AR Solutions *In Action*

CDC's Investments to Combat Antibiotic Resistance Threats

FISCAL YEAR 2019

MICHIGAN

$5,085,524

Funding for AR Activities
Fiscal Year 2019

HIGHLIGHTS

One local CDC fellow

AR Lab Network's National Tuberculosis Molecular Surveillance Center

FUNDING TO STATE HEALTH DEPARTMENTS

$1,971,058

AR LABORATORY NETWORK REGIONAL LABS boost state and local testing capacity and technology to detect, support response to, and prevent AR threats across the nation—and inform new innovations to detect AR.

In 2018, the National Tuberculosis Molecular Surveillance Center (NTMSC) implemented universal whole genome sequencing (WGS) of *Mycobacterium tuberculosis* isolates from all culture-confirmed cases in the U.S., sequencing more than 11,000 isolates to date. WGS data are used to support outbreak investigations and provide surveillance of drug resistance. Data from the NTMSC was used to initiate a rifampicin resistance alert for surveillance purposes in 2019, and 73 resistant isolates have been identified as of August 2019.

$2,798,109

RAPID DETECTION & RESPONSE: State, territory, and local public health partners fight antibiotic resistance in healthcare, the community, and food. Programs use the AR Lab Network to rapidly detect threats and implement prevention, response, and antibiotic stewardship to stop the spread of resistant germs.

With 2018 funding, Michigan responded to 40 cases of novel resistance. Thanks to rapid detection, communication, and response, the interval from case notification to the start of the investigation was less than 16 hours. With carbapenemase-producing carbapenem-resistant Enterobacteriaceae (CP-CRE) becoming reportable in 2018, Michigan strengthened its detection and response to CP-CRE, with 270 confirmed cases reported and 2,697 isolates submitted for confirmatory testing.

$252,147

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

Michigan 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 2020, Michigan will continue monitoring these isolates for resistance genes. When outbreaks are detected, local CDC-supported epidemiologists investigate the cases to stop spread.

$64,210

GONORRHEA RAPID DETECTION & RESPONSE 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 treatment option remains for gonorrhea and resistance continues to grow.

To help inform national treatment guidelines for gonorrhea, Michigan participates in the Gonococcal Isolate Surveillance Project (GISP), testing how well antibiotics work on laboratory samples from sentinel STD clinics, which are often the first to detect the threat. Select STD clinics in Michigan also collect additional samples, including from women and from extragenital sites, to further enhance surveillance for antibiotic resistant gonorrhea.

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