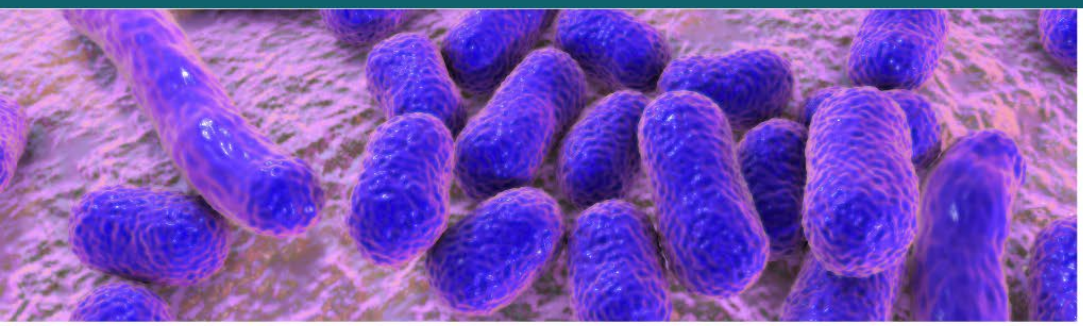

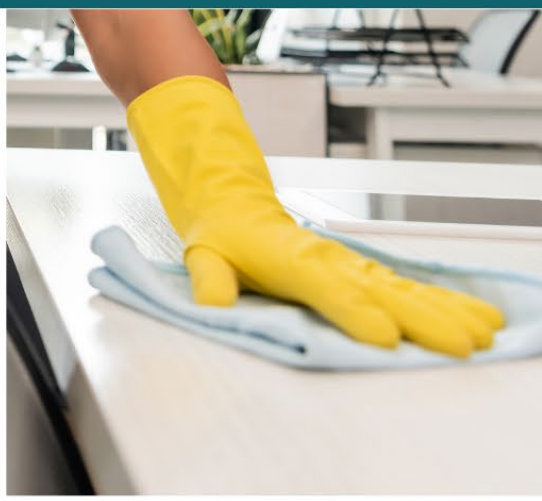

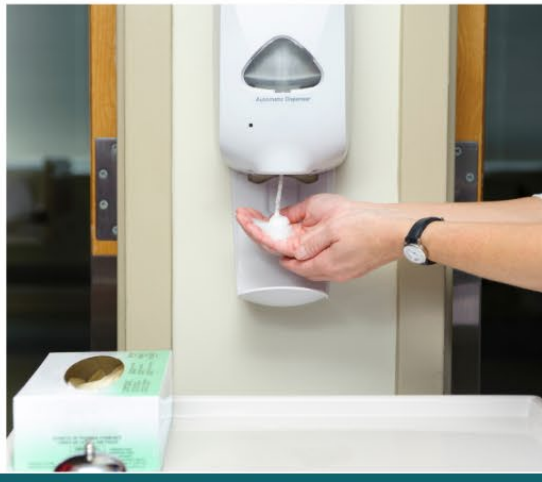

Recommendations for Prevention and Control of Targeted Multidrug-Resistant Organisms

For Assisted Living Facilities

Healthcare-Associated Infections (HAI) Prevention Program,
Division of Public Health, Department of Health Services

P-03250A (02/2024)

WISCONSIN DEPARTMENT of HEALTH SERVICES

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Introduction and Purpose

This document is designed to aid Wisconsin assisted living facilities (ALFs) 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 long-term care facilities (LTCFs), as well as the difficulties of treating infections caused by these organisms, make it critically important for ALFs to be prepared to prevent and respond to a potential outbreak.

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

This guide is based on a similar DHS document, ***Recommendations for Prevention and Control of Targeted Multidrug-Resistant Organisms in Wisconsin Nursing Homes, P-03250*** (PDF), that was developed by the Wisconsin HAI Prevention Program for nursing homes in 2022. This document was developed recognizing the wide range of housing arrangements, services, and levels of resident independence that exist under the ALF "umbrella." ALFs are encouraged to tailor the recommendations and other information in this guide based on their facility's individual factors such as the physical layout, services provided, staffing resources and roles, and the needs and strengths of individual residents.

Both the nursing homes guide and this document draw heavily from the CDC's (Centers for Disease Control and Prevention) ***Containment Strategy Guidelines: Interim Guidance for a Public Health Response to Contain Novel or Targeted Multidrug-resistant Organisms (MDROs)*.**

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 leadership in consultation with their local or Tribal health department (LTHD) and the Wisconsin HAI Prevention Program.

MDRO guide for ALFs

MDROs are well recognized by CDC and other public health entities as a concern in health care settings such as hospitals and other acute care settings, as well as in nursing homes. For several reasons, MDROs also pose a concern for ALFs.

- **ALF residents are likely to have some of the same risk factors for acquiring or transmitting MDROs as nursing home residents.** As noted by CDC, the presence of indwelling medical devices such as indwelling urinary catheters and feeding tubes, as well as open wounds and other underlying medical conditions, place individuals at risk for acquiring MDROs.
- **Residents may transition back and forth between a nursing home and an ALF, or between acute care facilities and the ALF.** Having multiple health care encounters increases an individual's risk of acquiring an MDRO.
- **On campuses where there are both nursing home and ALF settings, staff may work or be present in both**. MDROs can be transferred via the contaminated hands or clothing of health

care personnel (HCP). Therefore, HCP and other staff who are present in both settings could transmit MDROs between facilities.

- **Organisms have been identified among ALF residents in Wisconsin in recent months.** For example, at least one confirmed or suspected case of three of the four "targeted MDROs" shown in Table 1 were identified in a Wisconsin ALF resident in 2023.

While the approach to preventing and responding to targeted MDROs in ALFs may differ from the approach utilized in other health care settings in some ways, it is important for ALFs to be prepared to respond to the presence of these organisms in their facilities as part of protecting the health of facility residents and staff.

Targeted MDROs

In alignment with CDC, 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. • CP-CRE can cause serious infections if introduced to a sterile site, but people can also be colonized with CP-CRE without illness.
Carbapenemase-producing carbapenem-resistant *Acinetobacter baumannii* (CP-CRAB)	• *Acinetobacter baumannii* is commonly found in soil and water. • This organism can survive for a long time on surfaces, colonize the skin, and cause severe infections. • CRAB can be highly resistant to antibiotics. Pan-resistant CRAB isolates have been detected in Wisconsin.
Carbapenemase-producing carbapenem-resistant *Pseudomonas* spp. (CP-CRPA)	• *Pseudomonas aeruginosa* is a bacterium commonly found in soil and water. • *Pseudomonas aeruginosa* is naturally drug-resistant and can cause severe wound, burn, and respiratory infections. • While only a small proportion of CRPA isolates are carbapenemase-producing (CP), CP-CRPA can cause very serious and hard-to-treat infections.
Candida auris (C. auris)	• *C. auris* is a rare but potentially life-threatening type of fungus that is resistant to most antifungal medications. • *C. auris* can colonize the skin and is difficult to eliminate from the resident environment. • CDC estimates that *C. auris* infections have a high mortality rate.

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, CPOs can share their antibiotic resistance with other organisms around them. For these reasons, this document is specifically focused on CPOs. Several 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*.

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. Note that an individual who is colonized with a targeted MDRO can also become infected later with the organism.
- An individual who is **infected** with a targeted MDRO has the organism in or on their body and it is causing symptoms or illness.

Reportable MDRO cases

Table 2. Reported cases* of CP-CRAB, CP-CRE, CP-CRPA, and *C. auris* in Wisconsin, 2019–2023

	2019	2020	2021	2022	2023
CP-CRAB	46	41	153	112	153
CP-CRE	45	30	42	45	37
CP-CRPA	0	2	2	4	3
C. auris	0	0	1	5	21

*****Includes both clinical and positive colonization screening isolates. Note that, with the exception of CP-CRE, data reported for 2019–2021 is based on voluntary submission of isolates to the Wisconsin State Laboratory of Hygiene (WSLH).

For updated case counts of MDROs, please visit the Wisconsin HAI Prevention Program Reportable MDROs webpage.

Increasing *C. auris* activity

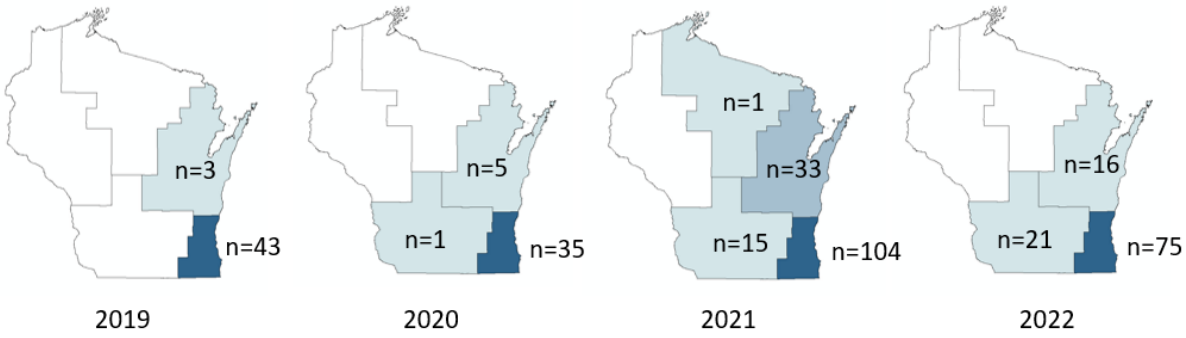
After first being found in each of its border states, Wisconsin identified its first case of *C. auris* in January 2022. *C. auris* became a reportable condition in Wisconsin in July 2022 and the number of identified cases have continued to rise. Sixteen of the 21 cases of *C. auris* reported in 2023 were detected in the Southeastern public health region of the state. *C. auris* cases were also detected in the Southern and Northeastern regions in late 2023, which are both regions with previously little to no *C. auris* activity

detected. For the most up-to-date data on *C. auris* cases, please visit the Wisconsin HAI Prevention Program Reportable MDROs webpage.

CP-CRAB in Wisconsin LTCFs

Data on CP-CRAB shows that this organism is clearly present in the state and of particular concern for LTCFs. As shown in Figure 1, there has been an increase in the number of positive CP-CRAB clinical and colonization screening isolates identified in Wisconsin in recent years. While changes in surveillance activities and reporting rules during this period may have impacted this, it is clear that CP-CRAB is present in our state. Of particular importance for ALFs, of the 105 CP-CRAB cases in Wisconsin in 2022 for which case history information was available, **92 (88%) had been a resident of a long-term care facility of some type in the previous year.**

Figure 1. Reported cases of CP-CRAB by Wisconsin public health region, 2019–2022



General MDRO resources

- DHS, MDRO Fact Sheet for Health Care Personnel, P-03172 (PDF)
- DHS, MDRO Fact Sheet for Residents and Families, P-03148 (PDF)
- DHS, CRE Fact Sheet for Health Care Settings, P-03232a (PDF)
- DHS, CRAB Fact Sheet for Health Care Settings, P-03232b (PDF)
- DHS, CRPA Fact Sheet for Health Care Settings, P-03232c (PDF)
- DHS, Candida auris Fact Sheet for Health Care Settings, P-03232 (PDF)

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 reducing the risk of MDRO transmission in ALFs.

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

- Ensure that paperwork and verbal reports received for new admissions and re-admissions to the facility include a review of residents' MDRO history.

- Have a plan to promptly obtain additional resources (for example, transmission-based 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.

- Ensure that contact information for the LTHD, Wisconsin HAI Prevention Program, and other key health care partners are readily available.

- Review facility cleaning guidelines and identify potential gaps. Observe routine housekeeping procedures to identify cross-contamination issues, such as using the same cloth to clean bathroom surfaces and wipe down ice buckets. 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 laboratory results for targeted MDROs can be challenging, and the testing often involves multiple steps. Isolates that are carbapenem-resistant undergo confirmatory testing at WSLH to determine whether the organism is carbapenemase-producing (CP). WSLH will also determine whether unusual *Candida* species isolates are *C. auris*.

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.

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:

- Regardless of the resident's independence level, **if the resident for whom you are awaiting final test results has uncontrolled secretions, incontinence, or wound drainage that is unable to be contained**, place the resident in **contact precautions and restrict them temporarily to their room,** in addition to using standard precautions, until the final lab results are available.

- If the resident does not have any uncontrolled secretions, incontinence, or wound drainage that is unable to be contained, and is **mainly independent** with their activities of daily living, strictly adhere to **standard precautions** while waiting for final test results.

- If the resident does not have any uncontrolled secretions, incontinence, or wound drainage that is unable to be contained, and is **dependent on ALF staff** for their activities of daily living, staff should, in addition to standard precautions, **wear a gown and gloves for all high-contact resident care activities**. These residents should not be restricted to their rooms. Again, these recommendations should be followed until final test results are received.

For more information on contact precautions, standard precautions, and examples of high-contact resident care activities, refer to the "Resident Management" section of this document.

The Wisconsin HAI Prevention Program or your LTHD may also recommend using a type of precautions called "enhanced barrier precautions (EBPs)," in addition to standard precautions. Refer to the "Resident Management" section of this document for more details on EBPs.

Final test results

- **If the test results show that the resident has a CPO or *C. auris***, follow the guidance outlined in the "Resident Management" section of 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.

Contact your region's Wisconsin HAI Prevention Program Regional Infection Preventionist (IP) or the MDRO IP for assistance with interpreting laboratory results.

Notification and Communication

Upon identification of a case of a targeted MDRO, the Wisconsin 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. This might include the ALF administrator, nurse leader, 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. Precaution door signs are routinely used in nursing homes to inform individuals entering the room of a resident with certain communicable conditions of specific precautions they should take to protect themselves and others. Where feasible and acceptable, use precautions door signage to protect the health of residents and staff in your ALF.

CDC's Frequently Asked Questions (FAQ) document discusses what information should be included on resident door signs while maintaining the rights and privacy of residents. The document states: "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."

Printable contact precautions resident door signs are available from CDC.

If door signs will not be used, ALFs will need to explore other ways to ensure staff are aware of the precautions to follow when caring for a resident who is colonized or infected with an MDRO. ALFs that choose not to use door signage should consult the Wisconsin HAI Prevention Program to discuss other ways to ensure staff are aware of appropriate control measures to take prior to entering these residents' 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 between health care providers have been identified by the Wisconsin HAI 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. Other health care providers currently involved in the resident's care such as dialysis, outpatient services, home health, or hospice should also be informed of the resident's MDRO history and status.

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
  - Infection or colonization status
  - Information regarding current treatment, if applicable

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.

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, physical space, or other resources, so the other entities can implement proper IPC measures.

Notification and communication resources

- CDC, Contact precautions sign (Available in Spanish)
- CDC, Inter-facility transfer form template (PDF)

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 MDROs.

Potential surveillance activities

- **Maintaining line lists** of residents known to be infected or colonized with targeted MDROs.
- **Performing colonization screening** of other residents when a resident is identified as being colonized or infected with a targeted MDRO to determine the extent of spread within the facility. Note that screening of residents on admission is generally not recommended in the ALF setting. However, screening in response to a new case may be recommended. See the "Colonization Screening" section for more details.

MDRO risk factors

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.

Colonization screening

Colonization screening is a specific surveillance activity typically done after a resident is found to be colonized or infected with a targeted MDRO, to identify whether other residents are also colonized or infected with the targeted MDRO. Colonization screening is a key activity that enables the facility and public health to understand the extent of potential spread and respond accordingly.

Key points 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 Wisconsin HAI Prevention Program will assist in determining the scope of screening activities.

- The LTHD and/or the Wisconsin HAI Prevention Program will also assist with determining testing frequency and 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. Residents and residents' POA have the right to decline testing. See the consent template for residents and families that can be revised and used to obtain and document informed consent.

- When a new resident who is already known to be infected or colonized with a targeted MDRO is admitted to the facility, colonization screening would **not** be required, so long as proper precautions are taken upon admission. Refer to the "Resident Management" section of this document for further information on precautions.

- The LTHD or Wisconsin 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.
  - Anticipated date of collection.

Instructions for the specific swab being used will arrive with the testing supplies and are also available online. Often, specimen collection involves a bilateral axilla and groin swab, though in some cases (particularly when testing for CP-CRE) a rectal swab or stool sample 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.

- If possible, collect swabs on a Monday or Tuesday.
  - 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. Specific collection dates will be coordinated in consultation with the Wisconsin HAI Program Regional IP and WSLH.
  - 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).

- Package the swabs using the ice packs and insulated shippers provided by WSLH and send them back via FedEx® on WSLH's account. If necessary, call FedEx® to ensure prompt pick-up of swabs. There is no charge to the facility for shipping.
  - 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 Wisconsin HAI Prevention Program.
  - Any resident who tests positive is assumed to be colonized indefinitely and will not need to be tested again.

- Colonization screening testing 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 colonization screening may be recommended by the LTHD and/or Wisconsin HAI Prevention Program following containment depending on the details of the outbreak.

Surveillance and outbreak resources

- DHS, MDRO Colonization Screening Fact Sheet for Health Care Personnel, P-03171 (PDF)
- DHS, Colonization Screening in Health Care Settings: FAQs for Staff, P-03530 (PDF) (Available in English and Spanish)
- DHS, MDRO Screening Tests Fact Sheet and Consent Template for Residents and Families (PDF) (Available in English and Spanish.)

Resident Management

To effectively manage residents who are colonized or infected with targeted MDROs, it is important to first understand both standard precautions and contact precautions. Information in this document on standard and contact precautions is primarily drawn from CDC's guidance on infection control basics and the Wisconsin HAI Prevention Program's webpage on precautions to be used in health care settings.

Standard precautions

Standard precautions should be taken during all resident care encounters, regardless of the resident's MDRO status, as they help keep staff, residents, and those in the environment safe.

Standard precautions include the following practices:

- **Performing hand hygiene**
  - Practice consistent hand hygiene with alcohol-based hand sanitizer containing at least 60% alcohol, or with soap and water.
  - Staff should perform hand hygiene before and after changing dressings, providing resident care (such as bathing, dressing, or changing linen), and accessing indwelling devices (such as urinary catheters). Staff should also perform hand hygiene before preparing or eating food, and after using the bathroom.
  - Caregivers' fingernails should be kept short and clean.
  - Residents should be encouraged to perform hand hygiene often.

- **Using PPE whenever there is an expectation of possible exposure to infectious material**
  - Standard precautions, in terms of PPE, refers to wearing the right PPE for the task and the anticipated risk.

- **Following respiratory hygiene and cough etiquette principles**
  - This includes covering a cough or sneeze and turning away from others, performing hand hygiene before and after touching your face, and disposing of facial tissues after use, to prevent the spread of pathogens.

- **Ensuring appropriate resident placement**
  - Placing a resident in a private room or in a room with a roommate who has the same MDRO may be necessary.

- **Handling, cleaning, and disinfecting resident care equipment and instruments or devices properly**
  - Thoroughly clean and disinfect all resident care equipment after each use, especially before using the equipment with another resident.

- **Cleaning and disinfecting the environment appropriately**
  - Clean from least soiled to most soiled and from physically high to physically low areas.
  - Check the master label of products used to clean surfaces and floors to ensure they are effective against the organism(s) present in the facility. Also ensure those who are cleaning

pay attention to the product's "contact time," the time a product needs to remain wet in order to kill the pathogen.
    - See the "Environmental Cleaning and Disinfection" section of this document for additional information and key points about cleaning and disinfection, including when an individual who is colonized or infected with an MDRO is present in the facility.

- **Handling textiles and laundry carefully**
    - Handle and store soiled and clean linens separately. Cover or contain linens to avoid contamination. Do not carry linens against the body or drag along the floor.
    - See the "Environmental Cleaning and Disinfection" section for additional details on laundry temperature and product considerations.

Contact precautions

Contact precautions should be used temporarily for residents who pose a risk of transmitting a targeted MDRO to others through direct contact.

Contact precautions include the following practices:

- **Using PPE appropriately**
    - When a resident is placed in contact precautions, all staff should put on a gown and gloves prior to room entry regardless of the reason for entering the room. Gown and gloves should be worn while in the resident's room and removed just prior to exiting the room. Contaminated PPE should never be worn in the hallway.
    - Keep garbage cans near the door inside each affected room to facilitate proper removal 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 put on clean PPE for the next roommate when providing care in double occupancy rooms.
    - Place a PPE cart filled with clean PPE just outside the resident's room. Assign a staff person to be responsible for keeping the PPE cart well stocked.
    - Have a plan to promptly obtain additional PPE if needed. Gown and glove usage can 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.
    - Where feasible and acceptable, ensure signage noting contact precautions is posted on each affected resident's door. This serves as a reminder to staff who enter the room to wear the appropriate PPE prior to entry.
    - Provide alcohol-based hand sanitizer 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, so that staff can use it as they put on and take off ("don and doff") PPE.
    - Even during times of PPE shortages, staff should continue to follow proper precautions and PPE usage when caring for residents who are colonized or infected with a targeted MDRO. Gowns and gloves should never be re-used or worn to care for multiple MDRO patients.

- **Ensuring appropriate resident placement**
  - When an MDRO is present in the facility, decisions about resident room assignments and roommates (in facilities with double room occupancy) are complex and many factors need to be considered to ensure the health and safety of residents. Facilities will need to consider space issues, resident co-morbidities and clinical care needs, staffing patterns, and other issues. Facilities are strongly encouraged to consult with the Wisconsin HAI Prevention Program or their LTHD to discuss potential rooming arrangements and options.
  - Ideally, place residents who are on contact precautions in a private room. When a private room is not available, consider placing the resident in a room with a resident(s) who has the same microorganism, but no other MDROs. This practice is known as cohorting. If cohorting is not an option, the best roommate for a person with an MDRO is someone who:
    - Has intact skin (in other words, no chronic wounds such as pressure ulcers or unhealed surgical wounds).
    - Has no invasive devices (such as nasogastric tubes, tracheostomy or tracheal tubes, IV lines, or indwelling urinary catheters).
    - Is not significantly immune compromised (for example, neutropenic, on oral steroids, or on chemotherapy).
  - The CDC's Frequently Asked Questions document notes 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 three 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 PPE (if worn) and performing hand hygiene when switching care from one roommate to another.

- **Limiting movement of the resident.**
  - When on contact precautions, limit the movement of the resident and **temporarily** restrict them to their room except for medically necessary care.

- **Using disposable or dedicated resident care equipment.**
  - 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 U.S. Environmental Protection Agency (EPA)-registered disinfectants according to the label instructions, ensuring the contact time is followed.
    - Launder lift slings between uses with different residents.

- **Prioritizing cleaning and disinfection of the rooms.**

- Clean the rooms of residents who are infected or colonized with an MDRO **after** cleaning all other resident rooms. See the "Environmental Cleaning and Disinfection" section for additional details about cleaning and disinfection.

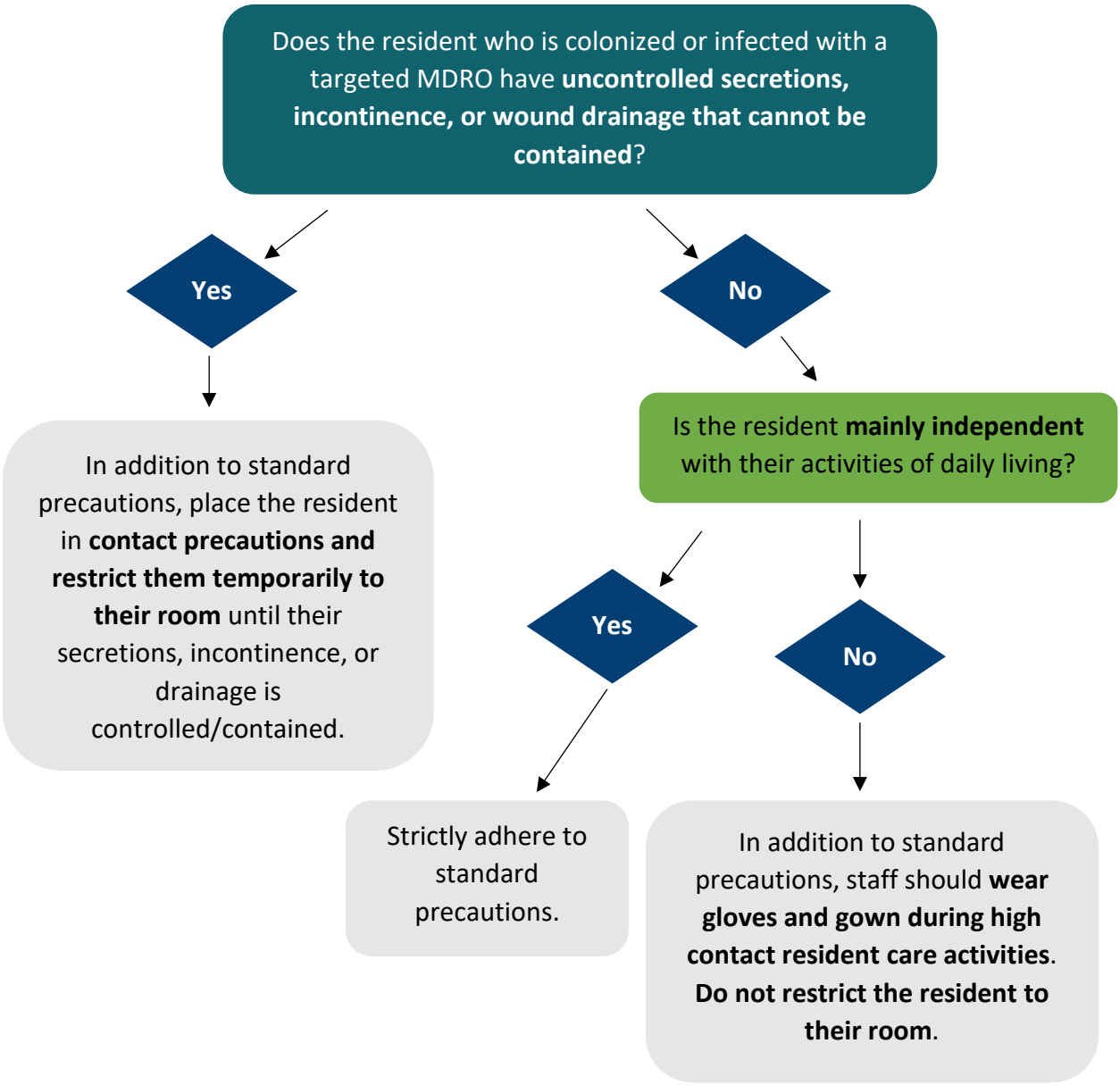
When to implement precautions

Standard precautions should be taken during **all** resident care encounters, regardless of the resident's MDRO status. When caring for a resident who is colonized or infected with a targeted MDRO, contact precautions or other specialized precautions may also be necessary to ensure the safety of staff and other residents.

- Regardless of the resident's independence level, if a resident who is infected or colonized with a targeted MDRO has or develops **uncontrolled secretions, incontinence, or wound drainage that is unable to be contained**, place the resident in **contact precautions and restrict them temporarily to their room** until their secretions, incontinence, or drainage is controlled and/or contained. This is in addition to practicing standard precautions with this resident.
- If a resident who is colonized or infected with a targeted MDRO **is mainly independent** with their activities of daily living and **does not have any uncontrolled secretions, incontinence, or wound drainage that is unable to be contained**, strictly adhere to **standard precautions**.
- If a resident who is colonized or infected with a targeted MDRO is **dependent on ALF staff** for their activities of daily living, it is recommended that **staff wear gloves and gown during high-contact care activities** in addition to practicing standard precautions. These residents do not need to be restricted to their rooms. In separate guidance for nursing homes on MDROs, CDC provides examples of high-contact care activities:
  - Dressing
  - Bathing and showering
  - Transferring
  - Providing hygiene
  - Changing linens
  - Changing briefs or assisting with toileting
  - Caring for or using devices: central line, urinary catheter, feeding tube, tracheostomy or ventilator
  - Caring for wounds (any skin opening requiring a dressing)

Figure 2 can help ALFs decide what type of precautions should be practiced with residents who are colonized or infected with a targeted MDRO.

Figure 2. What precautions should be taken with a resident who has a targeted MDRO in the ALF setting?



See the previous section and Table 3 for details on standard precautions, contact precautions, and examples of "high contact resident care activities."

Table 3 summarizes the information in this section. As noted throughout this document, ALFs are encouraged to contact the Wisconsin HAI Prevention Program or their LTHD with questions on managing residents who are colonized or infected with a targeted MDRO.

Table 3. Summary of recommended precautions for ALF residents who are colonized or infected with a targeted MDRO

Status of resident who is colonized or infected with MDRO	Precautions to use	Room restriction	Duration of precautions
Resident has **uncontrolled secretions, incontinence, or wound drainage that is unable to be contained**, regardless of their independence level.	**Contact precautions in addition to standard precautions** • Staff should wear gown and gloves throughout resident care encounters. • If possible, place resident in a private room. • Use disposable or dedicated medical equipment.	Temporarily restrict the resident to their room, except for medically necessary appointments.	Once the resident's secretions, incontinence, and/or wound drainage can be controlled/contained, remove room restriction, and follow the recommendations in this table based on the resident's independence level.
Resident is **mainly independent** with their activities of daily living.	**Standard precautions** • Perform hand hygiene as appropriate. • Use PPE whenever there is an expectation of possible exposure to infectious material. • Follow respiratory hygiene and cough etiquette principles. • Ensure appropriate resident placement. • Handle, clean, and disinfect resident care equipment, instruments, and devices properly**.** • Clean and disinfect the environment appropriately.	No room restriction	For the duration of the resident's stay at the facility.
Resident is **dependent on staff** for their activities of daily living.	In addition to **standard precautions**, staff should **wear gloves and gown during high-contact resident care activities**. Examples of these activities include: • Dressing • Changing briefs or assisting with toileting • Device care or use (central line, urinary catheter, feeding tube, tracheostomy) • Wound care (any skin opening requiring a dressing)	No room restriction	For the duration of the resident's stay at the facility.

Resident management in ALFs versus nursing homes

While ALFs and nursing homes share some risk factors for MDROs, there are also key differences that ALFs will need to consider when reviewing recommendations related to MDRO response, particularly in terms of managing residents who are colonized or infected with a targeted MDRO. While this guide was developed to be appropriate for the ALF setting, it may be helpful to keep a few things in mind when reviewing CDC or other materials developed primarily for the nursing home setting:

- The **role of residents themselves in preventing and controlling the spread of MDROs** may look different in ALFs versus in nursing homes. Compared to nursing home residents, ALF residents are likely to have greater levels of independence and autonomy in terms of hygiene, bathing, and at-home health care practices such as medical device usage and care. Because of this, ALF residents who are colonized or infected with an MDRO may also have **more responsibility for preventing the spread** of these organisms to others. Facilities should be prepared to provide a resident who is infected or colonized with an MDRO with education and resources on proper hygiene and precautions that will need to be taken.

- The **specific guidelines and recommendations that ALFs will follow to prevent or respond to targeted MDROs may differ** from those followed by nursing homes. A key difference is that nursing homes are recommended by CDC to implement a type of resident precautions called **EBPs**, also called enhanced barrier precautions, to prevent the spread of MDROs in that setting. EBPs involve staff use of gowns and gloves while providing "high-contact" care for residents with an MDRO, as well as with those who are at high risk for acquiring an MDRO. ALFs should note that EBPs were developed specifically for the nursing home setting and have not been formally recommended for use in other health care settings at this time. To be used effectively in an ALF setting, EBPs would need to be adapted on a case-by-case basis with input from the Wisconsin HAI Prevention Program or your LTHD.

- Finally, **fewer staff on-site with medical or nursing training** and the different staff roles and structures in ALFs versus nursing homes means that some of the recommendations on MDROs in nursing homes may need to be adapted. Responsibility for the health and safety of staff and residents will likely lie with the administrator and facility leadership team. Again, ALFs can contact their Wisconsin HAI Prevention Program's Regional IP or their LTHD for support and guidance related to MDROs.

Final points on resident management

- Educate staff on the different types of precautions, including the different types of PPE used and activities that are part of contact and standard precautions. Regular review of the expectations around donning and doffing (putting on and taking off) PPE, performing hand hygiene, and discarding used PPE is critical to preventing transmission. This should be provided upon hire and at regular intervals.

- 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, or "secret shopping" by volunteers. 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.

- 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 MDROs and 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.

Resident management resources

- CDC, Contact precautions sign (Available in Spanish)
- CDC, Containment Strategy Responding to Emerging Antibiotic Resistance (AR) Threats webpages
- DHS, MDRO Fact Sheet for Residents and Families, P-03148 (PDF)
- DHS, Hand Hygiene Resources for Health Care Personnel Fact Sheet, P-03146 (PDF)
- DHS, IP Starter Kit: Transmission-Based Precautions Section, P-02992 (PDF)
- DHS, MDRO Fact Sheet for Housekeeping, P-03147 (PDF)
- DHS, Disinfectant Considerations for MDROs, P-03400 (PDF)

Staff Management

Staff assignments

If possible, designate specific direct caregiver and housekeeping staff to care for residents who are colonized or infected with an MDRO. To the extent possible, facilities should also limit staff moving between affected and unaffected units. If staffing levels do not allow complete separation:

- Bundle cares to limit the number of staff members providing direct care to residents who are infected or colonized with an 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 spreads, the significance it has on infections and treatment options for residents, and how to prevent and control its 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 as outlined in the "Resident Management" section. Ensure staff are donning and doffing (putting on and taking off) PPE in the proper sequence and periodic audits are being done to maintain skills, particularly for new staff or when new PPE is included in the process.

Most PPE used during resident care, including care of residents placed in contact 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.

Staff management resources

- CDC, PPE Sequence (PDF)
- DHS, Hand Hygiene Resources for Health Care Personnel Fact Sheet, P-03146 (PDF)
- DHS, Hand Hygiene and PPE Observations Audit Tool, F-02726 (PDF)
- DHS, Hand Hygiene Observations Audit Tool, F-02475 (PDF)
- Wisconsin Department of Natural Resources (DNR), Hazardous Waste Management at Healthcare Facilities webpage

Environmental Cleaning and Disinfection

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.

Training and auditing staff practices

- Train and regularly check the competency of housekeeping staff on 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.

Order of operations and key areas

- 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 salon, 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 a targeted 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 vinyl curtains that can be cleaned and disinfected between each use.

Product considerations

- For cleaning surfaces and floors, check the product's instructions for use to ensure the product has been shown to be effective against the identified MDRO, or any other pathogen identified in the facility. When ***C. auris*** is present in the facility, see the EPA's "List P" for specific products shown to be effective against this organism.
- Pay attention to the contact time of each disinfectant to ensure complete disinfection of surfaces.

- Contact time for disinfectants range from 15 seconds to a maximum of 10 minutes.
- The surface must be visibly wet with the disinfectant for that amount of time to kill the microbes.
- If the surface dries before the prescribed contact time, a reapplication of product is indicated.
- Do not wipe the surface with a dry cloth or fan air over the surface to speed up the drying time.

Laundry and linens

- Ensure a temperature of at least 160°F (71°C) for a minimum of 25 minutes is used for hot water washing. No recommendation is offered by CDC regarding a hot water temperature setting and cycle duration for items laundered in residence-style health care facilities.
- If low temperature washing is used, choose chemicals suitable for low temperatures at proper use concentration.

PPE usage for housekeeping activities

All staff who remove resident linens, change bedding, or perform similar duties with used linens should wear gowns and gloves when working with linens from the rooms of residents who are colonized or infected with a targeted MDRO. 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 linen handling, PPE for housekeeping staff in the rooms of residents who are colonized or infected with a targeted MDRO 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.

Environmental cleaning resources

- CDC, Resident Care Equipment Cleaning Audits (PDF)
- DHS, MDRO Fact Sheet for Housekeeping Staff, P-03147 (PDF)
- DHS, Disinfectant Considerations for MDROs, P-03400 (PDF)

Sustainability

Responding to targeted MDROs in the ALF setting can be a lengthy process and requires the commitment of both leadership and staff. In addition to initial response activities, the following practices will also likely be needed:

- **Continued observations and audits of staff practices** (for example, hand hygiene, proper donning and doffing of PPE, and environmental cleaning). Facility leadership should round in the facility routinely to observe staff members' natural practices and provide immediate feedback and support as needed.
- **Regular environmental rounds.** Have facility leadership, including those responsible for 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.
- **Continuing education for staff.** Plan for how all staff will be educated on preventing the transmission of targeted MDROs. Evaluate education provided in new employee orientation and annual training and revise or supplement educational materials as needed.
- **Review of facility policies**. Facility policies and procedures regarding topics such as MDROs, contact precautions, hand hygiene, and environmental cleaning should be reviewed and updated as needed. Educate staff on any updates that are made.

Remember that the Wisconsin HAI Prevention Program and your LTHD is available to assist and advise you and your facility throughout the process of responding to a targeted MDRO. Contact information for Wisconsin HAI Program Regional Infection Preventionists and other HAI Program staff is available on the Wisconsin HAI Prevention Program's webpage.

Companion Documents and 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 staff contacts
- Wisconsin HAI Prevention Program Reportable MDROs webpage: The webpage includes links to a number of resources which may be of interest to readers of this guide.
- DHS, Guidelines for Prevention and Control of MDROs for Health Care Settings, P-42513 (PDF):This document provides background information and guidance on the prevention and control of MDROs in a variety of health care settings. While portions of the document are similar to this guide, the document also discusses additional MDROs and focuses on settings other than nursing homes.