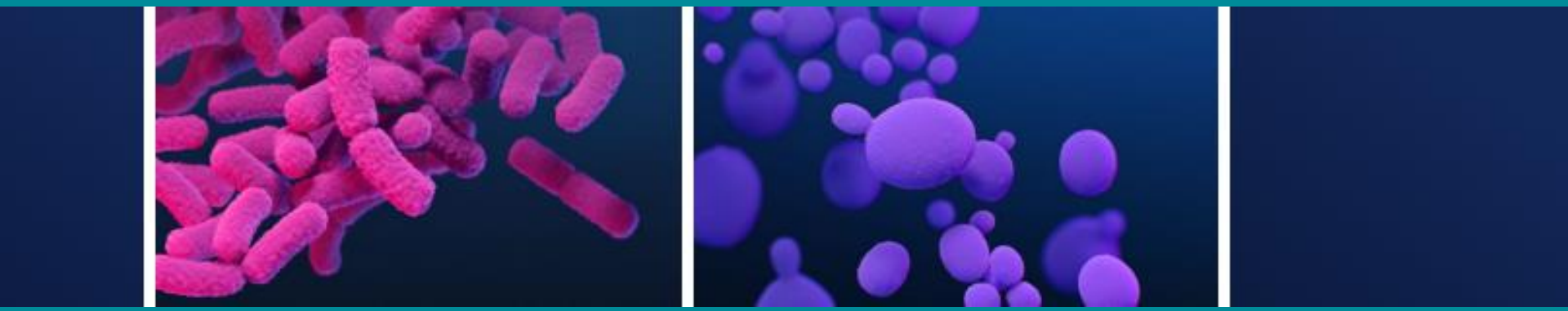
Addressing MDRO's: Next Steps



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Learning Objectives

Following the presentation, participants will be able to..

- Understand the CDC's 5 things to know about antimicrobial resistance
- Next steps to take after MDRO's are found
- Hand hygiene strategies
- Cleaning and disinfection strategies
- PPE and when to use it
- Know the difference between standard precautions, transmission-based precautions, and enhanced barrier precautions
- Identify differences between Acute Care and Post Acute care settings
- Outbreak response and critical communication
- Individual MDRO prevention opportunities
- Review current CDC actions
- Review laboratory resources

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Antimicrobial Resistance: 5 Things to Know

1. Antimicrobial resistance occurs when germs defeat the drugs designed to kill them, called antibiotics or antifungals.
2. Antimicrobial resistance can affect people at any stage of life. Infections caused by resistant germs are difficult—sometimes impossible—to treat.
3. You can take steps to reduce your risk of getting an infection.
4. Talk to your healthcare provider or veterinarian about whether antibiotics or antifungals are needed.
5. Tell your healthcare provider if you recently traveled to or received care in another country. Antimicrobial resistance has been found in all regions of the world.

https://www.cdc.gov/drugresistance/about/5-things-to-know.html#:~:text=Antimicrobial%20resistance%20occurs%20when%20germs,at%20any%20stage%20of%20life.

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MDRO Identified, Now What?

- Confirm if the patient has an active infection or is colonized, ensure the proper treatment course has been selected
- Place patient in transmission-based precautions or enhanced barrier precautions
- Look for other cases. Is this just one, or are there others?
- Report the case to public health as needed or required
- Ensure good hand hygiene practices are in place
- Ensure proper cleaning and disinfection is occurring

Hand Hygiene

Use an Alcohol-Based Hand Sanitizer

- Immediately before touching a patient
- Before performing an aseptic task (e.g., placing an indwelling device) or handling invasive medical devices
- Before moving from work on a soiled body site to a clean body site on the same patient
- After touching a patient or the patient's immediate environment
- After contact with blood, body fluids or contaminated surfaces
- Immediately after glove removal

Wash with Soap and Water

- When hands are visibly soiled
- After caring for a person with known or suspected infectious diarrhea
- After known or suspected exposure to spores (e.g. *B. anthracis*, *C difficile* outbreaks)

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

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Environmental Cleaning and Disinfection

- Environmental cleaning is part of Standard Precautions, which should be applied to all patients in all healthcare facilities.
- Clean with an EPA registered disinfectant with the proper/needed kill claims for the MDRO in question
- Clean high touch surfaces regularly
- Launder linens at high temperature
- Ensure staff are properly trained with competencies
- Audit cleaning processes to ensure compliance

https://www.cdc.gov/hai/prevent/resource-limited/index.html

PPE

Standard precautions say to use PPE as needed based on the risk of exposure

- Gloves
- Masks (ear loop, surgical, N-95)
- Gowns
- Eye protection (glasses, goggles, face shields)

- Follow correct donning and doffing sequences
- Always perform hand hygiene after removal of PPE

https://www.cdc.gov/hai/prevent/ppe.html

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Standard Precautions

- Perform hand hygiene
- Use PPE whenever there is an expectation of possible exposure to infectious material
- Follow respiratory hygiene/cough etiquette principles
- Ensure proper patient placement
- Properly handle and clean and disinfect patient care equipment and instruments/devices
  - Clean and disinfect the environment appropriately
- Handle textiles and laundry carefully
- Follow safe injection practices
- Ensure healthcare worker safety including proper handling of needles and other sharps

https://www.cdc.gov/infectioncontrol/basics/standard-precautions.html

Transmission Based Precautions

Contact Precautions

- Patient placement
- Use needed PPE correctly
- Limit transport and movement of patients
- Use disposable or dedicated patient-care equipment
- Prioritize cleaning and disinfection of the rooms

Droplet Precautions

- Source control: put a mask on the patient
- Ensure appropriate patient placement
- Use PPE appropriately
- Limit transport and movements of patients

Airborne Precautions

- Source control
- Patient placement in Airborne Infection Isolation room (AIIR)
- Restrict susceptible healthcare personnel from entering room
- Use PPE appropriately
- Limit transport and movement of patients
- Immunize susceptible persons as soon as possible following unprotect contact

https://www.cdc.gov/infectioncontrol/basics/transmission-based-precautions.html

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Enhanced Barrier Precautions

- Enhanced Barrier Precautions (EBP) are an infection control intervention designed to reduce transmission of resistant organisms that employs targeted gown and glove use during high contact resident care activities.
- EBP may be indicated (when Contact Precautions do not otherwise apply) for residents with any of the following:
  - Wounds or indwelling medical devices, regardless of MDRO colonization status
  - Infection or colonization with an MDRO.

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

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

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Acute Care Setting Prevention

- Always follow Standard Precautions
- Implement Transmission Based Precautions based on organism
  - Contact Precautions (MDRO, ESBL, CRAB, CRE, C.auris)
  - Droplet Precautions (Respiratory viruses)
  - Airborne Precautions (TB, Chickenpox, Measles)

- Leave precautions in place until discharge, or per CDC Appendix A, or per internal policy guidance

Post Acute Care Setting Prevention

- Always follow Standard Precautions
- Enhanced Barrier Precautions for residents with MDRO infection or colonization
- Contact Precautions: All residents infected or colonized with MDRO in the following situations
  - Acute diarrhea, draining wounds, other site excretions or secretions that are unable to be covered or contained
  - For a limited time period as determined in consultation with public health authorities, on units or in facilities during the investigation of a suspected or confirmed MDRO outbreak
  - When otherwise directed by public health authorities
  - All residents who have another infection (e.g., *C. difficile*, norovirus, scabies) or condition for which Contact Precautions is recommended in Appendix A (Type and Duration of Precautions Recommended for Selected Infections and Conditions) of the CDC Guideline for Isolation Precautions

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

Outbreaks

- Healthcare Facility contacts Local Public Health for assistance
- Epidemiologist gathers initial information and provides consultation on case finding, lab testing and infection control
- Team works on-site and help gather additional information from interview, case/chart review, observations and environmental sampling as needed
- Analyze information to identify risk factors for infection and help develop control measures
- Recommend new or revised measure and steps to prevent more patients from becoming infected or harmed
- Health department and facility implement recommendations and check to ensure the control measures are working

https://www.cdc.gov/hai/pdfs/outbreaks/how-cdc-help-resolves-outbreaks-hc-facilities-508.pdf

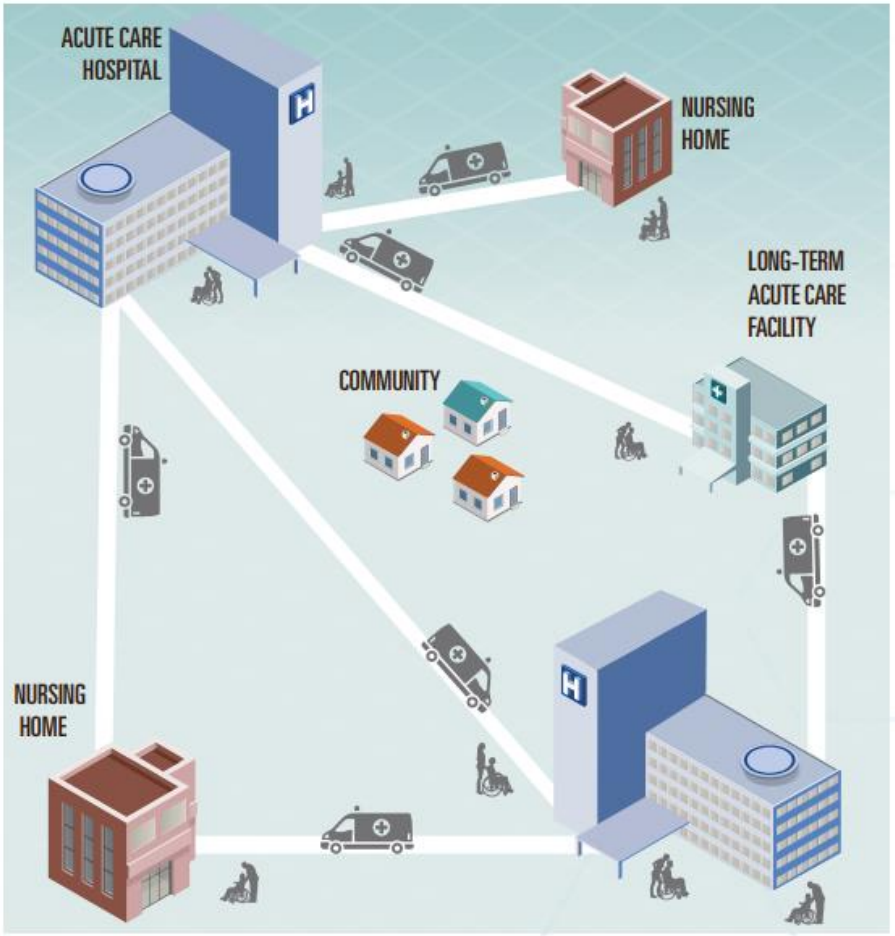
Individual Prevention

- Maintain good hygiene, wash hands regularly, maintain good health
- Proper use of antibiotics
- Clean your environment

Communication is Key

Patient Transfers Between Healthcare Locations

- Implement systems to designate patients known to be colonized or infected with a targeted MDRO and to notify receiving healthcare facilities and personnel prior to transfer of such patients within or between facilities



https://www.cdc.gov/drugresistance/pdf/threats-report/2019-ar-threats-report-508.pdf
https://www.cdc.gov/infectioncontrol/guidelines/mdro/index.html

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Public Health Departments

- Understand the prevalence or incidence of MDRO in their jurisdiction by performing some form of regional surveillance for these organisms.
- Increase awareness among healthcare facilities of the regional prevalence of MDRO and prevention strategies and initiatives.
- Provide a standardized form for facilities to use during patient transfers, especially between hospitals and long-term care facilities.
- Consider including MDRO infections on your state's Notifiable Diseases List.
- Include a range of facility types when developing regional MDRO prevention projects.
- Be a resource for healthcare facilities on appropriate infection prevention measures and antimicrobial stewardship

https://www.cdc.gov/hai/mdro-guides/prevention-strategy.html

What CDC is Doing: Investments and Action

Since 2016 Congress has appropriated $160 million in investments to for the CDC to fight antimicrobial resistance.

- State level funding
- Healthcare programs to reduce MDRO and HAI's
- Community actions (education, data, testing, research)
- Environmental Actions (water and soil)
- Food Supply Actions (lab capacity, innovation, data sharing)
- Global Action (collaborating with global partners, investing)
- Lab Capacity Action (expansion of testing and AR Lab Network)
- Innovative Action (research)

https://www.cdc.gov/drugresistance/solutions-initiative/index.html

CDC Antimicrobial Resistance Laboratory Network

CDC's Antimicrobial Resistance Laboratory Network (AR Lab Network), established in 2016, provides nationwide lab capacity to rapidly detect antimicrobial resistance and inform local responses to prevent spread and protect people. It closes the gap between local capabilities and the data needed to combat antimicrobial resistance in the U.S.

Core Testing by all regional labs

- Molecular testing to detect colonization of carbapenem-resistant Enterobacterales (CRE).
- Detection of new and emerging threats, like novel carbapenemase genes, and ability to detect changes in known threats, like methicillin resistant Staphylococcus aureus.
- Fungal susceptibility of Candida species to identify emerging resistance. Identification and colonization screening to detect and help prevent spread of Candida auris (C. auris).
- Perform expanded susceptibility testing to determine if new drugs or drug combinations will be effective to treat patients infected with especially rare resistant pathogens.
- Isolates may be used for the CDC and FDA AR Isolate Bank and WGS projects.

https://www.cdc.gov/drugresistance/ar-lab-networks/domestic.html

Questions?

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Resources

- https://www.cdc.gov/hai/pdfs/mdro-guides/Health-Response-Contain-MDRO-H.pdf
- https://www.cdc.gov/hai/mdro-guides/prevention-strategy.html
- https://www.cdc.gov/drugresistance/ar-lab-networks/domestic.html
- https://www.cdc.gov/infectioncontrol/guidelines/mdro/index.html
- https://www.cdc.gov/drugresistance/biggest-threats.html
- https://www.cdc.gov/hai/outbreaks/index.html
- https://www.cdc.gov/hai/containment/PPE-Nursing-Homes.html
- https://www.cdc.gov/drugresistance/solutions-initiative/index.html