

Carbapenem-Resistant Organisms Infection Prevention in Long-Term Care Facilities

To stop the spread of carbapenem-resistant organisms (CROs) and carbapenemase-producing organisms (CPOs), VDH recommends employing the following infection prevention strategies.

More intensive infection prevention should be implemented for CPOs (see Tables 1 and 2).

1. Hand Hygiene

- Promote, monitor, and provide feedback on hand hygiene.
- Ensure access to hand hygiene supplies in resident care areas.

2. Transmission-Based Precautions

- Monitor and provide feedback on proper adherence to transmission-based precautions.

High-Risk Residents (see Table 1)

Contact Precautions apply for any of the following residents infected or colonized with CRO:

- Have acute diarrhea, draining wounds or other sites of secretions or excretions that are unable to be covered or contained.
- On unit or in facility where ongoing transmission is documented or suspected.
- Have other condition or infection where Contact Precautions is recommended (e.g., *C. difficile*).

Empiric contact precautions might be used for residents transferred from high-risk settings (facilities in areas where CPOs are common or from facilities known to have CPO colonized or infected patients).

Low-Risk Residents (see Table 2)

Enhanced Barrier Precautions refer to the use of gloves and gowns during high-contact resident care activities[#] and apply for any of the following:

- Residents infected or colonized with CRO when Contact Precautions do not apply.
- Residents with wounds and/or indwelling medical devices (e.g., central line, urinary catheter, feeding tube, tracheostomy/ventilator) regardless of CRO colonization status located on shared unit/ward with resident infected or colonized with CPO.

3. Healthcare Personnel (HCP) and Visitor Education

- HCP and visitors should be educated about preventing transmission of CROs.
- At a minimum, this should include education and training on the proper use of personal protective equipment (PPE), including donning and doffing and hand hygiene.
- Post clear and concise isolation signs on the door.

4. Timely Notification

- Laboratories should ensure they have timely notification protocols in place to alert appropriate healthcare personnel of a positive CRO specimen.

5. Minimize Use of Invasive Devices

- Devices should be discontinued promptly when no longer needed.

6. Communication of CRO Status at Discharge and Transfer

- If a resident with CRO infection or colonization is transferred to another facility, ensure that CRO status is shared with the accepting facility in a timely manner.

7. Promotion of Antimicrobial Stewardship

- Ensure that antimicrobials are used for appropriate durations and that the appropriate, narrowest spectrum antimicrobial is used.
- CDC has identified core elements for successful [long-term care](#) antimicrobial stewardship programs.

8. Environmental Cleaning

- Perform daily cleaning and disinfection that include areas such as bed rails, patient trays and other areas in close proximity to the resident.
- Clean and disinfect areas around sinks regularly and do not store medical equipment near sinks.

9. Resident Cohorting

- Reserve single rooms for residents with highest transmission risk (see Tables 1 and 2).

10. Screening Contacts of CRO Residents

- Screen residents with epidemiologic links to newly-identified CRO colonized or infected residents.
- Contact your [local health department](#) for information about colonization screening for CPOs.

11. Active Surveillance Testing

- Screen high-risk residents at admission.
- Contact your [local health department](#) for information about colonization screening for CPOs.

Resources

Implementation of PPE in Nursing Homes to Prevent Spread of MDROs: <https://www.cdc.gov/hai/containment/PPE-Nursing-Homes.html>

Facility Guidance for Control of CRE: <https://www.cdc.gov/hai/organisms/cre/cre-toolkit/index.html>

Management of MDROs in Healthcare Settings: <https://www.cdc.gov/infectioncontrol/guidelines/mdro/index.html>

Containment Strategy for MDROs: <https://www.cdc.gov/hai/containment/guidelines.html>

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Intensity of infection prevention measures is based on mechanism of carbapenem resistance (CPO vs non-CPO), resident's clinical status, and factors that increase risk of transmission to other patients in the facility. General guidance is listed below.

Table 1. Recommendations for High-Risk Residents

High-risk residents are defined as any of the following residents infected or colonized with CRO:

- (1) Have acute diarrhea, draining wounds or other sites of secretions or excretions that are unable to be covered or contained;
- (2) On units or in facilities where ongoing transmission is documented or suspected;
- (2) Have other condition or infection where Contact Precautions is recommended (e.g., *C. difficile*).

Infection Prevention Measure	Carbapenemase-Producing Organism		Non-Carbapenemase-Producing Organism	
	Infected	Colonized	Infected	Colonized
Standard Precautions	Yes	Yes	Yes	Yes
Contact Precautions	Yes	Yes	Yes	Yes
Private room	Yes	Yes	Yes	Yes; if feasible
Restricted to room*	Yes	Yes	Yes	Yes
Door signage	Yes	Yes	Yes	Yes
Designated or disposable equipment	Yes	Yes	Yes	Yes
Visitor Recommendations				
Perform hand hygiene often, and always after leaving resident's room	Yes	Yes	Yes	Yes
Wear gown/gloves if performing high-contact resident care activities [#]	Yes	Yes	Yes	Yes

A high-risk resident may transition to the recommendations for a low-risk resident when they no longer meet the criteria for high-risk.

Table 2. Recommendations for Low-Risk Residents

Low-risk residents are residents infected or colonized with CRO who do not meet any of the criteria for high-risk OR residents with wounds and/or indwelling medical devices regardless of CRO colonization status located on shared unit/ward with resident infected or colonized with CPO.

Infection Prevention Measures	Carbapenemase-Producing Organism		Non-Carbapenemase-Producing Organism	
	Infected	Colonized	Infected	Colonized
Standard Precautions	Yes	Yes	Yes	Yes
Enhanced Barrier Precautions [^]	Yes	Yes	Yes	Yes
Contact Precautions	No	No	No	No
Private room	No	No	No	No
Restricted to room	No	No	No	No
Door signage	Yes	Yes	Yes	Yes
Designated or disposable equipment	Yes	Yes	Yes	Yes, if feasible ⁺
Visitor Recommendations				
Perform hand hygiene often, and always after leaving resident's room	Yes	Yes	Yes	Yes
Wear gown/gloves if performing high-contact resident care activities [#]	Yes	Yes	Yes	Yes

Enhanced Barrier Precautions[^] are intended to be a long-term strategy for gown/glove use during high-contact resident care activities[#] to be followed for the duration of a resident's stay in a facility given the prolonged, potentially life-long risk of remaining colonized with certain antibiotic resistant pathogens.

*Except for medically necessary care

[#]High-contact resident care activities such as: dressing, bathing/showering, transferring, providing hygiene, changing linens, changing briefs or assisting with toileting, device care or use, wound care, or contact with body fluids.

[^]Enhanced barrier precautions are transmission-based precautions that fall between Standard and Contact Precautions, and requires gown and glove use for low-risk residents during specific high-contact resident care activities[#] that have been found to increase risk for MDRO transmission.

⁺If not feasible to dedicate non-critical patient care equipment, apply thorough cleaning and disinfecting of these items between uses.