

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

*Updated Guidance from Centers for Disease Control and
Prevention (CDC)*

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

OVERVIEW


- ▶ Clarify the current CDC definition for “up-to-date” COVID-19 vaccine
- ▶ Provide background information (rational) for updated guidelines on use of PPE in nursing homes
- ▶ Present a description of precautions designed to reduce risk of transmission
- ▶ Discuss implementation of those precautions

WHEN ARE YOU UP TO DATE?

- ▶ You are **up to date** with your COVID-19 vaccines when you have received **all** doses in the primary series and **all** boosters recommended for you, when eligible.
 - ▶ If a booster is recommended and the individual is eligible for a booster, then to be up to date would require the booster. Similarly, if a 2nd booster is recommended and the individual is eligible for the 2nd booster, then that booster would be required in order to be up to date.
 - ▶ For adults aged 50 years and older, a 2nd booster is recommended to be received at least 4 months after the 1st booster and would be necessary to be up to date if at least 4 months have passed since the 1st booster.
- ▶ If you have completed your primary series-but **are not yet eligible** for a booster-you are also considered up to date.



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

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

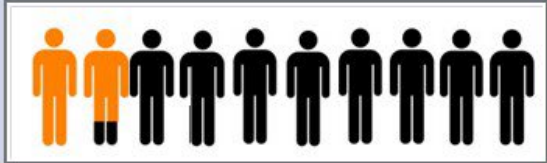



BACKGROUND

- ▶ 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 trial¹).
- ▶ Quasi-experimental study² 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*

¹Mody 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

²Lydecker 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.

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

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

MDROs TARGETED BY CDC

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



ADDITIONAL EPIDEMIOLOGICALLY IMPORTANT MDROs

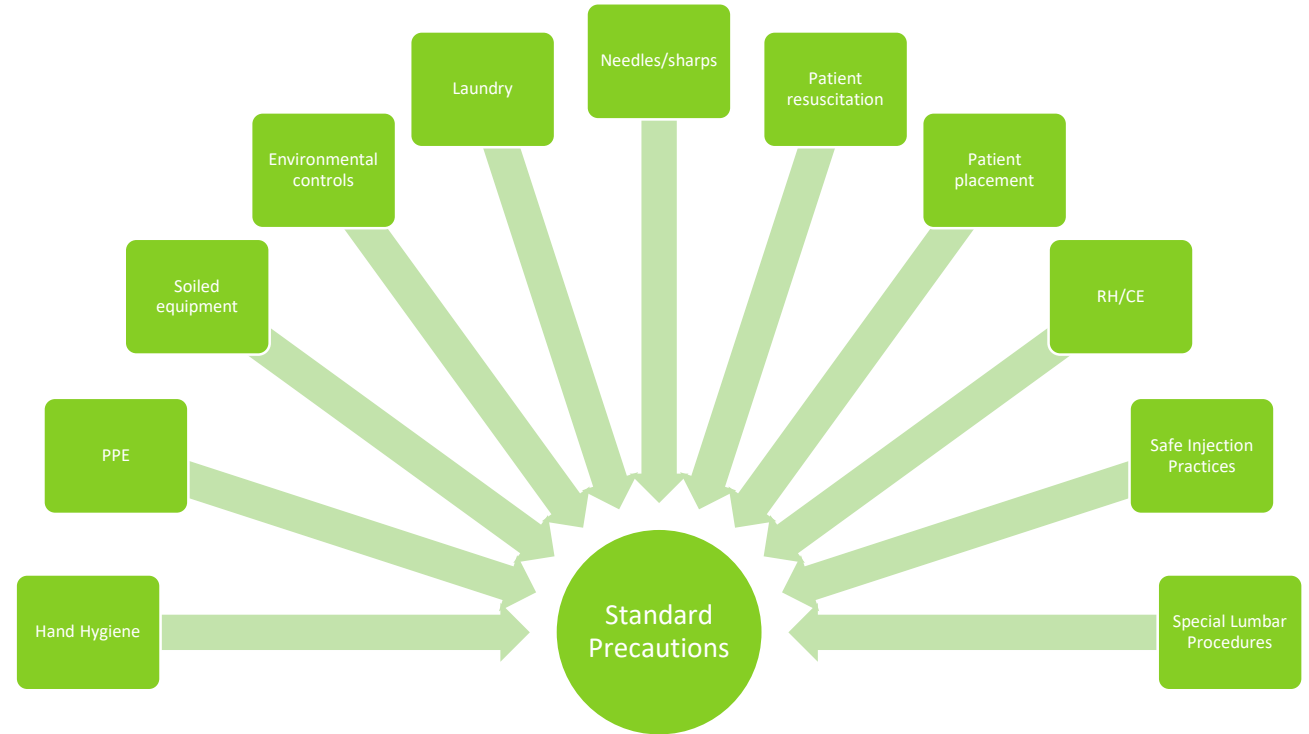
- ▶ Methicillin-resistant *Staphylococcus aureus* (MRSA),
- ▶ ESBL-producing Enterobacterales,
- ▶ Vancomycin-resistant *Enterococci* (VRE),
- ▶ Multidrug-resistant *Pseudomonas aeruginosa*,
- ▶ Drug-resistant *Streptococcus pneumoniae*



Photo credit: [Public Health Image Library \(PHIL\)](#)

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



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

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

- ▶ 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
- ▶ Gown and gloves prior to the high contact care activity (cannot reuse gown, must change between residents)
 - ▶ Eye protection based on risk of being splashed or splattered
- ▶ ***No room restriction and not restricted or limited from participation in group activities***



Invasive devices



Wounds

ENHANCED BARRIER PRECAUTIONS

- ▶ 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





ENHANCED BARRIER PRECAUTIONS (LTCFs)



PRECAUCIONES CON BARRERAS REFORZADAS (CENTROS DE LARGA ESTANCIA)

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:

Todos deben:

Clean hands before entering and after leaving room.

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 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, 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: 1/20/2022

Enhanced Barrier Precautions

Not intended for acute care or long-term acute care (LTACs)

All residents with any of the following:

- Infection or colonization with a novel or targeted MDRO when Contact Precautions do not apply. (includes: Pan-resistant organisms; Carbapenemase producing *Enterobacterales*, *Pseudomonas spp.*, or *Acinetobacter baumannii* and/or *Candida auris*)
- Wounds and/or indwelling medical devices (e.g., central line, urinary catheter, feeding tube, tracheostomy/ventilator) regardless of MDRO colonization status who reside on a unit or wing where a resident known to be infected or colonized with a novel or targeted MDRO resides.

Facilities may consider applying Enhanced Barrier Precautions to residents infected or colonized with other epidemiologically-important MDROs based on facility policy.

Perform Hand Hygiene

- Alcohol based handrub or wash with soap and water if visibly soiled before and after leaving the room.

Personal Protective Equipment

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

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

High-Contact Resident Care Activities include:

- 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

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 handrub or wash with soap and water if visibly soiled

Dishes/Utensils:

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

Appropriate Use, Cleaning, and Disinfection of medical equipment and devices

Follow facility policies and procedures for cleaning and disinfection of medical equipment and devices. All shared equipment must be cleaned between patients.

Linen and Textile Management:

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

IMPLEMENTATION STRATEGIES

- ▶ Facility has clear expectations for staff related to hand hygiene, gown/glove use, initial and ongoing training and access to appropriate supplies
 - ▶ Post clear signage on the door or wall outside resident room
 - ▶ Make PPE immediately available outside the room
 - ▶ Ensure access to alcohol-based hand rub
 - ▶ Position a trash can available for disposal of PPE
 - ▶ Periodic monitoring and assessment of adherence to practice
 - ▶ Educate residents and visitors

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

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

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.pdf>

Enhanced Barrier Precautions Letter to Nursing Home Staff <https://www.cdc.gov/hai/pdfs/containment/Letter-Nursing-Home-Staff.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

