

## **Carbapenem-Resistant *Enterobacteriaceae* (CRE)**

### **What are Carbapenem-Resistant *Enterobacteriaceae* (CRE)?**

CRE are bacteria that are resistant to most antibiotics. *Enterobacteriaceae* is a family of bacteria. Many of these bacteria live in our environment (in soil or water). Some of them can get into our bodies and make us sick. Members of the *Enterobacteriaceae* family of bacteria can cause pneumonia, kidney and bladder infections, and bloodstream infections. Most of the *Enterobacteriaceae* can be treated with antibiotics. However, because antibiotics have been overused, many of the *Enterobacteriaceae* have become resistant to most of the available antibiotics. The carbapenem antibiotics were developed to treat bacteria that had become resistant to most other antibiotics. About 10 years ago, we began to see bacteria from the *Enterobacteriaceae* family that had become resistant to the carbapenem antibiotics. These are called Carbapenem-Resistant *Enterobacteriaceae* or CRE.

### **Are CRE dangerous?**

They can be, because they are found in hospitals, and can cause infection in people who are very sick. Patients in intensive care units are at greatest risk, especially if they are on ventilators and have central intravenous catheters in place.

### **Are CRE treatable?**

Yes, usually. However, because we have few antibiotics available to treat CRE, they can be difficult to treat. Patients can die from infections with CRE.

### **What are hospitals doing to prevent CRE?**

Hospitals are very aware of CRE and are taking steps to prevent infection in their patients. Careful use of antibiotics can make it less likely that CRE will appear in a hospital. If a patient does become infected with CRE, hospitals take special precautions to prevent spread of the CRE to other patients.

### **How can CRE be transmitted to other patients?**

CRE can be transferred from the patient to the environment and to the hands of the care provider (doctor or nurse or other person) when the care provider touches the patient or touches the patient with medical equipment, then touches another patient.

### **What kind of precautions can the hospital use?**

Hospitals use “standard precautions” for all patient care activities. Standard precautions means that healthcare personnel wash their hands before they touch a patient and after they finish

caring for the patient, and they wear gloves and a gown for patient care activities that might result in exposure to blood or body fluids.

If a patient is infected with CRE, additional infection control measures are taken. These are called “contact precautions”. The patient is usually placed in a private room. The care provider wears gloves and a gown any time he/she is in the patient’s room. The patient must stay in the room and visitors may be restricted.

### **How can I prevent CRE in myself or a family member?**

As far as we know now, the greatest risk for acquiring a CRE is in a hospital, especially in an ICU. If you or a family member are hospitalized, you should follow instructions for hand washing and other infection control measures as requested. You should also expect your nurse and other care providers to wash their hands and wear gloves and gown if necessary. If you have questions, talk with your physician or nurse.

### **What should I do if I think I have CRE?**

Talk to your health care provider.

### **Where can I obtain additional information on CRE?**

The CDC website ([http://www.cdc.gov/ncidod/dhqp/ar\\_kp.html](http://www.cdc.gov/ncidod/dhqp/ar_kp.html)) has some general information on drug resistant bacteria, and several pages of information on *Klebsiella*. *Klebsiella* is a member of the *Enterobacteriaceae* family. It was the first member of the family to develop carbapenem resistance. The other CRE are similar in their ways of making people sick, and their resistance to treatment with common antibiotics.