TARGETED MULTIDRUG RESISTANT ORGANISM GUIDANCE

TO HELP PREVENT SPREAD IN HEALTH CARE SETTINGS

Multidrug-resistant organisms (MDROs) are an ongoing threat to patient health and safety. The potential for rapid spread in health care facilities and difficulty treating infections make it critically important for public health to conduct surveillance across settings and promote aggressive infection control measures.

This document focuses on Nevada targeted multidrug-resistant organisms (MDROs). Additionally, this guidance is designed to aid health care facilities prevent and control MDROs across the continuum of care.

Note: *This document is not a guide for medical treatment of persons colonized or infected with MDROs. Health care facilities should continue to consult with individual providers for treatment decisions. This list is not exclusive and would be subject to changed based on identified pathogen of concern.*

List of Nevada Targeted MDROs with Information

Organism	Notes and Considerations
Pan-resistant organisms	• These organisms are resistant to all tested antimicrobials (antibiotics or antifungals). MDRO Management | Guidelines Library | Infection Control | CDC
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. Information on CRE | CDC
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, can colonize on the skin, and can cause severe infections. • CRAB can be highly resistant to antibiotics. Carbapenem-resistant *Acinetobacter baumannii* (CRAB): An urgent public health threat in United States healthcare facilities | CDC

Organism	Notes and Considerations
Candida auris (C. auris)	• *Candida 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 it is difficult to eliminate from the resident environment. Healthcare Associated Infection Prevention and Control - Training and Education | Nevada DPBH Information about Candida auris | CDC

Additional epidemiologically important MDROs may include, but are not limited to:

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

Lists of Nevada Targeted MDROs by Tier

	Tier 1 Never detected in Nevada	Tier 2 Not commonly detected in Nevada	Tier 3 Commonly detected but not endemic in Nevada	Tier 4 Endemic in Nevada
Pathogens	• Novel organism and/or resistance mechanism • Organisms that harbor mcr-1 containing plasmids • Mosaic penA gene-containing N. gonorrhoeae (cephalosporin resistant) (very rare but not never) • IMP containing organisms • Drug resistant PulseNet organisms • Pan-resistant C. auris	• Vancomycin-resistant Staphylococcus aureus (VRSA) • Vancomycin-intermediate Staphylococcus aureus (VISA) • VIM Carbapenemase Resistant Pseudomonas Acinetobacter (VIM CRPA) • Pan-resistant gram-	• Carbapenemase-producing Pseudomonas spp. • Carbapenemase-producing Acinetobacter spp •	• Carbapenemase-producing Enterobacterales • KPC-producing Enterobacterales

	Tier 1 Never detected in Nevada	Tier 2 Not commonly detected in Nevada	Tier 3 Commonly detected but not endemic in Nevada	Tier 4 Endemic in Nevada
		negative organism • Candida auris (C. auris)		

[Interim Guidance for a Public Health Response to Contain Novel or Targeted Multidrug-resistant Organisms (MDROs): Updated December 2022 (cdc.gov)]

Reporting

In the event a health care facility identifies an organism(s) that is identified on the tier table, follow Nevada MDRO reporting requirements. Report to the Healthcare Associated Infection (HAI) Program by completing the appropriate case report form (see web page linked here) and sending a secure email to outbreak@health.nv.gov. If secure email is not available, fax to (702) 486-0490. HAI Program staff can assist with screening supplies and an onsite assessment to help identify new cases of MDRO and identify gaps in infection prevention and control practices.

In the event a health care facility identifies an organism(s) that is not identified on the tier table or is uncommon to the health care facility or region, the HAI Program should be notified immediately. The facility should send as much details as possible to the HAI Program, including organism species and genus, mechanism if applicable, number of cases, units where case(s) were identified and the laboratory report. This information should be shared securely via secure email to outbreak@health.nv.gov or by fax to (702) 486-0490. Upon notification the HAI Program will notify the State Epidemiologist and the HAI Program coordinator to determine next steps within the facility and to coordinate laboratory testing. The HAI coordinator will notify the Bureau of Health Care Quality and Compliance Infection Prevention (HCQC IP) manager as well as the Nevada State Public Health lab for a collaborative approach.

Prepare, Prevent and Contain

All health care facilities must have an infection prevention and control plan. This plan must be a comprehensive, institution-specific plan to detect, prevent, and control colonization and infection with MDROs. Additionally, the plan should include:

- MDRO risk assessment, appropriate admissions risk assessment, screening and applicable infection prevention and control measures.
- Process to review electronic and other patient records for MDROs present on admission or at time of transfer.

- Strategies of antibiotic stewardship to minimize over-prescribing of unnecessary antibiotics based on national best practices and guidelines, as well as local antibiogram trends.

The facility's infection prevention and control plan should be developed and reviewed by the multidisciplinary infection prevention committee at least annually or when the scope of services or practice changes. The plan should monitor levels, patterns and trends of antimicrobial resistance of relevant pathogens isolated from facility.

Note: *Monitoring trends in the incidence of target MDROs in the facility over time using appropriate statistical methods helps determine whether MDRO rates are decreasing and whether additional interventions are needed.*

Communicate internally and externally with other facilities

- Have a plan to inform all relevant staff of patients'/ residents' MDRO status so that appropriate precautions can be used.
- Inform the receiving facility and transport team of a resident's MDRO history and status when residents are transferred from one health care facility to another so that appropriate precautions can be used. Use the Nevada Interfacility Infection Control Transfer Form linked here

Assess and implement immediate infection prevention and control measures.

Immediately place any patient/resident with targeted MDRO in transmission-based precautions following the Centers for Disease Control and Prevention (CDC) guidance and ensure the following:

- If more than one case in the facility, cohort patients/residents as long as they have only the same organism (species, genus, resistance mechanism).
    - If possible, assign designated staff to care only for these cases.
- The sign on the door indicates required transmission-based precautions and shows proper personal protective equipment (PPE) to don when entering the room.
    - Standard Precautions for All Patient Care
    - Transmission-based precautions
- PPE is readily available for donning before entering the room, and there is a trash can inside the room near the exit to discard PPE prior to exiting the room.
- Hand sanitizer and/or a dedicated staff hand-washing sink with soap and paper towels is conveniently located for use before, during and after caring for the patient/resident.
- Dedicated or disposable medical equipment is used as much as possible. Store dedicated equipment in the patient's room, not in an isolation cart.
- Staff are performing proper cleaning and disinfection of any shared equipment and there is a clear process in place for distinguishing clean from dirty.
    - Further information found online at Selected EPA-Registered Disinfectants | U.S. Environmental Protection Agency
- Education and training of health care personnel: Health care facilities should provide education and training on risks and prevention of MDRO transmission during orientation and periodically (e.g., quarterly or annually) for health care personnel. Education should include information on organizational experience with MDROs and prevention strategies.

- Notify facility environmental services of targeted MDRO and ensure use of an effective disinfectant for the correct contact time.
    - Further information is online at Selected EPA-Registered Disinfectants | EPA
- Reinforce and audit adherence to proper hand hygiene, use of PPE and environmental cleaning and disinfection.

Nursing home-specific

- Review facility policies and assess residents' required precautions based on this assessment and use transmission-based precautions or enhanced barrier precautions (EBP) as appropriate.
    - Further information can be found online at Frequently Asked Questions (FAQs) about Enhanced Barrier Precautions in Nursing Homes | CDC.
- Have a plan to promptly obtain additional resources (e.g., transmission-based precautions and EBP signs, educational materials, cleaning supplies and PPE) when a resident is identified as infected or colonized with one of the targeted MDROs.
- Hand sanitizer and/or a dedicated staff hand-washing sink is conveniently located for use before, during and after caring for the patient/resident.
- Dedicated or disposable medical equipment are used as much as possible. Store dedicated equipment in the patient's room, not in isolation cart.
- 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 wiping 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.
- Staff are performing proper cleaning and disinfection of any shared equipment and there is a clear process in place for distinguishing clean from dirty.
- Notify facility environmental services of targeted MDRO and ensure use of an effective disinfectant) for the correct contact time.
- Reinforce and audit adherence to proper hand hygiene, use of PPE and environmental cleaning and disinfection.
- 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 and residents; inter-facility coordination; and training and education of staff.
- Provide regular information to residents and staff (e.g., 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.

Identify additional cases

- Review the facility's surveillance for this organism (genus and species with similar resistance profile) over the prior year, in addition to the facility's infection control MDRO plan and risk assessment.
- Note the usual incidence of this organism (cases per month) and whether there has been an increase in cases.

    - If you do not have access to this information, request a summary from your lab.
- To learn whether this organism has spread within your facility, work with the Office of State Epidemiology's HAI team to identify patients/residents who should be screened for this organism. In most situations, screening might include some of the following:
    - Roommates and those who shared a bathroom or equipment.
    - Patients/residents on the same hallway, wing or unit.
    - Patients/residents on the same unit with risk for MDRO acquisition (e.g., indwelling device, wound, or mechanical ventilation, etc.).
- Follow guidance and process provided from the HAI team and Nevada State Public Health Laboratory (PHL) for testing/screening. Coordinate with the facility's HAI lead for next steps regarding testing and logistics.
- Identify staff who can perform specimen collection, and train/educate staff on proper specimen collection.
- Make a plan for educating staff, patients/ residents, and visitors.
- Each patient/resident who is identified as being infected or colonized with the targeted MDRO and their families should be educated about the organism and how to prevent transmission to others.
- Reinforce with staff the need to maintain strict hand hygiene, proper PPE donning and doffing and a clean environment to minimize the risk of MDRO transmission.
- Incorporate periodic monitoring, assessment, and feedback of staff practices to determine the need for additional training and education. Refer to Appendix B and Appendix C at the end of this document.

Antimicrobial Stewardship

The overuse and misuse of antimicrobials is a major contributing factor in the development of drug resistance in bacteria and yeast, as well as colonization and infection by drug-resistant organisms. Antibiotic pressure selects for organisms resistant to antibiotic agents used, which can lead to colonization and infection by MDROs. Antimicrobial stewardship encourages judicious use of antimicrobial agents with the goal of slowing the spread of MDROs. Core tenets of antibiotic stewardship include:

- Treating true infections appropriately.
- Encouraging use of narrow spectrum agents or de-escalating therapy once culture results return.
- Treating true infections only, not colonization.
- Avoiding antibiotic prophylaxis.
- Monitoring local antibiotic resistance (antibiograms) to improve empiric antibiotic prescribing.

The facility's consulting pharmacist or infectious disease specialist should be consulted for assistance in establishing these measures, as well as for more complicated decision-making.

For more information, visit Core Elements of Antibiotic Stewardship | Antibiotic Use | CDC.

References

- MDRO Containment Strategy | HAIs | CDC
- Precautions to Prevent Transmission of Infectious Agents | CDC

- 2019 Antibiotic Resistance Threats Report | CDC
- Guideline for Hand Hygiene in Health-Care Settings | CDC
- Selected EPA-Registered Disinfectants | Environmental Protection Agency
- Sequence for Donning and Removing PPE | CDC

Appendix A: MDRO facility risk assessment

Template: Risk Assessment for Pathogens of Epidemiological Concern

Attached is a risk assessment template that may be used as by a facility to identify and stratify their pathogens of epidemiological concern (PEC).

Instructions: Assign a risk score for each PEC, ranging from 0 to 3, in each of the four assessment categories. Total the numbers in all the assessment categories to determine the numerical risk level for each PEC (i.e., add or multiply the score for each section to calculate the numerical risk level). Rank the PECs from highest to lowest. Pathogens with the highest risk score should be the highest priority for developing and updating strategies for preventing transmission.

Additionally, a gap analysis may be used to assess a facility's preparedness for preventing transmission of PEC. Please see the document *PEC Gap Analysis* as an example. Resources, including best practice guidance, for developing and improving strategies to prevent transmission of PEC are in the Resources section below.

Pathogen of Epidemiologic Concern (PEC)	The potential impact of transmission on patient and staff.				The probability of transmission occurring.				The organization's preparedness to prevent transmission.				Identified as a pathogen of epidemiological concern by agency				Total Numerical Risk Level
	High (3)	Med (2)	Low (1)	None (0)	High (3)	Med (2)	Low (1)	None (0)	High (0)	Med (1)	Low (2)	None (3)	OSE	CDC	NSPHL	Other/ Internal	

The Risk Assessment is an ongoing process and should be updated at least annually, or when newly pathogen of concern is identified.

Numerical Risk Level Total:

Zero- Process has been going well.
Low or 1- Processes are initiated and being followed.
Med or 2-The processes in place are working well and the outcomes are improving or sustained.
High or 3- Process needs attention. Training or education may be needed.

Agency Type:
OSE: Office of State Epidemiology
CDC: Centers for Disease Control
NSPHL: Nevada State Public Health Lab
Other/Internal: Facility identified pathogen

Definition of Categories:

What is the potential impact of transmission of patient and staff: Determined by evaluating the potential for 1) patient infection, illness, death, and need for medical intervention; 2) personnel infection, illness, staff shortage, and 3) impact on the organization's ability to function, provide safe patient care, and remain open.

What is the probability of transmission occurring: Determined by evaluating the risk of the pathogen actually being identified and transmission actually occurring, including surveillance data, scope of services provided by the facility, prevalence in the community, prevalence in newly admitted patients, environment of care conditions, patient population, mode of transmission, and virulence of pathogen.

Organization's preparedness to deal with this pathogen: Determined by considering policies and procedures already in place, staff experience, historical response to similar situations, and availability of, PPE, isolation rooms, staff, cleaning and disinfection agents, and equipment.

References for Risk Assessment Template:

CDC, Risk Assessment | HCP | Infection Control Guidelines Library | CDC

APIC, Guidelines and Resources for Infection Preventionists - APIC Sierra Chapter 044

APIC, IC risk assessment documents IC Risk Assessment Tool Form (Word Document) & IC Risk Assessment Analysis (Excel Document)

APPENDIX B: MDRO EDUCATION FOR STAFF

FREQUENTLY ASKED QUESTIONS ABOUT TARGETED MULTIDRUG RESISTANT ORGANISM OR RARE ANTIBIOTIC-RESISTANT ORGANISMS IN A PATIENT OR RESIDENT

The following FAQs are for health departments and health care facilities to provide just-in-time education to health care staff when a targeted MDRO or rare antibiotic-resistant organism is identified in a facility patient or resident.

When organisms are resistant to an antibiotic, it means that the drug will not work to treat infections caused by those organisms.

MDROs Targeted by CDC

- Pan-resistant organisms
- Carbapenemase-producing carbapenem-resistant Enterobacterales
- Carbapenemase-producing carbapenem-resistant Pseudomonas spp.,
- Carbapenemase-producing carbapenem-resistant Acinetobacter baumannii
- Candida auris

Additional epidemiologically important MDROs may include, but are not limited to:

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

Why am I being informed?

Health care personnel should be aware of the clinical impact of MDROs, which can be easily transferred among patients. Many MDROs can be difficult to treat, and patients with MDROs are at a greater risk of developing poor health outcomes.

The aim is to make sure this type of resistant organism does not spread further; healthcare personnel must always be reminded about the importance of infection prevention at work and at home. All of the usual infection prevention activities — including hand hygiene, use of PPE, cough etiquette and environmental cleaning — are needed to keep other patients/residents safe. Following proper infection prevention will also prevent you from getting infected or colonized and possibly spreading it to your loved ones.

What is being done to identify patients with infections caused by MDROs?

- The Laboratory department performs cultures to identify organisms and susceptibilities as necessary.
- If an organism is confirmed as a MDRO the patient's healthcare personnel are notified.
- An alert should be placed in the patient's record to indicate recent/current infection or colonization with MDROs.

- Patients identified with an MDRO may need to be placed in isolation precautions according to the facility's guidelines.
- An appropriate transfer tool should be employed to communicate infections across health care facilities. Use the Nevada Interfacility Infection Control Transfer Form linked here.

What kind of organism is this?

Some organisms are bacteria that live in the intestines, on the skin or in wounds, or around indwelling devices such as a tracheostomy tube, central line, urinary catheter, etc. They are common causes of health care-associated infections and usually occur in people who are chronically ill or have spent a lot of time in health care facilities. Sometimes they can be acquired during international travel to a place where they are more common.

Candida auris (*C. auris*) is an organism that can survive in the health care environment for long periods of time. It can cause invasive infections in hospitalized patients, including in the bloodstream.

These organisms are resistant to very strong antibiotics, are difficult to treat, and can lead to severe illness or even death. These organism s can also cause colonization (or being colonized), which means the person has the organism in or on their body but it's not causing any symptoms. However, people who are colonized can still spread the organism through close contact, or from dirty hands or equipment. Since we usually don't know if someone is colonized, it's important to use proper infection prevention with all patients or residents.

How are MDROs spread?

Most MDRO infections are spread by direct contact with an infected person's bodily fluids, such as blood, drainage from a wound, urine, bowel movements (stool) or sputum (phlegm). Also, MDRO organism can live outside the human body and may be found in the environment such as on bed linens, bed rails, bathroom fixtures, and medical equipment. MDRO germs can be spread person-to-person on dirty equipment and on the hands of patients, doctors, nurses, other health care providers and visitors.

Who is most likely to get an infection with MDRO?

Healthy people usually do not get MDRO infections. MDROs primarily affect hospitalized patients. They are more likely to affect those with severe disease, especially those with compromised immune systems, recent surgery, invasive medical devices (e.g., urinary catheters, central lines, or endotracheal tubes) or prolonged use of antibiotics. Intensive care unit (ICU) patients and patients in long-term health care settings are more likely to be affected.

What does our organization do when one of these organisms is found in one of our patients or residents?

Your infection preventionist will work with the public health department to try to learn where the patient or resident got the organism and if it has spread to others. Screening is sometimes performed on patients or residents who were high risk, those in the same area of the facility as the positive case or with shared equipment. Follow case-by-case instructions on screening advised by Nevada Office of State Epidemiology (OSE).

Why is it important for patients or residents to be tested for these organisms?

It is important for some patients or residents to be tested for these organisms so that the health care facility and health department can prevent it from spreading. Preventing the spread of these resistant organisms is very important so that they don't become common in facilities or in the community.

Will health care workers be screened too?

CDC does not usually recommend screening health care workers for these organisms unless there is an unusual risk or a definite link between a certain health care worker and several patients or residents with the same organism.

What is the risk to me as a health care worker?

It is unlikely for health care workers to get infected or colonized from taking care of patients or residents. Since these organisms are in stool, drainage, or secretions (like sputum or wound discharge), you would have to get organism s from the body fluid into your mouth, nose, eyes, or other opening in the body in order to get exposed to the organism. It is not spread through the air. Using all the right infection prevention practices will keep you from becoming infected or colonized with this organism.

What happens if more patients or residents are found to have these organisms?

If two or more patients or residents have the same organism, it might mean that your facility is having an outbreak. Each new case would need to be placed on the same infection prevention precautions. The health department might review your facility's infection prevention program and provide recommendations for improvement.

For each patient or resident with a positive test, who should be told?

- All caregivers in your own facility so that they will know how to protect themselves and other patients or residents.
- Each person who is infected or colonized should be educated about how they can prevent spreading it to their loved ones. They should also be told to inform any future healthcare providers about the results so that providers can make the best treatment decisions and take steps to prevent spreading the organism to others.
- Any health care facility that is receiving the patient or resident in transfer should be informed so they can implement proper infection prevention interventions to prevent spread within the new facility. It is very important to ensure that when patients or residents are transferred to another facility or discharged to home, the information about antibiotic resistant organism s is included on the transfer or discharge paperwork so that future caregivers are aware of the need for special infection prevention measures.
- Visitors to the patient or resident should be informed what to do during their visit to prevent picking up the organism and taking it home. Family and visitors should wash their hands well before and after visiting to decrease the chance of getting the organism. In some situations, they should also wear personal protective equipment.

APPENDIX C: MDRO EDUCATION FOR PATIENT, FAMILY AND CAREGIVER

FREQUENTLY ASKED QUESTIONS ABOUT TARGETED MULTIDRUG-RESISTANT ORGANISMS OR RARE ANTIBIOTIC-RESISTANT ORGANISMS IN A PATIENT OR RESIDENT

This information would provide you with guidance on multidrug resistant organisms (MDROs), including how they are spread and how MDRO infections are treated.

What are MDROs?

Multidrug-resistant organisms (MDROs) are germs that are difficult to treat because they are resistant to many antibiotics. This means that certain antibiotics are not able to treat infections caused by these germs anymore. MDROs are an important emerging threat to public health. Common MDROs include:

- Methicillin-resistant Staphylococcus aureus (MRSA)
- Vancomycin-resistant Enterococci (VRE)
- Extended spectrum beta-lactamase producing Enterobacteriaceae (ESBL)
- Carbapenem-resistant Enterobacteriaceae (CRE)
- Carbapenem-resistant Acinetobacter baumannii
- Carbapenem-resistant Pseudomonas aeruginosa

Are MDRO infections related to medical care abroad?

MDROs create certain proteins that can make them resistant to antibiotics. Several of these proteins appear to be more common in other countries than they are in the United States. If you have received medical care in another country, you should tell your doctor.

How are MDROs spread?

Most MDRO infections are spread by direct contact with an infected person's bodily fluids, such as blood, drainage from a wound, urine, bowel movements (stool), or sputum (phlegm).

Also, MDRO germs can live outside the human body and may be found in the environment such as on bed linens, bed rails, bathroom fixtures, and medical equipment. MDRO germs can be spread person-to-person on dirty equipment and on the hands of patients, doctors, nurses, other healthcare providers, and visitors.

Who is at risk for an MDRO infection?

Healthy people usually do not get MDRO infections. MDROs primarily affect hospitalized patients. They are more likely to affect those with severe disease, especially those with compromised immune systems, recent surgery, invasive medical devices (e.g., urinary catheters, central lines, or endotracheal tubes), or prolonged use of antibiotics. Intensive Care Unit (ICU) patients and patients in long-term healthcare settings are more likely to be affected.

What are the symptoms of an MDRO infection?

Your symptoms will depend on the location and type of infection you have.

How is an MDRO infection treated?

MDRO infection can be treated but the MDRO germ may remain in your body even after the infection is gone. This is called colonization. People who are colonized with MDRO do not need to take antibiotics. If the MDRO is causing an infection, the antibiotics that will work against it are limited but some options are available.

To identify the best antibiotic to treat a MDRO infection, health care providers may send a specimen (often called a culture) to the laboratory to determine which antibiotics are effective against the germ. Treatment with the wrong antibiotic, or not taking antibiotics according to a provider's instructions, can lead to a slow recovery and make the infection harder to cure.

Can my friends and family get an MDRO when they visit me?

MDRO infections usually do not occur in healthy individuals. Ask your visitors to check with the unit assigned staff before visiting you.

What can I do to help prevent MDRO spread?

- Tell your doctor or nurse if you have had a hospital stay in another healthcare facility or country.
- Ask that all staff clean their hands before and after caring for you.
- Ask your family and visitors to clean their hands before and after visiting.
- Be sure to clean your own hands often, especially after using the bathroom and before eating.
- When on contact precautions, you should stay in your room as much as possible. You should not go to common areas, such as the gift shop, cafeteria or child life areas but you can go to other areas of the hospital for treatments and tests.
- If you do leave your room for treatments or tests, you should wear clean clothes or a clean gown and wash your hands before leaving your room.
- Only take antibiotics as prescribed by your doctor.

What can my friends and family do to prevent the spread of MDROs when they visit me?

Follow instructions provided by your nurse to prevent transmission of MDRO.

Read and follow any signs posted outside your door.

Clean their hands before they enter your room and as they leave your room.

What do I need to do when I go home?

Once you are home, you can return to your normal routine. Often, the infection will be treated before you go home. There are a few things you and your caregivers should do, however, to lower the chances spreading the MDRO to others:

- If you receive a prescription to treat MDRO infection, take the medicine exactly as prescribed by your doctor and pharmacist. Do not take half-doses or stop before you run out.
- Wash your hands often, especially after going to the bathroom and before preparing food.

- People providing care for you at home should be careful about washing their hands, especially after contact with blood, urine, or wounds, after helping you use the bathroom or after cleaning up stool.
- Caregivers should also make sure to wash their hands before and after handling any medical devices (e.g., urinary catheters). This is particularly important if the caregiver is caring for more than one ill person at home.
- Use a disinfectant to wipe any surface that may have come in contact with the germ, such as your doorknob.
- Follow additional instructions given by your provider.

APPENDIX D: FREQUENTLY ASKED QUESTIONS FOR MULTIDRUG-RESISTANT ORGANISM SCREENING

INSTRUCTIONS TO HEALTH DEPARTMENTS AND HEALTH CARE FACILITIES:

The following FAQs and scripts are resources for health departments and health care facilities performing patient screening for multidrug-resistant organisms (MDROs). Two versions are provided: one for enteric colonizers such as carbapenem-resistant Enterobacteriaceae (CRE), carbapenem-resistant Acinetobacter baumannii (CRAB) or carbapenem-resistant Pseudomonas aeruginosa (CRPA), and one for skin flora such as methicillin-resistant Staphylococcus aureus. Content is provided so it can be tailored for different settings and scenarios.

Screening Tests for Rare Antibiotic-Resistant Germs that Colonize the Gut (e.g. Carbapenem-Resistant Enterobacteriaceae)

Why have I been contacted?

To make sure this type of resistant bacteria does not spread further, the health care facility or health department is contacting people who might have had contact with *Carbapenem-Resistant Enterobacteriaceae* (CRE). They are requesting that these people get a screening test to make sure they are not also carrying the bacteria.

Why is it important for me to be tested for this bacteria?

It is important for you to be tested for this germ so that the health care facility and health department can prevent it from spreading. Preventing the spread of these bacteria is very important so that these resistant bacteria don't become common in your community.

How can I be tested for this germ?

People carry this kind of germ in their gut or stool, so the best way to test for these bacteria is to swab your rectum. If you agree to be tested, a healthcare provider will gently insert just the tip of a soft swab that looks like a Q-tip into your rectum, gently rotate it, and then remove the swab. The procedure is not painful and there should be no side effects. The swab will be sent to a lab and, within a few days, the lab will report the result to your health care provider.

Do I have a choice to be tested?

Yes, providing a swab is voluntary. You can choose to decline testing. However, if you decline testing and you receive medical care, your health care providers might take extra precautions, such as wearing a gown and gloves when caring for you, since they will not know if you have this germ.

If my test is positive, what will I need to do?

The risk of spreading this germ to your family and friends is very low, but family and visitors should wash their hands well after caring for you or visiting you to decrease the chance of getting the germ. You should also wash your hands frequently, especially after using the bathroom and before eating or preparing food.

If you receive medical care at a health care facility such as a hospital or nursing home, be sure to let your health care providers know about the results so that they can take steps to prevent spreading the germ to others.

If my test is positive, will I need treatment?

If the test is positive, it means you are carrying the germs in your gut. Since they are not making you sick (causing infection), you will not need antibiotics. Many people stop carrying these bacteria over time, but this depends on many factors. Taking antibiotics can increase the time these germs are carried in your gut, so antibiotics should always be taken exactly as prescribed by your doctor.

Example verbal consent for collection of rectal swab to assess colonization with enteric bacteria

Note*: In certain situations for certain organisms such as carbapenem-resistant Acinetobacter baumannii (CRAB), additional anatomic sites may be screened.*

Hi, my name is [insert name] and I work for [insert organization]. I'm here to talk to you about some screening the [insert healthcare facility e.g., hospital or nursing home] is doing to check for a rare germ. Recently, we identified this germ that is rare in the U.S. in a patient who was cared for at this facility. The germ is called carbapenem-resistant Enterobacteriaceae or "CRE", [or carbapenem-resistant Acinetobacter baumannii or "CRAB"; or carbapenem-resistant Pseudomonas aeruginosa "CRPA"] for short.

We are screening patients for this germ because some people can carry this germ in the gut without knowing it and they can spread the germ to others without knowing it.

The chance that you carry this germ is very low, and fortunately, most people who do carry it never get sick from it. But to make sure this germ has not spread, the health department would like us to screen patients to make sure they don't have it.

If you agree to be screened, the process is very simple and takes just a few seconds. We would need to swab inside your rectum. To do that, we would gently insert just the tip of a soft swab, which looks like a Q-tip, into your rectum, gently rotate it, and then remove it. The process is not painful and there shouldn't be any side effects.

The swab will be sent to a lab to test for the bacteria, which will take a few days. If they find the germ, someone will contact you to discuss what to do. The results of the test will be kept confidential to the extent allowed by law.

Providing a swab is completely voluntary and you can choose not to.

Do you have any questions? [pause for questions]

Is it OK if we collect the swab?

Example verbal consent for collection of swabs to assess colonization with skin flora

Hello, my name is [insert name] and I work for [insert organization]. I'm here to talk to you about some screening the hospital is doing to check for a rare germ. Recently, the hospital found a few patients who are carrying a germ that is rare in the U.S. The germ is a bacteria called vancomycin-resistant Staphylococcus aureus, or "VRSA" for short.

We are screening patients for this germ because some people can carry this bacterium and not know it and they can spread the germ to others without knowing it.

The risk of acquiring this germ is very low. [for VRSA: So far, it has never spread to any of the contacts of the other people who have had it.] However, the health department would like to be sure that this germ has not spread in this instance as well. To make sure this germ does not spread, we are working with the health department to screen patients to make sure that they are not carrying it.

If you agree to be screened, the process is simple. We would need to collect two swabs. First, we would put a soft swab, like a Q-tip, inside your nose and gently rub the inside of both nostrils with a soft swab that looks like a Q-tip. We would also collect a second swab of your armpits and groin, the area where your leg joins your body.

The procedure is not painful and does not have side effects. The swabs will be sent to a lab to check for the germ. If it is present, someone will contact you to discuss what to do next. The test results will be kept confidential to the extent allowed by law.

Agreeing to these swabs is completely voluntary and you can choose not to be tested. You can also choose to do just one of the swabs if you prefer although, one swab is not as good at finding the bacteria compared with two swabs.

Do you have any questions? [pause for questions]

Is it OK if we collect the swabs?