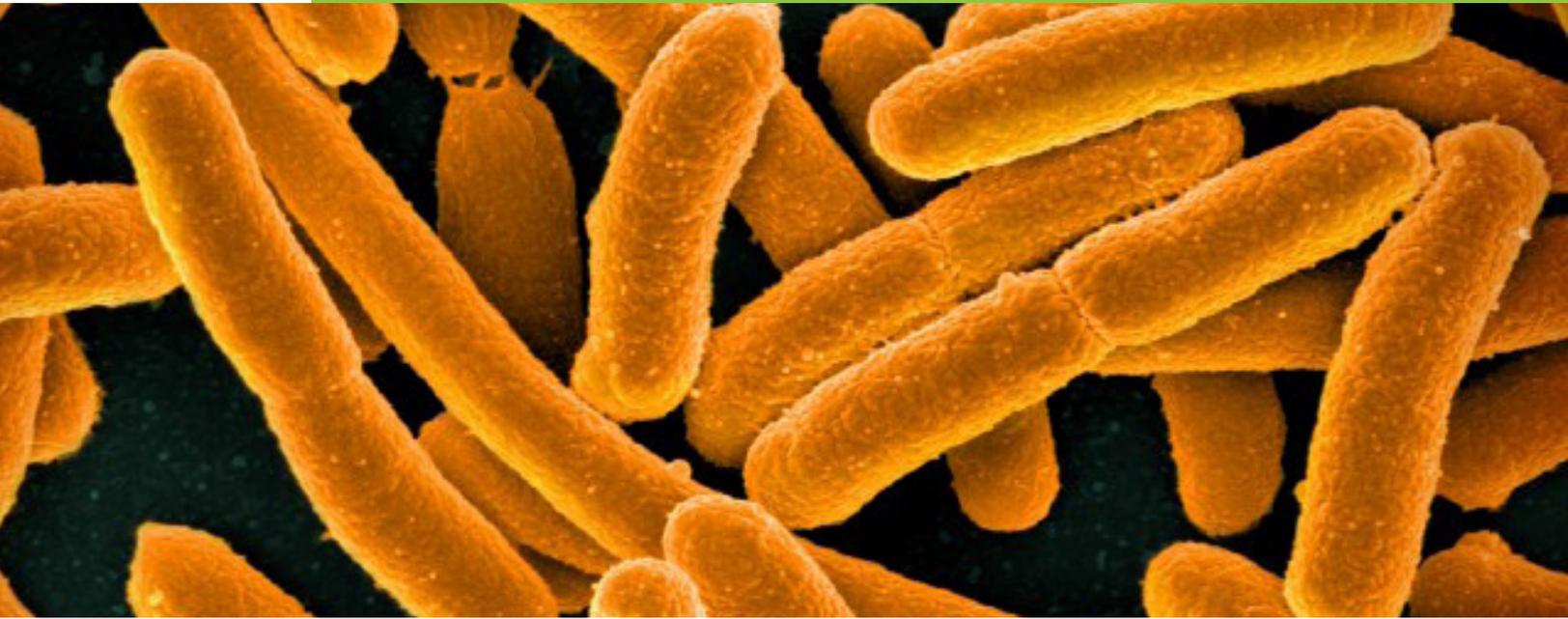


# *Escherichia coli*



## Did you know...

### E. COLI

*Escherichia coli* (*E. coli*) is a gram-negative bacterium from the Enterobacteriaceae family, and it has the ability to become resistant to different antibiotics, including a “last line of defense” drug called **carbapenem**.<sup>1,2</sup> When this specific type of resistance occurs, *E. coli* falls under the Carbapenem-resistant Enterobacteriaceae (**CRE**) classification.

*E. coli* can also develop another type of resistance that occurs through the production of an enzyme named **extended-spectrum beta-lactamase (ESBL)**. ESBL-producing bacteria are often less susceptible to antibiotics such as penicillins and cephalosporins.<sup>3</sup>

For more information on *E. coli* and HAIs, visit [www.cdc.gov/hai/organisms/organisms](http://www.cdc.gov/hai/organisms/organisms)

### PUBLIC HEALTH

The CDC has classified Carbapenem-Resistant Enterobacteriaceae (CRE) and **ESBL**-producing bacteria as **urgent** and **serious threats**, respectively. Specifically, Carbapenem-resistant *E. coli* has been estimated to cause 2% of Enterobacteriaceae HAIs, which translates to 1,400 infections and 90 deaths annually. In addition, **ESBL**-producing *E. coli* has been estimated to cause 14% of Enterobacteriaceae HAIs that are resistant to extended-spectrum cephalosporins, which translates to 9,000 infections and 600 deaths.<sup>1</sup>

### FINANCIAL IMPACT

Overall, *E. coli* has been a top pathogen of concern, accounting for 15% of Healthcare Acquired Infections (HAIs).<sup>3</sup> Furthermore, when this bacteria develops resistance, the financial impact can be profound. The economic burden of **antibiotic resistant *E. coli*** has been associated with increased total hospital costs upwards of 1.28 – 2.12 times that of antibiotic sensitive infections.<sup>3</sup>

## What is the CDC doing to help?<sup>1</sup>

- Tracking CRE and ESBL illnesses and risk factors
  - **National Healthcare Safety Network**
  - **Emerging Infections Program**
- Providing CRE and ESBL outbreak support
- Developing CRE and ESBL prevention and testing methods
- Promoting improved antibiotic prescribing

## What can hospitals and administrators do?<sup>1</sup>

- Enforce CDC guidelines for prevention, detection, tracking and reporting of these types of resistant *E. coli* infections
- Ensure laboratories can identify CRE and ESBL bacteria (like antibiotic resistant *E. coli*) and quickly communicate or alert clinical staff or other staff as appropriate
- Learn about CRE and ESBL trends within their facility and the surrounding facilities
- Require communication regarding infection status, including *E. coli* cases which are carbapenem-resistant or extended spectrum beta-lactamase producing, during patient transfers
- Participate in or launch regional CRE & ESBL prevention efforts, encourage wise antibiotic use

## What can providers do?<sup>1</sup>

- Stay informed about drug-resistant cases in your hospital and patients
- Ask for immediate updates when your patients are identified by the lab as having a drug-resistant infection
- Protect other patients from infections that are drug-resistant; adhere to infection control methods and precautions for each patient encounter
- During patient transfers, communicate to the receiving facility if your patient has a drug-resistant infection
- Temporary medical devices should be removed as soon as they are no longer needed
- Prescribe antibiotics wisely

For more information, visit [www.cdc.gov/antibiotic-use/healthcare](http://www.cdc.gov/antibiotic-use/healthcare)



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1. CDC, Antibiotic Resistant Threats in the US 2013, Center for Disease Control and Prevention. Atlanta. Accessed Feb 13, 2019. < <https://www.cdc.gov/drugresistance/pdf/ar-threats-2013-508.pdf> >  
2. Centers for Disease Control and Prevention. National Center for Emerging and Zoonotic Infectious Diseases. Division of Healthcare Quality Promotion. "Making Health Care Safer: Stop Infections from Lethal CRE Germs Now". CDC Vital Signs. March 2013.  
3. Weiner, Lindsey M., et al. "Antimicrobial-Resistant Pathogens Associated With Healthcare-Associated Infections: Summary of Data Reported to the National Healthcare Safety Network at the Centers for Disease Control and Prevention, 2011–2014". Infection Control & Hospital Epidemiology. 2016 Nov; 37 (11): pgs 1288-1301.