



RECOMMENDED PRACTICES TO INTERRUPT TRANSMISSION OF INFECTIOUS AGENTS IN LONG-TERM CARE FACILITIES

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KEY CONCEPTS

- ▶ Risk of transmission of infectious agents occurs in all settings
- ▶ Infections are transmitted from resident-to-resident via HCPs hands or medical equipment/devices
- ▶ Unidentified residents who are colonized or infected may represent risk to other residents
- ▶ Isolation precautions are only part of a comprehensive IP program




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FUNDAMENTAL ELEMENTS -

- ▶ Administrative support
- ▶ **Adequate Infection Prevention staffing**
- ▶ Good communication with clinical microbiology lab and environmental services
- ▶ A comprehensive educational program for HCPs, residents, and visitors
- ▶ **Infrastructure support** for surveillance, outbreak tracking, and data management


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CONTROLLING TRANSMISSION OF INFECTION




If there is a **means of transmission**, infection will spread to others.

Standard Precautions
Transmission-Based Precautions
Enhanced Barrier Precautions - NHs



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STANDARD PRECAUTIONS




STANDARD PRECAUTIONS

PRECAUCIONES ESTANDAR

Everyone must:

- Clean hands before entering and when leaving room.**
Lavar las manos antes de entrar y al salir de la habitación.
- Cover your mouth and nose with elbow or tissue when coughing or sneezing.**
Cubrirse la boca y la nariz con el codo o con un pañuelo de papel al toser o estornudar.
- Wear appropriate mask, gown, and/or gloves, if contact with blood or body fluids is expected.**
Usar mascarilla, bata y guantes adecuados si hay contacto con fluidos corporales.
- All Healthcare Personnel must:**
Property hands, clean, and disinfect medical equipment and devices. Handle laundry and soiled linens carefully.
- Safe injection practices:**
Follow safe injection practices.



Standard Precautions

Standard Precautions are a set of infection control practices that are used to prevent transmission of infectious agents. They are based on the principle that all blood and body fluids may contain infectious agents.

Practices that apply to all patients:

- Alcohol hand hygiene or soap with water and water.
- Cover your mouth and nose with a tissue when coughing or sneezing.
- Perform hand hygiene or, if not available, use an alcohol-based hand sanitizer.
- Wear appropriate mask, gown, and/or gloves, if contact with blood or body fluids is expected.

Practices that apply to patients with certain infections:

- Use appropriate mask, gown, and/or gloves, if contact with blood or body fluids is expected.
- Perform hand hygiene or, if not available, use an alcohol-based hand sanitizer.
- Use appropriate mask, gown, and/or gloves, if contact with blood or body fluids is expected.

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

2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings


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Define and explain standard precautions and their application during resident care activities

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HAND HYGIENE

► After touching blood, body fluids, secretions, excretions, contaminated items; immediately after removing gloves; between resident contacts.

► *When hands are visibly dirty or contaminated with proteinaceous material or are visibly soiled with blood or other body fluids, wash hands with either a nonantimicrobial soap and water or an antimicrobial soap and water*

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How to hand wash

Palms, interlaced fingers




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ALCOHOL BASED HAND RUB



► Put alcohol-based hand sanitizer with 60-95% alcohol in every resident room (ideally both inside and outside of the room) and other resident care and common areas (e.g., outside dining hall, in therapy gym).

► *Unless hands are visibly soiled, an alcohol-based hand sanitizer is preferred over soap and water in most clinical situations.*



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How to hand rub

20-30 seconds total



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HAND HYGIENE PROGRAM

ADDITIONAL ELEMENTS
CDC GUIDELINE FOR HAND HYGIENE IN HEALTHCARE SETTING

- Involve staff in evaluation and selection of hand hygiene products
- Provide employees with hand lotions/creams compatible with soap and/or ABHRs
- Do not wear artificial nails when providing direct clinical care
- Provide hand hygiene education to staff
- *Monitor staff adherence to recommended HH practices*



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APPROACHES THAT SHOULD NOT BE CONSIDERED A ROUTINE PART OF HH

- ▶ Do not supply individual pocket-sized ABHS dispensers in lieu of accessible wall-mounted dispensers
- ▶ Do not refill or “top-off” soap dispensers, moisturizer dispensers or ABHS dispensers
- ▶ Do not use antimicrobial soaps formulated with triclosan
- ▶ Do not routinely double-glove
- ▶ Do not remove access to ABHS when responding to organisms such as *C. difficile* or norovirus
- ▶ Do not disinfect gloves during care

<https://doi.org/10.1017/ice.2022.304>

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STANDARD PRECAUTIONS

Component	Recommendation
Personal Protective Equipment (PPE)	
Gloves 	For touching blood, body fluids, secretions, excretions, contaminated items; for touching mucous membranes and non-intact skin
Gown 	During procedures and resident-care activities when contact of clothing/exposed skin with blood/body fluids, secretions, and excretions is anticipated
Mask, eye protection 	During procedures and resident-care activities likely to generate splashes or sprays of blood, body fluids, secretions, especially suctioning, endotracheal intubation

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USE OF PERSONAL PROTECTIVE EQUIPMENT (PPE)



- ▶ Perform and maintain an inventory of PPE – monitor daily PPE use
- ▶ Make necessary PPE available where resident care is provided
- ▶ Position trash can near the exit inside the room for disposal
- ▶ Implement strategies to optimize current PPE supply – even before shortages occur

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USE OF PERSONAL PROTECTIVE EQUIPMENT (PPE)




- ▶ Three overriding principals related to personal protective equipment (PPE)
 - ▶ Wear PPE when the nature of the anticipated resident interaction indicates that contact with blood or body fluids may occur
 - ▶ Prevent contamination of clothing and skin during the process of removing PPE
 - ▶ Before leaving the resident's room, remove and discard PPE –respirators removed after leaving

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RESPIRATORS

- ▶ Healthcare providers who are in close contact with an LTCF resident with suspected or confirmed SARS-CoV-2 infection **must use a NIOSH-approved N95 FFR or equivalent or higher-level respirator** (29 CFR 1910.134)
 - ▶ This guidance is designed specifically for nursing homes, assisted living facilities and other LTCF (group homes with nursing care)
- ▶ Whenever respirators are required, employers must implement a written, worksite-specific respiratory protection program (RPP), including medical evaluation, fit testing, training, and other elements, as specified in OSHA's Respiratory Protection standard (29 CFR 1910.134).



<https://www.osha.gov/sites/default/files/respiratory-protection-covid19-long-term-care.pdf>

<https://www.osha.gov/sites/default/files/respiratory-protection-covid19-compliance.pdf>

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SAFE WORK PRACTICES (PPE USE)

- ✓ Keep hands away from face
- ✓ Work from clean to dirty
- ✓ Limit surfaces touched
- ✓ Change when torn or heavily contaminated
- ✓ Perform hand hygiene

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Component	Recommendation
Soiled equipment	Handle in a manner that prevents transfer of microorganisms to others and to the environment; wear gloves if visibly contaminated; perform hand hygiene
Environmental Control	Develop procedures for routine care, cleaning, and disinfection of environmental surfaces, especially frequently touched surfaces in resident-care areas
Laundry	Handle in a manner that prevents transfer of microorganisms to others and to the environment
Needles and sharps	Do not recap, bend, break, or hand-manipulate used needles; if recapping is required, use a one-handed scoop technique only; use safety features when available; place used sharps in puncture-resistant container
Resident Resuscitation	Use mouthpiece, resuscitation bag, other ventilation devices to prevent contact with mouth and oral secretions

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Component	Recommendation
Resident placement	Prioritize for <u>single-resident room</u> if resident is at increased risk of transmission, is likely to contaminate the environment, does not maintain appropriate hygiene, or is at increased risk of acquiring infection or developing adverse outcome following infection.
Respiratory hygiene/cough etiquette	Instruct symptomatic persons to cover mouth/nose when sneezing/coughing; use tissues and dispose in no-touch receptacle; observe hand hygiene after soiling of hands with respiratory secretions; wear surgical mask if tolerated or maintain spatial separation, >3 feet if possible. (source containment of infectious respiratory secretions in symptomatic residents, beginning at initial point of encounter)

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Component	Recommendation
Safe Injection Practices	Apply to the use of needles, cannulas that replace needles, and, where applicable intravenous delivery systems <ul style="list-style-type: none"> • Use aseptic technique • Needles, cannulae and syringes are sterile, single-use items • Use single-dose vials for parenteral medications whenever possible • Do not administer medications from single-dose vials or ampules to multiple residents • Do not keep multidose vials in the immediate resident treatment area • Do not use bags or bottles of IV solution as a common source of supply for multiple residents
Special Lumbar Procedures	Wear a surgical mask when placing a catheter or injecting material into the spinal canal or subdural space

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TRANSMISSION BASED PRECAUTIONS

Transmission-Based Precautions are for residents who are known or suspected to be infected or colonized with infectious agents, including certain epidemiologically important pathogens, and are used when the route(s) of transmission are not completely interrupted using Standard Precautions alone.

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graph TD
    Contact[Contact] --> TBP((Transmission-Based Precautions))
    Droplet[Droplet] --> TBP
    Airborne[Airborne] --> TBP
    
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Define transmission-based precautions (i.e., contact precautions, droplet precautions, airborne precautions) and explain how and when they should be utilized, as consistent with accepted national standards.

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TRANSMISSION BASED PRECAUTIONS

- ▶ *The facility should initiate transmission-based precautions for a constellation of new symptoms consistent with a communicable disease. Empirically initiated transmission-based precautions may be adjusted or discontinued when additional clinical information becomes available (e.g., confirmatory laboratory results).*
- ▶ *Residents on transmission-based precautions should remain in their rooms except for medically necessary care.*
- ▶ *Least restrictive possible*

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TRANSMISSION BASED PRECAUTIONS

► Place signage *that includes instructions for use of specific PPE* in a conspicuous *location* outside the resident's room (e.g., on the door or on the wall next to the doorway), *wing, or facility-wide. Additionally, either* the CDC category of transmission-based precautions (e.g., contact, droplet, or airborne) or instructions to see the nurse before entering *should be included in signage.*

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CONTACT PRECAUTIONS

- Common conditions:
 - MRSA,
 - VRE,
 - CRE,
 - ESBL-GNR,
 - *Candida auris*,
 - Scabies,
 - Uncontained draining wounds or abscesses
- Private room if available
- ***Don gown and gloves when entering the room***
- Disposable or dedicated equipment
- Transport residents in a fresh gown

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CONTACT PRECAUTIONS

► *Contact precautions should also be used in situations when a resident is experiencing wound drainage, fecal incontinence or diarrhea, or other discharges from the body that cannot be contained and suggest an increased potential for extensive environmental contamination and risk of transmission of a pathogen, **even before a specific organism has been identified.***

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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

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CONTACT PRECAUTIONS PRECAUCIONES DE TRANSMISION POR CONTACTO

Everyone must:
Clean hands before entering and when leaving room.
Todos debemos:
Lavarse las manos antes de entrar y antes de salir de la habitación.

All Healthcare Personnel must:
Wear gloves when entering room and remove before leaving room.
Wear a gown when entering room and remove before leaving.
Use patient-dedicated or single-use disposable equipment. If shared equipment is used clean and disinfect between patients.

Additional PPE may be required per Standard Precautions.

Contact Precautions

Remove sign after room is formally released upon discharge or discontinuation of precautions.

Common conditions (per CDC guidelines):
Methicillin-resistant *Staphylococcus aureus* (MRSA)
Vancomycin-resistant *Enterococcus* (VRE)
Colistin-resistant *Enterobacteriaceae* (CRE)
Extended spectrum beta lactamase producer Gram Negative Rods (ESBL, GNR)
Candida auris, scabies

Other existing resident organisms:
Scabies
Uncontained draining wounds or abscesses
HSV

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 (PPE):
- Goggles
- Alcohol based handoff or soap with water if visibly soiled
- Gown - ensure ties and fastenings are behind the back and in front of the gown
- Gloves - pull over the cuffs of gown

Safe and Effective Use of Gown:
- Do NOT wear same gown and gloves for multiple patients/residents
- Gowns - Carefully remove to prevent contamination of clothing or skin
- Goggles - Carefully remove to prevent contamination on clothing or skin
- Double based hand off or soap hands with soap and water if visibly soiled

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

Room Cleaning:
Follow facility policy for Contact Precautions

Trash and Linen Management:
Essential transport only. Place patient's waste in a leak proof, clean and disinfect transport equipment. Avoid receiving department, regular waste, or linen to not necessary on-line outside of facility containment.

Transport:
Essential transport only. Place patient's waste in a leak proof, clean and disinfect transport equipment. Avoid receiving department, regular waste, or linen to not necessary on-line outside of facility containment.

Duration of Precautions:
For all existing resident organisms, follow guidance and recommendations from CDC (Management of Antimicrobial-Resistant Organisms in Healthcare Settings) and WHO (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 Infection Prevention and Control in Health Care Facilities.
Preventing Transmission of Infectious Agents in Healthcare Settings

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ENTERIC PRECAUTIONS

- Common conditions:
 - *Clostridioides difficile*,
 - Norovirus,
 - Rotavirus
- USE ABHR for routine care.
- During an outbreak, HCP should consider using soap & water routinely
- Private room if possible
- Gown and gloves
- Disposable or dedicated equipment
- Use EPA agent from the K list of disinfectants: Dilute Bleach, sporicidal disinfectants.

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STOP ENTERIC PRECAUTIONS PRECAUCIONES DE TRANSMISION POR ALTO ENTERICA

Family/Visitors should not visit if having signs or symptoms of an infection or a communicable disease. Visitación sólo basada en febricitad y/o síntomas de una enfermedad contagiosa. Las visitas también dependen de la política de la institución.

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 al 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 with an EPA K list disinfectant.
Usar equipo dedicado de un solo uso o designado al paciente. Si se usa equipo compartido, limpiarlo con un desinfectante de la lista K de la EPA.

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

Revised Date: 1/20/2022

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DROPLET PRECAUTIONS

Applies when **respiratory droplets** contain pathogens which may be spread to another susceptible individual

Surgical or procedure mask upon entering the room

Private room when available

Transport resident in a medical grade mask.

Common conditions:

- Pertussis,
- Influenza,
- Rhinovirus,
- Neisseria meningitidis,
- Mumps,
- Rubella,
- Parvovirus B19

<https://www.cdc.gov/flu/professionals/diagnosis/testing-management-considerations-meningitides.htm>

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STOP DROPLET PRECAUTIONS PRECAUCIONES DE TRANSMISION POR GOTAS ALTO

Family/Visitors should not visit if having signs or symptoms of an infection or a communicable disease. Visitación sólo basada en febricitad y/o síntomas de una enfermedad contagiosa. Las visitas también dependen de la política de la institución.

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 al salir de la habitación.

Wear surgical/procedure mask when entering the room and remove after exiting the room.
Usar una mascarilla quirúrgica o para procedimientos al entrar a la habitación y quitársela después de salir de la habitación.

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

Revised Date: 1/20/2022

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DROPLET AND AIRBORNE TRANSMISSION

Smallest droplets (<25 micrometers) evaporate leaving "droplet nuclei" of bacilli that can reach alveoli (e.g., TB).

Medium-sized droplets: trapped & cleared in upper airway.

Largest droplets fall to ground in seconds; may persist in dust, but not an important cause of infection.

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AIRBORNE PRECAUTIONS

Occurs when pathogens are so small, they can easily be dispersed in the air over long distances by air currents.

Common conditions:

- Tuberculosis,
- Measles

Private room only

Room requires Negative airflow pressure

Doors must remain closed

Everyone must wear an N-95 respirator

Limit the movement and transport of the Resident

Hand hygiene before and after

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TUBERCULOSIS

Facility does not have a dedicated negative pressure room:

- Transfer resident to a facility capable of managing and evaluating resident
- Place a mask on the resident (if tolerated), place in room with door closed pending transport
- Be sure policy is included in your plan

Facility does have negative pressure room:

- Follow Airborne Precautions

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AIRBORNE PRECAUTIONS / PRECAUCIONES DE TRANSMISION AEREA

STOP **ALTO**

Family/Visitors should not visit if having signs or symptoms of an infection or a communicable disease. Visitación debe suspenderse si hay signos de una enfermedad contagiosa. Los visitantes deben suspenderse de la habitación de inmediato. Antes de entrar a la habitación, siga las instrucciones a continuación.

Follow instructions below before entering room.

Everyone must:

- Clean hands before entering and when leaving room.
- Wear a respirator (N95 or higher level respirator) prior to entering the room.
- Visitors-See nurse for instruction on mask or respirator selection and use.
- Keep door closed. (Maintain negative pressure)

Additional PPE may be required per Standard Precautions.

REVISÉ DATE: 1/30/2022

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TRANSMISSION-BASED PRECAUTIONS

Combinations of precautions may be necessary based on the pathogen:

- Droplet plus Contact
- Airborne plus Contact

1 Procelanoy RS, et al. J Pediatr (Rio J) 2002;11 April; 2 Almdenos A, et al. Vet Rec 2020;4; 3 Chin AWH, et al David Weber: Associate Chief Medical Officer, UNC Hospitals; Medical Director, Hospital Epidemiology: COVID-19 (SARS Co-V-2) Update

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AIRBORNE CONTACT PRECAUTIONS

- Common conditions:
 - Chicken Pox
 - Disseminated Shingles
 - Smallpox
 - Monkey pox
 - Extrapulmonary tuberculosis (draining lesions)
- AIRR- single-resident room with special air handling and ventilation capacity that meet the Facility Guidelines Institute (FGI) standards.
- N95 or higher respirator
- Essential transport only, with resident wearing a medical grade mask
- Upon discharge allow at least one hour for air to circulate

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1. Airborne Contaminant Removal

Table B.1. Air changes/hour (ACH) and time required for airborne-contaminant removal by efficiency *

ACH \pm %	Time (mins.) required for removal 99% efficiency	Time (mins.) required for removal 99.9% efficiency
2	138	207
4	69	104
6	46	69
8	35	52
10	28	41
12	23	35
15	18	28
20	14	21
50	6	8

* This table is revised from Table S3-1 in reference 4 and has been adapted from the formula for the rate of purging airborne contaminants presented in reference 1435.

<https://www.cdc.gov/infectioncontrol/guidelines/environmental/appendix/air.html#B1>

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CHICKENPOX AND SHINGLES

Disease/Condition	Type and Duration of Isolation
Chickenpox (varicella)	Airborne and Contact until lesions are dry and crusted
Shingles (Herpes zoster. Varicella zoster)	
Localize in resident with intact immune system with lesions that can be contained/covered	Standard Precautions
Disseminated disease in any resident	Airborne and Contact precautions for duration of illness
Localized disease in immunocompromised resident until disseminated infection ruled out	Airborne and Contact precautions for duration of illness

Non-immune healthcare personnel should not care for residents with Chickenpox or Shingles

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AIRBORNE CONTACT PRECAUTIONS / PRECAUCIONES PARA LA TRANSMISION POR CONTACTO Y POR VIA AEREA

STOP **ALTO**

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

Common conditions (per CDC guidelines)

- Disseminated Shingles
- Smallpox
- Extrapulmonary Tuberculosis (draining lesions)

Room Placement:

- Alcohol based handrub or wash with soap and water if readily soiled
- Fit tested NIOSH approved respirator (N95) or higher level respirator
- Healthcare worker must be fit tested for respirator and visitors should see nurse for proper use.

Wear a gown when entering room and remove before leaving.

Wear N95 or higher level respirator before entering the room and remove after exiting.

Wear gloves when entering room and remove before leaving.

Keep door closed. (Maintain negative pressure)

Additional PPE may be required per Standard Precautions.

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DROPLET CONTACT PRECAUTIONS

Common conditions:

- Rhinovirus if associated with copious secretions,
- Invasive group A streptococcal infection associated with soft tissue involvement
- Certain coronaviruses
- RSV (infants and young children)

- Private room when available or keep >3 spatial separation
- Surgical or procedure mask when entering room
- Gown and gloves on room entry and remove when leaving room
- Essential transport with resident/resident in a medical grade mask and clean gown

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DROPLET CONTACT PRECAUTIONS

PRECAUCIONES DE CONTACTO POR GOTITAS Y POR CONTACTO

Everyone must:

- Clean hands before entering and when leaving room.
- Wear a gown when entering room and remove before leaving.
- Wear surgical/procedure mask when entering the room. Remove immediately before leaving room.
- Wear gloves when entering room. Perform hand hygiene after removing gloves.

Additional PPE may be required per Standard Precautions.

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SPECIAL DROPLET CONTACT PRECAUTIONS

Common conditions:

- SARS,
- SAR-CoV-2 (COVID-19)

- Fit tested N95 or higher respirator
- Protective eyewear
- Gown and gloves
- Essential transport only with resident-resident wearing a medical grade mask

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SPECIAL DROPLET CONTACT PRECAUTIONS

PRECAUCIONES ESPECIALES PARA LA TRANSMISIÓN POR CONTACTO Y POR GOTITAS

All Healthcare Personnel must:

- Clean hands before entering and when leaving room.
- Wear a gown when entering room and remove before leaving.
- Wear N95 or higher level respirator before entering the room and remove after exiting.
- Protective eyewear (face shield or goggles)
- Wear gloves when entering room and remove before leaving.
- Place in private room. Keep door closed.

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VIRAL RESPIRATORY PATHOGENS TOOLKIT FOR NURSING HOMES

PREPARE	RESPOND	CONTROL
<ul style="list-style-type: none"> Vaccinate Allocate resources Monitor and Mask Educate Ventilate Test and treat 	<ul style="list-style-type: none"> TBP based on pathogen Remain in room Physical distancing and face mask if outside room PPE based on TBP Non-punitive sick leave policies for HCP Test if symptomatic Treat Investigate 	<ul style="list-style-type: none"> Notify the local/state PHD Initial attempts Additional measures

<https://www.cdc.gov/longtermcare/prevention/viral-respiratory-toolkit.html>

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WHEN TO DISCONTINUE TBP PRECAUTIONS

Resume Standard Precautions once high-risk exposures or active symptoms have discontinued

Refer to **Appendix A in the 2007 Isolation Guidelines-updated 2018**

Type and Duration of Precautions Recommended for Selected Infections and Conditions¹

Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings (2007)

Appendix A Updates [September 2018]

Changes: Updates and clarifications made to the table in Appendix A: Type and Duration of Precautions Recommended for Selected Infections and Conditions.

Infection/Condition	Type of Precaution	Duration of Precaution	Precautions/Comments
Abcess Draining, major	Contact + Standard	Duration of illness	Unltd drainage steps or can be contained by dressing.

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Multi-drug Resistant Organisms (MDROs)

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MULTIDRUG RESISTANT ORGANISMS

- ▶ MDRO- Organisms that develop resistance to one or more classes of antibiotics. This may result in typical antibiotic regimens not working or becoming less effective.
- ▶ Cause infections and/or colonization
- ▶ Infections caused by MDROs are:
 - ▶ More difficult to treat
 - ▶ Require more toxic antibiotics to treat
 - ▶ Often have poor resident outcomes
 - ▶ Are easily transmitted in healthcare settings

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COLONIZATION VS INFECTION

- ▶ MDRO colonization can persist for long periods of time (e.g., months) and result in silent transmission.
- ▶ Common colonization sites for MDROs include:
 - ▶ Nares
 - ▶ Axilla
 - ▶ Groin
 - ▶ Rectum

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RISK FACTORS FOR DEVELOPING A MDRO

- ▶ Duration of hospitalization
- ▶ High rates of transfer in and between hospitals
- ▶ Local institution risk factors
- ▶ **Long term care facilities**
- ▶ Intensive care units
- ▶ High rate of device utilization
- ▶ Colonization
- ▶ Prior antibiotic use

“Age, comorbid illnesses, invasive medical devices, frequent antibiotic exposure, and dependence on healthcare workers, in the setting of communal living, all serve to increase the risk of nursing home residents becoming colonized or infected with healthcare-acquired bacterial pathogens.”
(Dumyati, et. Al., 2017)

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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 (orange icon) No Known MDRO (black icon)

Slide acknowledgement CDC presentation

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- ▶ 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>

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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.

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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



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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]

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- Description of Precautions
- Summary of PPE Use and Room Restriction
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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.

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

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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

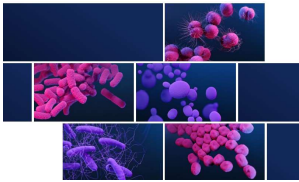
FROM: Director, Quality, Safety & Oversight Group (QSOG)

SUBJECT: Enhanced Barrier Precautions in Nursing Homes

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MDROs TARGETED BY CDC

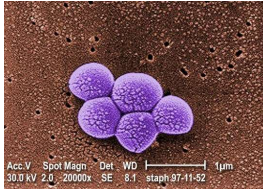
- ▶ Pan-resistant organisms:
 - ▶ Resistant to all current antibacterial agents (for example: *Acinetobacter*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*)
- ▶ Carbapenemase-producing Enterobacterales
- ▶ Carbapenemase-producing *Pseudomonas* spp.
- ▶ Carbapenemase-producing *Acinetobacter baumannii*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



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ADDITIONAL EPIDEMIOLOGICALLY IMPORTANT MDROs

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



Acc.V Spot Magn Det WD 30.0 kV 2.0 20000x SE 8.1 staph-97-11-52

Photo credit: Public Health Image Library (PHIL)

Facility has discretion for MDROs not targeted by CDC

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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**

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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

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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



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Invasive devices

Wounds

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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.





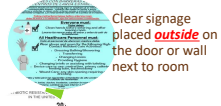
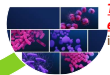
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WOUNDS CDC AND CMS

- ▶ **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.



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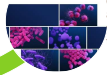
CDC

PPE place **immediately** outside the room

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

Targeted and epidemiologically important MDROs

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CMS

PPE and ABHR **readily accessible to staff**. Discretion can be used to place near or outside the room

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

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

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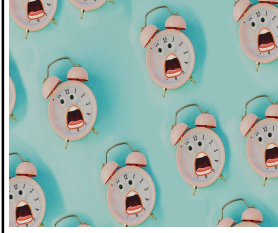
SHARED ROOMS



- ▶ 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.**

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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**

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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/EnhancedBarrierPrecautionsGown.pdf>

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STOP ENHANCED BARRIER PRECAUTIONS (LTCFs) ALTO

PRECAUCIONES CON BARRERAS REFORZADAS (CENTROS DE LARGA ESTADIA)

Familia/Visitors should not visit (having signs or symptoms of an infection or a communicable disease). Visitors should not visit if they are ill or have a communicable disease. Las visitas también dependen de la política de la institución.

Follow instructions before leaving entering room.

Everyone must:

- 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:

Toda 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 (e.g. 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:

- Vestir/bañar, duchar, transferir, cambiar la ropa de cama
- Precauciones higiénicas, cambio de ropa interior o transferir a casa al
- Cuidado o uso de dispositivos, uso central, sonda urinaria, sonda de alimentación, traqueostomía

Additional PPE may be required per Standard Precautions. El posible que se requiera equipo de protección adicional según las precauciones estándar.

Revised Date: 7/26/2022

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.

CDC

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NEUTROPENIC PRECAUTIONS

- ▶ Absolute neutrophil count (ANC) < 1500 or AMC expected to decrease to <500 over next 48 hours
- ▶ Private room if available
- ▶ Routine room cleaning
- ▶ Avoid raw or undercooked fruits, eggs, vegetables, or shellfish or cracked pepper
- ▶ No live flowers or plants
- ▶ **No staff or visitors' entry if ill**
- ▶ Surgical mask if leaving room

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NEUTROPENIC PRECAUTIONS
 Not included in CDC's Guidelines for Isolation Precautions.
PRECAUCIONES NEUTROPENICAS
 Family/visitors should not visit if having signs or symptoms of an infection or a communicable disease. Visit only under the facility's policy.
 Los familiares y visitantes no deben entrar al tener señales o síntomas de infección o de una enfermedad contagiosa. Las visitas deben reportarse de la política de la institución.
 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 when leaving room.
 Lavarse las manos antes de entrar y antes de salir de la habitación.

Avoid raw or undercooked fruits or vegetables; raw or undercooked eggs or shellfish.
 Evitar las frutas y verduras crudas o poco cocidas; los huevos o mariscos crudos o poco cocidos.

No live flowers or plants.
 No se permiten flores ni plantas vivas.

Do not enter if feeling unwell.
 No entre si está enfermo.

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

REVISSED DATE: 1/29/2022

SPICE

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SUMMARY

- ▶ Standard precautions are the primary strategy to interrupt transmission of infectious agents in healthcare facilities
 - ▶ HH,PPE, Respiratory Hygiene, Cleaning of Equipment and Environment
- ▶ Transmission-based precautions may also need to be implemented based on the type of infection and how it is transmitted
 - ▶ Contact, Droplet, Airborne and a combination of these
- ▶ Enhanced Barrier Precautions recommended by CDC and required by CMS to prevent transmission of MDROs in nursing homes.

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RESOURCES

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?msckid=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>

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ADDITIONAL RESOURCES

Type and Duration of Precautions Recommended for Selected Infections and Conditions
<https://www.cdc.gov/infectioncontrol/guidelines/isolation/appendix/type-duration-precautions.html>

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/>

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

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

Enhanced Barrier Precautions (EBPP) Steps

Protect Hand Hygiene, Gowning, Gloving, Masking

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

- ▶ Indwelling Medical Devices
- ▶ Urinary, Rectal, or Nasal Catheters
- ▶ Wounds
- ▶ Colonization or Infection with a MDRO

Protect residents and stop the spread of germs.
<https://www.cdc.gov/hai/containment/PPE-Nursing-Homes.html>

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