RECOMMENDED PRACTICES TO INTERRUPT TRANSMISSION OF INFECTIOUS AGENTS

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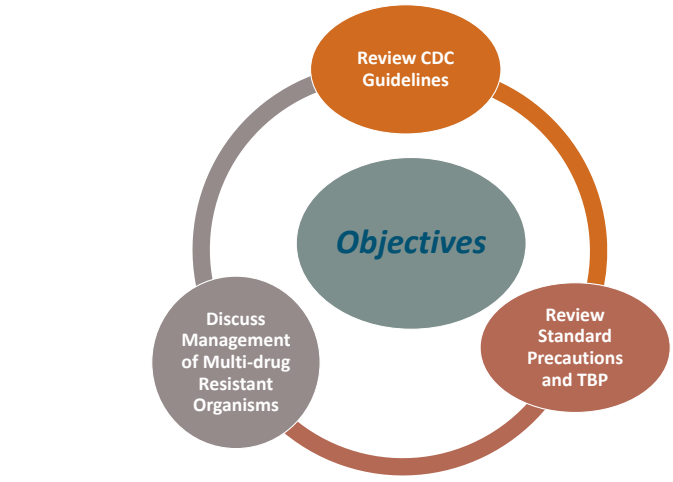


HISTORY OF ISOLATION PRECAUTIONS

- 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 *(OSHA uses term universal precautions in BBP rule)*
- 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

GUIDANCE DOCUMENTS

- 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings-**revised and added**:
  - Safe Injection Practices
  - Respiratory Hygiene/Cough Etiquette
  - Use of mask during spinal procedures
- Management of Multi-drug resistant organisms (2006)
- Implementation of Personal Protective Equipment (PPE) use in nursing homes to prevent spread of multidrug-resistant organisms (6/22)

KEY CONCEPTS

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

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

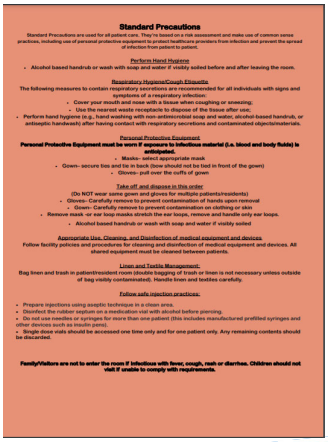
CONTROLLING TRANSMISSION OF INFECTION

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

Standard Precautions

Transmission-Based Precautions

STANDARD PRECAUTIONS



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

Acknowledgement: The authors and HICPAC gratefully acknowledge Dr. Larry Strausbaugh for his many contributions and valued guidance in the preparation of this guideline.

Suggested citation: Siegel JD, Rhinehart E, Jackson M, Chiarello L, and the Healthcare Infection Control Practices Advisory Committee, 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings
http://www.cdc.gov/ncidod/dhqp/pdf/isolation2007.pdf

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

HAND HYGIENE

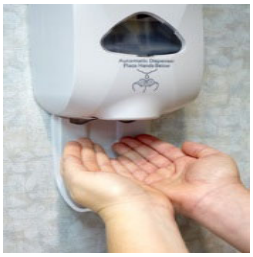
- After touching blood, body fluids, secretions, excretions, contaminated items; immediately after removing gloves; between resident contacts.

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

How to hand wash

ALCOHOL BASED HAND RUB

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



How to hand rub

HAND HYGIENE PROGRAM

ESSENTIAL PRACTICES = QUALITY OF EVIDENCE HIGH

- Promote the preferential use of ABHS in most clinical situations
- Perform HH as indicated by CDC **OR** the WHO Five moments
- HCP who provide direct or indirect care in high-risk areas (e.g, ICU, perioperative) should not wear artificial fingernail extenders
- Engage all HCP in primary prevention of occupational irritant and allergic contact dermatitis
- Provide facility-approved hand moisturizer that is compatible with antiseptics and gloves
- For routine hand hygiene, choose liquid, gel or foam ABHS with at least 60% alcohol

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

HAND HYGIENE PROGRAM

ESSENTIAL PRACTICES = QUALITY OF EVIDENCE HIGH

- Involve HCP in selection of products
- Educate HCP about an appropriate volume of ABHS and the time required to obtain effectiveness
- Ensure that ABHS dispensers are unambiguous, visible, and accessible within the workflow of HCP
- In private rooms, consider 2 ABHS dispensers the minimum threshold for adequate number of dispensers: 1 dispenser in the hallway, and 1 in the patient room

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

HAND HYGIENE PROGRAM

ESSENTIAL PRACTICES = QUALITY OF EVIDENCE HIGH

- Educate HCP about the potential for self-contamination and environmental contamination when gloves are worn
- *Clean hands immediately following glove removal. If handwashing is indicated (C. difficile, norovirus) and sinks are not immediately available, use ABHS and then wash hands as soon as possible.*
- Educate and confirm the ability of HCP to doff gloves in a manner that avoids contamination.
- Take steps to reduce environmental contamination associated with sinks and sink drains
- ***Do not keep medications or patient care supplies on countertops or mobile surfaces that are within 1 m (3 feet) of sinks***
- Monitor adherence to hand hygiene

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

APPROACHES THAT SHOULD NOT BE CONSIDERED A ROUTINE PART OF HH

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

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

STANDARD PRECAUTIONS

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

USE OF PERSONAL PROTECTIVE EQUIPMENT (PPE)

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

USE OF PERSONAL PROTECTIVE EQUIPMENT (PPE)

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

SAFE WORK PRACTICES (PPE USE)

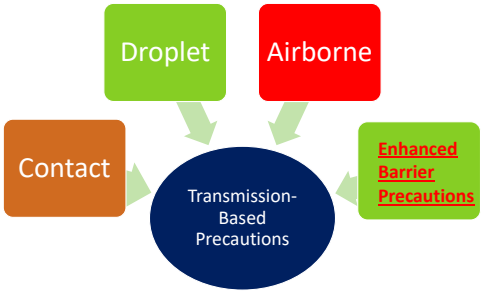
- ✓ Keep hands away from face
- ✓ Work from clean to dirty
- ✓ Limit surfaces touched
- ✓ Change when torn or heavily contaminated
- ✓ Perform hand hygiene

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

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

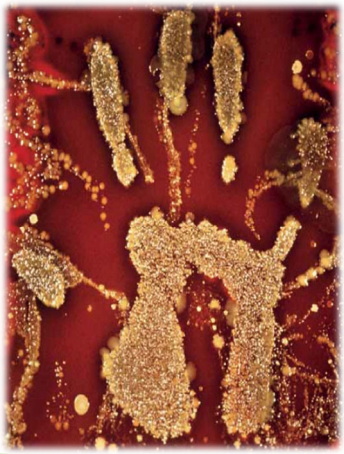
Component	Recommendation
Safe Injection Practices	Apply to the use of needles, cannulas that replace needles, and, where applicable intravenous delivery systems • Use aseptic technique • Needles, cannulae and syringes are sterile, single-use items • Use single-dose vials for parenteral medications whenever possible • Do not administer medications form single-dose vials or ampules to multiple residents • Do not keep multidose vials in the immediate resident treatment area • Do not use bags or bottles of IV solution as a common source of supply for multiple residents
Special Lumbar Procedures	Wear a surgical mask when placing a catheter or injecting material into the spinal canal or subdural space

TRANSMISSION BASED PRECAUTIONS



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

SOURCES OF INFECTION



- Humans
  - Patients
  - Healthcare Personnel
  - Visitors/household members
- Environmental
- Common Vehicles
- Vectorborne

Host Factors

Age

Immobility

Incontinence

Dysphagia

Chronic Diseases

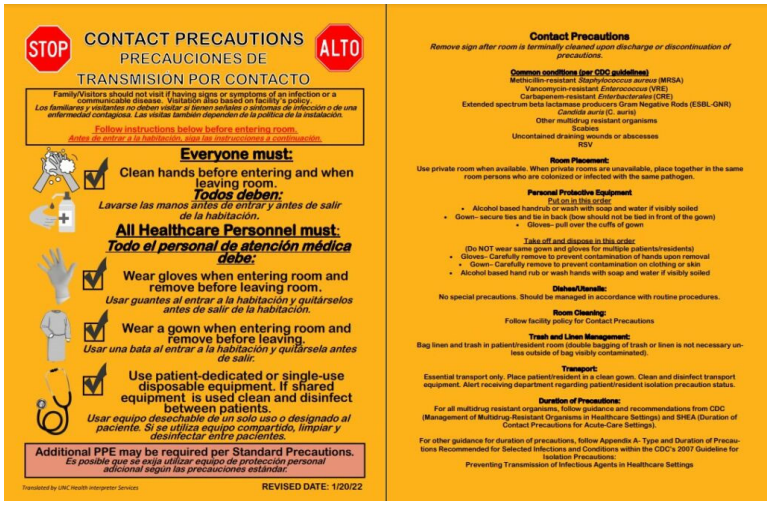
Poor Functional Status

Medications

Indwelling devices

ROUTES OF TRANSMISSION

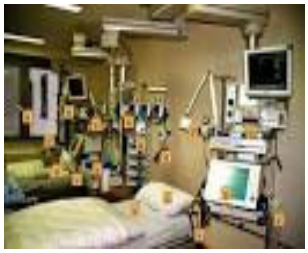
- Direct Contact
- Indirect Contact
- Droplet
- Aerosol (Airborne)



DIRECT AND INDIRECT CONTACT TRANSMISSION

DIRECT CONTACT: SKIN TO SKIN TOUCHING

INDIRECT CONTACT: INANIMATE SURFACES

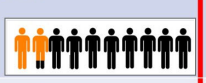


CONTACT PRECAUTIONS

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

The Large Burden of MDROs in Nursing Homes

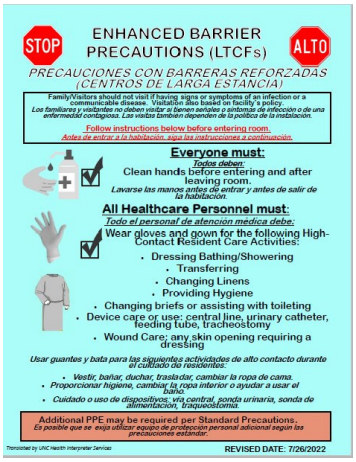
Facility Type	Documented MDRO	Actual MDRO
Nursing Homes (n = 14)	17%	58%
Ventilator-Capable Nursing Homes (n = 4)	20%	76%

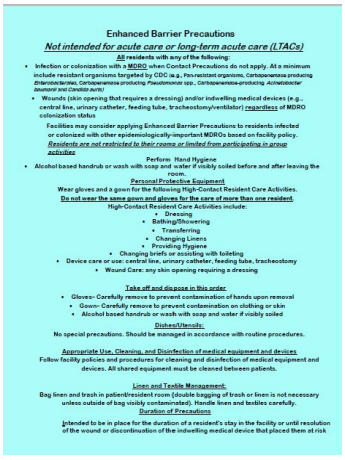


McKinnell JA et al, Clin Infect Dis. 2019; 69(9):1566-1573

Known MDRO No Known MDRO

Slide acknowledgement CDC presentation





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

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

Summary of Recent Changes:

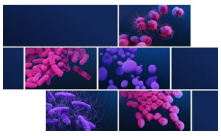
- Added additional rationale for the use of Enhanced Barrier Precautions (EBP) in nursing homes, including the high prevalence of multidrug-resistant organism (MDRO) colonization among residents in this setting.
- Expanded residents for whom EBP applies to include any resident with an indwelling medical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

On this Page

Resources

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

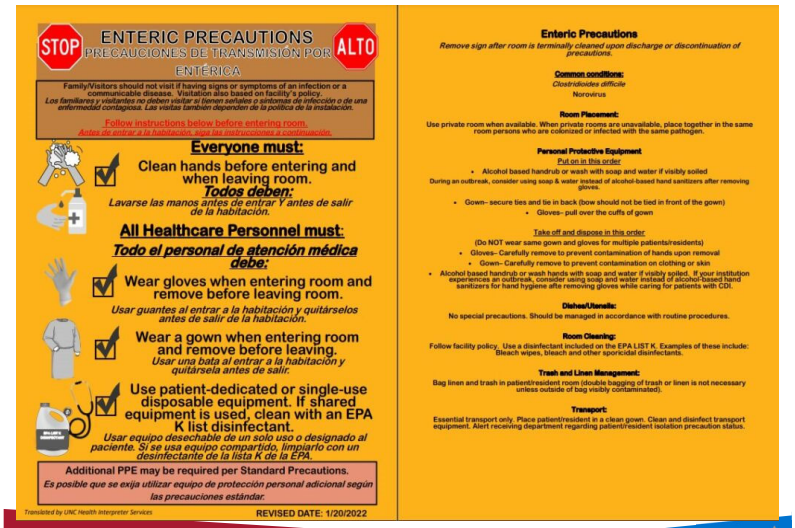
MDROs TARGETED BY CDC 2019



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

July 2022:

- **Expanded MDROs for which EPBs apply (MRSA, VRE etc.,)**
- **Expanded residents for whom EPBs applies to include any resident with an indwelling medical device or wound (regardless of MDRO colonization or infection status)**
- **EPB are to be continued for the duration of the resident's stay**



CONTACT → ENTERIC PRECAUTIONS

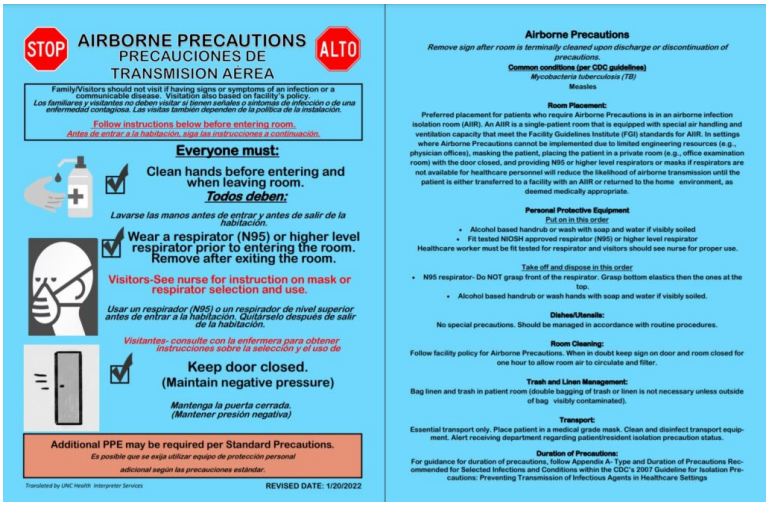
- Common conditions:
  - *Clostridioides difficile*,
  - Norovirus,
  - Rotovirus
- **USE ABHR for routine care.**
- During an outbreak, HCP should consider using soap & water routinely
- Private room if possible
- Gown and gloves
- Disposable or dedicated equipment
- Use EPA agent from the K list of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

DROPLET PRECAUTIONS

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

- 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.

https://www.cdc.gov/flu/professionals/diagnosis/testing-management-considerations-nursinghomes.htm



AIRBORNE PRECAUTIONS

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

- Common conditions:
  - Tuberculosis,
  - Measles

Private room only

Room requires Negative airflow pressure

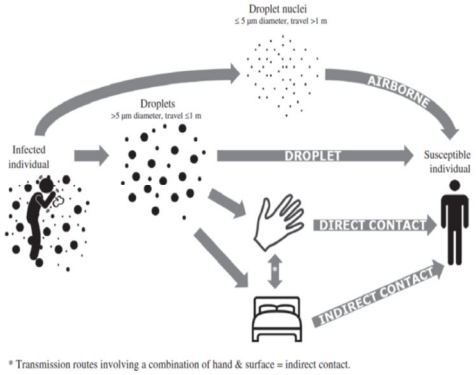
Doors must remain closed

Everyone must wear an N-95 respirator

Limit the movement and transport of the patient

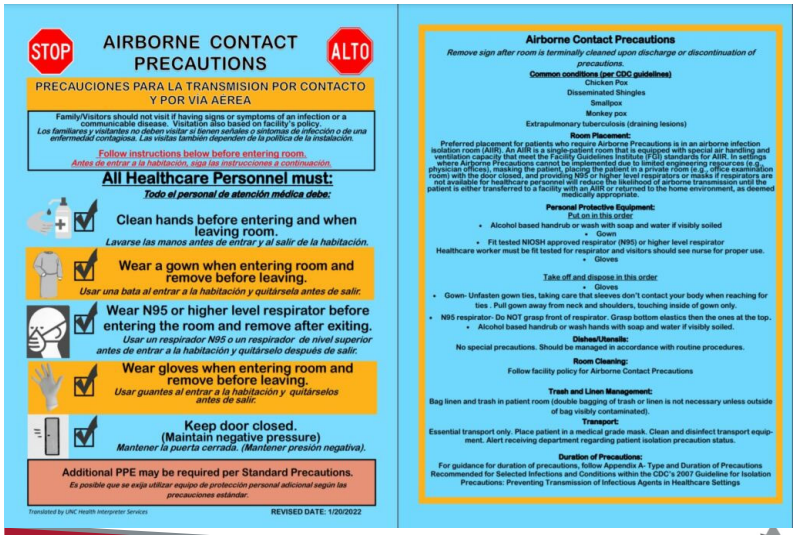
TRANSMISSION-BASED PRECAUTIONS

- Combinations of precautions may be necessary based on the pathogen:
  - **Droplet plus Contact**
  - **Airborne plus Contact**



* Transmission routes involving a combination of hand & surface = indirect contact.

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



STOP — AIRBORNE CONTACT PRECAUTIONS — ALTO

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
- 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.
- 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 wearing a medical grade mask
- Upon discharge allow at least one hour for air to circulate

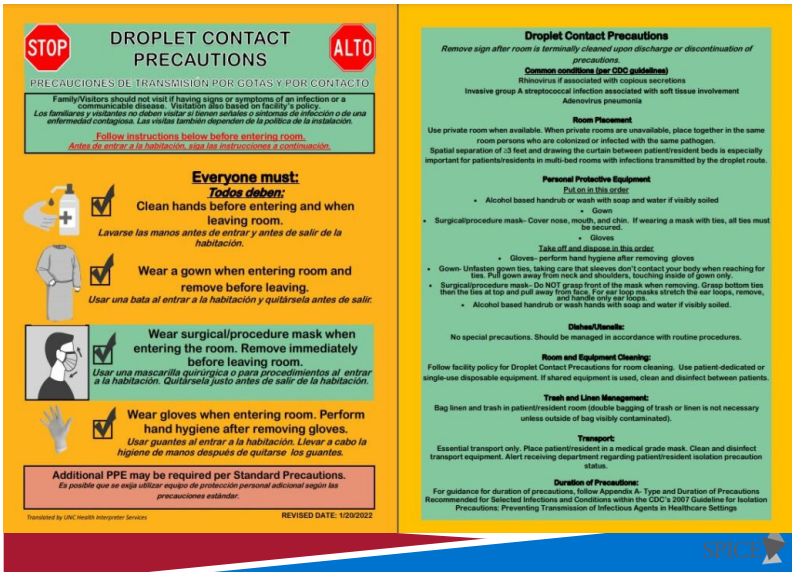
1. Airborne Contaminant Removal

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

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

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

https://www.cdc.gov/infectioncontrol/guidelines/environmental/appendix/air.html#b1



STOP — DROPLET CONTACT PRECAUTIONS — ALTO

PRECAUCIONES DE TRANSMISION 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.

Dishes/Utensils:
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 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 in a medical grade mask and clean gown

SPECIAL DROPLET CONTACT PRECAUTIONS
(PRIMARILY FOR NURSING HOMES)

- Common conditions:
  - SARS,
  - SAR-CoV-2 (COVID-19)
- Private room with door closed unless fall risk.
- Fit tested N95 or higher respirator
- Protective eyewear
- Gown and gloves
- Essential transport only with resident-resident wearing a medical grade mask

WHEN TO DISCONTINUE TBP PRECAUTIONS

- Resume Standard Precautions once high-risk exposures or active symptoms have discontinued
  - Refer to ***Appendix A in the 2007 Isolation Guidelines-updated 2018***

Type and Duration of Precautions Recommended for Selected Infections and Conditions[1]

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

Appendix A Updates [September 2018]

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

A B C D E F G H I J K L M N O P Q R S T U V W Y Z

A

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

Multi-drug Resistant Organisms (MDROs)

RISK FACTORS FOR DEVELOPING A MDRO

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

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

MDROS SPREAD IN HEALTHCARE SETTINGS

- Patient to patient transmission via healthcare provider's hands
- Environmental/equipment contamination

X marks the location where VRE was isolated in the room

Image from Abstract: The risk of hand and glove contamination after contact with a VRE + resident environment. Hayden M, ICAAC, 2001, Chicago, Il.

CANDIDA AURIS: AN OVERVIEW, CDC

- *Candida auris* is an emerging fungus that presents a serious global health threat for the following reasons:
  - *C. auris* is spreading geographically and increasing in incidence.
  - *C. auris* may colonize patients for months to years (no method of decolonization). Infection (usually candidemia) has a high mortality (~60%).
  - It is often multidrug-resistant (e.g., echinocandins, triazoles, polyene {amphotericin B}). Some strains are resistant to all three available classes of antifungals.
  - It is difficult to identify with standard laboratory methods, and it can be misidentified in labs without specific technology. Misidentification may lead to inappropriate management.
  - It has caused multiple outbreaks in healthcare settings. For this reason, it is important to quickly identify *C. auris* in a hospitalized patient so that healthcare facilities can take special precautions to stop its spread.

Acknowledgement: Dr. David Weber MD, MPH, FIDSA, FSHEA, FRSM: Emerging Infectious Disease: *Candida Auris*-SPICE webinar (3/15/23)

CANDIDA AURIS: AN OVERVIEW, CDC

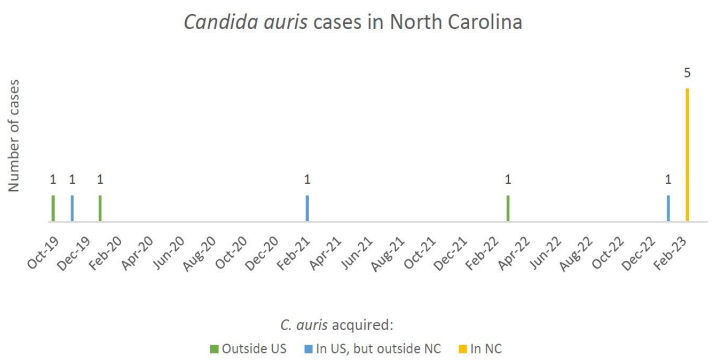
- May 11, 2021: Updated Tracking *C. auris* to include historical and current U.S. interactive maps and downloadable datasets
- July 19, 2021: Environmental Protection Agency (EPA) has created List P, a list of EPA-registered disinfectants effective against *C. auris*
- Current needs: (1) rapid diagnostics; (2) new drugs; (3) decolonization methods; (4) registered, easy to use and effective disinfectants; (5) other tools or protocols for treatment and prevention

Acknowledgement: Dr. David Weber MD, MPH, FIDSA, FSHEA, FRSM: Emerging Infectious Disease: *Candida Auris*-SPICE webinar (3/15/23)

CANDIDA AURIS: EPIDEMIOLOGY

- First isolated in 2009 from ear discharge of a female patient in Japan; now reported in >45 countries worldwide
- Healthcare-associated outbreaks common
- Mortality ~65%-70%
- Primarily infects the usual spectrum of compromised individuals including those with uncontrolled diabetes mellitus, chronic renal diseases, neutropenia, and those on immunosuppressive therapy, broad-spectrum antimicrobials, and those with indwelling medical devices, or at extremes of age.
- Causes an array of human diseases ranging from fungemias, surgical/nonsurgical wound infections, urinary tract infections, meningitis, myocarditis, skin abscesses, to bone infections.

Acknowledgement: Dr. David Weber MD, MPH, FIDSA, FSHEA, FRSM: Emerging Infectious Disease: *Candida Auris*-SPICE webinar (3/15/23)



CANDIDA AURIS: INFECTION CONTROL

- Place any patients with suspected or confirmed *C. auris* on contact precautions in a single-patient room immediately.
- *C. auris* is known to widely contaminate the environment and can persist in the environment for several weeks. Conduct daily and terminal environmental cleaning using a disinfectant on EPA's List P. ***(NCDHHS memo 3/30/23)***
- Healthcare providers should use Contact Precautions to manage patients with *C. auris* in acute care hospitals and long-term acute care hospitals. Manage residents with *C. auris* in nursing homes, including skilled nursing facilities, using either **Contact Precautions or Enhanced Barrier Precautions**, depending on the situation and local or state jurisdiction recommendations. (**CDC 1/23**)

KEY MDRO PREVENTION STRATEGIES

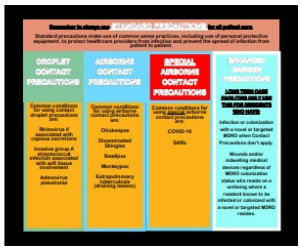
- Assessing hand hygiene practices
- Quickly reporting MDRO lab results
- Implementing Contact Precautions
- Recognizing previously colonized patients
- Strategically place patients based on MDRO risk factors
- Careful device utilization
- Antibiotic stewardship
- Inter-facility communication

NEUTROPENIC PRECAUTIONS

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

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

HTTPS://SPICE.UNC.EDU/RESOURCES/NC-STANDARDIZED-ISOLATION-SIGNAGE/



SUMMARY

- Standard precautions are the primary strategy to interrupt transmission of infectious agents in healthcare facilities
  - HH,PPE, Respiratory Hygiene, Cleaning of Equipment and Environment
- Transmission-based precautions may also need to be implemented based on the type of infection and how it is transmitted
  - Contact, Droplet, Airborne and a combination of these
  - Enhanced Barrier Precautions
- CDC Guidance specific to multi-drug resistant organisms
  - 2006-Management of MDROs
  - Enhanced Barrier Precautions - 2022