CDC'S GLOBAL AR PROJECTS

$11,106,161

Funding for AR Activities
Fiscal Year 2018

High levels of antibiotic-resistant germs are in all countries and regions of the world. Early and aggressive action at the source can keep germs with unusual resistance from spreading and protect the health and security of the United States. In addition to the work with partners shown here, CDC staff are leveraging expertise gained from work domestically to collaborate with global partners on pilot projects to combat tuberculosis in China and Vietnam and on outbreak responses of resistant germs around the world.

SINGLE-COUNTRY AR PROJECTS

Bangladesh
$250,000

Experts at the **International Centre for Diarrhoeal Disease Research, Bangladesh** are working to identify burden and risk factors for AR in community settings in **Bangladesh**.

Bangladesh
$378,327

Experts at the **University of Virginia** will study clinical and microbiologic outcomes in patients treated for drug-resistant *Shigella* infections at a hospital in **Dhaka, Bangladesh**. Data from this study can be used to help determine antibiotic breakpoints (which help determine if an antibiotic will be effective on an infection) for drug-resistant *Shigella*.

Botswana
$598,990

Experts from the **University of Pennsylvania** are working in **Botswana** to determine the prevalence of extended-spectrum beta-lactamase-producing Enterobacteriaceae (ESBL-EB) and "nightmare bacteria" CRE in hospitals and communities there. This research will help experts understand risk factors for colonization (carrying and potentially spreading the germ) and provide clinical and laboratory data about how these germs can spread.

Chile
$372,060

Experts from the **Universidad del Desarrollo** are working to determine the burden of multidrug-resistant gram-negative bacteria in hospitals and communities in **Chile** to better understand how resistant infections are transmitted in middle-income countries.

Dominican Republic
$341,452

Experts from **Texas Tech University** will collect samples from food, food animals, and the environment in the **Dominican Republic** and test the samples for *mcr* genes—concerning genes that can confer resistance to today's strongest treatment options. Experts will examine the factors that contribute to the spread of these genes in the Dominican Republic and this data will be used to inform public health recommendations.

Ethiopia
$168,840

Experts from **Ohio State University** are working in **Ethiopia** to combat AR by conducting standardized lab assessments and improving local capacity to detect and prevent AR threats.

AR: antibiotic resistance   **HAI:** healthcare-associated infection

CDC provides critical support in the U.S. and abroad to protect people from antibiotic resistance.

www.cdc.gov/ARinvestments

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

SINGLE-COUNTRY AR PROJECTS

$598,502

India
With funding to **PATH**, CDC prioritizes the emergence and spread of multidrug-resistant tuberculosis (MDR-TB) around the world by supporting the implementation of the National Action Plan for Combating MDR-TB (NAP). **India** has the largest TB and MDR-TB burden in the world and U.S. support for their program is critical. The engagement of private sector in the diagnosis and management of MDR-TB is vital for effective management of MDR-TB in India, and is aligned with country's goals as set forth in their national strategic plan.

$90,312

India
Experts at the **National Institute for Research in Tuberculosis (NIRT)** in **India** will generate the evidence needed to fill a specific gap in CDC's knowledge about treatment of drug-resistant tuberculosis (TB) to inform practice recommendations for the control and prevention of drug-resistant TB.

$920,000

Kenya
Experts from **Washington State University** are working in **Kenya** to develop and test a point prevalence survey of antibiotic use and track transmission of drug-resistant germs between community hospitals.

$271,410

Mexico
This project with the **U.S.-Mexico Foundation for Science** and the **Mexican Ministry of Health** will develop capacity and processes to inform the scale-up of TB diagnostics in **Mexico** for rapid identification of drug resistant strains, as well as strengthen TB surveillance and treatment outcomes. The project is based in two Mexican states along the U.S. border that have high rates of TB.

$200,000

Pakistan
Experts from the **World Health Organization Regional Office for the Eastern Mediterranean** are working in **Pakistan** on the implementation of their national AR surveillance plan.

$60,000

Philippines
CDC funds experts from the **World Health Organization** and the **Philippines Department of Health** to strengthen surveillance for antibiotic-resistant gonorrhea through the implementation of the Enhanced Gonococcal Antimicrobial Surveillance Program (EGASP). EGASP aims to monitor trends in antibiotic susceptibilities for *N. gonorrhoeae* using a standardized protocol, as well as epidemiological and laboratory standard operating procedures at selected sentinel sites and reference laboratories in **Manila**. EGASP data will also be used to inform policy and treatment guidelines in-country.

$75,000

Republic of Georgia
Experts from **Columbia University** are working in the **Republic of Georgia** to improve national infection prevention and control through training and capacity assessments.

$300,000

Thailand
Experts at the **Ministry of Public Health** in **Thailand** are working to strengthen AR surveillance through the development of a national AR reporting and response system aimed at monitoring and controlling antibiotic resistance in Thailand.

$104,000

Thailand
Experts at the **Ministry of Public Health** in **Thailand** will combat AR by improving local capacity to detect and prevent the spread of resistant threats.

CDC provides critical support in the U.S. and abroad to protect people from antibiotic resistance.

www.cdc.gov/ARinvestments

U.S. Department of Health and Human Services Centers for Disease Control and Prevention

SINGLE-COUNTRY AR PROJECTS

Thailand
$60,000

CDC funds experts from the **World Health Organization** and the **Ministry of Public Health** in **Thailand** to strengthen surveillance for antibiotic-resistant gonorrhea through the implementation of the Enhanced Gonococcal Antimicrobial Surveillance Program (EGASP). EGASP aims to monitor trends in antibiotic susceptibilities for *N. gonorrhoeae* using a standardized protocol, as well as epidemiological and laboratory standard operating procedures at selected sentinel sites and reference laboratories in Bangkok. EGASP data will also be used to inform policy and treatment guidelines in-country.

United Kingdom
$569,784

Experts from the **University of Oxford** in the **United Kingdom** will develop improved laboratory methods to better detect drug-resistant gonorrhea directly from patient samples and create publicly available tools to analyze genetic antibiotic resistance data.

United Kingdom
$475,675

Experts from the **University of Leeds** will validate a human gut model of healthy and 'disrupted' human microbiomes. These models will be used to determine how certain bacterial populations can prevent infection by *C. difficile* and other multidrug-resistant organisms, and reestablish healthy gut microbiome function after receiving antibiotics.

Vietnam
$130,000

Treatment of latent TB infection (LTBI) is essential to control and eliminate TB because it substantially reduces the risk that latent TB infection will progress to TB disease. To determine if LTBI testing and voluntary treatment is feasible to implement at overseas panel sites, CDC is partnering with the **International Organization for Migration** and the **University of California, San Francisco** on a pilot study in **Vietnam** with individuals planning to immigrate to the United States. Results from the pilot study will help inform CDC if LTBI testing and voluntary treatment should be included as part of the medical examination process for U.S.-bound immigrants and refugees and, if so, what factors need to be considered for the successful scale-up and implementation of such a strategy.

Vietnam
$200,000

CDC funds experts from **PATH** to work in **Vietnam** to strengthen national infection prevention and control policies, and enhance AR data collection, analysis and surveillance in healthcare facilities.

Learn more about CDC's work to combat antibiotic resistance globally:
www.cdc.gov/DrugResistance
www.cdc.gov/InfectionControl
www.cdc.gov/GlobalHIVTB

CDC provides critical support in the U.S. and abroad to protect people from antibiotic resistance.

www.cdc.gov/ARinvestments

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

MULTI-COUNTRY AR PROJECTS

Multiple Countries

$150,000 — Experts from the **American Society for Microbiology** are working in the countries of **Georgia, India, Vietnam, Kenya, Bangladesh and Ethiopia** to increase detection of AR threats by assessing and improving clinical microbiology laboratories and reference laboratories through training, on-site mentorship, data analysis and reporting capabilities.

$2,649,942 — Experts at **Massachusetts General Hospital-Harvard University** will characterize how often healthy travelers become colonized (carrying and potentially spreading the germ) with highly drug-resistant germs when traveling abroad. The study will also investigate risk factors for acquiring these drug-resistant germs while traveling and identify how long people carry these germs. Work will occur through Global TravEpiNet (GTEN), a CDC-supported national network of travel clinics across the U.S.
To learn more: https://wwwnc.cdc.gov/travel/page/gten

$169,716 — Experts at the **Center for Disease Dynamics, Economics, and Policy (CDDEP)** in **India and South Africa** are focused on developing a computational model to describe the cost and cost-effectiveness of infection prevention and control programs for stopping the spread of AR in healthcare settings in low- and middle-income countries.

$497,558 — Experts from the **Pan American Health Organization (PAHO)** are working in various countries throughout **Latin America** to develop and implement a standardized guideline and protocol on infection prevention and control practices, HAI surveillance, and outbreak investigations. In addition, to improve antibiotic use and access, experts will pilot an antibiotic consumption protocol/point prevalence survey in select countries and develop a national reference document for antibiotic stewardship in collaboration with other partners.

$754,593 — CDC funds experts from the **World Health Organization (WHO)** to work in **various countries** to enhance infection prevention and control (IPC) capacity by developing protocols for AR burden assessment, outlining containment standards for facilities with high levels of resistance, and creating a tool that estimates the cost of implementing IPC minimum standards.

$270,000 — Experts from the **Task Force for Global Health (TEPHINET)** are working in the **Republic of Georgia** to support the Ministry of Labour, Health and Social Affairs and the National Center for Disease Control and Public Health to develop an infection control and prevention program to prevent and control the spread of HAIs and drug-resistant germs. Experts are also working with the International Health Policy Program in **Thailand** to implement a national point prevalence survey and assessment of international prevention and control (IPC) core components at the facility level.

$450,000 — Experts from **Stellenbosch University** are working throughout **Africa** on the implementation of an e-learning platform for infection prevention and control (IPC) training and curriculum development for a water, sanitation, and hygiene (WASH) and IPC work group.

AR: antibiotic resistance   **HAI:** healthcare-associated infection

CDC provides critical support in the U.S. and abroad to protect people from antibiotic resistance.

www.cdc.gov/ARinvestments

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention