AR Solutions *In Action*

CDC's Investments to Combat Antibiotic Resistance Threats

FISCAL YEAR 2018

VIRGINIA

$3,235,794

Funding for AR Activities
Fiscal Year 2018

FUNDING TO STATE HEALTH DEPARTMENTS

$541,749

RAPID DETECTION AND RESPONSE to novel or high-concern drug-resistant germs is critical to contain the spread of these infections.

With 2017 funding, Virginia responded to two fatal cases of invasive MRSA infections in a NICU (a hospital unit that cares for newborns) by issuing recommendations for enhanced surveillance, screening staff, and increased environmental cleaning. This generated awareness of the mortality associated with invasive MRSA infections and the importance of reporting.

$638,029

HAI/AR PREVENTION works best when public health and healthcare facilities partner together to implement targeted, coordinated strategies to stop infections and improve antibiotic use.

With 2017 funding, Virginia's Healthcare-Associated Infections Advisory Group accelerated statewide and facility-level progress in preventing infections and the spread of resistance by offering targeted education across healthcare provider types and media platforms.

$475,120

FOOD SAFETY projects protect communities by rapidly identifying drug-resistant foodborne bacteria to stop and solve outbreaks and improve prevention.

Virginia uses whole genome sequencing to track and monitor local outbreaks of *Listeria*, *Salmonella*, *Campylobacter*, and *E. coli* and uploads sequence data into PulseNet for nationwide monitoring of outbreaks and trends. In Fiscal Year 2019, Virginia will begin simultaneously monitoring these isolates for resistance genes. When outbreaks are detected, local CDC-supported epidemiologists investigate the cases to stop spread.

FUNDING TO UNIVERSITIES & HEALTHCARE PARTNERS

$378,327

UNIVERSITY OF VIRGINIA: Discovering & Implementing What Works

This study will look at 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.*

$685,580

UNIVERSITY OF VIRGINIA: Innovative Prevention & Tracking

Carbapenemase-producing Gammaproteobacteria, a class of bacteria that can be highly resistant to today's strongest antibiotics, may colonize (or live in) the premise plumbing systems of healthcare facilities. This project will investigate those factors that may influence colonization and growth of these organisms in sink drains and use a multifaceted approach to assess interventions designed to prevent the spread of these organisms from plumbing to patients.

 This data represents CDC's largest funding categories for AR. It shows extramural funding that supports AR activities from multiple funding lines.

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

VIRGINIA AR Investments (*cont.*)

$280,734

VIRGINIA POLYTECHNIC INSTITUTE & STATE UNIVERSITY: Discovering & Implementing What Works

Water reclamation and reuse uses advanced treatment methods to make treated wastewater safe for a variety of uses, like irrigation, cooling towers, reservoir augmentation, and aquifer recharge. This study will identify specific waste water reuse treatment methods that reduce antibiotic-resistant bacteria and genes by comparing wastewater samples throughout the treatment train of two distinct advanced treatment facilities. Identifying treatment approaches that reduce antibiotic resistance is important as water reuse becomes more widely adopted.

$236,255

VIRGINIA POLYTECHNIC INSTITUTE & STATE UNIVERSITY: Discovering & Implementing What Works

This study will evaluate the effectiveness of a variety of disinfection methods used in hospital plumbing systems to kill antibiotic-resistant bacteria and prevent evolution and spread of new resistant strains. The findings will provide helpful guidance to hospitals and similar facilities where disinfection is important to protect high-risk populations.

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