AR Solutions *In Action*

CDC's Investments to Combat Antimicrobial Resistance Threats

FISCAL YEAR **2023**

MARYLAND

$15,799,163

Funding for AR Activities
Fiscal Year 2023

- **Two CDC Prevention Epicenters**
- **Regional Lab for the AR Lab Network (Mid-Atlantic)**
- **One of 10 sites for the Emerging Infections Program**

FUNDING TO HEALTH DEPARTMENTS

$2,290,718

AR Laboratory Network Regional Lab: Regional labs boost state and local testing capacity and technology to detect, support response to, and prevent AR threats across the nation—and inform innovations to detect AR.

Maryland helps rapidly identify and respond to urgent AR threats by participating in core testing activities. Maryland serves as an AR Lab Network reference laboratory for *Neisseria gonorrhoeae* gradient strip antibiotic susceptibility testing and *Aspergillus fumigatus* surveillance. Maryland also supports labs in the Mid-Atlantic Region through colonization screening testing for carbapenemase-producing organisms and *Candida* auris.

$350,257

Rapid Detection & Response: State, territory, and local public health partners fight AR in health care, the community, and food.

CDC-funded HAI/AR Programs form a network of health departments that detect, prevent, respond to, and contain HAI/AR threats and promote appropriate use of antibiotics and antifungals. CDC's AR Lab Network provides nationwide lab capacity to rapidly detect AR and inform local prevention and response activities to stop the spread of antimicrobial-resistant germs and protect people.

$105,620

Food Safety projects protect communities by rapidly identifying antimicrobial-resistant foodborne bacteria to stop and solve outbreaks and improve prevention.

Maryland uses whole genome sequencing to track local outbreaks of *Listeria*, *Salmonella*, *Campylobacter*, *Shigella*, and *Escherichia coli*, identifies AR genes, and shares surveillance data with PulseNet. When outbreaks are detected, local CDC-supported epidemiologists respond to stop their spread. Maryland conducts active, population-based surveillance for foodborne diseases through CDC's Emerging Infections Program.

The AR Investment Map includes data from CDC's largest funding categories for AR. It represents extramural funding that supports AR activities from multiple funding lines in CDC's annual appropriations. Some work received full or partial funding from one-time supplemental appropriations. See the fiscal year 2023 AR Investment Map Supplemental Funding Fact Sheet for more information.

AR: antimicrobial resistance
COVID-19: coronavirus disease 2019
HAI: healthcare-associated infection
IPC: infection prevention and control
NHSN: National Healthcare Safety Network
STD: sexually transmitted disease
STI: sexually transmitted infection

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

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

$294,000

Drug-resistant Gonorrhea Detect & Respond Program works with state and local epidemiology and laboratory partners to test for and quickly respond to resistant gonorrhea to stop its spread in high-risk communities. Only one recommended treatment option remains for gonorrhea and resistance to other antibiotics continues to grow.
The Gonococcal Isolate Surveillance Project (GISP) informs treatment guidelines by monitoring how well antibiotics work on samples collected from sentinel STD clinics. The STD Surveillance Network (SSuN) monitors adherence to treatment guidelines for patients diagnosed and reported with gonorrhea from all provider settings across funded jurisdictions. This work is supported by CDC STI, AR, and HIV funds.

$279,562

The Emerging Infections Program (EIP) HAI component helps answer critical questions about emerging HAI threats, advanced infection tracking methods, and AR in the United States.
The Maryland EIP performs population-based surveillance for candidemia, *Clostridioides difficile*, invasive *Staphylococcus aureus*, and resistant gram-negative bacteria. They also conduct HAI and antimicrobial use prevalence surveys and participate in a surveillance pilot for *Escherichia coli* infections to help support vaccine evaluation.
Learn more: www.cdc.gov/hai/eip

$50,000

Emerging Infections Program (EIP) sites improve public health by conducting population-based surveillance and research activities that inform policy and public health practice.
EIP Active Bacterial Core surveillance (ABCs) is an active laboratory- and population-based surveillance system for invasive bacterial pathogens of public health importance. ABCs provides an infrastructure for further public health research, which may include special studies to identify disease risk factors, evaluate vaccine efficacy, and monitor the effectiveness of prevention policies.
Learn more: www.cdc.gov/abcs

FUNDING TO UNIVERSITIES & HEALTHCARE PARTNERS

$1,533,104

Johns Hopkins University: CDC Prevention Epicenter
The Prevention Epicenters Program is a collaborative network of public health and experts in relevant fields of HAI and AR that responds to research priorities to protect patients. The network conducts research to support the translation of innovative IPC strategies for preventing HAIs, the spread of AR, and other adverse events in all healthcare settings.
Learn more: www.cdc.gov/hai/epicenters

$1,424,035

University of Maryland: CDC Prevention Epicenter
The Prevention Epicenters Program is a collaborative network of public health and experts in relevant fields of HAI and AR that responds to research priorities to protect patients. The network conducts research to support the translation of innovative IPC strategies for preventing HAIs, the spread of AR, and other adverse events in all healthcare settings.
Learn more: www.cdc.gov/hai/epicenters

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$5,155

Johns Hopkins University: Discovering & Implementing What Works

Investigators are building mathematical modeling workforce capacity in public health by strengthening applied modeling and network development for public health institutions. This includes assessing the impact of disparities and health equity on infectious diseases and incorporating these identified factors in infectious disease forecasts and transmission models.

Learn more: www.cdc.gov/hai/research/safehealthcare.html

$89,587

University of Maryland: Discovering & Implementing What Works

Investigators are conducting sentinel surveillance of organisms that can cause HAIs.

Learn more: www.cdc.gov/hai/research/safehealthcare.html

$600,000

The One Health Trust (Formerly The Center for Disease Dynamics, Economics, and Policy): Discovering & Implementing What Works

The Modeling Infectious Diseases in Healthcare Network (MInD-Healthcare) responds to evolving public health needs in healthcare settings by conducting transmission modeling research and assessing high-impact intervention strategies. Experts assess patients at risk of coming in contact with germs, develop transmission models, and evaluate the effectiveness of IPC interventions.

Learn more: www.cdc.gov/hai/research/MIND-Healthcare.html

$5,418,334

Association of Public Health Laboratories: Innovative Prevention & Tracking

Experts support CDC and the AR Lab Network by helping to build a strong AR workforce in public health, developing and amplifying messaging about AR Lab Network resources to relevant clinical partners, and developing and maintaining information technology solutions for reporting data from the AR Lab Network to submitting facilities, jurisdictional public health laboratories, prevention programs, and CDC.

$1,027,833

Association of Public Health Laboratories: Global Expertise & Capacity Enhancements

CDC's global work to combat AR helps prevent the importation of AR threats in the United States. Experts support CDC and global partners to develop whole genome sequencing and bioinformatics capacity to collect, track, and report data on enteric (gut) bacteria and AR in the Asia-Pacific region. This work is part of CDC's Global AR Lab & Response Network.

$350,000

Association of Public Health Laboratories: Global Expertise & Capacity Enhancements

CDC's global work to combat AR helps prevent the importation of AR threats in the United States. Experts work with local labs in Kenya on environmental surveillance of antimicrobial-resistant *Escherichia coli* in drinking water, drinking water sources, and environmental water and assess risk factors for exposure to antimicrobial-resistant pathogens to improve prevention measures. This work is part of CDC's Global AR Lab & Response Network.

$850,000

Association of Public Health Laboratories: Global Expertise & Capacity Enhancements

CDC's global work to combat AR helps prevent the importation of AR threats in the United States. Experts support CDC and global partners to develop information technology solutions for collecting, tracking, and reporting data within the Global AR Lab & Response Network, within the Global Action in Healthcare Network, and to CDC. This work is part of CDC's Global AR Lab & Response Network.

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MARYLAND - AR Investments (cont.)

$100,000

Association of Public Health Laboratories: Global Expertise & Capacity Enhancements

CDC's global work to combat AR helps prevent the importation of AR threats into the United States. Experts work in India to conduct whole genome sequencing to detect drug-resistant (DR) tuberculosis (TB) and analyze potential DR-TB transmission events.

$109,958

Association of Public Health Laboratories: Global Expertise & Capacity Enhancements

CDC's global work to combat AR helps prevent the importation of AR threats in the United States. Experts work in India to support quality-assured drug-sensitive and drug-resistant tuberculosis (TB) testing sites by introducing and expanding CDC-developed national external quality assurance programs for tests that analyze resistance to anti-TB drugs. Experts use new online resources to provide virtual training for people performing TB testing.

$146,000

Association of Public Health Laboratories: Global Expertise & Capacity Enhancements

CDC's global work to combat AR helps prevent the importation of AR threats into the United States. Experts work to develop whole genome sequencing guidance to build capacity to detect drug-resistant tuberculosis (TB) and guide appropriate patient treatment. This work is supported by global TB funds.

$275,000

Association of Public Health Laboratories: Global Expertise & Capacity Enhancements

CDC's global work to combat AR helps prevent the importation of AR threats into the United States. Experts improve tuberculosis surveillance and diagnostics among refugee camp populations in Kenya.

$500,000

Global Scientific Solutions for Health: Global Expertise & Capacity Enhancements

CDC's global work to combat AR helps prevent the importation of AR threats in the United States. Experts support surveillance for antimicrobial-resistant *Neisseria meningitidis* – the cause of meningococcal disease- in Burkina Faso and Togo to guide public health decision making and tracking and responding to the threat of meningococcal disease outbreaks in the region. This work is part of CDC's Global AR Lab & Response Network.

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