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CDC's National Training Collaborative for Healthcare Infection Prevention & Control

CDPH
California Department of Public Health

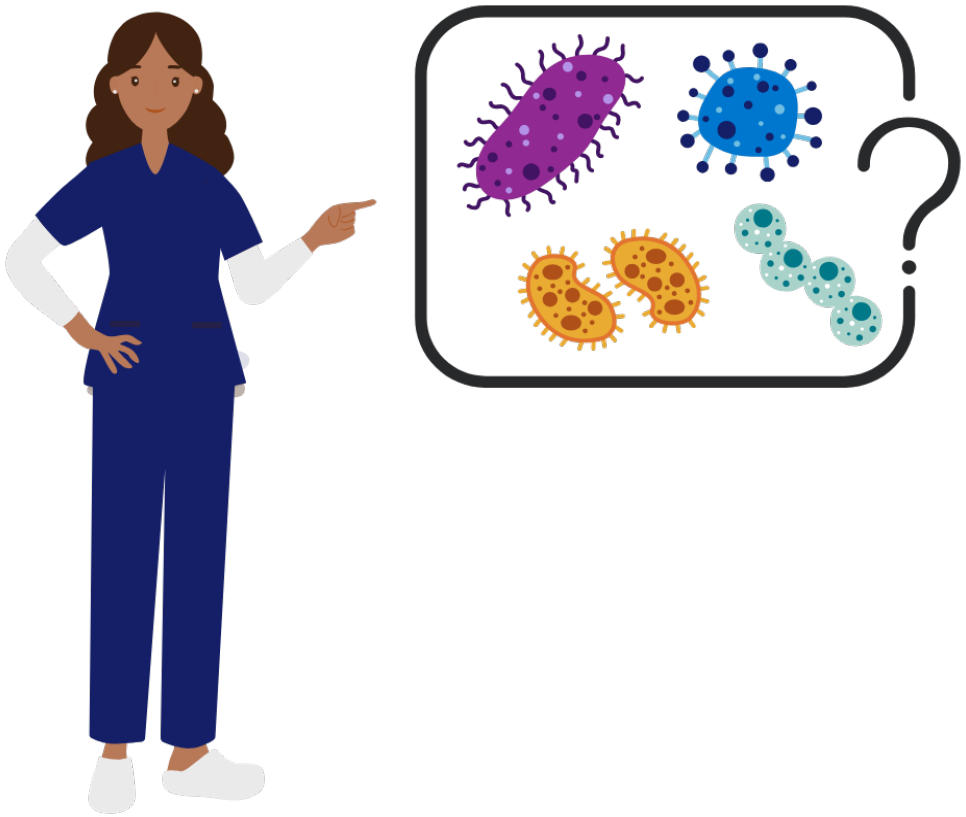
What Certified Nursing Assistants Need to Know and Do About Multidrug-Resistant Organisms

Infection Prevention and Control Training for Certified Nursing Assistants

Objectives

1. Define multidrug-resistant organisms (MDROs)
2. Describe how MDROs spread in different types of healthcare settings
3. Demonstrate how MDROs affect Certified Nursing Assistants (CNAs)
4. Review infection prevention and control (IPC) practices that limit the spread of MDROs

Let's Hear From You!



What do you know about MDROs? Share something you know!

Reflection

How confident are you in your understanding of MDROs?

A. Extremely confident

B. Confident enough

C. I know a little bit

D. Not very confident

E. I have never heard about MDROs!

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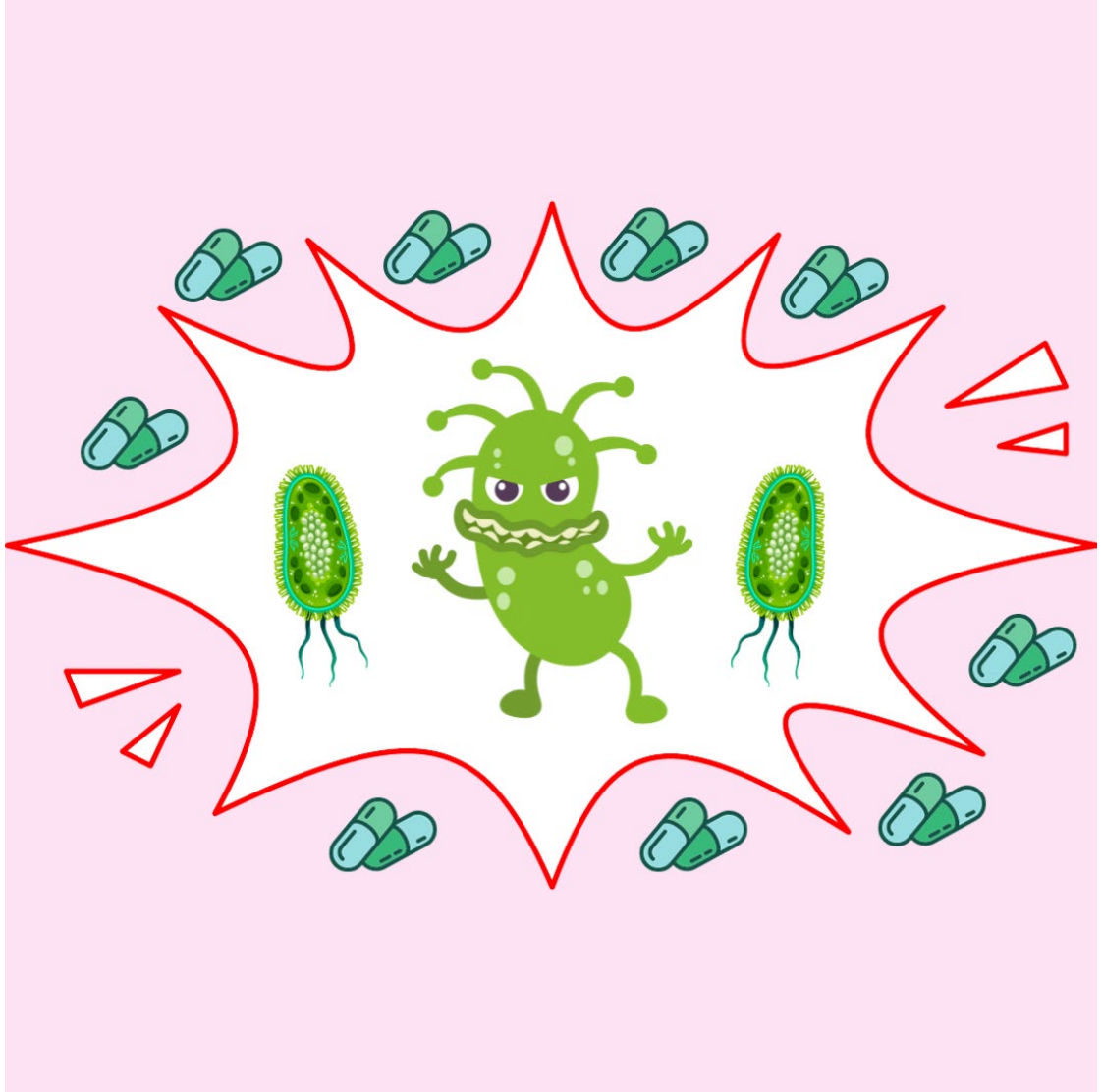
What are MDROs?

- Germs that have developed the ability to defeat the drugs made to kill them
- Can cause infections that are difficult to treat
- Make residents very sick or lead to death
- Known to spread easily among patients and residents within and between healthcare facilities



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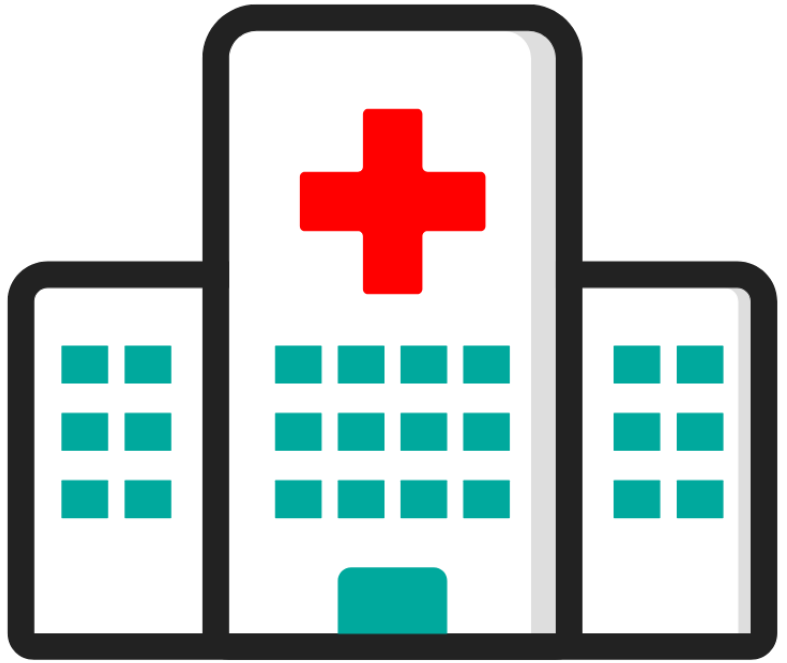
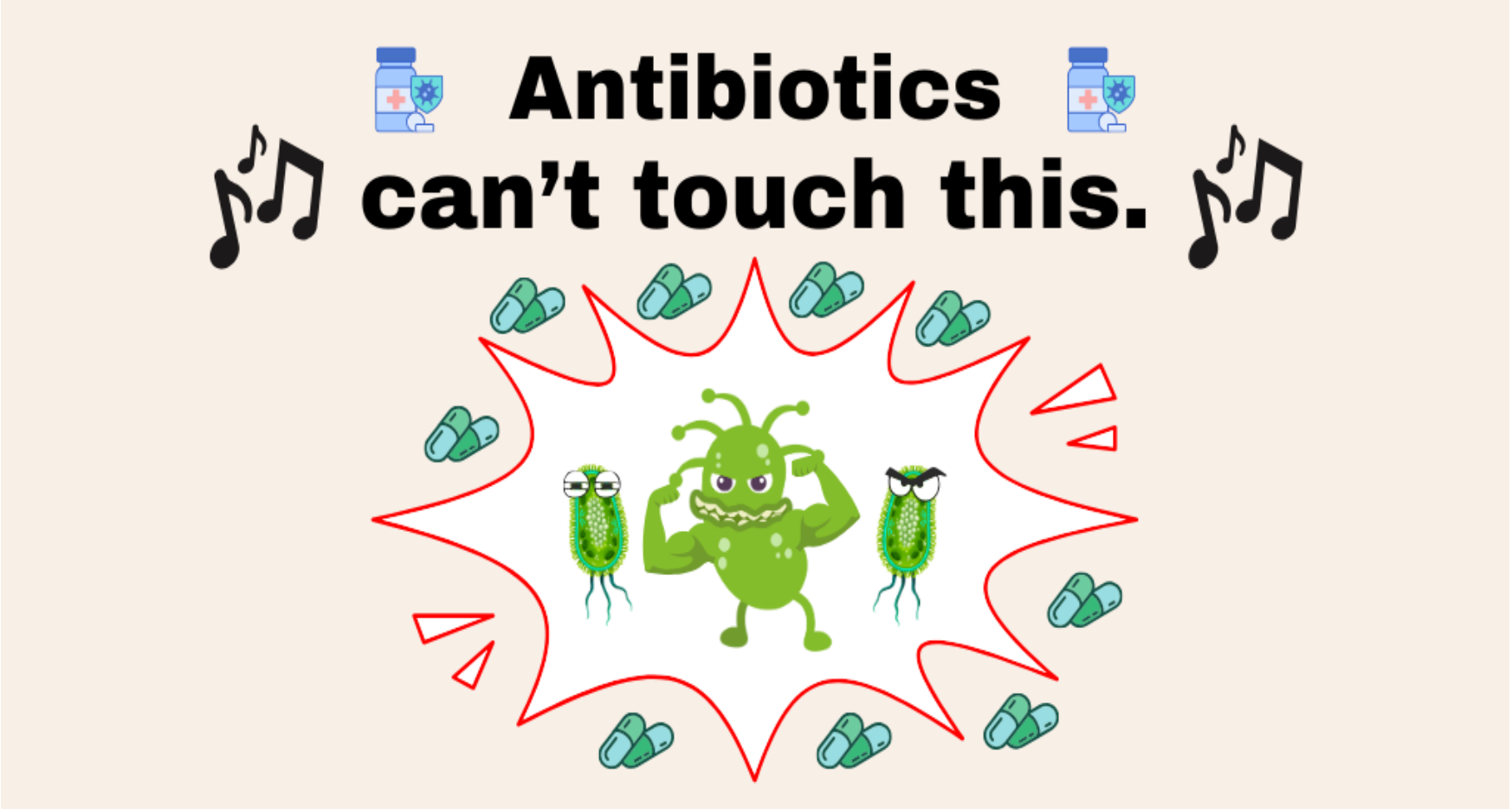
The National Impact of MDROs

- Healthcare facilities sees more people with MDROs in the United States over the last decade
- **2.8 million** people are treated for MDROs annually
- There are **35,000** deaths annually from MDROs

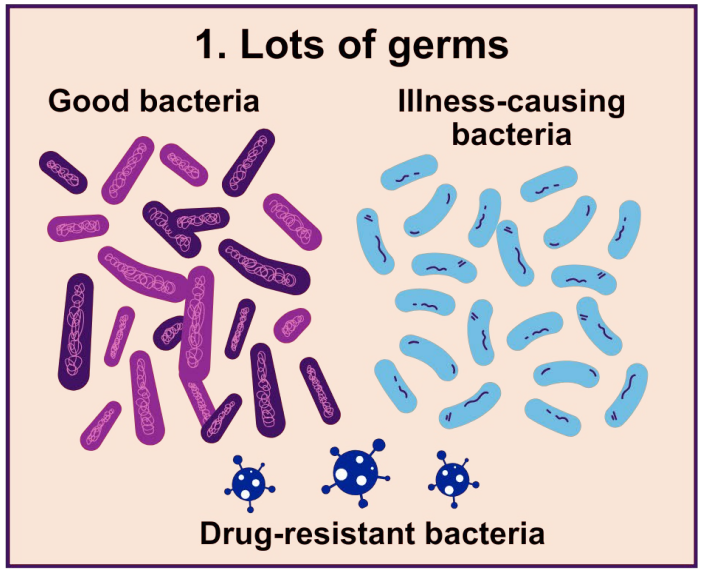


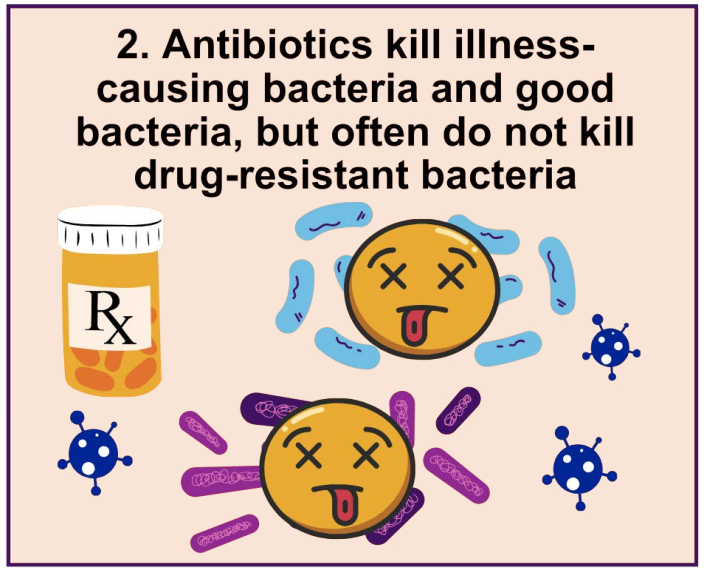
Epidemiology of MDROs | Centers for Disease Control and Prevention (CDC)
(www.cdc.gov/infection-control/hcp/mdro-management/epidemiology.html)

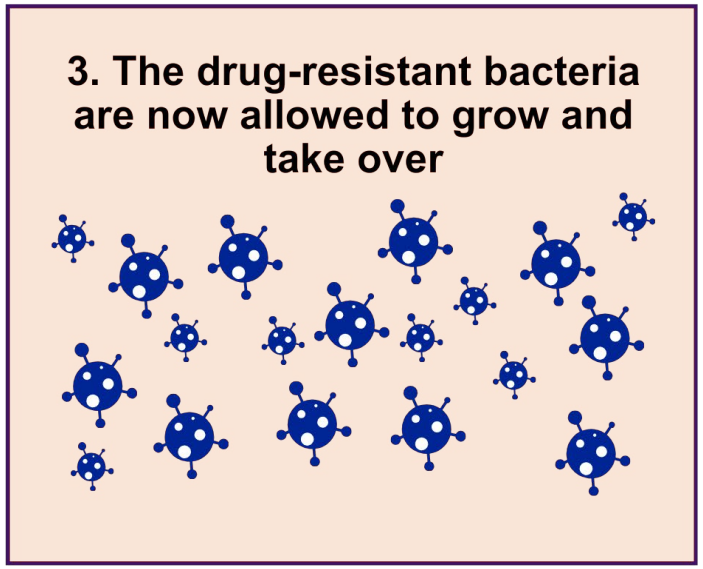
MDROs and Antimicrobial Resistance



How Does Antibiotic Resistance Occur?







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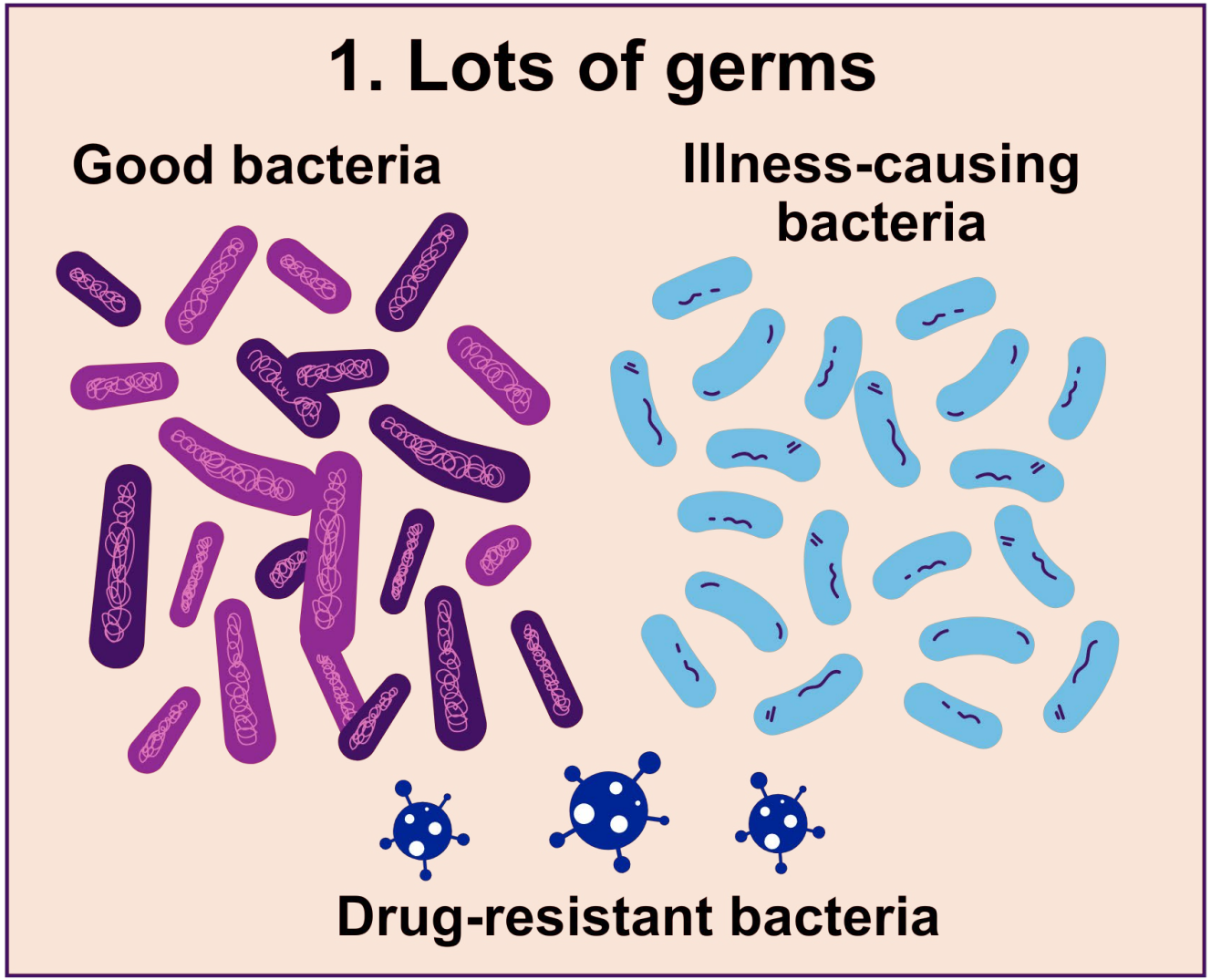
How Does Antibiotic Resistance Occur?

Step 1



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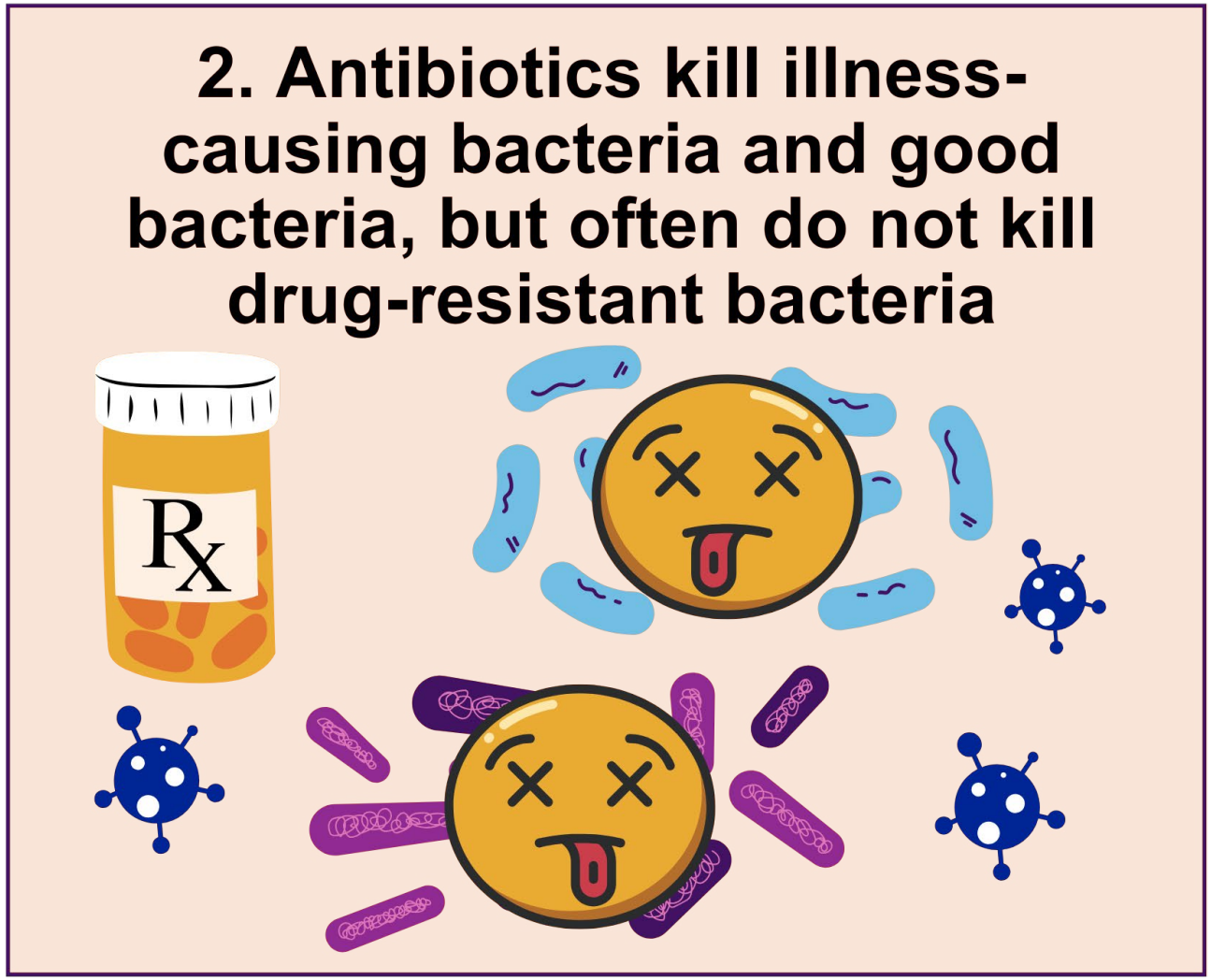
How Does Antibiotic Resistance Occur?

Step 2



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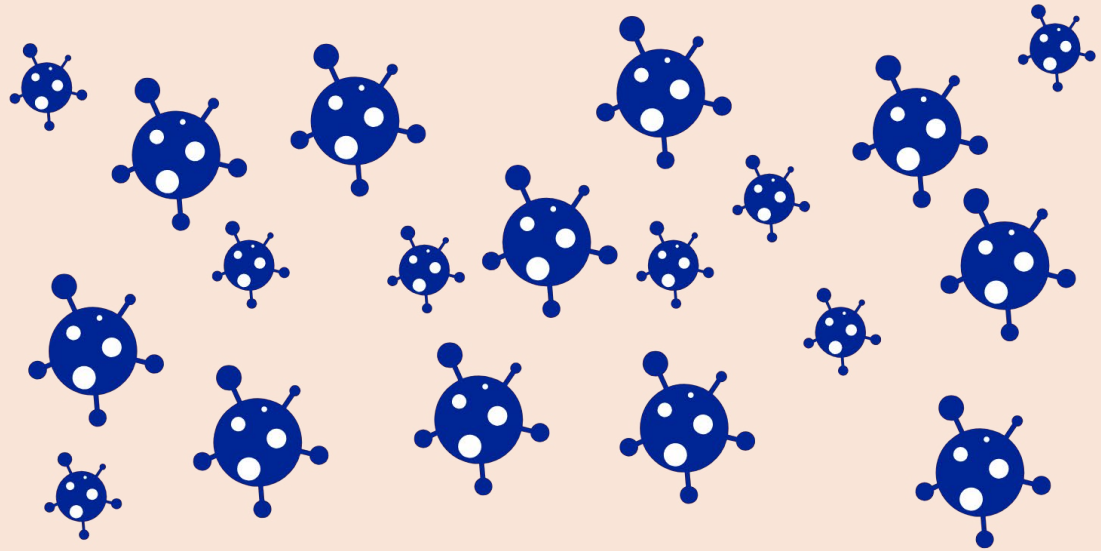
How Does Antibiotic Resistance Occur?

Step 3

3. The drug-resistant bacteria are now allowed to grow and take over



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How Does Antibiotic Resistance Occur?

Step 4

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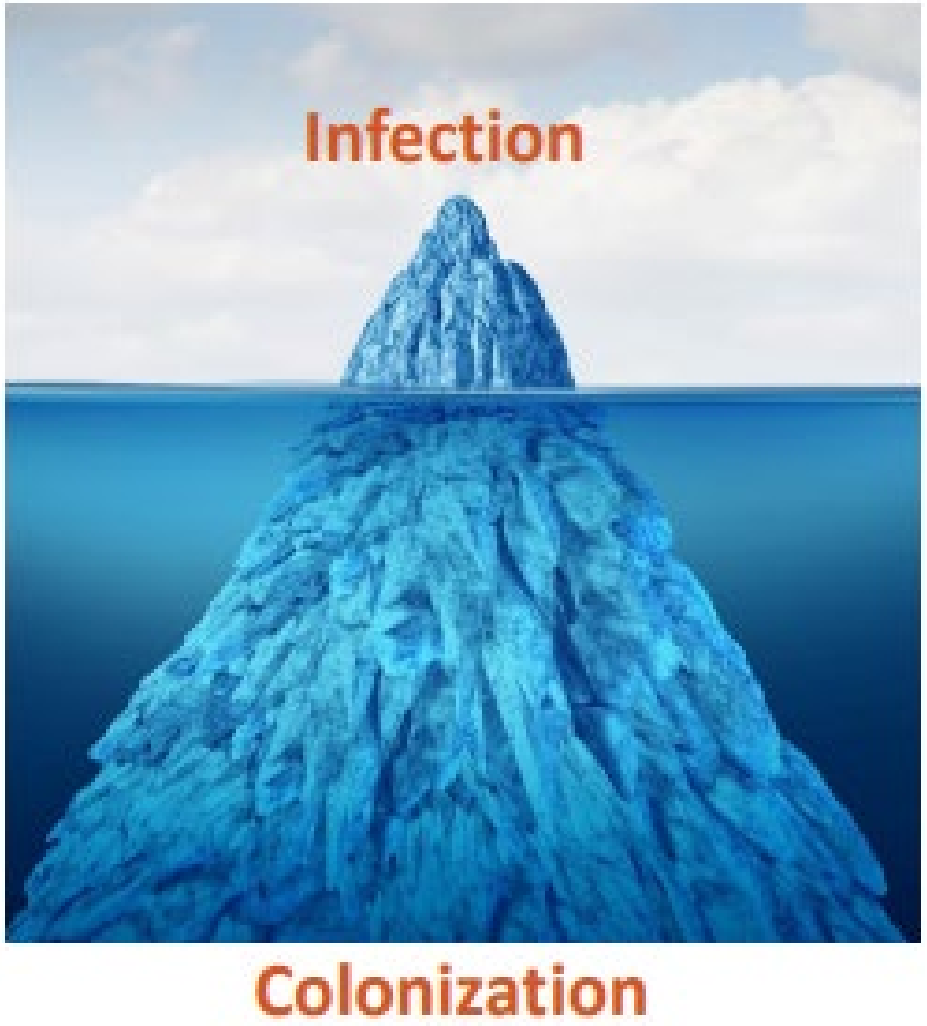
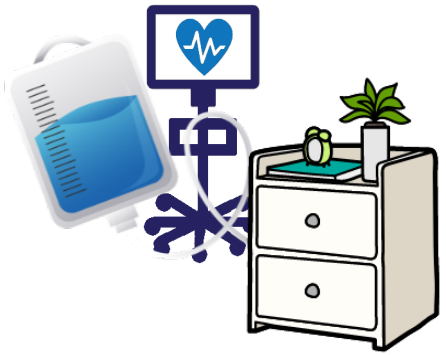
MDRO Colonization

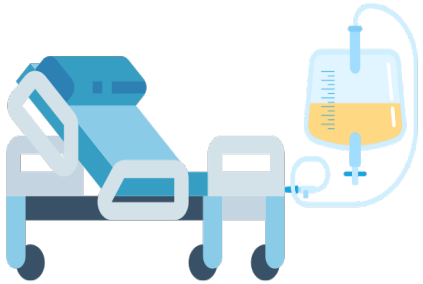
- Happens when MDROs are present on or in the body, but are not causing illness or symptoms
  - MDROs can spread from people who are colonized
  - Colonization is often not treated since there are no signs of illness



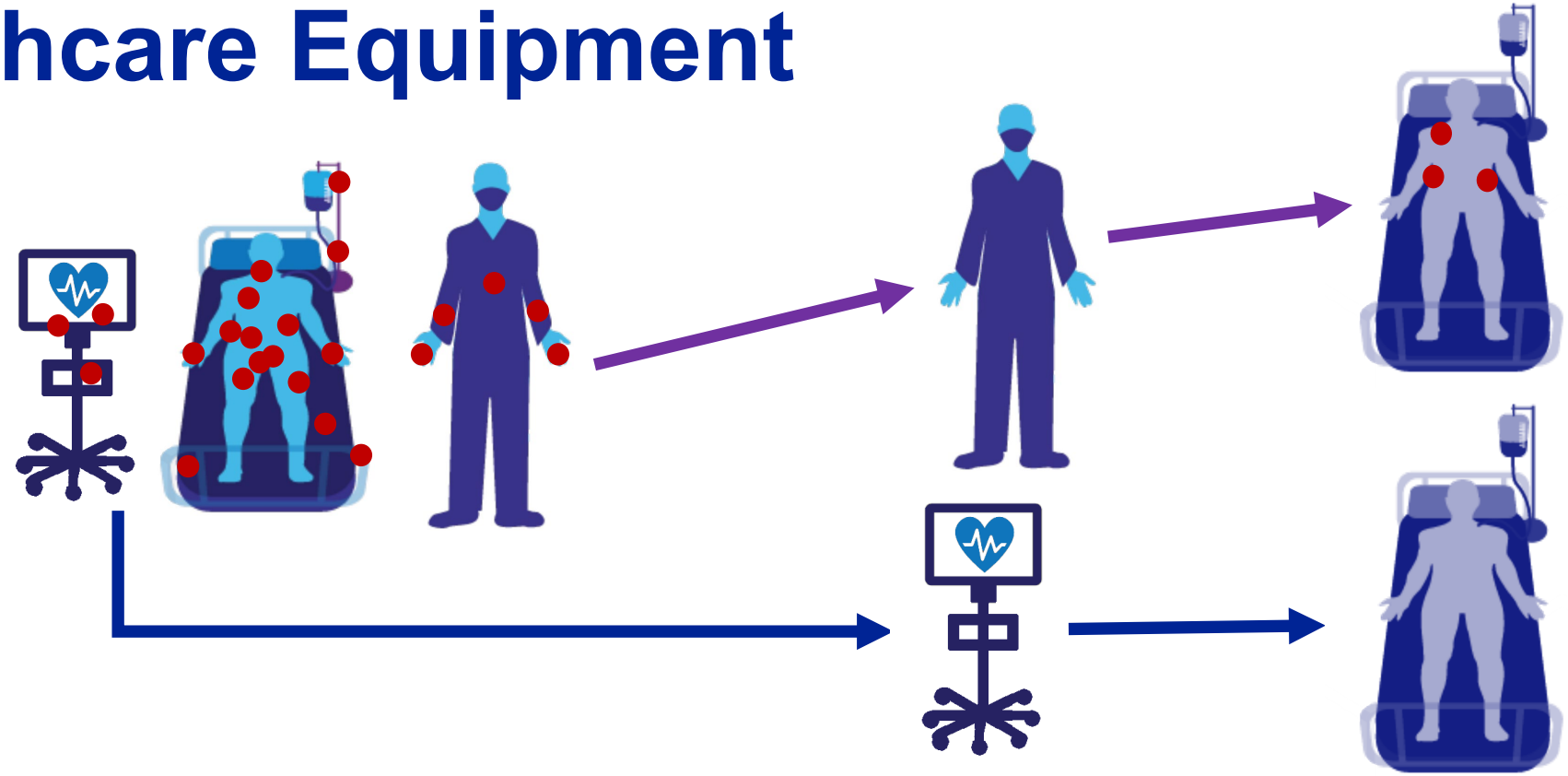
How Do MDROs Spread?

- Person-to-person on the hands and clothing of healthcare personnel
- From contaminated surfaces, such as bed rails, bedside tables, call lights, and medical equipment





MDROs Can Spread Between Residents Through Contaminated Hands, Surfaces, or Healthcare Equipment



MDRO Risk Factors

- Being sick with a severe disease or underlying medical condition making it difficult to fight off germs
- Frequent healthcare exposures
- Having an indwelling medical device (e.g., urinary catheters, feeding tubes, tracheostomy tubes)
- Mostly or completely dependent on others for activities of daily living (ADLs) like dressing, tooth brushing, or toileting

Knowledge Check #1

What are some ways MDROs can spread?

A. Healthcare personnel hands
B. Bedrails
C. Reusable medical equipment
D. Indwelling catheters
E. All of the above

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Knowledge Check #1

Answer

What are some ways MDROs can spread?

Answer is bolded and marked with asterisk (*).

A. Healthcare personnel hands
B. Bedrails
C. Reusable medical equipment
D. Indwelling catheters
E. **All of the above***

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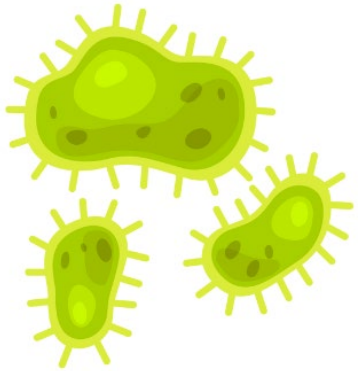
MDRO Examples

More common:

- Methicillin-resistant *Staphylococcus aureus* - **MRSA**
- Vancomycin-resistant Enterococcus - **VRE**
- Extended-spectrum beta-lactamase-producing organism - **ESBL**



Not as common:

- *Candida auris* - ***C. auris***
- Carbapenem-resistant organisms - **CROs**
- Carbapenem-resistant Enterobactereles - **CRE**
- Carbapenemase-producing organisms - **CPOs**

We don't want any MDROs to become *common* in healthcare facilities!

KEY

C. diff: *Clostridioides difficile*

C.auris: *Candida auris*

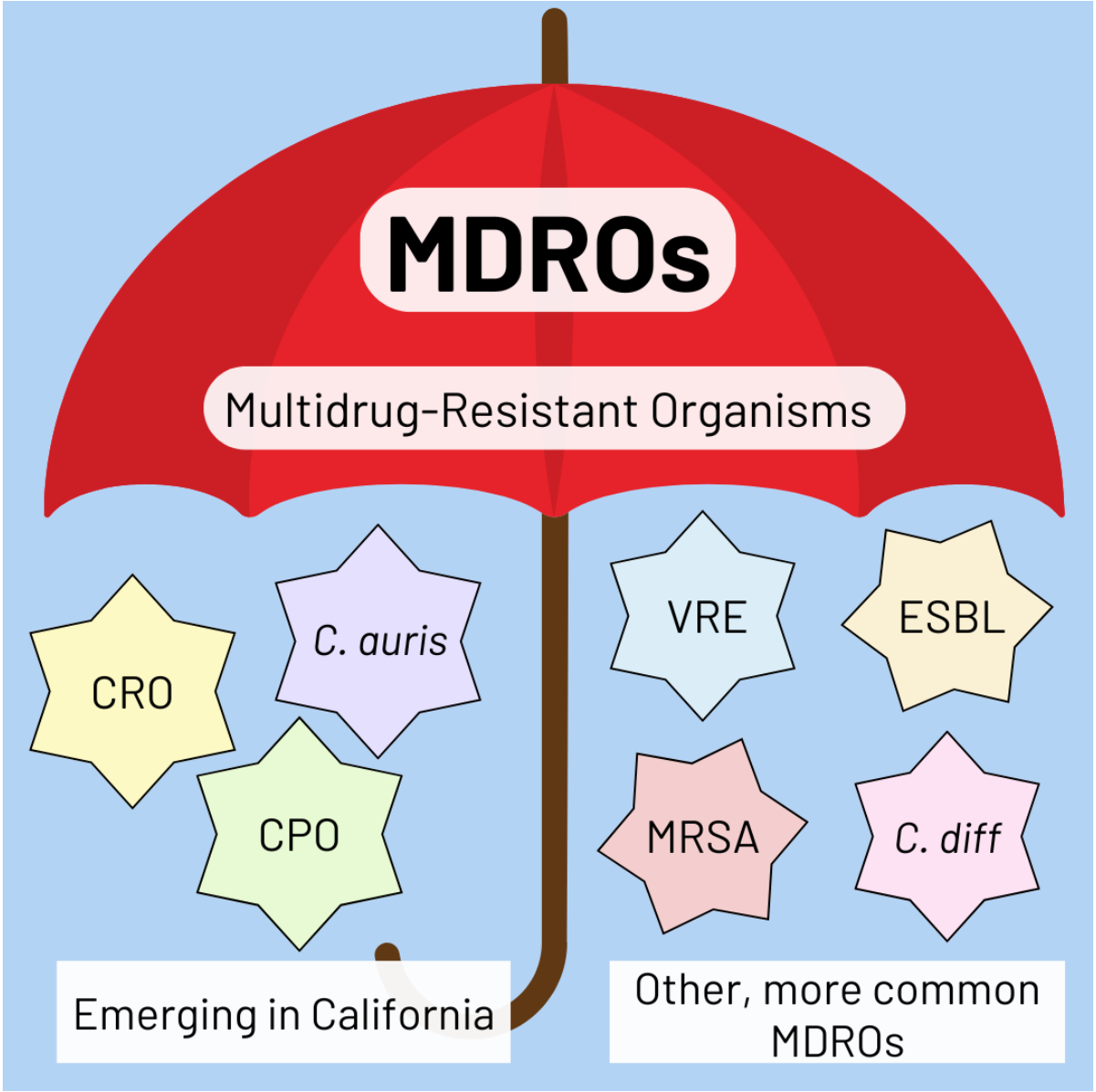
CPO: Carbapenemase-producing organism

CRO: Carbapenem-resistant organism

ESBL: Extended-spectrum beta-lactamase-producing organism

MRSA: Methicillin-resistant *Staphylococcus aureus*

VRE: Vancomycin-resistant Enterococcus



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KEY

C. diff: *Clostridioides difficile*

C.auris: *Candida auris*

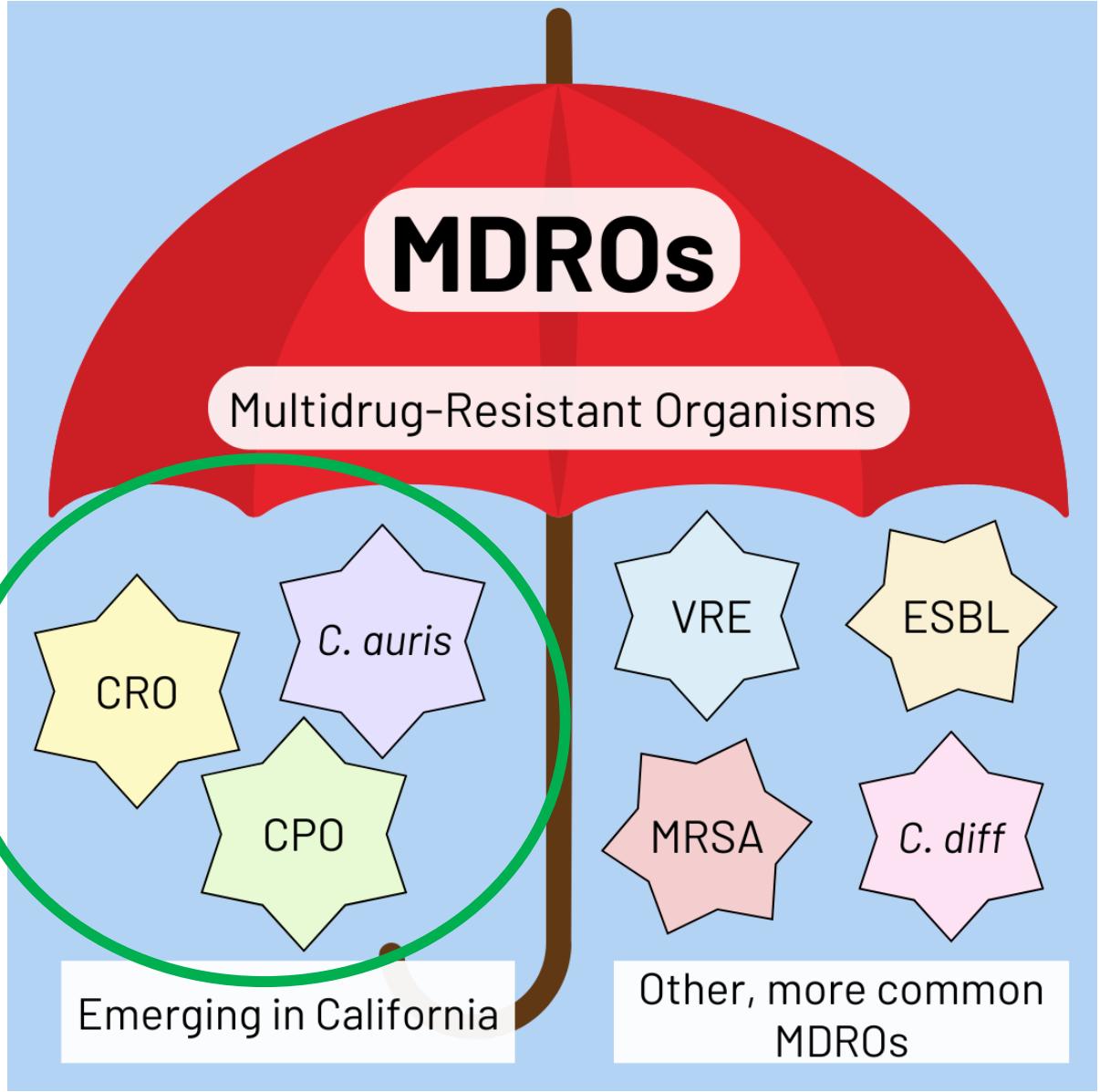
CPO: Carbapenemase-producing organism

CRO: Carbapenem-resistant organism

ESBL: Extended-spectrum beta-lactamase-producing organism

MRSA: Methicillin-resistant *Staphylococcus aureus*

VRE: Vancomycin-resistant Enterococcus



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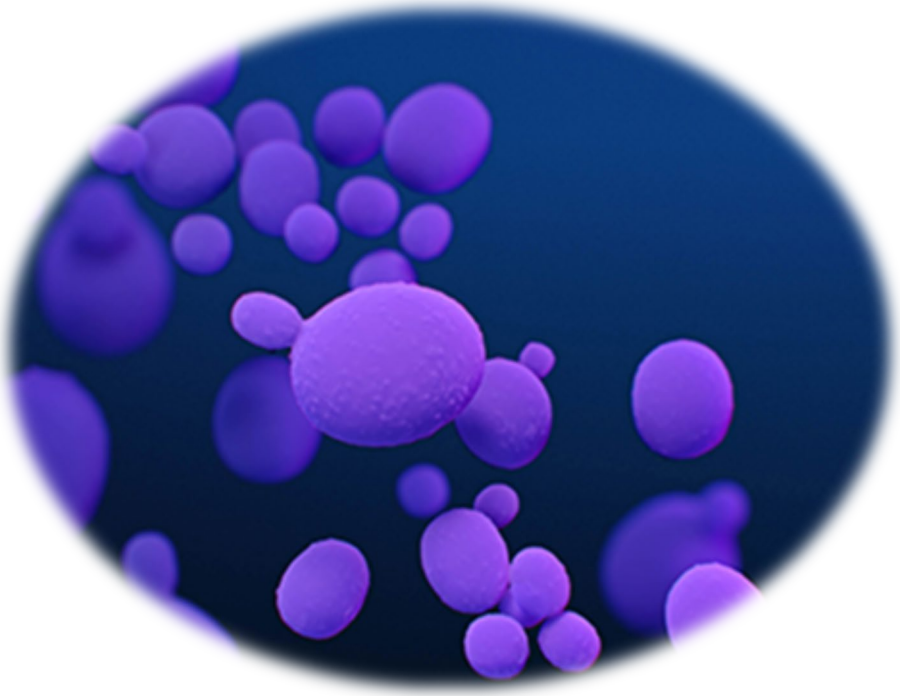
MDRO Example – *Candida auris*

- Can be resistant to all antifungal drugs (antimicrobials)
- Spreads easily to other residents by contaminated hands, clothing, equipment, and healthcare environment
- Can survive on surfaces for weeks
  - Lives on adhesive tape and other hard-to-clean surfaces
- Leads to infection that is serious and difficult to treat



MDRO Example - CROs

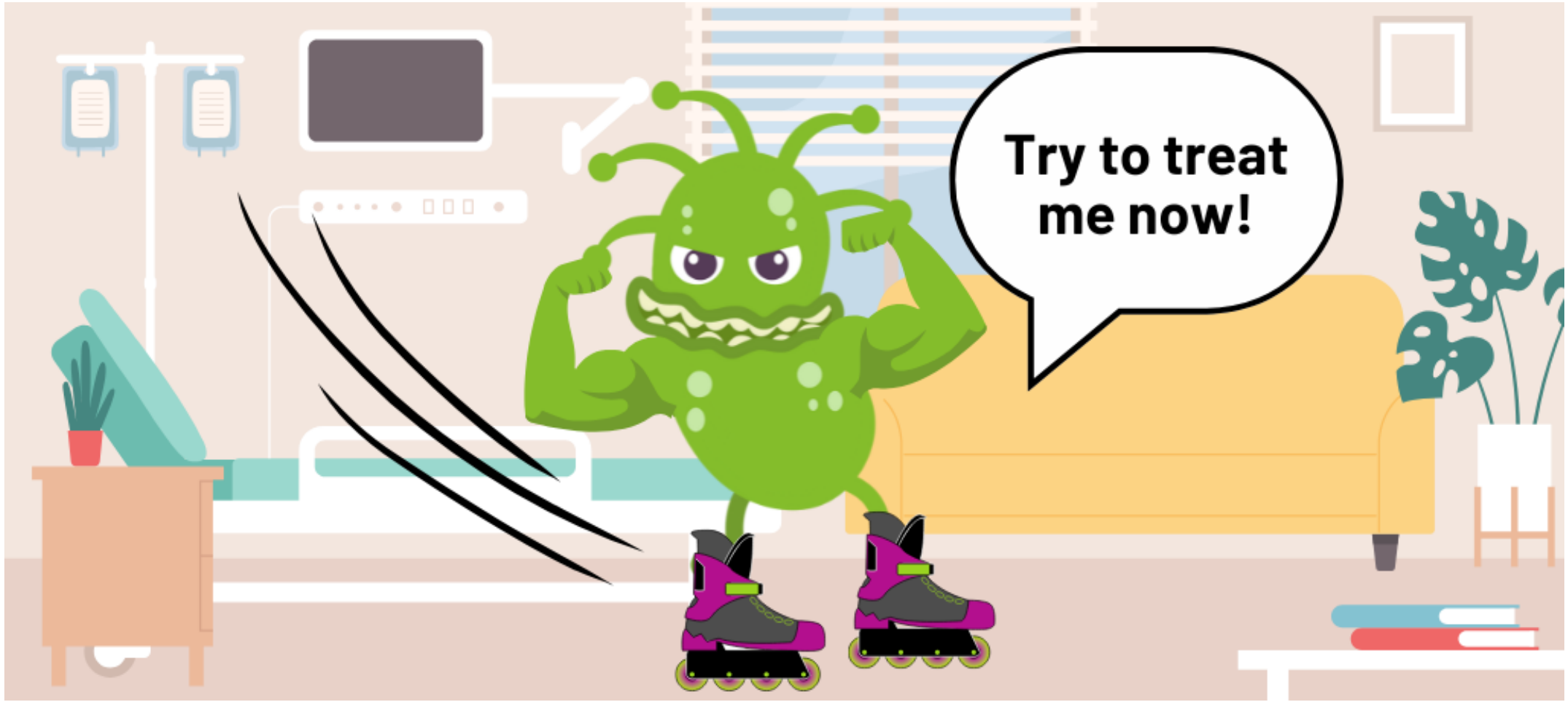
- Resistant to drugs called carbapenems
- CRO acronyms you might hear at your facility: CRAB, CRE, CRPA
- Residents with infections caused by these resistant organisms may become very sick or even die
- There are fewer drugs available for treatment of infections with CROs

KEY
CRAB: Carbapenem-resistant *Acinetobacter baumannii*
CRE: Carbapenem-resistant Enterobacterales
CRPA: Carbapenem-resistant *Pseudomonas aeruginosa*

MDRO Example - CPOs

- CPOs are types of CROs that produce enzymes
- These make carbapenem drugs stop working
- Increasingly identified in California healthcare facilities

Antimicrobial Resistance on the Move



MDRO Recap

- MDROs are germs that have developed the ability to defeat the drugs made to kill them
- There are multiple types of MDROs including *C. auris*, CPOs, CROs
- MDROs continue to spread across California and the United States
- MDROs can spread through contaminated hands or clothing of healthcare personnel or via contact with uncleaned surfaces and equipment
- Residents may have certain risk factors that increase their chances of MDRO colonization and infection

Core MDRO Prevention Practices

- Hand hygiene using hand sanitizer or soap and water when hands are visibly soiled
- Cleaning and disinfecting the environment to kill germs
- Following precautions that are in place
  - Standard precautions
  - Transmission-Based Precautions
  - Enhanced Barrier Precautions

Knowledge Check #2

Should you perform hand hygiene with only soap and water for residents with an MDRO?

A. Yes

B. No

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Knowledge Check #2

Answer

Should you perform hand hygiene with only soap and water for residents with an MDRO?

Answer is bolded and marked with asterisk (*).

A. Yes

B. **No***

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The CNA's Role in MDRO Prevention: Hand Hygiene

- Hands are the most common way germs are spread
- Perform hand hygiene for at least 20 seconds to keep your hands clean and stop the spread of germs

Clean hands save lives.

ABHR

Soap and Water

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Hand Sanitizer or Soap and Water?

- Hand sanitizer is preferred over soap and water in most cases:
  - Easy to get to the dispenser
  - Better at killing germs on hands
- There are times when soap and water are recommended:
  - When hands are visibly soiled
  - During known or suspected outbreaks of *C. difficile* or norovirus
  - After using the restroom
  - Before eating

Do you have access to all the hand hygiene supplies you need?

The CNA's Role in MDRO Prevention: Environmental Cleaning and Disinfecting

- We all play a part in making sure the environment stays clean for the safety of all in the facility
- Thorough cleaning must occur before a surface can be disinfected
- MDROs may require a specific disinfectant to kill them
  - *Candida auris* requires bleach or other strong disinfectant

The CNA's Role in MDRO Prevention: Precautions

- Standard Precautions
- Enhanced Barrier Precautions
- Transmission-Based Precautions
  - Contact Precautions

Infection Prevention and Control Starts with You!

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What Are Standard Precautions?

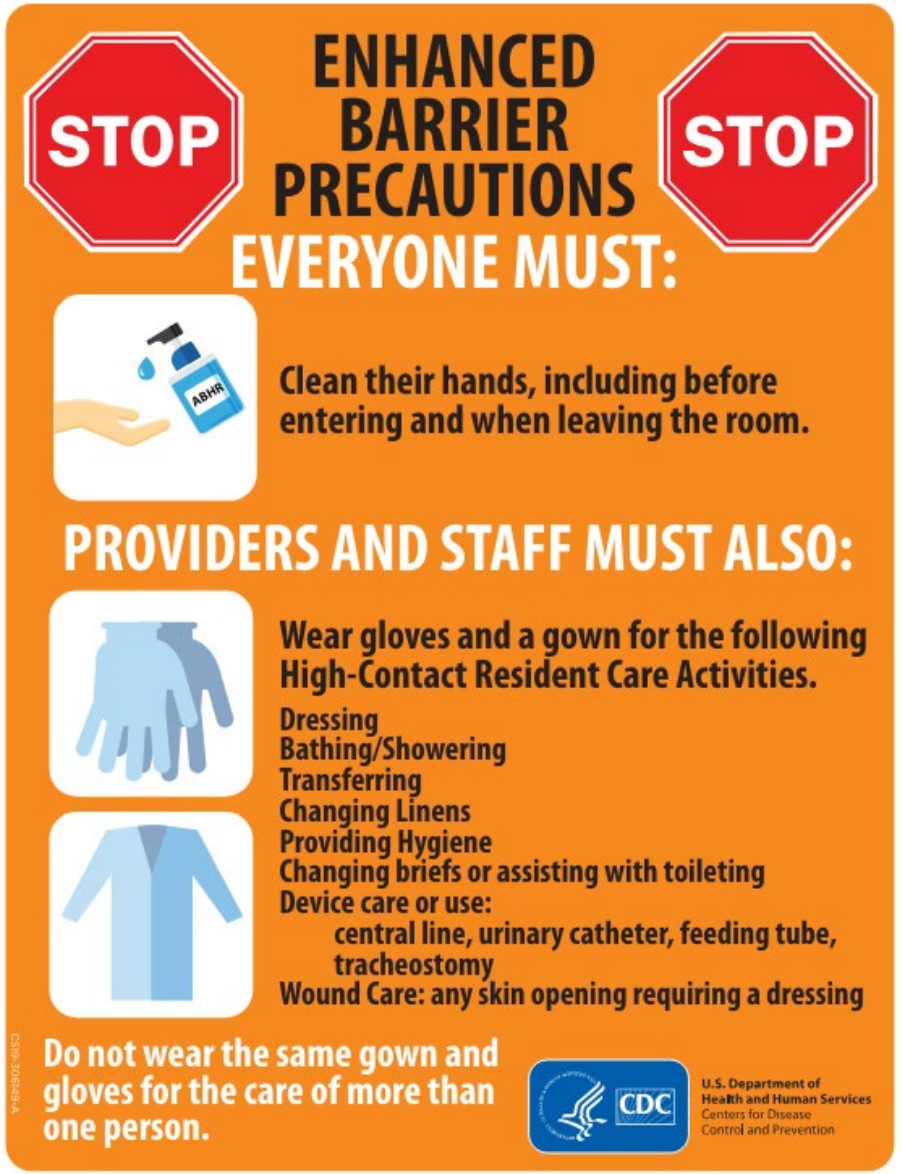
Use all the time, in all healthcare settings

- Perform hand hygiene
- Use personal protective equipment (PPE) whenever there is possible exposure to an infectious material
- Minimize potential exposures by following respiratory hygiene and cough etiquette
- Clean and disinfect the environment appropriately
- Follow safe injection practices
- Properly clean and disinfect resident care equipment and devices

CDC's Core Infection Prevention and Control Practices for Safe Healthcare Delivery in All Settings | CDC (www.cdc.gov/infection-control/hcp/sharps-safety/index.html)

What Are Enhanced Barrier Precautions (EBP)?

- Infection control practices to prevent the spread of MDROs in SNFs
- Use gloves and gowns for high-contact care activities for residents with certain MDROs or who are at increased risk for an MDRO



Enhanced Barrier Precautions Sign | CDC
(www.cdc.gov/long-term-care-facilities/media/pdfs/enhanced-barrier-precautions-sign-P.pdf)

Who Needs EBP?

Residents with:

- Colonization or infection with certain MDROs
- Indwelling medical devices
  - Central lines (including hemodialysis catheters)
  - Urinary catheters
  - Gastric feeding tubes
  - Tracheostomy tubes
- Chronic wounds (e.g., pressure ulcers, diabetic foot ulcers, chronic leg ulcers)

High-Contact Care Activities

- High-contact care activities may be bundled or grouped together
  - Decreases number of times CNAs need to put on or change gowns and gloves

EVERYONE MUST: Perform hand hygiene before entering the room.

ANYONE PARTICIPATING IN ANY OF THESE SIX MOMENTS MUST ALSO: Don gown and gloves.

Change and discard gown and gloves and perform hand hygiene between each resident and before leaving room.

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Bundling Care

- High-contact resident care activities may be bundled as part of morning and evening care
  - Decreases number of times CNAs need to put on or change gowns and gloves
- Non-high-contact resident care activities that are not done with other high-contact resident care activities would not need use of a gown and gloves
  - Examples: Delivering a meal tray, giving a resident a book or delivering their mail

Case Scenario

You changed a resident's briefs, and your next task is to help another resident in the same room get dressed. Both residents are on EBP.

What should you do before getting the second resident dressed in their clean clothes?

A. Remove your gown and gloves

B. Perform hand hygiene

C. Put on a clean gown and pair of gloves

D. All of the above

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Case Scenario

Answer

You changed a resident's briefs, and your next task is to help another resident in the same room get dressed. Both residents are on EBP.

What should you do before getting the second resident dressed in their clean clothes?

Answer is bolded and marked with asterisk (*).

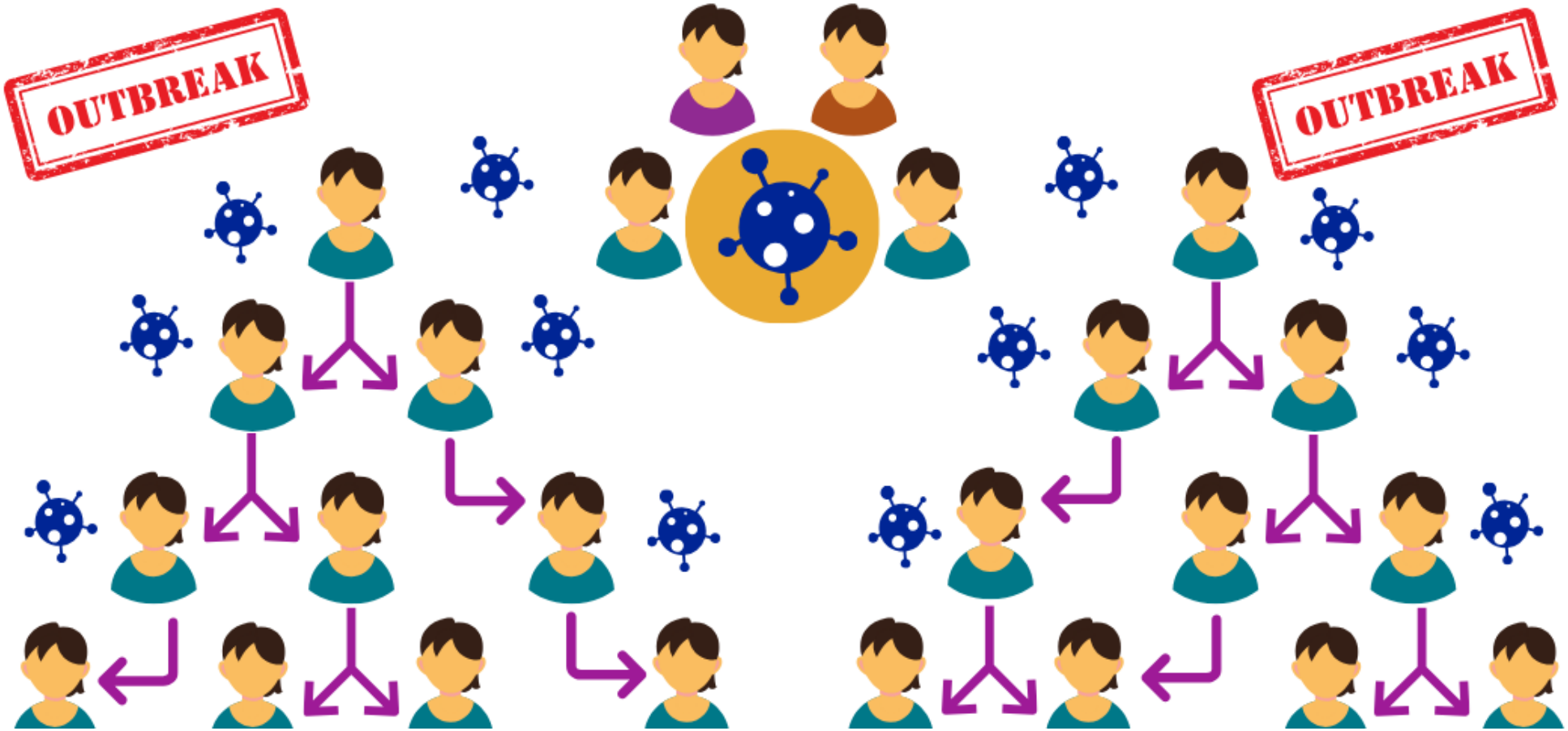
A. Remove your gown and gloves

B. Perform hand hygiene

C. Put on a clean gown and pair of gloves

D. **All of the above***

There's an MDRO Outbreak. Now What?!



Contact Precautions

- Transmission-Based Precautions that include hand hygiene, putting on a gown and gloves just before going into a resident's room
- Contact Precautions prevents the spread of germs through direct contact or indirect contact
- Make sure to follow your facility's signage and implement proper PPE
- Limit transport and movement of patients outside of the room to medically necessary purposes

Contact Precautions Sign (PDF) | CDC
(www.cdc.gov/infection-control/media/pdfs/contact-precautions-sign-P.pdf)

Knowledge Check #3

You are about to help a resident with an indwelling urinary catheter with morning care. There is no current MDRO outbreak at the facility. **What type of precautions should you use?**

A. Standard Precautions

B. Enhanced Barrier Precautions (EBP)

C. Contact Precautions

D. No precautions

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Knowledge Check #3

Answer

You are about to help a resident with an indwelling urinary catheter with morning care. There is no current MDRO outbreak at the facility. **What type of precautions should you use?**

Answer is bolded and marked with asterisk (*).

A. **Standard Precautions***

B. **Enhanced Barrier Precautions (EBP)***

C. Contact Precautions

D. No precautions

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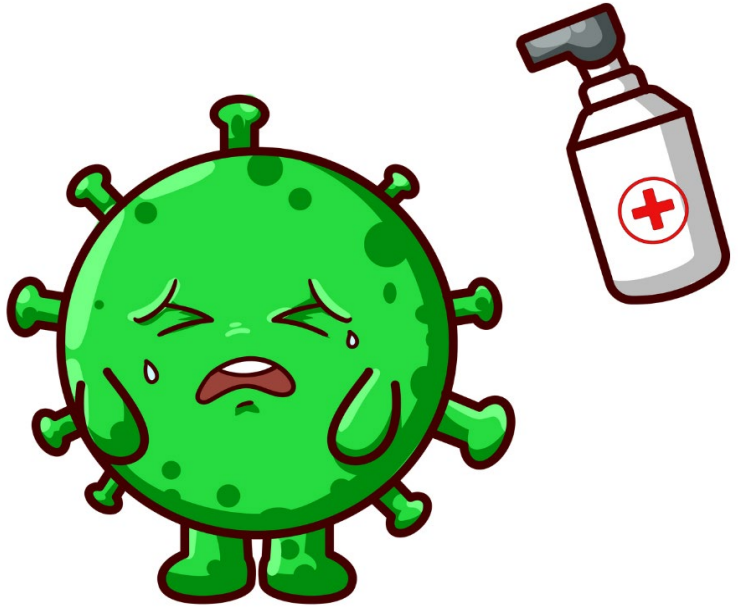
Other Considerations to Prevent MDROs

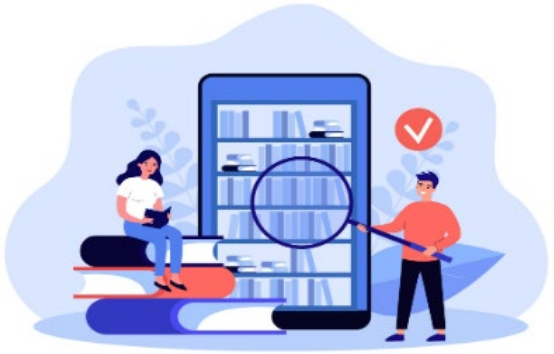
- Educate residents and visitors on MDRO prevention practices
- Communicate concerns and changes in resident's status with your charge nurse
- Work with your charge nurse to understand additional considerations for caring for residents with MDROs
- Practice self-care (e.g., clean your hands before and after shift, stay at home if you are sick)



Summary

- MDROs are germs that have developed the ability to defeat the drugs designed to kill them
- MDROs can spread to residents from contaminated hands of healthcare personnel or by medical equipment and surfaces that are not cleaned and disinfected
- Hand hygiene, cleaning and disinfection, and using PPE based on the type of precautions in place reduce the spread of MDROs
- CNAs play an important role in preventing the spread of MDROs by using IPC practices that stop the spread of germs

Next Steps



Visit the CNA Resources Page

(www.cdph.ca.gov/Programs/CHCQ/HAI/Pages/ProjectFirstline_PrintMaterialsLibrary.aspx)

Be an IPC Champion

Implement what you have learned from IPC trainings at your facility!

Contact Us for Support

ProjectFirstline@cdph.ca.gov

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Resources – Page 1

- 2019 Antibiotic Resistance Threats Report | Centers for Disease Control and Prevention | Centers for Disease Control and Prevention (CDC) (www.cdc.gov/antimicrobial-resistance/data-research/threats/index.html)
- Antimicrobial Resistance | California Department of Public Health (CDPH) (www.cdph.ca.gov/Programs/CHCQ/HAI/Pages/AntimicrobialResistanceLandingPage.aspx)
- Antimicrobial Resistance Facts and Stats | CDC (www.cdc.gov/antimicrobial-resistance/data-research/facts-stats/index.html)
- *Candida auris* | CDPH (www.cdph.ca.gov/Programs/CHCQ/HAI/Pages/Candida-auris.aspx)
- Carbapenemase-Producing | CDPH (www.cdph.ca.gov/Programs/CHCQ/HAI/Pages/CarbapenemaseProducingOrganisms.aspx)

Resources – Page 2

- CDC's Core Infection Prevention and Control Practices for Safe Healthcare Delivery in All Settings| CDC
  (www.cdc.gov/handhygiene/index.html)
- Clinical Overview of *Candida auris* | CDC
  (www.cdc.gov/candida-auris/hcp/clinical-overview/index.html)
- Contact Precautions (PDF) | CDC
  (www.cdc.gov/infection-control/media/pdfs/contact-precautions-sign-P.pdf)
- Enhanced Barrier Precautions (PDF) | CDC
  (www.cdc.gov/long-term-care-facilities/media/pdfs/enhanced-barrier-precautions-sign-P.pdf)
- Epidemiology of MDROs | CDC
  (www.cdc.gov/infection-control/hcp/mdro-management/epidemiology.html)

Resources – Page 3

- Frequently Asked Questions (FAQs) about Enhanced Barrier Precautions in Nursing Homes | CDC
  (www.cdc.gov/long-term-care-facilities/hcp/prevent-mdro/faqs.html)
- How Antibiotic Resistance Spreads (PDF) | CDC
  (www.cdc.gov/antimicrobial-resistance/media/pdfs/How-AR-Spreads-P.pdf)

Project Firstline Resources

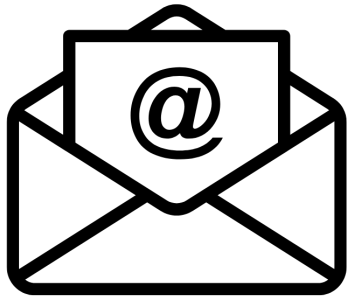
- Visit the Project Firstline Website (www.cdph.ca.gov/Programs/CHCQ/HAI/Pages/ProjectFirstline.aspx)
- Email the Project Firstline AskBox at ProjectFirstline@cdph.ca.gov

Project Firstline is a national collaborative led by the U.S. Centers for Disease Control and Prevention (CDC) to provide infection control training and education to frontline healthcare workers and public health personnel. The California Department of Public Health Healthcare-Associated Infections (HAI) Program is proud to partner with Project Firstline, as supported through Strengthening HAI/AR Program Capacity (SHARP) funding. CDC is an agency within the Department of Health and Human Services (HHS). The contents of this presentation do not necessarily represent the policies of CDC or HHS and should not be considered an endorsement by the Federal Government.

Thank You!

Questions?

For more information, contact
ProjectFirstline@cdph.ca.gov



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