

Preventing Multidrug-resistant Organism (MDRO) Infection

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 MDRO spread?

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 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 healthcare settings are more likely to be affected.

Can MDROs be 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, healthcare 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. In addition, some infections might be treatable with other therapies, like draining the infection.

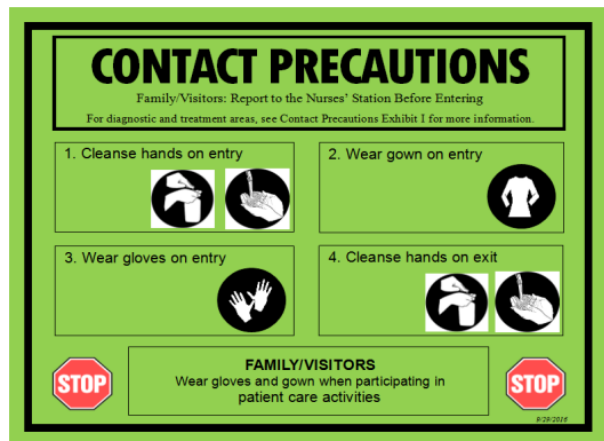
Can my friends and family get an MDRO when they visit me?

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

How is Michigan Medicine preventing MDRO infections?

- Staff clean their hands with soap and water or an alcohol-based hand sanitizer before and after caring for a patient. This can prevent MDRO and other germs from being passed from one patient to another on their hands.

- Hospital rooms and medical equipment that have been used for patients with MDRO are carefully cleaned with an appropriate disinfectant.
- **Contact Precautions (CP)** is a method used to prevent spreading MDROs to other patients. Patients on Contact Precautions will have a **green sign** posted outside their room. Contact Precautions mean:
 - Staff put on gloves and wear a gown over their clothing while taking care of patients with MDRO.
 - Before leaving the room, staff will remove their gown and gloves and clean their hands.
 - For patients with MRSA only, those with open and draining wounds found to contain MRSA are placed in Contact Precautions.
 - For more information, ask your nurse for the Contact Precautions general information sheet.
- Healthcare providers will only give patients antibiotics when it is necessary.
- Temporary medical devices will be removed as soon as possible.
- Certain patients will be tested for these germs to see if they are colonized to help prevent the MDRO from being passed on to other patients.



What can I do to help prevent MDRO infections?

- 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?

- Read and follow any signs posted outside your door.
- Clean their hands before they enter your room and as they leave your room.
- Ask your nurse if they need to wear protective gowns and gloves when they visit you.
 - It is recommended that all family/visitors wear gloves and a gown if they will be participating in patient care activities. Wearing a gown will reduce the spread of germs out of the room on their clothing.
 - Family/visitors must remove gowns and gloves and clean hands before leaving the room.
- While you are on Contact Precautions your family and visitors cannot go into the nourishment room or to any Child Life areas.

What do I need to do when I go home from the hospital?

Once you are home, you can return to your normal routine. Often, the infection will be better or completely gone before you go home. This makes giving MDRO

to other people less likely. 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 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.
- Caregivers should wear gloves when anticipating contact with body fluids or blood.
- Your doctor may give you additional instructions.

If you have questions, please ask your doctor or nurse.

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Adapted from: CDC. Management of Multidrug-Resistant Organisms in Healthcare Settings (2006).
Access at: <https://www.cdc.gov/infectioncontrol/guidelines/mdro/index.html>

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