

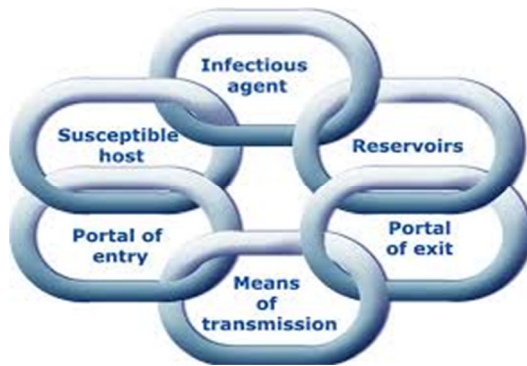
TRANSMISSION-BASED PRECAUTIONS

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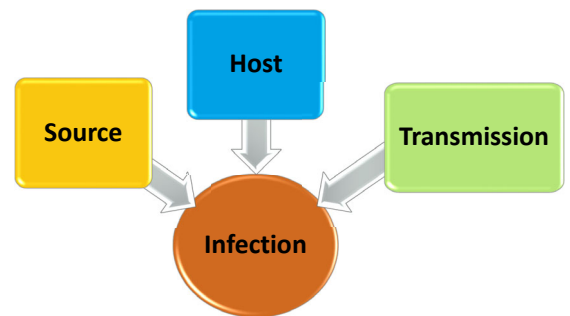
OBJECTIVES

- 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



DIRECT AND INDIRECT CONTACT TRANSMISSION

Direct Contact: skin to skin touching



Indirect Contact: inanimate surfaces



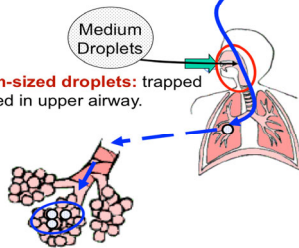
DROPLET AND AIRBORNE TRANSMISSION



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

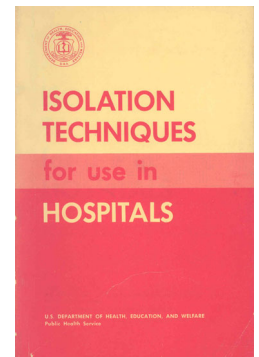
Largest droplets fall to ground in seconds; may persist in dust, but not an important cause of infection.

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



HISTORY OF INFECTION CONTROL PRECAUTIONS IN THE UNITED STATES

- 1970 CDC "Isolation Techniques for use in Hospitals", 1st Edition
- Six Categories of Isolation
- 1975 CDC "Isolation Techniques in Hospitals", 2ND Edition, color-coded category door signs



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

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—must be worn by all persons having direct contact with patient.
3. Masks—must be worn by all persons entering room before that person is not acceptable to the disease.
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 fluid secreted.
6. Articles—those contaminated with excretions must be discarded.

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—must be worn by all persons entering room before that person is not acceptable to the disease.
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 fluid secreted.
6. Articles—special precautions necessary for articles contaminated with stool and vomit. Articles must be discarded or decontaminated.

Wound & Skin Precautions

Visitors—Report to Nurses' Station Before Entering Room

1. Private Room—necessary.
2. Gowns—must be worn by all persons having direct contact with infected wound.
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 infected area.
6. Articles—special precautions necessary for articles contaminated with wound exudate, drainage, and blood.

NOTE: See manual for Special Dressing Techniques to be used when changing dressings.

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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

JANE D. SIEGEL, MD; EMILY RHINEHART, RN MPH CIC; MARGUERITE JACKSON, PHD; LINDA
CHIARELLO, RN MS; THE HEALTHCARE INFECTION CONTROL PRACTICES ADVISORY COMMITTEE

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



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



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**

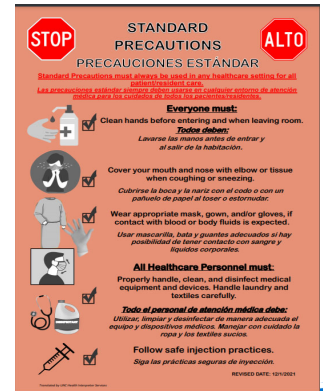
<https://spice.unc.edu/resources/nc-standardized-isolation-signage-published-january-2022/>



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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



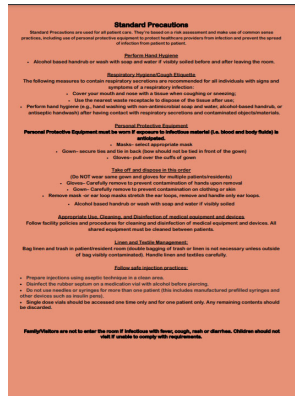
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STANDARD PRECAUTIONS

- Preferred use of ABHR

Follow safe infection practices:

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

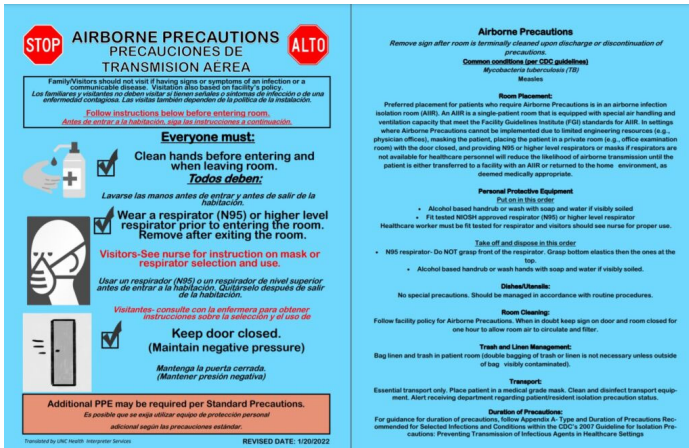


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UNIVERSAL RECOMMENDATIONS FOR ISOLATION PRECAUTIONS

- 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.

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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

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STOP

CONTACT PRECAUTIONS

PRECAUCIONES DE TRANSMISIÓN POR CONTACTO

Family/Visitors should not visit if having signs or symptoms of an infection or a communicable disease. Visitation also based on facility's policy.

Las familias y visitantes no deben entrar 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.

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 room.

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 equipo de protección personal adicional según las precauciones estándar.

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

Common conditions (per CDC guidelines):

Resistant (multidrug-resistant) *Staphylococcus aureus* (MRSA)

Vancomycin-resistant *Enterococcus* (VRE)

Carbapenem-resistant *Enterobacteriaceae* (CRE)

Extended spectrum beta-lactamase producers *Gram Negative Bacteria* (ESBL, GNB)

Candida auris (C. auris)

Other multidrug-resistant organisms

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 patient/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

Don't/Usable:

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

Produced by CDC Health Integration Services

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

STOP

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.

Las familias y visitantes no deben entrar 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.

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.

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

Common conditions (per CDC guidelines):

S. pneumoniae (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.

Don't/Usable:

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

Produced by CDC Health Integration Services

REVISED DATE: 1/20/2022

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.

STOP

ENTERIC PRECAUTIONS

PRECAUCIONES DE TRANSMISIÓN POR ENTERICA

Family/Visitors should not visit if having signs or symptoms of an infection or a communicable disease. Visitation also based on facility's policy.

Las familias y visitantes no deben entrar 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.

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 room.

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.

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

Common conditions:

Chlamydiae 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
- 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 patient/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 hand sanitizer instead of alcohol based hand sanitizers for hand hygiene after removing gloves while caring for patients with CDR

Don't/Usable:

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, quaternary, 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.

Produced by CDC Health Integration Services

REVISED DATE: 1/20/2022

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.

STOP

DROPLET CONTACT PRECAUTIONS

ALTO

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 signos 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.

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.

Revised Date: 10/20/22

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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 patient/resident in a medical grade mask and clean gown

STOP

SPECIAL DROPLET CONTACT PRECAUTIONS

ALTO

PRECAUCIONES ESPECIALES PARA LA TRANSMISIÓN POR CONTACTO Y 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 signos 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.

Revised Date: 1/26/2022

SPICE

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

STOP

AIRBORNE CONTACT PRECAUTIONS

ALTO

PRECAUCIONES PARA LA TRANSMISIÓN POR CONTACTO Y POR VÍA 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 signos 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 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.

Revised Date: 1/26/2022

SPICE

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

STOP

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. Visitación no debe realizarse si se tiene un signo o síntoma 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.

ALTO

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.
- Cuidado de heridas o cualquier apertura de la piel que requiera un apósito.

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

Revised Date: 1/20/2022

SPICE

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

STOP

NEUTROPENIC PRECAUTIONS

PRECAUCIONES NEUTROPENICAS

Not included in CDC's Guidelines for Isolation Precautions

Family/Visitors should not visit if having signs or symptoms of an infection or a communicable disease. Visitación no debe realizarse si se tiene un signo o síntoma 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.

ALTO

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.

Revised Date: 1/20/2022

SPICE

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 entry if ill
- Surgical mask if leaving room

STOP

PROTECTIVE PRECAUTIONS

PRECAUCIONES PROTECTORAS

Family/Visitors should not visit if having signs or symptoms of an infection or a communicable disease. Visitación no debe realizarse si se tiene un signo o síntoma 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.

ALTO

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.

Revised Date: 1/20/2022

SPICE

PROTECTIVE PRECAUTIONS

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

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

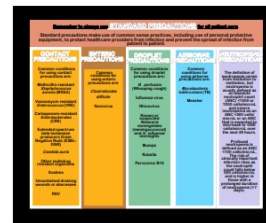
Clinical Syndrome or Condition	Potential Pathogens	Empiric Precautions (always includes Standard Precautions)
Diarrhea		
Acute diarrhea with infectious cause in incontinent or diapered patient	Enteric Pathogens	Contact Precautions
Rash or Exanthems, generalized, unknown etiology		
Petechial/Ecchymotic w/ fever	Neisseria meningitidis	Droplet Precautions for 1 st 24hrs of antimicrobial tx.
Vesicular	Varicella-zoster, herpes simplex, vaccinia viruses	Airborne plus Contact precautions
Respiratory Infections		
Cough/fever/upper lobe infiltrate	Tb, Respiratory Viruses, S. aureus	Airborne Precautions plus contact
Skin or Wound Infection		
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

SIGN ADDITIONS AND REVISIONS SUMMARY

PRECAUTION SIGN	WITH ADDITIONS AND REVISIONS SUMMARY
Standard Precautions	Standard Precautions are the minimum infection control practices that apply to all patient care, regardless of infection risk. They are the foundation for all other infection control practices. Standard Precautions include hand hygiene, use of personal protective equipment (PPE), safe injection practices, safe handling of potentially contaminated equipment and surfaces, and proper disposal of waste.
Transmission-Based Precautions	Transmission-Based Precautions are used in addition to Standard Precautions for patients with certain infectious diseases. They are designed to reduce the risk of transmission of specific pathogens. Transmission-Based Precautions include Contact Precautions, Droplet Precautions, and Airborne Precautions.
Contact Precautions	Contact Precautions are used for patients with infections caused by organisms that are spread by direct or indirect contact. Examples include MRSA, VRE, and Clostridiaceae. Contact Precautions include wearing gloves and gowns when entering the patient's room.
Droplet Precautions	Droplet Precautions are used for patients with infections caused by organisms that are spread by large respiratory droplets. Examples include pertussis, diphtheria, and meningococcal disease. Droplet Precautions include wearing a surgical mask and gown when entering the patient's room.
Airborne Precautions	Airborne Precautions are used for patients with infections caused by organisms that are spread by small respiratory droplets or aerosols. Examples include tuberculosis, measles, and varicella. Airborne Precautions include wearing a negative pressure room and a respirator when entering the patient's room.

FRONT/BACK POCKET CARD: (PRINTS A 2-PAGE DOCUMENT TO BE TRIMMED/LAMINATED)

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



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

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 species</i>	4	76 (41–168)
<i>Enterobacter cloacae</i>	1	133

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.



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



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



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



DISCONTINUATION OF CP FOR MRSA

Establish policy for previously MRSA colonized or infected.

- Off antibiotics effective against MRSA ≥ 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



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



QUESTIONS

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