

The AMR Challenge: An initiative of the Centers for Disease Control and Prevention in the United States

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In 2018, CDC and the US Department of Health and Human Services (HHS) launched the Antimicrobial Resistance (AMR) Challenge – a yearlong effort to accelerate progress against antibiotic resistance around the world. The AMR Challenge was a global call to action, uniting leaders across governments, private industry, and civil society to commit to action, deliver results, and combat AMR together.

Apples and oranges. Golden retrievers. Newborn babies and elderly parents. Regardless of where you live or who you are, antimicrobial resistance (AMR), also known as antibiotic resistance (AR), affects you.

Since their discovery nearly a century ago, antibiotics have transformed the world, increasing life expectancy and helping to heal serious infections. Infections are a part of the human experience, and we need antibiotics to work when we need them. However, we're now standing on a precipice that could return us to a pre-antibiotic world. Without aggressive action, AMR will wipe out our global progress in healthcare, food production, and life expectancy. We need to take action now to slow the spread, and we need all hands on deck to do it. That's why, over the past year, CDC spearheaded the AMR Challenge, a global effort to protect people, animals, and the environment from this threat.

CDC hears from healthcare providers who are scared of not being able to treat their patients effectively as antibiotic-resistant germs continue to find ways to defeat the antibiotics designed to kill them. CDC also hears from patients and their family members who have had their lives impacted by resistant infections. Given the pervasiveness of this threat, we know that the solution requires strong leadership, partnerships, coalitions, and collaborations.

In 2018, CDC and the US Department of Health and Human Services (HHS) launched the AMR Challenge – a yearlong effort to accelerate progress against new and deadly resistance spreading rapidly around the world. The AMR Challenge was a global call to action, uniting leaders across governments, private industry, and civil society to commit to action, deliver results, and combat AMR together.

Mobilizing action and collaboration

Modern travel of people, animals, and commodities has made

it easy for AMR to spread across all regions of the world. Given the importance of antibiotics around the globe, everyone has a stake in protecting their efficacy now and for future generations. We know that the health of people is connected to the health of animals and the environment, requiring action across countries, industries, and sectors. The AMR Challenge not only mobilized individual entities to address the issue, but it also successfully highlighted the value of partnerships in addressing one of the greatest public health threats of our time.

CDC has been a longtime leader in the fight against AMR. Through our investments in AMR detection, prevention, and innovation, CDC has found long-term success in the United States and abroad. Building collaborations among key partners fosters effective solutions to AMR and tailored, comprehensive approaches with lasting impact. Through the five areas of the AMR Challenge – tracking and data, infection prevention and control, antibiotic use, environment and sanitation, and vaccines, diagnostics and therapeutics – partners banded together to identify gaps, collaborate on solutions, and foster accountability for action.

By connecting with new and existing partners through the Challenge, we took meaningful actions to slow the spread of AMR to continue our progress in the fight to preserve these drugs. Commitment-makers included leaders from across sectors who are both policy-makers and implementers. Many government leaders stepped up to make AMR a priority in their countries.

Health departments across the United States also joined the Challenge and committed to actionable steps—like improving antibiotic use or reducing certain resistant infections—for their communities. Academic researchers and private industry participated by committing to finding and testing new ways

to prevent, treat, and detect resistant infections to ensure a continued focus on innovative solutions to addressing AMR. Out of this extensive network, real change, impact and progress were made in addressing AMR around the world.

CDC leads success through partnerships

Given the breadth of the Challenge and diversity of the partners engaged in this effort, many of the commitments involved partnership collaboration. Commitments often fell under more than one area, and many of the commitments impacted one another. In this way, the AMR Challenge was not only a platform to take meaningful action but it also served as a forum for organizations to communicate with one another, build on existing work together, and collaborate on new initiatives.

Recognizing the need for global collaboration to address AMR, CDC sought commitments from countries around the world. For example, stakeholders within the Government of India showed tremendous support for the Challenge, committing across multiple entities and commitment areas. India's commitment to the Challenge highlighted the importance of partnering within a region or country to holistically address the problem of AMR. As a part of the Challenge, India's Department of Biotechnology (DBT); which leads policy, strategy, centres, and programmes related to biotechnology in India; aimed to develop new antibiotics and antibiotic alternatives by issuing a Joint Call for Innovative Approaches to address AMR in collaboration with a network of researchers, product developers, and incubators.

The Indian Council of Medical Research, Ministry of Health and Family Welfare committed to collaborating with international partners to develop a better understanding of resistance mechanisms and discover new drug targets and molecules. Partners in this collaboration include CDC, the US National Institute for Allergy and Infectious Diseases (NIAID), Research Council Norway, and the German Federal Ministry of Education and Research (BMBF). Finally, the US-India Strategic Partnership Forum, a nonprofit organization from India, committed to identifying public-private partnership models that can improve access to antibiotics and other antimicrobial products. Commitments like these from India, as well as other countries around the world to work with the United States and other partners on combating AMR, have enabled significant global progress in addressing AMR. India showcased its commitment to taking actionable steps across the development and care delivery system while also affirming the need to partner with other governments and partners to make a meaningful impact.

CDC leveraged its existing partnerships domestically with the Association of Public Health Laboratories (APHL), the

Box 1: The AMR Challenge commitments

The AMR Challenge encouraged global leaders to make formal commitments in at least one of five areas that further progress against AMR:

- Tracking and data – sharing data and improving data collection to stay ahead of antibiotic resistance and prevent infections
- Infection prevention and control – Preventing infections and reducing the spread of germs
- Antibiotic use – improving the use of and access to antibiotics.
- Environment and sanitation – keeping antibiotics and antibiotic-resistant threats from entering the environment through actions like improving access to safe water
- Vaccines, therapeutics, and diagnostics—investing in development and expanding of access to vaccines, therapeutics, and diagnostics for better prevention, treatment, and detection of AMR

Association of State and Territorial Health Officials (ASTHO), and the Council of State and Territorial Epidemiologists (CSTE) displaying leadership in addressing AMR by garnering commitments from US states and territories. Through parallel engagement in the Challenge with the National Association of County and City Health Officials (NACCHO), many local health departments also signed on to take part in the Challenge. Together, these organizations challenged chief health officials, state laboratory directors, state epidemiologists, and local health departments to make commitments within laboratory capacity, infection prevention and control, and antibiotic use.

We also continued making progress across the spectrum of healthcare. Premier, a healthcare improvement company, partnered with care providers across the United States and surpassed its goal of reducing the rate of healthcare associated Clostridioides difficile infection (CDI) in 500 member Hospital Improvement Innovation Networks (HIIN) per 10,000 patients for a total reduction of 34% by March 2019. To achieve these results, Premier executed nearly 2,000 coaching calls, site visits, and webinars, and utilized resources on its Safety Institute Antimicrobial Resistance site. CDI prevention can save lives and improve antibiotic use. Other healthcare systems that have taken meaningful action to combat AMR include Anthem, AtlantiCare Health System, Ascension, Atrium Health, and Intermountain Healthcare.

Members of the private sector outside of human healthcare, such as Walmart and McDonald's, joined the call to take action as well. Walmart US committed to seeking antibiotic use data from meat suppliers throughout their supply chains. In order to do this, Walmart is implementing several projects that will provide greater transparency of antibiotic use throughout the supply chain that will enable them to improve antibiotic tracking and data collection by 2020. This commitment will enable Walmart to work toward judicious antibiotic use as defined by the American Veterinary Medical Association's (AVMA).

McDonald's is partnering with beef producers in its top 10 beef-sourcing markets to measure and understand antibiotic use across its global supply chain. Starting in 2022, McDonald's will be reporting progress against antibiotic reduction targets across these markets. This commitment will have a global impact, with the aim of preserving the efficacy of antibiotics for human and animal health in the future.

CDC also worked with Petco, one of the largest pet retailers in the United States, to commit to the judicious use of antibiotics and to restrict prophylactic use of antibiotics in its supply chain. By taking this action, Petco is modeling best practices and policies for the pet specialty industry. Aligning with Petco's commitment, the Pet Industry Joint Advisory Council (PIJAC) committed to the development and adoption of Recommendations for Judicious Use of Antimicrobials in Companion Animal Care, which were released in March 2019. CDC's partnership with PIJAC has facilitated significant progress in the fight against AMR in the animal sector.

Looking ahead

The AMR Challenge was an extremely successful effort to garner support worldwide to fight against AMR and to develop strategic partnerships to move the needle on slowing its spread. The Challenge provided an opportunity for key stakeholders to network, engage, and collaborate on proposed solutions related to AMR. CDC will continue to lead efforts to combat AMR both domestically and globally, and will continue to facilitate partnerships across sectors and settings. Collaborative partnerships are the key to success in fighting against AMR, and no one organization can work alone. HHS and CDC would not have had a successful effort without the help of partners, stakeholders, and leaders from across the world. Sustaining and strengthening a robust network of partnerships beyond the AMR Challenge will be crucial to meeting our collective goal: combating the development and spread of AMR worldwide. ■

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