CDC’s Investments to Combat Antibiotic Resistance Threats 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.

CDC’S GLOBAL AR PROJECTS

$11,106,161
Funding for AR Activities
Fiscal Year 2018

SINGLE-COUNTRY AR PROJECTS

**Bangladesh**
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.

$250,000

**Bangladesh**
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.

$378,327

**Botswana**
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.

$598,990

**Chile**
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.

$372,060

**Dominican Republic**
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.

$341,452

**Ethiopia**
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.

$168,840

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

www.cdc.gov/ARinvestments
**SINGLE-COUNTRY AR PROJECTS**

**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.

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.

India

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.

Kenya

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.

Pakistan

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.

Philippines

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

Republic of Georgia

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.

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.

Thailand
SINGLE-COUNTRY AR PROJECTS

**Thailand**
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.

$60,000

**United Kingdom**
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.

$569,784

**United Kingdom**
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.

$475,675

**Vietnam**
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.

$130,000

**Vietnam**
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.

$200,000

Learn more about CDC's work to combat antibiotic resistance globally:
[www.cdc.gov/InfectionControl](http://www.cdc.gov/InfectionControl)
[www.cdc.gov/GlobalHIVTB](http://www.cdc.gov/GlobalHIVTB)
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.