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What are carbapenem-resistant Enterobacteriaceae (CRE)?

Enterobacterales are germs normally found in the human gut. Common types include *E. coli* and *Klebsiella* species. Carbapenems are a class of antibiotics that were developed to treat germs that are resistant to other drugs. Because of the overuse of these antibiotics, some types of Enterobacterales are resistant to carbapenems and these germs are called carbapenem-resistant Enterobacterales (CRE).

Who gets CRE?

Healthy people usually do not get CRE infections. In healthcare, CRE infections might occur in patients being treated for other conditions. High-risk patients for CRE infections have devices like breathing tubes or bladder and blood catheters. Also at risk are patients on long courses of certain antibiotics.

How are CRE spread?

CRE can spread through direct contact with an infected person. It can also spread through contaminated items, like medical equipment, and surfaces, like bed rails and doorknobs.

What are the symptoms of CRE?

Some people carry CRE bacteria in their bodies without any symptoms. We call this being “colonized.” A person might be colonized for a long time before getting sick or might never get sick. Enterobacterales can cause many infections. These include infections of the stomach, lungs, wounds, or blood. CRE causes the same infections, but the infections are much harder to treat.

How soon after exposure do symptoms appear?

The time between exposure and symptom onset varies for different types of Enterobacterales. For CRE, it is not well known how soon symptoms appear after exposure. In most situations, exposure to CRE does not lead to illness. The person might carry the CRE in his or her body, but not get sick at all, or might get sick from the CRE days or weeks later.

How are CRE diagnosed?

We need special lab tests to identify bacteria that cause infections. They will also find which antibiotics, if any, can treat them.

What is the treatment for CRE?

Treatment options depend on the type of CRE infection. Some CRE infections can be treated. But the

bacteria must not be resistant to all antibiotics. If you have CRE, your physician will work with you to figure out the best course of treatment.

How can the spread of CRE be prevented?

Good infection prevention practices can limit the spread of CRE in healthcare settings. These include wearing a gown and gloves when caring for patients with CRE, and frequent hand hygiene by healthcare workers. Patients with CRE should follow their care providers' instructions. They should also keep their hands clean, especially after touching the affected area or using the bathroom. Visitors to a CRE patient should follow the hospital's precautions.

What if I have CRE?

Notify all your healthcare providers. Bring this paper if you need help remembering the name of the germ.

Follow your healthcare provider's instructions. If your provider prescribes you antibiotics, take them exactly as directed. Follow any other medical or hygiene advice your provider gives you.

Wash your hands with soap and warm water. Wash your hands when:

- Eating or preparing food.
- Before and after changing a wound dressing.
- After using the bathroom.
- After blowing your nose, coughing, or sneezing.

Use alcohol-based hand sanitizer when soap and water are not available. Ask and remind healthcare personnel to wash their hands.

What if I am caring for someone with CRE at home?

Family members who are healthy have a low chance of CRE infection. CRE mainly affects people with many medical problems. It is a problem for those who have spent a lot of time in healthcare settings.

Family or caregivers of patients with CRE must wash their hands before and after touching the patient or medical devices. Handwashing is crucial if the caregiver is caring for many sick people at home. Use gloves if contact with body fluids or blood is possible. Family and caregivers should ask and remind others to wash their hands.

How can I get more information about CRE?

- If you have concerns about CRE, contact your healthcare provider.
- Call your local health department. You can find your local health department at vdh.virginia.gov/health-department-locator/.
- Visit the Virginia Department of Health website at vdh.virginia.gov/haia/cro/.
- Visit the CDC website at cdc.gov/cre/about/index.html.

Translations

[Carbapenem-resistant Enterobacteriaceae Fact Sheet in Arabic](#)

[Carbapenem-resistant Enterobacteriaceae Fact Sheet in Dari](#)

[Carbapenem-resistant Enterobacteriaceae Fact Sheet in Haitian Creole](#)

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