

Carbapenemase-Producing Organisms (CPO) Fact Sheet for Healthcare Providers

What are Carbapenemase-Producing Organisms (CPO)?

CPO are multidrug resistant gram-negative bacteria including *Enterobacteriaceae* (e.g. *Klebsiella pneumoniae*, *Escherichia coli*, *Acinetobacter* spp., and *Pseudomonas* spp.) that produce enzymes which inactivate carbapenems, a class of broad-spectrum antibiotics. Patient can be colonized with CPO in their gastrointestinal tract. If an infection due to CPO occurs, it can result in high morbidity and mortality.

Where do they come from?

CPO prevalence has increased worldwide and has become endemic in many countries outside of Canada. Unfortunately, there are now a few Canadian hospitals that have endemic areas within their facilities. Patients with Emergency Department visits, hospitalization, surgery, hemodialysis, and chemotherapy outside of Canada within the past 12 months are at higher risk of CPO acquisition. Healthcare providers are at minimal risk of infection.

How are CPOs spread?

CPO transmission has been attributed to poor hand hygiene and contaminated patient equipment and surfaces. Broad-spectrum antimicrobial use also contributes to CPO development.

What can be done to prevent the spread of CPO?

1. Hand hygiene is the most important measure in preventing transmission and should be performed:

- Before and after contact with every patient
- When leaving the room or patient care area
- After removing gloves
- Between different procedures on the same patient
- Just before mouth care, suctioning, and assisting with meals

Both soap and water and alcohol based hand rub (ABHR) are effective against CPO.

2. Clean and disinfect patient equipment routinely:

- Dedicate equipment to patient being screened for CPO or known to have CPO. Clean and disinfect equipment between use.
- Clean and disinfect commode surfaces, from cleanest surface to most contaminated (i.e. backrest, arm rests, toilet seat) after each use.

3. Use private rooms and Contact Precautions for CPO positive patients:

- Wear gloves and gown for all direct contact with the patient or their environment.
- If patient is positive in sputum and is coughing, use procedure mask with attached visor/face shield.
- Change gloves and perform hand hygiene during care to prevent cross-contamination of sites.
- Dedicate non-critical equipment.



- Clean and disinfect any mobile equipment prior to patient exiting the room.

4. Screen patients at risk for CPO on admission.

5. Encourage patients to perform hand hygiene before meals, after using the washroom, and frequently throughout the day.

What is this important?

Hospital outbreaks of CPO are difficult and costly to contain. Interventions must be implemented to prevent spread to other patients.