve patient outcomes through the standardization of care and adherence to best practices.

- In support of the infection prevention efforts of the Society for Healthcare Epidemiology of America (SHEA), BD provides an educational grant for the “Prevention Course in HAI Knowledge and Control”—a free educational resource that provides critical information and skills to keep frontline providers, their families and patients safe.
- BD has worked in collaboration with national governments in multiple countries, including the United States, China, Kenya, Cambodia and India, via public-private partnerships to improve hospitals' capabilities with infection prevention and control.
- BD leverages expertise from internal clinical pharmacists, infectious disease (ID) physicians and industry-leading data scientists to produce more than 500 unique analytic tool sets, resulting in publications informing infection prevention guidelines.
- BD partners with clinicians in addressing vascular access related complications by identifying gaps in their current vascular access process.



Antibiotic stewardship

BD is committed to three key areas in support of global antibiotic stewardship:

1. Delivering updated and new diagnostic tools
 2. Deploying software to move data from lab to the patient
 3. Partnering in the development of training tools to foster stewardship
- In the United Kingdom, BD partnered with a community pharmacy chain to demonstrate the effective use of point-of-care tests to diagnose patients with viral infections, resulting in a reduction in the number of unnecessary antibiotic prescriptions.
 - In India, BD partnered with the Ministry of Health in Kerala to increase access to automated blood culture and identification and antibiotic susceptibility technologies at a secondary public sector hospital—Government Hospital, Ernakulum to reduce mortality rates due to sepsis.
 - Globally, BD is working with The Fleming Fund to strengthen laboratories in 19 developing and emerging countries. A successful rollout of equipment, reagents and training has improved lab capabilities across these countries.
 - To further strengthen capacities to combat AMR at both an individual laboratory level and across national laboratory systems, BD partnered with the Foundation for Innovative New Diagnostics (FIND), a Geneva-based non-governmental organization, to develop the new AMR scorecard for lab quality improvement.

Surveillance is a critical tool in the battle against AMR

As we've seen with the COVID-19 pandemic, comprehensive surveillance is critical for public health to identify and respond to emerging threats around the world.

Surveillance is needed to understand the scope and risk of drug-resistant infections and to catch emerging threats when and where they arise—and develop an appropriate and effective response.



Providing early warnings of outbreaks is a vital part of mitigating AMR. Without surveillance, we will not be able to bring attention and needed resources to address AMR.



Partner highlight

Delivering timely, relevant and scientifically valid evidence **to improve health policy and practice**



Surveillance

BD is committed to strengthening surveillance and reporting efforts:

- BD has contributed extensive data and analytics to global organizations, such as the U.S. Centers for Disease Control and Prevention (CDC); the Institute for Health Metrics and Evaluation (IHME); and the Center for Disease Dynamics, Economics and Policy (CDDEP) to evaluate and report the burden of AMR.
- The BD HealthSight™ platform leverages data to produce meaningful analytics and insights for clients, BD business units, and the scientific community/industry. With over 2.3 billion patient messages per year, we transform these data points into client analytic reports, poster presentations and peer-reviewed publications. We collaborate with other life science companies to publish these critical data sets.
- These data was also integrated into the CDC's *Antibiotic Resistance Threats Report*, highlighting the prevalence and impact of antibiotic-resistant bacteria and fungi on patients in the United States, and *The Lancet* report, Global burden of bacterial antimicrobial resistance in 2019: a systematic analysis.⁶
- The BD Health and Economic Outcomes Research (HEOR) team developed an AMR Burden of Disease Tool that illustrates current and anticipated future clinical and economic impacts of AMR across various system levels. BD has facilitated the use of this new tool with health systems and facilities in Canada, Southeast Asia and China.

Continued innovation and education are crucial in the ongoing battle to contain AMR



Innovation

BD remains committed to investing in innovations to combat AMR through the development of new diagnostics, devices and information systems that can help in clinical decision-making and reduce risks by:

- Supporting infection control guidelines
- Expanding diagnostics testing
- Advancing medication management



Awareness

Raising awareness is crucial because AMR threatens everyone!

- As founding sponsor of the Antimicrobial Resistance Fighters Coalition (ARFC), BD supports education, training and partnerships across the globe to raise awareness of AMR and to change behaviors to help maintain the effectiveness of antibiotics for our future generations.

Training is equally crucial to strengthen microbiology labs, globally.

- BD and The London School of Hygiene & Tropical Medicine, together with a global advisory group of experts, partnered to create the Massive Open Online Courses (MOOC) that educate participants about how diagnostics can be leveraged to reduce AMR risks. Lessons learned from COVID-19 are included in the training.



Antimicrobial Resistance Threatens Everyone.

All of us need to be resistance fighters.

LONDON SCHOOL of HYGIENE & TROPICAL MEDICINE



Partner highlight

Contributing to the improvement of global health **through the pursuit of excellence in research and advanced training.**

Halting and reversing this massive challenge will require the combined resources and efforts of both public and private sectors. AMR has no single solution, and the challenges cannot be solved without multiple players working collectively on a common AMR agenda. BD will continue to collaborate with global leaders around the world to address this urgent global health concern.



AMR is a global problem, right here, right now, and threatens every person on Earth.

But, together, we *can* make an impact, now, today.

Learn more at <https://amr.bd.com/>
or scan the QR code:



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