

# TRANSMISSION-BASED PRECAUTIONS

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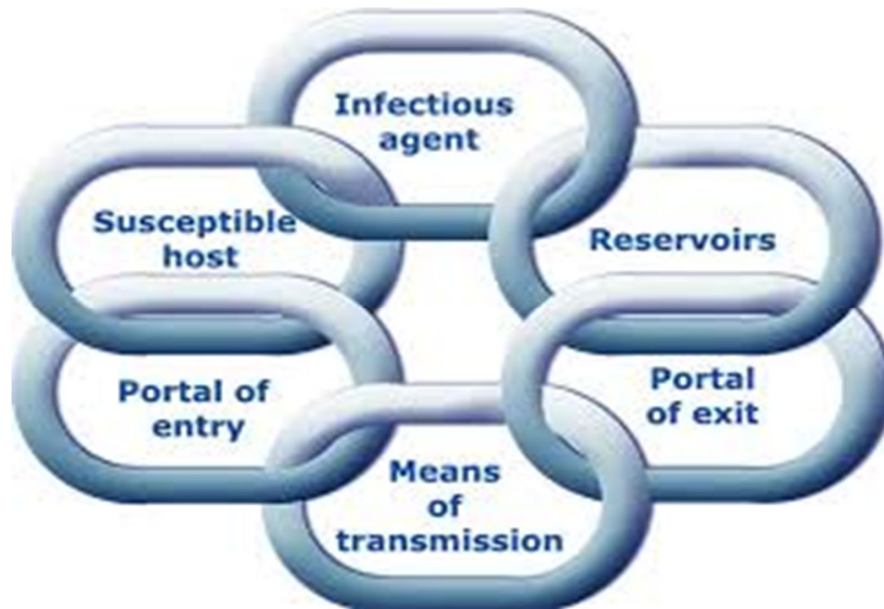
UNC School of Medicine



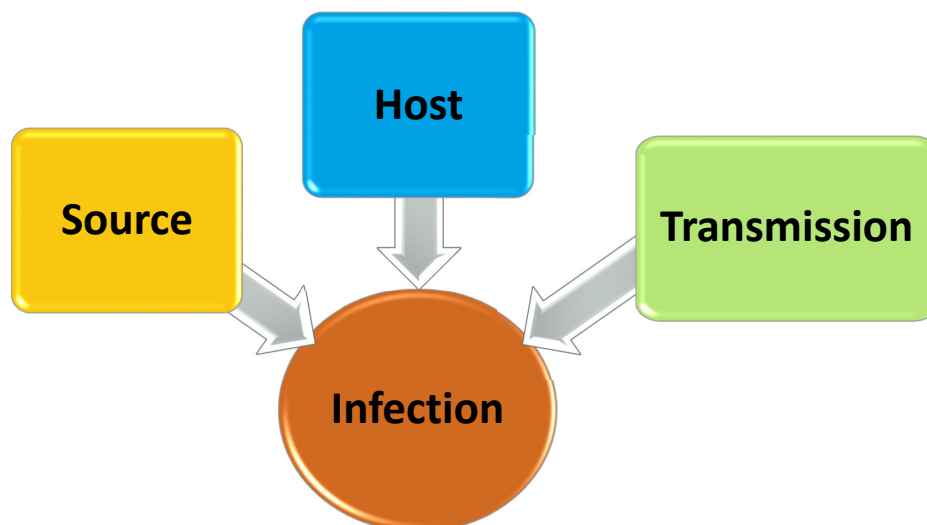
## OBJECTIVES

- Identify the chain of infection and routes of disease transmission
- Understand the history of isolation precautions guidelines and updates to the SPICE isolation precaution signage
- Recognize the effectiveness of transmission-based precautions compliance
- Describe isolation for visitors and discontinuation guidance

# CHAIN OF INFECTION



# RATIONALE BEHIND TRANSMISSION-BASED PRECAUTIONS



## SOURCES OF INFECTION



### Humans

**Patients**

**Healthcare Personnel**

**Visitors/household  
members**

### Environmental

**Common Vehicles**

**Vectorborne**



## Host Factors

**Age**

**Immobility**

**Incontinence**

**Dysphagia**

**Chronic Diseases**

**Poor Functional Status**

**Medications**

**Indwelling devices**



# ROUTES OF TRANSMISSION

- Direct Contact
- Indirect Contact
- Aerosol
- Droplet



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## DIRECT AND INDIRECT CONTACT TRANSMISSION

**Direct Contact: skin to skin touching**

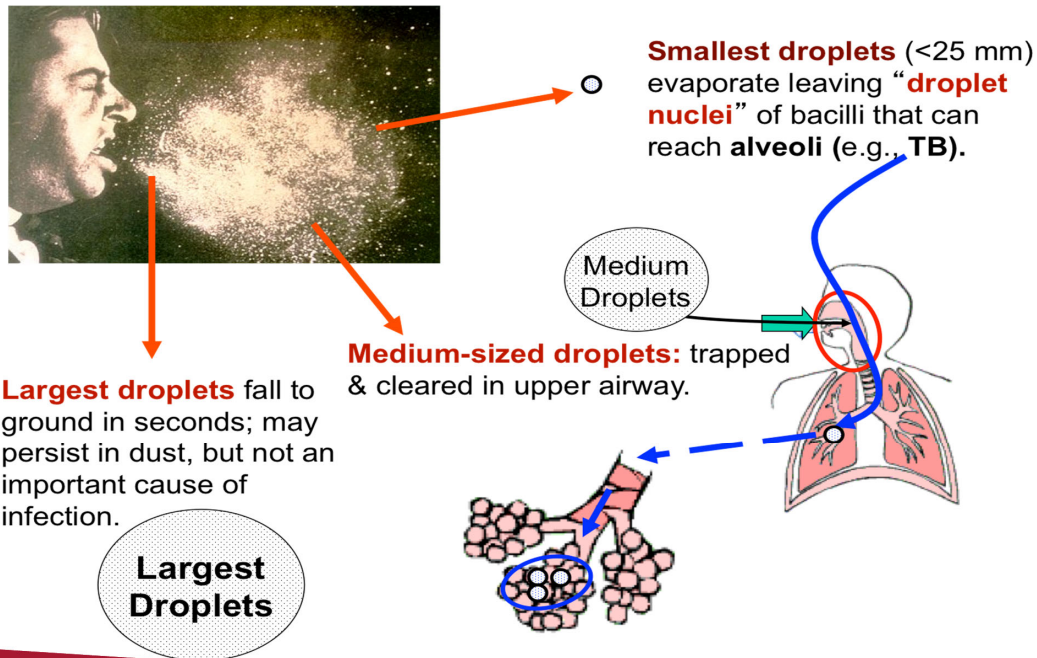


**Indirect Contact: inanimate surfaces**



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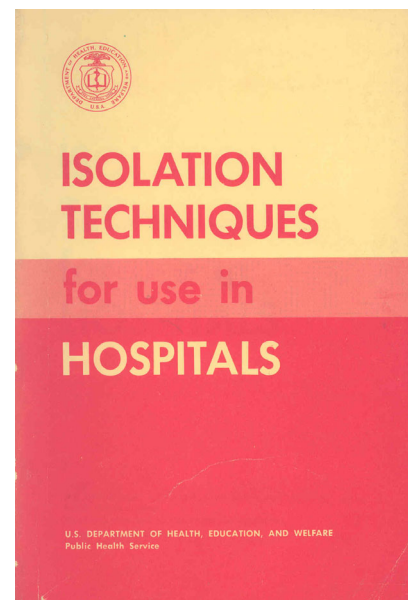
# DROPLET AND AIRBORNE TRANSMISSION



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## HISTORY OF INFECTION CONTROL PRECAUTIONS IN THE UNITED STATES

- 1970 CDC “Isolation Techniques for use in Hospitals”, 1<sup>st</sup> Edition
- Six Categories of Isolation
- 1975 CDC “Isolation Techniques in Hospitals”, 2<sup>ND</sup> Edition, color-coded category door signs



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## Strict Isolation

Visitors—Report to Nurses' Station Before Entering Room

1. Private Room—*necessary*; door must be kept closed.
2. Gowns—must be worn by all persons entering room.
3. Masks—must be worn by all persons entering room.
4. Hands—must be washed on entering and leaving room.
5. Gloves—must be worn by all persons entering room.
6. Articles—must be discarded, or wrapped before being sent to Central Supply for disinfection or sterilization.

**CDC  
1975**

## Respiratory Isolation

Visitors—Report to Nurses' Station Before Entering Room

1. Private Room—*necessary*; door must be kept closed.
2. Gowns—*not necessary*.
3. Masks—must be worn by any person entering room unless that person is not susceptible to the disease.
4. Hands—must be washed on entering and leaving room.
5. Gloves—*not necessary*.
6. Articles—those contaminated with secretions must be disinfected.

## Protective Isolation

Visitors—Report to Nurses' Station Before Entering Room

1. Private Room—*necessary*; door must be kept closed.
2. Gowns—must be worn by all persons entering room.
3. Masks—must be worn by all persons entering room.
4. Hands—must be washed on entering and leaving room.
5. Gloves—must be worn by all persons having direct contact with patient.
6. Articles—*see manual text*.

## Enteric Precautions

Visitors—Report to Nurses' Station Before Entering Room

1. Private Room—*necessary for children only*.
2. Gowns—must be worn by all persons having direct contact with patient.
3. Masks—*not necessary*.
4. Hands—must be washed on entering and leaving room.
5. Gloves—must be worn by all persons having direct contact with patient or with articles contaminated with fecal material.
6. Articles—special precautions necessary for articles contaminated with urine and feces. Articles must be disinfected or discarded.

## Wound & Skin Precautions

Visitors—Report to Nurses' Station Before Entering Room

1. Private Room—*desirable*.
  2. Gowns—must be worn by all persons having direct contact with infected wound.
  3. Masks—*not necessary* except during dressing changes.
  4. Hands—must be washed on entering and leaving room.
  5. Gloves—must be worn by all persons having direct contact with infected area.
  6. Articles—special precautions necessary for instruments, dressings, and linen.
- NOTE: See manual for Special Dressing Techniques to be used when changing dressings.

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# HISTORY OF ISOLATION PRECAUTIONS

- **1983 CDC Isolation Precautions in Hospital**  
Category-based precautions (Airborne Isolation, Droplet and Contact) plus blood and body fluids precautions
- **1985 Introduced Universal Precautions** all patients considered infectious regardless of testing
- **1987 Body Substance Isolation**  
- focused on worker protection)
- **1996 CDC HICPAC Revised Isolation Guidelines**  
- Introduced Standard Precautions and kept 3 categories of transmission-based precautions

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# **2006 MANAGEMENT OF RESISTANT ORGANISMS IN HEALTHCARE SETTINGS**

## **2007 GUIDELINE FOR ISOLATION PRECAUTIONS: PREVENTING TRANSMISSION OF INFECTIOUS AGENTS IN HEALTHCARE SETTINGS**

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- **Inclusion of non-hospital settings**
- **Re-emphasis on Standard Precautions**
  - **Safe injection Practices**
  - **Respiratory hygiene practices**
  - **Use of mask during spinal procedures**



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## **KEY CONCEPTS**

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



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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, patients, and visitors**
- **Infrastructure support for surveillance, outbreak tracking, and data management**



## HISTORY OF NC SPICE STANDARDIZED SIGNAGE

**In 2008, NC SPICE in collaboration with NC APIC to create a uniform color-coded signage for:**

- **Airborne Isolation Precautions**
- **Contact Precautions**
- **Contact Enteric Precautions**
- **Droplet Precautions**





## WHY STANDARDIZE ISOLATION PRECAUTIONS SIGNAGE?

- **Transmission based precautions prevents the spread of infections between patients and to staff**
- **Supports healthcare facilities to implement CDC guidelines**
- **Variation in signage makes care more difficult and puts patients and residents at risk.**
- **Increase compliance and consistency by healthcare providers and visitors.**
- **Use of SPICE signage is voluntary.**



## UPDATED AND NEW NC SPICE ISOLATION PRECAUTIONS SIGNAGE

- Signage to have simple, big easy to see pictures
- Signage to minimize reading
- Signage to not send family and visitors looking for nursing staff
- Provides family education and directions for protection
- Provides easy access to information for staff



# NC STANDARDIZED ISOLATION SIGNAGE (PUBLISHED JANUARY 2022)

10 isolation precaution categories

- Standard Precautions (coral) **NEW**
- Contact precautions (orange)
- Enteric Precautions (orange with brown)
- Droplet Precautions (green)
- Airborne Precautions (blue)
- Neutropenic Precautions (purple) **New**
- Contact Droplet Precautions (green/orange) **New**
- Special Droplet Contact Precautions (red/green orange)
- Protective Precautions (gray)
- Enhanced Barrier Precautions (teal) **New**



<https://spice.unc.edu/resources/nc-standardized-isolation-signage-published-january-2022/>



## STANDARD PRECAUTIONS

- Hand hygiene
- Gown and glove if soiling likely
- Wear face covering if splashing is likely
- Clean and disinfecting medical equipment and devices between patients/residents
- Follow safe injection practices



# STANDARD PRECAUTIONS

- Preferred use of ABHR

Follow safe infection practices:

- Prepare injections in a clean area,
- Disinfect the rubber septum on medication vial with alcohol before piercing,
- Use needles or syringes for only one patient/resident this includes manufactured prefilled syringes such as insulin pens
- Single dose vials accessed one time

**Standard Precautions**

Standard Precautions are used for all patient care. They're based on a risk assessment and make use of common sense practices, including use of personal protective equipment to protect healthcare providers from infection and prevent the spread of infection from patient to patient.

**Perform Hand Hygiene**

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

**Respiratory Hygiene/Cough Etiquette**

The following measures to contain respiratory secretions are recommended for all individuals with signs and symptoms of a respiratory infection:

- Cover your mouth and nose with a tissue when coughing or sneezing;
- Use the nearest waste receptacle to dispose of the tissue after use;
- Perform hand hygiene (e.g., hand washing with non-antimicrobial soap and water, alcohol-based handrub, or antiseptic handwash) after having contact with respiratory secretions and contaminated objects/materials.

**Personal Protective Equipment must be worn if exposure to infectious material (i.e. blood and body fluids) is anticipated.**

- Masks- select appropriate mask
- 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
- Remove mask -or ear loop masks stretch the ear loops, remove and handle only ear loops.
- Alcohol based handrub or wash with soap and water if visibly soiled

**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.

**Follow safe injection practices:**

- Prepare injections using aseptic technique in a clean area.
- Disinfect the rubber septum on a medication vial with alcohol before piercing.
- Do not use needles or syringes for more than one patient (this includes manufactured prefilled syringes and other devices such as insulin pens).
- Single dose vials should be accessed one time only and for one patient only. Any remaining contents should be discarded.

**Family/Visitors are not to enter the room if infectious with fever, cough, rash or diarrhea. Children should not visit if unable to comply with requirements.**

## UNIVERSAL RECOMMENDATIONS FOR ISOLATION PRECAUTIONS


- Hand Hygiene- ABHR preferred
- Dishes and Utensils: No special precautions
- Trash and Linen Management: No special trash or linen handling unless outside of bag visibly contaminated
- Personnel protective equipment: single use only.
- Duration of Precautions: Follow Appendix A-CDC 2007 Isolation Guidelines
- Visitation: Should not enter if feeling ill. Visitation also based on facility's policy.

**STOP** AIRBORNE PRECAUTIONS  
PRECAUCIONES DE  
TRANSMISION AÉREA **ALTO**


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.*

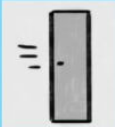
**Everyone must:**



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



**Wear a respirator (N95) or higher level respirator prior to entering the room. Remove after exiting the room.**  
*Visitors-See nurse for instruction on mask or respirator selection and use.*  
*Usar un respirador (N95) o un respirador de nivel superior antes de entrar a la habitación. Quitárselo después de salir de la habitación.*  
*Visitantes- consulte con la enfermera para obtener instrucciones sobre la selección y el uso de*



**Keep door closed. (Maintain negative pressure)**  
*Mantenga la puerta cerrada. (Mantener presión negativa)*

**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

**Airborne Precautions**

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

**Common conditions (per CDC guidelines)**  
*Mycobacteria tuberculosis (TB)*  
*Measles*

**Room Placement:**  
Preferred placement for patients who require Airborne Precautions is in an airborne infection isolation room (AIIR). An AIIR is a single-patient room that is equipped with special air handling and ventilation capacity that meet the Facility Guidelines Institute (FGI) standards for AIIR. In settings where Airborne Precautions cannot be implemented due to limited engineering resources (e.g., physician offices), masking the patient, placing the patient in a private room (e.g., office examination room) with the door closed, and providing N95 or higher level respirators or masks if respirators are not available for healthcare personnel will reduce the likelihood of airborne transmission until the patient is either transferred to a facility with an AIIR or returned to the home environment, as deemed medically appropriate.

**Personal Protective Equipment**  
*Put on in this order*

- Alcohol based handrub or wash with soap and water if visibly 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.

**Take off and dispose in this order**

- N95 respirator- Do NOT grasp front of the respirator. Grasp bottom elastics then the ones at the top.
- Alcohol based handrub or wash hands with soap and water if visibly soiled.

**Dishes/Utensils:**  
No special precautions. Should be managed in accordance with routine procedures.

**Room Cleaning:**  
Follow facility policy for Airborne Precautions. When in doubt keep sign on door and room closed for one hour to allow room air to circulate and filter.

**Trash and Linen Management:**  
Bag linen and trash in patient room (double bagging of trash or linen is not necessary unless outside of bag visibly contaminated).

**Transport:**  
Essential transport only. Place patient in a medical grade mask. Clean and disinfect transport equipment. Alert receiving department regarding patient/resident isolation precaution status.

**Duration of Precautions:**  
For 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



## AIRBORNE PRECAUTIONS

- Common conditions: tuberculosis, measles
- Preferred Airborne Isolation Room (AIIR)
- N95 or higher respirator
- Keep door closed to maintain negative pressure
- Direct visitors to nurse's station before entering
- Upon discharge allow at least one hour for air to circulate
- Private room required





**STOP** CONTACT PRECAUTIONS  
PRECAUCIONES DE  
TRANSMISIÓN POR CONTACTO **ALTO**

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.*
- 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

**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 *Enterobacteriales* (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

**Diapers/Urinals:**  
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


REVISED DATE: 1/20/22



## 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
  - Disposable or dedicated equipment
  - Transport patients in a fresh gown






## DROPLET PRECAUTIONS

### PRECAUCIONES DE TRANSMISIÓN POR GOTAS



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 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.*

Translated by UNC Health Interpreter Services REVISED DATE: 1/20/2022

**Droplet Precautions**

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

**Common conditions (per CDC guidelines)**

*B. pertussis* (Whooping cough)  
Influenza virus  
Rhinovirus  
Known or suspected *Neisseria meningitidis* (meningococcal) and *H. influenzae* meningitis  
Mumps  
Rubella  
Parvovirus B19

**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.  
Spatial separation of ≥3 feet and drawing the curtain between patient beds is especially important for patients in multi-bed rooms with infections transmitted by the droplet route.

**Personal Protective Equipment**  
Put on in this order

- Alcohol based handrub or wash with soap and water if visibly soiled
- Mask- Cover nose, mouth, and chin. If wearing a mask with ties, all ties must be secured.

Take off and dispose in this order

- Mask- Do NOT grasp front of the mask when removing. Grasp bottom ties then the ties at top and pull away from face. For ear loop masks stretch the ear loops, remove, and handle only ear loops.
- Alcohol based handrub 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 Droplet 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 medical grade mask. Clean and disinfect transport equipment. Alert receiving department regarding patient/resident isolation precaution status.

**Duration of Precautions:**  
For 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



# DROPLET PRECAUTIONS

- Common conditions: pertussis, Influenza, Rhinovirus, Neisseria meningitides, Mumps, Rubella, Parvovirus B19
  - Surgical or procedure mask upon entering the room
- Private room when available
  - Transport patient in a medical grade mask.





## ENTERIC PRECAUTIONS

### PRECAUCIONES DE TRANSMISIÓN POR ENTÉRICA

STOP

ALTO

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 with an EPA K list disinfectant.**  
*Usar equipo desechable 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 utilizar equipo de protección personal adicional según las precauciones estándar.

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### Enteric Precautions

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

**Common conditions:**  
*Clostridioides difficile*  
 Norovirus

**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
- During an outbreak, consider using soap & water instead of alcohol-based hand sanitizers after removing gloves.
- 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 handrub or wash hands with soap and water if visibly soiled. If your institution experiences an outbreak, consider using soap and water instead of alcohol-based hand sanitizers for hand hygiene after removing gloves while caring for patients with CDI.

**Diaper/Urinals:**  
 No special precautions. Should be managed in accordance with routine procedures.


**Room Cleaning:**  
 Follow facility policy. Use a disinfectant included on the EPA LIST K. Examples of these include: Bleach wipes, bleach and other sporicidal disinfectants.

**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.

## ENTERIC PRECAUTIONS

- **Common conditions:**  
**Clostridioides difficile,**  
**Norovirus, Rotovirus**
- **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.**



## DROPLET CONTACT PRECAUTIONS



PRECAUCIONES DE TRANSMISIÓN POR GOTAS Y 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: Todos deben:**

**Clean hands before entering and when leaving room.**  
*Lavarse las manos antes de entrar y 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.*

**Wear surgical/procedure mask when entering the room. Remove immediately before leaving room.**  
*Usar una mascarilla quirúrgica o para procedimientos al entrar a la habitación. Quitársela justo antes de salir de la habitación.*

**Wear gloves when entering room. Perform hand hygiene after removing gloves.**  
*Usar guantes al entrar a la habitación. Llevar a cabo la higiene de manos después de quitarse los guantes.*

**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

### Droplet Contact Precautions

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

**Common conditions (per CDC guidelines)**  
 Rhinovirus if associated with copious secretions  
 Invasive group A streptococcal infection associated with soft tissue involvement  
 Adenovirus pneumonia

**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. Spatial separation of >3 feet and drawing the curtain between patient/resident beds is especially important for patients/residents in multi-bed rooms with infections transmitted by the droplet route.

**Personal Protective Equipment**  
 Put on in this order

- Alcohol based handrub or wash with soap and water if visibly soiled
- Gown
- Surgical/procedure mask- Cover nose, mouth, and chin. If wearing a mask with ties, all ties must be secured.
- Gloves

**Take off and dispose in this order**

- Gloves- perform hand hygiene after removing gloves
- Gown- Unfasten gown ties, taking care that sleeves don't contact your body when reaching for ties. Pull gown away from neck and shoulders, touching inside of gown only.
- Surgical/procedure mask- Do NOT grasp front of the mask when removing. Grasp bottom ties then the ties at top and pull away from face. For ear loop masks stretch the ear loops, remove, and handle only ear loops.
- Alcohol based handrub or wash hands with soap and water if visibly soiled.

**Disposal/Utilize:**

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

**Room and Equipment Cleaning:**

Follow facility policy for Droplet Contact Precautions for room cleaning. Use patient-dedicated or single-use disposable equipment. If shared equipment is used, clean and disinfect between patients.

**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 medical grade mask. Clean and disinfect transport equipment. Alert receiving department regarding patient/resident isolation precaution status.

**Duration of Precautions:**

For 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

## 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 patient/resident in a medical grade mask and clean gown

## SPECIAL DROPLET CONTACT PRECAUTIONS

PRECAUCIONES ESPECIALES PARA LA TRANSMISIÓN POR CONTACTO Y POR GOTAS

*Family/Visitors should not visit if having signs or symptoms of an infectious or 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 institución.*

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

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

-  Clean hands before entering and when leaving room.  
*Lavarse las manos antes de entrar y antes de salir de la habitación.*
-  Wear a gown when entering room and remove before leaving.  
*Usar una bata al entrar y quitársela antes de salir.*
-  Wear N95 or higher level respirator before entering the room and remove after exiting.  
*Usar un respirador N95 o un respirador de nivel superior antes de entrar a la habitación y quitárselo después de salir.*
-  Protective eyewear (face shield or goggles)  
*Protección para los ojos (careta o gafas protectoras)*
-  Wear gloves when entering room and remove before leaving.  
*Usar guantes al entrar a la habitación y quitárselos antes de salir.*
-  Place in private room. Keep door closed (if safe to do so).  
*Colocar en habitación privada. Mantenga la puerta cerrada (si es seguro hacerlo).*

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

REVISADO POR: [illegible] REVISADO EL: 2/9/2022

### Special Droplet Contact Precautions

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

**Common conditions (per CDC guidelines)**

SARS, COVID-19

**Room Placement:**

Place patient in a single-person room. Keep the door closed UNLESS it poses a safety risk (i.e., fall, memory care units). Dedicated bathroom should be in the room. When private rooms are unavailable, place together in the same room persons who are colonized or infected with the same pathogen.

Aerosol Generating Procedures (AGPs) should be performed in an Airborne Infection Isolation Room (AIIR) if available.

**Personal Protective Equipment:**

*Put on in this order:*

- Alcohol based handrub or wash with soap and water if visibly soiled
  - Gown
  - 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.

*Take off and dispose in this order:*

- Eye Protection- Remove goggles or face shield from the back by lifting head band or ear pieces
- Gown- Unfasten gown ties, taking care that sleeves don't contact your body when reaching for ties. Pull gown away from neck and shoulders, touching inside of gown only.
- N95 respirator- Do NOT grasp front of the respirator. Grasp bottom elastics then the ones at the top.
  - Alcohol based handrub or wash hands with soap and water if visibly soiled.

**Diapers/Utensils:**

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

**Room Cleaning:**

Follow facility policy for Special Droplet 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 medical grade mask. Clean and disinfect transport equipment. Alert receiving department regarding patient/resident isolation precaution status.


**Duration of Precautions:**

For 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


## SPECIAL DROPLET CONTACT PRECAUTIONS

- Common conditions: SARS, SAR-CoV-2 (COVID-19)
- ~~AIIR single patient room with special air handling and ventilation capacity that meet the Facility Guidelines Institute (FGI) standards. Exception is for AGPS~~
- Private room with door closed unless fall risk.
- Fit tested N95 or higher respirator
- Protective eyewear
- Essential transport only with patient-resident wearing a medical grade mask
- ~~Upon discharge allow at least one hour for air to circulate~~





## AIRBORNE CONTACT PRECAUTIONS




**PRECAUCIONES PARA LA TRANSMISION POR CONTACTO Y POR VIA AEREA**


*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.*


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




**Clean hands before entering and when leaving room.**  
*Lavarse las manos antes de entrar y al 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.*



**Wear N95 or higher level respirator before entering the room and remove after exiting.**  
*Usar un respirador N95 o un respirador de nivel superior antes de entrar a la habitación y quitárselo después de salir.*



**Wear gloves when entering room and remove before leaving.**  
*Usar guantes al entrar a la habitación y quitárselos antes de salir.*



**Keep door closed. (Maintain negative pressure)**  
*Mantener la puerta cerrada. (Mantener presión negativa).*

**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

### Airborne Contact Precautions

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

**Common conditions (per CDC guidelines)**

- Chicken Pox
- Disseminated Shingles
- Smallpox
- Monkey pox
- Extrapulmonary tuberculosis (draining lesions)

**Room Placement:**

Preferred placement for patients who require Airborne Precautions is in an airborne infection isolation room (AIIR). An AIIR is a single-patient room that is equipped with special air handling and ventilation capacity that meet the Facility Guidelines Institute (FGI) standards for AIIR. In settings where Airborne Precautions cannot be implemented due to limited engineering resources (e.g., physician offices), masking the patient, placing the patient in a private room (e.g., office examination room) with the door closed, and providing N95 or higher level respirators or masks if respirators are not available for healthcare personnel will reduce the likelihood of airborne transmission until the patient is either transferred to a facility with an AIIR or returned to the home environment, as deemed medically appropriate.

**Personal Protective Equipment:**

*Put on in this order*

- Alcohol based handrub or wash with soap and water if visibly soiled
- Gown

Healthcare worker must be fit tested for respirator and visitors should see nurse for proper use.

- Gloves

*Take off and dispose in this order*

- Gloves
- Gown- Unfasten gown ties, taking care that sleeves don't contact your body when reaching for ties. Pull gown away from neck and shoulders, touching inside of gown only.
- N95 respirator- Do NOT grasp front of respirator. Grasp bottom elastics then the ones at the top.
  - Alcohol based handrub or wash hands with soap and water if visibly soiled.

**Dishes/Utensils:**

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

**Room Cleaning:**

Follow facility policy for Airborne Contact Precautions

**Trash and Linen Management:**


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

**Transport:**

Essential transport only. Place patient in a medical grade mask. Clean and disinfect transport equipment. Alert receiving department regarding patient isolation precaution status.


**Duration of Precautions:**

For 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




## AIRBORNE CONTACT PRECAUTIONS

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



## 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 LINC 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.



## ENHANCED BARRIER PRECAUTIONS (LCTFS)

- Infection or colonization with a novel or targeted MDRO when Contact Precautions don't apply.
  - Wounds and/or indwelling medical devices regardless of MDRO colonization status who reside on a unit/wing where a resident known to be infected or colonized with a novel or targeted MDRO resides.
- Wear gloves and gown for **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



## NEUTROPENIC PRECAUTIONS

Not included in CDC's Guidelines for Isolation Precautions



## PRECAUCIONES NEUTROPÉNICAS

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 when leaving room.  
*Lavarse las manos antes de entrar y antes de salir de la habitación.*
-   Avoid raw or under cooked 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.*

Translated by UNIC Health Interpreter Services      REVISED DATE: 1/20/2022

### Neutropenic Precautions

Neutropenia — The definition of neutropenia varies from institution to institution, but neutropenia is usually defined as an absolute neutrophil count (ANC) <1500 or 1000 cells/microL and severe neutropenia as an ANC <500 cells/microL, or an ANC that is expected to decrease to <500 cells/microL over the next 48 hours [2,3]. Profound neutropenia is defined as an ANC <100 cells/microL. The risk of clinically important infection rises as the neutrophil count falls below 500 cells/microL and is higher in those with a prolonged duration of neutropenia (>7 days).

**Room Placement:**  
Use private room when available.

**Personal Protective Equipment**  
Per Standard Precautions

**Dishes/Utensils:**  
No special precautions. Should be managed in accordance with routine procedures.

**Room Cleaning:**  
Follow facility policy for Neutropenic 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 medical grade mask. Clean and disinfect transport equipment. Alert receiving department regarding patient/resident isolation precaution status.

**Other Special Precautions:**


- No live flowers or plants.
- Do not enter if feeling unwell.
- Avoid fresh uncooked fruits and vegetables (cooked fruits and vegetables are okay), raw or undercooked eggs or shellfish. Only use desiccated pepper.




## NEUTROPENIC PRECAUTIONS

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





**PROTECTIVE PRECAUTIONS**




**PRECAUCIONES PROTECTORAS**


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 when leaving room.**  
*Lavarse las manos antes de entrar y antes de salir de la habitación.*



**Well sealed private room with filtering, air flow, air pressure, and ventilation requirements (specified on back of sign)**  
*Habitación privada bien sellada con requisitos de filtración, flujo de aire, presión de aire y ventilación (especificados en la parte posterior del letrero)*



**No dried or fresh flowers or potted plants.**  
*No se permiten flores frescas o secas ni plantas vivas.*



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

Personal protective equipment may be required per Standard Precautions.  
*Es posible que se exija utilizar el equipo de protección personal según las precauciones estándar.*

Translated by UNC Health Interpreter Services REVISED DATE: 1/20/2022

**Protective Precautions**  
*Remove sign after discontinuation of precautions.*

A Protective Environment is designed for allogeneic hematopoietic stem cell transplant (HSCT) patients to minimize fungal spore counts in the air and reduce the risk of invasive environmental fungal infections.

**Room Placement:**

- Filter incoming air using central or point-of-use high efficiency particulate (HEPA) filters capable of removing 99.7% of particles.
  - Ensure at least 12 air changes per hour (ACH).
- Direct room airflow with the air supply on one side or the room that moves air across the patient bed and exhausted on opposite side.
- Ensure positive air pressure in room and monitor daily with visual indicators (smoke tubes or flutter strips).
- Ensure room is well-sealed to prevent infiltration of outside air (including sealed walls, floors, ceilings, windows, electrical outlets-if leakage detected, locate source and repair).
  - Use self-closing doors on all room exits.

**Personal Protective Equipment**

- Alcohol based handrub or wash with soap and water if visibly soiled.
  - PPE indicated per standard precautions.
- After PPE removal, alcohol based handrub or wash hands with soap and water if visibly soiled.

**Dishes/Utensils:**

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

**Room Cleaning:**

- Daily wet-dusting of horizontal surfaces using cloths moistened with EPA-registered hospital disinfectant/delugent (includes sprinker heads). Avoid dusting methods that disperse dust.
- No carpeting in hallways and patient rooms. No upholstered furniture and furnishings. Use vacuum cleaner with HEPA filters when vacuum cleaning is necessary.

**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. To prevent inhalation of fungal spores during periods when construction, renovation, or other dust-generating activities that may be ongoing in and around the health-care facility, it has been advised that severely immunocompromised patients wear a high-efficiency respiratory protection device (e.g., an N95 respirator- if medically fit to tolerate) when they leave the Protective Environment. Clean and disinfect transport equipment. Alert receiving department regarding patient/resident isolation precaution status.

**Other Special Precautions:**

- Prohibit dried and fresh flowers and potted plants
- For patients requiring both a Protective Environment (PE) and Airborne Infection Isolation (AIIR), use an anteroom to ensure proper air balance relationships and provide independent exhaust of contaminated air to the outside or place a HEPA filter in the exhaust duct. If an anteroom is not available, place patient in an AIIR and use portable ventilation units, industrial-grade HEPA filters to enhance filtration of spores.

For additional guidance on protective environments, please see guidance:  
<https://www.cdc.gov/infectioncontrol/guidelines/isolation/appendb/environment.html>



## PROTECTIVE PRECAUTIONS

- Designed for (HSCT)
- Dust reduction cleaning
- Private room
- No dried or fresh flowers or potted plants
- HEPA filters (99.7%)
- Do not enter if feeling unwell.
- $\geq 12$  AER
- Essential transport only wearing N95 respirator
- Positive air pressure with monitoring
- Self-sealing room exits.

## SYNDROMIC AND EMPIRIC APPLICATION OF TRANSMISSION-BASED PRECAUTIONS

- **Diagnosis requires lab confirmation**
- **Culture-based lab test require 2 or more days**
- **Precautions should be implemented while awaiting results**
  - **Based on clinical presentation and likely pathogen**
- **Reduces transmission opportunities**



Clinical Syndrome or Condition	Potential Pathogens	Empiric Precautions (always includes Standard Precautions)
<b>Diarrhea</b>		
Acute diarrhea with infectious cause in incontinent or diapered patient	Enteric Pathogens	Contact Precautions
<b>Rash or Exanthems, generalized, unknown etiology</b>		
Petechial/Echymotic w/ fever	Neisseria meningitides	Droplet Precautions for 1 <sup>st</sup> 24hrs of antimicrobial tx.
Vesicular	Varicella-zoster, herpes simplex, vaccinia viruses	Airborne plus Contact precautions
<b>Respiratory Infections</b>		
Cough/fever/upper lobe infiltrate	Tb, Respiratory Viruses, S. aureus	Airborne Precautions plus contact
<b>Skin or Wound Infection</b>		
Abscess or draining wound that cannot be covered	Staphylococcus aureus, group A streptococcus	Contact Precautions Add Droplet for the first 24 hours of antimicrobial therapy if group A strep disease suspected





## DO ALL MDROS REQUIRE TRANSMISSION-BASED PRECAUTIONS?

- Epidemiologic significant pathogens - MDROs judged by the IPCP, based on local, state, regional, or national recommendations to be of clinical and epidemiologic significance.
- Contact Precautions recommended in settings with evidence of ongoing transmission, acute-care settings with increased risk for transmission or wounds that cannot be contained by dressings.
- Contact state health department for guidance regarding new or emerging MDRO.

2007 CDC HICPAC Isolation-Precautions Guidelines

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## MDR-GNR COLONIZATION PERSISTENCE

**Table 3. Duration of colonization with multidrug-resistant gram-negative bacteria (MDRGNB).**

MDRGNB	No. of isolates	Duration of colonization, median days (range)
All species	52	144 (41–349)
<i>Proteus mirabilis</i>	15	161 (50–279)
<i>Klebsiella pneumoniae</i>	12	132 (70–349)
<i>Escherichia coli</i>	8	178 (50–259)
<i>Proteus stuartii</i>	7	121 (50–322)
<i>Morganella morganii</i>	5	103 (41–328)
<i>Citrobacter</i> species	4	76 (41–168)
<i>Enterobacter cloacae</i>	1	133

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## **ROLES OF ACTIVE SURVEILLANCE- TIER 2 CDC RECOMMENDATIONS**

- (Tier 2 recommendations)
- Targeted surveillance of high-risk patients:
  - Useful during outbreaks and when incidence of an MDR-GNR is rising or not declining despite routine control efforts
- Point prevalence surveys during outbreaks:
  - Define reservoir and guide control efforts
  - Determine if on-going surveillance cultures needed



## **HOW EFFECTIVE ARE CONTACT PRECAUTIONS?**

- Unknown
- Ineffective “MRSA” if adherence is poor (20-30%)
  - Afif W, et al. Am J Infect Control 2002;30:430-433
  - Cromer AL, et al. Am J Infect Control 2004;32:451-5
- Most data from outbreak settings
- Given extent of environmental contamination with some MDR-GNRs, barrier precautions make theoretical sense.



# DOFFING AND DUFFING EFFECTIVENESS

**1. Donning PPE: protocol deviation in 27% EVD; 50% CP**

**DoFFing PPE: protocol deviation in 100% EVD; 67% CP**

**Fluorescence detected: for EVD 44% EVD; 28% CP**

Kwon JH, et al. Assessment of HCWs Protocol Deviations and Self-Contamination During Personal Protective Equipment Donning and DoFFing. ICHE. September 2017.

**2. HCP contaminated almost 80% of the PPE simulations.**

Kang, et al. Use of personal protective equipment among health care personnel: Results of clinical observations and simulations. (2017)

**3. Mannequin simulated BBF with UV-fluorescent tracers**

Poller B, et al. A fluorescence-based simulation exercise for training HCW in the use of personal protective equipment, Journal of Hospital Infection 2018,

**4. HCP (ICU) 39% error doffing, 36% MDRO contaminated**

Di Fiore et al, Improper Removal of Personal Protective Equipment Contaminates HCWs ICHE, March 2018.



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## UPDATE ON RECOMMENDATIONS FOR PRECAUTIONS FOR VISITORS

- Use guided by specific pathogen, underlying infectious condition and endemicity of the organism in hospital and community

SHEA EXPERT GUIDANCE

### Isolation Precautions for Visitors

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Infection Control & Hospital Epidemiology / FirstView Article / April 2015, pp 1 - 12

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# ISOLATION PRECAUTIONS FOR VISITORS

- **All visitors comply with hand hygiene before and after visiting**
- **Endemic situations with MRSA and VRE**
  - **No Contact Precautions for visitors in routine circumstances**
  - **Visitors visiting multiple patients should use Contact Precautions**

Infection Control & Hospital Epidemiology / FirstView Article / April 2015, pp 1 - 12

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# DISCONTINUING CONTACT PRECAUTIONS

- **Disease specific recommendations in Appendix A of CDC Isolation-Precautions Guidelines**
  - **Type and duration of precautions**
- **Remain in effect for limited period of time (i.e. while the risk for transmission persist or for the duration of illness)**
- **New SHEA Expert Guidance 2018**

Ref. SHEA Duration of Contact Precautions. ICHE. 2018 by The Society for Healthcare Epidemiology of America. All rights reserved. DOI: 10.1017/ice.2017.245

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# DISCONTINUATION OF CP FOR MRSA

Establish policy for previously MRSA colonized or infected.

- Off antibiotics effective against MRSA  $\geq$  72 hrs (3 weeks for dialysis)
- Optimal number of surveillance cultures unclear
  - Optimal culture site unclear, anterior nares common

Ref. SHEA Duration of Contact Precautions. ICHE. 2018 by The Society for Healthcare Epidemiology of America. All rights reserved. DOI: 10.1017/ice.2017.245

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## SUMMARY

- Chain of Infection
- Routes of disease transmission
- NC SPICE revised the standardized isolation precautions signage

<https://spice.unc.edu/resources/nc-standardized-isolation-signage/>

- Effectiveness of TBP
- Visitor guidance
- TBP discontinuation for MRDO

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# QUESTIONS

??????????

