



**Indiana**  
Department  
of  
**Health**

# HAI-AR STEERING COMMITTEE UPDATES

TRANSMISSION BASED PRECAUTIONS  
WORKGROUP PROJECT

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IP PROGRAM MANAGER

12.13,22 HAI-AR Presentation

OUR MISSION:

To promote, protect, and improve the health and safety of all Hoosiers.

OUR VISION:

Every Hoosier reaches optimal health regardless of where they live, learn, work, or play.





Antimicrobial Stewardship  
TBP Workgroup 2019-2020

**HAI Steering Committee**  
**8.20.22**

# TBP Workgroup

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**Workgroup Chair:** Jennifer Spivey, IDOH IP Consultant

**Workgroup Mentor:** Nancy Adams, IDOH Regulatory QA

**Acute Care IPs:** Kimberley Bellessa, Sandy Benson, Sonya Mauzey (Women's Health), Emily Haines, Rhonda Blevins, Laurie Fish

**Ambulatory IP:** Scott Grimes

**LTC-LTACH IPs:** Lisa Jones, Rose Smalley, Susie Brandenburg, Victor Zindoga, Nancy Adams

**Behavioral Health IPs:** Scott and Jennifer

# TBP Workgroup Charge

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## **Transmission Based Precautions Across the Healthcare Continuum:**

Determine what is considered the **best practice** in transmission- based precautions for antibiotic resistant organism **across the continuum of care by facility type** (skilled nursing facilities, long term care facilities, long term acute care facilities, acute care facilities, and ambulatory care recommendations).

Assess how these differences impact transitions of care. Make recommendations on how to best communicate a patient's antibiotic-resistant organism status during transitions of care, taking into consideration the standards of these different facility types.

# TBP Workgroup Problem Statement

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Federal regulations and best-practices related to the use of standard and transmission- based precautions for antibiotic resistant organisms differ according to facility type.

The facility type-specific differences are not universally known, and thus it is perceived that breaches in infection control practices are occurring when patients transition from one facility type to another.

# Completed Workplan

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- Literature search and bi-weekly meetings discussing each facility type January to March 2019
- Organism Guidance per level of care grid development- April to July 2019
- Enhanced Barrier Precautions LTC- July 2019
- Presentation to AH Steering Committee-Aug 2019
- Edits and communications to stakeholders- January 2020
- **TBP Workplan Recommendation Approval February 2020 ISDH Steering**
- March APIC Indiana Spring meeting – roll out canceled due to COVID-19
- August 2022 Approved at HAI Steering Committee to present to you Oct 2022

# Infection Risk During Transitions of Care

## Outcome to increase education for IDOH Transfer forms across continuum of care

- Increase risk of antibiotic resistant organism exposure-  
Use IDOH Transfer forms as part of education
- Residents and patients colonized with antibiotic resistant organisms can increase risk





# IDOH Transfer Form



Eric J. Holcomb  
Governor  
Kristina M. Box, MD, FACOG  
State Health Commissioner

## Inter-Facility Infection Control Transfer Form

Does the person* currently have an infection, colonization OR a history Colonization Active infection of positive culture of a multidrug-resistant organism (MDRO) or other or history potentially transmissible infectious organism?	Colonization or History (Check if Yes)	Active Infection on Treatment (Check if Yes)
Methicillin-resistant <i>Staphylococcus aureus</i> (MRSA)	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Vancomycin-resistant <i>Enterococcus</i> (VRE)	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<i>Clostridioides difficile</i>	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<i>Acinetobacter</i> , multidrug-resistant	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Enterobacteriaceae (e.g., <i>f. coli</i> , <i>Klebsiella</i> , <i>Proteus</i> ) producing- Yes Extended Spectrum Beta-Lactamase (ESBL)	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Carbapenem-resistant Enterobacteriaceae (CRE)	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<i>Pseudomonas aeruginosa</i> , multidrug-resistant	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<i>Candida auris</i>	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
COVID-19 Choose a Test Type: <input type="checkbox"/> PCR <input type="checkbox"/> POC Antigen	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Other, specify (e.g., scabies, norovirus, influenza): <input type="text"/>	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes

## Inter-Facility Infection Control Transfer Form

This inter-facility infection control patient transfer form can assist in fostering communication during transitions of care for patients infected with MDROs, COVID-19, etc. The discharging facility should complete this transfer form and sign at the bottom after all fields are completed. Attach copies of pertinent records and latest laboratory reports to send with the patient to the receiving facility. This form has been adapted from the Centers for Disease Control and Prevention (CDC).

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## Recommendations for Transmission-Based Precautions Across the Continuum of Care

For outbreaks or situations of ongoing, increased risk, use strict contact precautions.

All infection control guidelines are based on patient understanding and the cognitive ability to comply with precautions.

Organism (alphabetical)	Facility Type							
	Acute Care	Acute Care Specialty Hospital	LTC-SNF	LTAC	vSNF	Ambulatory Clinic	Rehab	Behavioral Health, inpatient
<b>C Diff <sup>a</sup></b>	C+	C+	C+	C+	C+	C+	C+	C+
<i>Candida auris</i> , infection	C^	C^	C^	C^	C^	C^	C^	C^
<i>Candida auris</i> , colonization	C^	C^	EBP^	C^	EBP^	V^	V^	V^
<b>CRE, infection</b>	C+	C+	C+	C+	C+	V+	V+	V+
<b>CRE, colonization</b>	C	C	V	C	V	V	V	V
<b>CPO and pan-resistant, infection</b>	C+	C+	C+	C+	C+	V+	V+	V+
<b>CPO and pan-resistant, colonization</b>	C	C	EBP	C	EBP	V	V	V
<b>ESBL, infection</b>	C+	V*	V+	C+	V+	V+	V+	V+
<b>ESBL, colonization</b>	V*	V*	V	C	V	V	V	V
<b>MRSA or VRE, infection</b>	V*	C+	V+	C+	V+	V+	V+	V+
<b>MRSA or VRE, colonization</b>	V*	V*	V	C	V	V	V	V

<sup>a</sup> Also for large incontinence of unknown organism.

+ sporicidal agent, \* if risk assessment and horizontal measures dictate within the institution (based on CDC guidance)

^ List P or Bleach Based Product

C - contact precautions, EBP – enhanced barrier precautions, V – standard-to-contact precaution (based on level of ADLs)



# Example of *C. auris*

Organism (alphabetical)	Facility Type							
	Acute Care	Acute Care Specialty Hospital	LTC-SNF	LTAC	vSNF	Ambulatory Clinic	Rehab	Behavioral Health, inpatient
<b>C Diff <sup>a</sup></b>	C+	C+	C+	C+	C+	+C+	+C+	+C+
<b>Candida auris, infection</b>	C^	C^	C^	C^	C^	+C^	+C^	+C^
<b>Candida auris, colonization</b>	C^	C^	EBP^	C^	EBP^	+V^	+V^	+V^

<sup>a</sup> Also for large incontinence of unknown organism.

+ sporicidal agent, \* if risk assessment and horizontal measures dictate within the institution (based on CDC guidance)

^ List P or Bleach Based Product

C - contact precautions, EBP – enhanced barrier precautions, V – standard-to-contact precaution (based on level of ADLs)

**Note:** EBP is for LTC only- SNFs- All other facility types use a reiteration of standard precautions or enhanced precautions maybe by facility type. CDC recommends for all contact, droplet or airborne, EBP for LTC colonization.

**Note:** LIST P product may be what you are using but check the label as the times may differ for *C. auris* disinfection as it is a hardy organism – i.e. Kill claim may say 1 min for the wipe for product use and 5 min for *C. auris*

## Organism Definitions

### Acronyms and Abbreviations

CRE = Carbapenem-Resistant Enterobacterales

CPO = Carbapenem Producing Organism

ESBL = Extended Spectrum Beta-Lactamase

MRSA = Methicillin-Resistant *Staphylococcus aureus*

Pan Res = Pan-Resistant Organism

VRE = Vancomycin-Resistant Enterococci

### CRE

By definition, these organisms are (1) part of the Enterobacterales family and (2) resistant to at least one carbapenem.

- Examples of Enterobacteriaceae: *E. coli*, *Klebsiella* sp., *Enterobacter* sp. *Proteus* sp., etc.
- Examples of carbapenem antibiotics: Meropenem, Ertapenem, Imipenem, Doripenem, etc.

### CPO

By definition, these organisms (1) have the ability to produce a carbapenemase.

- Carbapenemase genes can be identified by laboratory tests such as the Carba-R. Your results would specify which gene was detected (KPC, NDM, VIM, IMP, OXA, etc.).
- Carbapenemase production can be identified by laboratory tests like CarbaNP or mCIM. Your result would specify if the isolate was positive or negative for carbapenemase production.
- The term CPO includes organisms such as CP-CRE\*, carbapenemase producing *Pseudomonas* sp, and carbapenemase producing *Acinetobacter* sp.  
\*Indiana State Department of Health Reportable Communicable Disease and Condition

### ESBL

By definition, these organisms (1) have the ability to produce an ESBL.

- ESBL production can be determined from various laboratory tests. The most common genes responsible for ESBL are TEM, SHV, and CTX-M.
- In the United States, unless tested by PCR, ESBL is only reportable for *E. coli*, *K. pneumoniae*, *K. oxytoca*, or *P. mirabilis*. Some laboratories use ceftriaxone resistance as a surrogate.

### MRSA

By definition, these organisms are (1) identified as *Staphylococcus aureus* and (2) resistant to a methicillin surrogate antibiotic (*i.e.* oxacillin, cefoxitin) or positive for the *mecA* gene.

### Pan-Resistant Organism

For the purposes of this guidance, pan-resistant organisms should be defined as an organism that is (1) not susceptible (resistant or intermediate) to all antimicrobials tested and (2) that testing has included antimicrobials from at least three drug classes.

### VRE

vancomycin (it is *expected* that they are resistant to vancomycin) and they should not be considered MDROs.

## Multidrug Resistant Organisms (MDRO)

### Common Acronyms and Phrases

<b>AR</b>	Antibiotic Resistance
<b>ARLN</b>	Antibiotic Resistant Laboratory Network
<b>APIC</b>	Association for Professionals in Infection Control and Epidemiology
<b>AS</b>	Antibiotic Stewardship
<b>AST</b>	Antibiotic Susceptibility Testing
<b><i>C. auris</i></b>	<i>Candida auris</i>
<b>CAUTI</b>	Catheter Associated Urinary Tract Infection
<b>CDI or <i>C. diff</i></b>	<i>Clostridioides difficile</i> infection
<b>CDR</b>	Communicable Disease Rule
<b>CLABSI</b>	Central Line Associated Blood Stream Infection
<b>cIAI</b>	Complicated Intra-abdominal Infection
<b>CLIA</b>	Clinical Laboratory Standards Institute
<b>CMS</b>	Centers for Medicare and Medicaid Services
<b>CP-CRE</b>	Carbapenemase Producing – Carbapenem Resistant <i>Enterobacteriaceae</i>
<b>CP-CRPA</b>	Carbapenemase Producing – Carbapenem Resistant <i>Pseudomonas aeruginosa</i>
<b>CR-AB</b>	Carbapenem-Resistant <i>Acinetobacter baumannii</i>
<b>CRE</b>	Carbapenem-Resistant <i>Enterobacteriaceae</i>
<b>CRPA</b>	Carbapenem-Resistant <i>Pseudomonas aeruginosa</i>
<b>cUTI</b>	Complicated Urinary Tract Infection
<b>DOD</b>	Department of Defense
<b>ELR</b>	Electronic Laboratory Report
<b>ESBL</b>	Extended Spectrum Beta-Lactamase
<b>FDA</b>	Food and Drug Administration
<b>HAI</b>	Healthcare-Associated Infection
<b>HAP</b>	Healthcare Associated Pneumonia
<b>Id</b>	Identification
<b>ID</b>	Infectious Disease
<b>IMP</b>	Imipenemase
<b>KPC</b>	<i>Klebsiella pneumoniae</i> Carbapenemase



# RISK Assessment Template for use from APIC National

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## INSTRUCTIONS

Each facility should perform a risk assessment to determine if isolation precautions can be modified for patients that have a history/colonization of a multi-drug resistant organism (MDRO). The risk assessment elements have been integrated into a Yes/No questionnaire as detailed below. Upon completion, a report of findings should be considered and presented to your local Infection Control Committee for review and adoption.

## DEFINITIONS

Any shaded area within the risk assessment does not require an action plan. However, the answer of each question is taken into consideration when determining the need to remove or continue isolation for colonized or known history of an MDRO.

Any question that has a “\*” mark requires an action plan if the answer is “NO”.

A question that has a “\*\*” mark does not require an individual action plan by the facility if it is currently not in place as a standardized process will be created for system wide adoption.

## INTERPRETATION OF RESULTS

After the completion of the risk assessment, it is recommended that the decision to remove or continue contact transmission based precautions for colonized or known history of an MDRO be established based on the following results:

- Remove Contact Precautions: if  $< 7$  questions are answered as “NO”
- Continue Contact Precautions: if  $\geq 7$  questions are answered as “NO”

Each facility may conduct a follow up risk assessment upon completion of action plans if  $\geq 7$  questions were answered as “NO” in order to remove contact precautions for MDRO history or colonization.



# TBP Workgroup handouts products

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These items are posted on the [IDOH Infection Prevention Program page](#):

- Organism TBP Chart
- Organism Definitions and Acronyms
- Risk Assessment Template
- Transfer Form
- TBP Workgroup SBAR



## CDC's Enhanced Barrier Update July 2019 and 2022



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# Enhanced Barrier Precautions for LTC July 2019

Examples of high-contact resident care activities requiring gown and glove use for enhanced barrier precautions include:

- Dressing
- Bathing/showering
- Transferring
- Providing hygiene
- Changing linens
- Changing briefs or assisting with toileting
- Device care or use: central line, urinary catheter, feeding tube, tracheostomy/ventilator
- Wound care: any skin opening requiring a dressing

Gown and gloves would not be required for resident care activities other than those listed above, unless otherwise necessary for adherence to standard precautions. residents are not restricted to their rooms or limited from participation in group activities, however assure proper hand hygiene education for resident, caregivers and family.

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



Implementation of Personal Protective Equipment in Nursing Homes to Prevent Spread of Novel or Targeted Multidrug-resistant Organisms (MDROs)

Updated: July 26, 2019

**As of July 2019, Novel or Targeted MDROs are defined as:**

- Pan-resistant organisms,
- Carbapenemase-producing enterobacteriaceae,
- Carbapenemase-producing *Pseudomonas* spp.,
- Carbapenemase-producing *Acinetobacter baumannii*, and
- *Candida auris*







# MDROs Have Significant Impact in Nursing Homes

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- Many nursing home residents are unknowingly colonized with an MDRO, especially residents with risk factors like indwelling medical devices or wounds
- Residents who have an MDRO can develop serious infections, remain colonized for long time periods, and spread MDROs to others
- Healthcare personnel can spread MDROs through contaminated hands and clothing

# The Large Burden of MDROs in Nursing Homes

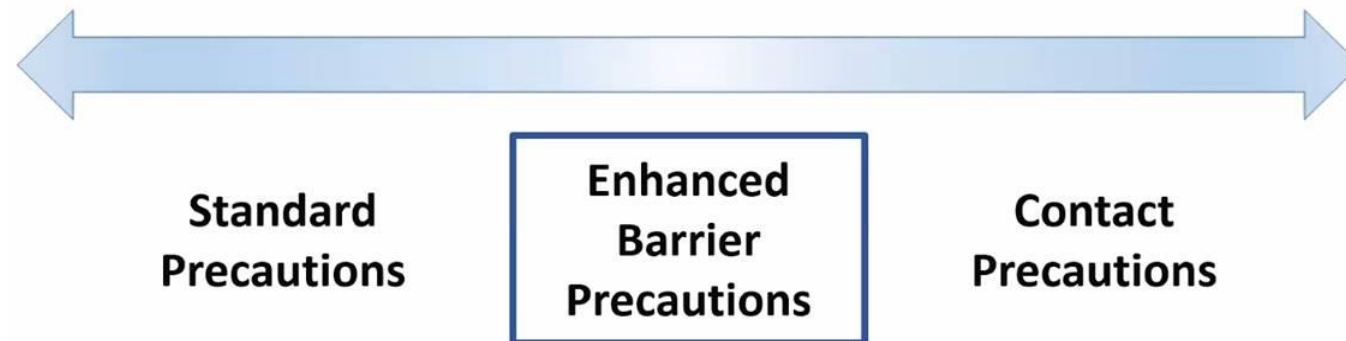
Facility Type	Documented MDRO	Actual MDRO
Nursing Homes (n = 14)	17% 	58% 
Ventilator-Capable Nursing Homes (n = 4)	20% 	76% 



# Definitions of Common Terms and Abbreviations

- Multidrug-resistant Organism (MDRO): bacteria or fungi resistant to multiple antimicrobials
- Colonization: germ is found on or in the body but is not causing infection

## Personal Protective Equipment (PPE) & Precautions



# Need for Enhanced Barrier Precautions (EBP)

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- Historically, interventions in nursing homes have focused only on residents who are actively infected with an MDRO
- Need for a broader approach to reduce the spread of MDROs without isolating residents for long periods of time
- Recent studies have indicated the use of EBP can effectively reduce the spread of MDROs

# CDC Transmission Based Precautions Signs

**STOP** **CONTACT PRECAUTIONS** **STOP**  
**EVERYONE MUST:**



Clean their hands, including before entering and when leaving the room.

**PROVIDERS AND STAFF MUST ALSO:**



Put on gloves before room entry. Discard gloves before room exit.



Put on gown before room entry. Discard gown before room exit.  
**Do not wear the same gown and gloves for the care of more than one person.**



Use dedicated or disposable equipment. Clean and disinfect reusable equipment before use on another person.



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**STOP** **DROPLET PRECAUTIONS** **STOP**  
**EVERYONE MUST:**



Clean their hands, including before entering and when leaving the room.

Make sure their eyes, nose and mouth are fully covered before room entry.



or




Remove face protection before room exit.




U.S. Department of Health and Human Services  
Centers for Disease Control and Prevention

**STOP** **AIRBORNE PRECAUTIONS** **STOP**  
**EVERYONE MUST:**



Clean their hands, including before entering and when leaving the room.




Put on a fit-tested N-95 or higher level respirator before room entry.

Remove respirator after exiting the room and closing the door.



Door to room must remain closed.



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# Indications for Enhanced Barrier Precautions

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- EBP are indicated for nursing home residents with any of the following:
  - Infection or colonization with an MDRO *when Contact Precautions do not otherwise apply*
  - Wounds and/or indwelling medical devices
- EBP is not limited to outbreaks or specific MDROs

# What are Enhanced Barrier Precautions?

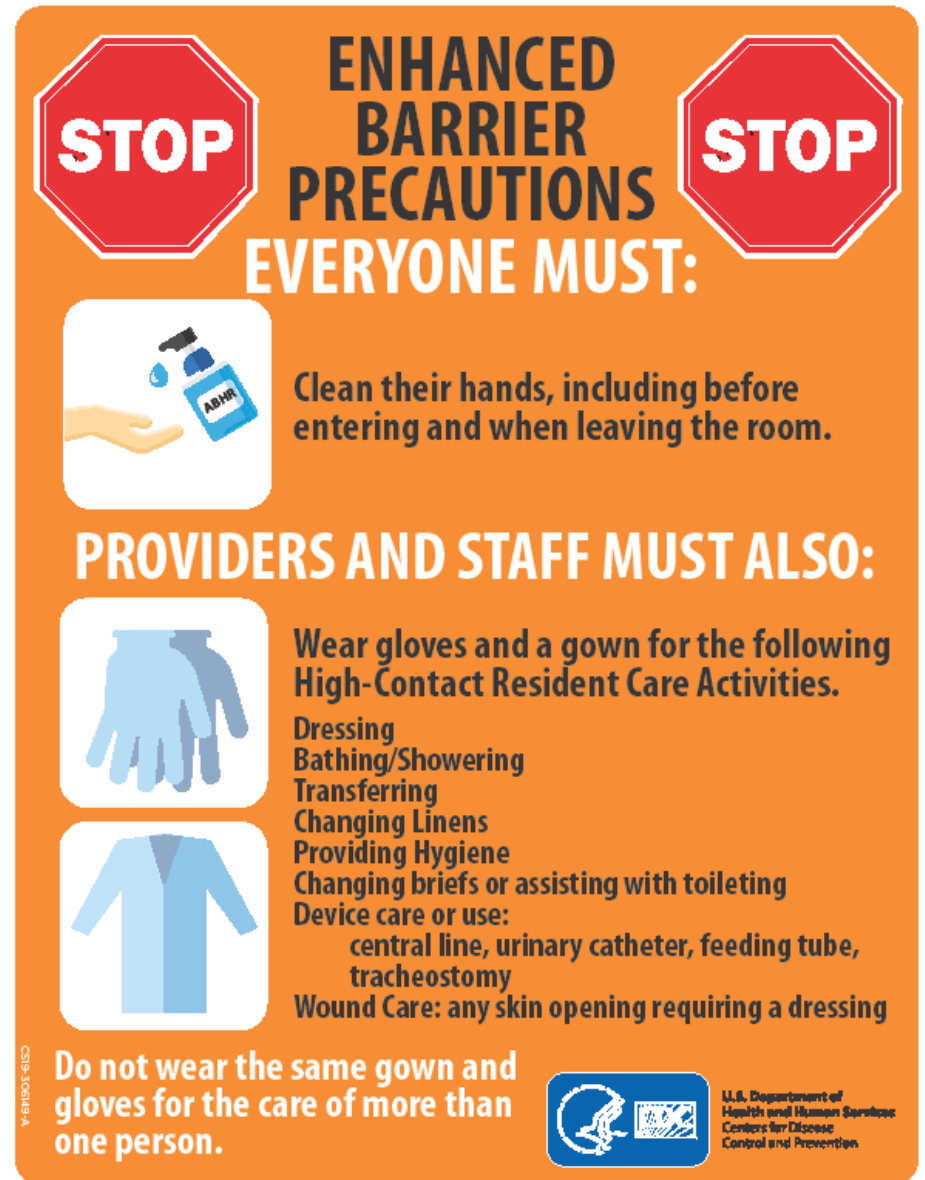
- Use of gown and gloves during high-contact resident care activities
- No private room required
- Residents can participate in group activities
- Intended to be used for resident's entire length of stay




- [CDC Enhanced Barrier Precautions Signage](#)

# Who does EBP apply to:

- **LTC residents in congregate care live in facilities** and this is a way to protect them long term for MDROs and Novel Pathogens.
- Healthcare levels of resident care indicate whether gown and glove are required upon entry to the room or activity.
- July 2019, novel pathogens colonization and outbreak controls
- July 2022, CDC added EBP are indicated for nursing home residents with any of the following:
  1. Infection or colonization with an MDRO *when Contact Precautions do not otherwise apply*
  2. Wounds and/or indwelling medical devices
  3. EBP is not limited to outbreaks or specific MDROs




**STOP** **ENHANCED BARRIER PRECAUTIONS** **STOP**  
**EVERYONE MUST:**




Clean their hands, including before entering and when leaving the room.

**PROVIDERS AND STAFF MUST ALSO:**




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

Dressing  
Bathing/Showering  
Transferring  
Changing Linens  
Providing Hygiene  
Changing briefs or assisting with toileting  
Device care or use:  
    central line, urinary catheter, feeding tube,  
    tracheostomy  
Wound Care: any skin opening requiring a dressing



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

© 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100



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# How to Be Successful



Hand Hygiene



Environmental  
Cleaning and  
Disinfection



Enhanced  
Barrier  
Precautions



Auditing



Communication

# MDROs CMS Contact Precautions-EBP F880

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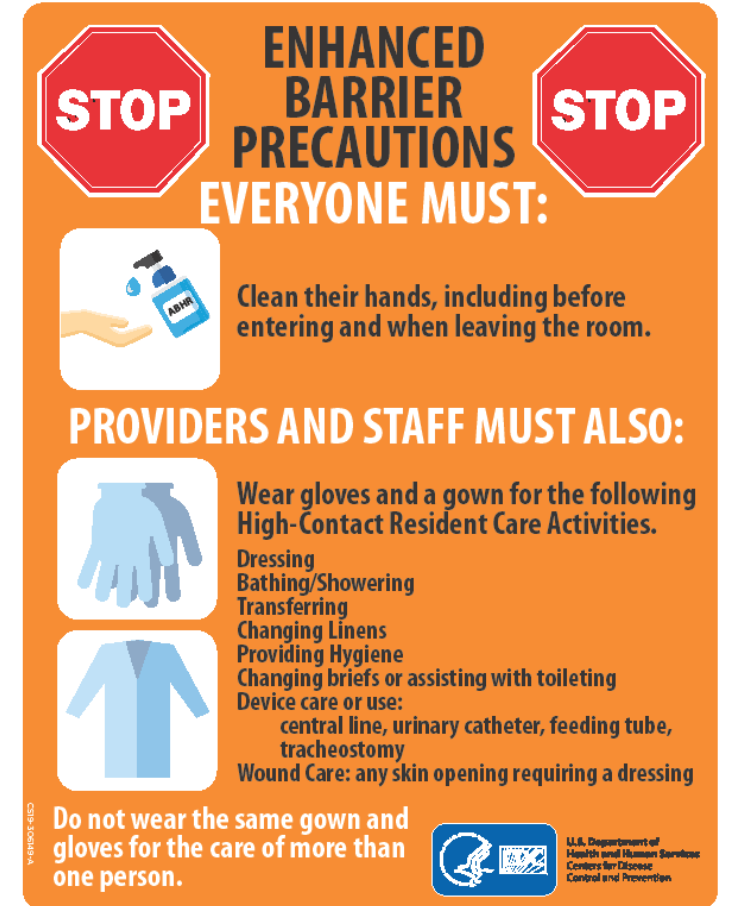
## Contact precautions are used for residents infected or colonized with MDROs in the following situations:

- When a resident has wounds, secretions, or excretions that are unable to be covered or contained
- On units or in facilities where, despite attempts to control the spread of the MDRO, ongoing transmission is occurring.
- These strategies may differ depending on the prevalence or incidence of the MDRO in the facility and region.
- They provide examples of PPE- which is EBP- Gown and Glove in high-contact resident activity

**NOTE: Additional information related to MDROs may be found in CDC's "Implementation of Personal Protective Equipment in Nursing Homes to Prevent Spread of Novel or Targeted Multidrug-resistant Organisms (MDROs)" at <https://www.cdc.gov/hai/containment/PPE-Nursing-Homes.html>.**

# Resources Enhanced Barrier Precautions

- CDC reference: [Implementation of Personal Protective Equipment \(PPE\) Use in Nursing Homes to Prevent Spread of Multidrug-resistant Organisms \(MDROs\)](#)
- CDC FAQ: [Frequently Asked Questions \(FAQs\) about Enhanced Barrier Precautions in Nursing Homes](#)
- Considerations for Use of Enhanced Barrier Precautions in Skilled Nursing Facilities  
<https://www.cdc.gov/hicpac/workgroup/EnhancedBarrierPrecautions.html?msckid=39038417aed311ec8c868e1e03c50297>
- Enhanced Barrier Precautions Letter to Nursing Home Residents, Families, Friends, and Volunteers <https://www.cdc.gov/hai/pdfs/containment/Letter-Nursing-Home-Residents-Families-Friends.pdf>
- Enhanced Barrier Precautions Letter to Nursing Home Staff <https://www.cdc.gov/hai/pdfs/containment/Letter-Nursing-Home-Staff.pdf>



# Resources

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## [Facility Guidance for Control of CRE](#)



**Facility Guidance for Control  
of Carbapenem-resistant  
*Enterobacteriaceae* (CRE)**

November 2015 Update - CRE Toolkit

# Resources

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## Management of Multidrug-Resistant Organisms In Healthcare Settings, 2006

Management of Multidrug-Resistant Organisms In Healthcare Settings, 2006

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### Management of Multidrug-Resistant Organisms In Healthcare Settings, 2006

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Acknowledgement:

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



# Resources

## SHEA Expert Guidance for the Duration of Contact Precautions for Acute-Care Settings

INFECTION CONTROL & HOSPITAL EPIDEMIOLOGY

SHEA EXPERT GUIDANCE

### Duration of Contact Precautions for Acute-Care Settings

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#### PURPOSE

This expert guidance document (EG) provides recommendations regarding discontinuation of contact precautions (CP) at the individual patient level in acute-care hospitals employing CP for 1 or more of the following organisms: methicillin-resistant *Staphylococcus aureus* (MRSA), vancomycin-resistant enterococci (VRE), *Clostridium difficile*, and multidrug-resistant *Enterobacteriaceae* (MDR-E), including carbapenem-resistant *Enterobacteriaceae* (CRE) and extended-spectrum  $\beta$ -lactamase (ESBL)-producing organisms. This document also provides a review of the role of

#### INTENDED USE

Special-topic EG documents are developed to address areas of relatively narrow scope that lack the level of evidence required for a formal guideline but are important for the provision of safe and effective healthcare. As such, systematic grading of evidence level is not provided for individual recommendations. Each EG is based on a synthesis of limited evidence, theoretical rationale, current practices, practical considerations, the opinion of the writing group, and consideration of potential harms where applicable. Within the EG, a summary

# Questions?

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