

# Enhanced Barrier Precautions (EBP) Education from a Patient's Perspective

Project Firstline Seminar

Healthcare-associated Infections & Antibiotic Resistance Program

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# Disclosure Statement

“The speaker does not have a financial or non-financial relationship with a commercial interest that would create a conflict of interest with this presentation.”

# Objectives

- ▶ Summarize Standard Precautions and Transmission-based Precautions
- ▶ Discuss when to implement Enhanced Barrier Precautions
- ▶ Explain methods for successful implementation of Enhanced Barrier Precautions
- ▶ Recognize effects of long term use on patients and staff
- ▶ Review ways to balance safety with quality of life

# Standard Precautions

# Standard Precautions

- ▶ Should be used with all patients consistently regardless of infectious status
  - Perform hand hygiene
  - Follow respiratory hygiene/cough etiquette
  - Ensure appropriate patient placement
  - Properly handle, clean and disinfect equipment, instruments, and devices
  - Clean and disinfect environment appropriately
  - Handle textiles and laundry carefully
  - Follow safe injection practices



# Standard Precautions

- ▶ Use personal protective equipment (PPE) whenever there is expectation of possible exposure to infectious material
  - Gloves - when there will be contact with blood, body fluids, mucous membranes, non-intact skin, or other potentially infectious materials
  - Protective clothing (e.g. gowns) - when there will be contact with blood, body fluids, or other potentially infectious substances to protect skin and prevent soiling or contaminating clothing
  - Mouth, nose, and eye protection - when there will be splashes or sprays of blood, body fluids, secretions, or excretions

# Transmission-Based Precautions

# Review of Transmission Based Precautions (TBP)

- ▶ Transmission-Based Precautions are the second tier of basic infection control and are to be used in addition to [Standard Precautions](#) for patients who may be infected or colonized with certain infectious agents for which additional precautions are needed to prevent infection transmission.
  - Droplet
  - Airborne
  - Contact





# Droplet Precautions

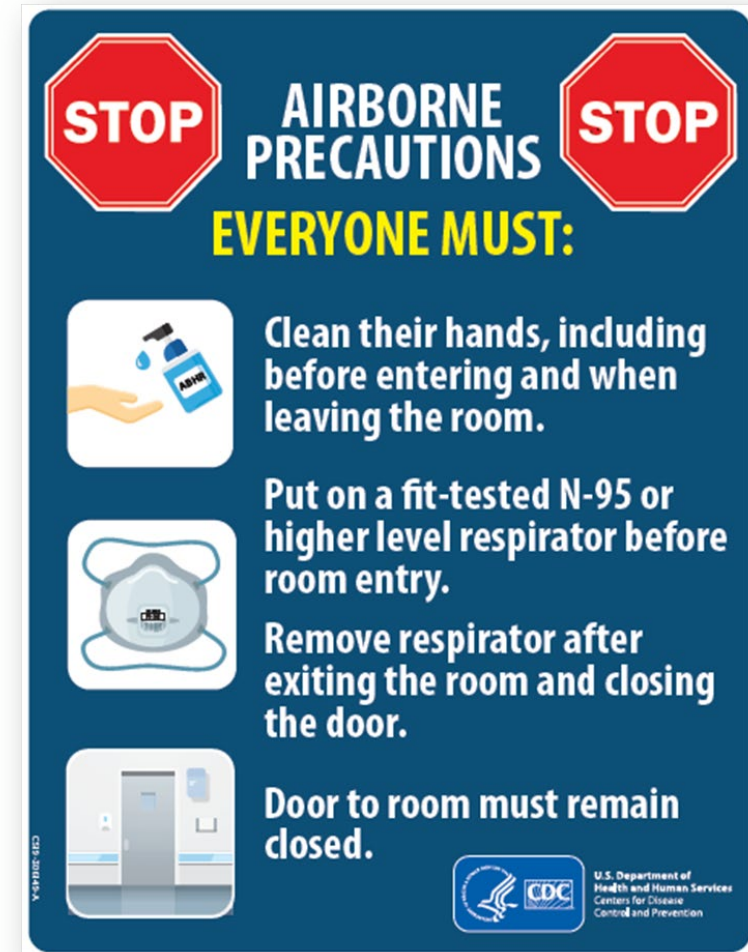
Method used to contain diseases that are spread by large respiratory droplets

- ▶ Patients known to be infected with pathogens transmitted by respiratory droplets
  - ▶ Examples (Influenza, mumps, other respiratory illnesses)
- ▶ Requires facemask and eye protection



# Airborne Precautions

- ▶ Method used to contain diseases that are spread by very small infectious agents that remain suspended in the air over long distances
- ▶ Patients known to be infected with pathogens transmitted via the airborne route
  - ▶ Examples (TB, measles, varicella)
- ▶ Requires N95 and negative pressure room



# Contact Precautions

- ▶ Method used to contain diseases that are spread by: **direct and indirect contact** with a patient's environment
- ▶ Patients with known or suspected infection/colonization with pathogens that may be spread through contact
  - ▶ Draining wounds, *C. diff*, norovirus
- ▶ Requires gloves and gown and dedicated equipment
- ▶ Intended to be time-limited to reduce transmission during limited infectious period



# Knowledge Check

**1. During which of the following situations might you use Standard Precautions when caring for a resident?**

- A. They are infected with *C. difficile*
- B. They have a heavily draining wound
- C. Standard Precautions should be used on all patients
- D. All of the above (A, B, and C)

# Knowledge Check

**1. During which of the following situations might you use Standard Precautions when caring for a resident?**

- A. They are infected with *C. difficile*
- B. They have a heavily draining wound
- C. Standard Precautions should be used on all patients
- D. All of the above (A, B, and C)**

Rationale: Standard Precautions are used for all patient care. Transmission-Based Precautions are the second tier of basic infection control and are to be used in addition to Standard Precautions for patients who may be infected or colonized with certain infectious agents for which additional precautions are needed to prevent infection transmission.

# Knowledge Check

**2. A resident has been diagnosed with Influenza A, which of the following Transmission Based Precautions would you use when caring for a resident?**

- A. Contact
- B. Droplet
- C. Airborne

# Knowledge Check

**2. A resident has been diagnosed with Influenza A, which of the following Transmission Based Precautions would you use when caring for a resident?**

A. Contact

☒ B. Droplet

C. Airborne

Rationale: Use Droplet Precautions for patients known or suspected to be infected with pathogens transmitted by respiratory droplets that are generated by a patient who is coughing, sneezing, or talking. Examples include: Influenza, mumps, other respiratory illnesses

# **Enhanced Barrier Precautions**



# Enhanced Barrier Precautions

- ▶ Falls in between Standard and Contact Precautions
- ▶ Use EBP when performing high-contact resident care activities and for residents who meet criteria for the use of EBP
- ▶ Includes the use of gown and gloves
- ▶ Resident does not need a private room
- ▶ Resident is not restricted to room
  - ▶ may participate in communal dining and group activities
- ▶ Intended to be used for the resident's entire length of stay in the facility when known to be colonized



# What are high-contact resident care activities?

Dressing

Bathing/Showering

Transferring

Providing Hygiene

Changing Linens

Changing Briefs or  
Assisting with Toileting

Device Care or Use

- Indwelling catheter
- Trach/vent
- Central line
- Feeding tube

Wound Care

- Generally defined as the care of any skin opening requiring a dressing

# Differences Between Contact Precautions and Enhanced Barrier Precautions

## Contact Precautions

- ▶ Perform hand hygiene
- ▶ Gown and gloves upon room entry regardless of activities to be performed
- ▶ Dedicated equipment
- ▶ Recommended to be time limited
- ▶ Private room
- ▶ Room restriction
  - Not permitted to participate in group activities

## Enhanced Barrier Precautions

- ▶ Perform hand hygiene
- ▶ Gown and gloves prior to high-contact care activity
- ▶ Recommended for duration of stay
- ▶ Note:
  - Does **not** require a single room
  - Does **not** require restrictions of movement/participation in group activities
  - Does **not** require dedicated equipment

# Knowledge Check

**3. True or False. A resident is placed on Enhanced Barrier Precautions for a MDRO. These precautions must be used for the resident's entire length of stay in the facility.**

- A. True
- B. False

# Knowledge Check

**3. True or False. A resident is placed on Enhanced Barrier Precautions for a MDRO. These precautions must be used for the resident's entire length of stay in the facility.**

- ☒ A. True
- ☐ B. False

Rationale: Enhanced Barrier Precautions require the use of gown and gloves only for high-contact resident care activities. Residents are not restricted to their rooms and do not require placement in a private room. Because Enhanced Barrier Precautions do not impose the same activity and room placement restrictions as Contact Precautions, they are intended to be in place for the duration of a resident's stay in the facility

# Knowledge Check

**4. True or False. Residents on Contact Precautions are recommended to be restricted to their rooms except for medically necessary care, while Enhanced Barrier Precautions allow residents to participate in group activities and move outside of their room.**

- A. True
- B. False

# Knowledge Check

**4. True or False. Residents on Contact Precautions are recommended to be restricted to their rooms except for medically necessary care, while Enhanced Barrier Precautions allow residents to participate in group activities and move outside of their room.**

A. True

B. False

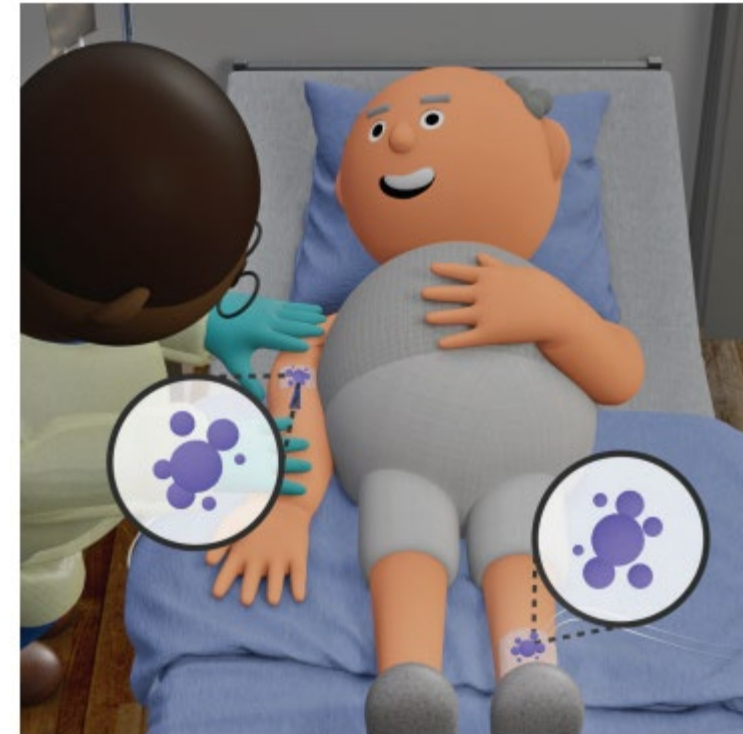
Rationale: Contact Precautions require the use of gown and gloves on every entry into a resident's room, regardless of the level of care being provided to the resident. The resident is given dedicated equipment (e.g., stethoscope and blood pressure cuff) and is placed in a private room if available. Residents on Contact Precautions are recommended to be restricted to their rooms except for medically necessary care. Enhanced Barrier Precautions do not impose the same activity and room placement restrictions as Contact Precautions. Residents are not restricted to their rooms and do not require placement in a private room. Enhanced Barrier Precautions also allow residents to participate in group activities.

# **Why Enhanced Barrier Precautions?**



# The Need For Enhanced Barrier Precautions

- ▶ High burden of multidrug-resistant organisms (MDROs) colonization in nursing homes and with nursing home residents
- ▶ Many facilities do not know which residents are colonized
- ▶ Colonized residents are at increased risk of MDRO infection
- ▶ EBP provides a method for reducing the transmission or spread of MDROs without isolating the resident
- ▶ EBP balance safety and quality of life



# When to use Enhanced Barrier Precautions

- When Contact Precautions do not apply *and* a resident is known to be infected or colonized with a MDRO such as:
  - Pan-resistant organisms
  - *Candida auris*
  - Carbapenemase-producing organisms
  - MRSA, VRE, ESBLs, etc.
- A resident has a wound or indwelling medical device (regardless of MDRO colonization status)



# Residents at Increased Risk of MDRO Acquisition

Devices and wounds are risk factors that place these residents at higher risk for carrying or acquiring a MDRO and many residents colonized with a MDRO are asymptomatic or not presently known to be colonized.

- Any wounds (**where Contact Precautions are NOT indicated**)
  - Any skin opening requiring a dressing such as for chronic wounds (e.g., pressure ulcers, diabetic foot ulcers, unhealed surgical wounds, and chronic venous stasis ulcers). This does not include shorter-lasting wounds, such as skin breaks or skin tears covered with a Band-Aid or similar dressing.
- An indwelling medical device (central lines, indwelling urinary catheters, feeding tubes, tracheostomy tubes, and endotracheal tubes) provides a direct pathway for pathogens in the environment to enter the body and cause infection

## Duration of EBP

- Residents colonized with a novel or targeted MDRO are intended to remain on Enhanced Barrier Precautions for the duration of their stay in a facility.
- A transition back to Standard Precautions, alone, might be appropriate for residents placed on Enhanced Barrier Precautions solely because of the presence of a wound or indwelling medical device when the wound heals or the device is removed.
- MDRO colonization is typically prolonged and follow-up testing to determine clearance may yield false negatives
  - CDC does not recommend routine retesting of residents with a history of colonization or infection with a MDRO or discontinuation of Enhanced Barrier Precautions after a subsequent negative test.

# Broad Application of EBP

- Enhanced Barrier Precautions are currently recommended to be used broadly, in all units across the whole facility, for residents who meet the above criteria.
- A broader application includes facilities where targeted MDROs have not yet been identified and is intended to minimize the transmission of MDROs in nursing homes.
- We are here to help. For assistance with decision making, contact your local OPH/HAI team member

# Why EBP in nursing homes

## 1. Residents Have Higher Risks of Infection

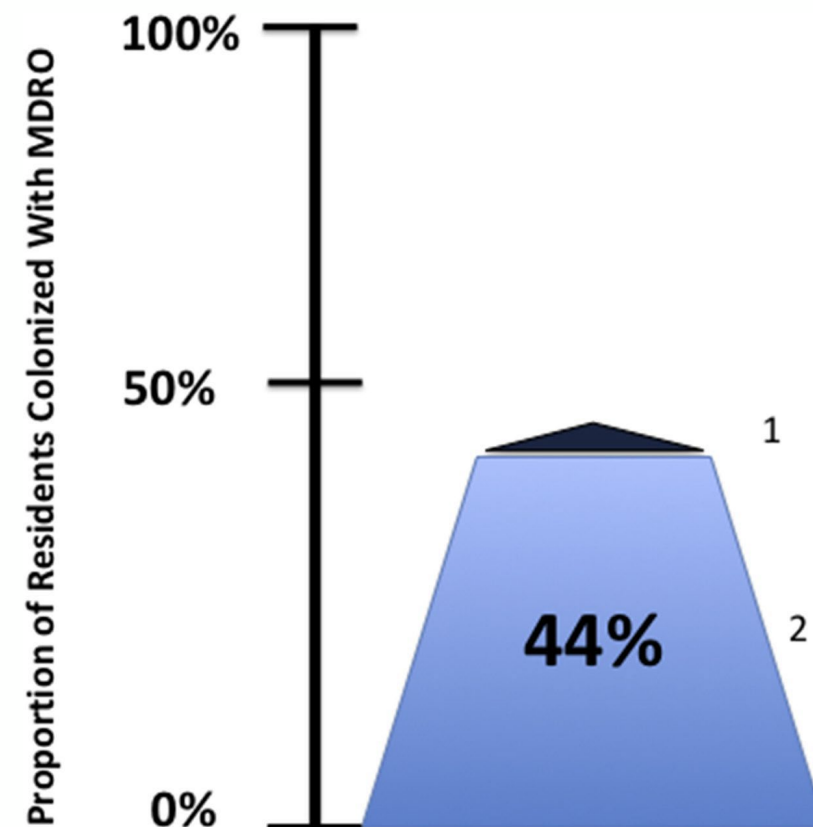
- Age-related decrease in immune response
- Complex comorbid conditions
- Functional and cognitive deficits requiring high level of dependence
- Frequent antibiotic use
- Indwelling medical devices



# Why EBP in nursing homes

## 2. High Prevalence of MDROs in Nursing Homes

- 48% of residents with MDRO
  - Only 4% had a known MDRO (shown in black)
  - 44% had MDRO only identified during screening (shown in blue)
- Factors associated with MDRO colonization:
  - Urinary catheters
  - Bed bound
  - Gastrointestinal devices
  - Indwelling medical devices



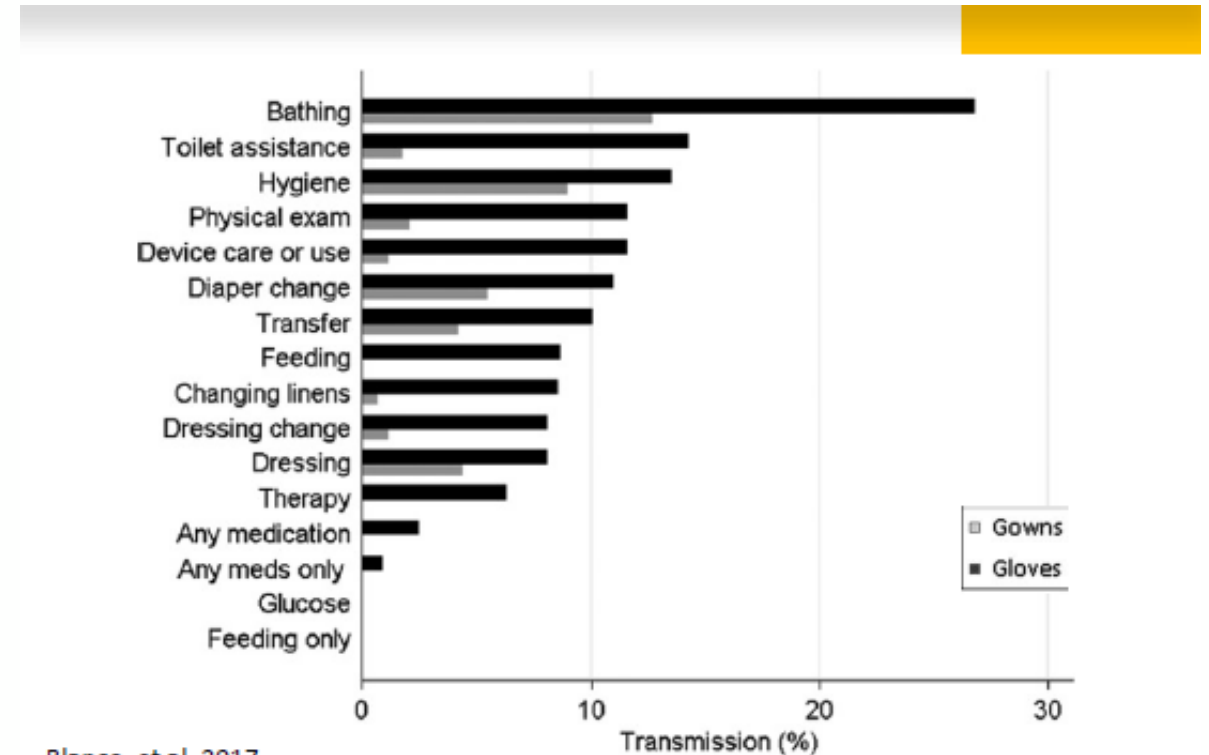
McKinnell, et al. 2020



# MDRO Transmission

## 3. Occurs Often During High-Contact Resident Care Activities

- Dressing resident
- Bathing/showering
- Transferring
- Providing hygiene
- Changing linens
- Diaper change/toilet assist
- Device care or use

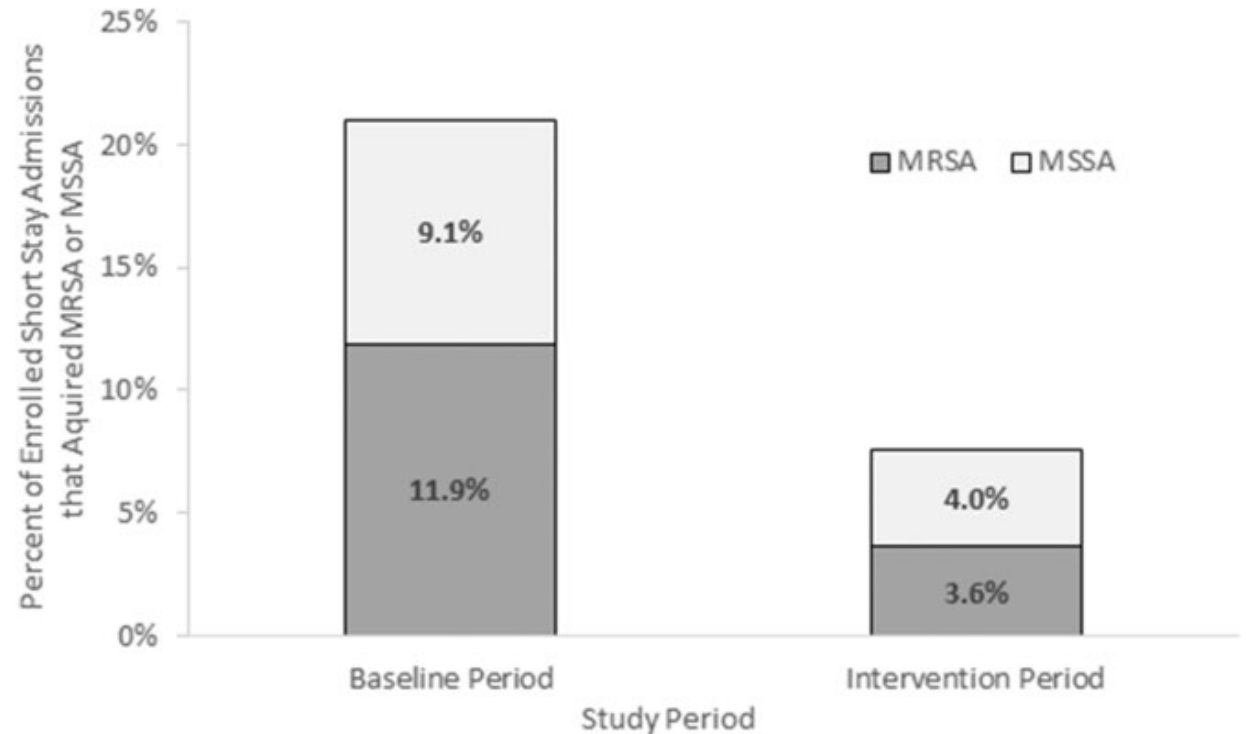


Blanco, et al. 2017



# Targeted Gown and Glove Use to Reduce MDRO Transmission

- Resident-to-resident pathogen transmission in skilled nursing facilities occurs, in part, via healthcare personnel, who may carry and spread MDROs on their *hands* or *clothing* during resident care activities.
- A Randomized Control Trial (RCT) demonstrated when using EBP, MDRO transmission decreased
- Results support EBP as an evidence-based approach to preventing transmission of MDROs with targeted gown and gloves use



Lydecker et al., 2021

# Knowledge Check

**5. True or False. Multidrug-resistant organism (MDRO) transmission is common in skilled nursing facilities, contributing to substantial resident morbidity and mortality and increased healthcare costs.**

- A. True
- B. False

# Knowledge Check

**5. True or False. Multidrug-resistant organism (MDRO) transmission is common in skilled nursing facilities, contributing to substantial resident morbidity and mortality and increased healthcare costs.**

☒ A. True

☐ B. False

Rationale: Multidrug-resistant organism (MDRO) transmission is common in skilled nursing facilities, contributing to significant morbidity and mortality for residents and increased costs for the health care system. Residents in skilled nursing facilities are disproportionately affected by MDRO infections. In regional point prevalence surveys, colonization prevalence among residents in skilled nursing facilities is estimated at greater than 50%.

# Knowledge Check

**6. True or False. Healthcare personnel may carry and spread MDROs on their hands or clothing during resident care activities. This increases resident-to-resident pathogen transmission in skilled nursing facilities.**

- A. True
- B. False

# Knowledge Check

**6. True or False. Healthcare personnel may carry and spread MDROs on their hands or clothing during resident care activities. This increases resident-to-resident pathogen transmission in skilled nursing facilities.**

A. True

B. False

Rationale: Resident-to-resident pathogen transmission in skilled nursing facilities occurs, in part, via healthcare personnel, who may transiently carry and spread MDROs on their hands or clothing during resident care activities. Residents who have complex medical needs involving wounds and indwelling medical devices are at higher risk of both acquisition and colonization by MDROs.

# Implementation of EBP & Patient Considerations

# Implementation of Enhanced Barrier Precautions

- Facilities should have clear policies indicating when residents should be placed on EBP
- Staff should receive training on EBP
- Return demonstrations for hand hygiene and PPE selection and use should be incorporated into trainings whenever possible
- Communicate with Residents, Families, Friends, and Volunteers
  - CDC letter: Enhanced Barrier Precautions Letter to Nursing Home Residents, Families, Friends, and Volunteers
- Resident/family education and open communication can positively impact the experience with EBP

# CDC Sample Letter

## Keeping Residents Safe – Use of Enhanced Barrier Precautions

A message from:

**Dear Residents, Families, Friends, and Volunteers:**

You may have noticed new signs on some doors that say “Enhanced Barrier Precautions” and staff wearing gowns and gloves more often. We’re doing this based on new recommendations from the Centers for Disease Control and Prevention to protect our residents and staff from germs that can cause serious infections and are hard to treat. You may have heard these germs called multidrug-resistant organisms or MDROs in the news.

Studies have shown that more than 50% of nursing home residents have these germs on or in their body, especially in places where the skin is broken, such as wounds or insertion sites of medical devices like feeding tubes. Most of the time people never know they are carrying these germs but under certain conditions they can enter the body and cause serious infections.

Fortunately, there are many things we can do to keep these germs from spreading, but we need your help! Two important practices are:

- 1. Cleaning our hands.** Alcohol-based hand sanitizer can kill these germs and keep us from spreading them with our hands. This is why we remind you and your visitors to frequently clean your hands.
- 2. Using gowns and gloves.** Since we can’t wash our clothes between caring for residents, gowns and gloves help keep these germs from getting on our clothes and spreading to others when we are having close contact with residents. This is why you might see us wearing a gown and gloves when we are performing transfers or other activities involving a lot of contact with a resident. Just because we are wearing a gown and gloves doesn’t mean that a resident is carrying one of these germs. We also wear them to protect residents who might be more vulnerable to developing a serious infection if exposed to these germs. We will also wear them if we expect a care activity to be messy, like if we are changing a dressing on a wound.

To support these practices, you will see more alcohol-based hand sanitizer dispensers, carts to hold clean gowns and gloves, and trash cans so we can change gowns and gloves between residents. You will also see more signs to help remind staff when they should be wearing gowns and gloves.

We are always happy to answer any questions you might have about actions we are taking to protect our residents and staff and appreciate your support!

**Please contact us with additional questions at:**

Sincerely,

To learn more about Enhanced Barrier Precautions, please visit **Implementation of Personal Protective Equipment (PPE) Use in Nursing Homes to Prevent Spread of Multidrug-resistant Organisms (MDROs)** at <https://www.cdc.gov/hai/containment/PPE-Nursing-Homes.html>.



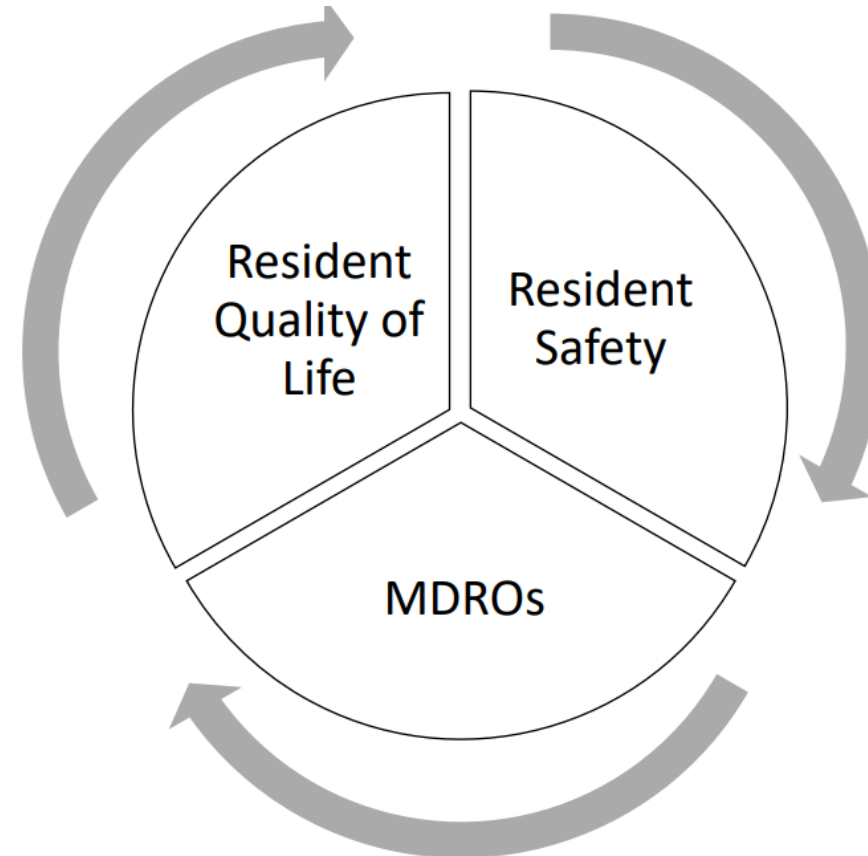
# Implementation of Enhanced Barrier Precautions

- Maintains a Homelike Environment
  - Allows group activity participation
  - May use communal dining
  - No room restrictions



# Implementation of Enhanced Barrier Precautions

- Enhanced Barrier Precautions balances Safety with Quality of Life



# Summary

- Multidrug-resistant organism (MDRO) transmission is common in skilled nursing facilities, contributing to substantial resident morbidity and mortality and increased healthcare costs.
- Enhanced Barrier Precautions (EBP) help to maintain a home-like environment that strives to strike a balance between patient safety and quality of life
- EBP are an infection control intervention designed to reduce transmission of resistant organisms that employs targeted gown and glove use during high contact resident care activities.
- EBP may be indicated (when Contact Precautions do not otherwise apply) for residents with any of the following:
  - Wounds or indwelling medical devices, regardless of MDRO colonization status
  - Infection or colonization with an MDRO.
- Effective implementation of EBP requires staff training on the proper use of personal protective equipment (PPE) and the availability of PPE and hand hygiene supplies at the point of care.
- Standard Precautions, which are a group of infection prevention practices, continue to apply to the care of all residents, regardless of suspected or confirmed infection or colonization status.

# Resources

- ▶ CDC Guidance - Enhanced Barrier Precautions  
<https://www.cdc.gov/infectioncontrol/guidelines/isolation/appendix/type-duration-precautions.html>
- ▶ FAQs about Enhanced Barrier Precautions in Nursing Homes  
<https://www.cdc.gov/hai/containment/faqs.html>
- ▶ CDC Webinar: Preventing the Spread of Novel or Targeted Multidrug-resistant Organisms (MDROs) in Nursing Homes through Enhanced Barrier Precautions  
[https://emergency.cdc.gov/coca/calls/2019/callinfo\\_102419.asp](https://emergency.cdc.gov/coca/calls/2019/callinfo_102419.asp)
- ▶ Transmission-Based Precautions (guidance and free signage)  
<https://www.cdc.gov/infectioncontrol/basics/transmission-based-precautions.html>
- ▶ Standard Precautions Guidance  
<https://www.cdc.gov/infectioncontrol/basics/standard-precautions.html>
- ▶ 2019 Antibiotic Resistant Threats Report  
<https://www.cdc.gov/drugresistance/biggest-threats.html>
- ▶ 2022 Special Report: COVID-19 U.S. Impact on Antimicrobial Resistance  
<https://www.cdc.gov/drugresistance/pdf/covid19-impact-report-508.pdf>
- ▶ Infection Prevention and Control for *Candida auris*  
<https://www.cdc.gov/fungal/candida-auris/c-auris-infection-control.html>
- ▶ Contact Precautions Sign  
[https://www.cdc.gov/infectioncontrol/pdf/contact-precautions-sign-P.pdf\(English\)](https://www.cdc.gov/infectioncontrol/pdf/contact-precautions-sign-P.pdf(English))  
[https://www.cdc.gov/infectioncontrol/pdf/spanish-contact-precautions-sign-P.pdf\(Spanish\)](https://www.cdc.gov/infectioncontrol/pdf/spanish-contact-precautions-sign-P.pdf(Spanish))
- ▶ Enhanced Barrier Precautions Sign  
[https://www.cdc.gov/hai/pdfs/containment/enhanced-barrier-precautions-sign-P.pdf\(English\)](https://www.cdc.gov/hai/pdfs/containment/enhanced-barrier-precautions-sign-P.pdf(English))  
[https://www.cdc.gov/hai/pdfs/containment/spanish-enhanced-barrier-precautions-sign-P.pdf\(Spanish\)](https://www.cdc.gov/hai/pdfs/containment/spanish-enhanced-barrier-precautions-sign-P.pdf(Spanish))
- ▶ CDC letter: 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>

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# Questions?

THANK YOU

