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# Enhanced Barrier Precautions (EBP): An Overview

Cindy Wandling, MSN, RN, QCP  
Quality Improvement Specialist

October 5, 2022



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Quality Improvement Organizations  
CENTERS FOR MEDICARE & MEDICAID SERVICES  
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# Objectives

The attendee will obtain an overview of:

- A brief history of Multi-Drug Resistant Organisms (MDROs); the cause, spread, colonization, infection, and who is at risk
- The Centers for Disease Control and Prevention's (CDC) rationale for recommending Enhanced Barrier Precautions (EBP)
- Guidelines for implementation of EPBs to the nursing home population

# MDROs: A Brief History

## What are they?

- Multidrug-resistant organisms (MRDOs) are bacteria that have become resistant to certain antibiotics, and these antibiotics can no longer be used to control or kill the bacteria.
- Penicillin resistance in *Staphylococcus aureus* was first found in the 1940s.
- The widespread use of antibiotics, plus the natural growth of bacteria over time, has created a number of MDROs.

# Cause, Spread, Colonization, Infection, and Who Is at Risk

## What causes MDROs?

- Multidrug-resistant organisms develop when antibiotics are taken longer than necessary or when they are not needed.

## How do MDROs spread?

- Most often, MDROs spread from patient to patient on the hands of health care workers.
- MDROs can also spread by objects and from person-to-person through direct contact.

## What is MDRO colonization?

- In some cases, it is possible for MDROs to be present on your body but not cause any illness. Such cases are called “colonization.”
- Colonization rarely becomes an infection unless the bacteria spreads to a part of the body where the bacteria are not usually found.

# Cause, Spread, Colonization, Infection, and Who Is at Risk (Cont.)

## **What is an MDRO infection?**

- Infection means the bacteria are in or on your body and causing an illness or other medical condition.

## **Who is at most risk for an MDRO infection?**

- Infection with an MDRO occurs most often in young children, the elderly, or in people who have an existing severe illness or a health condition, such as chronic lung, heart, or kidney disease.

# The Rationale – Enhanced Barrier Precautions

- Residents in nursing homes are at increased risk of becoming colonized and developing infection with MDROs.
- More than 50% of nursing home residents may be colonized with an MDRO.
- Focusing only on residents with active infection fails to address the continued risk of transmission.
- There is growing evidence that the traditional implementation of Contact Precautions in nursing homes is not implementable for most residents for prevention of MDRO transmission.

# The Rationale

The MDROs for which the use of EBP applies are based on local epidemiology. At a minimum, they should include resistant organisms targeted by CDC but can also include other epidemiologically important MDROs.

- While EBPs were initially intended for those colonized with or at risk for colonization, updated guidance now provides facilities the flexibility to implement EBPs for residents colonized or infected with any epidemiologically important MDRO.

# MDROs – Not All Inclusive

NOVEL/TARGETED	EPIDEMIOLOGICALLY IMPORTANT MDROs
Pan-resistant organisms	Methicillin-resistant Staphylococcus aureus (MRSA)
Carbapenemase-producing carbapenem-resistant Enterobacterales	ESBL-producing Enterobacterales
Carbapenemase-producing carbapenem-resistant Pseudomonas	Vancomycin-resistant Enterococci (VRE)
Carbapenemase-producing carbapenem-resistant Acinetobacter baumannii	Multidrug-resistant Pseudomonas aeruginosa
Candida auris	Drug-resistant Streptococcus pneumoniae

# Guidelines for EBP Implementation

- ***Enhanced Barrier Precautions*** expand the use of Personal Protective Equipment (PPE) and refer to the use of gown and gloves during high-contact resident care activities that provide opportunities for transfer of MDROs to staff hands and clothing.
- MDROs may be indirectly transferred from resident-to-resident during these **high-contact care activities**.
- Nursing home residents with **wounds and indwelling medical devices** are at especially high risk of both acquisition of and colonization with MDROs.

# Guidelines for EBP Implementation

- The use of gown and gloves for **high-contact resident care activities** is indicated – when Contact Precautions do not otherwise apply – for nursing home residents with wounds and/or indwelling medical devices regardless of MDRO colonization, as well as for residents with MDRO infection or colonization.

# High-Contact Care Activities

Examples of high-contact resident care activities requiring gown and glove use for *Enhanced Barrier Precautions* include:

- Dressing
- Bathing/showering
- Transferring
- Providing hygiene (brushing teeth, combing hair, shaving)
- Changing linens
- Changing briefs or assisting with toileting
- Device **care or use**: central line, urinary catheter, feeding tube, tracheostomy/ventilator
- Wound care – refer to CDC’s Frequently Asked Questions
- Physical & Occupational Therapy

# Chronic Wounds and Indwelling Medical Devices

The intent of EBP is to focus on residents with a higher risk of acquiring an MDRO over a prolonged period of time.

- This generally includes residents with chronic wounds and not those with only shorter-lasting wounds, such as skin breaks or skin tears covered with a bandage or similar dressing.
- Examples of chronic wounds include, but are not limited to:
  - Pressure ulcers
  - Diabetic foot ulcers
  - Unhealed surgical wounds
  - Chronic venous stasis ulcers

## Indwelling Medical Devices

- Central vascular lines (including hemodialysis catheters)
- Indwelling urinary catheters
- Feeding tubes
- Tracheostomy tubes

# Things to Consider About EBP

- EBP is simply that! **Enhancing** the current Standard and Transmission-based Precautions.
- Gown and gloves used for each resident during high-contact resident care activities should be removed after each resident encounter.
- Hand hygiene should be performed and new gown and gloves should be donned before caring for a different resident.
- **Not recommended for residents with Clostridioides difficile. Continue isolation and contact precautions.**
- Residents do not require a private room and are not restricted to their rooms.

# More Things to Consider About EBP

- Intended to be in place for the duration of a resident's stay in the facility or until resolution of the wound or discontinuation of the indwelling medical device that placed them at higher risk.
- Intended for MDROs and do not replace existing guidance regarding use of contact precautions.
- Enhanced Barrier Precautions are **primarily intended to apply to care that occurs within a resident's room** where high-contact resident care activities – including transfers – are bundled together with other high-contact activity, such as part of morning or evening care.

# Does the patient require a private room?

## No. Single-person rooms (if available):

- Should be prioritized for residents who have acute infection with a communicable disease (such as influenza, SARS-CoV-2, hepatitis A) or
- For residents placed on **Contact Precautions** for presence of acute diarrhea, draining wounds, or other sites of secretions or excretions that are unable to be covered or contained.

# Shared Rooms

- Residents on Enhanced Barrier Precautions may share rooms with other residents.
- Facilities with capacity to offer single-person rooms or create roommate pairs based on MDRO colonization may choose to do so.
- If there are multiple residents with a novel or targeted MDRO in the same facility, consider cohorting them together in one wing or unit to decrease spread.

# Shared Rooms

- When single-patient rooms are not available, cohort patients with the same MDRO in the same room or patient-care area.
- When cohorting patients with the same MDRO is not possible, place MDRO patients in rooms with patients who are at low risk for acquisition of MDROs and associated adverse outcomes from infection and are likely to have short lengths of stay. (e.g. no open wounds, no invasive medical devices, not immunocompromised).

# Strategies to Help Minimize Transmission of Pathogens Between Roommates

## Must:

- Maintain spatial separation of at least 3 feet between beds.
- Use privacy curtains to limit direct contact.
- Clean and disinfect any shared reusable equipment.
- Clean and disinfect environmental surfaces on a more frequent schedule.
- Change personal protective equipment (if worn).
- Perform hand hygiene when switching care from one roommate to another.

# More Signs!



**STOP** **ENHANCED BARRIER PRECAUTIONS** **STOP**  
**EVERYONE MUST:**

 Clean their hands, including before entering and when leaving the room.

**PROVIDERS AND STAFF MUST ALSO:**

 **Wear gloves and a gown for the following High-Contact Resident Care Activities.**

- Dressing
- Bathing/Showering
- Transferring
- Changing Linens
- Providing Hygiene
- 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

**Do not wear the same gown and gloves for the care of more than one person.**

 U.S. Department of Health and Human Services  
Centers for Disease Control and Prevention

CS19-0064-A



# What about all those precaution signs?!

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 diagnosis or the reason for the Precautions would violate HIPAA and resident dignity.

# Quality Insights Contact Information

- Cindy Wandling  
Quality Improvement Specialist  
[cwandling@qualityinsights.org](mailto:cwandling@qualityinsights.org)
- Find us online:  
[qualityinsights.org/qin](http://qualityinsights.org/qin)



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# Know Your Resources for EBPs

- Implementation of Personal Protective Equipment (PPE) Use in Nursing Homes to Prevent Spread of Multidrug-resistant Organisms (MDROs)  
<https://www.cdc.gov/hai/containment/PPE-Nursing-Homes.html>
- Frequently Asked Questions (FAQs) about Enhanced Barrier Precautions in Nursing  
Considerations for Use of Enhanced Barrier Precautions in Skilled Nursing Facilities  
<https://www.cdc.gov/hai/containment/faqs.html>
- Enhanced Barrier Precautions Letter to Nursing Home Residents, Families, Friends, and Volunteers  
<https://www.cdc.gov/hai/pdfs/containment/letter-nursing-home-residents-families-friends-508.pdf>
- Enhanced Barrier Precautions Letter to Nursing Home Staff  
<https://www.cdc.gov/hai/pdfs/containment/letter-nursing-home-staff-508.pdf>
- Multidrug-Resistant Organisms (MDROs): What Are They?  
<https://portal.ct.gov/DPH/HAI/MultidrugResistant-Organisms-MDROs-What-Are-They>
- Isolation Precautions <https://www.cdc.gov/infectioncontrol/guidelines/isolation/index.html>
- Type and Duration of Precautions Recommended for Selected Infections and Conditions  
<https://www.cdc.gov/infectioncontrol/guidelines/isolation/appendix/type-duration-precautions.html>
- Nursing Home Infection Preventionist Training Course  
[https://www.train.org/cdctrain/training\\_plan/3814](https://www.train.org/cdctrain/training_plan/3814)
- Multidrug-resistant organisms (MDRO) Management  
<https://www.cdc.gov/infectioncontrol/guidelines/mdro/index.html>