Candida auris: Screening and Containment in a Facility

Healthcare-associated Infections & Antibiotic Resistance Program

Louisiana Office of Public Health

4/23/2024

Disclosure Statement

"The speakers do not have financial or non-financial relationships with commercial interest that would create conflict of interest with this presentation."

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Topic 1: April 24, 2024
Candida auris Screening and Containment in a Facility

Topic 2: June 26, 2024
Enhanced Barrier Precaution Education from a Patient's Perspective

Topic 3: September 25, 2024
Environmental Factors and Ventilation to Prevent Infectious Disease Spread

Topic 4: December 11, 2024
Hands On with Hand Hygiene

This nursing continuing professional development activity was approved by Louisiana State Nurses Association - Approver, an accredited approver by the American Nurses Credentialing Center's Commission on Accreditation. Approval Code: LSNA-101077701-2024

Louisiana Department of Health, Office of Public Health is approved by the Louisiana Board of Examiners of Nursing Facility Administrators (NFA) as a provider of continuing education programs.

Objectives

- Review *Candida auris*
- Describe at least two (2) risk factors for *Candida auris* infection and colonization
- Discuss primary infection control recommendations for prevention of *Candida auris* infection
- Describe the role of colonization screenings in *C. auris* prevention

Definition of terms

- MDRO – Multi drug resistant organisms
- *C. auris- Candida auris*
- Infection - It occurs when a pathogen invades a body site and causes signs and symptoms of disease
- Colonization - an organism can be found in or on the body but it is not causing any symptoms or disease

What is *Candida auris ?*

Polling Questions

- Have you heard about *Candida auris?*
- On a scale of 1-10, how much do you know about *Candida auris*?

Candida auris

- *Candida auris (C. auris)* is a type of yeast/fungus that can cause severe illness.
- It is often resistant to antifungal treatments.
- It spreads very easily in healthcare settings through direct contact.
- It is hardy in the environment and can survive for weeks on surfaces
- Patients may be colonized with *C. auris* and asymptomatic.

https://www.cdc.gov/fungal/candida-auris/candida-auris-qanda.html

C. auris - Symptoms

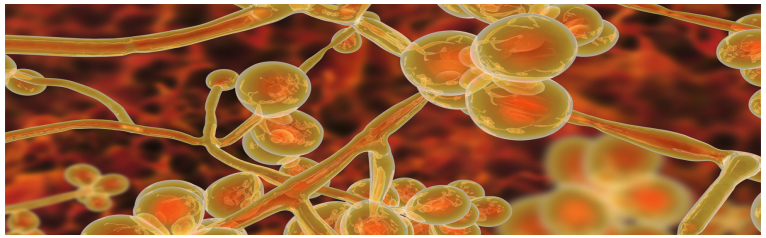
Symptoms of a *C. auris* infection depend on where in your body the fungus infects. Some symptoms could include

- Fever.
- Chills.
- Lethargy (extreme tiredness).
- Low blood pressure.
- High heart rate (tachycardia).
- Low body temperature (hypothermia).
- Pain, pressure or feeling of fullness in your ear (*C. auris* ear infection).

Since many people who get *C. auris* infections are already seriously ill, symptoms of *C. auris* may not be noticeable.

https://my.clevelandclinic.org/health/diseases/25152-candida-auris

Why the hype with C.auris?



- ***Candida auris*** is an emerging multi-drug resistant yeast that can cause severe invasive infections associated with high mortality.
- ***Candida auris*** can survive on surfaces and medical equipment, spread from patient to patient and lead to outbreaks in healthcare settings.
- Risk of infection or colonization with ***Candida auris*** is greatest among our most vulnerable patients. These are patients with a.) extensive healthcare exposures; b.) infected or colonized with another MDRO; c.) invasive medical devices.
- *C. auris* colonization lasts for years and may be indefinite

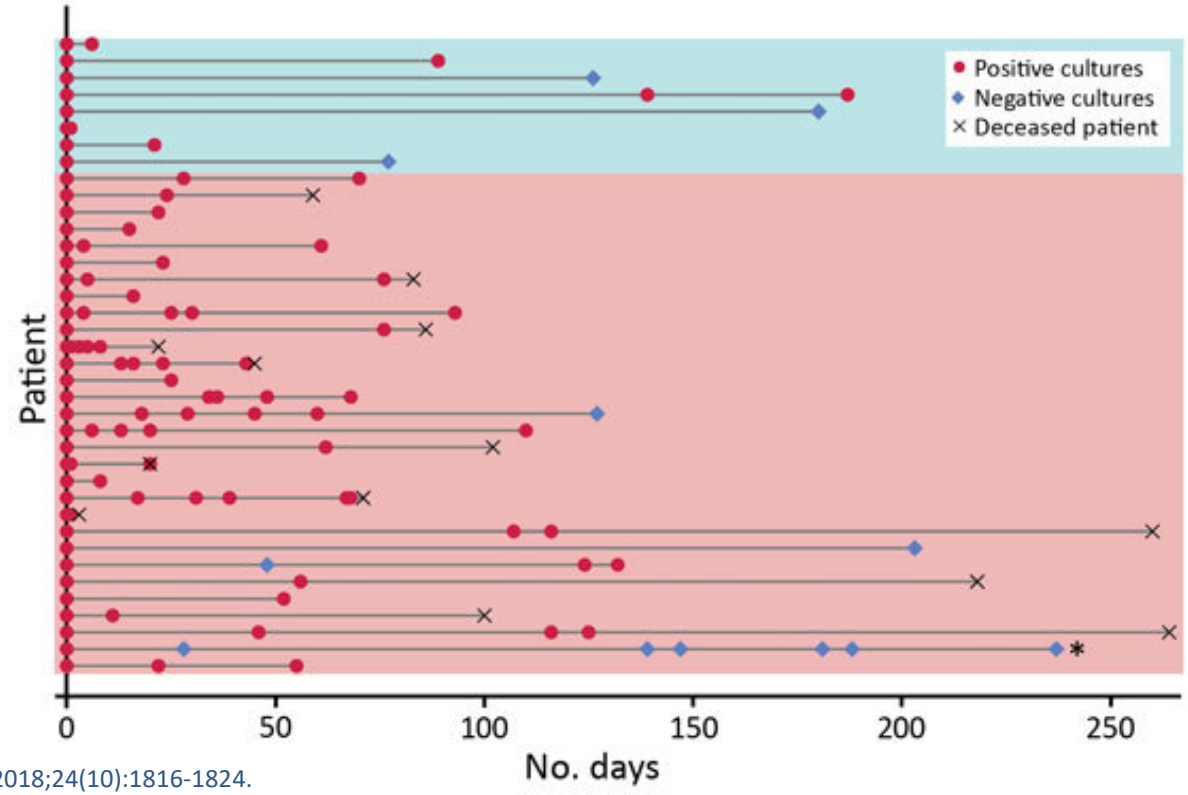
https://www.cdc.gov/fungal/candida-auris/candida-auris-qanda.html

Can cause invasive infections and high mortality

- 8% of colonized patients have positive clinical specimens of which half are bloodstream infections

- Mortality of invasive infections is ~40% within the first 30 days

- Long-term *Candida auris* colonization of clinical and screening case-patients, New York, USA, 2013–2017



Adams E, Quinn M, Tsay S, et al. Candida auris in Healthcare Facilities, New York, USA, 2013-2017. Emerg Infect Dis. 2018;24(10):1816-1824. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6154128

Limited Options for Antifungal Medications to Treat

- Azoles (Ex. Fluconazole, Voriconazole, Posaconazole)
- Echinocandins (Ex. Micafungin, Caspofungin, Anidulofungin)
- Polyenes (Ex. Amphotericin B)

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3996373/#:~:text=The%20therapeutic%20options%20for%20invasive,of%20antiretroviral%20drugs%20than%20antifungals.

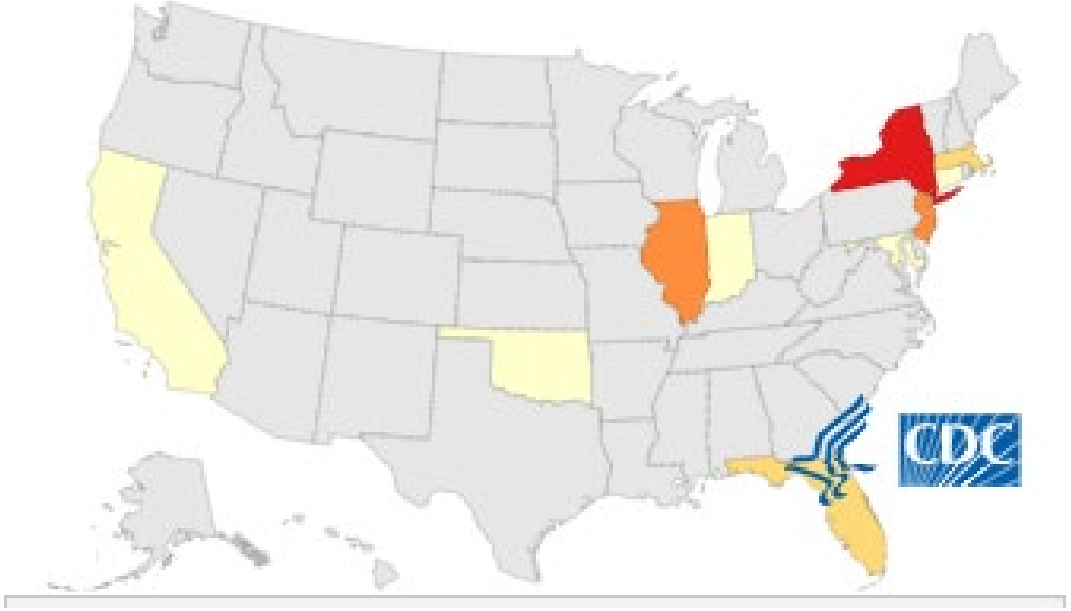
https://www.cdc.gov/drugresistance/pdf/threats-report/2019-ar-threats-report-508.pdf

History of *Candida auris*

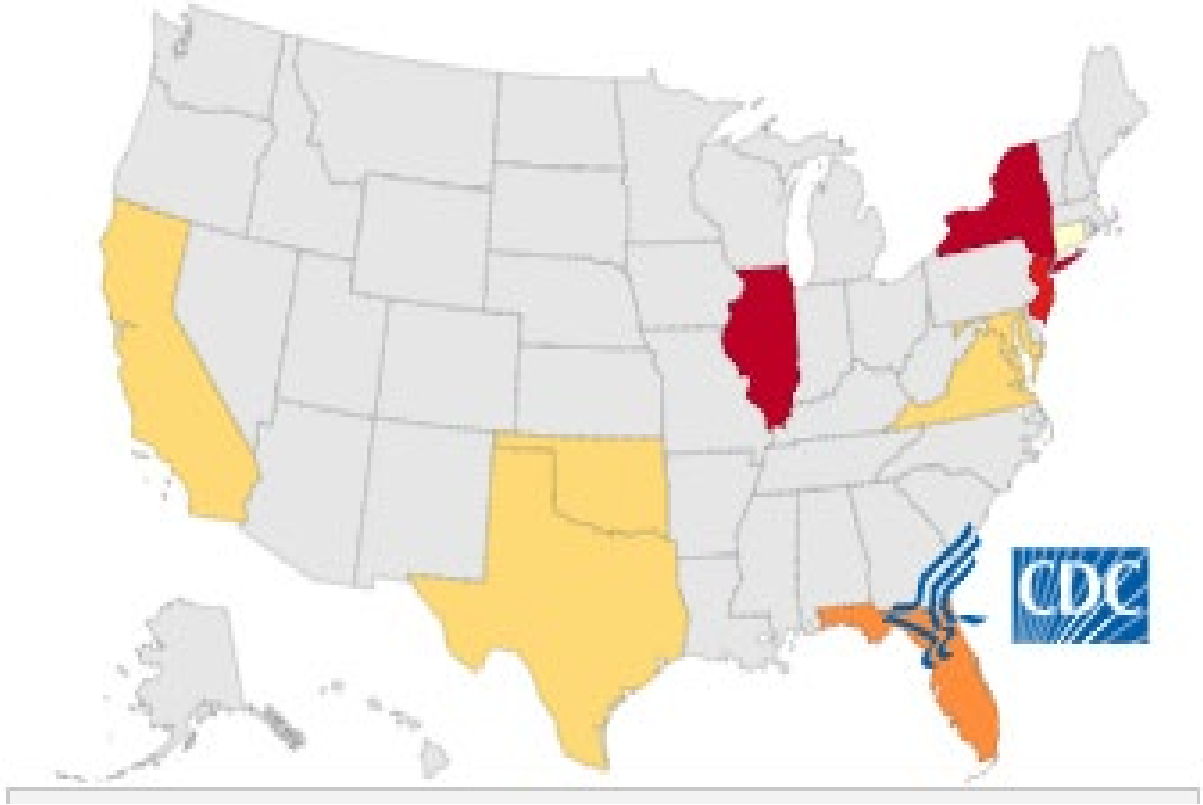
CDC COCA Call: Multidrug-resistant Candida auris – YouTube
https://www.niaid.nih.gov/news-events/candida-auris-mysterious-and-tenacious-enemy#:~:text=One%20fungal%20pathogen%2C%20Candida%20auris,emerged%20rapidly%20around%20the%20globe.

Reported clinical cases of *Candida auris*, 2013-2016

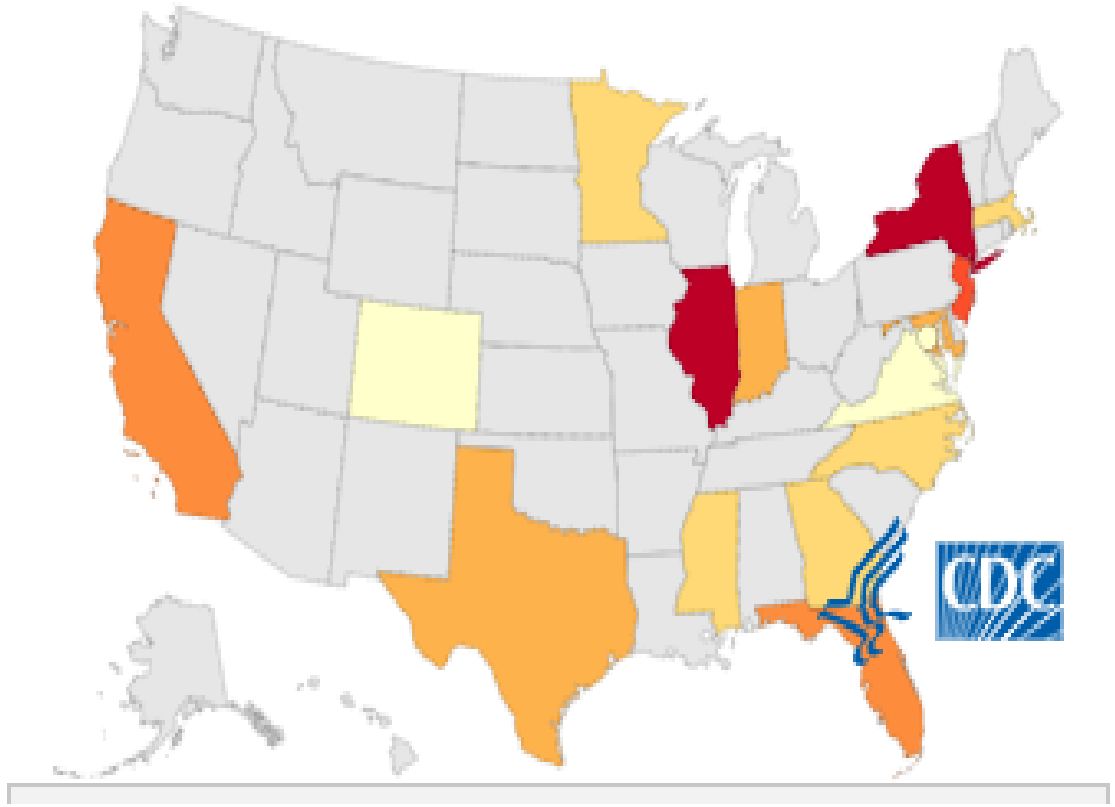
Reported clinical cases of *Candida auris*, 2017



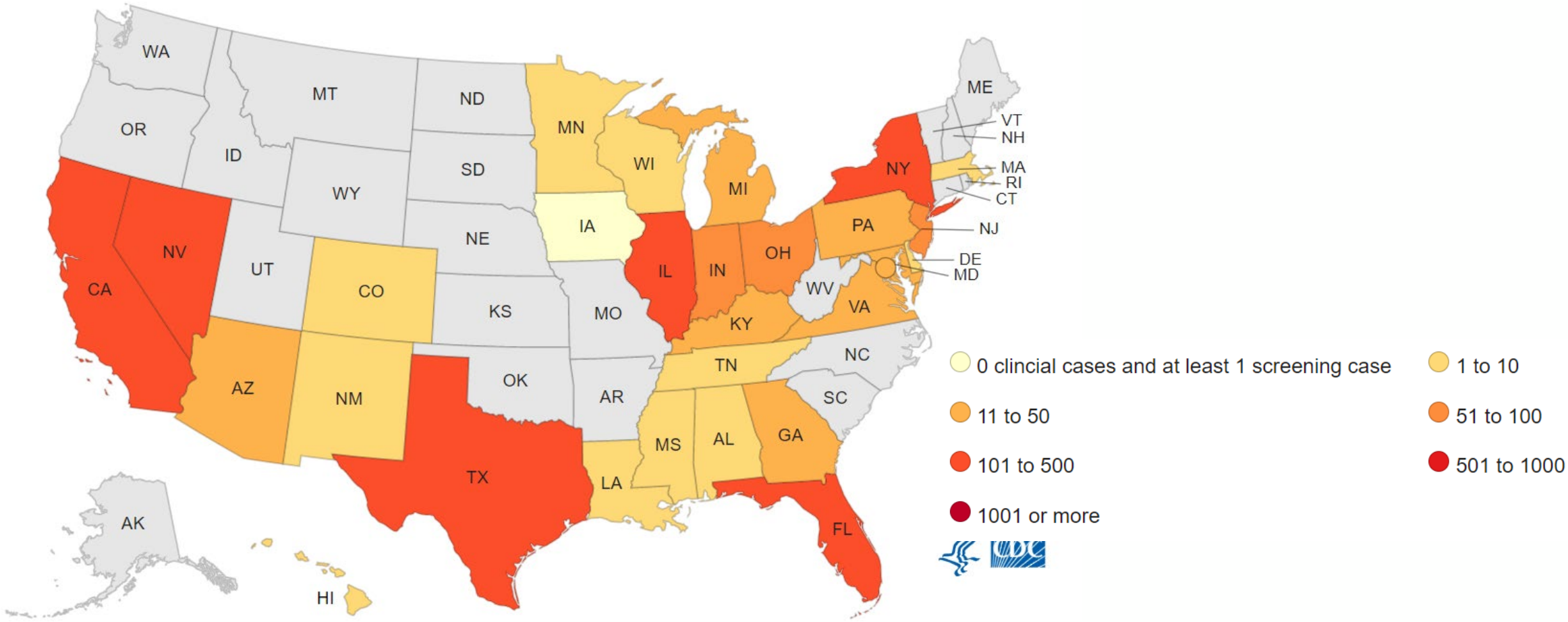
Reported clinical cases of *Candida auris*, 2018



Reported clinical cases of *Candida auris*, 2019



Number of *C. auris* clinical cases through December 31, 2022



Tracking Candida auris | Candida auris | Fungal Diseases | CDC

C. auris Burden in Louisiana

- January 1, 2022 – February 14, 2024
  - 42 clinical cases
  - 68 screening cases
    - 4 of which later became clinical infections (reflected in the clinical case count)
  - **Total of 110 cases identified**
- Mostly located in Greater New Orleans area
  - Cases also detected in Regions 2, 4, 7, and 9
- All-cause mortality data as of September 15, 2023:
  - Clinical cases - 27%
  - Screening cases - 24%

Risk Factors

Risk Factors

- Immunosuppressive conditions
- Infection/colonization with other MDROs
- Recent antibiotic or antifungal use
- Medical device use – Tracheostomy/Ventilator
- Frequent or prolonged stays in healthcare facilities, especially vSNFs and LTACHs
  - Outpatient exposure not usually of concern
- **Not a threat to the general public or healthy individuals**

https://www.cdc.gov/fungal/candida-auris/candida-auris-qanda.html#risk-factors

Infection vs. Colonization

Infection

- Presence of signs and symptoms
- Bloodstream, wound, and ear infections have been documented
  - Lung and bladder infections?
- Treatment is usually necessary
- Requires use of Transmission-based Precautions

Colonization

- No signs or symptoms detected or reported
- May occur on skin, nares, oropharynx, rectum, and other body sites
- No treatment necessary
- Requires use of Transmission-based Precautions

https://www.cdc.gov/fungal/candida-auris/index.html

Colonization

- May be persistent and/or intermittent
- Usually lasts months to years and may be indefinite
- No well-established decolonization strategies
- Clearance testing not recommended
- May lead to invasive infection in 5 – 10% of cases
- Those with clinical infection may remain colonized even after treatment
- Can lead to transmission and subsequent outbreaks
  - High levels of shedding
  - Recontamination of surfaces within 4 hours[1]

[1]Sansom et al, 2022 ASHE

Spread of *Candida auris*

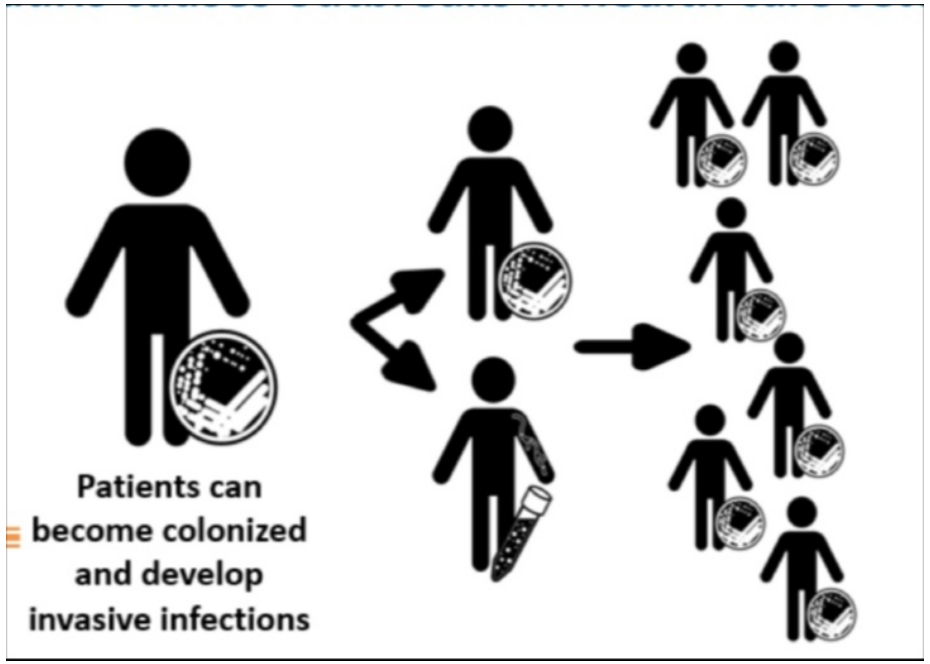
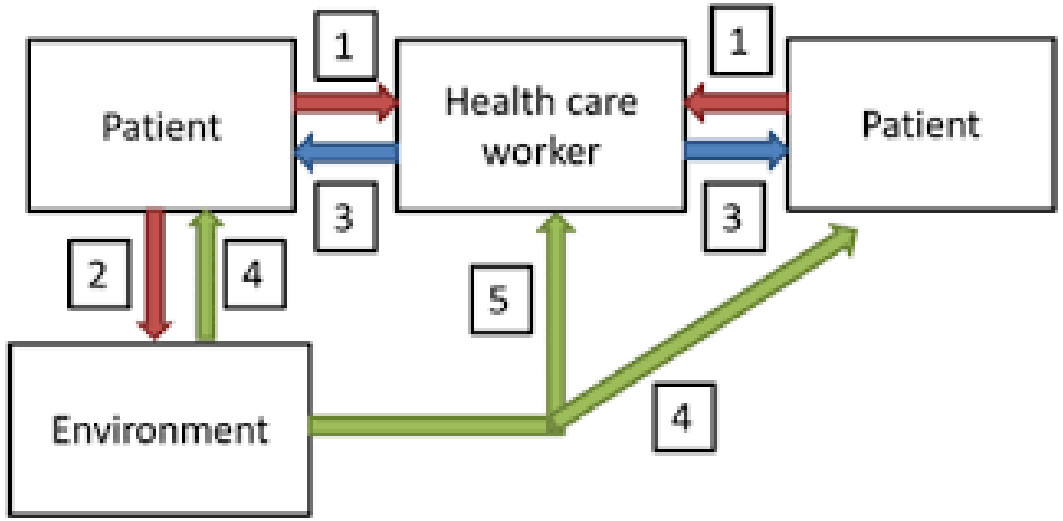


Figure 1



Spreads in healthcare settings

Figure 2

https://www.cdph.ca.gov/Programs/CHCQ/HAI/CDPH%20Document%20Library/COVID-19_MDRO_All_Facilitis_090120_V3_EE.pdf
https://www.cambridge.org/core/journals/infection-control-and-hospital-epidemiology/article/transmission-pathways-of-multidrugresistant-organisms-in-the-hospital-setting-a-scoping-review/A4389A03B0AD181EAB0A388796293481

- Most people who get ***Candida auris*** infections are already sick from other medical conditions.
- If you are infected/colonized with *C. auris* please let your healthcare provider know.

Responding to detection of *C.auris* in a facility:

- Screening
- Infection control and prevention measures

Strategies listed in the CDC's MDRO Containment Guidance

- 1. Conduct initial response measures
- 2. Conduct a healthcare investigation
- 3. Conduct a contact investigation
- 4. Conduct clinical laboratory prospective and retrospective surveillance
- 5. Perform environmental cultures
- 6. Implement a system to ensure adherence to infection control measures

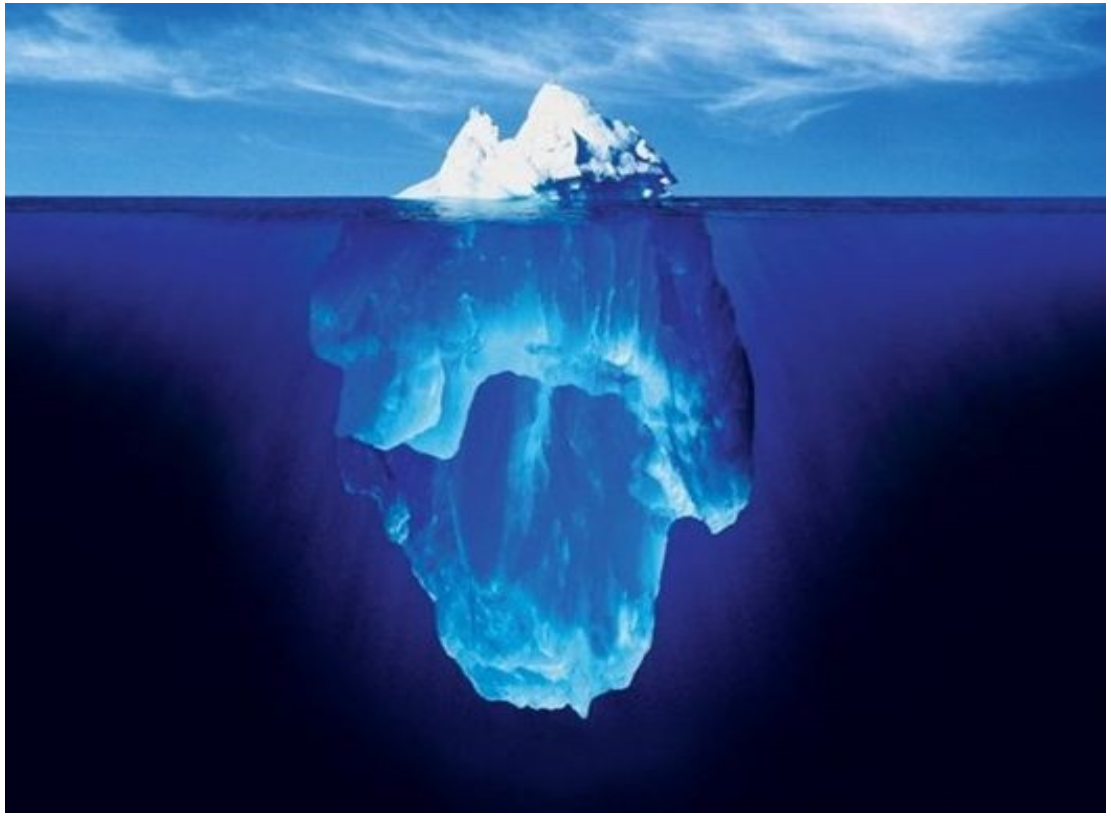
https://www.cdc.gov/hai/pdfs/mdro-guides/Health-Response-Contain-MDRO-H.pdf

Colonization Screenings

- Colonization screenings are a series of repeated specimen collection among patients who may have been exposed to *C. auris*
- Louisiana follows CDC guidance for containing *C. auris* and other MDROs in healthcare settings

https://www.cdc.gov/hai/pdfs/mdro-guides/Health-Response-Contain-MDRO-508.pdf

Colonization Screenings – the Why



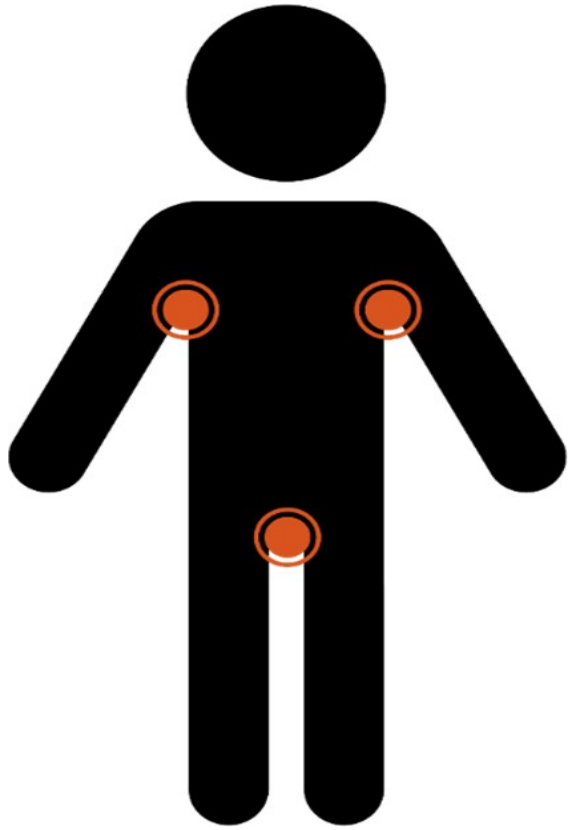
- If a case of *C. auris* is identified at your facility, colonization screenings will be needed to determine if other patients are positive and if any spread has occurred.
- Only performed among patients with possible exposure
  - Not appropriate for staff or family members
- Screening results are for surveillance and infection control purposes only

▶ **Results are not used for assigning attribution or blame**

- **Healthcare facilities are highly interconnected through shared patient populations**

Colonization Screenings – the How

- Multiple rounds of testing are performed weekly or biweekly among previously negative/untested patients
  - Colonization screenings are usually discontinued when there have been at least two consecutive rounds of testing with no new cases detected
  - If high colonization pressure is found, OPH will work with the facility to revise screening recommendations
- All testing supplies and shipping costs are covered by OPH
- Done in consultation with Public Health



https://www.cdc.gov/fungal/candida-auris/c-auris-screening.html#:~:text=Screening%20to%20identify%20patients%20or,the%20intended%20purpose%20of%20screening.

Patient Tracking and Discharge Planning

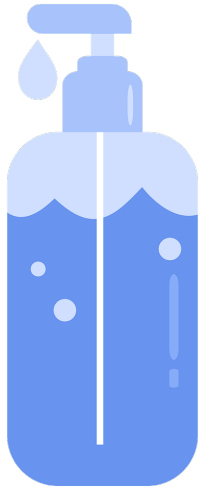
- Screenings should be conducted as a point prevalence survey
  - Test whoever is currently on the unit
  - No need to track down patients that were already transferred/discharged between screening rounds
- Do not delay discharges and transfers based on pending screening results
  - Immediately inform receiving facilities of positive screening results
- Educate patients with positive screening results about *C. auris*
  - Allow them the opportunity to ask questions
  - Encourage that they notify healthcare facilities they visit in the future about their *C. auris* status
    - FAQs are available to help

Infection Prevention and Control Measures

- Hand Hygiene
- PPE Use – transmission based precautions and room placement
- Environmental Cleaning and Disinfection
- Auditing – facilitating adherence to IPC measures
- Communication – both internal (staff, visitors, vendors) and external (patient transfer)
- Rapid Detection and Reporting – Lab surveillance (screening)

Infection Prevention and Control for Candida auris | Candida auris | Fungal Diseases | CDC

Hand Hygiene in facilities where *C. auris* occurs



- Use Alcohol-Based Hand sanitizer prior to and after performing any hands-on activity with resident
- This includes before and after donning and doffing gloves
- Recommendation to use soap and water if hands are visibly soiled, before eating and after using the restroom

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

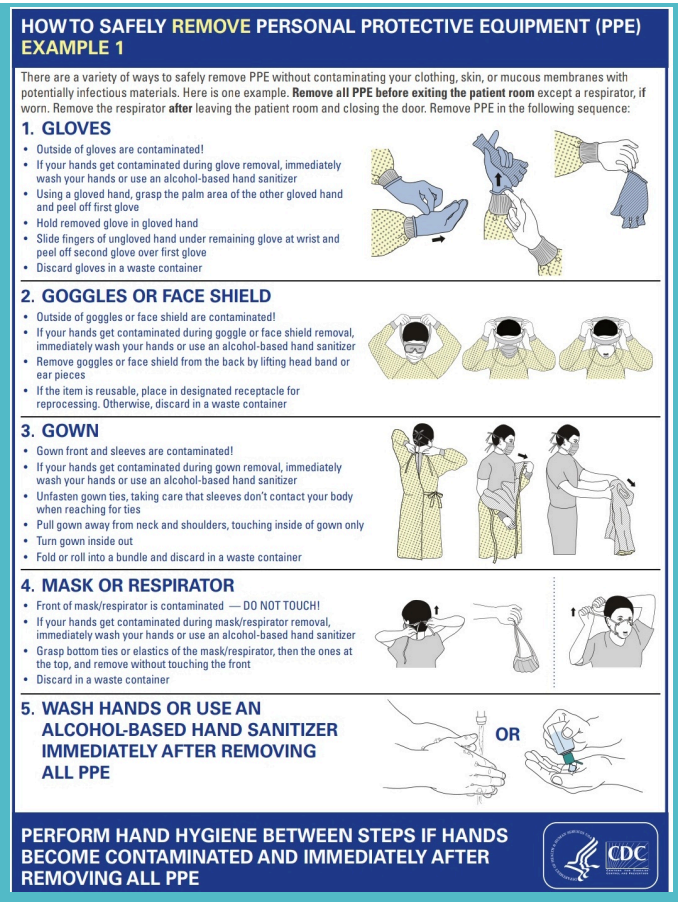
What can family members do to help keep *C. auris* from spreading?

Patients and family members should clean their hands thoroughly before and after touching each other or the area around the patient, particularly when leaving a patient's room. Although the risk of *C. auris* infection in otherwise healthy people is low, patients and their family members should continue practicing good hand hygiene when returning home. If family members are caring for patients with *C. auris*, they should consider wearing disposable gloves when providing certain types of care like changing the dressing on wounds and helping the patient bathe.

https://www.cdc.gov/fungal/candida-auris/patients-qa.html#:~:text=Family%20members%20and%20others%20caring,one%20ill%20person%20at%20home.

PPE use

- Ensure staff understand when and what types of PPE are recommended during activities with residents
- Ensure appropriate storage and accessibility of PPE at point of care locations



HOW TO SAFELY REMOVE PERSONAL PROTECTIVE EQUIPMENT (PPE)
EXAMPLE 1

There are a variety of ways to safely remove PPE without contaminating your clothing, skin, or mucous membranes with potentially infectious materials. Here is one example. **Remove all PPE before exiting the patient room** except a respirator, if worn. Remove the respirator **after** leaving the patient room and closing the door. Remove PPE in the following sequence:

1. GLOVES

- Outside of gloves are contaminated!
- If your hands get contaminated during glove removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Using a gloved hand, grasp the palm area of the other gloved hand and peel off first glove
- Hold removed glove in gloved hand
- Slide fingers of ungloved hand under remaining glove at wrist and peel off second glove over first glove
- Discard gloves in a waste container

2. GOGGLES OR FACE SHIELD

- Outside of goggles or face shield are contaminated!
- If your hands get contaminated during goggle or face shield removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Remove goggles or face shield from the back by lifting head band or ear pieces
- If the item is reusable, place in designated receptacle for reprocessing. Otherwise, discard in a waste container

3. GOWN

- Gown front and sleeves are contaminated!
- If your hands get contaminated during gown removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Unfasten gown ties, taking care that sleeves don't contact your body when reaching for ties
- Pull gown away from neck and shoulders, touching inside of gown only
- Turn gown inside out
- Fold or roll into a bundle and discard in a waste container

4. MASK OR RESPIRATOR

- Front of mask/respirator is contaminated — DO NOT TOUCH!
- If your hands get contaminated during mask/respirator removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp bottom ties or elastics of the mask/respirator, then the ones at the top, and remove without touching the front
- Discard in a waste container

5. WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITIZER IMMEDIATELY AFTER REMOVING ALL PPE

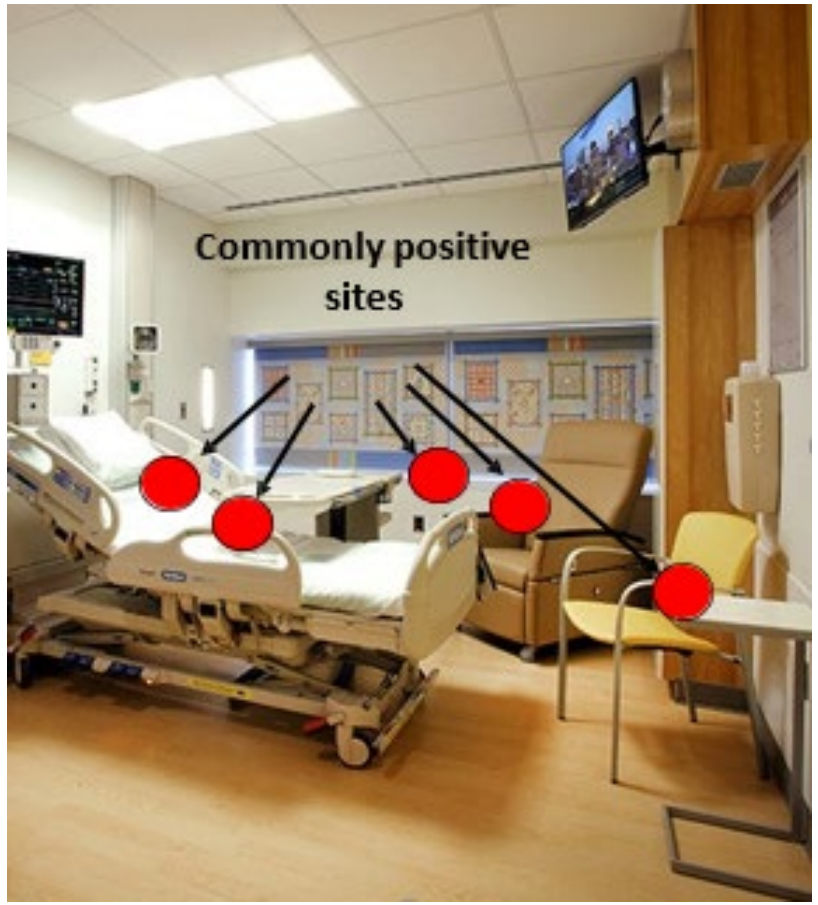
OR

PERFORM HAND HYGIENE BETWEEN STEPS IF HANDS BECOME CONTAMINATED AND IMMEDIATELY AFTER REMOVING ALL PPE

CDC

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

Environmental cleaning and disinfection



- Develop and maintain a “who cleans what” list
- Clean and disinfect high touch surfaces at least daily
- Use the appropriate cleaning products based on the EPA list
- Clean and disinfect reusable medical equipment after every use (i.e. Vital sign machines, glucometers, transfer lifts)

CLEANING PRACTICES

- Confirm that EPA list P products are being used on the unit. (List P: Antimicrobial Products Registered with EPA for Claims Against *Candida Auris*)
- Perform additional black light/UV spot audits to provide objective measurement of cleaning thoroughness
- Declutter patients' rooms

Establish clear responsibilities (WHO DOES WHAT) and frequencies for cleaning equipment and surfaces by EVS, nursing, respiratory therapy and other services involved in healthcare.

https://www.cdc.gov/fungal/candida-auris/c-auris-infection-control.html#disinfection

Auditing

- Monitor adherence to infection prevention and control (IPC) practices
- IPC practices include hand hygiene, putting on/taking off (don/doff) PPE, environmental surface and equipment cleaning and disinfection
- Can be either paper or electronic documentation
- Provide prompt (real-time) regular feedback on adherence and related outcomes to healthcare personnel and facility leadership

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

AUDITS TO IDENTIFY INFECTION CONTROL BREACHES

Focus on additional hand hygiene and PPE audits.

- Consider who can be recruited to assist? Unit secretaries, interns, clinical coordinators

Environmental cleaning audits:

- -Black light audits/UV spot audits.
- -Enhanced environmental cleaning instrument logs.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9171225/

GEMBA WALK:

- **GEMBA walk is a workplace walkthrough that aims to observe employees, ask questions about their tasks and identify ways to improve.**

-For ancillary groups, follow work flow to identify if shared equipment is being cleaned and if it is being cleaned properly.

-Use basic open-ended questions like:

"What are you working on?"

"Can you explain any problems you encounter with the established process?"

" Who do you speak with when there is a problem and how have they been helpful?"

Communication

- Use appropriate and legible signs for precautions
- Maintain an up-to-date list of residents meeting criteria for precautions
- Notify internally (unit, floor) and externally (hospital, doctor's office, dialysis clinics) about a resident's MDRO status and precautions recommended to be used

https://www.cdc.gov/infectioncontrol/pdf/webinarslides/Webinar-EBPinNH-Nov2022-Slides-508.pdf

DISCUSSION:

- Clotile Boudreaux was admitted to an acute care hospital from a SNF unit. The Infection Prevention team has been notified by the micro lab that a blood culture result shows *Candida auris* from this patient, collected on the 7th day of admission. As the IP, you had read state-wide alerts about *C.auris* and are concerned about an outbreak at your facility. You wonder what you should do about this single case (if anything)?.....

YOU CAN:

To reduce spread to other patients, healthcare personnel should use precautions when caring for patients with *C. auris*, which may include:

- C. auris is a class A reportable disease and should be Reported to LDH/OPH/HAI program for guidance and support (InfectionControl@LA.gov)
- Placing the patient on isolation in a different room.
- Having healthcare personnel or other caregivers wear gowns and gloves during patient care.
- Cleaning the room with products from EPA List P.
- Having family members and healthcare personnel clean their hands thoroughly after visiting the patient.
- The patient may also be encouraged to wash their hands often.

DISCUSSION:

-Junior Thibodaux was admitted to ICU. He underwent multiple complicated cardiac procedures and received multiple antibiotics. He has a tracheostomy and is ventilator dependent.

-He was not initially on any isolation precautions. He had 2 roommates during the 1st week of admission to the step down unit.

-On day 7 from admission, a sputum specimen revealed *Carbapenem-resistant enterobacteriaceae* (CRE). On hospital day 10 ***Candida auris*** was identified in a blood culture.

Example of an ACTION PLAN:

A. EPIDEMIOLOGIC SURVEILLANCE:

- Consult with your public health department to discuss best surveillance strategies.

B. ENVIRONMENTAL CLEANING:

1. Establish clear responsibilities for cleaning between healthcare workers and EVS.
2. Investigate ways to store patient belongings and nursing supplies in patient rooms to help increase EVS access for cleaning.
3. Establish alternative locations for storing food service carts.
4. Use observation surveillance to observe EVS use of supplies and placement of cart, paying close attention to making sure the cart and its supplies are not being contaminated.
5. Make sure rooms are being cleaned from cleanest area to dirtiest area.

C. EDUCATION:

1. Attend huddles regarding *C.auris* infection control to educate regarding *C.auris*
2. Download and disperse *C.auris* CDC handouts to staff and to patient's family members.
3. Consider sharing information with unit newsletters/emails.
4. Education to ancillary groups: Respiratory therapy, physical and occupational therapy, dietary services and pastoral care.
5. EVS education-translated materials
6. Competency checks using educational management software and CDC Project Firstline materials.

BEDSIDE NURSING PERSPECTIVE:

Think about……

- Ease at which it spreads from patient to patient with environmental contamination and ease of dissemination.
- Limited treatment options once patient is infected
- Potential for severe outcomes.
- Information discussed at meetings related to outbreaks is often not communicated to the bedside staff.
- Can be escalated to patient safety committee.
- Cleaning responsibility of certain items falls on nursing.

Evaluation

- https://laredcap.oph.dhh.la.gov/surveys/?s=3WJDED3TC7XA989C

THANK YOU

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

LOUISIANA DEPARTMENT OF HEALTH