LOS ANGELES COUNTY DEPARTMENT OF PUBLIC HEALTH

Carbapenemase-Producing Organism (CPO) FAQS

This document outlines recommendations and frequently asked questions (FAQs) for healthcare facilities (HCFs) regarding managing care for patients and residents infected or colonized with carbapenemase-producing organisms (CPOs).

GENERAL RESOURCES

LACDPH MDRO Website
CDPH CRO & CPO website
CDPH CPO Quicksheet
CDC Overview of CPOs

QUESTIONS? CONCERNS?
CONTACT THE LACDPH HEALTHCARE OUTREACH UNIT AT
HAI@PH.LACOUNTY.GOV OR 213-240-7941

ADMISSION RECOMMENDATIONS

For all admissions from HCFs that are on the list to monitor (sent via email to HCF IPs), **verify the patient's current CPO status** and follow the recommendations below. Patients may be cohorted by CPO (carbapenemase gene and organism) status if needed.

- If positive: Once a patient tests positive, they should not be re-screened as patients can be colonized for long periods of time.
    - For acute care hospitals (ACH) including long-term acute care hospitals (LTACHs), persons should be placed on Contact Precautions.
    - For skilled nursing facilities (SNFs), follow Enhanced Barrier Precautions (EBP) and SNF MDRO Guidance to determine which type of transmission-based precautions (TBP) to apply and how to best cohort residents. Most CPO-positive patients can be managed using EBP.
    - For community care facilities, persons should be placed on Standard Precautions.
- If negative or pending, and:
    - Specimen was collected more than 24 hours before discharge: patient is suspect and should be screened. Patient should be placed in single room on empiric TBP as defined above until swabbed for CPO colonization and result returns negative.
    - Specimen was collected less than 24 hours before discharge: patient does not need to be re-screened. Patient should be placed in single room on empiric TBP as defined above until result is provided.
- See LACDPH Transferring Guidance for MDROs for more details.

Strongly consider additional admission screening for carbapenemase-producing organisms (CPOs) on high-risk patients as defined on page 2.

Flag positive patients' medical records for future re-admissions, as many patients can remain colonized even after being discharged home. Suspect patients should also be flagged, then screened on admission. LACDPH recommends all facilities use an inter-facility transfer form for all patient transfers.

Note that LACDPH generally considers all patients discharged from any long-term acute care hospital (LTACH) or skilled nursing facility (SNF) subacute unit to be at higher risk for CPOs, *C. auris*, or other MDRO colonization.

DISCHARGE RECOMMENDATIONS

If patient is discharged, you must notify the receiving HCF of the patient's confirmed or suspect CPO status. In addition, a phone call to the receiving facility's infection preventionist (IP) is recommended.

LACDPH strongly recommends all facilities use an inter-facility transfer form for all discharges. Facilities should also review both internal and external protocols to ensure the appropriate persons (including transporters) will be made aware of patients' CPO and other MDRO status upon transfer. For more information on interfacility transfers, see here. See LACDPH Transferring Guidance for MDROs and SNF MDRO Guidance for more details.

FREQUENTLY ASKED QUESTIONS

What are CPOs?

CPO are bacteria that produce carbapenemase enzymes (e.g., KPC, NDM, OXA-48, IMP, VIM). These enzymes inactivate carbapenem antibiotics, such as meropenem. CPO can include *Acinetobacter baumannii*, *Pseudomonas aeruginosa*, and bacteria in the Enterobacterales order such as *Escherichia coli* (*E. coli*) and *Citrobacter*, *Enterobacter*, and *Klebsiella* species (spp.).

What is the difference between CPO and CRO?

A carbapenem-resistant organism (CRO) is resistant to carbapenem antibiotics regardless of having a carbapenemase or not. A CPO is a subset of CRO that produces a carbapenemase making them resistant to carbapenem antibiotics. The carbapenemase enzyme is the mechanism of resistance. See here for slides and a recording of an explanation from CDC.

How do CPOs spread?

CPOs can spread in healthcare settings via contact with contaminated surfaces, such as the hands of healthcare workers or shared equipment. They are of particular concern due to their increased resistance and transmissibility. CPO outbreaks have been identified in short-stay acute care hospitals (ACH), long-term acute care hospitals (LTACH), and skilled nursing facilities (SNF) (with and without subacute units). Some CPOs may be hardy and can persist for long periods of time in the environment, including on surfaces and shared medical equipment, if appropriate cleaning and disinfection practices are not used.

Who is at risk of CPOs?

Generally, healthy individuals will not have CPOs. Risk factors include prior healthcare exposure (especially from subacute units (SAUs) and long-term acute care hospitals (LTACHs)), presence of indwelling medical devices (such as mechanical ventilators or urinary catheters), recent broad spectrum antibiotic use, and/or recent international healthcare exposure.

How do I know if a patient/resident has a CPO?

Always look for lab reports or documentation of CPOs upon and during admission. Call the transferring facility if this information is not available or apparent. CPOs can only be identified if molecular testing has been performed on a CRO isolate. Some laboratories do not conduct carbapenemase testing on CRO isolates, therefore the presence of a carbapenemase is unknown which is important for HCFs to understand for cohorting or infection control purposes.

Registered facilities may use the LACDPH Patient Safety Information Exchange (PSIE) to determine if a patient was reported to be positive for a CPO to LACDPH.

When should we screen patients/residents for CPOs?

Screen for CPO colonization in the following scenarios:

1. In response to a newly-identified CPO case - see LACDPH MDRO Screening Guidance.
2. In response to an ongoing outbreak/transmission
3. Considered at-risk of being colonized or infected with CPOs, such as patients admitted:
    a. from a known outbreak facility
    b. from LTACH or subacute unit of a SNF – see here for a list in LA County
    c. with tracheostomy tube/on ventilator, other indwelling devices, and/or have open/draining wounds
    d. who have had a recent overnight stay in a healthcare facility outside of the US

How do we screen for CPOs?

Some labs can screen for carbapenemase-producing organism (CPO) colonization by testing rectal swabs. We advise HCFs to set up carbapenemase testing for carbapenem-resistant organism isolates to identify carbapenemase genes (or find a lab that can do this). If you need help identifying a laboratory that can perform this testing, please see the List of Laboratories with Carbapenemase Testing Capacity.

What infection control measures do I implement for CPOs?

As with patients with other multidrug-resistant organisms (MDRO), facilities should ensure staff are compliant with basic infection control measures, which include:

- Place the patient on the appropriate TBP, ideally in a single room if possible. If single rooms are not available, facilities may cohort with other patients/residens.
    - If your facility has multiple positive patients, consider cohorting geographically, and dedicating primary nursing staff.
- Ensure thorough cleaning and disinfection of the patient care environment and any shared equipment/medical devices with an EPA-registered disinfectant with claims for the CPO using correct contact time.
- Dedicate medical equipment as much as possible. Consider single-use, disposable equipment.
- Carry out routine adherence monitoring of hand hygiene (HH), environmental cleaning and disinfection (EVS), and use of personal protective equipment (PPE) – on all shifts and units.

How do we cohort CPO patients with other patients?

Ideally, facilities should cohort with other patients/residents who have the same carbapenemase gene (e.g., KPC-*K. pneumoniae* with KPC-*K. pneumoniae*, or NDM-*E. coli* with NDM-*A. baumannii*). Suspect patients should be placed separately from positive patients as much as possible. However, if this is not feasible, facilities may cohort suspect and confirmed CPO patients/residents with another patient/resident who is at the lowest risk for infection (e.g., the fewest amount of indwelling devices or wounds).
In any situation, facilities should ensure staff are following practices to limit transmission, including:

- Only cohort positive residents with non-positive residents in rooms that can allow for sufficient physical separation.
- Round the floor regularly to directly observe (aka adherence monitoring) and improve adherence to hand hygiene (HH), personal protective equipment (PPE), and environmental cleaning & disinfection practices among staff.
- Treat each bed space within a multi-occupancy room as if it's a separate room.

LTACHs should refer to the LACDPH LTACH MDRO Guidance.
SNFs should refer to the LACDPH SNF MDRO Guidance.

What do I do when a patient with a CPO is discharged?

Communicate the patient's CPO status to the receiving facility or home health agency; always use an interfacility transfer form. For patients discharged home, provide a letter to give to their healthcare provider if readmitted to a healthcare facility in the future.

Does soap and water or alcohol-based hand sanitizer work better against CPOs?

Alcohol-based hand sanitizer is the preferred method for cleaning hands if not visibly soiled. If hands are visibly soiled, wash with soap and water.

Do colonized patients require treatment?

Generally, colonized individuals (i.e., positive via screening swab or culture of a non-invasive source without showing signs/symptoms of infection) do not require treatment. Only infections (i.e., patient is showing signs/symptoms of an infection) should be treated.

Is there a clearance protocol for patients with CPOs?

At this time, there is no clearance or decolonization protocol for patients with CPOs. Once identified with a CPO, the individual is considered colonized indefinitely. Patients/residents should remain on Contact Precautions (ACH) or EBP (SNF) for the duration of their admission.

A health care facility is refusing to accept my CPO patient. What can I do?

Please note that CPOs, or any MDRO infection/colonization status, alone is never a reason to refuse (re)admission or treatment of a person per AFL 24-15. If a facility can provide appropriate care and has available bed/treatment space, they should not deny admitting/seeing a patient. Note that facilities can be reported to the CDPH Health Facilities Inspection Division for refusing patients based on MDRO status alone.

I feel nervous about my facility caring for a CPO-positive resident. Can I get some guidance?

Absolutely! The LACDPH Healthcare Outreach Unit is always available to provide guidance and support to facilities when it comes to managing and admitting CPOs or other MDRO-positive residents. As a reminder, compliance to basic IC measures (HH, PPE, EVS) and EBP are all that's needed to manage MDRO-positive residents – and we can help you strengthen those practices! Our team is offering consultative on-site infection control visits to SNFs in LA County. For more information and request a visit, please see our website. Another option is for facilities to complete a Self-Led Infection Control Evaluation (SLICE) to determine areas and resources for improvement.

How do I report CPOs?

CPOs are a mandated laboratory-reportable condition by LACDPH and CDPH. All carbapenemase-producing organisms (CPOs) should be reported to DPH within one working day. Please verify with your laboratory that these identifications are being reported via electronic laboratory report (ELR) and if not, please report cases via REDCap until ELR transmission is implemented. For more information on if/how to report, please see our MDRO Reporting FAQ.

How can I learn more about CPOs and MDROs in LA County?

We have many MDRO-focused resources available on our MDRO website.
Facilities may also refer to our MDRO Dashboard to understand trends of MDROs in LA County.