LOS ANGELES COUNTY DEPARTMENT OF PUBLIC HEALTH

NDM-CRE TRANSFER RECOMMENDATIONS AND FAQS

This document outlines key recommendations and frequently asked questions for healthcare facilities (HCFs) regarding a local outbreak of New Delhi metallo-betalactamase-producing Enterobacterales (NDM-CRE), an uncommon form of carbapenemase-producing (CP)-CRE in Los Angeles County.

GENERAL RESOURCES

LACDPH NMDRO website
CDPH CRO website
LACDPH Lab Newsletter Issue #9 (CPOs)

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

ADMISSION RECOMMENDATIONS

For all admissions from the list of HCFs to monitor (sent weekly via email to HCF IPs), **verify their current NDM-CRE status** and follow the recommendations below. In all situations, patients may be cohorted by CRE status if needed.

- If positive: patient should be placed in single room on Contact Precautions. Once a patient tests positive, they should not be re-screened as patients can be colonized for long periods of time.
- 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 Contact Precautions* until swabbed for CP-CRE 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 Contact Precautions until result is provided.
- See LACDPH Transferring Guidance for MDROs for more details if needed.

Strongly consider additional admission screening for carbapenemase-producing organisms (CPOs) on high-risk patients - see "When should we screen patients/residents for CP-CRE?" 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 admissions.

DISCHARGE RECOMMENDATIONS

If patient is discharged, you must notify the receiving HCF of the patient's confirmed or suspect CP-CRE 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' NDM-CRE and other MDRO status upon transfer.

For more guidance, see our Inter-Facility Transfers website: http://publichealth.lacounty.gov/acd/InterfacilityTransfers.htm

FREQUENTLY ASKED QUESTIONS

What are CRE and CP-CRE?

Enterobacterales are a large order of bacteria that commonly cause infections in healthcare settings. Examples include *Escherichia coli (E. coli)* and *Klebsiella pneumoniae (K. pneumoniae).* Carbapenem-resistant Enterobacterales (CRE) are resistant to carbapenems, "last-resort" antibiotics such as meropenem and imipenem; this can occur through production of carbapenemase enzymes, like NDM or KPC, which can inactivate carbapenem and other antibiotics. Carbapenemase-producing CRE (CP-CRE) are CRE that are positive for a carbapenemase, and are part of the group of carbapenemase-producing organisms (CPOs). These are of particular concern due to their increased resistance and transmissibility.

Why is NDM-CRE more of a concern?

In Los Angeles County, most CP-CRE are found to carry the KPC carbapenemase. NDM-CRE are identified much less frequently and can be more drug resistant than KPC-CRE.

How do CRE spread?

CRE can spread in healthcare settings. Patients can serve as sources of transmission. CRE can persist for long periods of time in the healthcare environment, including mobile medical equipment.

Where have we seen outbreaks of CRE?

In California, CRE 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).

Who is at risk of CRE or NDM-CRE?

Generally, healthy individuals will not have CRE. Risk factors include prior healthcare exposure (especially from long-term acute care hospitals (LTACHs)), mechanical ventilation, and presence of indwelling medical devices such as urinary catheters or endotracheal tubes.

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

Always look for lab reports or documentation of CRE (or NDM-CRE) upon and during admission. Call the transferring facility if this information is not available or apparent. Clinical cultures can identify Enterobacterales isolates that are resistant to carbapenem (e.g., meropenem) antibiotics.

When should we screen patients/residents for CP-CRE?

Screen for CP-CRE colonization in the following scenarios:

1. In response to a newly-identified CP-CRE case (use CDPH Screening Decision Tree):
    a. Always screen roommates and those who shared a bathroom.
    b. Consider screening those who shared primary healthcare personnel (HCP) or a device.
2. In response to an ongoing outbreak/transmission
3. Considered at-risk of being colonized or infected with CP-CRE, such as patients admitted:
    a. from a known outbreak facility (see list sent weekly to IPs)
    b. from LTACH or subacute unit of a SNF
    c. who are trached/vented, with other indwelling devices, 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 CP-CRE?

Some labs can screen for carbapenemase-producing organism (CPO) colonization by testing rectal swabs. We advise HCFs to set up carbapenemase testing on CRE and other carbapenem-resistant organism (CRO) isolates to identify NDM or other carbapenemase genes (or find a lab that can do this). For more information on CP-CRE testing methods, see our MDRO Lab Newsletter Issue # 9 and the CDPH CRO website. If you need help identifying a laboratory that can perform carbapenemase testing, please email the Healthcare Outreach Unit at hai@ph.lacounty.gov.

What infection control measures do I implement for CP-CRE?

As with patients with other multidrug-resistant organisms (MDRO):

- Place the patient on Contact precautions, ideally in a single room if possible.
- Dedicate medical equipment as much as possible. Consider single-use, disposable equipment.
- If your facility has multiple positive patients, consider cohorting geographically, and dedicating primary nursing staff.
- Ensure cleaning and disinfection with an EPA-registered disinfectant with claims for *Enterobacterales* using correct contact time.
- Carry out routine adherence monitoring of hand hygiene, environmental cleaning, and PPE in the facility – on all shifts.

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

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.

What do I do when a patient with CP-CRE is discharged?

Communicate (ideally verbally) the patient's CRE 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.

How do we cohort CP-CRE patients with other patients?

Patients positive for NDM- or any CP-CRE must be placed in a single room on Contact Precautions, but can be cohorted with other positive patients- as long as COVID-19 and other MDRO status is also considered. In SNFs, Enhanced Standard Precautions should be followed. Suspect patients should be placed separately from positive patients as much as possible. If you need assistance in determining a cohorting strategy in order to make room for a new suspect or confirmed patient, contact LACDPH.

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.

Is there a clearance protocol for patients with CRE?

At this time, there is no clearance or decolonization protocol for patients with CRE. Once identified with CRE, we consider them colonized indefinitely. Patients/residents should remain on Contact Precautions for the duration of their admission.

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

Please note that NDM-CRE, or any MDRO infection/colonization status, alone is never a reason to refuse (re)admission or treatment of a person. 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.

How do I report CP-CRE?

CP-CRE is a mandated laboratory-reportable condition via ELR in Los Angeles County. Reports may also be securely submitted via the LACDPH REDCap MDRO Reporting Portal.