Carbapenem-resistant Enterobacteriaceae (CRE) are a major concern for patients in healthcare facilities. Some bacteria in this family are resistant to nearly all antibiotics, leaving more toxic or less effective treatment options.

**WHAT YOU NEED TO KNOW**

- Patients who require devices (e.g., catheters) and patients taking long courses of some antibiotics are most at risk for CRE infections.
- CRE can carry mobile genetic elements that are easily shared between bacteria. Approximately 30% of CRE carry a mobile genetic element that can make an enzyme, which makes carbapenem antibiotics ineffective and rapidly spreads resistance that destroys these important drugs.
- Preventing CRE infections and containing the spread of carbapenem resistance is important to protect people.

**CASES OVER TIME**

Containment strategies have prevented further spread of some types of CRE in the United States, but continued action is needed.
CARBAPENEM-RESISTANT ENTEROBACTERIACEAE (CRE)

STOPPING CRE

CDC developed a robust system for detecting and responding to carbapenemase-producing CRE (CP-CRE) in the United States. In 2016, CDC established the Antibiotic Resistance Laboratory Network (AR Lab Network). Through the network, labs in 50 states, many major cities, and Puerto Rico provide clinical laboratories access to advanced detection capacities to identify patients with CP-CRE infections. The AR Lab Network also provides testing to screen people at risk for CP-CRE to help slow or stop its spread.

Patients with CP-CRE may have gone unrecognized before the AR Lab Network. When CP-CRE is identified now, health departments and healthcare facilities can take action to contain its spread, such as having healthcare providers wear gowns and gloves when providing care. This new national public health infrastructure means rapid action is taken to stop spread when even one CP-CRE case is identified.

CDC’S AR LAB NETWORK

To avoid spread seen in the past, CDC funded infrastructure to rapidly detect and respond to future unusual resistance threats. Laboratories nationwide work together to fight antibiotic resistance.

Clinical Labs
Collect and submit patient samples for testing at public health department and regional labs

Public Health Department Labs
Characterize patient samples for species type, carbapenemase production, and resistance profiles

7 Regional Labs and National TB Center
Detect antibiotic resistance, track changes in resistance, and identify outbreaks

CDC
Coordinates the network, provides technical expertise, and supports outbreak responses

ONLINE RESOURCES

About CRE in Healthcare Settings
www.cdc.gov/hai/organisms/cre

CDC Vital Signs: Containing Unusual Resistance
www.cdc.gov/vitalsigns/containing-unusual-resistance

This fact sheet is part of CDC’s 2019 Antibiotic Resistance Threats Report. The full report, including data sources, is available at www.cdc.gov/DrugResistance/Biggest-Threats.html.