

**LAC+USC MEDICAL CENTER
DEPARTMENT OF INFECTION PREVENTION AND CONTROL
POLICIES AND PROCEDURES**

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Policy No. IPC-15	

SUBJECT: Management of Patients Infected with Multidrug Resistant Organisms (MDRO) – including MRSA, VRE, MDR Gram Negatives (ESBL, CRE, CRAB etc.), <i>Clostridioides difficile</i>, & <i>Candida auris</i>		Original Issue Date: 12/2000	Effective Date: 9/2022
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Departments Consulted: Microbiology Lab Environmental Services Nursing Safety	Reviewed & Approved By: Paul Holtom MD, Hospital Epidemiologist Noah Wald-Dickler MD, Associate Hospital Epidemiologist Chair and Vice-Chair, Infection Control Committee	Approved By: Brad Spellberg, MD Chief Medical Officer	

PURPOSE

To provide guidelines for minimizing transmission of multidrug-resistant organisms in healthcare settings.

POLICY

Multidrug-Resistant Organisms (MDRO) are defined as microorganisms resistant to one or more classes of antimicrobial agents. Although the names of certain MDROs describe resistance to only one agent (e.g., MRSA, VRE), these pathogens are frequently resistant to most available antimicrobial agents.

These highly resistant organisms deserve special attention in healthcare facilities. In addition to methicillin-resistant *Staph aureus* (MRSA) and vancomycin-resistant enterococci (VRE), certain gram-negative bacilli (GNB), including those producing extended spectrum beta-lactamases (ESBLs) and others that are resistant to multiple classes of antimicrobial agents (such as Carbapenem-Resistant Enterobacterales (CREs) are of particular concern. More recent emerging organisms of concern include carbapenem-resistant *Acinetobacter baumannii* (CRAB) and *Candida auris*. Successful control of MDROs has been documented in the United States and abroad using a variety of combined interventions. These include improvements in hand hygiene, use of Contact Precautions for specific MDRO organisms, education, enhanced environmental cleaning, judicious antimicrobial use, and improvements in communication about patients with MDROs within and between healthcare facilities. Other interventions, such as surveillance cultures to identify asymptomatic carriers, may be considered in specific situations such as an MDRO outbreak.

Care of patients with clinical infections due to MDROs requires Standard and Contact transmission-based precautions. Gowns and gloves should be used when performing patient care and effective hand hygiene performed after removing gown and gloves.

Contact Precautions are not required for most MRSA colonization or infections, regardless of specimen location (e.g., nares, blood, or urine). Unless an open wound due to MRSA is present and drainage cannot be contained by dressings, Standard Precautions should be used.

For other MDRO organisms including VRE, *Clostridioides difficile* (*C. diff*), *Candida auris*, and multidrug-resistant gram negative bacilli including ESBL, CRE, and CRAB, Contact Precautions are required.

Patients will be informed of their MDRO status and provided appropriate educational materials.

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MDRO INFECTION CONTROL PROCEDURES

A. PRIVATE ROOM

Patients with positive MDRO cultures (excepting MRSA/ORSA) will be placed in single patient rooms whenever possible. Patients with the same MDRO or other infectious organism may be cohorted (patients having an infection with the same organism) if a single patient room is not available.

B. ROOM SIGNAGE

For MRSA infections, absent actively draining wounds not contained by their dressings, no room signage is required as patients will be placed in Standard Precautions.

For VRE, *Candida auris* and multidrug-resistant gram-negative bacilli including ESBL, CRAB and CRE organisms, a **CONTACT PRECAUTIONS** sign (**green**) will be posted on the door of the patient room as soon as the MDRO is identified. Nursing will be responsible for sign placement.

Patients with *C. diff* will have a unique sign (**Brown**) posted instructing individuals to wash hands with soap and water rather than using alcohol hand sanitizer.

C. HAND HYGIENE AND PERSONAL PROTECTIVE EQUIPMENT (PPE)

All PPE will be readily available; either in an anteroom or on a cart provided at the room entrance.

- 1. Hand Hygiene:** all persons entering the room will perform hand hygiene at the room entrance and before exiting the patient's room. Clothing and ungloved hands must not contact the patient's immediate environment (e.g., doorknob, bed rail), including after PPE removal and before exiting the room.

As alcohol-based hand sanitizers are ineffective against dormant clostridial spores, **handwashing with soap and water is required prior to room entry & exit** of patients with *C. difficile* colitis.

- 2. Gloves:** gloves will be worn for care of all patients with a MDRO infection in Contact Precautions. Gloves should be applied before entering the patient room. Hand hygiene should be performed after glove removal and before exiting the room. Hand hygiene will be done between every glove change.
- 3. Gowns:** gowns will be worn upon entering Contact Precautions rooms and should be removed prior to exiting the room.
- 4. Masks:** Masks should be worn if there is a risk of mucosal exposure during respiratory procedures.
- 5. Eye/Face Protection:** Eye/Face protection should be worn if blood/body fluid splash is a risk
- 6. Non-Disposable Patient Equipment**
 - a.** Patients in a Contact Precautions room will be assigned non-critical, single-use patient equipment (e.g., thermometer, BP cuff, and stethoscope). Disposable equipment will be used whenever possible. Non-disposable patient care items entering the room (such as stethoscopes, IV poles, commodes, x-ray equipment, respiratory therapy equipment, and crash carts) will be cleaned with a hospital-approved disinfectant prior to removal from the room.

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- b. Only necessary items (including linen) needed for one shift should be taken into the patient's room. Upon hospital discharge of patients with an MDRO, all unused disposable supplies from the room will be discarded and not restocked for the next patient.

7. **Linen and Waste Management:** all linen and waste are to be bagged prior to removal from Contact Precautions rooms. A "gooseneck" knot will be used to secure bags. Upon discharge all unused linen remaining in the room will be sent for reprocessing.

D. TRANSPORTING PATIENTS WITH MDROs

MDRO colonized/infected patients should have all tests/procedures performed in the room when possible. All equipment utilized will be cleaned prior to removal from the room with a hospital approved disinfectant.

If a test/procedure is unable to be performed in the room, and the patient must be transported to another department, the receiving department will be notified of the patient's isolation status prior to transport. The patient will wear a disposable gown, if transported by wheelchair. If transported by a bed/gurney, a clean sheet should be placed over the patient. Handles of transport wheelchair/beds will be wiped with hospital-approved disinfectant wipes and staff will perform hand hygiene before and after transporting. Staff will not wear PPE (gloves or gowns) while transporting to the test/procedure rooms unless direct contact with the patient is anticipated (e.g. bagging between ventilator attachments).

The test/procedure room will be handled as an isolation room. All staff must comply with MDRO precautions include use of appropriate PPE as above.

Equipment in contact with the patient (e.g., gurney, wheelchair, radiology table, etc.) during transport or treatment/procedure will be thoroughly cleaned after use (using a hospital approved disinfectant). The treatment/procedure area must be cleaned/disinfected prior to initiating any treatment/procedure for another patient.

E. TRANSFERS and DISCHARGES

Patients may be discharged home without special precautions.

Consistent with LA County Public Health requirements, no MDRO patient will be transferred to another ward, acute care facility, or skilled nursing facility (SNF) unless the receiving ward or facility has been notified and this notification has been documented in the electronic medical record.

No inter-ICU transfers of MDRO patients will occur without the prior approval of the Hospital Epidemiologist or his designee, and the ICU Director on-Call.

F. MDRO SURVEILLANCE and ENVIRONMENTAL CULTURES

Surveillance cultures on uninfected patients or environmental cultures are not routine and must be approved by the Hospital Epidemiologist or his designee. Refer to Infection Control Policies "Environmental Microbiologic Sampling", "MRSA Active Surveillance", and "Outbreak Investigation & Management" for additional information.

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G. NOTIFICATION OF MDRO INFECTION

1. MDRO's Inpatient/Hospital Settings

The Microbiology Laboratory will notify the patient physician, ward, and the Epidemiology Department of newly detected MDRO results, including the date/time and site of specimen collection. For VRE, *C. auris* and multidrug resistant gram-negative bacilli including ESBL, CRE, and CRAB organisms, the assigned inpatient RN will place the patient in CONTACT precautions. If necessary, the staff will move the patient to an available single patient room after notifying Bed Control.

2. Discharged Patients with an MDRO

- Facilities receiving a **known** MDRO-infected patient from LAC+USC will be notified prior to the patient's discharge. This notification shall be documented in the EMR.
- If the patient has been discharged before the culture is available, the Microbiology Laboratory will notify the ordering physician or team, and the Department of Epidemiology, of the MDRO identification.
- An LAC+USC Infection Preventionist will notify the receiving outside facility of the MDRO results so that the outside facility may implement appropriate Infection Control measures.

3. Outpatients with MDRO's

The Microbiology Laboratory will notify the Department of Epidemiology and the ordering outpatient physician of record utilizing established medical center outpatient critical lab value notification contact tree procedures.

4. Electronic Medical Record (ORCHID Flag)

When the Microbiology Lab enters a positive culture into ORCHID for an MDRO, an automatic precaution is generated in the system by ORCHID, that appears in the banner bar and an order is also generated to place the patient into contact precautions.

H. CLEARANCE OF CONTACT PRECAUTIONS

Once a patient has been identified as infected or colonized with an MDRO, contact isolation precautions will be maintained for the duration of the hospitalization.

1. Clearance Cultures

Clearance cultures of MDROs are neither done routinely nor required for hospital discharge. Patients may be colonized with these organisms for extended periods of time without symptoms.

2. Duration of Precautions & Readmission of Patients with Known Prior MDROs

The electronic medical record system, ORCHID, will display a message the first time a provider opens the chart which identifies any MDRO infection history a patient may have as identified in the diagnosis and problem listing.

- Prior ESBL infections** identified greater than 3 months prior to the current admission date will not prompt a message in the system to place the patient into contact precautions. Patients readmitted with a history of an ESBL organism >3 months prior to the current admission do not require contact isolation precautions unless a new ESBL organism or other MDRO is identified.

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- b) **Prior MRSA Infection** does not require Contact Precautions or repeat culture or surveillance testing unless indicated clinically, or as required by law or local MRSA Active Surveillance Policy (see separate policy for targeted populations for MRSA active surveillance/screening).
- c) **Prior VRE Infection:** patients readmitted with a history of VRE >3 months prior to the current admission do not require contact isolation precautions unless a new VRE organism or other MDRO is identified. Notably, some enterococcal species (including *E. casseliflavus* and *E. flavescens*) are intrinsically resistant to vancomycin. Isolations precautions for these organisms may be discussed on a case-by-case basis with Infection Control & Prevention.
- d) **Prior *C. auris* or non-ESBL multidrug-resistant gram-negative bacillus (CRE, CRAB):** Patients readmitted who have ever had a history of *Candida auris* or a non-ESBL multidrug-resistant gram-negative bacillus (including any carbapenem-resistant Enterobacterales or carbapenem-resistant *Acinetobacter baumannii*) **should be placed in contact isolation**, for any readmission, irrespective of when the original organism was identified.
- e) **Prior *C. difficile* infection:** patients readmitted with a history of positive *C. difficile* PCR >3 months prior to the current admission, and with no active diarrhea, do not require contact isolation precautions. Like ESBL and VRE, patients with a history of *C. difficile* within the prior 3 months should be placed in contact isolation precautions at the time of rehospitalization.

C. difficile PCR testing should only be performed in patients with active signs and symptoms of colitis. *C. difficile* PCR testing requires a paper order form be filled out, signed by the attending physician, and accompany the specimen to the lab.

I. TERMINATION OF CONTACT PRECAUTIONS

Upon hospital discharge - or transfer to another ward or unit - of a patient who is in Contact Precautions, the room will be terminally cleaned by the Environmental Services Department (EVS). Terminal cleaning on discharge includes a change of privacy curtains and/or window coverings.

REFERENCES

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