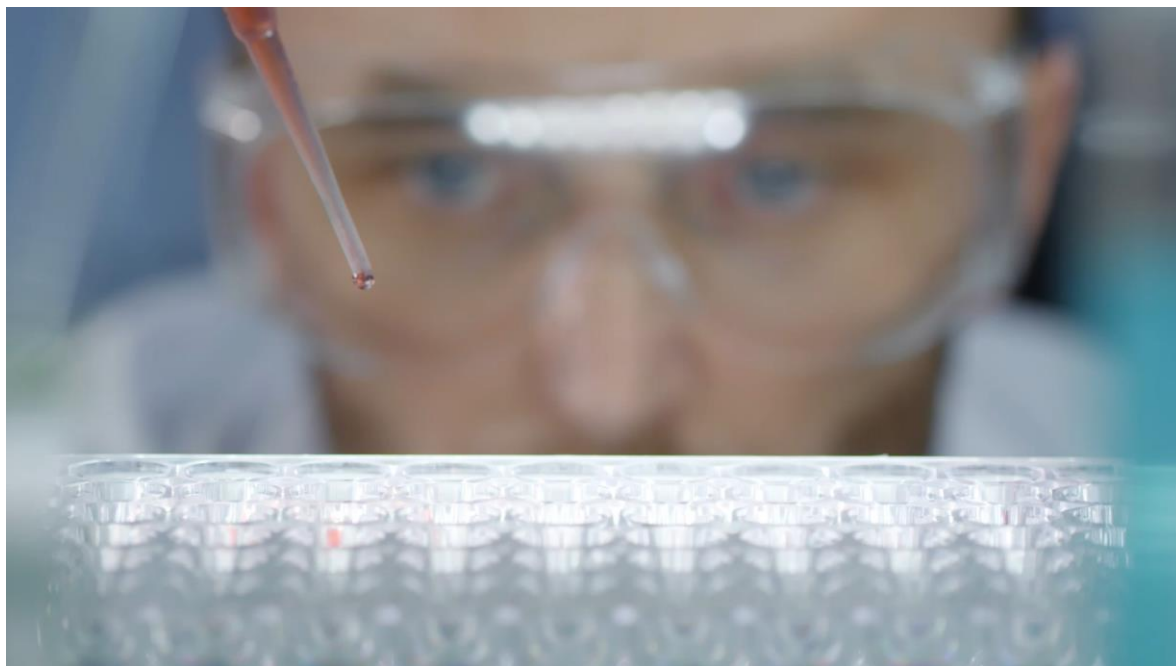




Multi-Drug Resistant Organisms And Enhanced Barrier Precautions

A Medical Director's Perspective

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Mercy Post Acute and Long-Term Care

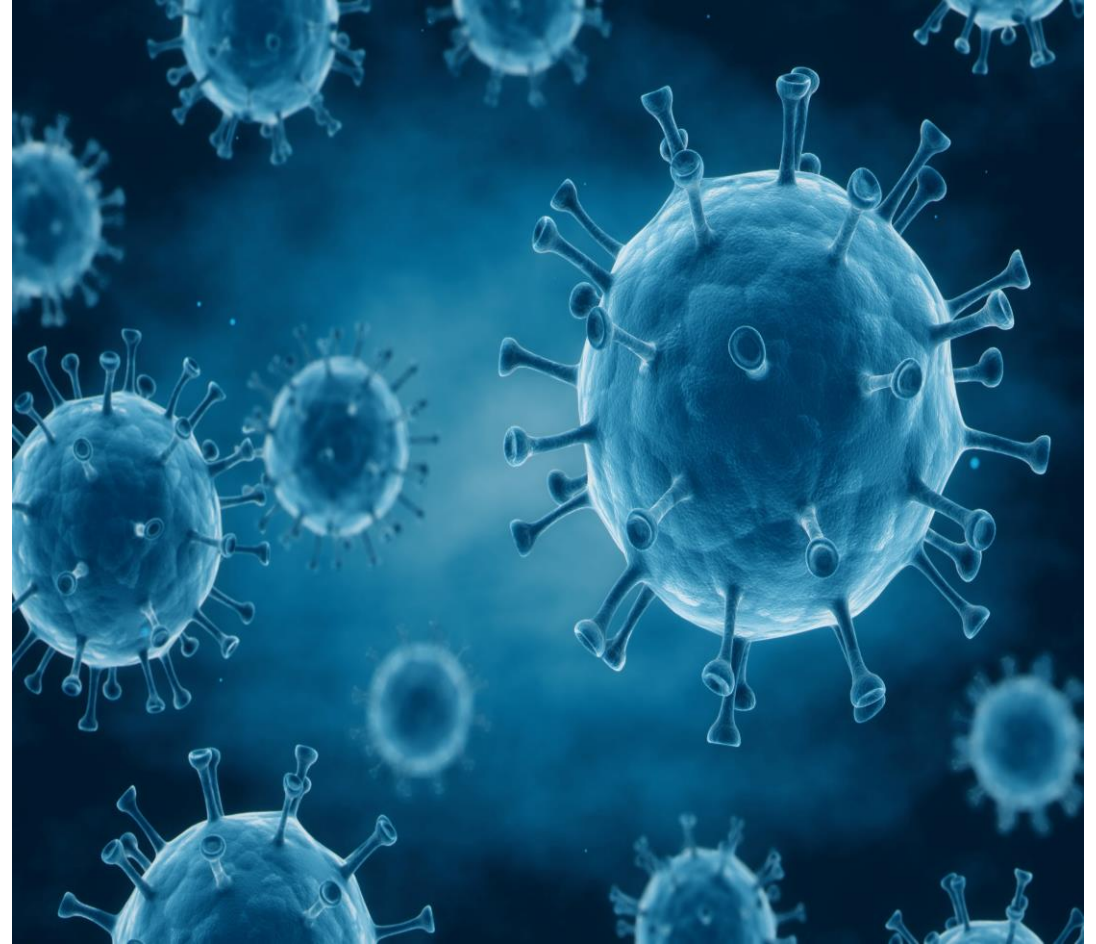
Objectives

- Describe the current state and trends regarding Multidrug Resistant Organisms in healthcare settings.
- Review CDC and Missouri DHSS guidance on Enhanced Barrier Precautions in nursing homes.
- Identify ways to engage nursing home medical directors in implementation of Enhanced Barrier Precautions.
- Review practical strategies for educating families and staff regarding Enhanced Barrier Precautions.

Multi-Drug Resistant Organisms

“Superbugs”

- MRSA
- VRE
- ESBL
- Multi-Drug-Resistant Pseudomonas
- CRE, CRAB
- C. Auris
- ?? What's next



True or False?

The incidence of osteomyelitis has doubled in the last 40 years in patients aged 60 years and older.

Since 1990, the probability that a sepsis death resulted from an MDRO has increased 85%.

The incidence of MDRO's across the board is increasing year over year.

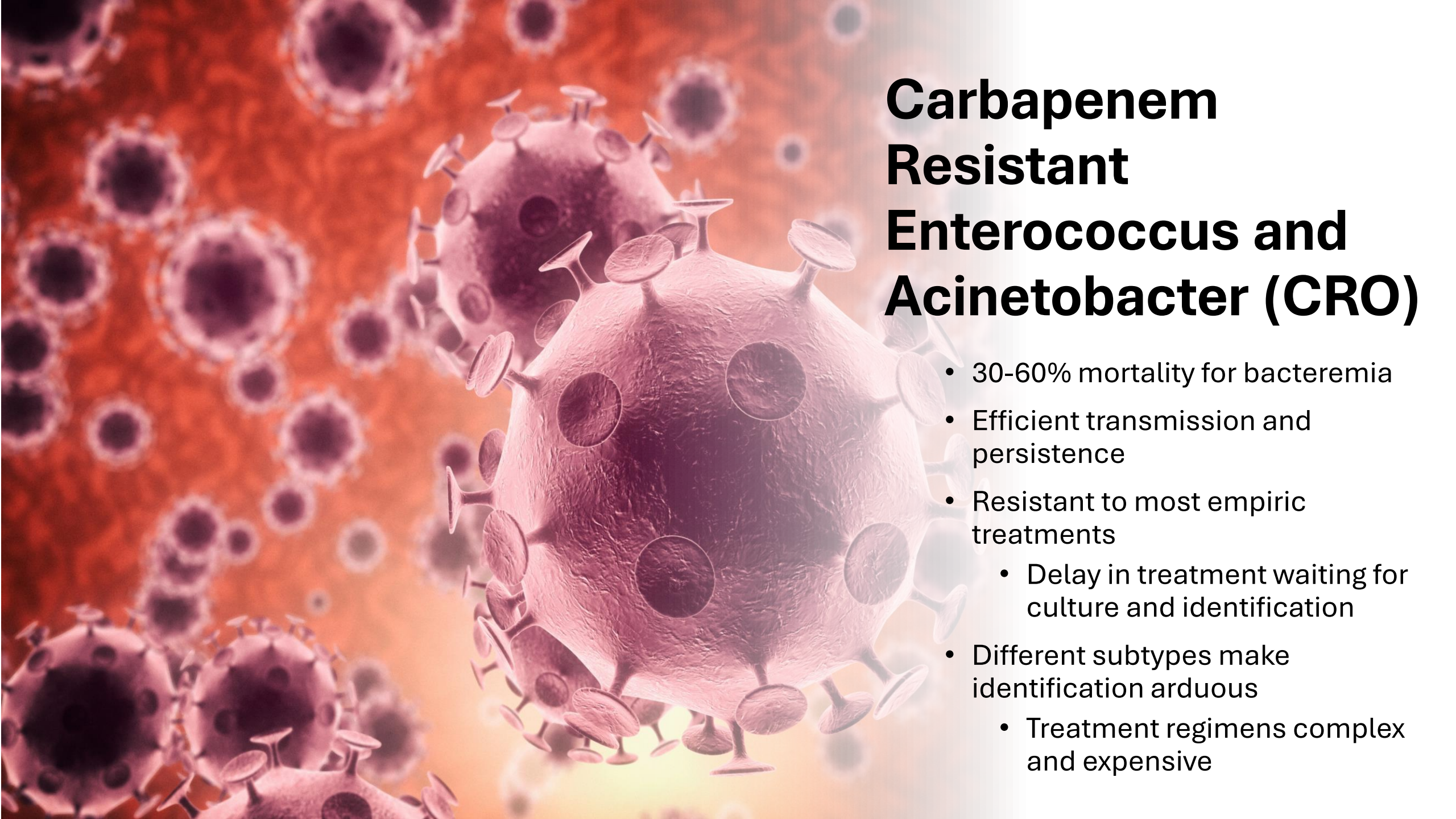
Economic factors are limiting the development of new antibiotics to combat MDRO's.



Candida Auris

- Colonizes nares, axilla, groin and persists
- Candidemia develops in up to 25% of critically ill patients
- High mortality of 50% with candidemia
 - Rapid spread
 - Highly resistant to already limited antifungal options
- Only treatments are fungistatic, not fungicidal





Carbapenem Resistant Enterococcus and Acinetobacter (CRO)

- 30-60% mortality for bacteremia
- Efficient transmission and persistence
- Resistant to most empiric treatments
 - Delay in treatment waiting for culture and identification
- Different subtypes make identification arduous
 - Treatment regimens complex and expensive

Why are hospitals screening for C Auris/CRO?

- Mortality and morbidity risks, especially for critically ill patients
- Risk for progression is high in ICU/acutely ill patients
 - Immunosuppression including diabetes
 - Already on antibiotics, disrupting normal flora
- Efficient transmission in ICU patients
 - ICU patients require high-contact with staff
 - High burden of organisms, even with colonization
 - Lines, drains, wounds



Colonization vs. Infection

- Colonization

- Micro-organisms present on host without classic signs/symptoms of infection or increased immune response
- Up to 20% can become infection
 - Risk factors include immunosuppression, chronic comorbidities, disruption of normal flora

- Infection

- Micro-organisms invade host tissues, inciting damage and/or immune response
 - Fever, chills, elevated white blood cell count, symptoms of pneumonia, UTI, cellulitis, etc

What are Enhanced Barrier Precautions?

- Infection control intervention designed to reduce transmission of MDRO's in nursing homes
- Between standard and contact precautions
- Use of Personal Protective Equipment during high contact activities with select nursing home patients
 - Gown
 - Gloves
 - Face protection if splashes/sprays are anticipated



High Contact Activities Requiring EBP

- Majority of MDRO's including C Auris, CRO are most concentrated in axilla, groin and nares, as well as bodily fluids
- Dressing
- Bathing/showering
- Transferring (e.g. bed to wheelchair)
- Changing bed linens
- Hygiene tasks (combing hair, brushing teeth, shaving)
- Assisting with toileting/changing briefs
- Wound care of open wounds
- Device/line care (central line, catheters, feeding tube, tracheostomies)

Which patients require EBP in LTCF?

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- Patients COLONIZED with an MDRO (usually any history of MDRO)
- **High focus on C Auris and CRO**
- Patients with open wounds
- Patients with indwelling devices
- Patients with ACTIVE INFECTION may still require contact precautions, isolation, etc
- Active infection supersedes colonization
- Engage medical director in decision making (especially if question of colonization vs. infection)

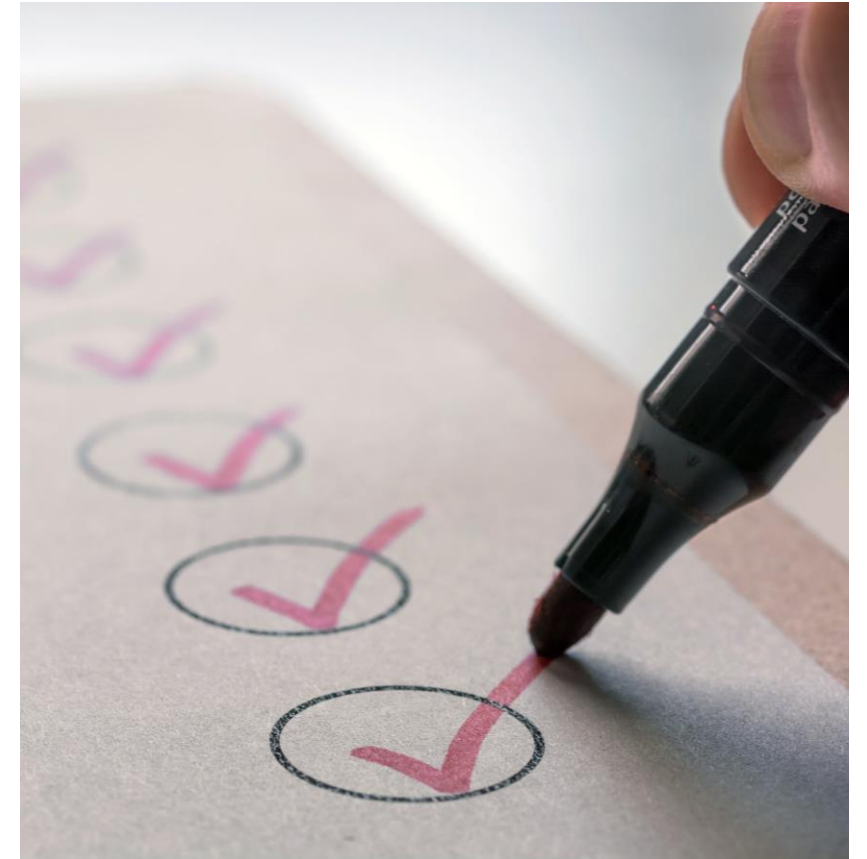
Duration of EBP



- Usually ENTIRE DURATION OF STAY AT THE FACILITY
 - Reliable eradication strategies/test for cure do not exist
- Engage medical director in decision making
- Exceptions
 - All wounds have healed
 - All indwelling devices have been discontinued

Evidence for EBP

- 2025 pre-post study of 120 nursing home chronic ventilated patients
 - Demonstrated feasibility of EBP and 67% reduction in resident-to-resident MDRO transmission
- 2021 cluster RCT in 6 nursing homes EBP alongside other interventions (e.g. chlorhexidine, hand washing, etc)
 - Demonstrated 43% reduction in MDRO prevalence
- Limitations
 - No stand alone large RCT
 - Broader evidence for contact precautions/IPC interventions is lacking



Hospital vs. LTCF Precautions

C. Auris and CRO Colonization

- Hospital

- Strict contact precautions
- Recall 25% of critically ill patients develop candidemia from C Auris
- Recall up to 20% of MDRO colonization progresses to infection
 - Risk much higher in ICU/hospital patients

- LTCF

- Enhanced barrier precautions
- Patients not critically ill
- Main focus is limiting spread to other, more high-risk patients
- Axilla/groin/bodily fluids most likely areas to harbor colonized organisms



Practical Considerations

- Private Rooms
 - Not required
 - Highly encouraged for C. Auris and CRO
- Dining, Communal Activities, and Outings
 - Mostly doesn't require high-contact activities
- Visitors
 - Mostly doesn't require high-contact activities and visitors not likely to spread MDRO to other residents
- Physical Therapy
 - Depends on what is being worked on and level of contact needed



Staff and Family Education

- Signage and easy access to PPE is encouraged
 - Many resources available
 - CDC, QIPMO, MO DHSS, AHCA/NCAL
- Medical Directors can assist, especially in staff education
 - Reassurance of colonization vs. infection
 - In-services
 - Reviewing risk of transmission to staff
 - Family education regarding signage and rationale
 - Zoom meetings, webinars, newsletters, presentations
 - Evaluation of staff with risk factors (e.g. immunocompromise)

Future Considerations

- Decolonization protocols
 - NEJM study only demonstrated reduction in MDRO prevalence from 47% to 32%
 - CRO population too small to analyze
- Further study of Enhanced Barrier Precautions
 - Randomized Clinical Trials
- Re-evaluation of EBP implementation and duration for certain organisms
 - History of MDRO infection not completely reliable to identify colonization



Questions/Discussion

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Resources

- CDC Website: FAQ on Enhanced Barrier Precautions in Nursing Facilities. Accessed July 2026.
- Missouri DHSS Website: Enhanced Barrier Precautions Resources. Accessed July 2026.
- QIPMO Website: Enhanced Barrier Precautions Resources. Accessed July 2026.
- Mody, et al. *Effectiveness of a Multicomponent Intervention to Reduce Multidrug Resistant Organisms in Nursing Homes: A Cluster Randomized Trial*. JAMA Network Open. 2025.
- O'hara, et al. *Enhanced Barrier Precautions to Prevent Transmission of S. Aureus in Nursing Homes*. *Infection Control and Hospital Epidemiology*. 2021.
- Miller, et al. *Decolonization in Nursing Homes to Prevent Infection and Hospitalization*. New England Journal of Medicine. 2023.
- Jerrigan, et al. *Multidrug Resistant Bacterial Infections in US Hospitalized Patients, 2012-2017*. New England Journal of Medicine, 2020.