

# IMPLEMENTATION OF PERSONAL PROTECTIVE EQUIPMENT USE IN NURSING HOMES TO PREVENT THE SPREAD OF MULTIDRUG-RESISTANT ORGANISMS

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Associate Director of SPICE

April 4, 2024

<https://www.cdc.gov/hai/containment/PPE-Nursing-Homes.html>

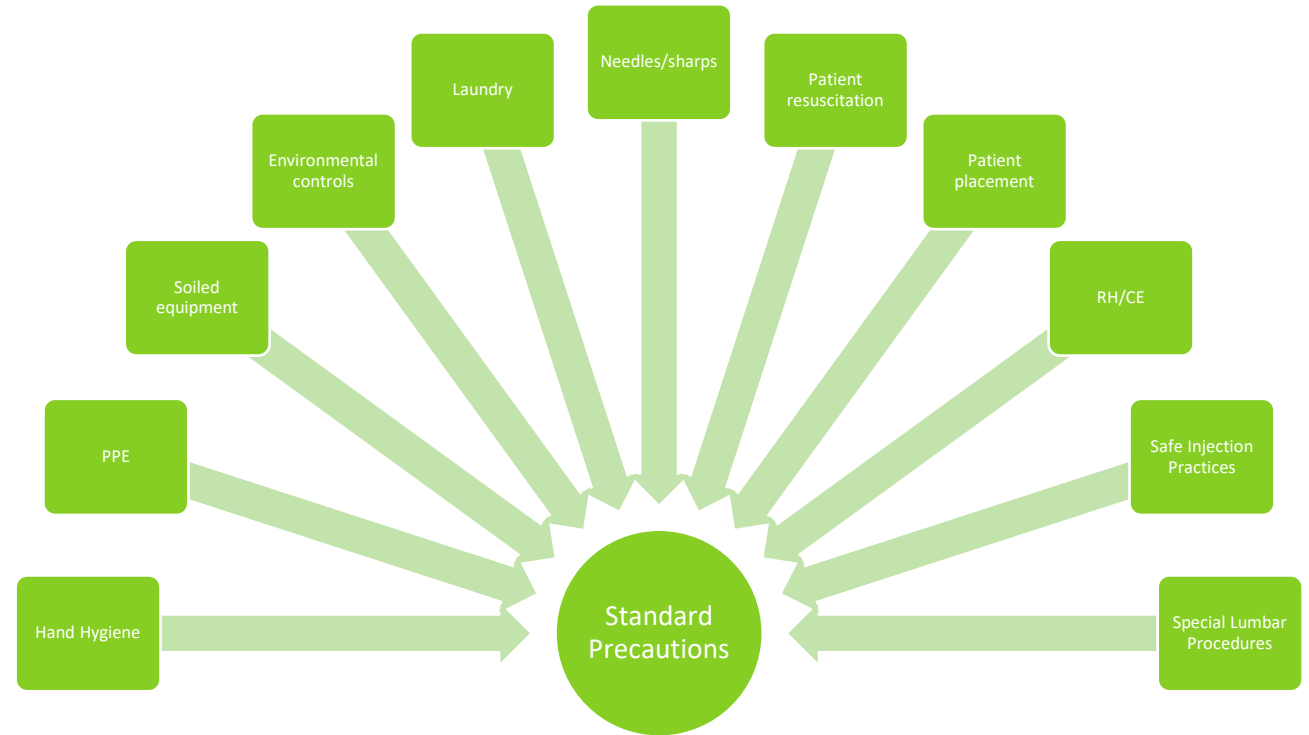
# AGENDA



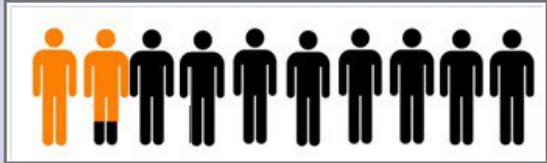



- ▶ Provide background information (rational) for guidance on use of PPE in nursing homes
- ▶ Describe Enhanced Barrier Precautions
- ▶ Discuss implementation of those precautions
- ▶ Describe variations in CDC recommendations and CMS requirements
- ▶ Q&A

# STANDARD PRECAUTIONS

***Implementation of Standard Precautions constitutes the primary strategy for the prevention of healthcare-associated transmission of infectious agents among patients and healthcare personnel***



# The Large Burden of MDROs in Nursing Homes

Facility Type	Documented MDRO	Actual MDRO
Nursing Homes (n = 14)	17% 	58% 
Ventilator-Capable Nursing Homes (n = 4)	20% 	76% 

McKinnell JA et al, Clin Infect Dis. 2019; 69(9):1566-1573



Known MDRO



No Known MDRO

Slide acknowledgement CDC presentation

# BACKGROUND



- ▶ Residents in nursing homes are at increased risk of becoming colonized and developing infections with multidrug-resistant organisms (MDROs)
- ▶ *S. aureus* and MDRO colonization prevalence among residents in skilled nursing homes is estimated at greater than 50%, with new acquisitions occurring frequently
- ▶ Implicated in outbreaks
- ▶ Invasive devices and wounds increase risk for colonization and/or acquisition
- ▶ Transmission via healthcare personnel hands, or clothing

<https://www.cdc.gov/hicpac/workgroup/EnhancedBarrierPrecautions.html>

## BACKGROUND

- ▶ Available evidence suggests routine use of EBP for residents with wounds or indwelling medical devices would reduce the transmission of *S. aureus* and MDROs (a randomized clinical trial<sup>1</sup>).
- ▶ Quasi-experimental study<sup>2</sup> routine use of EBP during high-risk care of residents with wounds or indwelling devices reduced acquisition and transmission of both methicillin-susceptible and methicillin-resistant *S. aureus*

<sup>1</sup>Mody L, Krein SL, Saint S, et al. A Targeted Infection Prevention Intervention in Nursing Home Residents with Indwelling Devices: A Randomized Clinical Trial. *JAMA Internal Medicine* 2015;175:714-23

<sup>2</sup>Lydecker AD, Osei PA, Pineles L, et al. Targeted Gown and Glove Use to Prevent *Staphylococcus aureus* Acquisition in Community-Based Nursing Homes: A Pilot Study. *Infection Control & Hospital Epidemiology* 2020:1-7.

# CHALLENGES



- ▶ Implementation of contact precautions
- ▶ Focus on active infection alone fails to address risk of transmission from residents with MDRO colonization
- ▶ Growing evidence that the traditional implementation of contact precautions in nursing homes is not implementable for most residents for prevention of MDRO transmission

# CONTACT PRECAUTIONS

## ▶ Contact Precautions:

- ▶ All residents with an MDRO when there is acute diarrhea, draining wounds or other sites of secretions/excretions that cannot be contained or covered
  - ▶ On units or in facilities where ongoing transmission is documented or suspected
  - ▶ *C. difficile* infection
  - ▶ Norovirus
  - ▶ Shingles when resident is immunocompromised, and vesicles cannot be covered
  - ▶ Other conditions as noted in Appendix A- Type and Duration of Precautions Recommended For Selected Infections and Conditions
- ▶ Gown and gloves upon **ANY room entry**
- ▶ Room restriction except for medically necessary care







# CONTACT PRECAUTIONS PRECAUCIONES DE TRANSMISIÓN POR CONTACTO



Family/Visitors should not visit if having signs or symptoms of an infection or a communicable disease. Visitation also based on facility's policy.  
*Los familiares y visitantes no deben visitar si tienen señales o síntomas de infección o de una enfermedad contagiosa. Las visitas también dependen de la política de la instalación.*

**Follow instructions below before entering room.**  
*Antes de entrar a la habitación, siga las instrucciones a continuación.*



**Everyone must:**  
Clean hands before entering and when leaving room.



**Todos deben:**  
*Lavarse las manos antes de entrar y antes de salir de la habitación.*



**All Healthcare Personnel must:**  
**Todo el personal de atención médica debe:**  
Wear gloves when entering room and remove before leaving room.

*Usar guantes al entrar a la habitación y quitárselos antes de salir de la habitación.*



Wear a gown when entering room and remove before leaving.  
*Usar una bata al entrar a la habitación y quitársela antes de salir.*



Use patient-dedicated or single-use disposable equipment. If shared equipment is used clean and disinfect between patients.

*Usar equipo desechable de un solo uso o designado al paciente. Si se utiliza equipo compartido, limpiar y desinfectar entre pacientes.*

**Additional PPE may be required per Standard Precautions.**  
*Es posible que se exija utilizar equipo de protección personal adicional según las precauciones estándar.*

Translated by UNC Health Interpreter Services

REVISED DATE: 1/20/22

## Contact Precautions

Remove sign after room is terminally cleaned upon discharge or discontinuation of precautions.

### Common conditions (per CDC guidelines)

- Methicillin-resistant *Staphylococcus aureus* (MRSA)
- Vancomycin-resistant *Enterococcus* (VRE)
- Carbapenem-resistant *Enterobacterales* (CRE)
- Extended spectrum beta lactamase producers Gram Negative Rods (ESBL-GNR)
- Candida auris* (C. auris)
- Other multidrug resistant organisms
- Scabies
- Uncontained draining wounds or abscesses
- RSV

### Room Placement:

Use private room when available. When private rooms are unavailable, place together in the same room persons who are colonized or infected with the same pathogen.

### Personal Protective Equipment

#### Put on in this order

- Alcohol based handrub or wash with soap and water if visibly soiled
- Gown- secure ties and tie in back (bow should not be tied in front of the gown)
- Gloves- pull over the cuffs of gown

#### Take off and dispose in this order

- (Do NOT wear same gown and gloves for multiple patients/residents)
- Gloves- Carefully remove to prevent contamination of hands upon removal
- Gown- Carefully remove to prevent contamination on clothing or skin
- Alcohol based hand rub or wash hands with soap and water if visibly soiled

### Diaper/Utensils:

No special precautions. Should be managed in accordance with routine procedures.

### Room Cleaning:

Follow facility policy for Contact Precautions

### Trash and Linen Management:

Bag linen and trash in patient/resident room (double bagging of trash or linen is not necessary unless outside of bag visibly contaminated).

### Transport:

Essential transport only. Place patient/resident in a clean gown. Clean and disinfect transport equipment. Alert receiving department regarding patient/resident isolation precaution status.


### Duration of Precautions:

For all multidrug resistant organisms, follow guidance and recommendations from CDC (Management of Multidrug-Resistant Organisms in Healthcare Settings) and SHEA (Duration of Contact Precautions for Acute-Care Settings).

For other guidance for duration of precautions, follow Appendix A- Type and Duration of Precautions Recommended for Selected Infections and Conditions within the CDC's 2007 Guideline for Isolation Precautions:

Preventing Transmission of Infectious Agents in Healthcare Settings

# Implementation of Personal Protective Equipment (PPE) Use in Nursing Homes to Prevent Spread of Multidrug-resistant Organisms (MDROs)

Print version: [Implementation of PPE in Nursing Homes to Prevent Spread of MDROs](#)  [PDF – 7 pages]

## Summary of Recent Changes:

- Added additional rationale for the use of Enhanced Barrier Precautions (EBP) in nursing homes, including the high prevalence of multidrug-resistant organism (MDRO) colonization among residents in this setting.
- Expanded residents for whom EBP applies to include any resident with an indwelling medical device or wound (regardless of MDRO colonization or infection status).
- Expanded MDROs for which EBP applies.
- Clarified that, in the majority of situations, EBP are to be continued for the duration of a resident's admission.

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On this Page

Background

Description of Precautions

Summary of PPE Use and Room Restriction

Implementation

References

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Resources

<https://www.cdc.gov/hai/containment/PPE-Nursing-Homes.html>

DEPARTMENT OF HEALTH & HUMAN SERVICES  
Centers for Medicare & Medicaid Services  
7500 Security Boulevard, Mail Stop C2-21-16  
Baltimore, Maryland 21244-1850



**Center for Clinical Standards and Quality/Quality, Safety & Oversight Group**

**Ref: QSO-24-08-NH**

**DATE:** March 20, 2024

**TO:** State Survey Agency Directors

**FROM:** Director, Quality, Safety & Oversight Group (QSOG)

**SUBJECT:** Enhanced Barrier Precautions in Nursing Homes

# ENHANCED BARRIER PRECAUTIONS (EBP)

- ▶ Expands the use of PPE beyond situations in which exposure to blood and body fluids is anticipated (i.e. Standard Precautions)
- ▶ Refers 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



# ENHANCED BARRIER PRECAUTIONS

## CDC AND CMS

- ▶ Applies to **ALL** residents with **ANY of the following**:
  - ▶ Infection **OR** colonization with a **MDRO** when Contact Precautions do not apply
  - ▶ Wounds and/or indwelling medical devices (e.g., central lines, urinary catheter, feeding tube, tracheostomy/ventilator) **REGARDLESS** of MDRO colonization status and **regardless of wherever they reside in the facility**
- ▶ Gown and gloves prior to the high contact care activity (cannot reuse gown, must change between residents)
  - ▶ Additional PPE (i.e., eye protection) based standard precautions.
- ▶ **No room restriction and not restricted or limited from participation in group activities**

# CDC RECOMMENDS ENHANCED BARRIER PRECAUTIONS (EBPs)

## ▶ Targeted Multi-drug Resistant Organism (MDROs)

- ▶ Pan-resistant organisms:
  - ▶ Resistant to all current antibacterial agents *Acinetobacter*, *Klebsiella pneumonia*, *Pseudomonas aeruginosa*
- ▶ Carbapenemase-producing Enterobacterales
- ▶ Carbapenemase-producing *Pseudomonas* spp.
- ▶ Carbapenemase-producing *Acinetobacter baumannii* and
- ▶ *Candida auris*

## ▶ Epidemiological Important MDROs

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



# CMS REQUIRES ENHANCED BARRIER PRECAUTIONS (EBPs)

- ▶ CDC's Targeted Multi-drug Resistant Organism (MDROs)
  - ▶ Pan-resistant organisms:
    - ▶ Resistant to all current antibacterial agents  
*Acinetobacter, Klebsiella pneumonia, pseudomonas aeruginosa*
  - ▶ Carbapenemase-producing Enterobacterales
  - ▶ Carbapenemase-producing *Pseudomonas* spp.
  - ▶ Carbapenemase-producing *Acinetobacter baumannii* and
  - ▶ *Candida auris*
- ▶ **Facility has discretion for MDROs not targeted by CDC**



Photo credit:

[Public Health Image Library \(PHIL\)](#)

# IMPLEMENTATION STRATEGIES

- ▶ ***CMS and CDC:*** Facility has clear expectations for staff related to hand hygiene, gown/glove use, initial and ongoing training and access to appropriate supplies
  - ▶ ***PPE and ABHR available***
  - ▶ ***Communication with staff***
- ▶ Facilities with rooms containing multiple residents should provide staff with training and resources to ensure that they change their gown and gloves and perform hand hygiene in between care of residents in the same room.
- ▶ **Periodic monitoring and assessment of adherence to practice**
- ▶ Educate residents and visitors

***Other recommended practices-environmental cleaning and cleaning and disinfection resident care equipment***



# ENHANCED BARRIER PRECAUTIONS

## *CDC AND CMS*

### ▶ Examples of high-contact resident care activities requiring gown and glove use:

- ▶ Dressing
- ▶ Bathing/showering
- ▶ Transferring
- ▶ Providing hygiene (brushing teeth, combing hair, and shaving) primarily bundled with am or pm care
- ▶ Changing linens
- ▶ Changing briefs or assisting with toileting
- ▶ Device care or use; central line, urinary catheter, feeding tube, tracheostomy/ventilator
- ▶ Wound care: any skin opening requiring a dressing





**Invasive devices**



**Wounds**

# INDWELLING MEDICAL DEVICES

## *CDC AND CMS*



### ▶ CDC

- ▶ Examples of indwelling medical devices include central line, urinary catheter, feeding tube, and tracheostomy/ventilator;

### ▶ CMS

- ▶ Indwelling medical device examples include central lines, urinary catheters, feeding tubes, and tracheostomies. A peripheral intravenous line (not a peripherally inserted central catheter) is not considered an indwelling medical device for the purpose of EBP.

# WOUNDS

## *CDC AND CMS*

### ▶ CDC

- ▶ Any skin opening requiring a dressing

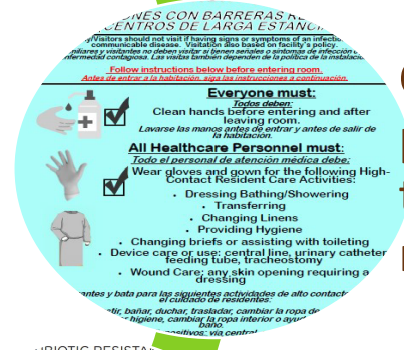
### ▶ CMS and CDC

- ▶ Wounds generally include chronic wounds, not shorter-lasting wounds, such as skin breaks or skin tears covered with an adhesive bandage (e.g., Band-Aid®) or similar dressing. Examples of chronic wounds include, but are not limited to, pressure ulcers, diabetic foot ulcers, unhealed surgical wounds, and venous stasis ulcers.

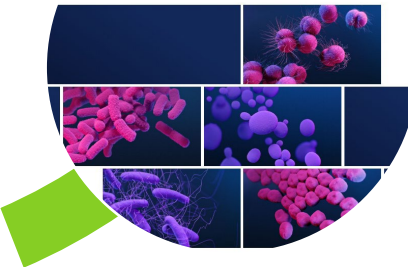




PPE place **immediately** outside the room



Clear signage placed **outside** on the door or wall next to room



**Targeted and epidemiologically** important MDROs

ANTIBIOTIC RESISTANCE IN THE UNITED STATES 2011

# CMS



PPE and ABHR **readily accessible to staff.**

Discretion can be used to place near or outside the room

...ENES CON BARRERAS EN  
CENTROS DE LARGA ESTANCIA...

...infectious disease. Validation also based on facility's policy  
...intermedial dirigidos. Las visitas también requieren de la puesta de la mascarilla.

Follow instructions below before entering room.  
Antes de entrar a la habitación, siga las instrucciones a continuación.

**Everyone must:**  
Todos deben:

- Clean hands before entering and after leaving room.  
Lavar las manos antes de entrar y antes de salir de la habitación.

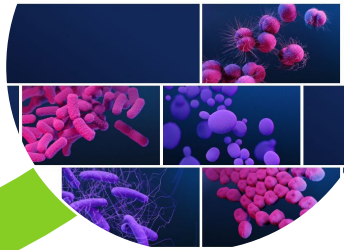
**All Healthcare Personnel must:**  
Todo el personal de atención médica debe:

- Wear gloves and 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, primary catheter, feeding tube, tracheostomy
- Wound Care; any skin opening requiring a dressing

...antes y dato para las siguientes actividades de alto contacto  
...al cuidado de residentes:  
...tic, bañar, duchar, trasladar, cambiar la ropa de  
...higiene, cambiar la ropa interior o ayu  
...bidos. Visi cent

Facilities can **use discretion on how to communicate to staff** to maintain a home-like environment

...ANTIBIOTIC RESISTANCE  
...IN THE UNITED  
...201.



CDC **targeted MDROs** and **discretion** to use for MDROs not targeted.



# SHARED ROOMS



- ▶ When residents are placed in shared rooms, facilities must implement strategies to help minimize transmission of pathogens between roommates including:
  - ▶ maintaining spatial separation of at least 3 feet between beds to reduce opportunities for inadvertent sharing of items between the residents,
  - ▶ use of privacy curtains to limit direct contact,
  - ▶ cleaning and disinfecting any shared reusable equipment,
  - ▶ cleaning and disinfecting environmental surfaces on a more frequent schedule, and
  - ▶ ***changing personal protective equipment (if worn) and performing hand hygiene when switching care from one roommate to another.***

# DURATION OF EBPS

## *CDC AND CMS*

- ▶ 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 or
  - ▶ Until resolution of the wound or discontinuation of the indwelling medical device that placed them at higher risk





## CONSIDERATIONS DURING SHORTAGES OF GOWNS OR GLOVES-CDC

- ▶ When PPE supply chains are strained during extraordinary circumstances such as the COVID-19 pandemic, facilities may encounter shortages of gowns or gloves.
- ▶ **Neither extended use nor reuse of gowns and gloves is recommended for mitigating shortages in the context of EBP.**
- ▶ To optimize PPE supply, facilities can consider substituting disposable gowns with washable cloth isolation gowns that have long sleeves with cuffs.
- ▶ Healthcare personnel can reduce PPE consumption by bundling multiple care activities in the same resident interaction.

<https://www.cdc.gov/hicpac/pdf/EnhancedBarrierPrecautions-H.pdf>

# 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) 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 all residents

# CDC RESOURCES FOR ENHANCED BARRIER PRECAUTIONS

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 Homes <https://www.cdc.gov/hai/containment/faqs.html>

Considerations for Use of Enhanced Barrier Precautions in Skilled Nursing Facilities <https://www.cdc.gov/hicpac/workgroup/EnhancedBarrierPrecautions.html?msclkid=39038417aed311ec8c868e1e03c50297>

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>

# RESOURCES-CDC

## ▶ Letter to residents, family, volunteers

Keeping Residents Safe – Use of Enhanced Barrier Precautions

A message from: [Redacted]

**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.

Help Keep Our Residents Safe – Enhanced Barrier Precautions in Nursing Homes

A message from: [Redacted]

**Dear Valued Staff:**

You will soon see an increase in the circumstances when we are asking you to wear a gown and gloves while caring for residents. This is based on new recommendations from the Centers for Disease Control and Prevention to protect our residents and staff from multidrug-resistant organisms (MDROs), which can cause serious infections and are hard to treat. These new recommendations are called Enhanced Barrier Precautions, or EBP.

## ▶ Letter to staff

## Enhanced Barrier Precautions How We Keep Our Residents Safe



### What's New

We are using Enhanced Barrier Precautions to help protect our residents from infection. You may notice:

- New signs throughout the facility
- Staff wearing gowns and gloves for high-contact care activities

### Why We're Making These Changes

We are taking action to protect our residents from dangerous germs. These germs can cause infections that are hard to treat.

Enhanced Barrier Precautions allow us to provide safe, high quality care and help stop the spread of germs within our facility.

### How to Help When You Visit

You can help stop the spread of germs by cleaning your hands with alcohol-based hand sanitizer or soap and water.

Learn more about Enhanced Barrier Precautions:  
[bit.ly/PPE-NursingHomes](http://bit.ly/PPE-NursingHomes)



More than  
**50%**  
of nursing home residents carry a  
multidrug-resistant organism.

## Multidrug-resistant organisms (MDROs) are a threat to our residents.

### Enhanced Barrier Precautions (EBP) Steps



Perform Hand Hygiene



Wear Gown



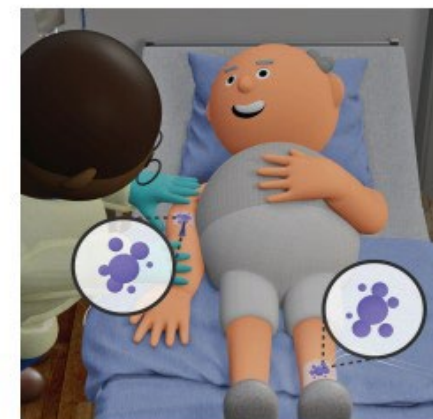
Wear Gloves



Dispose of Gown & Gloves in Room

Use EBP during high-contact care activities for residents with:

- 1 Indwelling Medical Devices  
(e.g., central line, urinary catheter, feeding tube, tracheostomy/ventilator)
- 2 Wounds
- 3 Colonization or Infection with a MDRO



Protect residents and stop the spread of germs.

[bit.ly/PPE-NursingHomes](http://bit.ly/PPE-NursingHomes)

Scan to watch an EBP video.



<https://www.cdc.gov/hai/containment/PPE-Nursing-Homes.html>

# ADDITIONAL RESOURCES

► CMS QSO-24-08-NH

SUBJECT: Enhanced Barrier Precautions in Nursing Homes

<https://www.cms.gov/files/document/qso-24-08-nh.pdf>

► NC Statewide Program for Infection Control and Prevention (SPICE)

<https://spice.unc.edu/>

**STOP** ENHANCED BARRIER PRECAUTIONS (LTCFs) **ALTO**

*PRECAUCIONES CON BARRERAS REFORZADAS (CENTROS DE LARGA ESTANCIA)*

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  - 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

*Usar guantes y bata para las siguientes actividades de alto contacto durante el cuidado de residentes:*

- Vestir, bañar, duchar, trasladar, cambiar la ropa de cama.
- Proporcionar higiene, cambiar la ropa interior o ayudar a usar el baño.
- Cuidado o uso de dispositivos: vía central, sonda urinaria, sonda de alimentación, traqueostomía.

Additional PPE may be required per Standard Precautions.  
*Es posible que se exija utilizar equipo de protección personal adicional según las precauciones estándar.*

Translated by UNC Health Interpreter Services **REVISED DATE: 7/26/2022**

