

Carbapenemase-Producing Organisms in Long-term Care Information for Staff

What are CPO?

Carbapenemase-producing organisms (CPO) are multi-drug resistant bacteria including *Escherichia coli*, and species of *Klebsiella*, *Acinetobacter* and *Pseudomonas*. These bacteria have acquired additional genes that encode carbapenemases and make them resistant to most antibiotics, including the carbapenems. A few examples of the carbapenemase are the New-Delhi metallo-beta-lactamase (NDM), *Klebsiella pneumoniae* carbapenemase (KPC) and OXA-48. Infections caused by CPO may be very difficult to treat because of the extensive antibiotic resistance.

These organisms are typically found in the human digestive system where they do not cause symptoms (the person is a carrier, or colonized), but they can cause a difficult-to-treat infection if they spread to other parts of the body such as a wound, the respiratory tract or the blood. People who get an infection with CPO are usually already ill for other reasons. As with other microorganisms, the environment can become contaminated with them, providing a potential source of spread.

Where did CPO originate?

CPO have been emerging world-wide for almost two decades. BC are seeing CPO cases in individuals who have travelled to countries where CPO are endemic, as well as some locally acquired cases. CPO cases in Long-Term Care may pose a risk to staff, other residents and their families. Compliance with hand hygiene as per 4 moments of hand hygiene and wearing appropriate personal protective equipment based on point of care risk assessment is the optimal way for staff to prevent spread and to protect themselves, their residents, and visitors.

How can you prevent CPO from spreading?

- Clean your hands when going from resident to the next resident
- Clean your hands before entering and when leaving a resident room or area
- Clean and disinfect all shared medical equipment between residents
- Clean your hands before preparing or eating food
- Wear gown and gloves for high-contact activities involving CPO positive residents

What are the recommendations for managing residents with CPO in Long-Term Care?

In Long-Term Care, Fraser Health recommends enhanced barrier precautions for CPO positive residents.

Services should not be denied on the basis of colonization or infection with CPO.

These recommendations do not apply to community settings, dialysis centers, JPOCSC and outpatient clinics in acute care. Separate CPO guidelines for dialysis centers and acute care outpatient clinics are available at: http://fhpulse/clinical_resources/clinical_policy_office/Lists/CDST%20Library/DispForm.aspx?ID=2501

The following infection prevention and control practices for caring for CPO positive residents are recommended for the duration of the stay:

Infection Prevention and Control Practices	<ul style="list-style-type: none"> • Enhanced barrier precautions involves the use of gloves and gown during high-contact care activities. Additional personal protective equipment should be used based on point of care risk assessment. Such activities include: <ul style="list-style-type: none"> ○ Caring for residents with urinary or fecal incontinence ○ Caring for residents with behavioral needs that may pose a risk of contaminating the environment ○ Caring for residents with ostomy ○ Caring for indwelling devices, which may include central line, urinary catheter, feeding tube, tracheostomy/ventilator ○ Splash-generating activity ○ Wound care-any skin opening requiring a dressing ○ Dressing, bathing, showering ○ Transferring residents ○ Changing linen ○ Changing briefs or assisting with toileting • Dedicate reusable resident care equipment where possible • Shared non-critical equipment must be cleaned and disinfected between resident use • If the resident uses a urinal or bedpan, use a washer/disinfector or macerator unit to dispose of contents <ul style="list-style-type: none"> ○ If a washer/disinfector or macerator unit is not available, use closed systems such as disposable bags (e.g., HYGIE® bags).
Accommodation	<ul style="list-style-type: none"> • Single occupancy room with dedicated bathroom preferred • For multi-occupancy room the following recommendations should be taken into consideration: <ul style="list-style-type: none"> ○ Cohort residents with the same CPO gene, if possible. Consult IPC before cohorting any CPO positive resident ○ Roommates should not have chronic wounds or indwelling devices (e.g., tracheostomy, urinary catheter) ○ Roommates should not require higher personal care needs ○ Roommates should not share the bathroom with the CPO positive residents ○ Dedicate bathroom or toileting facilities for CPO positive residents.
Resident's personal care	<ul style="list-style-type: none"> • Prioritize resident's personal hygiene by increasing frequency of bathing/showering or bed bath, if possible • Schedule bathing/showering of CPO positive resident prior to daily cleaning of the shower/tub room and notify Housekeeping Services to perform an isolation clean after the CPO positive resident has used the shower/tub room • Dedicate all personal hygiene products and any barrier creams used for bedsores for the resident's exclusive use • Ensure the resident's hands are cleaned using alcohol-based hand rub (ABHR) or soap and water, especially after they use the toilet, before meals and before leaving their room.
Hand Hygiene	<ul style="list-style-type: none"> • Clean your hands according to the 4 moments of hand hygiene • Use alcohol-based hand rub (ABHR) or soap and water

	<ul style="list-style-type: none"> • Use soap and water when hands are visibly soiled or when caring for residents with diarrhea and/or vomiting • Assist residents to clean their hands before they leave their room, before meals, before participating in social activities and after toileting • Hand hygiene sinks shall be dedicated for hand washing only • Body fluids and bath water should be disposed of in appropriate locations (e.g., soiled utility sinks, macerators), not into hand hygiene sinks.
Environmental Cleaning and Furnishings	<ul style="list-style-type: none"> • Follow enhanced cleaning and disinfecting protocols for resident's room and bathroom including a second clean of high touch surfaces 6-8 hours after the first cleaning and disinfection using hospital grade cleaning and disinfectant products • Notify Housekeeping Services to perform an isolation clean after the CPO positive resident has used the shower/tub room • Linen and resident's clothing may be laundered as per routine facility's established procedures • Toilet brushes must be disposable or dedicated to the room; do not use in other rooms • Notify Housekeeping Services to perform an isolation discharge clean when the resident is discharged.
Resident Care Equipment	<ul style="list-style-type: none"> • Assess the integrity of resident care equipment and furnishings, and remove damaged items from service (e.g., medical devices, wash basins, chair lifts, slings) • Mattresses and pillows should be intact and have impervious covers • Use disposable/dedicated resident equipment for duration of stay • If dedicated equipment is not available, clean and disinfect equipment between residents with a manufacturer recommended disinfectant with a Drug Identification Number • Dedicate laundry hamper to the room or near the entrance to the resident room • Maintain minimal supplies in the resident environment. Keep personal hygiene products in the room for resident's use • Items that cannot be cleaned and disinfected must be dedicated then disposed of upon discharge.
Waste Management	<ul style="list-style-type: none"> • Routine waste management
Movement outside their room	<ul style="list-style-type: none"> • CPO positive residents may move freely outside their room, go to the dining room and participate in social and community activities; with the exception when resident is in an acute stage of CPO infection (e.g. diarrhea, respiratory symptoms) and require additional precautions • Assist CPO positive residents with hand hygiene using an alcohol-based hand rub (ABHR) or soap and water before they leave their room, before meals or before they participate in any social or community activities • CPO positive residents should only use their own dedicated toileting facilities. Public bathrooms may be dedicated for urgent resident use if required. Immediately after use the staff member should secure the bathroom until an isolation discharge clean is performed.
Visitors	<ul style="list-style-type: none"> • Perform hand hygiene with an alcohol-based hand rub (ABHR) or soap and water before and after visiting

	<ul style="list-style-type: none"> • A visitor who provides personal care of high-contact activities must perform hand hygiene and follow enhanced barrier precautions (gown, gloves) with risk assessment for additional personal protective equipment (e.g., goggle).
<p>Consultation, appointments or transfer to another setting</p>	<ul style="list-style-type: none"> • Inform the receiving facility when a CPO positive resident is being transferred to another institution, community or care unit in compliance with the facility's established procedures. • Prior to the transfer, the resident must complete the following four steps, with assistance of a HCP if necessary: <ul style="list-style-type: none"> ○ Perform hand hygiene ○ Change into clean clothing or hospital gown ○ Cover all open and draining wounds with a dry dressing ○ Change and secure incontinence products if applicable.

Please contact your Infection Prevention and Control Community practitioner with any questions or concerns at: Ask IPC Community askIPCcommunity@fraserhealth.ca