



The Other “C” Words

The Battle Against Multidrug-Resistant Organisms; We are in this Together

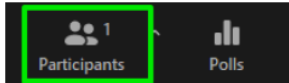
Elizabeth Soda, MD

Kaitlin Forsberg, MPH

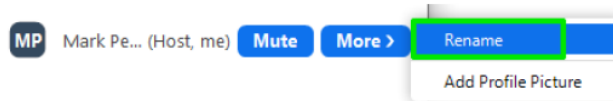
Heather Jones, DNP, NP-C

How to Change your Name in Zoom

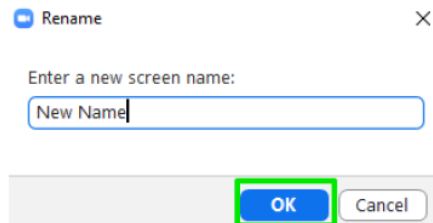
- 1.) To change your name after entering a Zoom meeting, click on the “Participants” button at the top of the Zoom window.



- 2.) Next, hover your mouse over your name in the “Participants” list on the right side of the Zoom window. Click on “Rename”.



- 3.) Enter the name you'd like to appear in the Zoom meeting and click on “OK”.



Example:

Meredith Grey, Seattle Grace, WA

Welcome to the Mid-Atlantic MDRO Webinar Series!

- The Mid-Atlantic states are currently seeing the emergence and rise of several multidrug-resistant organisms (MDROs)
- Now is the time to work together to limit them from spreading further, ultimately preventing harm to patients and residents
- This is the first of several webinars for healthcare facilities of all types in Virginia, Maryland, and D.C. focused on this topic

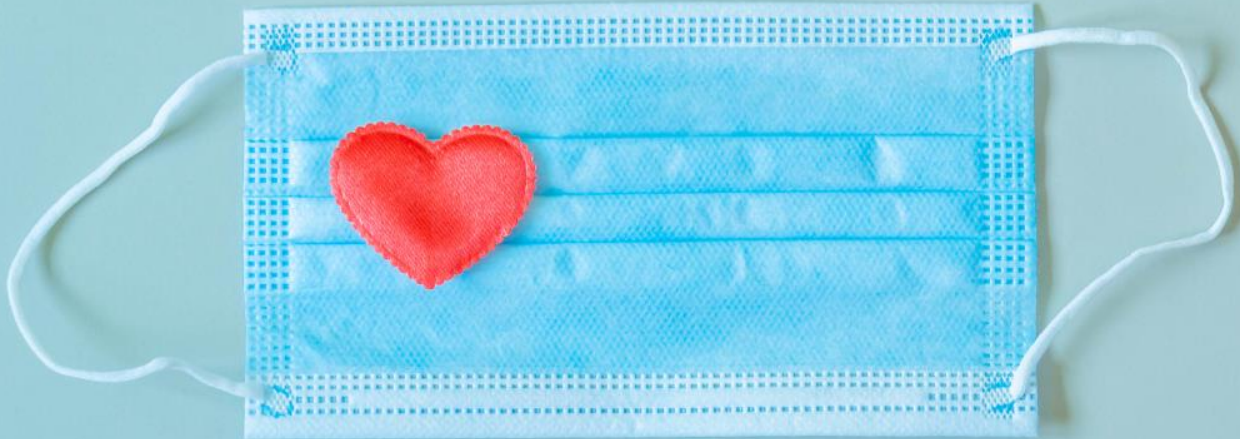
Why You?

- You are unique
 - Close proximity of large urban areas in three different jurisdictions
 - Large number of patient/resident transfers across all jurisdictions
- The region has a MDRO problem
 - Highly drug-resistant *Candida auris*
 - Highly drug-resistant gram-negative bacteria
- We must work together to limit the spread of these MDROs

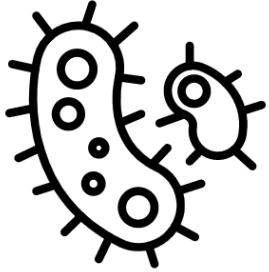
Objectives of Today's Webinar

- To not talk about COVID-19
- To bring together healthcare facilities of all types to learn about MDROs that are affecting the region
- To lay a foundation of knowledge that will be built upon in future webinars

THANK
YOU

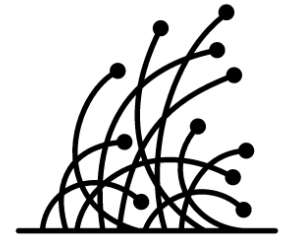


What are Multidrug-Resistant Organisms (MDROs)?



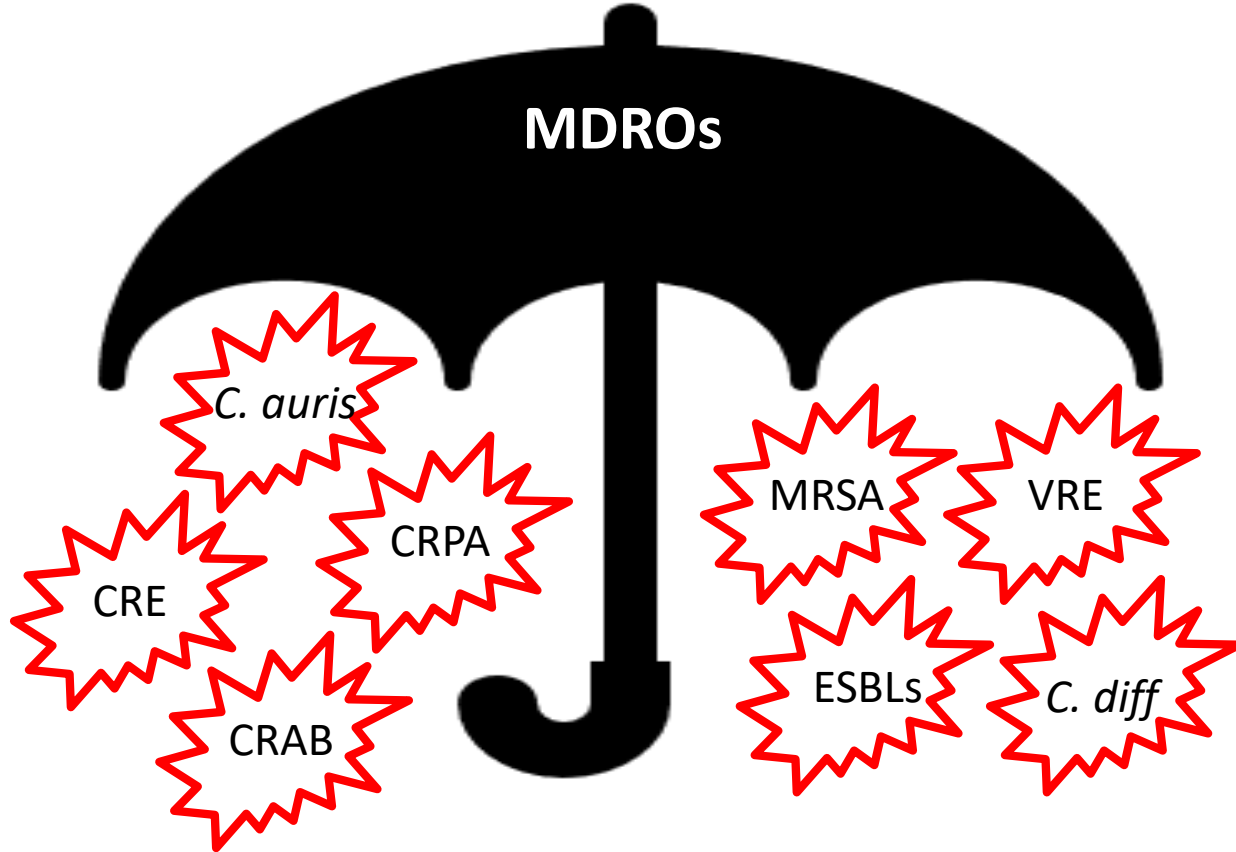
Bacteria

Resistant to all or most antimicrobials tested, making them hard to treat

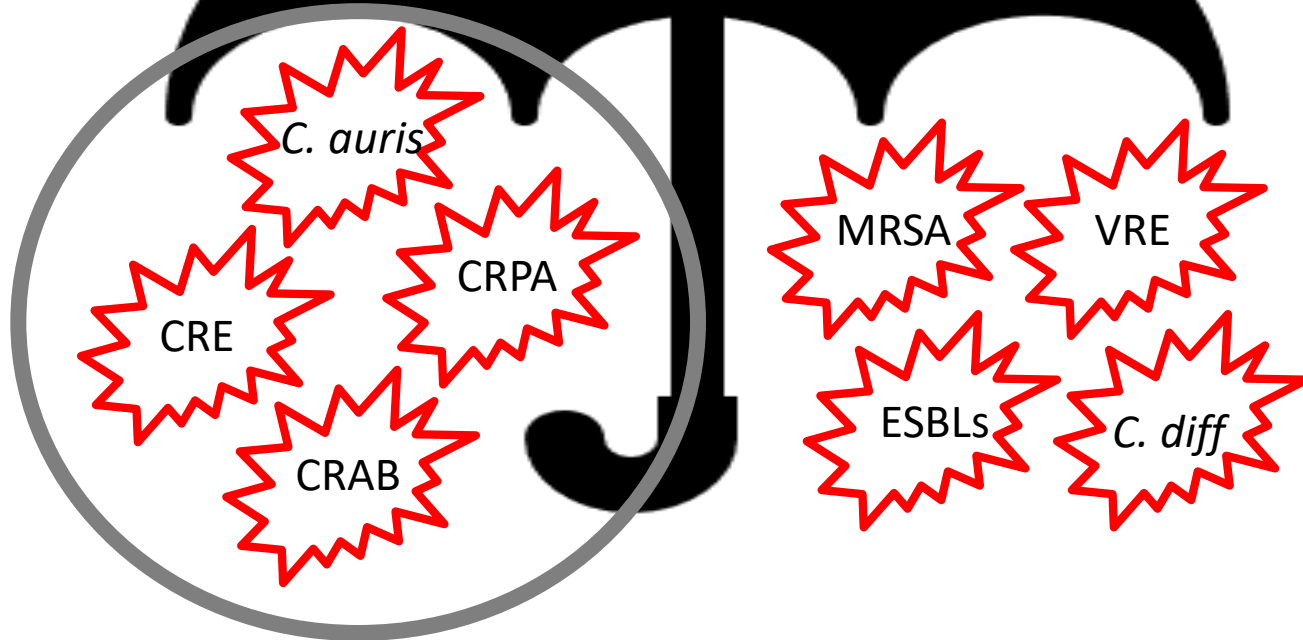


Fungi

MDROs



MDROs



Where do MDROs come from?

Germs are exposed to antimicrobials in people, animals, and our environment

Germs defend themselves by developing resistance which can be passed to their progeny (family) and some kinds of resistance can be shared by jumping between germs (friends)

The resistant germs can move from person-to-person or from the environment to people

MDROs often Affect the Sickest of the Sick

- **Multiple healthcare stays**
- **Prolonged healthcare stays**
- **Invasive devices (e.g., tracheostomies)**
- **Ventilator-dependent**
- **Recently received antibiotics and antifungals**



MDRO Infections

- **MDROs can cause many different types of infections**
 - **Bloodstream**
 - **Urinary tract**
 - **Respiratory system**
- **Infections with MDROs are associated with worse outcomes**
 - **Longer hospital stays**
 - **Higher mortality**

MDRO Colonization

- Colonization means that a person is carrying a MDRO but does not have symptoms of an infection
- Some colonized people will develop infections
- Colonized people play a large role in the spread of MDROs to other people in healthcare settings (require infection control action)

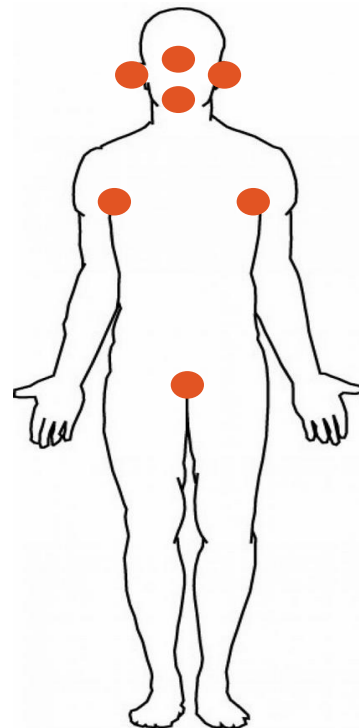


Infection

Colonization

Colonization Duration

- Colonization can persist for many months
- Currently, no well-established decolonization strategies

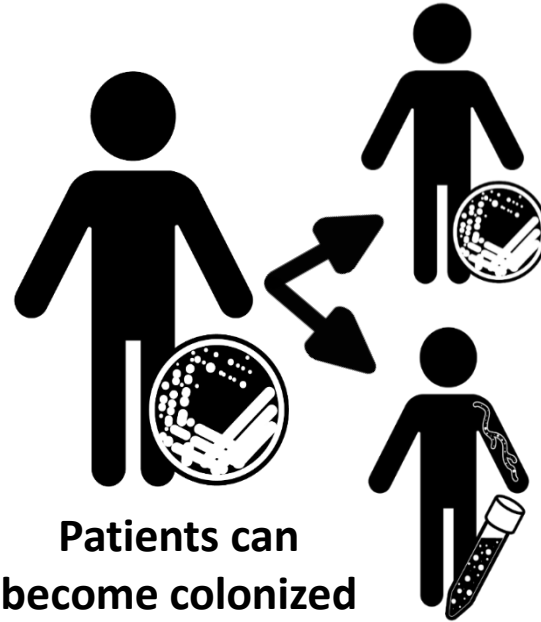


Candida auris (C. auris)

Why are we concerned about *Candida auris*?



Highly
drug-resistant

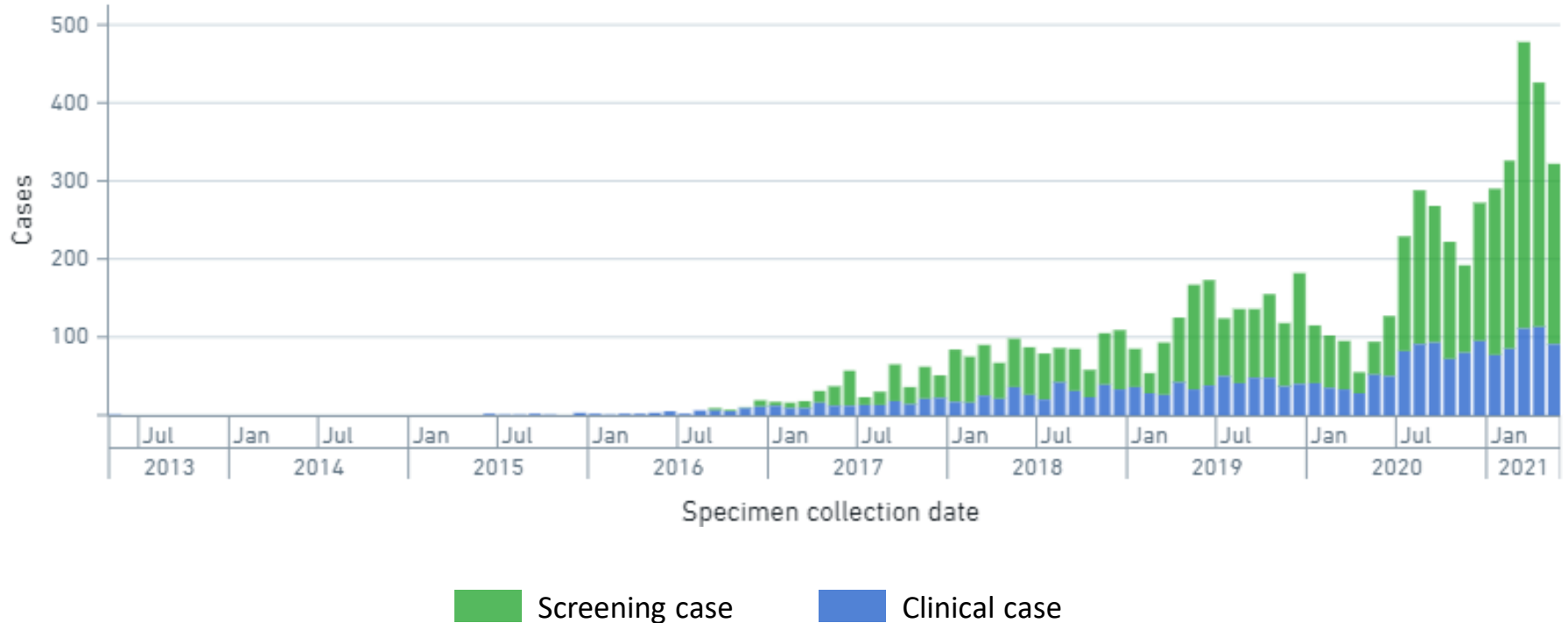


Patients can
become colonized
and develop
invasive infections

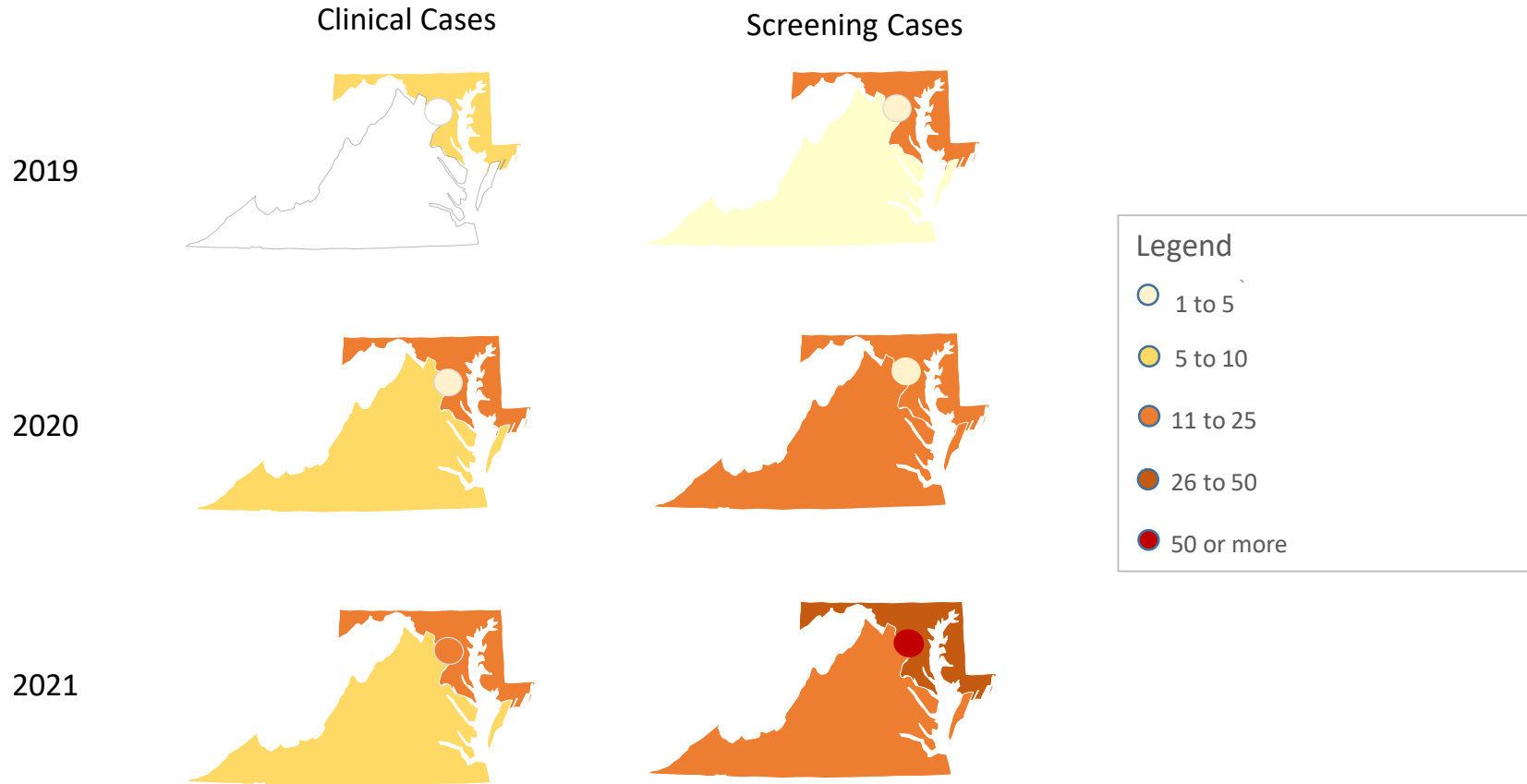


Spreads in healthcare
settings

Increasing transmission of *C. auris* in the United States



C. auris in the Mid-Atlantic Region

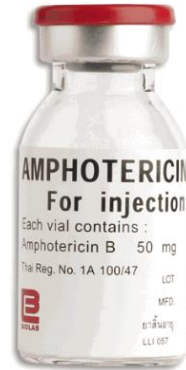


C. auris Resistant Isolates in DC, MD, and VA



99%

Azoles



64%

Polyenes



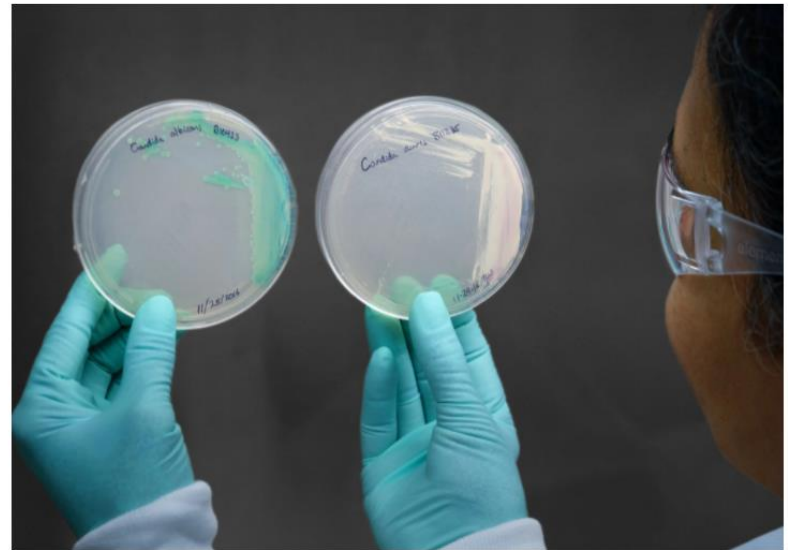
4%

Echinocandins

- **65% multidrug-resistant**
- **Multiple pan-resistant cases reported in US since 2020**

Outbreaks of Untreatable, Drug-Resistant Fungus Spread in 2 Cities

For the first time, the C.D.C. identified several cases of *Candida auris* that were resistant to all drugs, in two health facilities in Texas and a long-term care center in Washington, D.C.



Cultured *Candida auris*, right, which was first discovered in 2009. Centers for Disease Control and Prevention

The Mid-Atlantic is one of the 2 areas of the country experiencing transmission of echinocandin-resistant *C. auris*

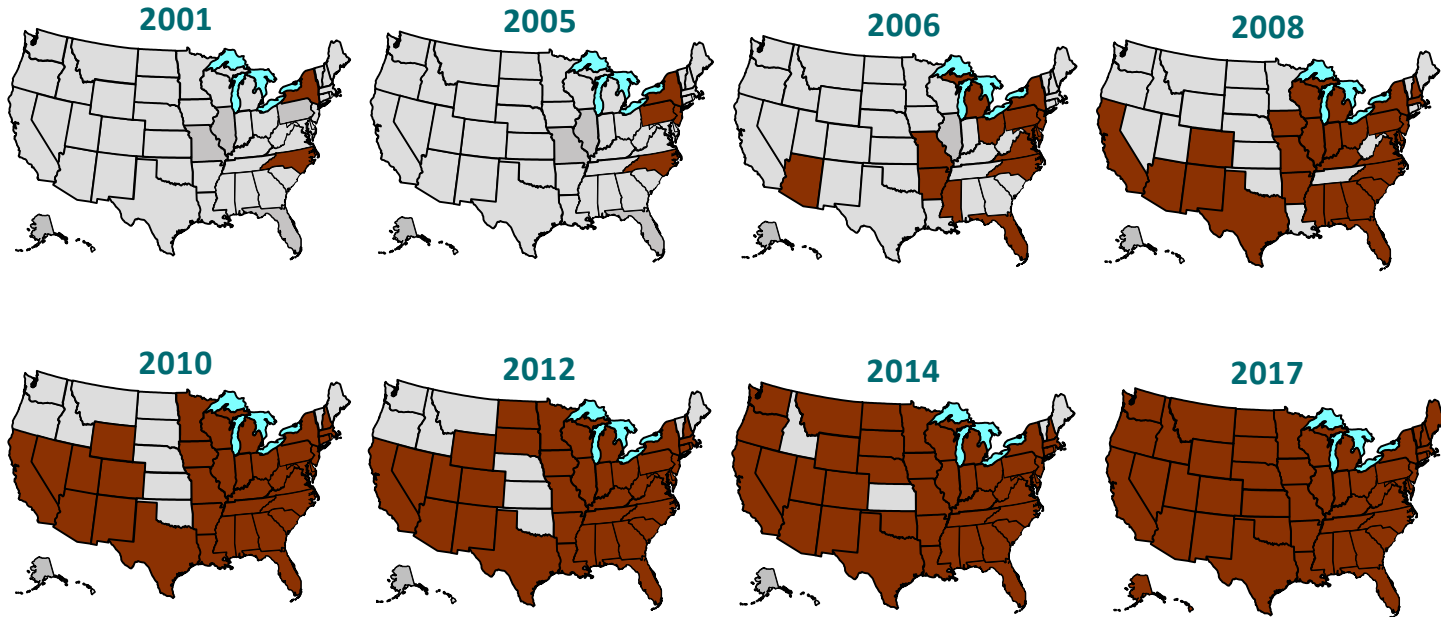
Carbapenem-Producing Organisms (CPOs)

Carbapenemase-Producing Organisms (CPOs, future webinar)

- **Carbapenemases are enzymes that destroy the carbapenem and other beta-lactam antibiotics**
 - **KPC, NDM, VIM, IMP, OXA-48**
- **Bacteria that can make these enzymes are CPOs**
 - **CP-CRE, CP-CRA(B), CP-CRPA**
 - **Are often resistant to many other types of antibiotics**
 - **Can share how to make these enzymes with other bacteria**

Carbapenemases can Spread Rapidly

KPC-CRE found in the US spread from 2 states in 2001 to 50 states, DC, and PR by 2017

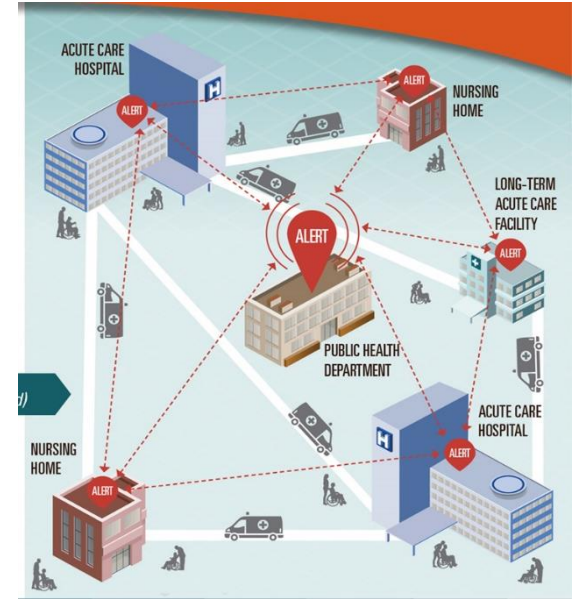


■ States with *Klebsiella pneumoniae* carbapenemase (KPC)-producing Carbapenem-resistant Enterobacteriales (CRE) confirmed by CDC

Healthcare Facilities and MDROs

We are all Connected

- Healthcare facilities exist in intricate networks of patient/resident sharing
- What one facility does or does not do can affect a whole region
- Limiting the spread of MDROs is everyone's responsibility!



High Acuity Post-Acute Care Facilities

- Long-term acute care hospitals (LTACHs) and ventilator-capable skilled nursing facilities (vSNFs)
- Care for high acuity patients/residents for longer durations
- Demonstrate higher rates of MDRO transmission and outbreaks compared to other healthcare facility types
- Play a critical role in limiting the spread of MDROs in a region

Acute Care Hospitals

- Tend to see less internal MDRO transmission but can still experience large outbreaks
- Play a critical role in identifying and communicating the presence of MDROs
- Play an important role in setting the standard of practice for infection control in a region

Other Healthcare Facilities and Providers

- Lower acuity long term care facilities, outpatient clinics, home health, medical transport
- Less likely to experience MDRO outbreaks but are not immune to them either
- But can still have a negative impact on the spread of MDROs with:
 - Poor understanding of MDROs and how they transmit
 - Poor communication with other providers or their health departments
 - Poor infection prevention and control practices

The Blame Game

- Sometimes facilities can fall into the blame game trap
- This can be counterproductive for:
 - Them
 - Their patients/residents, and
 - All other healthcare facilities in the region



DEADLY GERMS, LOST CURES

How a Chicago Woman Fell Victim to *Candida Auris*, a Drug-Resistant Fungus

The mysterious infection has appeared at hospitals around the world, but few institutions or families have discussed their experience.



New York Identifies Hospitals and Nursing Homes With Deadly Fungus

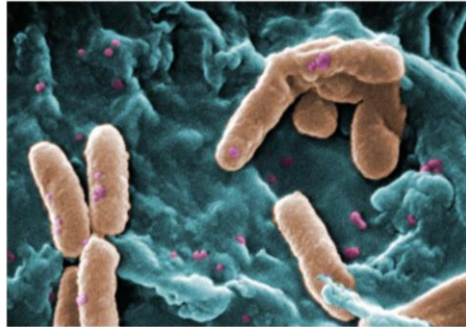
The policy change, for the virulent drug-resistant germ *Candida auris*, came as the C.D.C. reported that more people are dying of drug-resistant infections than it previously estimated.



a Davila with her husband, Anthony Hernandez, battled a *C. auris* infection, among other ailments,

Culture of Secrecy Shields Hospitals With Outbreaks of Drug-Resistant Infections

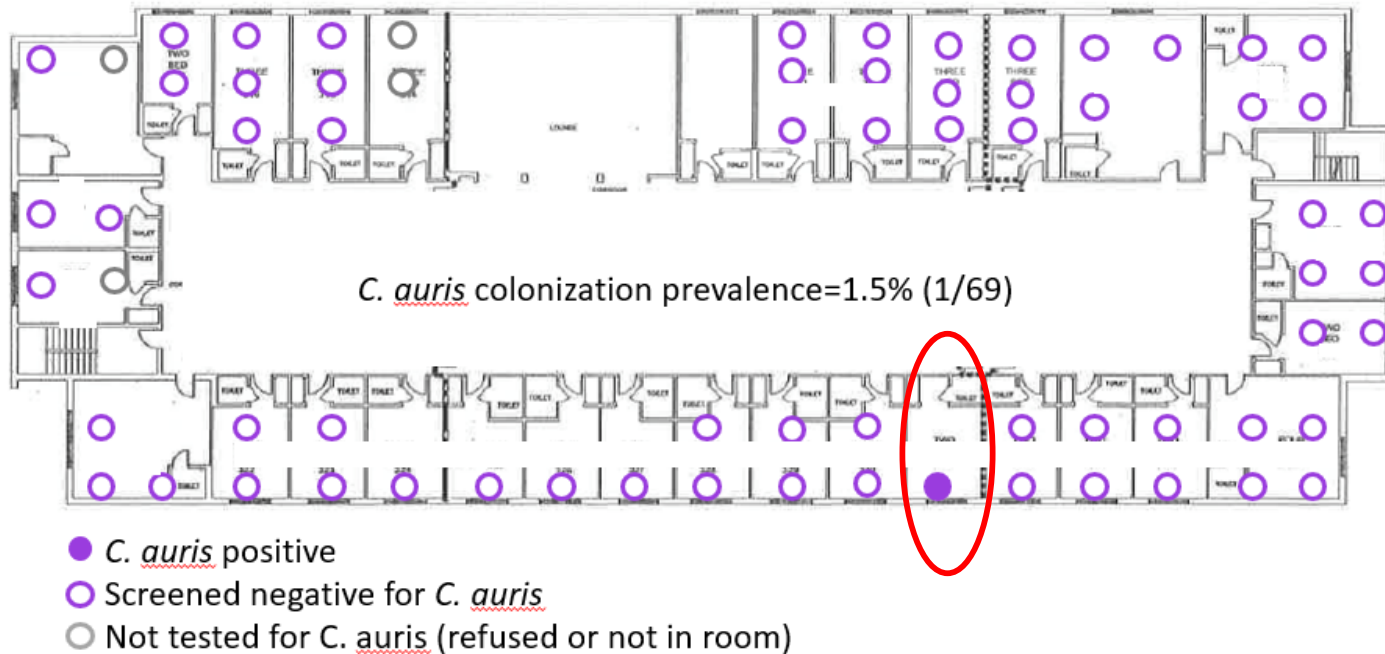
The lack of transparency puts patients at risk, some say. Institutions say disclosure could scare some people away from seeking needed medical care.



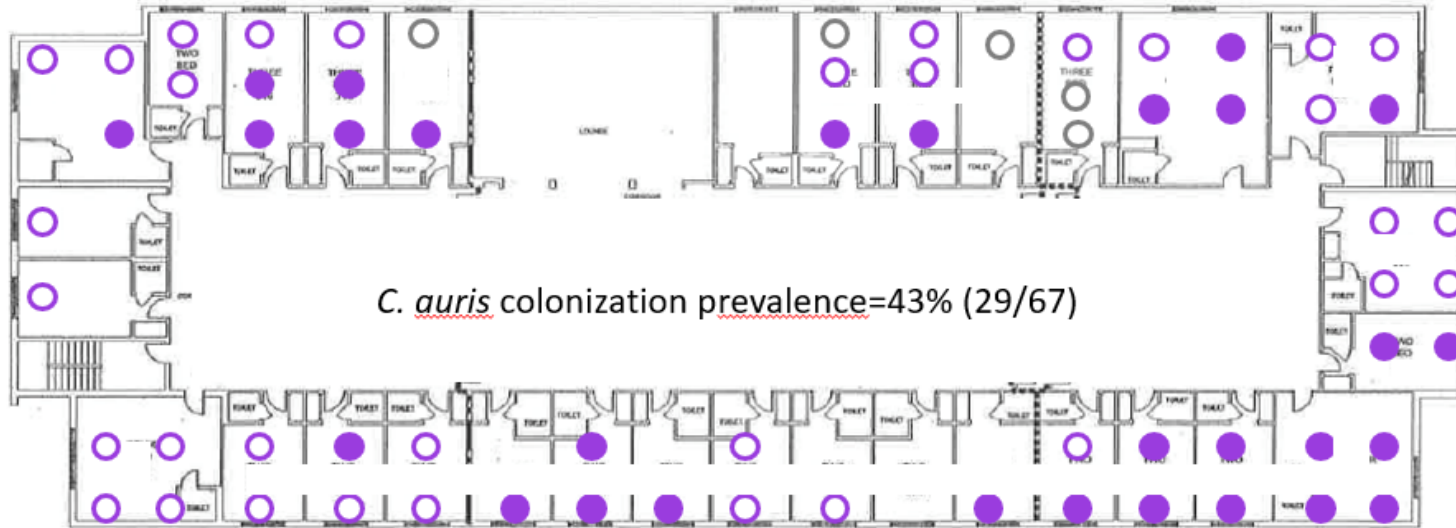
The C.D.C. made a public announcement when an antibiotic-resistant form of the rod-shaped *Pseudomonas aeruginosa* bacteria sickened several American travelers to Tijuana, Mexico. But it does

Preventing MDRO Spread

vSNF A Ventilator/Trach Floor March 2017 *C. auris* PPS Results

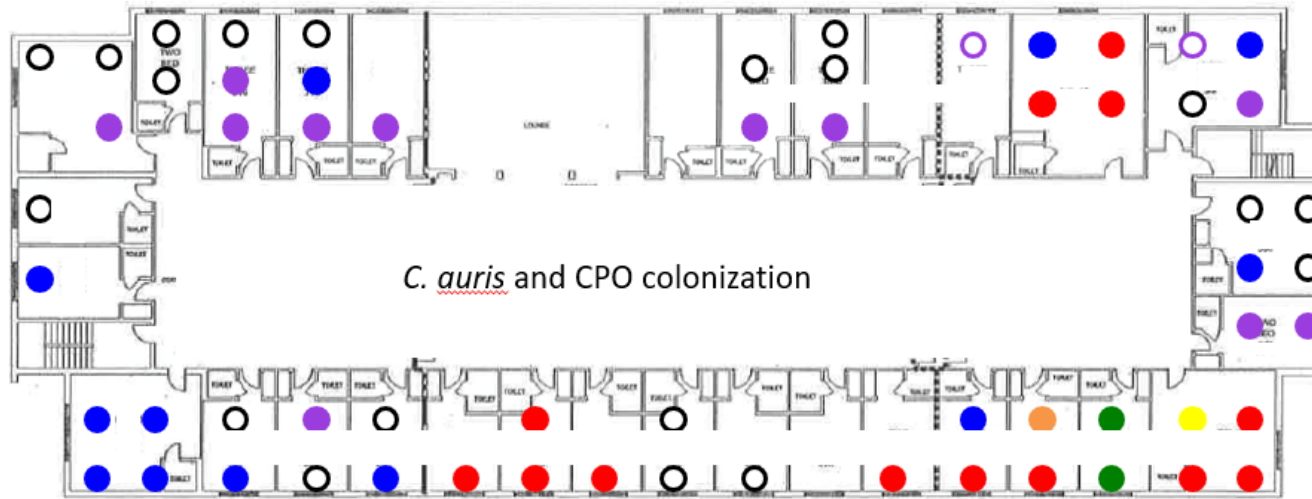


vSNF A Ventilator/Trach Floor January 2018 *C. auris* PPS Results



- *C. auris* positive
- Screened negative for *C. auris*
- Not tested for *C. auris* (refused or not in room)

vSNF A Ventilator/Trach Floor January 2018 CPO and *C. auris* PPS Results



- *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.

But this is not just a one facility problem....



<https://www.dph.illinois.gov/topics-services/diseases-and-conditions/infectious-diseases/candida-auris>

Battling MDRO Spread in 3 Simple 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 at transfer to other facilities which people have MDRO(s)**

But if only it was that simple...

No one will accept my MDRO patients

We don't have enough resources to support a robust IPC program

They just don't communicate with me!

If we perform colonization screening and find the MDRO, it will hurt our reputation and cost us money and time

All the people we have taken care of with these MDROs got it somewhere else

So it can be complicated...

**But it's easier if we all work towards a common goal
of implementing the 3 steps together**



Terminology

- **All Facilities:** Activities that apply to all facilities listening
- **Some Facilities:** Activities that will apply to only some of the facilities listening; your health departments will let you know if this type of activity may benefit you.



We will share a brief story about how other facilities have successfully implemented some of these activities

Step 1: Identify those with MDROs

Identify Individuals with MDROs from Clinical Cultures

All Facilities:

- Understand what your laboratory's ability is to detect these organisms
 - **Future webinar topic:** *C. auris* laboratory identification
- Know and follow reporting rules and isolate submission (even if you're using a contracted laboratory)

Some Facilities:

- Consider using enhanced detection methods
 - Identify all *Candida* species isolated from all laboratory culture



Identify Colonized Individuals

- **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) (future webinar topic)**
 - Point prevalence survey
 - Admission screening
 - Discharge screening
- **Point prevalence survey (PPS): When colonization screening is performed on a group of people to determine how many of them are colonized**

Identify Colonized Individuals

All Facilities:

- Evaluate for a response PPS: A PPS conducted in response to the identification of someone with a MDRO
 - Detect additional individuals for whom IPC actions are required
 - Can suggest if transmission is occurring within a facility



Identify Colonized Individuals



Some Facilities:

- **Proactive PPS: A PPS conducted at a facility regardless and possibly prior to the identification of someone with a MDRO**
 - Best utilized in certain high-risk healthcare facilities
 - Can allow for earlier interventions to reduce the risk of more widespread transmission within and between facilities
 - Should look for multiple types of MDROs



Versus



Identify Colonized Individuals

Some Facilities:

- **Admission screening: Performing colonization screening for some individuals upon admission to a facility**
- **Discharge screening: Performing colonization screening prior to someone being discharged**

Step 2: Utilize Recommended IPC Practices

Utilize Recommended IPC Practices

All Facilities:

Three core strategies to limit the spread of MDROs (**future webinar**)

1. Hand hygiene
2. Contact Precautions for all facilities or Enhanced Barrier Precautions in nursing homes (**future webinar**)
3. Environmental cleaning and disinfection
 - Sink hygiene

Hand Hygiene

- **Alcohol-based hand sanitizers are the preferred method of hand hygiene in most clinical situations**
- **Hand hygiene observations and feedback are essential to improving adherence**



Contact Precautions

- Used by ACH and LTACHs for patients with MDROs
- Will also apply to certain nursing homes residents
 - *C. difficile*, scabies, norovirus
 - However, Enhanced Barrier Precautions (EBP) can often apply to residents with certain MDROs



STOP **CONTACT PRECAUTIONS** **STOP**
EVERYONE MUST:

 Clean their hands, including before entering and when leaving the room.

PROVIDERS AND STAFF MUST ALSO:

 Put on gloves before room entry.
Discard gloves before room exit.

 Put on gown before room entry.
Discard gown before room exit.
Do not wear the same gown and gloves for the care of more than one person.

 Use dedicated or disposable equipment.
Clean and disinfect reusable equipment before use on another person.

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

4480826103

- Private rooms are preferred (but not required) for patients/residents requiring Contact Precautions
- If not possible,
 - Prioritize private rooms for individuals with uncontainable secretions or excretions
 - Cohort individuals with like organisms (**future webinar**)
- Patients should be restricted to their room **except** for medically necessary movement

Enhanced Barrier Precautions (EBP) (future webinar)

- Utilized in nursing homes only
- Use of gown and gloves:
 - For high touch activities only
 - For residents with known MDROs (CRE, CRAB, CRPA, *C. auris*)
 - Or those who may be at increased risk (indwelling devices, wounds) if currently residing on the same unit as someone with a MDRO
- Please contact your health department before implementing for additional tips

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.

Y. Wang, CDC

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

Standard Precautions

Used in all settings and with all patients

- **Gloves**
 - Use when touching blood, body fluids, secretions, excretions, contaminated items, and touching mucous membranes and non-intact skin
- **Gowns**
 - Use during any procedure and patient care activity when contact 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

Environmental Cleaning and Disinfection

- Effective cleaning and disinfection of healthcare facility surfaces and equipment is critical
- Focus on, at least, daily cleaning and disinfection of high touch surfaces
- Clean and disinfect non-disposable, non-dedicated equipment after each use:
 - Vital sign machines
 - Glucometers
 - Portable radiology equipment



Environmental Cleaning and Disinfection

- **Ensure you are using the correct cleaning/disinfection product for the correct contact time**
 - **Contact time: Is the amount of time a disinfectant must remain wet on a surface to be effective**
 - **All staff with cleaning duties should know this time for each product they use**



C. auris Specific Cleaning and Disinfection Products

- First choice:
 - List P: Antimicrobial Products Registered with EPA for Claims Against *Candida auris*
 - <https://www.epa.gov/pesticide-registration/list-p-antimicrobial-products-registered-epa-claims-against-candida-auris>
- Second choice:
 - List K: EPA's Registered Antimicrobial Products Effective Against *C. diff* Spores
 - <https://www.epa.gov/pesticide-registration/list-k-epas-registered-antimicrobial-products-effective-against-clostridium>

**Strongly consider using disinfectants effective
against *C. auris***



Sink Hygiene

- Sinks and drains in healthcare facilities can become contaminated with MDROs
- All facilities should limit patient and patient care equipment exposure to the splash zone of sinks and drains (3 feet on all sides)
- All facilities should create a water management program to limit *Legionella* and other opportunistic pathogens of premise plumbing from growing and spreading in their facilities
- More information:
<https://www.cdc.gov/hai/prevent/environment/water.html>

Utilize Recommended IPC Practices

All Facilities:

- **Return to pre-COVID IPC practices**
 - **Changing gloves and gowns after each patient/resident encounter**
 - **Gowns and gloves should be removed prior to room exit**
 - **Placing environmental disinfectant wipes at points of use**
 - **Use disposable or dedicated patient care equipment for patients on Contact Precautions**
 - **Implement or return to IPC observations (auditing) and feedback**
 - **Staff reeducation**

Step 3: Communicate

Life is Better with Effective Communication

- **To ensure safe patient/resident care, we need effective communication at any transition**
 - Between units
 - Between facilities (interfacility)
 - This includes someone's MDRO status pending laboratory screening tests
- **Give what you wish to receive**

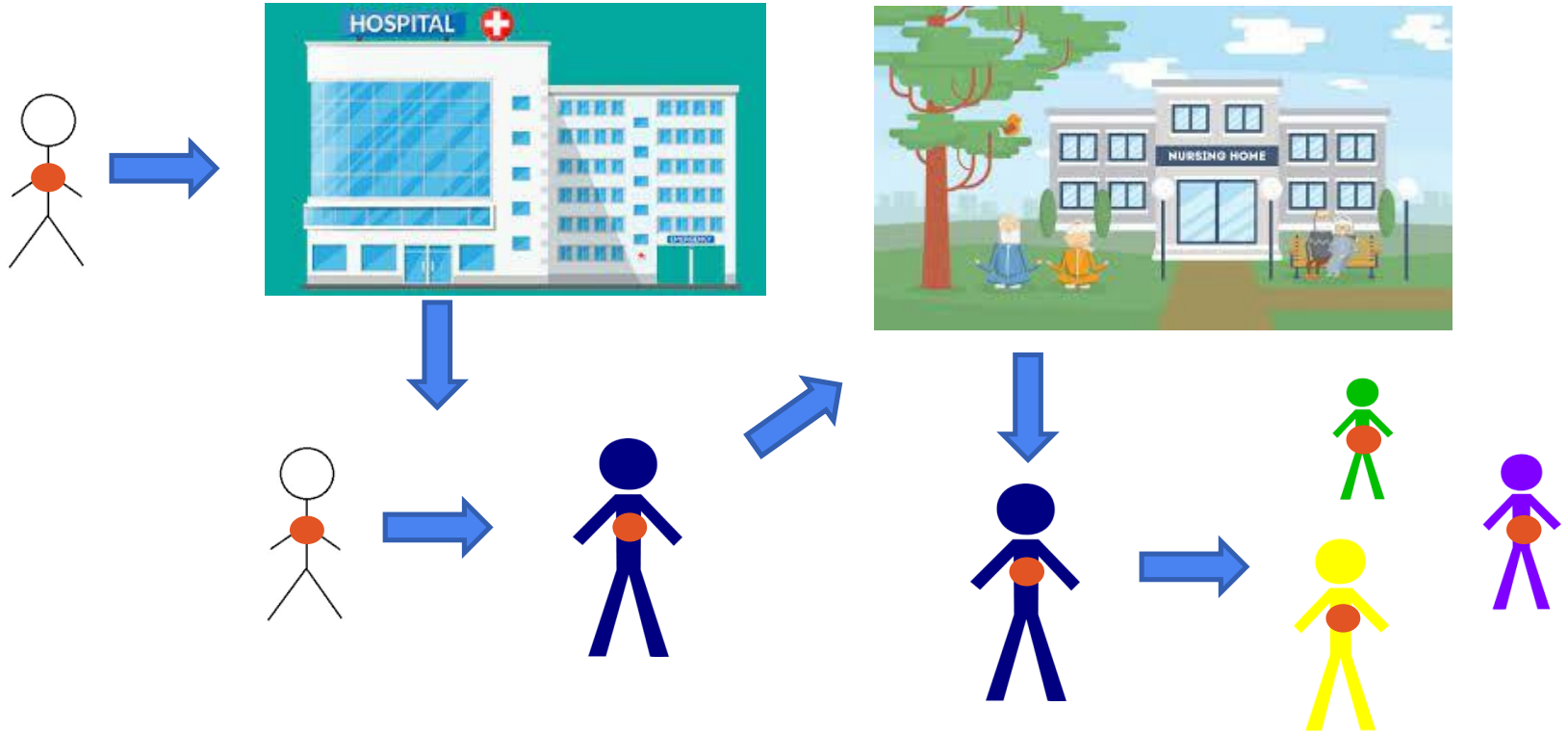


But Communication is often a Challenge

- Don't know when or what to communicate
- Don't know how to best communicate
- Don't know who to communicate with
- Don't have time to effectively communicate



But by Not Effectively Communicating MDRO Status



We Need You (All Facilities)

- To assess how you communicate an individual's MDRO status within your facility and with other facilities/providers (**future webinar**)
 - How is this done? Verbally? On Paper?
 - What is communicated?
 - Who is responsible for the communication?
 - How do you ensure the receiver and communicator of the information understands?
 - Who do you receive and transfer to the most?



Next Steps for All Facilities

Be Sure to Report and Submit MDRO Isolates

- Washington D.C.
 - Notify DC Health of MDROs and all other diseases except for TB, STIs, HIV, and Hepatitis B, C to <https://dccovid.force.com/provider/s/>
- Virginia:
 - *Candida auris*: <https://www.vdh.virginia.gov/haiar/diseases-organisms/candida-auris/>
 - Carbapenem-resistant organisms: <https://www.vdh.virginia.gov/haiar/diseases-organisms/carbapenem-resistant-organisms-cro/>
- Maryland
 - Carbapenem-resistant organisms: <https://health.maryland.gov/phpa/Pages/what-to-report.aspx>
 - *Candida auris*:
https://health.maryland.gov/laboratories/docs/Candida%20Surveillance%20Memo_MemoONLY.pdf

Be Sure to Report and Submit MDRO Isolates

- **Pennsylvania (non-Philadelphia)**
 - To report a new case of *Candida auris*, please call your local district or county health department or call 1-877-PA-HEALTH within 24 hours of detection.
 - To report the new detection of a carbapenemase-producing organism, or another reportable condition, please submit reports to PA-NEDSS (<https://www.nedss.state.pa.us/nedss/>).
 - Please reach out to the HAIP/AS program with any questions by email at RA-DHHA@pa.gov. Information on isolate submission will be provided on a case-by-case basis.
- **Philadelphia**
 - To report a new case of *Candida auris*, please call the Philadelphia Department of Public Health (PDPH) at (215) 685-6748 [after-hours (215) 686-4514] within 24 hours. A [Candida auris report form](#) should also be filled out and faxed to PDPH at (215) 238-6947 after reporting the case via phone.
 - Please report the new detection of a Carbapenem-resistant Enterobacteriaceae (CRE) to PDPH within 5 days, with the exception of CRE clusters/outbreaks, which should be reported, via phone, within 24 hours at (215) 685-6748. A [CRE Report Form](#) should be filled out and faxed to PDPH at (215) 238-6947.
 - Please reach out to the HAI/AR program with any questions by email at HAI.PDPH@Phila.gov.

Be Sure to Report and Submit MDRO Isolates

- **New Jersey**
 - To report a new case of *Candida auris*, please call the New Jersey Department of Health (NJDOH) Communicable Disease Service (CDS) at (609) 826-5964 or email HAIAR@doh.nj.gov within 24 hours.
 - A [Candida auris Case Report Form](#), available on the [Candida auris disease webpage](#), should also be electronically completed and securely emailed to NJDOH CDS or uploaded to our [encrypted portal](#) after reporting the case via phone or email.
 - Please report the new detection of a Carbapenem-resistant Organism (CRO), Vancomycin-Intermediate and Vancomycin-Resistant *Staphylococcus aureus* (VISA/VRSA), or other pan-non-susceptible organism to NJDOH CDS within 5 days, with the exception of clusters/outbreaks, which should be reported, via phone, within 24 hours at (609) 826-5964.
 - Please reach out to the HAI/AR program with any questions by email at HAIAR@doh.nj.gov. Information on isolate submission will be provided on a case-by-case basis.
 - Other points of contact:
 - Gabriel Innes, VMD, PhD, CIC, DACVPM, Antimicrobial Surveillance Coordinator, Gabriel.Innes@doh.nj.gov
 - Adrienne Sherman, MPH, Healthcare-Associated Infections and Antimicrobial Resistance Epidemiologist, Adrienne.Sherman@doh.nj.gov

IPC Practices

- Identify where gaps in your IPC practices exist and work on them before you have a problem
 - Consider cleaning and disinfecting products with *C. auris* activity
 - Your health department can help with IPC practice assessments
 - VA Infection Control Request Form: : [Infection Control Assessment and Response \(ICAR\) – HAIAR \(virginia.gov\)](#)
- Return to pre-COVID-19 IPC practices when the situation and resources allow

Communication

- **Assess your current communication practices**
- **What can be done to improve them as individual facilities?**
- **What can be done to improve them as a region of facilities?**
- **Please consider attending our future webinar on this topic to provide us with your thoughts and suggestions about improving communication**

Continue to Educate Yourself and Your Staff

- Please pass on what you have learned to your staff, additional links at the end of this slide deck
- Contact your health department if you are interested in more individualized trainings
- Attend future webinars

Future Webinar Topics

- Colonization Screening 101 (next webinar topic)
- *C. auris* laboratory identification
- ABCs of MDROs (with a focus on CPOs)
- MDROs and IPC Basics
- Enhanced Barrier Precautions (nursing homes)
- Spotlight on Communication
- How do we fix our communication problems?
- ACH MDRO Challenges Feedback Sessions
- LTCFs MDRO Challenges Feedback Sessions

Educational Links

<https://www.cdc.gov/hai/organisms/cre/cre-clinicians.html>

<https://www.cdc.gov/hai/organisms/cre/cre-facilities.html>

<https://www.cdc.gov/hai/pdfs/cre/CRE-guidance-508.pdf>

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

<https://www.cdc.gov/fungal/candida-auris/health-professionals.html>

<https://www.cdc.gov/fungal/candida-auris/c-auris-infection-control.html>

IPC Educational Links

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

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

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

<https://www.who.int/teams/integrated-health-services/infection-prevention-control/hand-hygiene/tools-and-resources>

<https://www.cdc.gov/infectioncontrol/projectfirstline/index.html>

Contacts

- **D.C. Health**
 - doh.hai@dc.gov
- **Maryland**
 - mdh.ipcovid@maryland.gov
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Thank you for attending!

Questions?

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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.

