



Enhanced Barrier Precautions in Skilled Nursing Facilities

Heather Jones, DNP, FNP-C

Division of Healthcare Quality Promotion, Centers for Disease Control and Prevention

Bola Ogundimu, DrPH, CIC

Division of Healthcare Quality Promotion, Centers for Disease Control and Prevention

Linda Behan, BSN, RN, CIC

Long Term Care Infection Prevention, LLC.

Kara Jacobs Slifka, MD, MPH

Division of Healthcare Quality Promotion, Centers for Disease Control and Prevention

November 15, 2022

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Course Number: WC4446

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Course Access Code: EBP1115

CE Expiration Date: December 15, 2022

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**Please type all your questions
in the Q & A Section**



Objectives


- Describe Enhanced Barrier Precautions (EBP)
- Discuss why EBP are recommended to be used in nursing homes
- Explain methods for successful implementation of EBP

Standard Precautions and Contact Precautions



Standard Precautions

Used with all resident care
based on an assessment of risk
to protect healthcare providers
and prevent spread of infection



Standard Precautions Practices

- Perform hand hygiene
- Use personal protective equipment (PPE) whenever there is expectation of possible exposure to infectious material
- Follow respiratory hygiene/cough etiquette
- Ensure appropriate patient placement
- Properly handle, clean and disinfect equipment, instruments, and devices
- Clean and disinfect environment appropriately
- Handle textiles and laundry carefully
- Follow safe injection practices
- Handle needles and sharps safely

Using PPE as Part of Standard Precautions

Used with all residents whenever there is an expectation of possible exposure to infectious material

- **Gloves**
 - Use when anticipating touching blood, body fluids, secretions, excretions, contaminated items, and touching mucous membranes or non-intact skin
- **Gown**
 - Use during any procedure and resident care activity when contact is anticipated with blood/body fluids, secretions, or excretions
- **Mask, goggles, or face shield**
 - Use during any activity likely to generate splashes or sprays with blood, body fluids, secretions, or excretions

Contact Precautions



- Used to prevent spread of germs via contact from individual with known or suspected infection
- Gown and gloves must be used for all room entries and care activities
- Room placement:
 - Single-person room is ideal*
 - Room restriction except for medically necessary care
- Intended to be time-limited to reduce transmission during limited infectious period

*If single-person rooms are not available, case-by-case decisions regarding placement should consider infection risks to other patients/residents in the room and available alternatives

Enhanced Barrier Precautions

What are Enhanced Barrier Precautions (EBP)?

A risk-based approach to PPE use designed to reduce the spread of multidrug-resistant organisms (MDROs)

The use of gown and gloves during **high-contact resident care activities** for residents at high risk of colonization* with an MDRO to disrupt spread

Expands the use of PPE beyond situations in which exposure to blood and body fluids is anticipated

Used in coordination with good infection prevention and control measures

*Colonization means that the organism can be found in or on the body, but it is not causing any symptoms or disease

What are High-Contact Resident Care Activities?

Dressing

Bathing/Showering

Transferring

Providing Hygiene

Changing Linens

Changing Briefs or
Assisting with Toileting

Device Care or Use

- Indwelling catheter
- Trach/vent
- Central line
- Feeding tube

Wound Care

- Generally defined as the care of any skin opening requiring a dressing

When Should I Use Enhanced Barrier Precautions?

Residents with any of the following:

- Infection or colonization with an MDRO when *Contact Precautions do not apply*
- Wounds
- Indwelling medical devices (e.g., central line, urinary catheter, feeding tube, tracheostomy, ventilator)

What Does “*when Contact Precautions do not apply*” Mean?

Contact Precautions should be used for All residents infected or colonized with an MDRO who also have:

- Presence of acute diarrhea
- Draining wounds or other sites of secretions or excretions that are unable to be covered or contained
- For a limited time period on units or in facilities during an investigation of a suspected or confirmed MDRO outbreak

Residents who have another infection or condition for which Contact Precautions is recommended on Appendix A



What MDROs are Included With EBP?

Examples of MDROs Targeted by CDC:

- Pan-resistant organisms
- Carbapenemase-producing carbapenem-resistant Enterobacterales
- Carbapenemase-producing carbapenem-resistant *Pseudomonas* species
- Carbapenemase-producing carbapenem-resistant *Acinetobacter baumannii*
- *Candida auris*

Additional epidemiologically important MDROs may include, but are not limited to:

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

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.

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

Enhanced Barrier Precautions (EBP)

Use EBP when performing high-contact resident care activities and for residents who meet criteria for the use of EBP

- Includes the use of gown and gloves
- Resident does not need a private room
- Resident may participate in communal activities and is not restricted to room
- Intended to be used for the resident's entire length of stay in the facility

Differences Between Contact Precautions and Enhanced Barrier Precautions

Contact Precautions

- Gown and gloves for all room entries and for all activities
- Private room ideal
- Room restriction except for medically necessary care
- Recommended to be time limited

Enhanced Barrier Precautions

- Gown and gloves only for high-contact resident care activities
- No private room
- No room restriction and may participate in communal activities
- Recommended for duration of stay

Infection Prevention and Control Measures



Infection Prevention and Control

Hand Hygiene

PPE Use

Environmental Cleaning and Disinfection

Auditing

Communication

Hand Hygiene

Use Alcohol-Based Hand Sanitizer prior to and after performing any hands-on activity with resident

Including before and after donning and doffing gloves

Recommendation to use soap and water if hands are visibly soiled, before eating, and after using the restroom

PPE Use

- Ensure staff understand when and what types of PPE are recommended during activities with residents
- Ensure appropriate storage and accessibility of PPE at point of care locations



Environmental Cleaning and Disinfection

Develop and maintain a “Who Cleans What” list

Clean and disinfect high touch surfaces at least daily

Reduce the number of products used for cleaning and disinfection

Clean and disinfect reusable medical equipment after every use (i.e., vital sign machines, glucometers, transfer lifts)

Auditing

- Monitor adherence to infection prevention and control (IPC) practices
- IPC practices include hand hygiene, putting on/taking off (don/doff) PPE, environmental surface and equipment cleaning and disinfection
- Can be either paper or electronic documentation
- Provide prompt (real-time) regular feedback on adherence and related outcomes to healthcare personnel and facility leadership

Communication

Use appropriate and legible signs for precautions

Maintain an up-to-date list of residents meeting criteria for precautions

Notify internally (unit, floor) and externally (hospital, doctor's office) about a resident's MDRO status and precautions recommended to be used

Why Enhanced Barrier Precautions?

The Need For Enhanced Barrier Precautions

- High burden of MDRO colonization in nursing homes and with nursing home residents
- Many facilities do not know which residents are colonized
- Colonized residents are at increased risk of MDRO infection
- Provides a method for reducing the transmission or spread of MDROs without isolating the resident

Why Nursing Homes?

- Residents with complex medical needs are at higher risk for acquiring MDROs
- Standard Precautions often have not been successfully implemented in nursing home settings
- Allows for a more effective response to serious antibiotic resistant threats
- Reduces the necessity for Contact Precautions

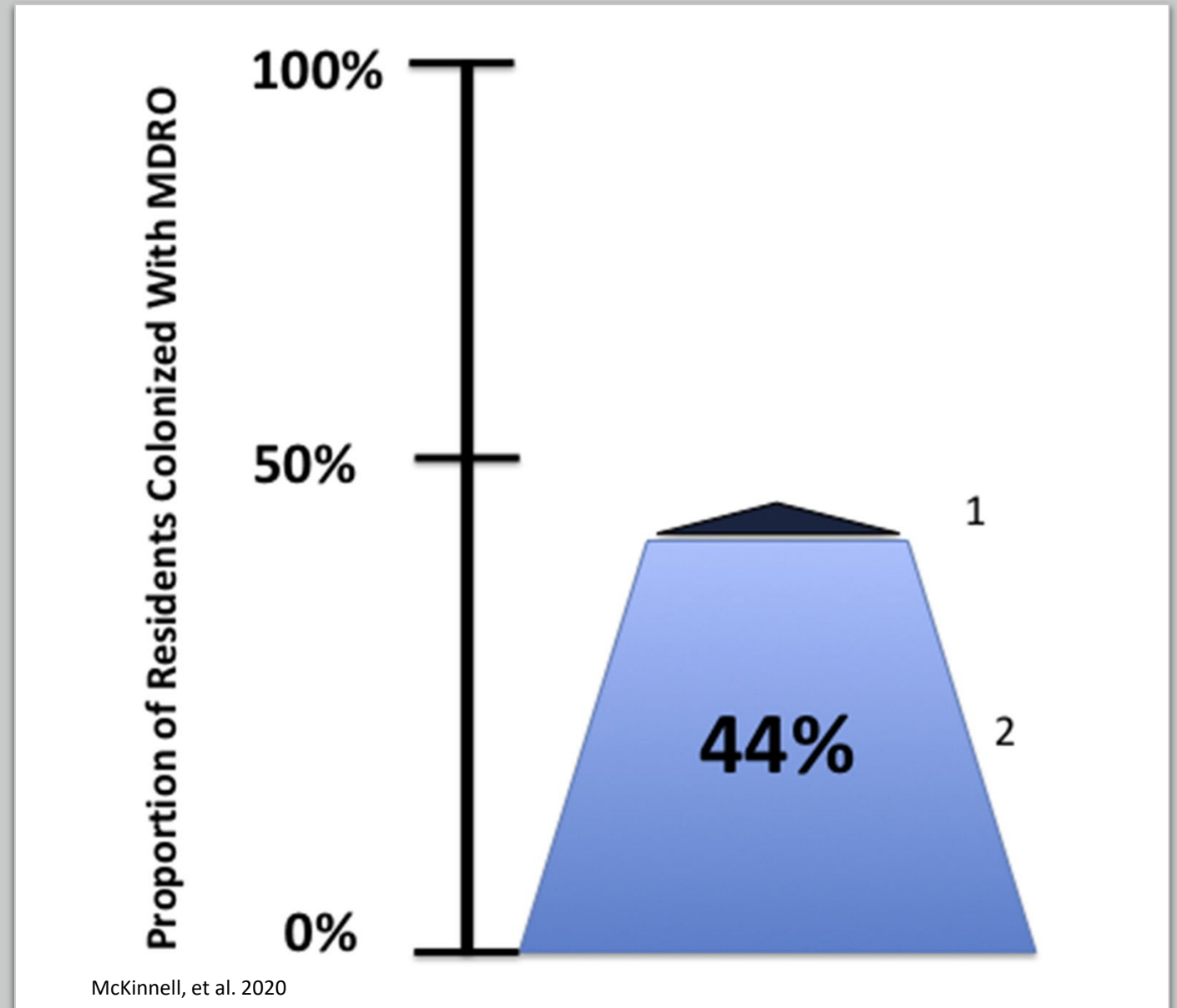
Residents Have Higher Risks of Infection

- Age-related decrease in immune response
- Complex comorbid conditions
- Functional and cognitive deficits requiring high level of dependence
- Frequent antibiotic use
- Indwelling medical devices



High Prevalence of MDROs in Nursing Homes

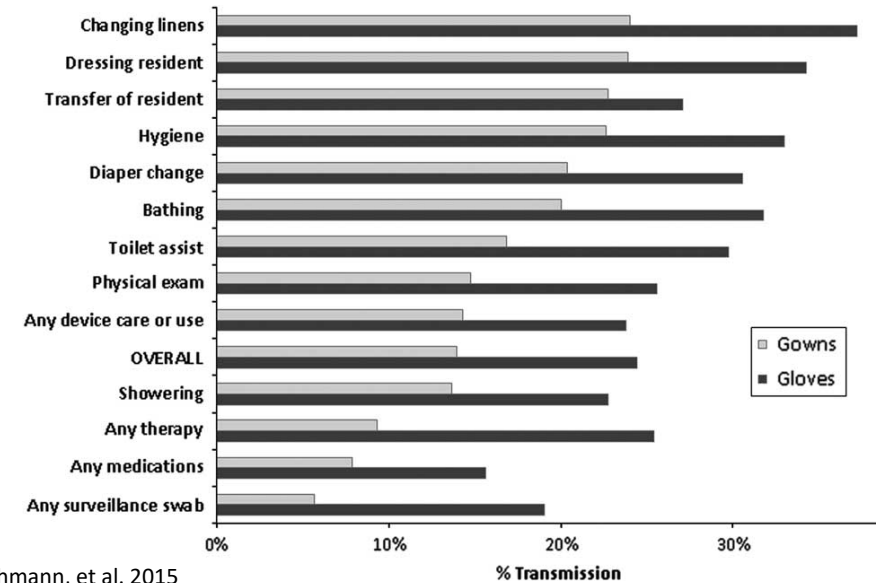
- 48% of residents with MDRO
 - Only 4% had a known MDRO (shown in black)
 - 44% had MDRO only identified during screening (shown in blue)
- Factors associated with MDRO colonization:
 - Urinary catheters
 - Bed bound
 - Gastrointestinal devices



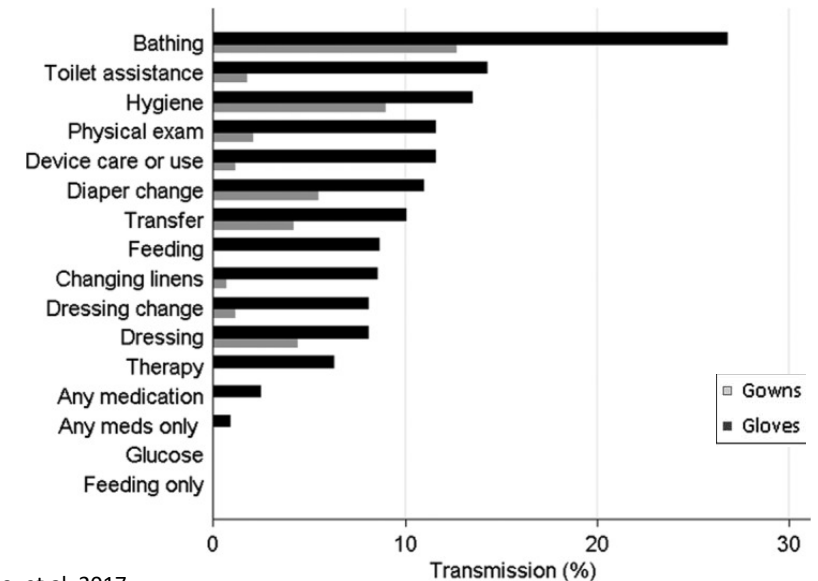
MDRO Transmission Occurs Often During High-Contact Resident Care Activities

Highest risk activities for MDRO transmission

- Dressing resident
- Bathing/showering
- Transferring
- Providing hygiene
- Changing linens
- Diaper change/toilet assist
- Device care or use



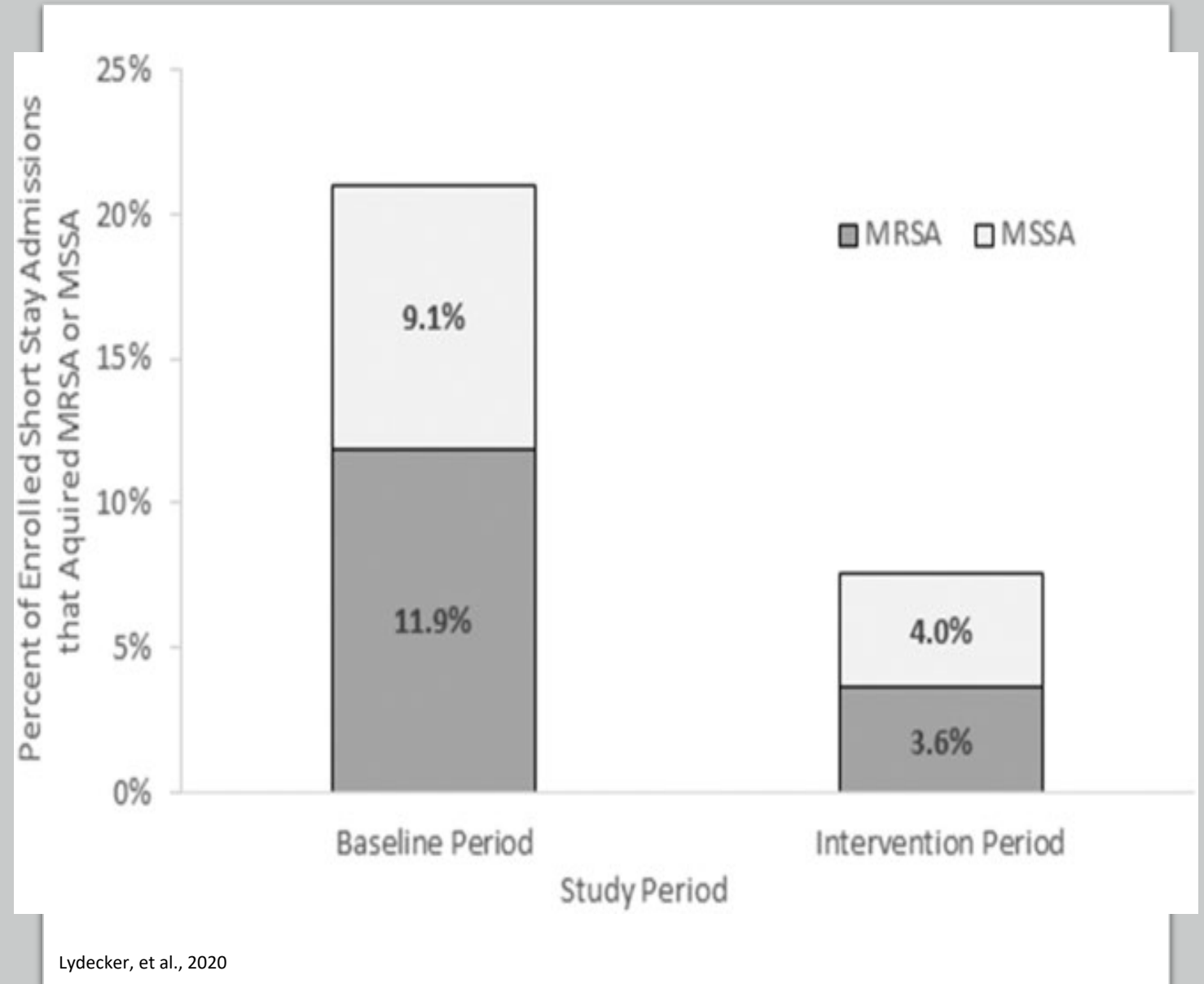
Roghmann, et al. 2015



Blanco, et al. 2017

Targeted Gown and Glove Use to Reduce MDRO Transmission

- Adherence to gown and glove use by nursing home staff was excellent
- Using EBP, MDRO transmission decreased
- Results support EBP as an evidence-based approach to preventing transmission of MDROs with targeted gown and gloves use

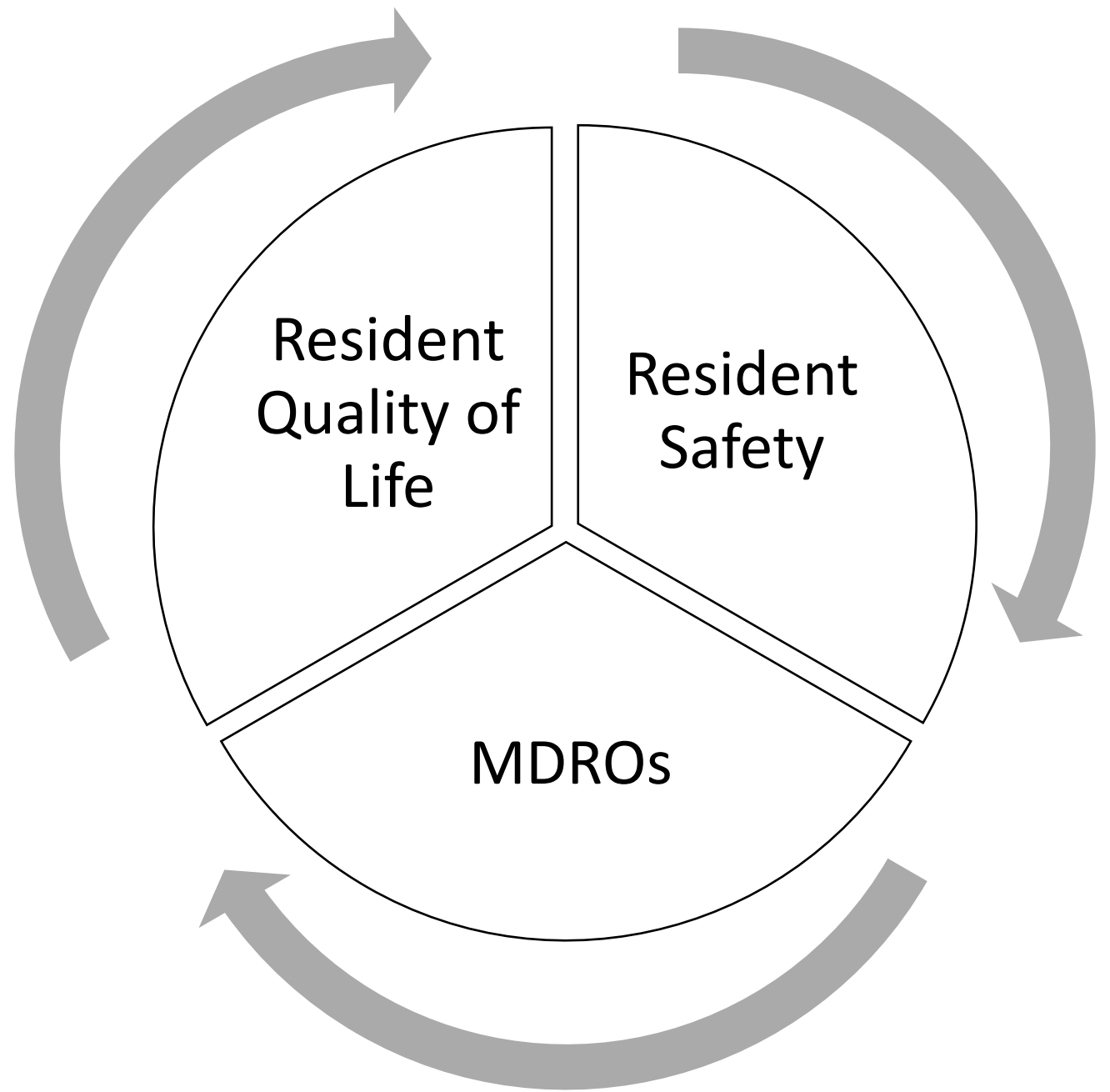


Maintains a Homelike Environment

- Allows group activity participation
- May use communal dining
- No room restrictions



**EBP Balances
Safety With Quality**



HICPAC Post-Acute and Long-term Care Workgroup EBP Summary

- Multidrug-resistant organism (MDRO) transmission is common in skilled nursing facilities, contributing to significant morbidity and mortality for residents and increased costs for the health care system.
- Enhanced Barrier Precautions (EBP) is an approach of targeted gown and glove use during high contact resident care activities, designed to reduce transmission of *S. aureus* and MDROs.
- EBP may be applied (when Contact Precautions do not otherwise apply) to residents with any of the following
 - Wounds or indwelling medical devices, regardless of MDRO colonization status
 - Infection or colonization with an MDRO
- Effective implementation of EBP requires staff training on the proper use of personal protective equipment (PPE) and the availability of PPE with hand hygiene products at the point of care

**Review Methods for Successful Implementation of
Enhanced Barrier Precautions (EBP): Lessons Learned
Through an EBP Pilot**

EBP Pilot: The Basics (Criteria and Plan)

Criteria

- Colonization or infection with any MDRO
- Wounds and/or indwelling medical devices
- EBP implemented facility wide in a variety of different long-term care facilities

Project Plan

- 2-4 weeks for implementation
- 3 months of intervention

EBP Pilot: The Basics (Outcomes)

- Staff adherence to EBP
- Staff, resident, and family member feedback
- Description of residents meeting EBP criteria
- Change in hospitalization and infection rates
- Burden, including cost

Implementation Plan Step 1 - Developing Buy-In

- **Essential**
 - Corporate clinical and operational leaders
 - Facility medical, clinical, and operational
- **Staff**
- **Held meetings**
- **Explained what EBP is and rationale**
- **Benefits – reduction of MDROs**
 - Residents
 - Admissions – reduced cohorting issues and bed lock
 - Colonization pressure
 - Cost – infections and hospital transfers
- **Impact**

Medical Provider Letter

Dear Medical Provider,

We want to inform you that our center is participating in a collaborative project with the CDC to learn best practices for implementing Enhanced Barrier Precautions (EBP). EBP expands the use of personal protective equipment (gowns and gloves) beyond situations in which exposure to blood and body fluids is anticipated to use during high contact resident care activities (for example, bathing, incontinence care, transfers, device/wound care) that provide opportunities for transfer of MDROs to staff hands and clothing.

During the project, which runs until the end of March 2020, you will likely see more precautions signs and PPE carts in the center. The focus is on containing carbapenemase-producing organisms, but we are also trialing EBP use with common MDROs such as MRSA, VRE, and ESBL.

If you have any questions or concerns, please reach out us.

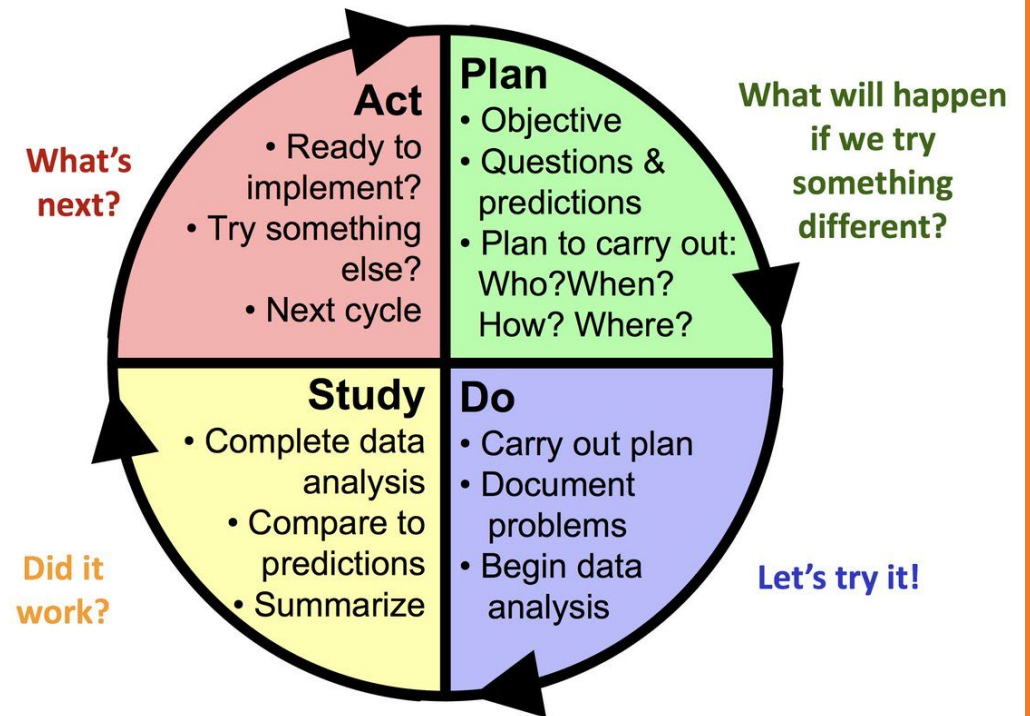
Regards,

Implementation Plan Step 2 – Selecting Implementation Method

Methods of introducing new practices

- Read and sign
- On unit brief inservice
- Group inservice
- Quality Improvement initiative

The PDSA Cycle for Learning and Improvement



Implementation Plan Step 3 – Develop Implementation Plan

- Planning
- Training and Education to staff
- Education for residents, families, and visitors
- Communication
- Ordering/stocking Precautions signs
- Supply of PPE and isolation carts
- Location sites for isolation carts
- Locations of ABHR dispensers
- Locations of disinfectant wipes
- Implementation as a standing item in QAPI
- **Identify residents with qualifying characteristics for placement on EBP**
 - **Maintain this list**
- Placement of residents on EBP or Contact Precautions
- Documentation- line list, care plan

Example of the PPE Section of Implementation Plan

<ul style="list-style-type: none"> • Determine current PPE on hand (gowns – in universal and extra large size, gloves – all sizes, face protection – masks, goggles, face shields) • Review current storage of PPE in central supply space. Is the space adequate for larger quantities of PPE – gowns specifically? • Determine who will stock the PPE to the carts on the units and frequency to ensure products are available each shift. <p>9. Walk the halls. Determine location sites for isolation/PPE carts on each unit based on the location of patients placed on Enhanced Barrier or Contact Precautions</p> <ul style="list-style-type: none"> • Determine the frequency, process, and person(s) responsible for cleaning and disinfection the isolation carts in between patient use • Determine need to purchase additional PPE carts on wheels and schedule of purchasing <p>10. Determine locations of ABHR dispensers in patient rooms and/or in hallways for</p>		<p>Consider egress in hallways, location of red emergency power outlets in determining location of carts</p> <p>PPE must be readily (immediately) accessible to staff</p> <p>Carts must be on wheels, so are not permanent fixtures in the hallway, but are easily movable</p> <p>Consider ease of use and workflow</p>
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Resident/Family Education



Welcome to Our Center!

We are committed to a culture of patient safety in this facility, from the nursing staff, to the administrative office, to the environmental services department. The infection prevention and control department would like to share with you some of the clinical practices we use to prevent the spread of germs here, at _____, based on nationally recognized standards of care.

You will notice that our staff may wear personal protective equipment, or PPE, such as gowns and gloves for patient care, such as bathing, dressing, grooming, toileting and changing linens.

This is in accordance with CDC recommendations for certain standards of patient care and also as a result of a deeper commitment to protecting you or your loved one from the germs of the patient we last cared for.

Our staff take care of many patients, and like honeybees, if we are not careful, can transfer germs from patient to patient, just like a honeybee pollinates flowers in a field. We don't want to be honeybees. We want to provide safe, effective and competent care for you or your loved one, by wearing the proper PPE to prevent the risk of transmission.

If you have any questions about this practice, please ask to speak to your nurse or the Infection Preventionist for this facility.
Thank you!

Talking Points for State Surveyors

- We just wanted to inform you that our center is currently collaborating with the Center for Disease Control and Prevention (CDC) regarding Enhanced Barrier Precautions
- Facilities should contact their local state survey agency when implementing Enhanced Barrier Precautions
- The purpose of the collaboration, which will last through the end of March 2020, is to establish best practices for the implementation of Enhanced Barrier Precautions to be used as a standard of practice rather than just for containment

Common Issues – Isolation Carts

- Re-stocking of PPE
- Number of carts needed
- Concerned about egress
- Fear carts would be considered “stationary” by surveyors since not moved frequently
- Clutter in hallways - carts and other equipment, especially during AM care (lifts, linen carts)
- No room for residents to sit in the hallway if they wanted to
- Carts – identified a generic cart from a national retail chain that was slimmer and wider, could accommodate twice the PPE
- **Always use carts on wheels**
- **Best Practice: 1 cart per 2-4 rooms worked best, depending on style of cart**

Life Safety Code

The Life Safety Code and health care corridor width

NFPA Journal®, January/February 2013

According to [NFPA 101®, Life Safety Code®](#), new health care facilities are required to have corridors 8 feet (2.4 meters) "in clear and unobstructed width." This has long been an issue in health care occupancies, where medical equipment and other items are often found in corridors or hung from corridor walls. The 2012 edition of the Life Safety Code made some significant changes regarding placement and use of items in corridors in health care occupancies, which was done to improve the quality of life, particularly in nursing homes, and to recognize the operational needs in hospitals.

The code now allows groups of furniture in corridors, provided the corridor is at least 8 feet wide. This allows for seating areas that can be used by residents and visitors, and as "rest stops" for occupants who cannot walk far without needing a rest. This allowance for furniture in the corridors also helps nursing homes provide a more home-like and friendlier environment. The furniture must be secured to the wall or floor, arranged so it leaves at least 6 feet (1.8 meters) clear in the corridor, and located only on one side of the corridor. Each grouping of furniture can be no larger than 50 square feet (4.6 square meters), and each grouping must be separated by at least 10 feet (3 meters). Also, corridors within the smoke compartment either need to be protected with smoke detection, or the fixed furniture locations need to be visible from a nurses' station.

The Life Safety Code also allows non-continuous projections from the walls up to 6 inches (15 cm) deep, provided these projections are a minimum of 38 inches (96 cm) above the floor, which elevates them above gurney and cart height. This allows for telephones, flat-screen charting stations, and other items to be mounted on the corridor walls.

The Life Safety Code also expanded its provisions for wheeled items in the corridor. Projections into the corridor for wheeled equipment are permitted under three conditions: where the equipment does not reduce the corridor width to less than five feet (1.5 meters); where the fire plan provides for the relocation of the equipment in an emergency; and where the wheeled equipment is limited to equipment in use, emergency medical equipment such as crash carts or isolation carts, and patient lift and transport equipment. This last item is new. It is important that patient lift equipment be located nearby so staff can move patients as needed, and the facility will need to be careful with such equipment so that it does not block access to emergency equipment, fire and smoke door operation, or access to exits. Obviously staff training will be important.

FROM THE ARCHIVES

November - December 2012

[Fire alarm system requirements in NFPA 72 and NFPA 101](#)

September - October 2012

[What do codes say about boiler in hotels and dormitories in schools?](#)

July - August 2012

[Occupancy load increases for events held in tents](#)

May - June 2012

[Markings must be constructed correctly for their intended purpose](#)

March - April 2012

[Decrease also the number of means of egress](#)

January - February 2012

[Changes to NFPA 101: occupancy classes in two new areas \(2011\)](#)

Alcohol-Based Hand Rub and Disinfectants

- ABHR in resident rooms
- Concern surveyors would issue citation
- Single-use packets for nurse procedures
- Products group to research tamper proof ABHR dispensers, if available
- Sent facilities life safety and other codes for amount and location of ABHR dispensers
- Institutional feel rather than home-like when adding more hallway ABHR dispensers
- Some facilities placed canisters of disinfectant wipes in the bottom drawer of the precaution carts making it easier for staff to disinfect equipment, etc.
- Two of these facilities went through annual survey and the surveyors found no issues with this practice

NFPA 101 Life Safety Code 2018

Placement of Hand Hygiene Dispensers

18.4.3* Alcohol-Based Hand-Rub Dispensers. Alcohol-based hand-rub dispensers shall be protected in accordance with 8.7.3.1, unless all of the following conditions are met:

- (1) Where dispensers are installed in a corridor, the corridor shall have a minimum width of 6 ft (1830 mm).
- (2) The maximum individual dispenser fluid capacity shall be as follows:
 - (a) 0.32 gal (1.2 L) for dispensers in rooms, corridors, and areas open to corridors
 - (b) 0.50 gal (2.0 L) for dispensers in suites of rooms
- (3) Where aerosol containers are used, the maximum capacity of the aerosol dispenser shall be 18 oz (0.51 kg) and shall be limited to Level 1 aerosols as defined in NFPA 50B.
- (4) Dispensers shall be separated from each other by horizontal spacing of not less than 48 in. (1220 mm).
- (5) Not more than an aggregate 50 gal (37.8 L) of alcohol-based hand-rub solution or 11.35 oz (32.2 kg) of Level 1 aerosols, or a combination of liquids and Level 1 aerosols not to exceed, in total, the equivalent of 10 gal (37.8 L) or 11.35 oz (32.2 kg), shall be in use outside of a storage cabinet in a single smoke compartment, except as otherwise provided in 18.4.3.06.
- (6) One dispenser complying with 18.4.3(2) or (3) per room and located in that room shall not be included in the aggregated quantity addressed in 18.4.3(5).
- (7) Storage of quantities greater than 5 gal (18.9 L) in a single smoke compartment shall meet the requirements of NFPA 50B.
- (8) Dispensers shall not be installed in the following locations:

- (a) Above an ignition source within a 1 in. (25 mm) horizontal distance from each side of the ignition source
- (b) To the side of an ignition source within a 1 in. (25 mm) horizontal distance from the ignition source
- (c) Beneath an ignition source within a 1 in. (25 mm) vertical distance from the ignition source
- (9) Dispensers installed directly over carpeted floors shall be permitted only in sprinklered smoke compartments.
- (10) The alcohol-based hand-rub solution shall not exceed 50 percent alcohol content by volume.
- (11) Operation of the dispenser shall comply with the following criteria:
 - (a) The dispenser shall not release its contents except when the dispenser is activated, either manually or automatically by touch-free activation.
 - (b) Any activation of the dispenser shall occur only when an object is placed within 4 in. (100 mm) of the sensing device.
 - (c) An object placed within the activation zone and left in place shall not cause more than one activation.
 - (d) The dispenser shall not dispense more solution than the amount required for hand hygiene consistent with label instructions.
 - (e) The dispenser shall be designed, constructed, and operated in a manner that ensures that accidental or malicious activation of the dispensing device is minimized.
 - (f) The dispenser shall be tested in accordance with the manufacturer's care and use instructions each time a new refill is installed.



Page 223 of 660 of 2018 edition of NFPA 101B
[https://www.nfpa.org/codes-and-standards/life-safety-code-and-standards/life-safety-code-and-standards/life-safety-code-101](https://www.nfpa.org/codes-and-standards/codes-and-standards/life-safety-code-and-standards/life-safety-code-and-standards/life-safety-code-101)

accessed 8/25/18 mm

is communication is to promote use of alcohol-based hand rubs (ABHR) in long-term care facilities (LTCF). The Pennsylvania Department of Health, Division of Nursing Care Facilities and Division of Safety

OBJECTIVE:

To ensure that health care providers might need to clean their hands as many as 10 times per day, health care providers properly implement World Health Organization's (WHO) [Clean Hands Campaign](http://www.who.int/infection-prevention/campaigns/clean-hands) (<http://www.who.int/infection-prevention/campaigns/clean-hands>)

Ensure that ABHR is the most effective method for hand hygiene in health care settings, and that it is the least likely to lead to skin breakdown in health care workers. The goal is to promote hand hygiene in health care settings, including LTCF.

IMPLEMENTATION:

Ensure that the ABHR dispensers are widely available and easily accessible to staff where and when they need it!

Place ABHR dispensers at the entrance to each patient room. Ideally, dispensers should be easily accessible to health care workers. In multi-resident rooms, consider placing dispensers in a common area, such as a hallway, as well as at the entrance to each unit. In long-term care units, place ABHR dispensers near the nurses' station. Provide individual dispensers in an otherwise empty pocket or clipped onto their person. Use dispensers in your locked units. Train staff on how to properly use individual dispensers and demonstrate competency.

Life Safety Code and ABHR

Common Issues – PPE

- Amount of cumulative time for staff to comply with donning/doffing PPE
- KEY- plan ahead and bundle care
- Vent unit Respiratory Therapists
- Vent center - increase garbage pick up
- Ordered larger trash cans with lids for resident rooms to accommodate more PPE



Staff Education and Notification

- EBP policy and procedure
 - MDRO-EBP care plan developed and placed into EMR
 - Incorporated education into general orientation
 - Completed competency testing on hand hygiene and donning/doffing PPE for all new hires
 - Developed and delivered discipline specific education
 - Obtained EBP sign for doors
 - One center used a yellow highlighter on the CNA kardexes
 - Yellow dots on room name plates
-

Center Infection Preventionist Constraints

- Challenge to implement for some IPs due to competing demands:
 - Plans of Correction
 - Influenza program implementation
 - Staffing
 - Expecting state survey at any time
 - One DON took charge of implementing as she shared IP with another center

Observation Tool: Enhanced Barrier Precautions / Contact Precautions

Center: _____

Staff Type* & Date <i>(see key below & type)</i>	Type of Opportunity <i>(choose from dropdown box below)</i>	HH Performed? <i>(choose from dropdown box below)</i>	Enhanced Barrier (E) or Contact Precautions (C) <i>(choose from dropdown box below)</i>	Gown and Gloves Used? <i>(choose from dropdown box below)</i>	Gown/Gloves Changed Between Patients? <i>(choose from dropdown box below)</i>
MD	Room Entry	No HH Done	E	Both	Yes

Process Surveillance

Staff and Resident Comments

November

“I’m always going to have to put this one?
It’s too much to put on each time.”

December

CNA “Time consuming, takes away from prompt response and time with residents.”

CNA “No residents voicing complaints – residents and families do not have a problem voicing concerns.”

IP “Feels like everyone being admitted has an MDRO.”

January

IP “ No residents refused; they like the extra protection. Staff have incorporated into their workflow.”

February

CNA “In the beginning, it was hard, had to go in-and-out of room because I forgot something. But then I got used to it and it makes me plan ahead – what am I going to need, not it’s not bad and it’s not adding time.”

February

IP “Resident’s families coming in expecting precautions because used in hospital”

Resident “Staff wears gowns and gloves during care, doesn’t make me feel bad.”

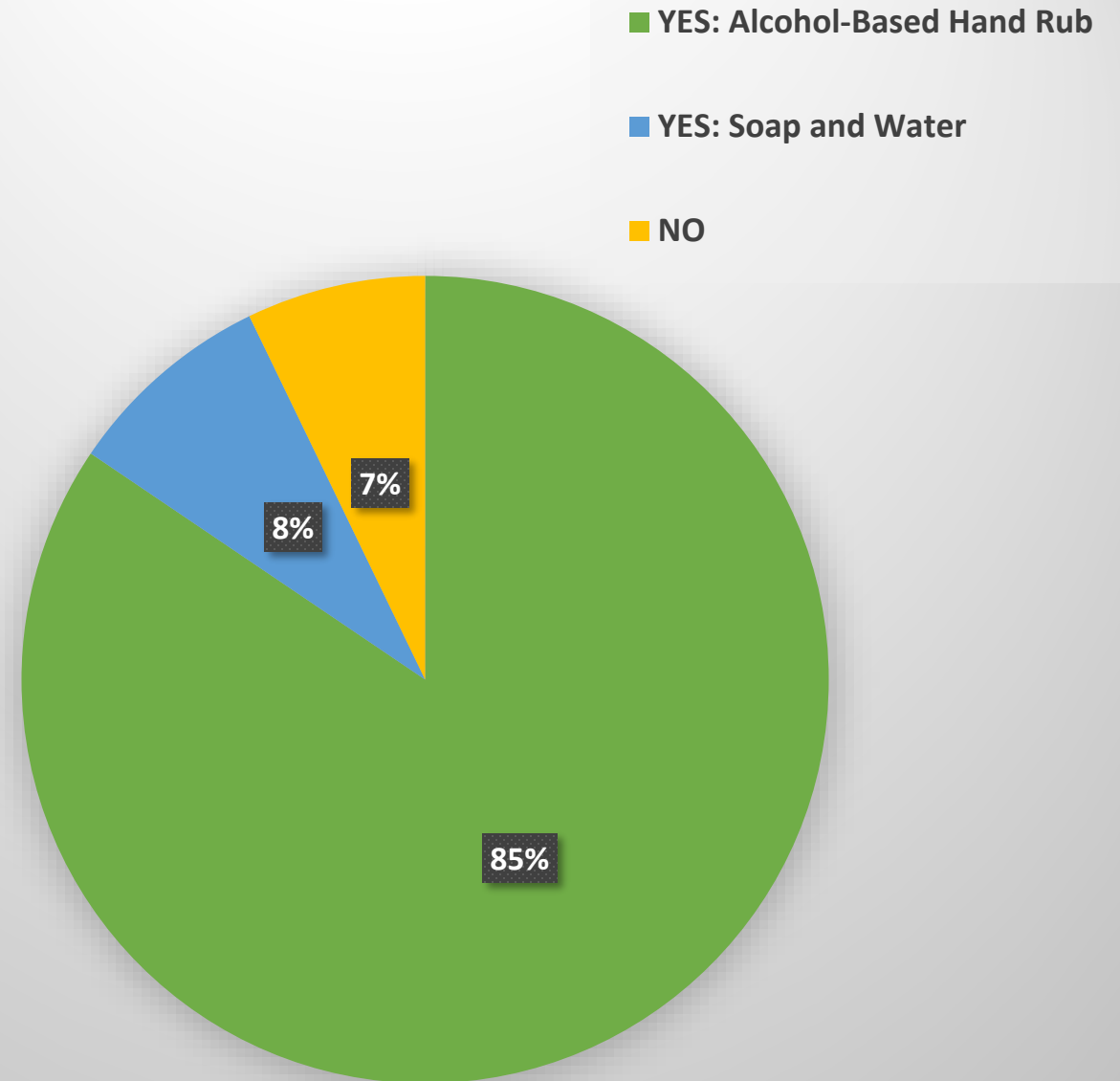
Resident “Doesn’t bother me. Did request clarification again as to why staff wearing PPE.”

Staff Adherence to EBP PPE

<u>PPE</u>	<u>Adherence</u>						Grand Total
	Nurse Aide	Nursing (LPN, nurse, RN)	Clinical (MD, NP)	Respiratory Therapy	Rehab	Environmental Services	
Gown and Gloves							
n	87	52	9	25	13	10	196
%	82.86%	88.14%	90.00%	100.00%	86.67%	55.56%	84.48%
Gloves only							
n	16	4	0	0	1	6	27
%	15.24%	6.78%	0.00%	0.00%	6.67%	33.33%	11.64%
Neither used							
n	2	3	1	0	1	2	9
%	1.90%	5.08%	10.00%	0.00%	6.67%	11.11%	3.88%
Total n	105	59	10	25	15	18	232

Hand Hygiene Performance

- Total = 246 observations
 - Nurse Aides: 86% (91)
 - Nursing: 75% (51)
 - Clinical: 60% (6)
 - Rehab: 86% (12)
 - Respiratory Therapy: 100% (25)
 - Environmental Services: 75% (12)



Why Did Residents Meet Criteria For EBP?

Indication	Number of EBP Residents Total = 319	Percentage
Wounds	138	43%
Indwelling Device	149	47%
Novel/Target Organism	12	4%
Any other MDRO	141	44%

Proportion of Residents Meeting EBP Criteria in Different Facilities

Center Description	Met EBP Criteria
<p><u>Center #1:</u></p> <ul style="list-style-type: none"> • Mostly long-stay residents • Short-stay unit • CENSUS = 238 	<p>66/238 = 28%</p> <ul style="list-style-type: none"> • MDRO = 36 (55%) • Wound = 29 (44%) • Device = 23 (35%) <p>*20 (30% met >1 criteria)</p>
<p><u>Center #2:</u></p> <ul style="list-style-type: none"> • Short-stay only • Average LOS \leq 2 weeks • CENSUS = 110 	<p>10/110 = 9%</p> <ul style="list-style-type: none"> • MDRO = 2 (20%) • Wound = 1 (10%) • Device = 7 (70%) <p>*No residents met >1 criteria</p>
<p><u>Center #3:</u></p> <ul style="list-style-type: none"> • Provides ventilator services • Mix of long- and short-stay residents • CENSUS = 130 	<p>54/130=42%</p> <ul style="list-style-type: none"> • MDRO = 32 (59%) • Wound = 24 (44%) • Device = 29 (54%) <p>*27 (50% met >1 criteria)</p>

Cost

- Increase in cost associated with more use of PPE
 - Start-up costs greater than maintenance costs
 - PPE storage carts, ABHR, gowns, gloves
 - Costs may differ from actual use
 - Challenging to predict PPE use
 - Supply purchases may have been an overestimate
- Recommendations from Administrators
 - Spread out implementation if challenges arise
 - Increased trash pickup was an unexpected increased cost

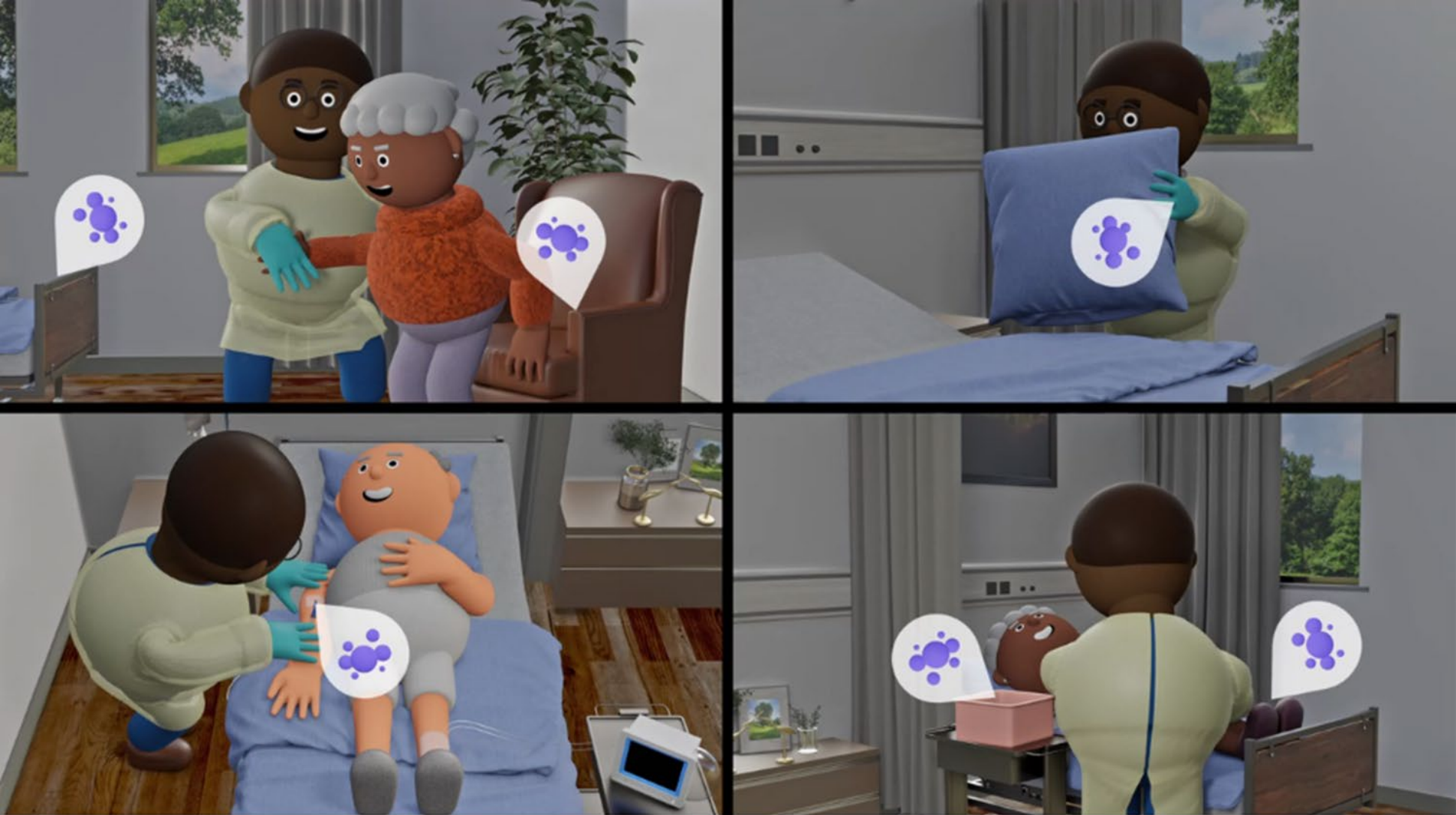
What We Learned

- Enhanced Barrier Precautions can be successful
 - Having an implementation plan is essential
 - Promoting education plays a critical role
 - Communication with everyone
- EBP use will differ across facilities
 - This number will vary based on facility population and criteria for EBP
- Ventilator-capable nursing homes had higher costs

**Please type all your questions
in the Q & A or Chat Section**



EBP Resources Coming Soon!



Resources

Enhanced Barrier Precautions

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

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

Frequently Asked Questions (FAQs) about Enhanced Barrier Precautions in Nursing Homes

<https://www.cdc.gov/hai/containment/faqs.html>

Considerations for Use of Enhanced Barrier Precautions in Skilled Nursing Facilities

<https://www.cdc.gov/hicpac/workgroup/EnhancedBarrierPrecautions.html?msclkid=39038417aed311ec8c868e1e03c50297>

Enhanced Barrier Precautions Sign

<https://www.cdc.gov/hai/pdfs/containment/enhanced-barrier-precautions-sign-P.pdf> (English)

<https://www.cdc.gov/hai/pdfs/containment/spanish-enhanced-barrier-precautions-sign-P.pdf> (Spanish)

Resources

Educational Resources

Project Firstline

<https://www.cdc.gov/infectioncontrol/projectfirstline/healthcare/videos-graphics.html>

CDC Train: Infection Preventionist Training Course

<https://cdc.train.org/cdctrain/welcome>

Infection Prevention and Control Assessment Tool for Long-Term Care Facilities

<https://www.cdc.gov/infectioncontrol/pdf/icar/lctcf.pdf>

Resources 1

Hand Hygiene

Hand Hygiene and Standard Precautions Course

<https://www.cdc.gov/handhygiene/training/interactiveEducation/>

Clean Hands Count for Healthcare Providers

<https://www.cdc.gov/handhygiene/providers/index.html>

Resources 2

Personal Protective Equipment

Burn Rate Calculator – Version 2

<https://www.cdc.gov/coronavirus/2019-ncov/downloads/hcp/PPE-Burn-Rate-Calculator-Version-2.2.xlsx>

NIOSH PPE Tracker App

<https://www.cdc.gov/niosh/ppe/ppeapp.html>

Resources 3

Environmental Cleaning and Disinfection

CDC Environmental Cleaning Checklist

<https://www.cdc.gov/hai/pdfs/toolkits/Environmental-Cleaning-Checklist10-28-2010.doc>

CDC Environmental Checklist for Monitoring Terminal Cleaning

<https://www.cdc.gov/hai/pdfs/toolkits/Environmental-Cleaning-Checklist-10-6-2010.pdf>

CDC Environmental Cleaning Evaluation Worksheet (Excel)

<https://www.cdc.gov/hai/pdfs/toolkits/Environmental-Cleaning-Eval-Worksheet-10-6-2010.xls>

Resources 4

Communication

Interfacility Transfer Form

<https://www.cdc.gov/hai/pdfs/toolkits/Interfacility-IC-Transfer-Form-508.pdf?msclkid=0dd6df40ac5911ec9ad0153afa2f9e30>

Contact Precautions Sign

<https://www.cdc.gov/infectioncontrol/pdf/contact-precautions-sign-P.pdf> (English)

<https://www.cdc.gov/infectioncontrol/pdf/spanish-contact-precautions-sign-P.pdf> (Spanish)

Resources 5

State-Based Resources

State-based HAI Prevention Activities

<https://www.cdc.gov/hai/state-based/index.html>

References

- Blanco, N., Pineles, L., Lydecker, A. D., Johnson, J. K., Sorkin, J. D., Morgan, D. J., VA Gown and Glove Investigators, & Roghmann, M. C. (2017). Transmission of Resistant Gram-Negative Bacteria to Health Care Worker Gowns and Gloves during Care of Nursing Home Residents in Veterans Affairs Community Living Centers. *Antimicrobial agents and chemotherapy*, 61(10), e00790-17. <https://doi.org/10.1128/AAC.00790-17>
- Blanco, N., Johnson, J., Sorkin, J., Lydecker, A., Levy, L., Mody, L., & Roghmann, M. (2018). Transmission of resistant Gram-negative bacteria to healthcare personnel gowns and gloves during care of residents in community-based nursing facilities. *Infection Control & Hospital Epidemiology*, 39(12), 1425-1430. doi:10.1017/ice.2018.247
- Cassone, M., & Mody, L. (2015). Colonization with Multi-Drug Resistant Organisms in Nursing Homes: Scope, Importance, and Management. *Current geriatrics reports*, 4(1), 87–95. <https://doi.org/10.1007/s13670-015-0120-2>
- Lydecker, A., Osei, P., Pineles, L., Johnson, J., Meisel, J., Stine, O., . . . Roghmann, M. (2021). Targeted gown and glove use to prevent *Staphylococcus aureus* acquisition in community-based nursing homes: A pilot study. *Infection Control & Hospital Epidemiology*, 42(4), 448-454. doi:10.1017/ice.2020.1219

References 2

McKinnell, J. A., Singh, R. D., Miller, L. G., Kleinman, K., Gussin, G., He, J., Saavedra, R., Dutciuc, T. D., Estevez, M., Chang, J., Heim, L., Yamaguchi, S., Custodio, H., Gohil, S. K., Park, S., Tam, S., Robinson, P. A., Tjoa, T., Nguyen, J., Evans, K. D., ... Huang, S. S. (2019). The SHIELD Orange County Project: Multidrug-resistant Organism Prevalence in 21 Nursing Homes and Long-term Acute Care Facilities in Southern California. *Clinical infectious diseases : an official publication of the Infectious Diseases Society of America*, 69(9), 1566–1573. <https://doi.org/10.1093/cid/ciz119>

McKinnell JA, Miller LG, Singh RD, Gussin G, Kleinman K, Mendez J, Laurner B, Catuna TD, Heim L, Saavedra R, Felix J, Torres C, Chang J, Estevez M, Mendez J, Tchakalian G, Bloomfield L, Ceja S, Franco R, Miner A, Hurtado A, Hean R, Varasteh A, Robinson PA, Park S, Tam S, Tjoa T, He J, Agrawal S, Yamaguchi S, Custodio H, Nguyen J, Bittencourt CE, Evans KD, Mor V, McConeghy K, Weinstein RA, Hayden MK, Stone ND, Steinberg K, Beecham N, Montgomery J, DeAnn W, Peterson EM, Huang SS. High Prevalence of Multidrug-Resistant Organism Colonization in 28 Nursing Homes: An "Iceberg Effect". *J Am Med Dir Assoc*. 2020 Dec;21(12):1937-1943.e2. <https://doi.org/10.1016/j.jamda.2020.04.007>

Mody, L., Maheshwari, S., Galecki, A., Kauffman, C. A., & Bradley, S. F. (2007). Indwelling device use and antibiotic resistance in nursing homes: identifying a high-risk group. *Journal of the American Geriatrics Society*, 55(12), 1921–1926. <https://doi.org/10.1111/j.1532-5415.2007.01468.x>

Roghmann, M. C., Johnson, J. K., Sorkin, J. D., Langenberg, P., Lydecker, A., Sorace, B., Levy, L., & Mody, L. (2015). Transmission of Methicillin-Resistant *Staphylococcus aureus* (MRSA) to Healthcare Worker Gowns and Gloves During Care of Nursing Home Residents. *Infection control and hospital epidemiology*, 36(9), 1050–1057. <https://doi.org/10.1017/ice.2015.119>

Course Number: WC4446

Continuing Edu Information

Course Access Code: EBP1115

CE Expiration Date: December 15, 2022

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