



Recommendations for Prevention and Control of Targeted Multidrug-Resistant Organisms

For Nursing Homes

Wisconsin Healthcare-Associated Infections Prevention Program |
Division of Public Health | Department of Health Services



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Introduction and Purpose

This document is designed to aid Wisconsin nursing homes in the prevention and control of outbreaks of a specific group of highly concerning multidrug-resistant organisms (MDROs). MDROs are an emerging threat to global public health, and the potential for rapid spread within nursing homes, as well as the difficulties of treating infections caused by these organisms, make it critically important for nursing homes to be prepared to respond to a potential outbreak.

The recommendations included in this document are intended to support a nursing home's response to the identification of single case of a targeted MDRO within the facility, reduce the risk of spread of the targeted MDRO within the facility, and help contain outbreaks.

Note that other than sections that discuss Wisconsin communicable disease reporting requirements and processes, this guide draws heavily from three CDC (Centers for Disease Control and Prevention) resources:

- CDC, [Containment Strategy Guidelines: Interim Guidance for a Public Health Response to Contain Novel or Targeted Multidrug-resistant Organisms \(MDROs\)](#)
- CDC, [Frequently Asked Questions \(FAQs\) about Enhanced Barrier Precautions in Nursing Homes](#)
- CDC, [Implementation of Personal Protective Equipment \(PPE\) Use in Nursing Homes to Prevent Spread of Multidrug-resistant Organisms \(MDROs\)](#)

This document aims to synthesize CDC guidance on MDROs with local lessons learned, and to serve as a high-level guide to the MDRO prevention and response process in nursing homes. However, facilities are encouraged to refer directly to the CDC documents above and to the other resources listed throughout this guide for additional details and information.

Finally, facilities should note that these recommendations are not exhaustive and implementation of all strategies and measures may not be appropriate or feasible in all situations. Facility-level assessment of the situation should be made by the facility's infection preventionist or other infection prevention and control (IPC) staff in collaboration with facility leadership.

Targeted MDROs discussed in this document

In alignment with CDC, the [targeted MDROs](#) discussed in this document include the organisms in Table 1.

Table 1. Targeted MDROs

Organism	Notes and Considerations
Pan-resistant organisms	These organisms are resistant to all tested antimicrobials (antibiotics or antifungals).
Carbapenemase-producing carbapenem-resistant Enterobacterales (CP-CRE)	- This order of bacteria is commonly found in the human gastrointestinal system as part of the normal flora. - People can be colonized with CP-CRE without signs or symptoms of illness.* - CP-CRE can cause serious infections if introduced to a sterile site.
Carbapenemase-producing carbapenem-resistant <i>Acinetobacter baumannii</i> (CP-CRAB)	<i>Acinetobacter baumannii</i> is commonly found in soil and water. - This organism can survive for a long time on surfaces, can colonize on the skin, and can cause severe infections. - People can be colonized with CP-CRAB without signs or symptoms of illness.* - CRAB can be highly resistant to antibiotics. Pan-resistant CRAB isolates have been detected in Wisconsin.
Carbapenemase-producing carbapenem-resistant <i>Pseudomonas</i> spp. (CP-CRPA)	<i>Pseudomonas aeruginosa</i> is a bacterium commonly found in soil and water. <i>Pseudomonas aeruginosa</i> is naturally drug-resistant and can cause severe wound, burn, and respiratory infections. - People can be colonized with CP-CRPA without signs or symptoms of illness.* - While only a small proportion of CRPA isolates are carbapenemase-producing, CP-CRPA can cause very serious and hard-to-treat infections.
<i>Candida auris</i> (<i>C. auris</i>)	<i>Candida auris</i> is a rare but potentially life-threatening type of fungus that is resistant to most antifungal medications. <i>C. auris</i> can colonize the skin and it is difficult to eliminate from the resident environment. - People can be colonized with <i>C. auris</i> without signs or symptoms of infection.* - CDC estimates that C. auris infections have a high mortality rate.

*It is important to note that individuals can be “colonized” or infected with any of the above MDROs. An individual who is colonized with a targeted MDRO is carrying the organism in or on their body, often for very long periods of time, but the organism is not causing symptoms or making the individual ill. Individuals who are colonized with an MDRO can, however, spread the organism to surfaces in their environment and to other people. An individual who is colonized with a targeted MDRO can also become infected later with the organism.

While all carbapenem-resistant organisms are of concern, carbapenemase-producing organisms (CPOs) are particularly concerning because of their ability to produce an enzyme (carbapenemase) that increases the organism's resistance to almost all β -lactam antibiotics, including carbapenems. In addition, carbapenemase genes are often located on mobile resistance elements that enable the transfer of antibiotic resistance to other organisms. For these reasons, this document is specifically focused on CPOs. A number of different types of bacteria can be carbapenemase-producing, but carbapenemase production has most often been identified among members of the Enterobacterales order (for example, *E. coli* and *Klebsiella*), as well as in *Acinetobacter baumannii* and *Pseudomonas aeruginosa*.

Wisconsin MDRO Situation Report

Since 2022 CPOs have been reportable in Wisconsin, this includes CP-CRPA, CP-CRE and CP-CRAB. While *Pseudomonas aeruginosa* is often resistant to antibiotics, carbapenemases remain rare among isolates. In Wisconsin, approximately two percent of CRPA isolates are CP-CRPA and fewer than five CP-CRPA cases are identified per year. Among CRE isolates, the prevalence of CP-CRE is about 20–30%, with genes like KPC and NDM being the most common. Between 40 and 70 new cases of CP-CRE are detected each year in Wisconsin. CRAB is unique in that nearly all isolates carry a carbapenemase. It is usually one of several OXA genes that are only seen in this organism. Some isolates of CP-CRAB identified are also pan-resistant, meaning they were resistant to all of the antimicrobials against which they were tested. Wisconsin detects about 100–150 new cases of CP-CRAB each year, and historically about 90% of these cases were either current or former residents of a long-term care facility (LTCF). While CP-CRAB remains most common in the southeastern region of the state, it has been detected in facilities within all five public health regions in Wisconsin. This data clearly demonstrates that CP-CRAB is present in the state and of particular concern for nursing homes.

Since being first identified in 2022, *C. auris* cases have continued to increase in Wisconsin. In 2026, Wisconsin surpassed 100 total cases. About half of these cases are detected through colonization screening. Because it is a fungal pathogen, antibiotics do not work against *C. auris*, and there are only a few classes of antifungals for treatment. Strains of *C. auris* that are resistant to echinocandins, the antifungal most commonly used for treatment, have been detected in the United States but not yet in Wisconsin.



Visit the [DHS Reportable MDROs webpage](#) for more surveillance data on targeted MDROs in Wisconsin.

Resources

- DHS, [Candida auris Fact Sheet for Health Care Settings](#)
- DHS, [Carbapenem-Resistant Acinetobacter baumannii \(CRAB\) Fact Sheet for Health Care Settings](#)

- DHS, [Carbapenem-Resistant Enterobacterales \(CRE\) Fact Sheet for Health Care Settings](#)
- DHS, [Carbapenem-Resistant Pseudomonas aeruginosa \(CRPA\) Fact Sheet for Health Care Settings](#)
- DHS, [Multidrug-Resistant Organisms \(MDROs\) Fact Sheet for Health Care Personnel](#)
- DHS, [Multidrug-Resistant Organisms \(MDROs\) Fact Sheet for Residents and Families](#)

Prevention and Planning

Early identification of residents who are colonized or infected with a targeted MDRO, paired with immediate implementation of appropriate precautions and environmental cleaning, is critical to mitigating the risk of MDRO transmission in nursing homes.

Having the following plans and resources in place will help to ensure your facility is prepared to respond to the presence of a targeted MDRO in your facility.

- Ensure that paperwork and verbal reports received for new admissions and re-admissions to the facility include a review of residents' MDRO history. Consider using a [transfer communication tool](#) to help streamline this process.
- Have a plan to promptly obtain additional resources (for example, transmission-based precautions and enhanced barrier precautions door signs, educational materials, cleaning supplies, and personal protective equipment [PPE]) when a resident is identified as infected or colonized with one of the targeted MDROs.
- Review your facility's policies regarding [enhanced barrier precautions \(EBPs\)](#). Enhanced barrier precautions are a key part of a nursing home's response to the presence of a targeted MDRO and are also increasingly recognized as an important strategy for preventing the "silent transmission" of MDROs within nursing homes.
- Ensure that contact information for the [Local or Tribal Health Department \(LTHD\)](#), Wisconsin [Healthcare-Associated Infections \(HAI\) Prevention Program](#), and other key health care partners is readily available.
- Review facility cleaning guidelines and identify potential gaps. Observe routine housekeeping procedures to identify cross-contamination issues, such as using the same cloths to clean multiple residents' rooms rather than using fresh cloths for each room. Identify high-risk surfaces, including surfaces with frequent hand contact, surfaces in shared areas such as tub or shower rooms, and shared medical equipment. Develop an outbreak-specific cleaning plan to supplement routine protocols.
- Form a multidisciplinary planning committee or team to provide guidance and response when potential cases or outbreaks occur. This planning committee should designate specific individuals to manage various tasks during an outbreak, such as communication with families, visitors, residents, and the LTHD; inter-facility coordination; and training and education of staff.
- Provide regular information to residents and staff (for example, in-services, notices, and posters) to reinforce facility policy regarding proper hand hygiene. Ensure there is adequate access to hand hygiene stations and supplies to support this.

Interpreting Lab Results

Interpreting the results of testing for a targeted MDRO can be challenging, and the testing often involves multiple steps. Isolates that are carbapenem-resistant undergo confirmatory testing at the Wisconsin State Laboratory of Hygiene (WSLH) to determine whether the organism is carbapenemase-producing (CP).

When reviewing lab results for a resident, it's important to note that just because a resident tests positive for CRE, *Pseudomonas spp.*, or *Acinetobacter baumannii*, this doesn't necessarily mean that the resident has CP-CRE, CP-CRPA, or CP-CRAB.

CDC currently includes CP-CRE, CP-CRPA, and CP-CRAB, along with pan-resistant organisms and *C. auris*, as organisms that require the use of enhanced barrier precautions (EBPs) in the nursing home setting. This topic is discussed in greater detail in the [Management of Residents](#) section of this document.

While awaiting final test results from WSLH to determine whether a resident is infected or colonized with a targeted MDRO, the following precautions should be taken with the resident whose results are pending:

- **If the resident has signs or symptoms of infection**, use contact precautions in addition to standard precautions. Place the resident in a private room, if possible. All staff should wear a gown and gloves upon entry to the room. Disinfect medical equipment and personal care items before removing from the room or discard disposable items. Limit movement in and out of the resident's room.
- **If the resident does NOT have signs or symptoms of infection**, use EBPs in addition to standard precautions for all high-contact care activities. Refer to the section titled [Management of Residents](#) for more details on EBPs.

Upon receipt of final test results:

- **If the test results show that the resident has a CPO or *C. auris***, follow the guidance outlined in this document.
- **If the test results show that the resident does not have a CPO or *C. auris***, then default to your facility's protocols for management of MDROs that are not targeted organisms, as appropriate.

Notification and Communication

Upon identification of a case of a targeted MDRO, the DHS HAI Prevention Program or the LTHD will reach out to the affected facility to consult with them about response efforts. Prevention and control of targeted MDRO outbreaks requires the participation of several key stakeholders to be most effective. The medical director should be consulted any time the facility has a new case of a targeted MDRO. Additional members of leadership should also be involved, including the director of nursing, infection preventionist, administrator, and housekeeping or environmental services manager.

Internal Communication and Signage

When a targeted MDRO is identified in a facility, communication between direct care staff and housekeeping staff is essential. Staff who will be entering the rooms of residents who are on transmission-based precautions should be made aware of appropriate control measures prior to entering. This can be done by placing instructional signage on the door to the resident room and flagging the resident's medical record.

In its [FAQs](#) on precautions in nursing homes, CDC discusses what information should be included on resident door signs while maintaining the rights and privacy of residents:

“Signs are intended to signal to individuals entering the room the specific actions they should take to protect themselves and the resident. To do this effectively, the sign must contain information about the type of precautions and the recommended PPE to be worn when caring for the resident. Generic signs that instruct individuals to speak to the nurse are not adequate to ensure precautions are followed. Signs should not include information about the resident's diagnosis or the reason for the precautions (e.g., presence of a resistant pathogen); inclusion of that information would violate HIPAA and resident dignity.”

See the “Resources” section below for links to printable contact and enhanced barrier precautions resident door signs from CDC. Also see the guidance at F583 of the [CMS State Operations Manual, Appendix PP](#) for additional information on the use of precautions signage outside resident rooms.

External Communication and Transfers

The importance of clear and timely communication between facilities when a resident who is colonized or infected with a targeted MDRO is being transferred cannot be overstated.

Communication failures at the time of resident transfer have been identified in the literature and by the Wisconsin HAI Prevention Program as a key contributor to the spread of MDROs between facilities. When a resident with a targeted MDRO is transferred from one facility to another, the receiving facility must be informed of the resident's MDRO history and status, ideally prior to the transfer, so that appropriate precautions can be implemented.

The following information should be communicated to the receiving facility:

- Basic information about the resident and transferring facility
 - Resident name and date of birth
 - Transferring facility name
 - Reporter name and contact information
- Resident MDRO history and current status
 - Organism name
 - Specimen type and collection date
 - Does individual have an infection or are they colonized with the MDRO?
 - Is resident currently being treated for MDRO infection? Is treatment complete or ongoing?

Ideally, the transferring facility will contact the receiving facility by phone to ensure the facility is aware of and understands the resident's MDROs status. At minimum, MDRO status information should be included in the transfer paperwork and in the resident's chart. Using a [transfer communication form](#) for all resident transfers can help standardize this process.

In addition to notifying other health care facilities upon transfer of a resident who is colonized or infected with a targeted MDRO, facilities should consider notifying "sister" facilities with which they share staff, facilities, or other resources of their current outbreak status, so the other entities can implement proper IPC measures.

Resources

- CDC, [Contact Precautions Sign](#)
- CDC, [Enhanced Barrier Precautions Sign](#)
- CDC, [Enhanced Barrier Precautions Sign \(Spanish version\)](#)
- CDC, [Frequently Asked Questions \(FAQs\) about Enhanced Barrier Precautions in Nursing Homes](#)
- Centers for Medicare and Medicaid Services (CMS), [State Operations Manual Appendix PP—Guidance to Surveyors for Long Term Care Facilities](#)
- DHS, [Health Care Facility Transfer Form](#)

Surveillance and Outbreak Identification

Surveillance activities for targeted MDROs include identifying potential sources of transmission, determining prevalence, monitoring rates of transmission within the facility, and determining host risk factors for carriage.

Examples of surveillance activities include:

- Maintaining line lists of residents known to be infected and colonized with targeted MDROs.
- Obtaining cultures of all high-risk residents and/or upon admission to detect colonization or infection with targeted MDROs.
- Performing colonization screening to determine the extent of spread of the targeted MDRO within the facility in response to an identified case.

Risk factors that increase a resident's risk of becoming infected and/or colonized with a targeted MDRO include:

- Underlying medical conditions.
- Current and/or prolonged antibiotic use.
- Indwelling medical devices and/or lines.
- Presence or history of chronic wounds.
- History of frequent or prolonged hospitalizations and frequent surgeries or procedures.
- History of residing in congregate living settings.
- History of health care abroad and out-of-state.

Colonization screening

Colonization screening, also known as point prevalence screening (PPS), is a specific surveillance activity that is typically done when a resident in a nursing home is found to be colonized or infected with a targeted MDRO. Colonization screening is conducted to identify other residents who are colonized or infected with the targeted MDRO. Screening may be conducted with residents of a particular area of the facility or with all residents. The LTHD and/or the HAI Prevention Program will assist with determining the scope of screening, but, in short, screening is a key activity which enables the facility and public health to understand the extent of the outbreak and respond accordingly.

Key points to know about colonization screening

- Depending on the location(s) of the positive resident(s), screening may be done at the unit-level or facility-level. The LTHD and/or HAI Prevention Program will assist in determining the scope of the screening.
- The LTHD and/or the HAI Prevention Program will also assist with determining testing frequency and with ordering testing supplies from WSLH.
- WSLH offers fee-exempt colonization testing for select organisms. WSLH has specific expertise in the surveillance of targeted MDROs and serves as the CDC-appointed Midwest Region [Antibiotic Resistance Lab Network](#) laboratory.
- If possible, it is helpful to have the same staff member(s) perform the screening, to help ensure specimen collection and documentation are done in a consistent way.
- Residents or a resident's power of attorney (POA) must provide informed consent prior to testing. Screening tests are voluntary and residents/POAs have the right to decline testing. See the "Resources" section below for a sample template that can be revised and used to obtain and document informed consent.
- Note that when a new resident who is already known to be infected or colonized with a targeted MDRO is admitted to the facility, response-driven colonization screening would **not** be required, so long as proper precautions are taken upon admission. Refer to the [Management of Residents](#) section of this document for further information on precautions.

Details regarding specimen collection and clinical testing

- Colonization screening supplies and processing of tests will be provided by WSLH at no charge.
- Instructions for the specific swab being used will arrive with the testing supplies.
 - [Instructions for Axilla/Groin Swab Collection](#)
 - [Instructions for Rectal Swab Collection](#)
 - Often, specimen collection involves a bilateral axilla and groin swab, though in some cases (particularly when testing for CP-CRE) a rectal swab is taken. Be sure the person performing the tests has reviewed how to properly collect the specimen in advance.
- Unpack screening supplies received from WSLH promptly. Review the contents to be sure all needed supplies are included and place ice packs in the freezer as directed.
- The HAI Prevention Program will send a supply request to WSLH. Information needed from the facility includes:
 - Main contact's phone and email
 - Approximate number of swabs that will be collected

- Preferred date of collection. The HAI Prevention Program will assist in scheduling the confirmed collection date.
- The facility must fill out a WSLH test requisition form with resident identifiers for each swab collected.
- Each swab must also be labeled with at least two identifiers (typically name and date of birth).
- The facility should package the swabs using the ice packs and insulated shippers provided by WSLH and send them back per [WSLH's shipping instructions](#). There is no charge to the facility for shipping.
- Swabs should be shipped the same day they are collected. In most cases, swabs are only validated for testing within four days after collection. Swabs received late in the week or on weekends may be unable to be tested and require re-collection.
- Test results can take 1-5 days to receive, depending on the type of test ordered.
- Results are currently faxed to the facility and the HAI Prevention Program.
- Any resident who tests positive is assumed to be colonized indefinitely and will not need to be tested again.
- PPS testing done in response to a newly identified case should be repeated every 1-2 months until the facility has two consecutive rounds of tests without any new positive cases identified. At this point, containment has been achieved. Periodic, less frequent PPS may be recommended by the LTHD and/or HAI Prevention Program following containment depending on the details of the outbreak.

Resources

- DHS, [Multidrug-Resistant Organism \(MDRO\) Colonization Screening Fact Sheet for Health Care Facilities](#)
- DHS, [Multidrug-Resistant Organism \(MDRO\) Colonization Screening Fact Sheet for Resident and Family Education](#) (Includes a modifiable template for obtaining informed consent for screening. Fact sheet and consent template are available in English and Spanish).

Management of Residents

This section is intended to provide guidance on the different types of precautions, including enhanced barrier precautions (EBPs), that may be needed when a targeted MDRO is identified in the facility.

Key points about PPE and medical equipment during targeted MDRO response

- Plan to promptly obtain additional PPE. Gown and glove usage will increase during a targeted MDRO response. Estimate the quantities of PPE that will be needed, taking into account staff room entry practices, policies for grouping cares, current burn rates, and other facility-specific issues.
- Ensure signage noting the type of precautions is posted on each affected resident's door and ensure the necessary PPE based on the type of precautions is readily accessible to staff. This serves as a reminder to staff who enter the room to don the appropriate PPE.
- Provide alcohol-based hand sanitizer (ABHS) throughout the building to promote frequent hand hygiene among staff, residents, and visitors. This includes availability for each resident room, ideally both inside and outside the room, to provide access as part of the PPE donning and doffing process.
- Keep garbage cans near the door inside each affected room to facilitate proper doffing and immediate disposal of used PPE before staff leave the room. Standardizing the location of the garbage cans will help reinforce a consistent process for staff, not only upon exit of the room, but also when providing care for multiple residents in the same room. Staff should know how to remove PPE and don clean PPE for the next roommate when providing care in double occupancy rooms.
- Neither extended use nor reuse of gowns and gloves is recommended for mitigating shortages in the context of precautions for targeted MDROs.
- For residents known to be infected or colonized with a targeted MDRO, use single use/disposable or dedicated medical equipment (for example, vital signs equipment, shower chairs, or lift slings) if possible. If supply does not allow for this:
 - Shared equipment must be cleaned and disinfected between each use. Use Environmental Protection Agency (EPA)-registered disinfectants effective for the MDRO according to the label instructions, ensuring the contact time is followed. Contact time is how long the disinfectant needs to remain on a surface for it to be effective.
 - Launder lift slings between uses with different residents.

Enhanced barrier precautions

CDC first released specialized guidance in 2019 to prevent the spread of targeted MDROs in nursing homes. [EBPs](#) expand the use of PPE beyond situations in which exposure to blood and body fluids is anticipated and incorporate gown and glove use for high-contact resident care activities where MDROs

may be transferred to staff hands, equipment, and clothing. EBPs address the growing number of outbreaks where MDRO transmission is believed to have occurred from residents who were colonized with an organism, but not actively infected.

EBPs offer a mid-point between [standard](#) and [contact](#) precautions, and were developed to protect residents at risk of acquiring an MDRO, while being less restrictive than contact precautions for those who are colonized with a targeted MDRO. They also take into account the types of activities that pose a higher transmission risk in the more home-like environment of skilled nursing facilities for residents who may live there for many years.

In July 2022, CDC expanded its recommendations for the use of EBPs in nursing homes, in part because of the growing recognition of the high prevalence of MDRO colonization as well as documented MDRO transmission in the nursing home setting. The updated CDC guidelines now recommend EBPs for **all residents with chronic wounds and indwelling medical devices** and **expands the types of MDROs** for which EBPs are recommended. CDC states that in addition to the “targeted” MDROs, facilities should also consider implementing EBPs for “other epidemiologically important MDROs.”

[Per the CDC](#), additional epidemiologically important MDROs that facilities may choose to use EBPs for based on their own [risk assessment](#) and policy include:

- Methicillin-resistant *Staphylococcus aureus* (MRSA)
- ESBL-producing Enterobacterales
- Vancomycin-resistant *Enterococci* (VRE)
- Multidrug-resistant *Pseudomonas aeruginosa*
- Drug-resistant *Streptococcus pneumoniae*

[Per current recommendations](#), EBPs should be used with:

- Residents who are infected or colonized with an MDRO, *when contact precautions do not apply*.
- Residents who have wounds and/or indwelling medical devices, such as a central line, urinary catheter, feeding tube, or tracheostomy/ventilator, *regardless of MDRO colonization status*.

CDC identified specific [resident care activities](#) that require gown and glove use, based on studies where researchers observed care to identify activities involving a greater degree of staff-to-resident contact, as well as contact with bodily fluids that could increase transfer of organisms to staff hands and uniforms. These **high-contact resident care activities requiring EBPs** include:

- Dressing
- Bathing or showering
- Transferring

- Providing hygiene
- Changing linens
- Changing briefs or assisting with toileting
- Device care or use, including devices such as a central line, urinary catheter, feeding tube, or tracheostomy/ventilator
- Wound care, including any chronic skin opening that requires a dressing



In April 2024, the Centers for Medicare and Medicaid Services (CMS) released a memo requiring nursing homes to implement EBPs to align with nationally accepted standards. In April 2025, CMS incorporated the EBP requirements into F880 in Appendix PP of the [State Operations Manual](#).

Therapists should use gowns and gloves when working with residents on EBPs in the therapy gym if they anticipate close physical contact while assisting with transfers and mobility. Decisions on whether to have therapists don PPE in the hallways for ambulation of residents on EBPs should be based on the facility's own [risk assessment](#) and policy, taking into consideration the level of physical contact the therapist will have with the resident during the activity.

A key point to remember is that EBPs should generally be used **for the duration of a resident's stay** in a facility. In some situations, a resident may transition back to standard precautions. For example, a resident who is placed on EBPs solely because of an indwelling medical device may transition back to standard precautions when the device is removed. Similarly, a resident on EBPs solely because of the presence of a wound may transition to standard precautions when the wound is healed.

Finally, there are situations where EBPs are **not** appropriate. EBPs are not appropriate for situations where resident body fluids or wounds are unable to be contained or for diarrheal illnesses like *Clostridioides difficile* or norovirus. Nursing homes should continue to follow [CDC guidance](#) for the use of transmission-based precautions where indicated. Also, CDC developed the EBP guidance specifically for the nursing home setting, due to the differences in length of stay, activities, MDRO transmission patterns, and types of care provided. Currently, EBPs are not recommended for other health care settings for those reasons.

Resident rooms and cohorting

CDC discusses resident room assignment, cohorting, and other considerations on its [FAQs about Enhanced Barrier Precautions in Nursing Homes](#) webpage. In response to a question regarding whether residents placed on EBPs require placement in a single-person room, CDC states:

“Single-person rooms (if available) should be prioritized for residents who have acute infection with a communicable disease (such as influenza, SARS-CoV-2, hepatitis A) or for residents placed on Contact Precautions for presence of acute diarrhea, draining wounds, or other sites of secretions or excretions that are unable to be covered or contained. Residents on Enhanced Barrier Precautions may share rooms with other residents; however, facilities with capacity to offer single-person rooms or create roommate pairs based on MDRO colonization may choose to do so. Further, if there are multiple residents with a novel or targeted MDRO in the same facility, consider cohorting them together in one wing or unit to decrease the direct movement of healthcare personnel from colonized or infected residents to those who are not known to be colonized.”

CDC goes on to say that when residents are placed in shared rooms, facilities must implement strategies to help minimize the transmission of pathogens between roommates including:

- Maintaining spatial separation of at least 3 feet between beds to reduce opportunities for inadvertent sharing of items between the residents
- Using privacy curtains to limit direct contact
- Cleaning and disinfecting any shared reusable equipment
- Cleaning and disinfecting environmental surfaces on a more frequent schedule
- Changing personal protective equipment (if worn) and performing hand hygiene when switching care from one roommate to another

Decisions about cohorting residents are complex and many factors need to be considered, including space issues, resident co-morbidities and clinical care needs, staffing patterns, and other issues. Facilities are strongly encouraged to consult with the HAI Prevention Program or their LTHD to discuss potential cohorting plans and options.

EBPs and other precautions in the broader context of daily life in nursing homes

The CDC EBP guidance specifies which activities need gowns and gloves to minimize transmission. The principles of EBP focus on transmission between staff and residents, not residents to other residents or via inanimate objects. EBPs are different than contact precautions and **do not require room restriction or limitations on visiting common areas or other group activities**. This is because it is the high-contact activities that are considered the risk, most of which involve personal hygiene activities that are room-based. If a resident will not have that type of contact with a staff member while in common areas or during group activities, staff should follow their standard precautions.

Staff do not need to wear gowns and gloves when performing care duties that are not part of the EBP list as long as they keep standard precaution principles in mind. For example, a certified nursing assistant (CNA) who is only dropping off a meal tray in a resident room does not need to wear a gown or gloves during this time, unless there is anticipated extensive physical contact. Dining and group

activities do not involve direct, prolonged contact between the resident and a staff member and do not require EBP.

In general, residents colonized or infected with a targeted MDRO may use common living areas, recreational areas, and dining facilities. Residents leaving their rooms for activities should wear clean clothes and have clean, dry dressings (if applicable). . All residents should perform hand hygiene immediately before leaving their rooms. If residents are unable to perform hand hygiene themselves, residents' hands should be cleansed for them. Hand hygiene should be offered frequently, particularly before dining and group activities, as well as whenever they become contaminated.

Table 3. Overview of PPE Use and Resident Room Restriction (Adapted from CDC's [Summary of PPE Use and Room Restriction When Caring for Residents Colonized or Infected with MDROs in Nursing Homes](#))

Precautions	Applies to:	PPE used for these situations:	Required PPE	Room restriction
Standard Precautions	All residents	Any potential exposure to: • Blood • Body fluids • Mucous membranes • Non-intact skin • Potentially contaminated environmental surfaces or equipment	Depending on anticipated exposure, gloves, gown, or face protection Change PPE and perform hand hygiene before caring for another resident.	None
Enhanced Barrier Precautions	All residents with <i>any of the following</i> : • Infection or colonization with an MDRO <i>when contact precautions do not apply</i>. • Wounds and/or indwelling medical devices (e.g., central line, urinary catheter, feeding tube, tracheostomy/ventilator) <i>regardless of MDRO colonization status</i>.	During high-contact resident care activities: • Dressing • Bathing/showering • Transferring • Providing hygiene • Changing linens • Changing briefs or assisting with toileting • Device care or use: central line, urinary catheter, feeding tube, tracheostomy/ventilator • Wound care: any chronic skin opening requiring a dressing	Gloves and gown prior to the high-contact care activity Change PPE and perform hand hygiene before caring for another resident. Face protection may also be needed if performing activity with risk of splash or spray.	None
Contact Precautions	All residents infected or colonized with a targeted MDRO <i>in any of the following situations</i> : • Presence of acute diarrhea, draining wounds, or other sites of secretions or excretions that are unable to be covered or contained. • Temporarily on units or in facilities where ongoing transmission is documented or suspected, in consultation with public health authorities.	• Any room entry	Gloves and gown Don before room entry, doff before room exit. Change PPE and perform hand hygiene before caring for another resident. Face protection may also be needed if performing an	Yes, except for medically necessary care

	For infections and other conditions where contact precautions are recommended, see Appendix A –of the CDC Guideline for Isolation Precautions		activity with risk of splash or spray.	
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Final points about resident management

- Educate staff on different types of precautions. Regular review of the expectations around donning and doffing PPE, performing hand hygiene, and discarding used PPE is critical to preventing transmission. This should be provided upon hire and at regular intervals.
- Appropriate [signage](#) will help reinforce staff practices:
 - Use standardized signs that clearly indicate the type of precautions and PPE that should be used so all staff understand the expectations for room entry, providing cares, and housekeeping. Signs should not include the type of condition or the resident's name, but rather the type of precautions to be used.
 - [Per CMS](#), "Facilities have the discretion on how to communicate to staff which residents require the use of EBPs. CMS supports facilities in using creative (e.g., subtle) ways to alert staff when EBP use is necessary to help maintain a home-like environment, as long as staff are aware of which residents require the use of EBP prior to providing high-contact care activities."
- Reinforce policies for precautions and PPE use through routine auditing. This can include formal auditing practices by designated staff, as well as just-in-time reminders from co-workers. Staff meetings and regular education opportunities can help address any adherence themes identified during these reviews, as well as determine whether practices in written policies or procedures need adjustment based on the reality of implementation.
- Provide education to residents and their visitors about EBPs so that they understand why this type of precaution was put in place and under which circumstances it will be used.
 - Visitors are not required to wear a gown and gloves when visiting a resident on EBPs; however, hand hygiene should still be encouraged. If a visitor participates in any high-contact resident care activities with a resident who is colonized or infected with a targeted MDRO, the facility may consider providing the visitor with education on EBPs and how to safely use a gown and gloves during resident cares.
- This guidance is specifically intended for response to targeted MDROs, but facilities should still follow the appropriate CDC guidelines for infection prevention practices and the duration of isolation precautions for other communicable diseases (such as *C. difficile*, norovirus, or scabies) found in the CDC [Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings. Appendix A](#).

Resources

- CDC, [Consideration for Use of EBPs in Skilled Nursing Facilities](#)
- CDC, [Contact Precautions Sign](#)
- CDC, [Contact Precautions Sign \(Spanish version\)](#)
- CDC, [Enhanced Barrier Precautions in Nursing Homes Video](#)
- CDC, [Enhanced Barrier Precautions Sign](#)
- CDC, [Enhanced Barrier Precautions Sign \(Spanish version\)](#)
- CDC, [Frequently Asked Questions about Enhanced Barrier Precautions in Nursing Homes](#)
- CDC, [Implementation of Personal Protective Equipment \(PPE\) Use in Nursing Homes to Prevent Spread of Multidrug-resistant Organisms \(MDROs\)](#)
- CDC, [MDRO Containment Strategy](#)
- DHS, [HAI: Precautions](#)
- DHS, [Transmission-Based Precautions Reference Guide](#)

Management of Staff

Staff assignments

If possible, designate specific direct caregiver and housekeeping staff to work in affected units. Facilities should also limit staff moving between affected and unaffected units whenever possible. If staffing levels do not allow complete separation:

- Bundle cares to limit the number of staff members providing direct care to residents infected or colonized with a MDRO.
- Ensure environmental cleaning is done starting with unaffected areas and resident rooms first, including unaffected common areas like the dining room. Clean affected units and the rooms of residents who are colonized or infected with a targeted MDRO last.

Staff education

Provide education to staff regarding the targeted MDRO, including how it is spread, the significance it has on infections in residents, and how to prevent and control the spread within the facility. Educate staff on the need to maintain strict hand hygiene and a clean environment to minimize the risk of transmission of the targeted MDRO.

Hand hygiene reminders

Reinforce the importance of hand hygiene when providing care to residents who are infected or colonized with a targeted MDRO. **Alcohol-based hand sanitizers are the preferred method for cleaning hands in most clinical situations, due to evidence of better compliance compared to soap and water.** Wash hands with soap and water whenever they are visibly dirty, before eating, after using the restroom, and after known or suspected exposure to gastrointestinal pathogens, such as norovirus or *C. difficile*.

Multiple opportunities for hand hygiene may occur during a single care episode. The [clinical indications for hand hygiene](#) include:

- Immediately before touching a resident
- Before performing an aseptic task or handling invasive medical devices
- Before moving from work on a soiled body site to a clean body site on the same resident
- After touching a resident or the resident's immediate environment
- Immediately after glove removal following contact with blood, body fluids, or contaminated surfaces

- When hands are visibly soiled

Ensure staff are performing hand hygiene appropriately and periodic audits are being done to reinforce the process. Staff should also be empowered to discreetly remind each other of the need for hand hygiene if they observe another not performing it.

Precautions and PPE

Implement contact precautions and/or EBPs as outlined in [Management of Residents](#) section. Ensure staff are donning and doffing PPE in the proper sequence and periodic audits are being done to maintain skills.

Most PPE used during resident care, including care of residents placed in EBPs or transmission-based precautions, would not be considered regulated medical waste requiring disposal in a biohazard bag, and could be discarded as routine, non-infectious waste.

After removing PPE, immediately perform hand hygiene and ensure hands and clothes do not touch potentially contaminated environmental surfaces or items in the resident's room, such as bed rails, light switches, doorknobs, and tables.

Resources

- CDC, [Frequently Asked Questions about Enhanced Barrier Precautions in Nursing Homes](#)
- CDC, [Implementation of Personal Protective Equipment \(PPE\) Use in Nursing Homes to Prevent Spread of Multidrug-resistant Organisms \(MDROs\)](#)
- CDC, [PPE Sequence](#)
- DHS, [Hand Hygiene Tracking Workbook](#)

Cleaning Management

As noted earlier, some of the targeted MDROs are very persistent and can survive a long time in the environment, making regular and thorough cleaning and disinfection essential to stopping their spread.

Order of operations and key areas for environmental cleaning and disinfection

- Clean and disinfect surfaces starting from the areas with a lower likelihood of contamination to areas with highly contaminated surfaces. This includes cleaning non-affected wings and resident rooms prior to the rooms of residents who are colonized or infected with a targeted MDRO.
- Increase the frequency of routine environmental cleaning, including cleaning shared areas, such as tub or shower rooms, and the area surrounding the living space of residents who are infected or colonized with the targeted MDRO. Pay particular attention to cleaning objects and surfaces that are frequently touched.
- Be sure that lift slings are laundered frequently. Ideally, residents who are colonized or infected with a targeted MDRO should have their own lift sling that is not used with other residents. If this is not possible, launder slings after they are used with residents who are infected or colonized with an MDRO.
- Change privacy curtains on a routine basis, if they become soiled, and after a resident on isolation is discharged or transferred. If privacy curtains are needed in shared bathroom or shower areas, consider using ones made of a material that can be cleaned and disinfected between each use.

Cleaning and disinfecting product considerations

- Cleaning and disinfecting supplies should be easily accessible for staff.
- Check the master labels of the disinfectants being used against the [EPA list of registered disinfectants](#) to be sure they are effective against the organism(s) you desire to kill.
- Prepare and use disinfectants according to the label instructions.
 - When storing prepared solutions, be sure containers are clean and clearly labeled. Containers should be cleaned out and dried prior to refilling with fresh solution. Do not “top off” existing bottles of solution.
 - Contact time is how long a disinfectant needs to remain wet on a surface for it to be effective. Ensure staff are aware of contact time requirements and use products appropriately. If the contact time poses difficulties, facilities may also consider changing to another product with a shorter contact time.

- If a bucket is used to store disinfecting solution, do not double-dip a used cleaning cloth into the solution. A clean cloth should be used each time to avoid contamination of the disinfectant.
- Properly manage cleaning carts, if used. This includes avoiding taking them into the resident rooms and cleaning the carts at a minimum daily.

PPE usage for housekeeping activities

Changing linens is one of the high-contact activities discussed in CDC's EBP guidance, due to the risk of contamination of linens through body fluids, and because targeted MDROs can colonize individuals' skin. There is also a high likelihood that linens will touch a staff person's uniform as the person removes or carries linens. Gowns and gloves prevent contamination of the staff member, especially when they may transition from handling dirty linen to clean linen in short periods of time.

All staff who remove resident linens, change bedding, or perform similar duties should wear gowns and gloves when working with linens from the rooms of residents on EBPs. This may include nursing staff, housekeepers, and laundry staff.

Facilities need to be able to clearly identify which linens may require additional PPE use. Other than changing linens, PPE for housekeeping staff in the rooms of residents on EBP should be dictated by facility policy and standard precautions for anticipated exposures to body fluids, chemicals, and contaminated surfaces. Residents on contact precautions have a different level of expectation for transmission, so housekeeping staff should wear gowns and gloves whenever cleaning those rooms, not just for certain cleaning activities. Again, appropriate door signage will assist housekeeping staff in knowing what type of PPE should be worn for their safety and to minimize transmission.

Training and auditing staff practices

- Train and regularly check the competency of housekeeping staff in the facility's cleaning and disinfection practices for the health care environment. Ensure housekeeping personnel are made aware when a resident with an MDRO is in the facility so they may respond appropriately, including use of the correct disinfectant and reinforcement of proper practices.
- Ensure laundry personnel are made aware of potentially infected linen and are provided with appropriate PPE.
- Ensure that any clinical staff who will be responsible for cleaning and disinfecting resident items or spaces are also trained and educated on proper procedures.
- Regularly audit environmental cleaning practices and assess staff competency and understanding of cleaning protocols and practices.

Resources

- CDC, [Resident Care Equipment Cleaning Audits](#)

- DHS, [Multidrug-Resistant Organisms \(MDROs\) Fact Sheet for Housekeeping Staff](#)

Sustainability

Responding to targeted MDROs in the nursing home setting is a lengthy process and will require the commitment of both leadership and staff. To sustain effective MDRO mitigation, facilities should consider the following:

- Have the support of administrative and clinical leadership to implement the infection prevention and control strategies needed to decrease MDRO transmission risk. To help support leadership buy-in, provide them with [educational materials](#) that support these efforts.
- Continue to observe and perform audits of staff practices (for example, hand hygiene, proper donning and doffing of PPE, and environmental cleaning).
 - Clinical leadership, including IPC staff, should round in the facility routinely to observe staff members' natural practices and provide immediate feedback and support as needed.
 - Incorporate audit results into the facility's Quality Assurance Performance Improvement (QAPI) Program to identify trends and initiate performance improvement projects when needed.
- Perform regular environmental rounding.
 - Have leadership from both clinical and ancillary services, such as housekeeping and facilities management, tour the facility on a routine basis to assess the cleanliness and condition of the overall environment, resident rooms, shared spaces, and shared medical equipment.
 - Use a [rounding tool](#) to document the results of the environmental rounds and any necessary action items.
- Continue to provide education for staff.
 - Plan for how all staff will be educated on mitigating the transmission of targeted MDROs. Evaluate education provided in new employee orientation and annual training, and revise or supplement educational materials as needed.
- Ensure oversight of IPC practices through the Quality Assessment and Assurance (QAA) Committee and QAPI Program.
 - As noted in section F865 of the [CMS State Operations Manual](#), "each LTCF, including a facility that is part of a multi-unit chain, must develop, implement, and maintain an effective, comprehensive, data-driven QAPI program that focuses on outcomes of care and quality of life indicators."
 - Provide regular updates to the QAA Committee on the status of the outbreak, measures being taken to mitigate transmission of the targeted MDRO, and results of staff audits.
 - Engage the QAA Committee to problem solve any barriers to effective IPC practices. Develop and initiate performance improvement projects as necessary.
 - Performance improvement project goals should be specific, measurable, attainable, realistic, and time-bound to help keep efforts organized and on track.

- Review and update your facility’s policies and procedures regarding topics such as MDROs, enhanced barrier precautions, transmission-based precautions, hand hygiene, and environmental cleaning. Educate staff on any updates that are made.



Responding to the presence of a targeted MDRO in your facility and protecting the health of your residents and staff in these situations can be a daunting task. Remember that the DHS HAI Prevention Program and/or your LTHD will be available to assist and advise you and your facility throughout the process. Contact information for your HAI Program Regional Infection Preventionist and other HAI Program staff is available on the [HAI Program’s webpage](#).

Additional Resources

See each section of the guide for links to resources related to that topic. In addition, the following general resources may also be helpful.

- [Wisconsin HAI Prevention Program Reportable MDROs webpage](#)
- [Wisconsin HAI Prevention Program Resources for Health Professionals webpage](#)