

# **Colonization Screening 101**

## **Combating the Multidrug-Resistant Organism Together**

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# Welcome Back!

- **Thank you for joining us for our second webinar!**
- **We will not be reviewing all the concepts already covered in webinar 1**
  - **You may want to refer to those slides if there are concepts you do not remember**
- **Continuing education is available for this talk (see webinar flyer for more information)**

# Disclosures

- **None of the speakers have any disclosures to share**

# **Objectives: By the end of the presentation, participants will be able to**

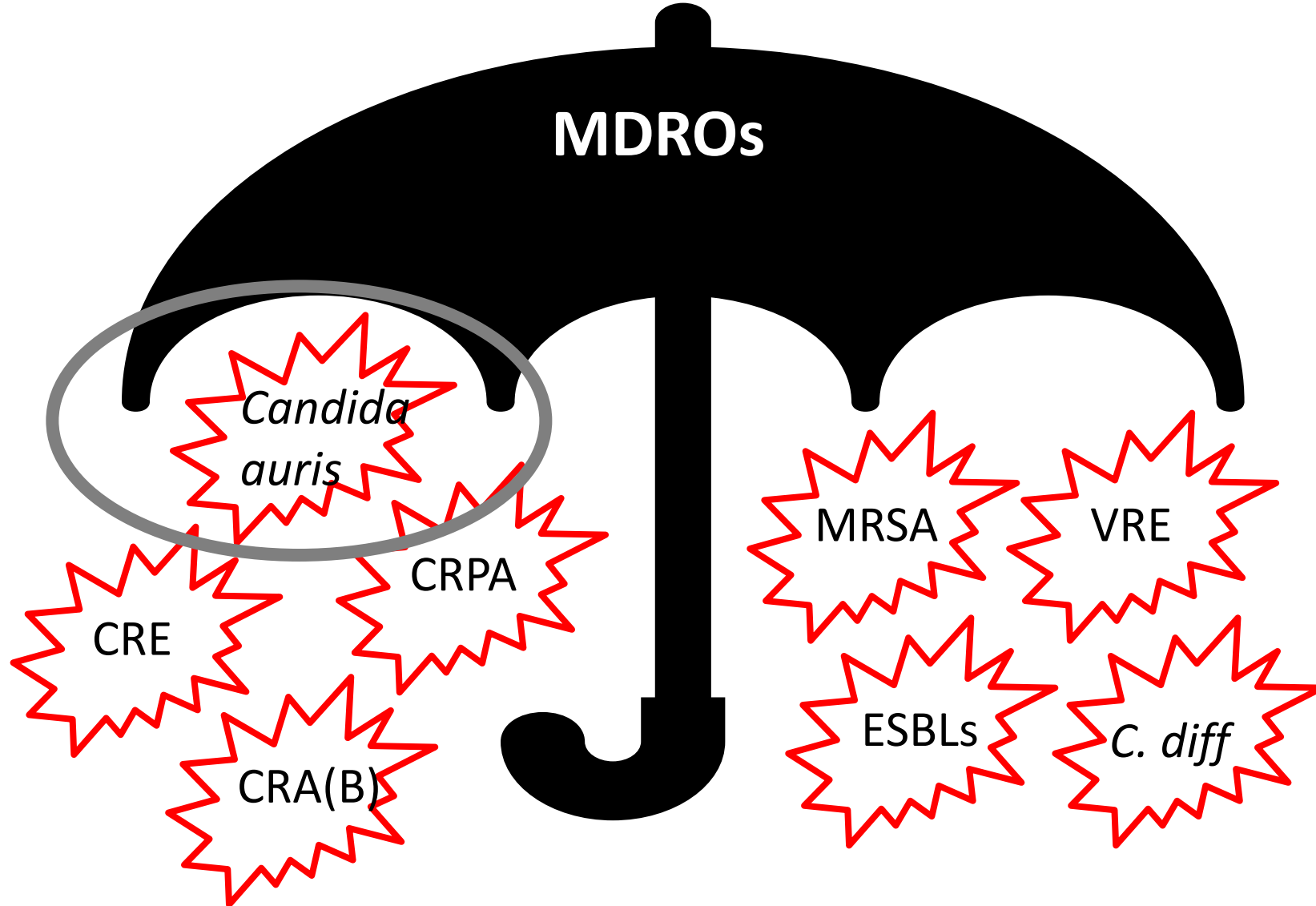
- 1. Describe how multidrug-resistant organisms (MDROs) spread through healthcare facilities.**
  - 2. Describe the role their healthcare facility type plays in limiting further transmission throughout their regions.**
  - 3. Compare the different types of MDRO colonization screening and which types apply to their healthcare facility.**
  - 4. Identify infection prevention and control practices they should implement at their healthcare facilities to prevent MDRO transmission.**
  - 5. Recognize current practices for communicating a patient/resident MDRO status both inside and outside their facility and identify key strategies for improving care through clear multidisciplinary communication.**
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# Battling MDRO Spread in Three Steps

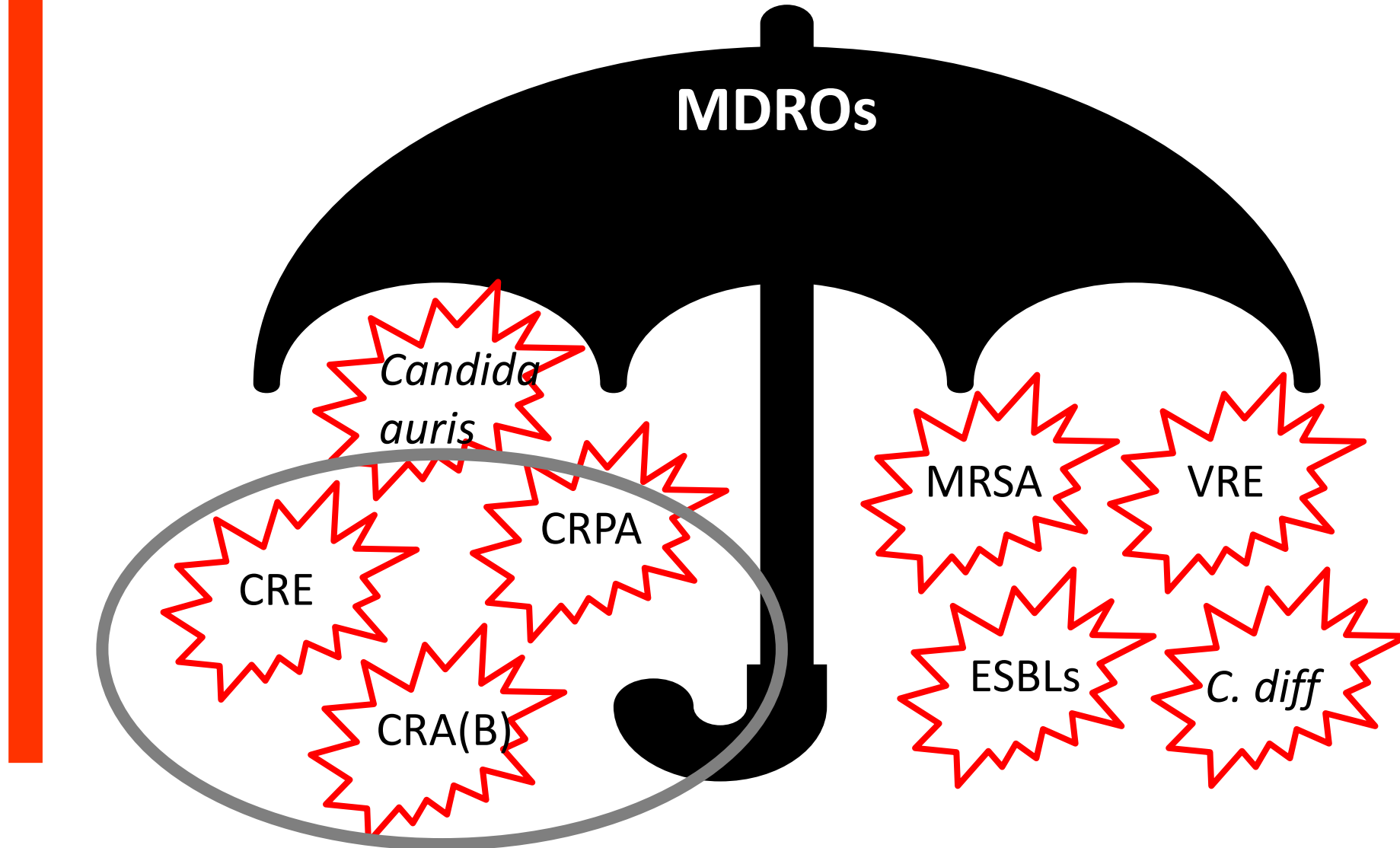
- 1. Identify as many people as possible who are infected or colonized with MDROs in a region**
- 2. Have good baseline infection control practices and use the recommended infection control practices for people with MDROs in healthcare facilities**
- 3. Communicate to other facilities about people with known MDROs at transfer**

# Battling MDRO Spread in Three Steps

1. Identify as many people as possible who are infected or colonized with MDROs in a region
2. Have good baseline infection control practices and use recommended infection control practices for people with MDROs in healthcare facilities
3. Communicate to other facilities about people with known MDROs at transfer



Can be referred to as carbapenemase-producing organisms (CPOs) if a carbapenemase enzyme, such as KPC or NDM, is identified





# Colonization Principles

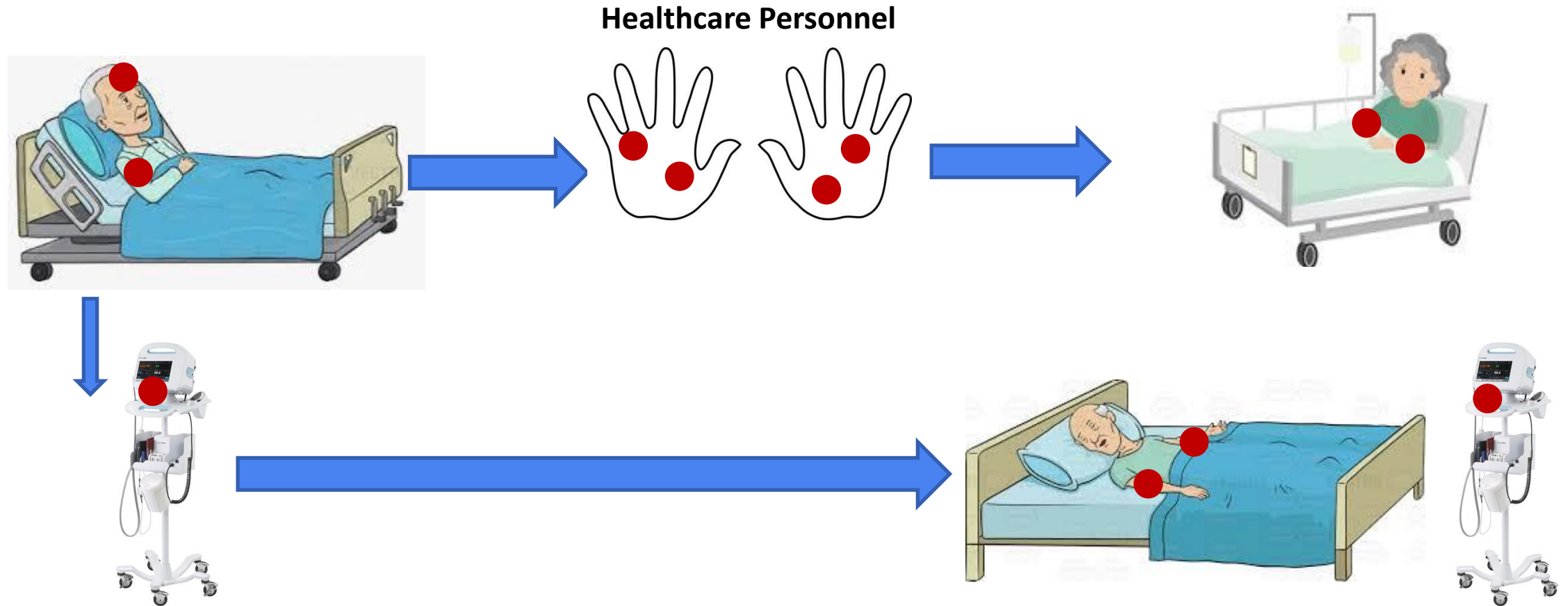
# MDRO Colonization

- Colonization means that a person is carrying a MDRO in or on them but does not have symptoms of an infection
- Some colonized people will eventually develop infections
- Colonized people can be a source of spread of MDROs to other people in healthcare settings

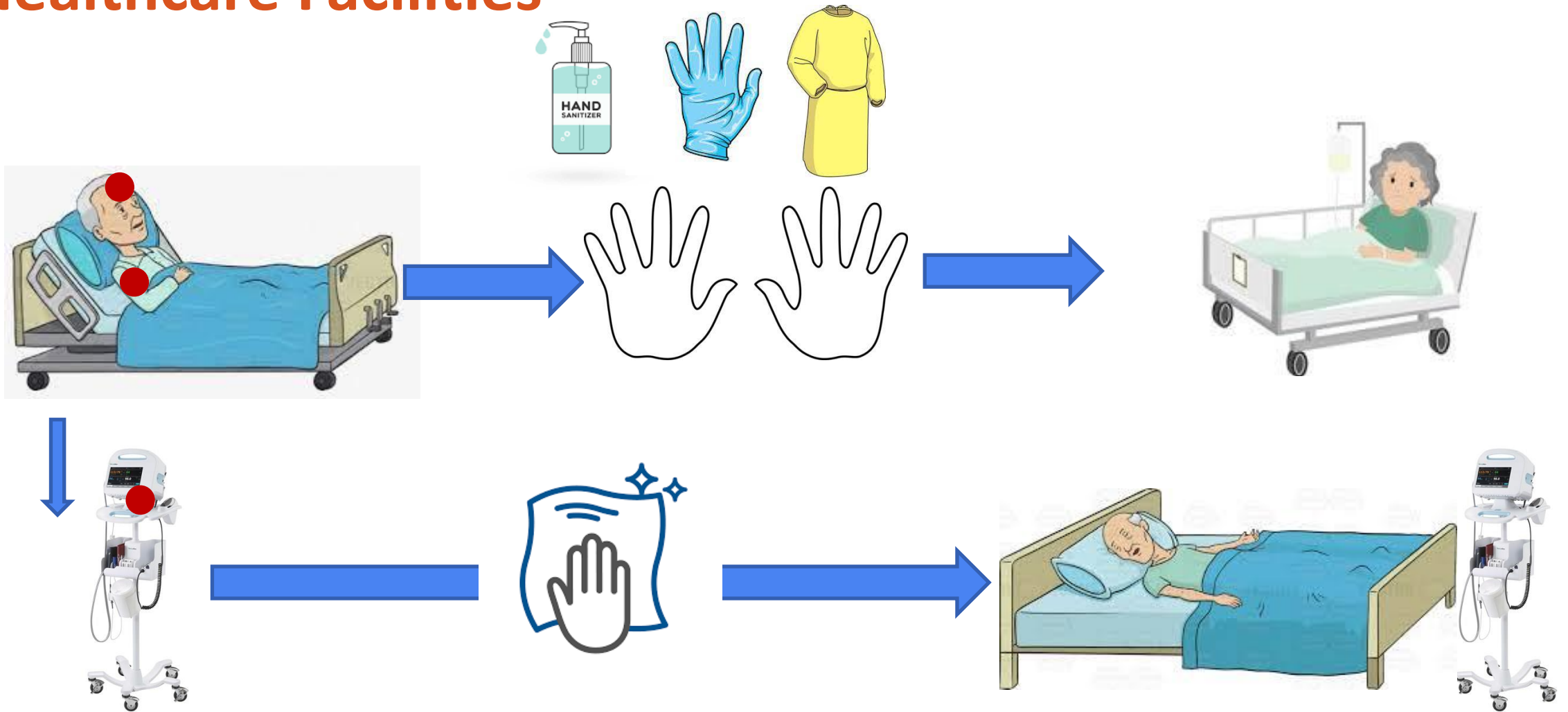


Colonization

# Colonized Individuals and MDRO Transmission in Healthcare Facilities

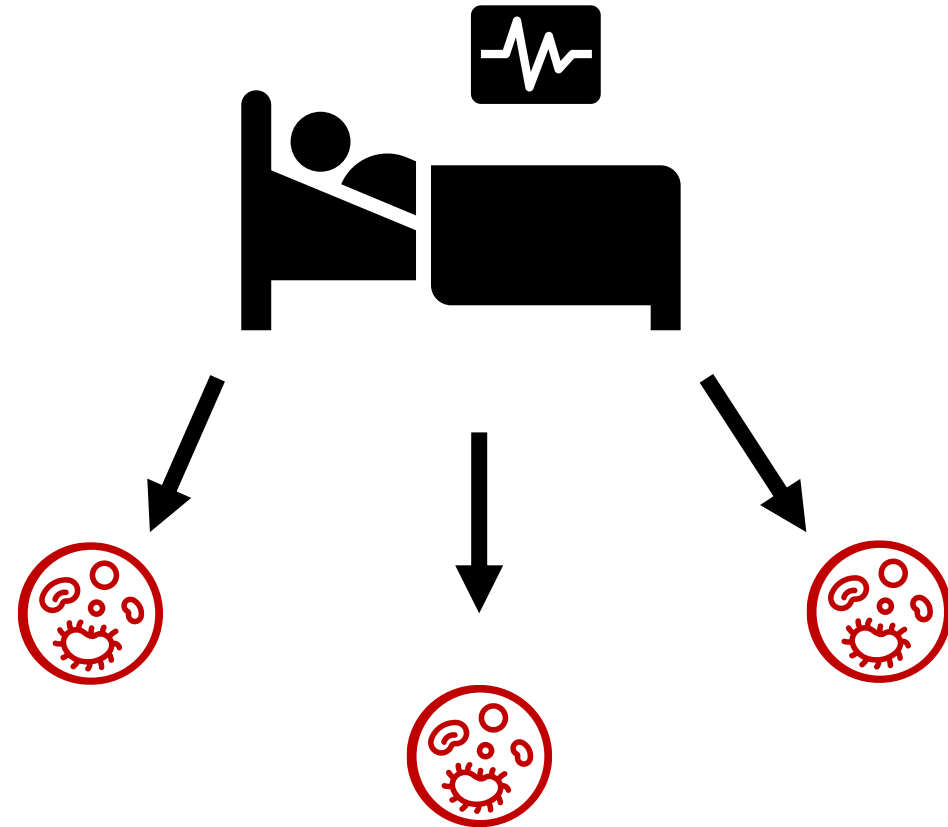


# Colonized Individuals and MDRO Transmission in Healthcare Facilities



# Colonized Individuals and MDRO Transmission in Healthcare Facilities

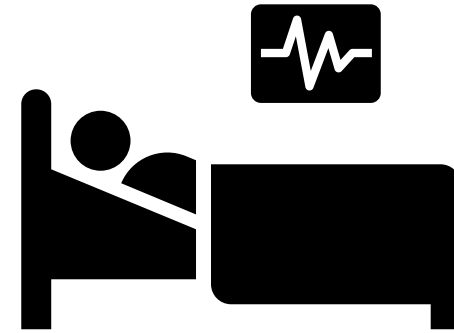
- Shedding of MDROs from colonized patients can also lead to the contamination of the surrounding healthcare environment
- Some MDROs like *Candida auris* (*C. auris*) can persist for weeks, increasing potential for transmission



# Colonized Individuals and MDRO Transmission in Healthcare Facilities

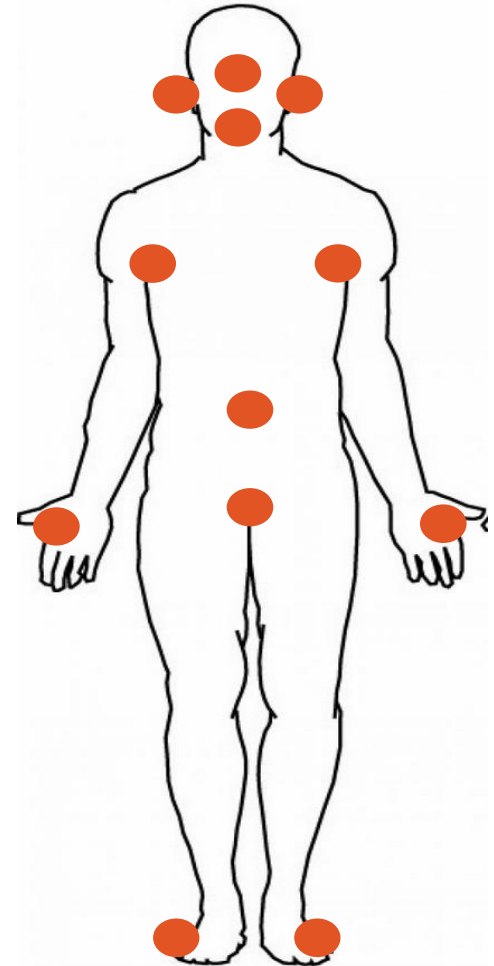
- Adequate cleaning and disinfection of the healthcare environment is critical to controlling spread of MDROs
- Use EPA registered products appropriate for relevant MDRO according to label instructions
  - Example: List P for *C. auris*

<https://www.epa.gov/pesticide-registration/list-p-antimicrobial-products-registered-epa-claims-against-candida-auris>



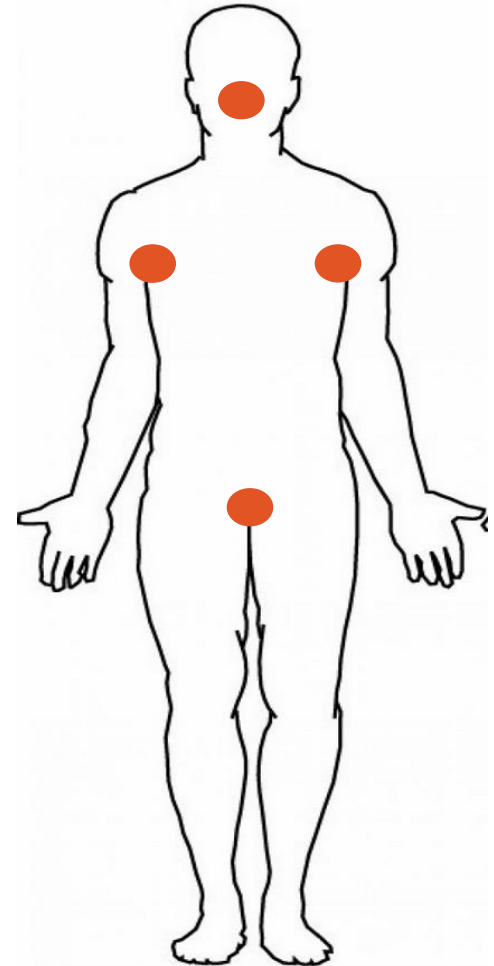
# Colonization Principles – Body Site and MDROs

- MDROs can be found in many different locations both on and inside the body
- Different MDROs colonize different body sites
- Examples
  - *Candida auris*: axilla, inguinal, nares, hands, toes, other skin sites
  - Carbapenem-resistant Enterobacterales (CRE): tends to preferentially colonize the gastrointestinal tract



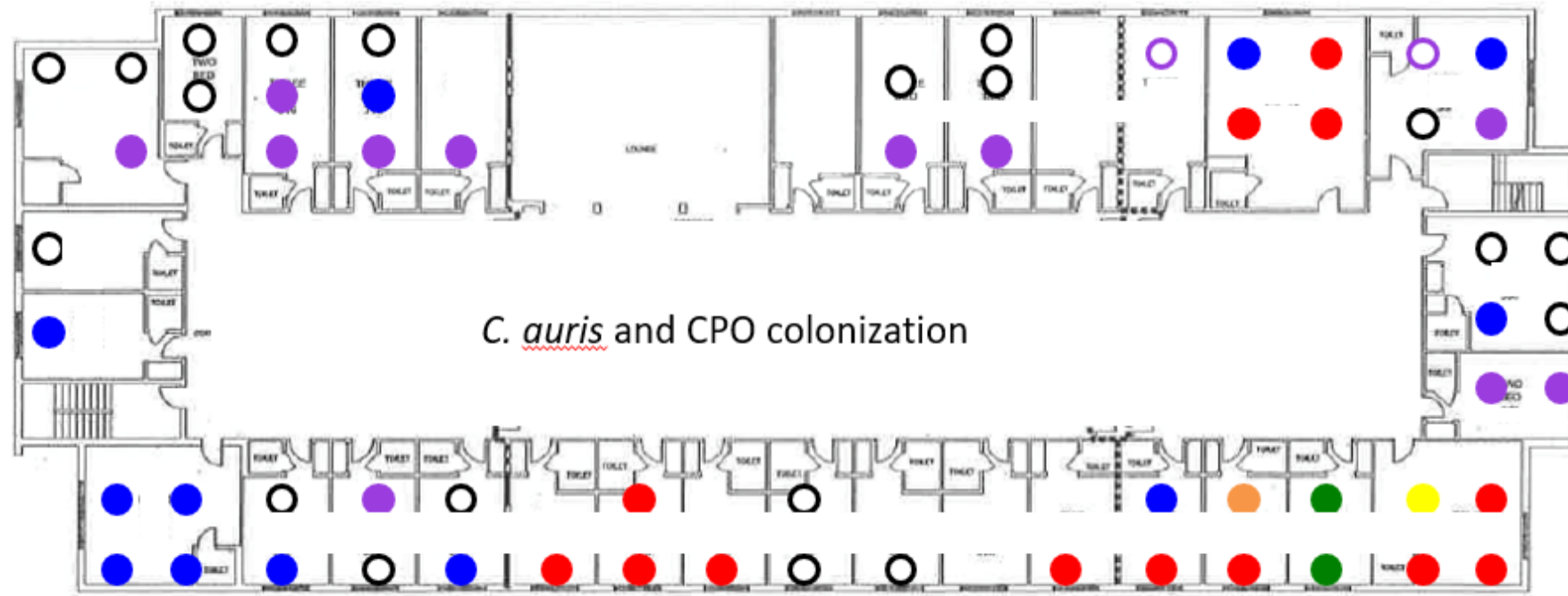
# Colonization Principles – Body Site and MDROs

- The areas selected for colonization screening are body areas that are:
  - Commonly colonized and
  - Provide more reliable detection
- Examples
  - *C. auris*: bilateral axilla/inguinal swab
  - CRE: rectal swab





# MDRO Co-colonization



- *C. auris*
- *C. auris* and KPC
- KPC or CRE with unknown mechanism of resistance
- *C. auris*, KPC, and NDM
- *C. auris*, VIM-CRPA, and KPC
- *C. auris* and KPC-CRPA
- Screened negative for *C. auris*, but not tested for CRE
- Screened negative for CRE and *C. auris*

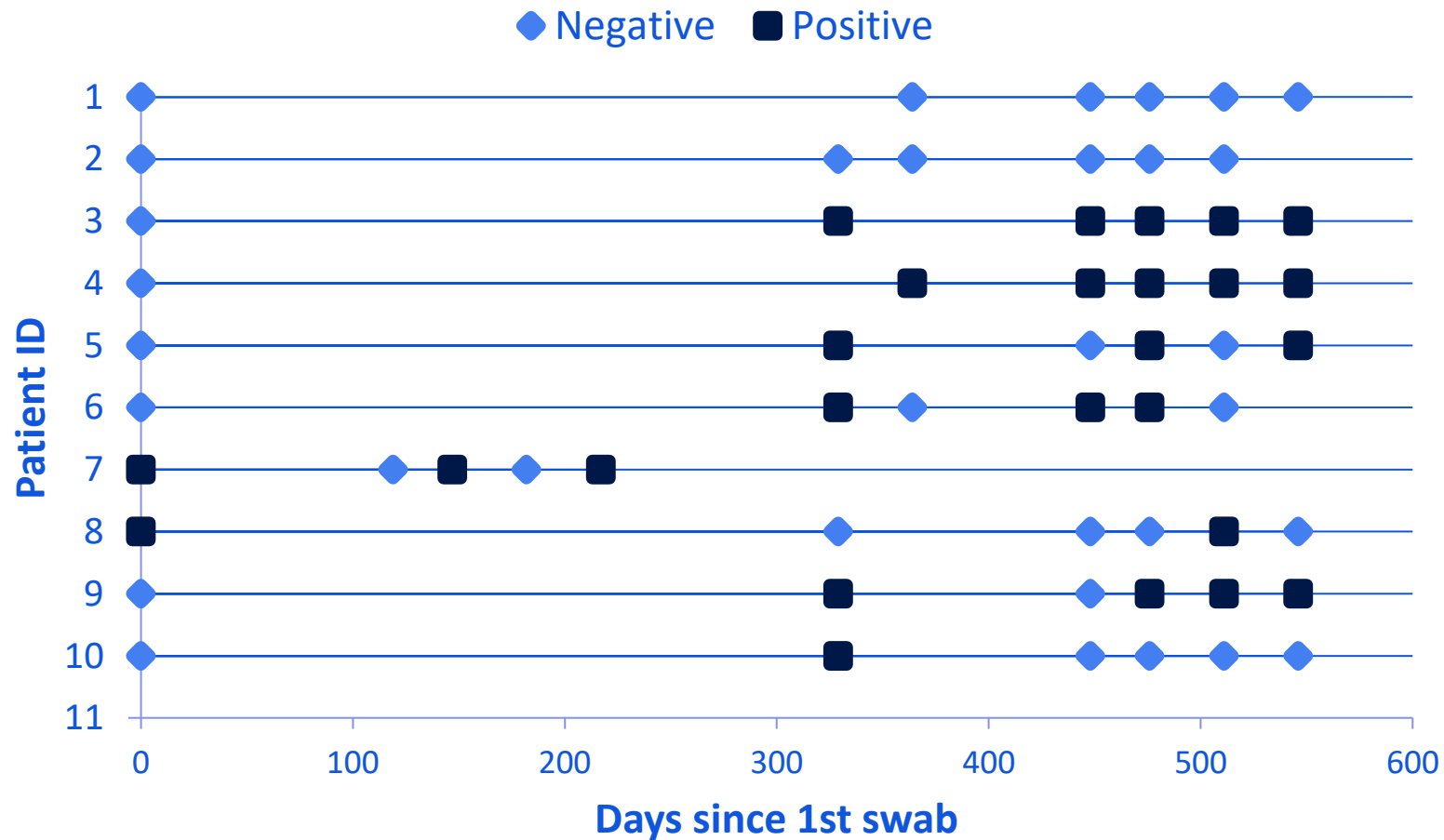
vSNF = skilled nursing facility with ventilator units

CPO = carbapenemase-producing organism; PPS = point-prevalence survey

Slide courtesy of Chicago Department of Public Health.

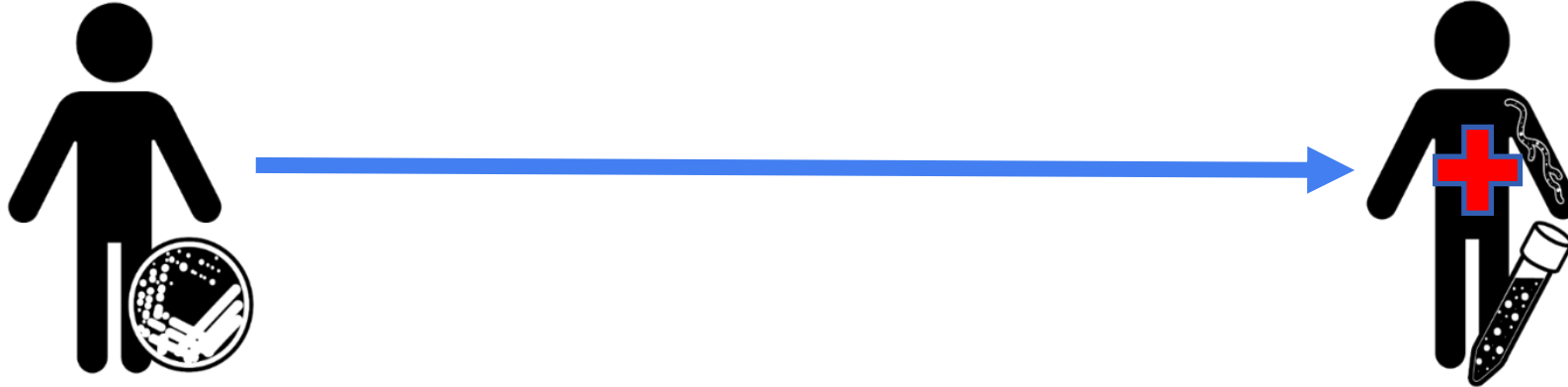
# Colonization can be Long-term

- Example: *Candida auris*



# Colonized Patients can Develop Infections

5-10% of patients colonized with *C. auris* develop invasive infections



Mortality is **>45%** *within the first 30 days*

# Colonization Screening

# Disclaimer

**Your health departments are the real experts on colonization screening for your area.....**

**They are super-knowledgeable and supportive.....**

**Please talk with them about screening**

# Disclaimer

- We will be talking a lot about colonization screening today
- But it is very important to remember that only a combination of colonization screening and infection control work will decrease MDRO transmission in a facility and throughout a region

# Colonization Screening

- Colonization screening: Using a swab to sample different body sites to determine if that person has the MDRO of interest (i.e., colonized but not infected)
- Different strategies for colonization screening:
  - Point prevalence surveys (PPSs)
    - Response-based
    - Proactive
  - Admission screening
  - Discharge screening

# Point Prevalence Surveys (PPSs)

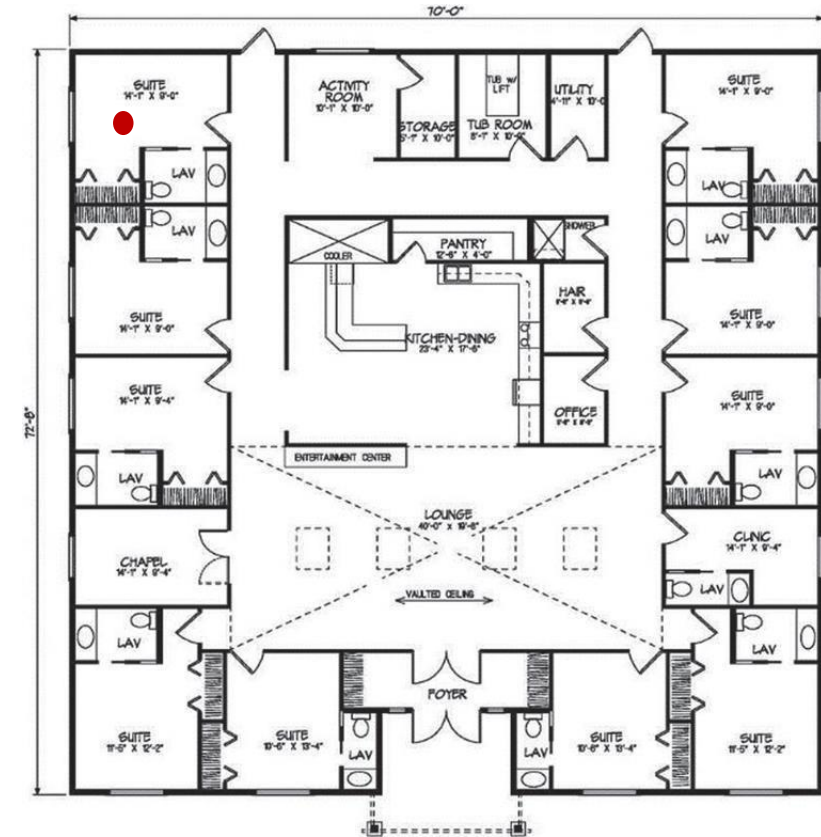
- **PPS: When colonization screening is performed on a group of people at the same time to determine how many of them are colonized**
  - “Survey” does not mean this is research
  - Considered an important type of public health monitoring or surveillance
- **Response-based PPS: A PPS conducted in response to the new identification of a person or multiple people with a MDRO in your facility to see if you can find colonized people you didn't know about before**
- **Proactive PPS: A PPS conducted at a facility regardless and possibly prior to the identification of someone with a MDRO of interest**



# Case #1

An 81-year-old man:

- Long-term resident of a ventilator unit in a ventilator-capable skilled nursing facility (vSNF) for three years
- Urine culture with carbapenem resistant *Klebsiella pneumoniae* with NDM carbapenemase enzyme production
- First NDM detected in this facility and is otherwise uncommon in the region

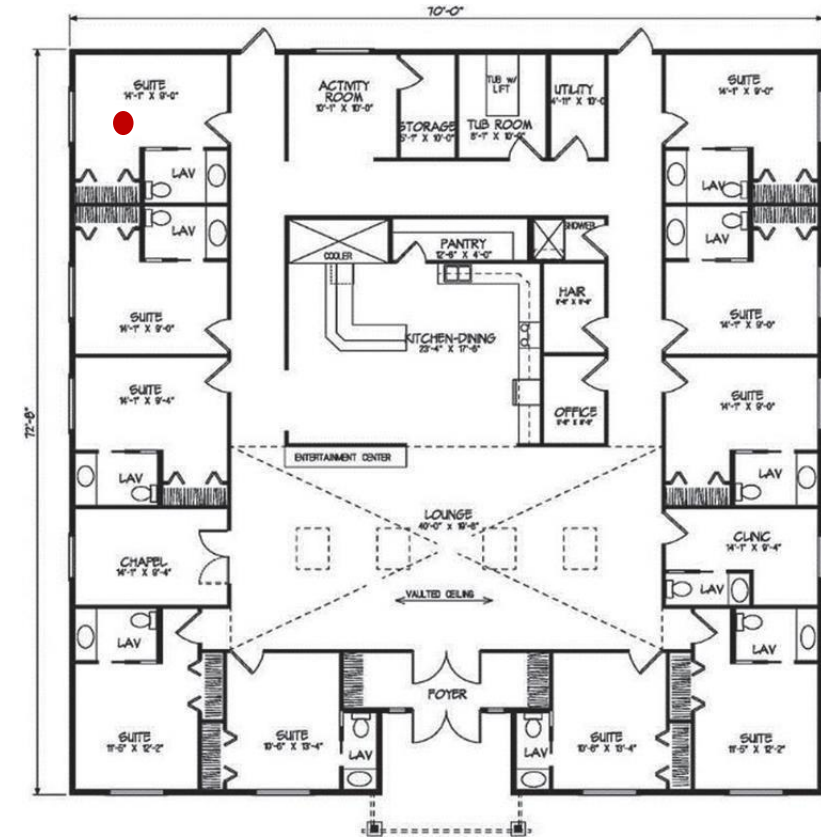


Ventilator unit of a skilled nursing facility

# Case #1

An 81-year-old man:

- Had not been on Contact or Enhanced Barrier Precautions (EBP) but is now in a private room on EBP
- Had 3 roommates prior to moving rooms
- 20 additional residents located on the ventilator unit



Ventilator unit of a skilled nursing facility

# Question #1 Poll Question

- What type of colonization screening will the health department most likely recommend *initially*?
  - a. Response-based PPS for CPOs but limited to only roommates and people in rooms adjected to his (targeted screening)
  - b. Response-based PPSs for CPOs with screening of all residents on the ventilator unit
  - c. Proactive PPS
  - d. Discharge screening

# Question #1 Poll Question

- What type of colonization screening will the health department most likely recommend *initially*?
  - a. Response-based PPS for CPOs but limited to only roommates and people in rooms adjoined to his (targeted screening)
  - b. Response-based PPSs for CPOs with screening of all residents on the ventilator unit
  - c. Proactive PPS
  - d. Discharge screening

# Response-based PPSs

- When a response-based PPS may be utilized after identifying a single person with a MDRO:
  - How common a MDRO is in your region
  - Which unit the patient/resident with the MDRO is/was located
  - The facility's use of and adherence to infection control actions:
    - Contact Precautions or Enhanced Barrier Precautions, hand hygiene, and environment cleaning and disinfection

# Response-based PPSs

- **Who to screen during a response-based PPS:**
  - **Targeted screening:**
    - Those at high-risk for MDROs on the unit (e.g., bed bound, ventilated, etc.)
    - Roommates/shared bathrooms
  - **But broader screening maybe needed (e.g., whole unit) especially :**
    - If there are many individuals at high-risk for MDROs on a unit or
    - If determining who is a high-risk contact is too time-consuming or
    - If targeted screening reveals more people with the MDRO

# Preparing Patients/Residents for a PPS

- **Ensure your healthcare personnel can explain the concepts in plain language to patients/residents:**
  - **About the MDRO**
    - <https://www.cdc.gov/hai/organisms/cre/index.html>
    - <https://www.cdc.gov/fungal/candida-auris/index.html>
  - **About colonization screening:**
    - <https://www.cdc.gov/fungal/candida-auris/c-auris-screening-info.html>
  - **Consider using a script**

# Screening Assent Script Excerpt

Recently, we identified a germ, which is rare in the U.S., in a patient who was cared for at this facility [or in the area]. The germ is called *Candida auris* and is a type of yeast that can be resistant to many of the drugs used to treat it. It can also spread from patient to patient in hospitals and nursing homes.

We are testing patients who might have come into contact with it to see if they are now also carrying the germ. Some people can carry it on their skin without knowing it, and they can spread the germ to others without knowing it.

The chance that you carry this germ is low, and fortunately, most people who carry it don't get sick from it. There are a few reasons why it can be helpful to test patients for this germ. First, your doctors will be able to make better decisions for you about your medical care if they know whether you carry this germ. Second, the healthcare facility and health department need to know who is carrying the germ so that they can help prevent it from spreading.

The procedure is not painful and there should be no side effects. If you agree to be tested, the process is simple. We would use a soft swab, like a Q-tip, to swab your armpit and your groin, the area where your leg joins your body.

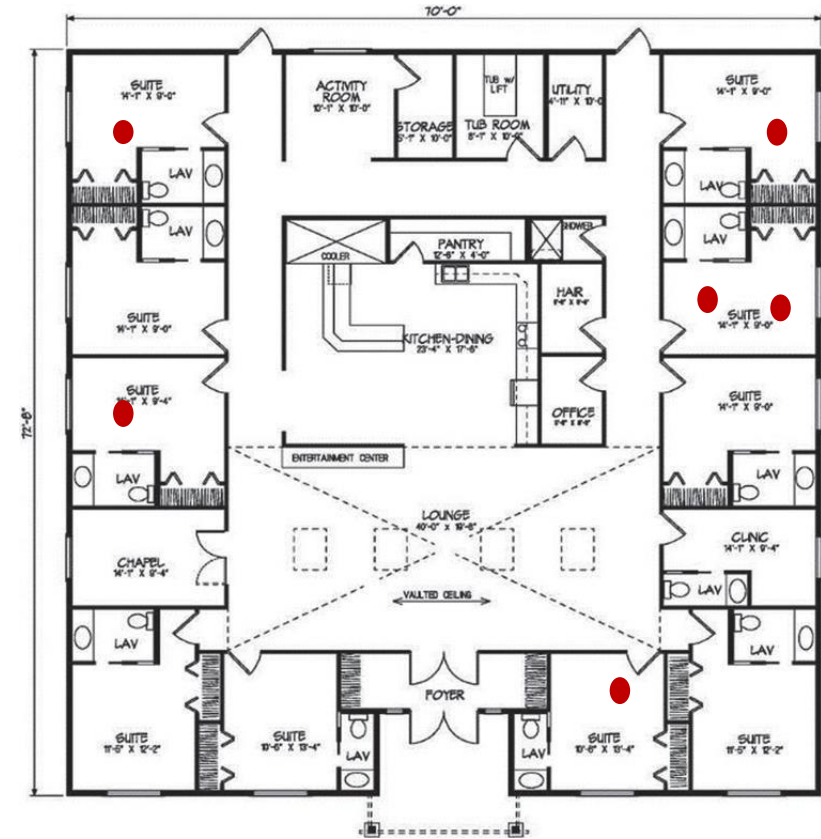
<https://www.cdc.gov/fungal/diseases/candidiasis/pdf/C-auris-assent-for-screening-template.pdf>



# Case #1 continued

**The vSNF conducted a response-based PPS of the whole ventilator unit:**

- PPS identified 5 residents colonized with a NDM-producing organism
- *Candida auris* outbreak has been identified at a neighboring facility which frequently transfers residents to them



### Ventilator unit of a skilled nursing facility

## Question #2 Poll Question

- Which of the following recommendations would the health department likely make next?
  - a. To allow the health department to assist with an infection control assessment
  - b. To conduct another response-based PPS in several weeks
  - c. To also look for *Candida auris* at a future PPS as well
  - d. All of the above

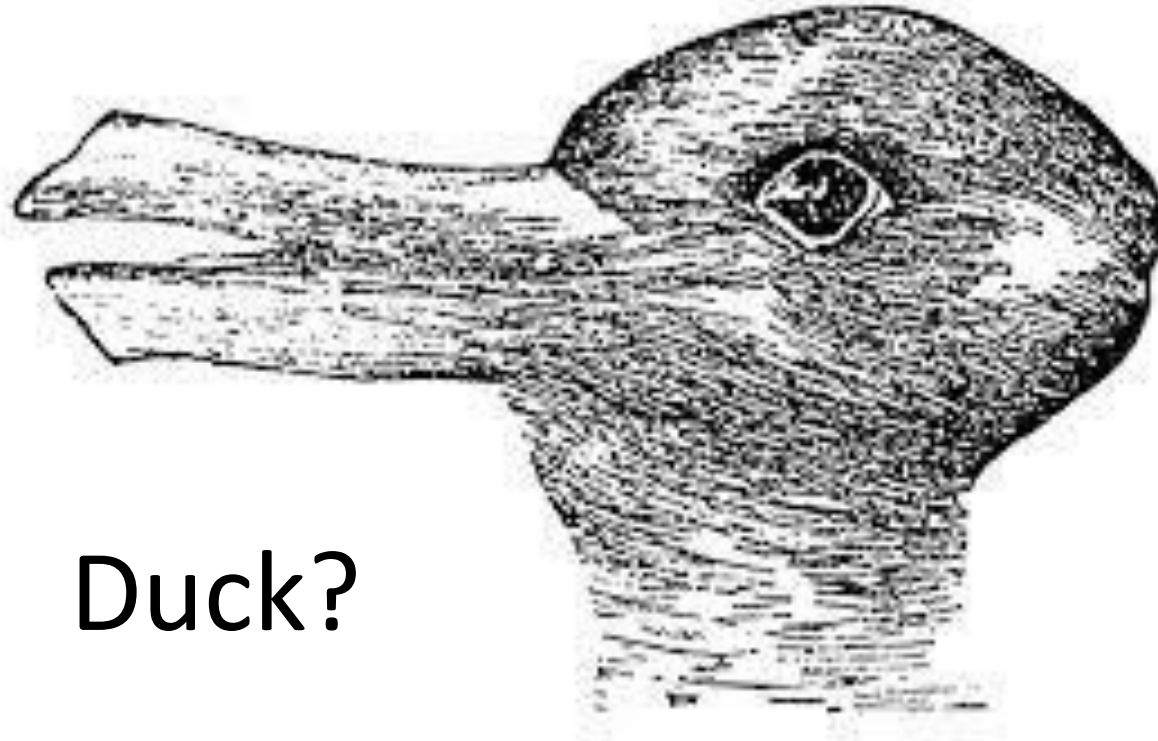
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# **Actions after Finding Colonized Patients/Residents on a Response-based PPS**

- **Residents/patients with the MDRO and their families should be notified**
- **For anyone with the MDRO (and potentially those at highest risk for the MDROs in nursing homes), implement recommended infection control measures**
- **Work with the health department to investigate**
  - **Is MDRO transmission likely occurring within the facility (i.e., cluster or outbreak)?**

It's all about Perspective...



Duck?

Rabbit?

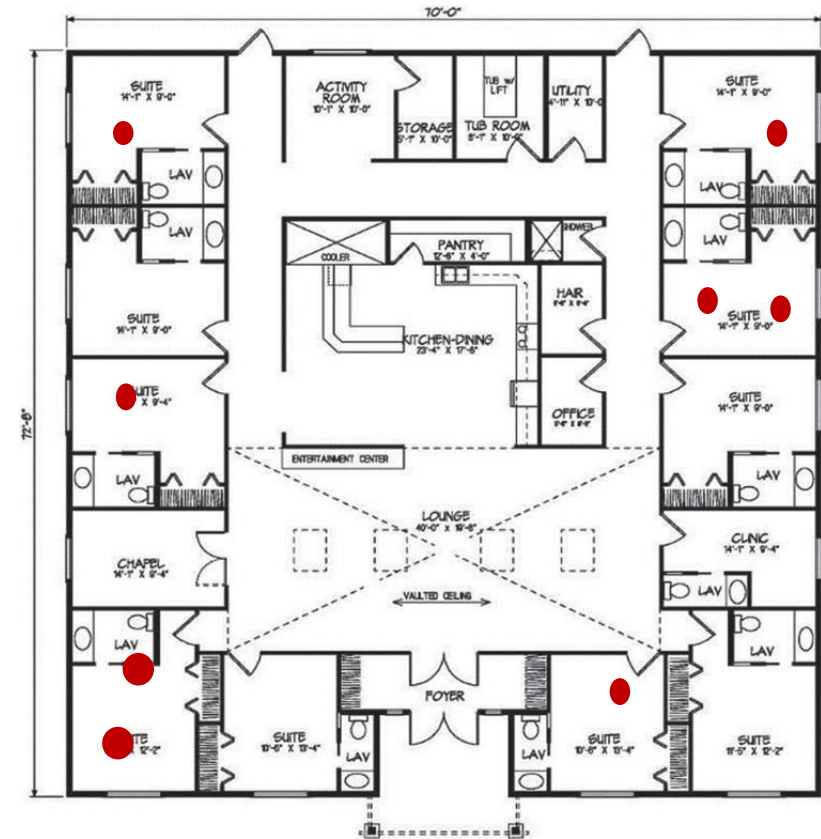
# Actions after Finding Colonized Patients/Residents on a Response-based PPS

- **Assess your infection control practices to see where gaps may exist even if transmission isn't likely occurring**
- **Implement changes to improve upon infection control gaps**
- **Repeat response-based PPSs while infection control improvements are made to identify new cases**
- **Expand PPS to look for other types of MDROs if suggested by your health department**

## Case #1 continued

Another response-based PPS to identify both CPOs (e.g., NDM) and *Candida auris* is conducted on the ventilator unit 2 weeks later after improvements in hand hygiene performance are made:

- PPS identified 2 new residents colonized with an NDM-producing organism
- No one with *Candida auris* colonization was identified



Ventilator unit of a skilled nursing facility

## Question #3 Poll Question

- **What should the facility do next?**
  - a. Give up-they just can't control this MDRO**
  - b. Ghost the health department**
  - c. Continue to evaluate and correct the infection control gaps**
  - d. Blame the facility up the street; the MDRO must be coming from them.**



## Question #3 Poll Question

- What should the facility do next?
  - a. Give up-they just can't control this MDRO
  - b. Ghost the health department
  - c. Continue to evaluate and correct the infection control gaps
  - d. Blame the facility up the street; the MDRO must be coming from them.

# Transmission Happens

- No healthcare facility wants to bring harm to their patients or residents
- No healthcare facility wants to bring harm to patients or residents in their transfer networks
- Most of us do our best under the circumstances and with the resources we have been given
- But sometimes transmission happens...and happens...and happens
- This can cause frustration, anxiety, anger, blame, \$!%\*%

# What To Do

- **Don't give up!**
  - Infection control improvements take time...but are always worth the effort
- **Don't get too focused on the PPS results alone**
  - Define other measures of success and celebrate them
- **Don't get too focused on where the patient/resident acquired the MDRO**
  - If they are in your facility, it is up to you to limit transmission
- **Don't forget the people behind their diagnosis**

## Case # 2

- The infection preventionist (IP) at a long-term acute care hospital (LTACH) was reading a health department alert about the sudden increase in *Candida auris* in the area. The IP has already begun assessing and improving their current infection control practices, but she wants to do more.



## Question #4 Poll Question

- Which of the following colonization screening activities could she suggest to her administrator?
  - a. A proactive PPS
  - b. Discharge screening
  - c. Admission screening
  - d. A and C
  - e. All of the above

## Question #4 Poll Question

- Which of the following colonization screening activities could she suggest to her administrator?
  - a. A proactive PPS
  - b. Discharge screening
  - c. Admission screening
  - d. A and C
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# Point Prevalence Surveys (PPSs)

- **PPS: When colonization screening is performed on a group of people at the same time to determine how many of them are colonized**
- **Response-based PPS: A PPS conducted in response to the new identification of a person or multiple people with a MDRO of interest to see if you can find colonized people you didn't know about before**
- **Proactive PPS: A PPS conducted at a facility regardless and possibly prior to the identification of someone with a MDRO of interest**

# Proactive PPSs

- Best utilized by facilities at highest risk for MDRO transmission (especially high-acuity long-term care)
- Enables a facility to seek out the MDRO instead of just waiting for it to show itself
- Finding previously unknown colonized people is a win for them, the facility, and other healthcare facilities in the region





# Proactive PPS Considerations

- **Frequency**
  - Depends upon facility type and how common a MDRO is your region
  - Some facilities (especially vSNFs and LTACHs) will benefit from routinely scheduled ones
- **Consider screening for more than one MDRO (e.g., *Candida auris* and CPOs)**

# Proactive PPS Considerations

- You may find people with the MDRO
  - This may cause you angst
  - And may lead to more PPSs
  - And require increased attention to infection control improvements
  - But knowing on your own terms is better than not knowing or being surprised by it!
- You may not find people with the MDRO
  - Monitor and improve infection control practices

# Admission Screening Considerations

- Colonization screening that occurs upon admission to a facility
  - Screen for more than one type of MDRO
- Consideration by facility type:
  - LTACH and vSNFs:
    - In combination with proactive PPSs
    - Few people with the MDRO in their facility
    - Dedicated units to the care of people with MDROs
  - Acute care hospitals (ACH):
    - Higher amounts of the MDRO in a region
    - Particularly if they share patients with LTACHs and vSNFs

# Admission Screening Considerations

- **Requires a well-developed implementation plan**
- **Who to screen:**
  - **It depends based upon laboratory resources and what is feasible for you (talk to your laboratory and/or health department)**
  - **Examples:**
    - **vSNF screens all admission to their ventilator unit**
    - **LTACH screens all admissions**
    - **ACH screens all admissions from certain facilities or facility types**

# Admission Screening Considerations

- Who to screen:
  - Examples (continued)
    - ACH only screens admissions with MDRO risk factors from certain facilities or facility types
    - ACH screens all admission to their ICUs
    - Patients admitted to healthcare facilities after an overnight stay in a healthcare facility outside of the United States in the prior 6 months



## Case #3

A medical intensive care unit in an acute care hospital is experiencing an outbreak of highly-drug resistant NDM *E. coli*.

- Three rounds of response-based PPSs continue to find patients with the MDRO
- Critical gaps in their infection control procedures have been identified
  - Hand hygiene rates at 50%
  - Staff not routinely using gowns
  - Shared patient equipment not routinely cleaned and disinfected



## Question #5 Poll Question

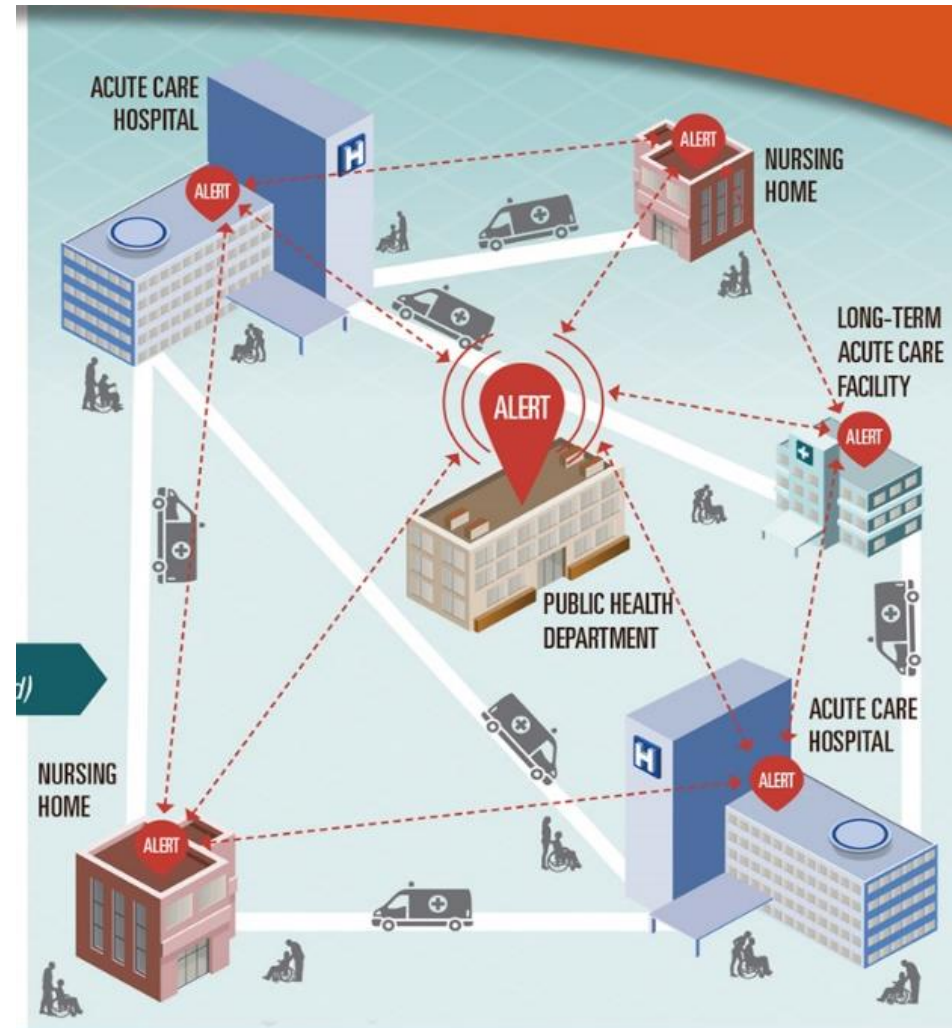
- **What steps can this facility take to limit transmission to other healthcare facilities at transfer?**
  - a. Discharge screening**
  - b. Verbally communicating with any facility accepting someone with the MDRO in transfer**
  - c. Continue to work on infection control gaps**
  - d. All of the above**

## Question #5 Poll Question

- What steps can this facility take to limit transmission to other healthcare facilities at transfer?
  - a. Discharge screening
  - b. Verbally communicating with any facility accepting someone with the MDRO in transfer
  - c. Continue to work on infection control gaps
  - d. All of the above



# Remember We are All Connected....



# Making it Easy to Share MDROs



MDRO



# So, We Must Work Together to Protect the Region



MDRO



# Communication

- **Communication regarding someone's MDRO status at transfer should occur at every transition of care**
- **The transferring facility should ensure:**
  - **The accepting facility is aware at the time of or ideally prior to transfer**
  - **Ensure recommended infection control actions are communicated**
  - **Choose an effective way of doing this; implement consistently for every transfer**

# Communication

- **The accepting facility should ensure their infection preventionist is aware of the person's MDRO status**
- **Don't forget to communicate with your health department**
- **Very complex topic and will be covered in more detail in future webinars**

# Utilize Recommended IPC Practices

Three core strategies to limit the spread of MDROs

- 1. Hand hygiene**
  - 2. Contact Precautions for all facilities or Enhanced Barrier Precautions in nursing homes**
  - 3. Environmental cleaning and disinfection**
    - Includes preventing transmission from reservoirs in sink drains, toilets, and other wastewater plumbing
- Will be covered in more detail during a future webinar

# Discharge Screening Considerations

- **Discharge Screening: Colonization screening performed prior to discharge to another unit or healthcare facility**
  - Particularly useful during a current outbreak on a unit
  - Or if your facility has many people with the MDRO
  - Requires a well-developed implementation plan
- **Talk to your laboratory**
  - Can they support this?
  - Can the public health lab support it?
  - What is the turnaround time?

# Discharge Screening Considerations

- **Timing?**
  - **Screening at discharge vs. right before discharge**
- **Who will you screen?**
  - **Those transferring to other healthcare facilities**
    - **Especially to units that house many people with risk of MDRO colonization**
  - **Those transferring to other units in your healthcare facilities**
- **Communicate with your health department**



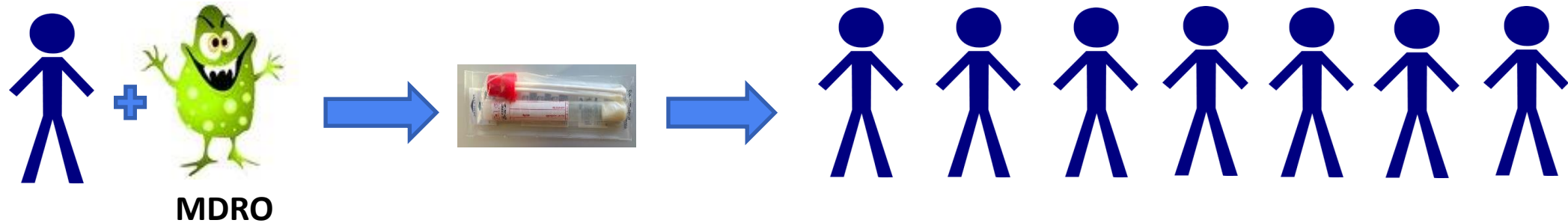
# Discharge Screening Considerations

- **Communicate with the accepting facility or unit**
  - **If results are not back prior to discharge:**
    - **Ideally accepting facility/unit empirically uses recommended infection control practices for the MDRO until test results are available (e.g., Contact Precautions, correct cleaning/disinfection agent)**
    - **Ensure results are communicated**
    - **Should NOT delay discharge while awaiting result**
    - **Should NOT prevent acceptance to a facility**

# Colonization Screening Summary

# Colonization Screening Summary

## Response-based PPS



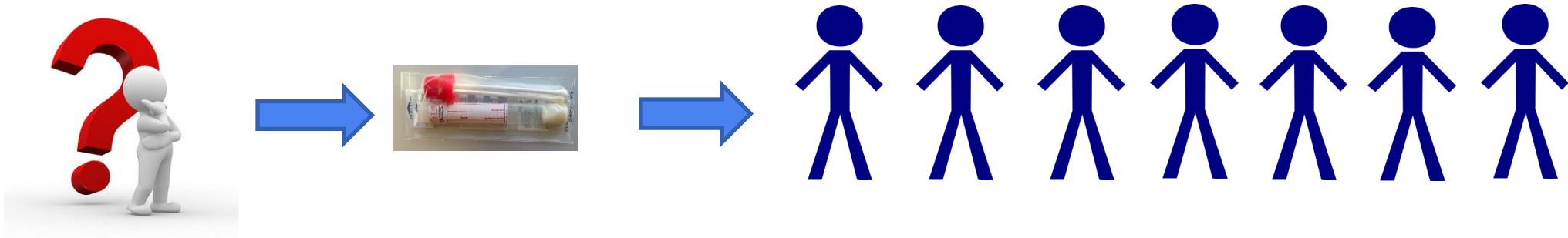
**What is it:** Find one or more people with a MDRO in a facility, swab a group of people not known to have the MDRO in the facility to see if they are colonized with it.

**Which healthcare facilities:**

- Can apply to any healthcare facility depending upon factors such as
  - The type and amount of the MDRO in the facility/region
  - The use and adherence to recommended infection control practices

# Colonization Screening Summary

## Proactive PPS



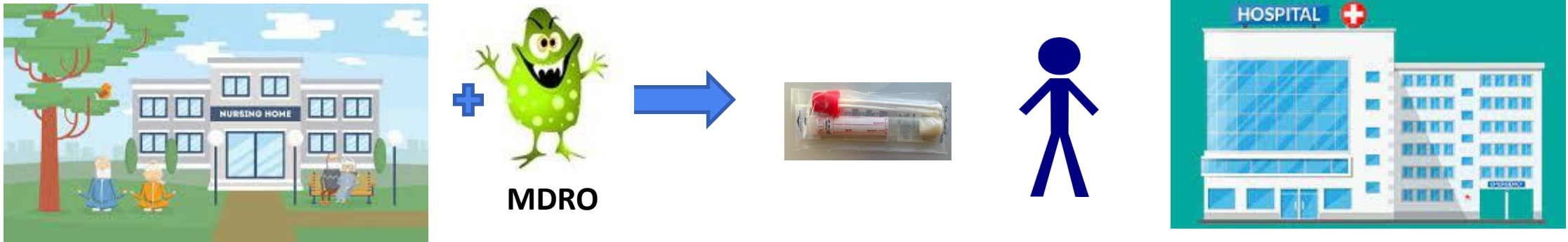
**What is it:** Swab a group of people not known to have the MDRO in a facility to see if some of them are colonized with it even if no one is known to have the MDRO in the facility.

**Which healthcare facilities:**

- Recommended as a routine tool for facilities at highest risk for MDRO transmission such as vSNFs and LTACHs
- Maybe used in other healthcare facilities as needed to better understand what is happening in their facility

# Colonization Screening Summary

## Admission Screening



**What is it:** Screening someone not known to have the MDRO upon admission to your facility to see if the person is colonized with it.

**Which healthcare facilities:**

- Any facility can pursue this although there maybe limited public health resources to support it
- Maybe most beneficial to vSNFs and LTACHs with few cases or with a dedicated MDRO unit
- Maybe most beneficial to ACHs when there are many case of MDROs in their region

# Colonization Screening Summary

## Discharge Screening



**What is it:** Screening someone not known to have the MDRO at or prior to discharge to another facility or to another unit in your facility to see if they are colonized with it.

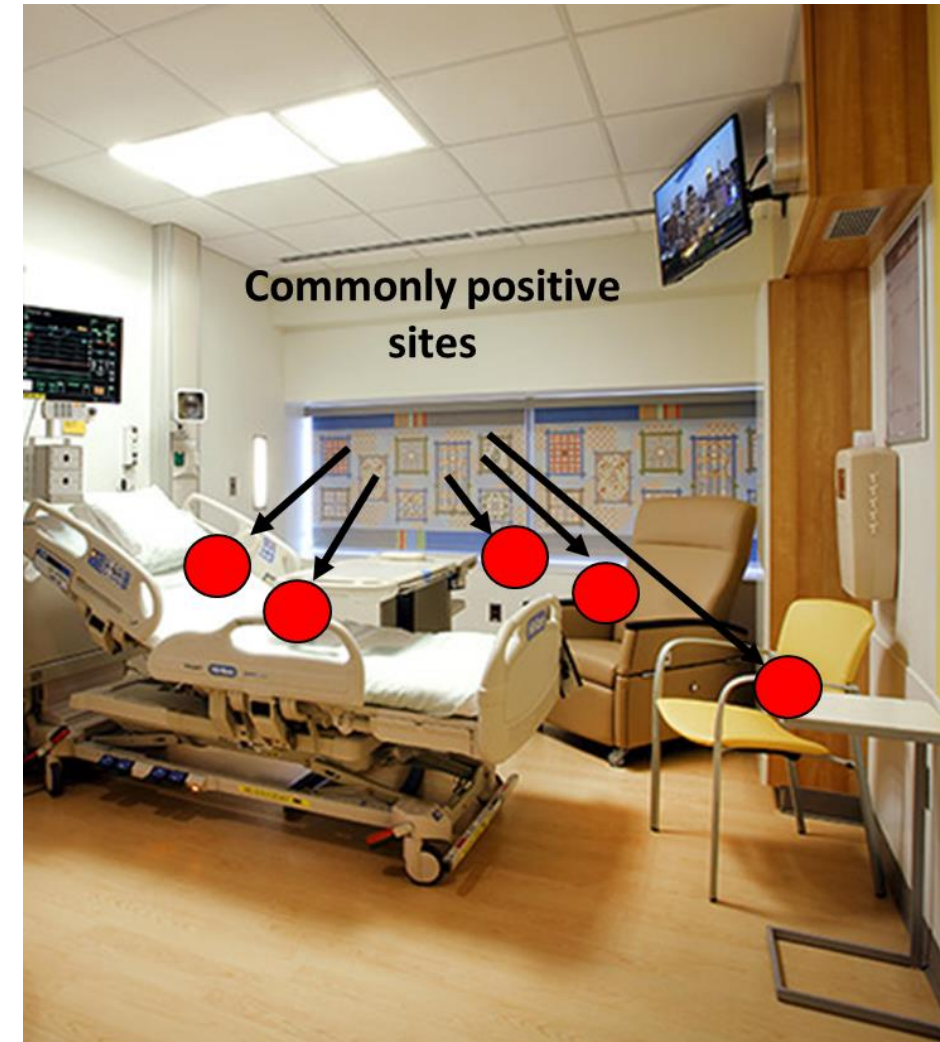
**Which healthcare facilities:**

- Any facility that is experiencing a current outbreak or has many people with the MDRO in their facility

# Environmental Sampling

# Contexts when Environmental Sampling can Help

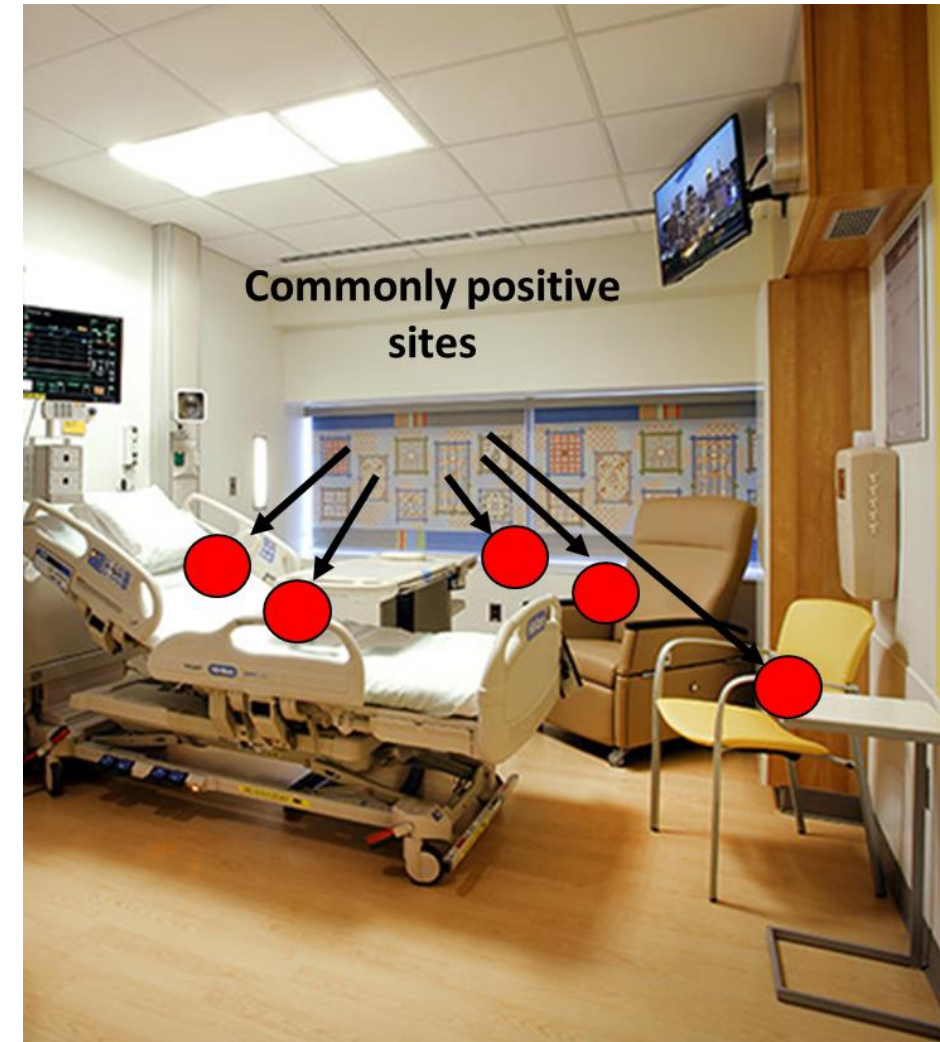
- Support outbreak investigations only if:
  - All other efforts to stop transmission have been well-implemented
  - Clear questions to be answered by an environmental investigation
    - Not a fishing expedition
- Public health lab resources are limited
  - Requires consult to justify and support





# Limitations of Environmental Sampling

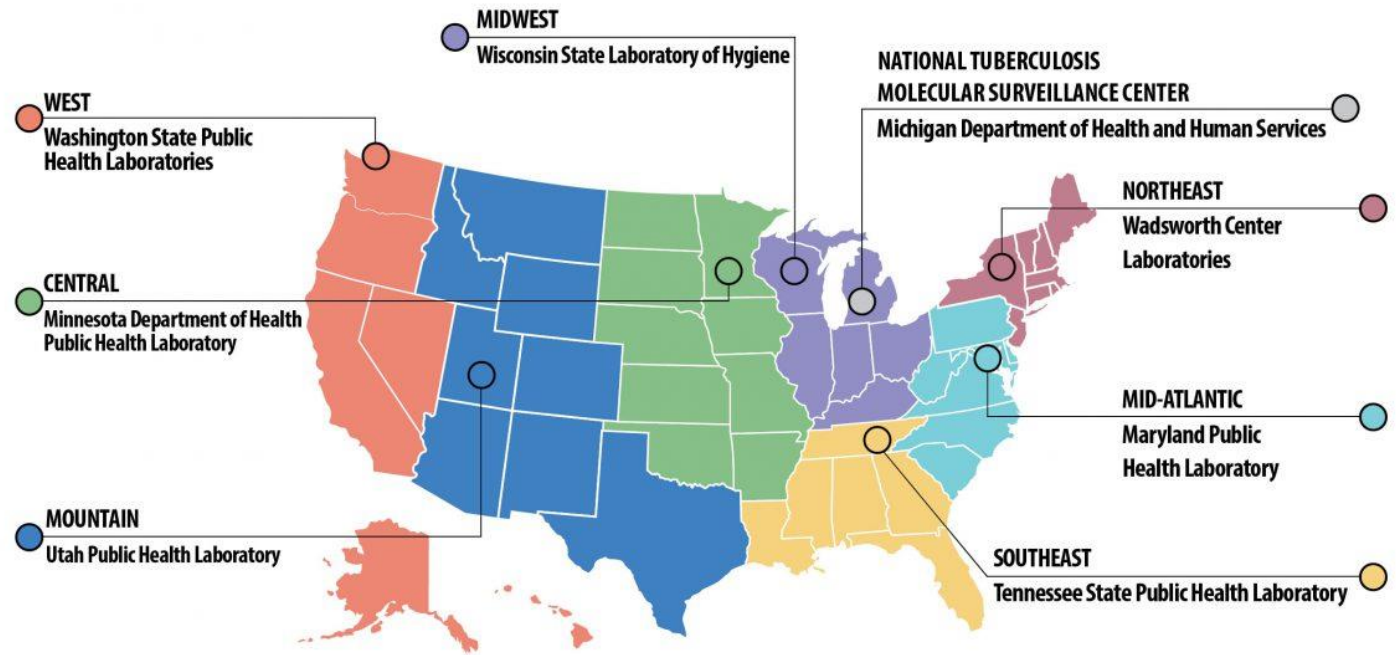
- Environmental sampling cannot confirm the absence of an MDRO
  - Can presume the immediate environment is around colonized patient likely contaminated
- Not a suitable tool to assess thoroughness of cleaning
  - Alternatives:
    - Fluorescent markers
    - ATP Bioluminescence



# Colonization Screening Nuts and Bolts

# How Do Healthcare Facilities Access MDRO Colonization Screening?

- Contact your state/jurisdictional health department's HAI group to request testing unless you have a prior arrangement for ongoing admission/discharge screening.



# How Do Health Departments Access Colonization Screening?

Health Department (HD) assesses facility needs and develops plan for screening.



HD sends request to Public Health Lab (PHL) with plan for screening, including epi details and planned scope.

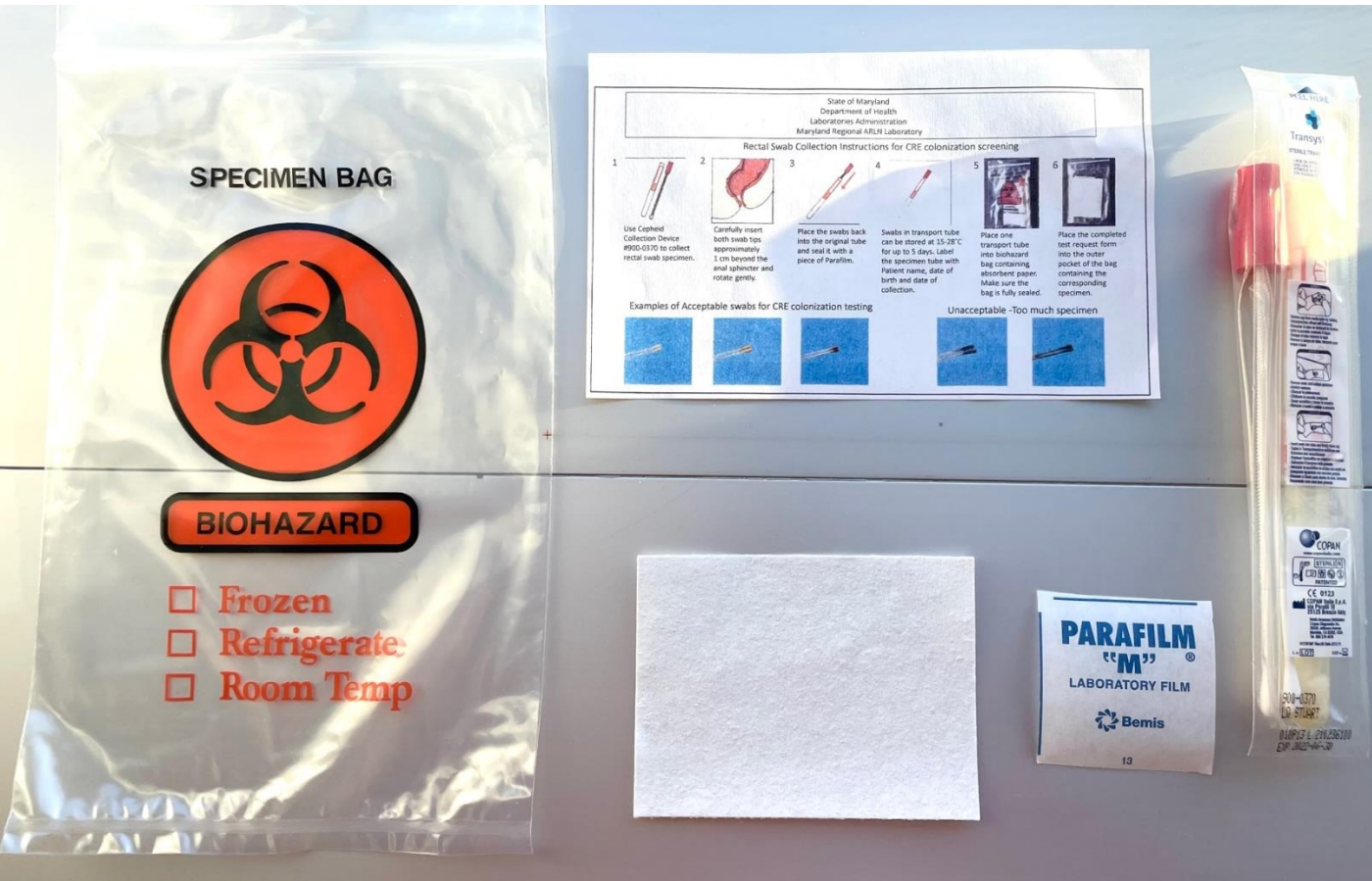


PHL reviews plan for screening and may suggest adjustments for timing, scope, lab capacity, frequently in consultation with CDC Subject Matter Experts.



Screening plan approved/rejected. Collection kits are shipped to facility. MD Specific: Lab-Web Portal accounts are generated as needed.

# What's in a CPO Colonization Screening Kit?




- Biohazard bag
- Copan Transystem Sterile transport swab
- Parafilm
- Absorbent paper
- Specimen collection cheat sheet





# CPO Colonization Screening Instruction Sheet


State of Maryland  
Department of Health  
Laboratories Administration  
Maryland Regional ARLN Laboratory


## Rectal Swab Collection Instructions for CRE colonization screening


- 

1 Use Cepheid Collection Device #900-0370 to collect rectal swab specimen.
- 

2 Carefully insert both swab tips approximately 1 cm beyond the anal sphincter and rotate gently.
- 

3 Place the swabs back into the original tube and seal it with a piece of Parafilm.
- 

4 Swabs in transport tube can be stored at 15-28°C for up to 5 days. Label the specimen tube with Patient name, date of birth and date of collection.
- 

5 Place one transport tube into biohazard bag containing absorbent paper. Make sure the bag is fully sealed.
- 

6 Place the completed test request form into the outer pocket of the bag containing the corresponding specimen.

### Examples of Acceptable swabs for CRE colonization testing



### Unacceptable - Too much specimen



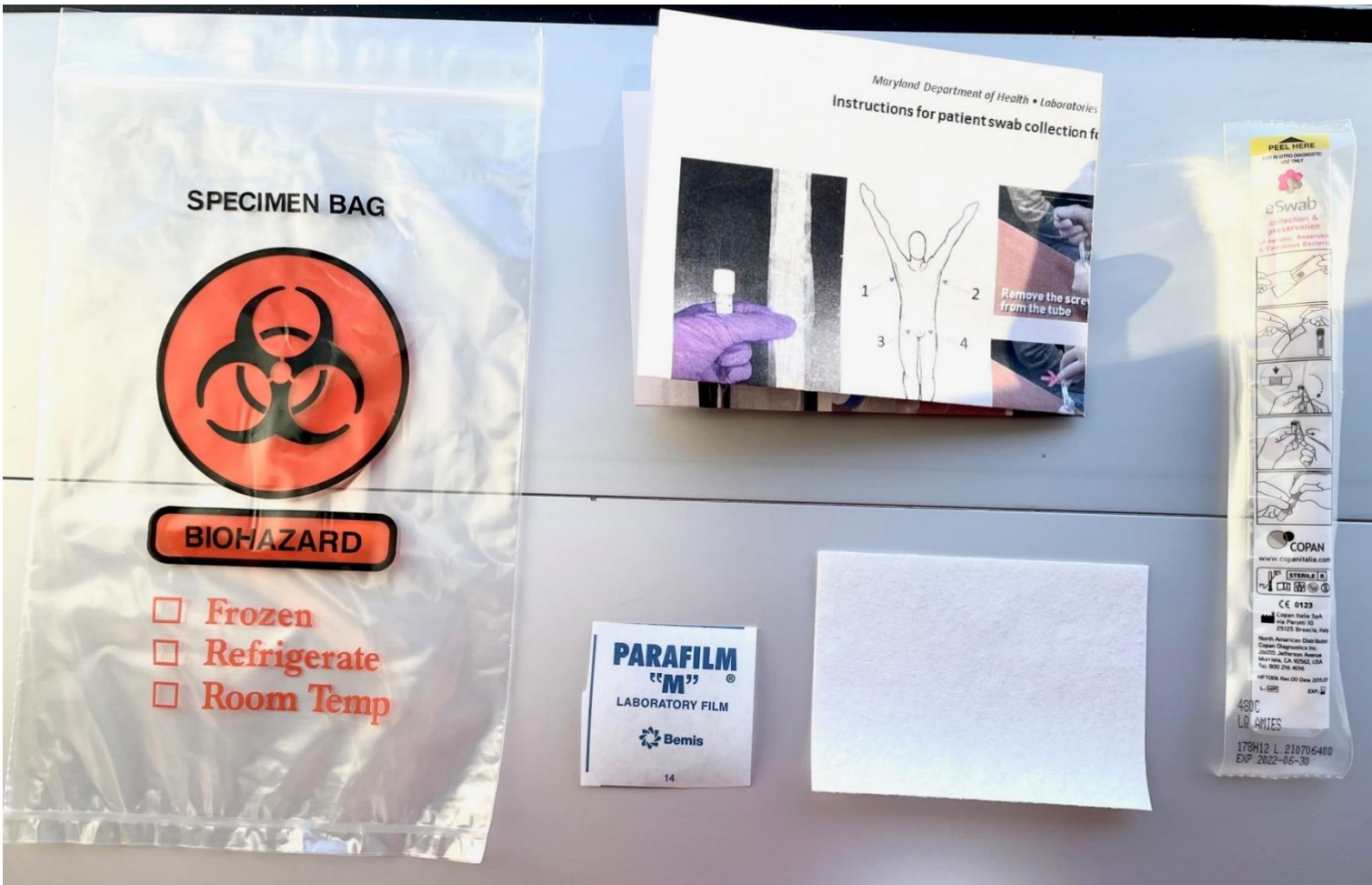
# Swabs for CPO Colonization Screening



- Rectal swabs only
- Copan Transystem Sterile transport swab
- Swabs are attached to the red top of the tube
- Double swab
- Small sponge at the bottom of the tube

# What's in a *C. auris* Colonization Screening Kit?

- Biohazard bag
- Eswab
- Parafilm square
- Absorbent paper
- Specimen collection cheat sheet

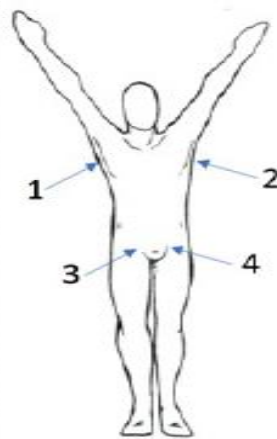




# C. auris Colonization Screening Instruction Sheet

Maryland Department of Health • Laboratories Administration • ARLN Regional Laboratory

## Instructions for patient swab collection for *Candida auris* colonization screening



1. Use BD ESwab™ Collection and Transport System for collection. Open the package by grasping the plastic at the opposite end from the soft tip. Remove the tube from the packaging. Pull the swab from its package.

2. Rub the soft end of the collection swab across the indicated site 3 to 5 times. Rub both sides of the swab tip over the left axilla skin surface and then the right targeting the crease. With the same swab, rub both sides of the swab tip over the left groin skin surface and then the right targeting the crease.

3. Remove the cap from the swab collection tube, then place the soft end of the collection swab into the tube. DONOT pour the liquid out of the tube. Snap off the end of the swab at the marked line. Screw on the tube cap and Parafilm.

4. Write specimen information on the tube label. Place tube into the biohazard bag with absorbent paper. Place test request form in the outer pocket of the bag.

5. Seal the bag and ship immediately to Maryland Regional Lab as a Biological Substance, Category B. Swabs can be stored for no more than 4 days after collection.

# Swabs for *C. auris* Colonization Screening

- Axilla-groin specimens
- Can be manufactured by BD or COPAN
- Always labeled as an Eswab
- Usually a white top, sometimes a blue, green or purple top
- Single, regular flocked swab with a breakpoint in the middle
- Small amount of liquid in the bottom of the tube



# CPO/C. auris Colonization Specimen Labeling Requirements

- **All specimens must be labeled with the following:**
  - Name
  - Date of Birth
  - Collection Date
- **Unlabeled tubes are automatically rejected, regardless of whether they are accompanied by a lab slip/manifest.**
- **Always talk to your public health lab, as specimen acceptability criteria may be slightly different.**
  - **Mid-Atlantic Region:** These identifiers **MUST** match the accompanying lab slip.
  - **Northeast Region:** These identifiers must match the line list you give the health department.

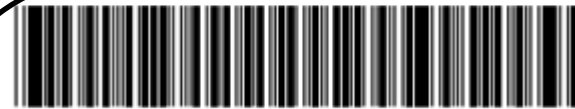
# MDPHL Lab Requisition Requirements

- CRE and *C. auris* colonization screening require requisitions to be generated in the Lab-Web Portal.
- Once generated in the lab-web portal, printed requisitions should be placed in the outer pocket of each individual sample biohazard bag.
- DO NOT place the requisition in the main compartment with the sample.

Maryland Department of Health Laboratories Administration  
Robert A. Myers, PhD, Director  
1770 Ashland Avenue, Baltimore, MD 21205  
(443) 681-3800  
MDPHL.ARLN@maryland.gov



Candida Auris Colonization Screening Requisition  
Submitted By: [REDACTED]  
Date Submitted: 10/21/2021 10:23:03 AM EDT



Order ID: OIDMD [REDACTED]

Tests
<b>Candida Auris Colonization</b>
Has this patient previously tested positive at your facility? <b>No</b>
Specimen Type: <b>Axilla/Groin Swab</b>

# Common Reasons for Specimen Rejection

- **Unlabeled tube**
- **Leaked in transit**
- **For eswabs:**
  - **Swab missing**
  - **Liquid missing from tube**
- **For rectal swabs:**
  - **Having too much sample on the swab causes an invalid result.**

# Regional Lab Specimen Packing and Shipping Requirements

- Specimens can be shipped at room temperature
- Must be tested within 5 days of specimen collection
- Must be shipped in compliance with Category B Biohazard Shipping Regulations. We can provide you with a lot of the materials to be Cat-B compliant, but it's every facility's responsibility to make sure you're shipping correctly.
  - Sealed primary container, i.e., a tightly closed and parafilmed specimen tube
  - Sealed secondary container with absorbent material: a closed biohazard bag with the specimen tube and absorbent paper
  - Rigid outer container with UN3373 Label.

# Resources

# Contacts

- **D.C. Health**
  - `doh.hai@dc.gov`
- **Maryland**
  - [mdh.ipcovid@maryland.gov](mailto:mdh.ipcovid@maryland.gov) – Maryland HAI Group
  - [mdphl.arln@maryland.gov](mailto:mdphl.arln@maryland.gov) – Mid-Atlantic Regional Lab
- **Virginia**
  - `hai@vdh.virginia.gov`
- **Massachusetts**
  - 24/7 Epidemiology Line with questions: 617-983-6800



# CE Information and Recording

- Please see registration flyer for CE information from this live event
- The recording and slides will be posted to this website:
  - [MDRO Containment Webinar Series - HAIAR \(virginia.gov\)](https://www.virginia.gov/haiar/mdro-containment-webinar-series)
- CE is also available on demand for the recording if any of your colleagues who didn't listen today would like to and receive CE in the future

# Our Next Webinar

- **February 2022:**

**CDC Long-term Care Team presents: Enhanced Barrier Precaution**

**We hope you will join us!**

# Future Webinars

- **Infection Control for MDROs**
  - **MDROs and Water**
  - **The ABCs of CPOs**
  - **Communication: Let's Talk!**
- 
- **Let us know if there are other topics you want to hear about!**

# Resources

- <https://www.cdc.gov/hai/containment/guidelines.html>
- <https://www.cdc.gov/hai/organisms/cre/cre-facilities.html>
- <https://www.cdc.gov/fungal/candida-auris/fact-sheets/c-auris-colonization.html>
- <https://www.cdc.gov/fungal/candida-auris/c-auris-screening.html>
- <https://www.cdc.gov/fungal/diseases/candidiasis/pdf/C-auris-assent-for-screening-template.pdf>
- [https://www.fedex.com/content/dam/fedex/us-united-states/services/UN3373\\_fxcom.pdf](https://www.fedex.com/content/dam/fedex/us-united-states/services/UN3373_fxcom.pdf)
- <https://www.cdc.gov/drugresistance/solutions-initiative/ar-lab-network.html>

# UN3373 Packaging Considerations

**1. Primary watertight inner receptacle.** Use primary receptacles made of glass, metal, or plastic with a positive means of ensuring a leakproof seal; a skirted stopper or metal crimp seal must be provided; screw caps must be reinforced with adhesive tape. For liquid specimens, the primary receptacle must not contain more than 1 L. For dried specimens, the primary receptacle must not exceed the outer packaging weight limit.

## Acceptable Primary Receptacles

Taped plastic canister

Taped glass or plastic jar

Taped glass or plastic vial

\*Parafilmed plastic vial

**2. Absorbent material.** Place absorbent material between the primary and secondary receptacles, using enough material to absorb the entire contents of all primary receptacles. Absorbent material is required for Biological Substance, Category B (UN 3373) shipments containing liquids. Acceptable absorbent materials include cellulose wadding, cotton balls, super-absorbent packets, and paper towels.

## Acceptable Absorbent Materials

Cellulose wadding

Cotton balls

Super-absorbent packets

Paper towels

\*Absorbent paper

# UN3373 Packaging Considerations

**3. Secondary watertight inner receptacle.** Use a secondary container that is leakproof for liquid specimens or siftproof for dried specimens. Choose only secondary containers certified by the manufacturer for Biological Substance, Category B (UN 3373) prior to use. Either your primary or secondary receptacle must be able to withstand, without leakage, an internal pressure differential of not less than 95 kPa in the range of -40°C to 55°C (-40°F to 130°F). To prevent contact between multiple fragile primary receptacles, individually wrap or separate them inside the secondary container.

**4. Sturdy outer packaging.** Use rigid outer packaging constructed of corrugated fiberboard, wood, metal, or plastic, or other equally strong material, including cylinders made of such materials and appropriately sized for the contents. Chipboard or paperboard boxes are unacceptable outer packaging. The completed packaging must be of good quality, strong enough to withstand the normal rigors of transportation without loss of contents as a result of vibration, changes in temperature, humidity, or pressure. Limit the total



\*Sealed biohazard bag



**Questions?**

**FAQs**



# How should we handle assent for colonization screening?

- **Reminder: this is not research. Formal written consent is not required, but facility policies may differ. Patients can always opt out of screening.**
- **Facility policies: do you require written permission or verbal yes/no?**
  - **Written permission: patient or authorized representative must provide written approval for the procedure**
  - **Verbal assent: patient or authorized representative gives a verbal yes/no for the procedure**
- **Does your facility consider screening to be routine lab work or special testing?**
  - **Routine lab work → written consent may not be needed. Do you get written consent for every single blood culture you do?**
  - **Special testing → may require written permission consent.**

# How do we explain this to patients/residents/families to minimize refusals to screen?

- **Use plain language**
- **Frame screening as painless, beneficial**
- **Consider healthcare staff comfort in discussing rectal swabs and groin swabs**
- **Your jurisdictional HAI/Group may have some existing scripts that you can use when speaking with patients and their families.**
- **CDC has script templates you can adapt for your own use.**
- **Make sure your script is available in the languages your patient population speaks.**

# Should we screen patients to document clearance of the MDRO?

- No. It is generally not recommended to re-screen for clearance.
  - Many patients remain colonized with MDROs over months or years, especially if patient's medical status remains the same.
  - Screening resources are limited – it is a waste of resources to continuously reconfirm existing MDRO patients.
  - Colonization can be intermittent → one negative screen does not indicate clearance.
- Occasionally, assessing for MDRO clearance may be warranted if clinical status significantly improves.
- Talk with your jurisdictional HAI group if you have patients you would like to assess for MDRO clearance.

# Do we need to place someone on Contact Precautions or Enhanced Barrier Precautions while awaiting admission screening results?

- If someone is transferring from a facility with a known outbreak:
  - Try to place that person in a private room on Contact Precautions or Enhanced Barrier Precautions depending upon facility type
- If it is too hard to determine which facilities have outbreaks, it is reasonable to do this for anyone being screened
- If these precautions are not possible, work with your health department to decide what makes the most sense for your facility

# Why don't we screen healthcare personnel?

- For the MDROs we are discussing today:
  - Healthcare personnel only rarely become infected with them
  - Some healthcare personnel can become colonized with them, but the colonization does not tend to last for long and should not transmit to patients if they follow recommended infection control practices
  - So, we don't tend to include them in the colonization screening process
  - Minimize your and your patient's/resident's exposure risk with infection control practices such as hand hygiene and the use of gowns and gloves

# Are there false positives or false negatives with these tests?

- All tests have some rate of false positives and false negatives, but facilities and labs work together to help keep these to an absolute minimum!
  - Avoiding false negatives:
    - Facilities: making sure there's enough material on the swab, collecting swabs as instructed
    - Labs: comprehensive specimen rejection criteria and thorough quality control measures.
  - Avoiding false positives:
    - Facilities: Using sterile swabbing technique
    - Labs: anti-cross-contamination measures, specificity studies, and quality control measures to carefully analyze results

# What if my lab wants to perform colonization screening in-house?

- **CPO Colonization:**
  - **Cepheid GeneXpert CARBA-R assay**
    - **KPC, NDM, VIM, OXA-48, and some IMP variants**
    - **Fast, FDA-approved, less technician input, but expensive**
  - **Culture-based CPO colonization screening → plate out rectal swabs and see what you find!**
    - **More options for CPO assays, potentially cheaper, but longer TAT and requires more technician time. May not be billable to insurance.**

# What if my lab wants to perform colonization screening in-house?

- ***Candida auris* colonization:**
  - **Culture**
    - Enrichment broth culture method uses high heat and salt to help isolate *C. auris*
    - Isolates should be confirmed with MALDI-TOF or amplicon sequencing
  - **Molecular/RT-PCR**
    - No FDA approved test for *C. auris* colonization screening at this time
    - Most labs use Taqman RT-PCR validated as LDT using enrichment broth as gold standard reference method



# Thank you for attending!

For more information, contact CDC  
1-800-CDC-INFO (232-4636)  
TTY: 1-888-232-6348 [www.cdc.gov](http://www.cdc.gov)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

