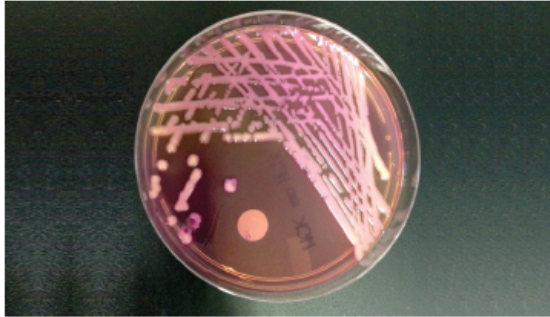




**CARBAPENEM RESISTANT ENTEROBACTERIACAE (CRE)**



### What is CRE?

Carbapenems are strong antibiotics used by doctors to treat infections caused by very resistant bugs (bacteria). Enterobacteriaceae are a group of bugs which normally live in our gut without causing illness. CRE's are enterobacteriaceae that produce enzymes that break down Carbapenem antibiotics, thereby making them highly resistant to normal antibiotic treatment. Most of the time these CRE bugs are carried harmlessly in the gut along with other normal gut bugs, which is known as "colonisation".

### How do people get CRE?

People who have been on multiple courses of antibiotics are more at risk of becoming colonised with a CRE. This is because the "normal" bugs in the gut are killed by the antibiotics, allowing the more resistant bugs (that might originally only be found in the gut in extremely small numbers) to multiply without any competition.

CRE bugs are carried by patients, health care staff or visitors, either harmlessly or because they are infected with the bug. It can be spread between people through direct contact, mainly by unwashed hands, or by touching items or surfaces that the person with CRE may have touched such as bed rails, toilets or other equipment. CRE is not spread by the air.

### Who is at risk for CRE?

Sick patients are particularly susceptible to developing an infection with CRE organisms if they become colonised. Nobody fully understands what causes somebody to change from colonisation (where the bug is living in your gut without causing illness) to infection (where the bug is causing illness e.g. pneumonia, urinary tract infection) therefore it is best to prevent the spread of CRE to vulnerable people in the first place. Patients admitted to ICU, people with cancer, pregnant women, and people with liver and kidney disease are particularly vulnerable.

If somebody develops an infection with a CRE bug it is extremely difficult to treat with antibiotics because CRE bugs are very resistant to most commonly used antibiotics.



Patients in hospital are far more vulnerable to infection than patients in their own homes, therefore special precautions are required to prevent the spread of CRE between patients in hospital.

### Why do we need to know if a patient is carrying CRE?

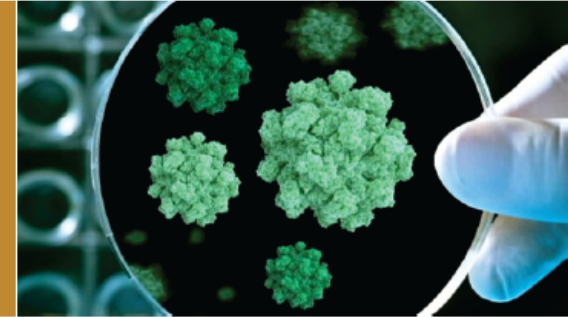
Screening tests are done on patients who come from other hospitals or old-age homes to prevent spread of the CRE to other patients in the new hospital. It is also useful to know if a very sick patient is carrying CRE before it makes them sick, therefore patients admitted to ICU's may also be screened for CRE every week to pick up if they might be carrying the CRE bugs. That way, if a sick patient who is known to have CRE develops an infection, while the doctor is waiting for the laboratory results they can choose an appropriate antibiotic, bearing in mind that the bug making the patient sick may possibly be a CRE bug.

### What special precautions are required for CRE?

Special precautions are designed to prevent CRE spreading between patients on the ward. Patients found to have CRE are cared for in an isolation room with their own toilet or commode. Staff and visitors must put on gloves and aprons before entering the room to prevent their clothes and hands from picking up CRE. Patients, staff and visitors must wash their hands thoroughly before entering and after leaving the room. Hospital records should reflect that a CRE was found on laboratory testing.

### Visitors

Visitors are allowed, however, they must obey all the instructions given to them by the nursing staff. They should report to the nursing station when they arrive on the ward. Visitors should wash hands thoroughly and put on long-sleeved gowns and gloves before entering the room. They should not use the toilet facilities in the isolation room. They should also not eat and drink while in the room. Before leaving the room, visitors must remove the gloves and gown and throw them away in the garbage container and linen hamper inside the isolation room. Visitors must also wash their hands thoroughly after leaving the room before they touch anything outside the room.



### Going home

You can go home as soon as your doctor says you are ready, even if you have CRE. Carrying CRE will not affect your discharge.

### What should happen at home?

The following practices are recommended at home for someone colonised with CRE:

- Everyone who helps the person with personal care or with going to the toilet should wash their hands after touching them.
- Hands should be washed before preparing food and before eating. Everyone in the house should do the same. Cutlery and crockery can be washed in the usual way.
- Wash hands well after using the toilet.
- Ideally the person should have their own bathroom towel. Towels should be washed regularly.
- Avoid sharing personal grooming tools e.g. razors, scissors and tweezers.
- Clothes may be washed with the rest of the household in the usual way.
- No special cleaning of furniture or items in the home is required.
- Shared bathrooms should be cleaned frequently with a bleach-based cleanser.
- Cover up any open wounds or cuts.

**Remember that clean hands protect people from contracting a lot of other kinds of bugs not just CRE.**

### Getting rid of CRE

The body may clear CRE from the gut as the person recovers, but this is not always the case, and it may remain in the gut for a long time. Antibiotics are available (a very limited number!) to treat CRE infections, but antibiotics are not used to clear the gut of CRE colonisation as this practice has not been shown by any medical research to be effective.