

# CARBAPENEMASE PRODUCING ENTEROBACTERIACEAE (CPE)

## What is CPE?

Enterobacteriaceae are a family of bacteria, many of which live in our intestines. Carbapenemase-producing Enterobacteriaceae (CPE) produce enzymes that can break down many types of antibiotics, making the bacteria very resistant and hard to treat.

Infection occurs when CPE enter the body and cause diseases such as pneumonia and urinary tract infections. Most people carry CPE in their intestines without it causing them any harm or symptoms of infection. This is called colonization.

In Canadian hospitals, there are currently few infections with CPE, but caution is still needed to prevent their increase and spread. CPE outbreaks are being reported more and more in hospitals around the world, including Canada.

## How does CPE spread?

CPE are typically spread in health care facilities such as hospitals, which is why infection prevention and control best practices are to be followed in these facilities.

If a person is colonized or infected with CPE, the bacteria can be spread to other people through direct contact (usually from the hands of health care workers) or indirectly through contact with shared items or surfaces (e.g., towels, taps, etc.).

CPE can survive for weeks on equipment and surfaces such as door and equipment handles, and handrails and bedrails if they are not properly cleaned and disinfected.

## What are risk factors for CPE infection?

CPE infection is more likely to develop among the elderly, individuals who are hospitalized and those with severe disease or weakened immune systems.

Other factors that increase the risk of getting CPE infection include:

- Prolonged hospital stays, especially in countries with high or unknown rates of CPE
- Invasive medical procedures and surgeries

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- Use of invasive devices such as urinary catheters or ventilators
- Previous use of antibiotics

## How is CPE treated?

If a person has the bacteria present in their body (colonization) but has no symptoms of an infection with CPE, they do not usually need treatment.

If a person has a CPE infection, treatment depends on the type of CPE and the location of the infection. CPE can be very hard to treat as most antibiotics are resistant. People with CPE may need strong antibiotics or may have to take more than one antibiotic which may result in significant side effects.

## What can be done to prevent the spread of CPE?

### HAND HYGIENE

Proper hand hygiene is one of the most effective ways to reduce the risk of getting colonized or infected with CPE.

Practice good hand hygiene before and after contact or care with patients/residents.

Proper hand hygiene techniques include washing hands for 15 seconds with soap and running water or applying alcohol-based hand rub (70-90% ethanol or isopropyl alcohol) to all areas of your hands (use a thumb-sized amount) and rubbing hands until they are dry.

Hands should be cleaned:

- After using the bathroom
- After blowing your nose
- Before eating and drinking
- Before and after touching dressings or wounds
- When hands are visibly dirty (soiled)
- Before entering or leaving a patient/resident room



It is also important to educate and remind patients/residents about the proper way to perform hand hygiene.

## ADDITIONAL MEASURES

Additional measures need to be taken in the health care facility to stop CPE from spreading to other people. The following measures should be taken for a colonized or infected individual:

- Private room accommodation is preferred (the door can remain open)
- Hand hygiene is performed by everyone who enters and leaves the room
- Long-sleeved gown and gloves are worn by everyone who provides direct care
- The proper steps for putting on and taking off personal protective equipment are followed
- Signage is placed on the door to remind anyone entering the room what measures need to be taken
- Equipment should be dedicated to the patient/resident or adequately cleaned and disinfected after each use if it is shared. This includes transport equipment (e.g., wheelchairs)
- The room and equipment used in the room is cleaned and disinfected daily
- The room is terminally cleaned upon discharge or after Additional Precautions have been discontinued. Fresh supplies should be stocked

## References

<https://www.publichealthontario.ca/-/media/documents/a/2013/aros-screening-testing-surveillance.pdf>

[Carbapenemase-producing Enterobacteriaceae \(CPE\) Information Sheet for Patients and Visitors](#)

[Frequently Asked Questions: Carbapenemase-Producing Enterobacteriaceae \(CPE\)](#)  
[\(publichealthontario.ca\)](#)