

Candida auris: An Emerging Threat

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Speaker Bio



Doe Kley, RN, MPH, T-CHEST, LTC-CIP, CIC Infection Prevention Fellow Clinical and Scientific Affairs, Clorox Healthcare

Doe Kley is an Infection Prevention Fellow within Clorox Healthcare's Clinical and Scientific Affairs team and is passionate about helping gleam insights and solutions to tackle the many challenges faced in infection prevention. Her role focuses on providing consultative services and developing practice tools using her nearly 20 years of clinical expertise in acute care infection prevention from working in large healthcare systems, such as Intermountain Healthcare and Kaiser Permanente.

Doe is a registered nurse and received her Master of Public Health from the University of Nevada, Reno, as well as a Bachelor of Microbiology from Weber State University. She teaches an infection control course for the Ohio State University (OSU) and is also dual-board certified in infection prevention and epidemiology in both acute and long-term care. Additionally, Doe is certified to train EVS through Association for the Healthcare Environment (AHE) and is currently a member of AHE, the Association for Professionals in Infection Control & Epidemiology (APIC), the Association of periOperative Registered Nurses (AORN), and the Society for Healthcare Epidemiology of America (SHEA). Doe is active on several committees including Test Committee for the Certification Board of Infection Control & Epidemiology (CBIC) and the Advisory Council for the Pearce Foundation Environmental Services Optimization Playbook (EvSOP). She also served on the board of directors for California APIC Coordinating Council (CACC) in 2022.

Relevant Financial Disclosures

Faculty for this activity:

- Doe Kley is employed by the Clorox Company. However, no products will be discussed or promoted in this presentation.

Agenda

What we will cover today:

- A brief history of *C. auris*
- What is *C. auris* and why it's so problematic
- Review transmission and outbreaks
- Infection prevention & control measures for *C. auris*
- Caveats around environmental cleaning & disinfection for this unique pathogen.
- Q&A

Learning Objectives

At the conclusion of this webinar, participants will be able to:

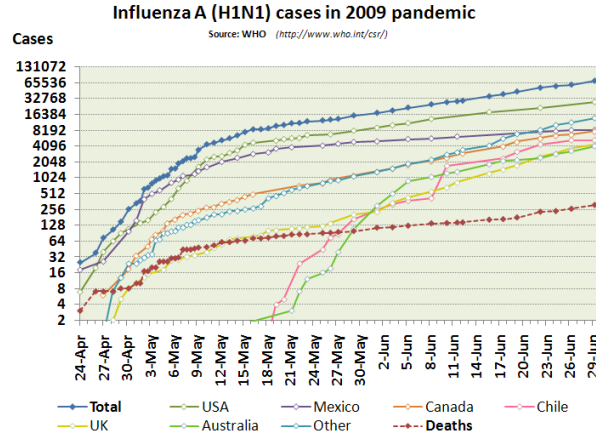
- 1 Explain the epidemiology of *C. auris*.
- 2 Differentiate *C. auris* from other antimicrobial-resistant pathogens.
- 3 Implement surveillance for *C. auris* into their infection control program.
- 4 Select appropriate infection control measures to contain *C. auris*.
- 5 Identify the subtleties around cleaning and disinfection for this pathogen.

***C. auris*: humble beginnings but rapid spread**

Remember 2009?



Barack Obama sworn in as 44th US President



Swine (H1N1) Influenza Pandemic

	2009 H1N1	COVID-19
# Cases	61 million	612 million
# Deaths	12,000	6.5 million



US airways Flight 1549
"Hudson Miracle", Captain Sullenberger



Cruise I never got to take ☹️

2009: Japan - A new foe emerges

Microbiol Immunol 2009; 53: 41–44
doi:10.1111/j.1348-0421.2008.00083.x

ORIGINAL ARTICLE

***Candida auris* sp. nov., a novel ascomycetous yeast isolated from the external ear canal of an inpatient in a Japanese hospital**

Kazuo Satoh^{1,2}, Koichi Makimura^{1,3}, Yayoi Hasumi¹, Yayoi Nishiyama¹, Katsuhisa Uchida¹ and Hideyo Yamaguchi¹

¹Teikyo University Institute of Medical Mycology, 359 Otsuka, Hachioji, Tokyo 192-0395, ²Japan Health Sciences Foundation, 13-4 Nihonbashi-Kodenmacho, Chuo-ku, Tokyo 103-0001 and ³Genome Research Center, Graduate School of Medicine and Faculty of Medicine, Teikyo University, Otsuka 359, Hachioji, Tokyo 192-0395, Japan

“auris” means
“ear” in Latin

ABSTRACT

A single strain of a novel ascomycetous yeast species belonging to the genus *Candida* was isolated from the external ear canal of an inpatient in a Japanese hospital. Analyses of the 26S rDNA D1/D2 domain, nuclear ribosomal DNA ITS region sequences, and chemotaxonomic studies indicated that this strain represents a new species with a close phylogenetic relationship to *Candida ruelliae* and *Candida haemulonii* in the Metschnikowiaceae clade. This strain grew well at 40 °C, but showed slow and weak growth at 42 °C. The taxonomic description of *Candida auris* sp. nov. is proposed (type strain JCM15448^T = CBS10913^T = DSM21092^T).

C. auris likely around since the 1980s

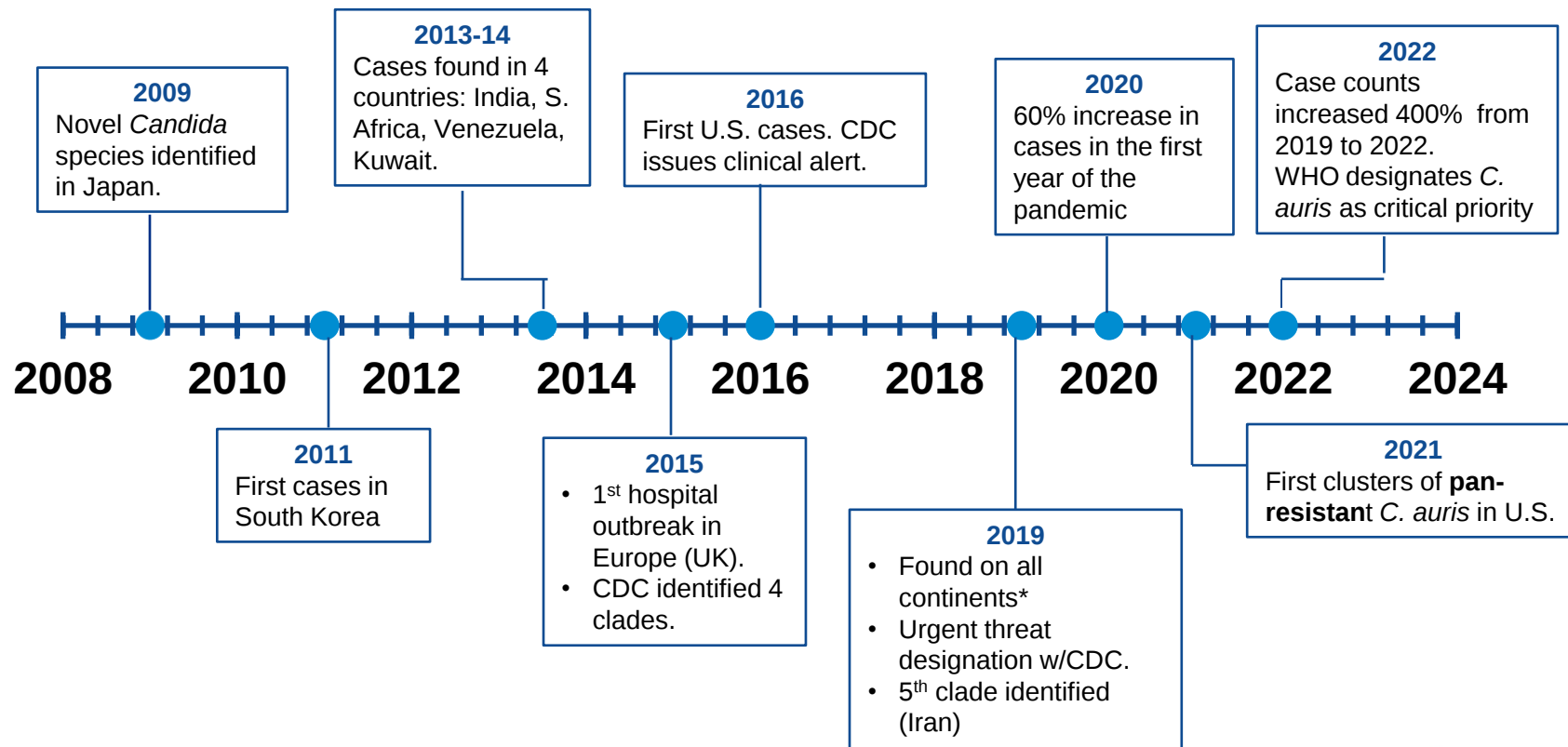
1980s



Cases under-reported:

- Not looking for it
- Lack of local diagnostic testing methods
- Misidentification

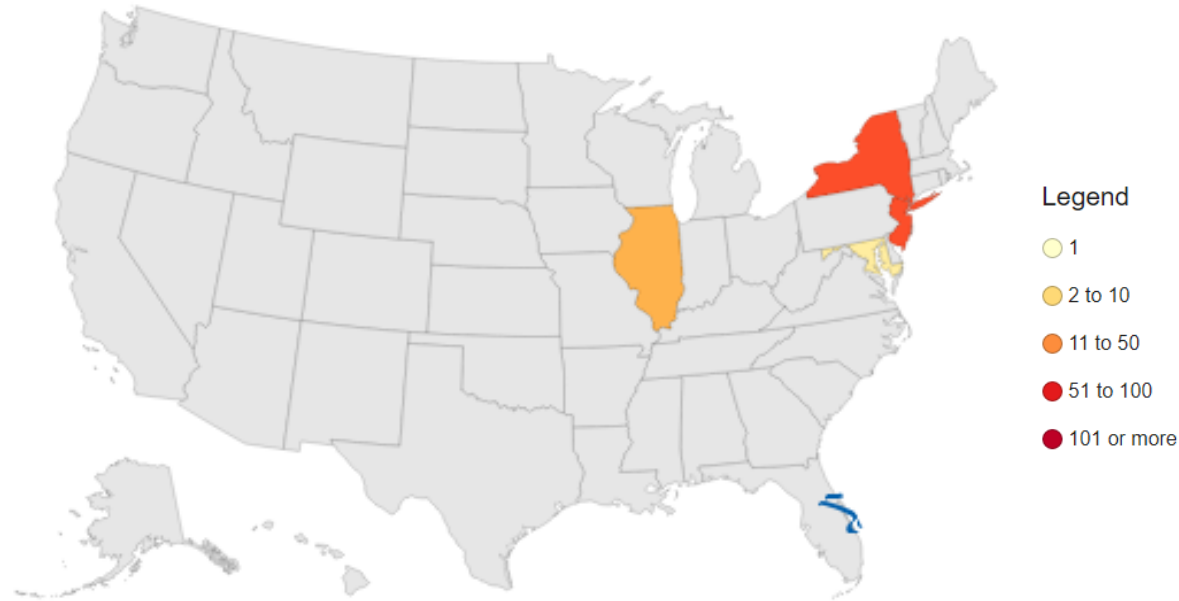
C. auris Timeline



*Except Antarctica

C. auris Case Counts in its Early Years in the U.S.

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



References:

1. CDC. *Candida auris* 2019 Case Definition. Available from <https://ndc.services.cdc.gov/case-definitions/candida-auris-2019/>
2. CDC. MMWR: Investigation of the First 7 Reported Cases of *C. auris*, A Globally Emerging Invasive, Multidrug-Resistant Fungus – US, May 2013-Aug 2016. Available from https://www.cdc.gov/mmwr/volumes/65/wr/mm6544e1.htm#T1_down
3. CDC. *C. auris* Clinical Update 2017. Available from <https://www.cdc.gov/fungal/candida-auris/c-auris-alert-09-17.html>

Fast Forward 10 years to the Current U.S. Case Counts



Year	U.S. Total Case Count*
2013-16	63
2017	173
2018	331
2019	478
2020	757
2021	1,474
2022	2,377

*Clinical cases only. Colonizations excluded

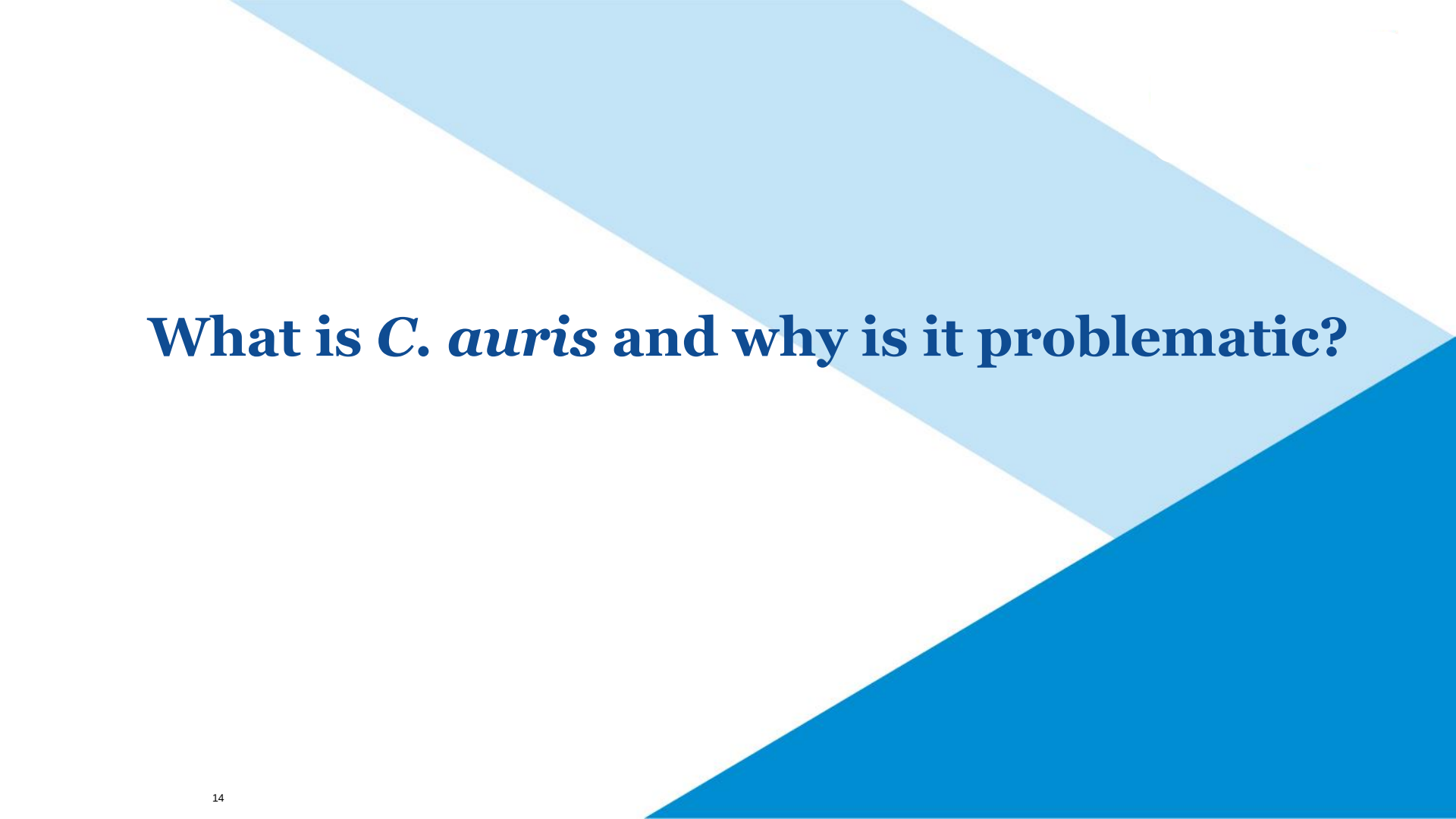
Image from <https://www.cdc.gov/fungal/candida-auris/tracking-c-auris.html>

C. auris: A global view

Countries from which *Candida auris* cases have been reported, as of February 15, 2021

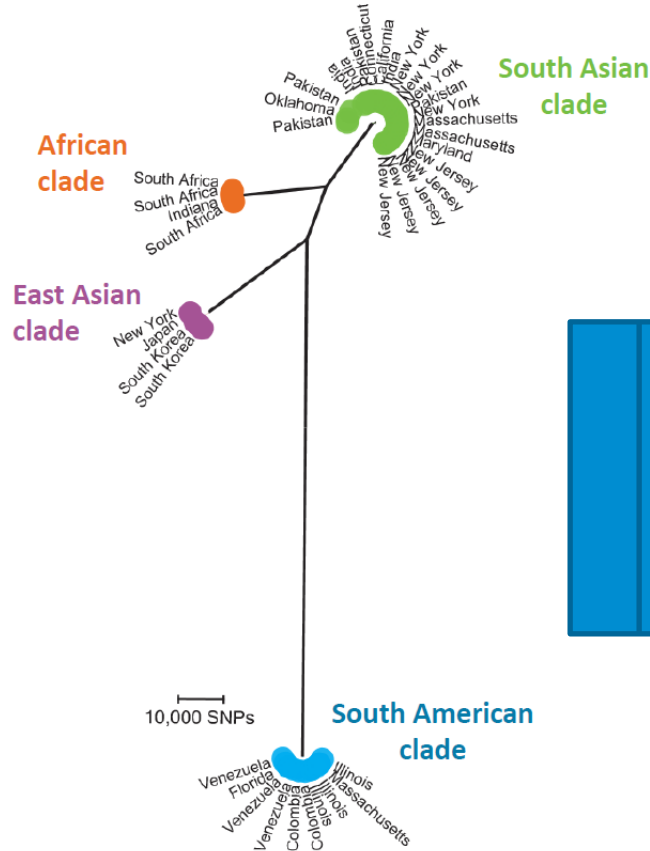
This map is no longer being updated given how widespread *C. auris* has become.





What is *C. auris* and why is it problematic?

Emerging Pathogenic Yeast



A great read:

Casadevall et al. (2019).
On the Emergence of *C. auris*:
Climate Change, Azoles, Swaps,
and Birds.
ASM mBio, Vol 10, Issue 4, p. 1-6

Clade:

Noun | BIOLOGY
a group of organisms
believed to have
evolved from a
common ancestor

Global Emerging Threat – Five Reasons Why

1

- Multi-drug resistant

2

- Difficult to identify with routine lab methods

3

- Invasive infections, high mortality

4

- Persists in the environment

5

- Spreads rapidly in healthcare settings



Multi-drug Resistant

3 classes of antifungals to treat Candida infections:

Antifungal	% Resistance
Azoles	86%
Amphotericin B (polyenes)	26%
Echinocandins	1.2%

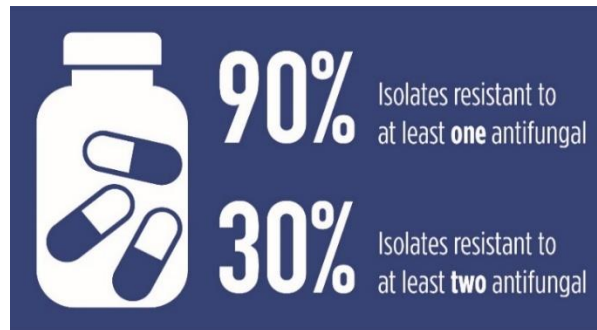
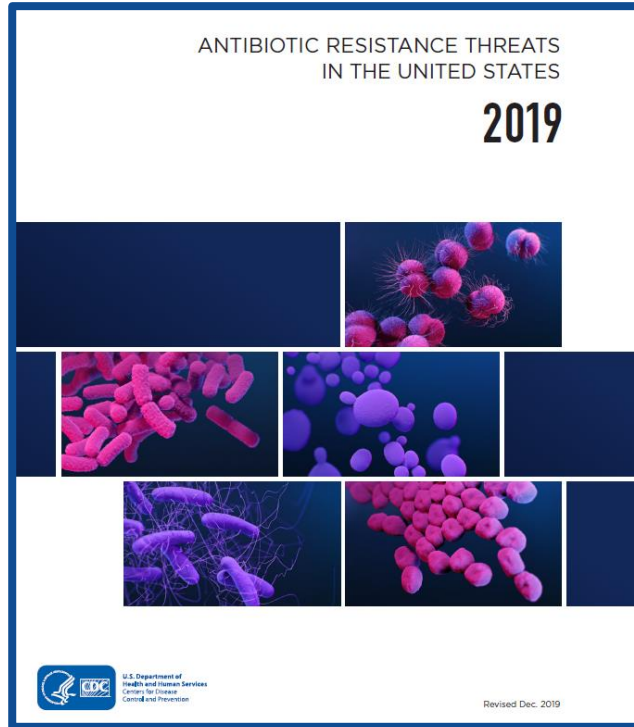


Image retrieved from CDC (2019) AR Threat Report

Multi-drug Resistant

URGENT THREAT!



Urgent Threats

Serious Threats

Concerning Threats

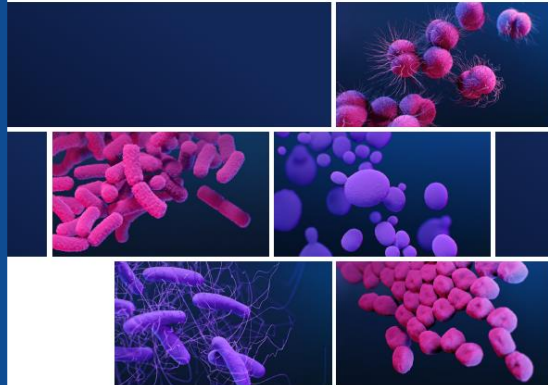
Watch List

Multi-drug Resistant

THREAT LEVEL **URGENT**

URGENT THREAT!

ANTIBIOTIC RESISTANCE THREATS IN THE UNITED STATES

2019

Revised Dec. 2019

Urgent Threats

- Carbapenem-resistant *Acinetobacter*
- *Candida auris* (*C. auris*)
- *Clostridioides difficile* (*C. difficile*)
- Carbapenem-resistant Enterobacteriaceae (CRE)
- Drug-resistant *Neisseria gonorrhoeae* (*N. gonorrhoeae*)

Serious Threats

- Drug-resistant *Campylobacter*
- Drug-resistant *Candida*
- Extended-spectrum beta-lactamase (ESBL)-producing Enterobacteriaceae
- Vancomycin-resistant *Enterococci* (VRE)
- Multidrug-resistant *Pseudomonas aeruginosa* (*P. aeruginosa*)
- Drug-resistant nontyphoidal *Salmonella*
- Drug-resistant *Salmonella* serotype Typhi
- Drug-resistant *Shigella*
- Methicillin-resistant *Staphylococcus aureus* (MRSA)
- Drug-resistant *Streptococcus pneumoniae* (*S. pneumoniae*)
- Drug-resistant Tuberculosis (TB)

Concerning Threats

- Erythromycin-resistant group A *Streptococcus*
- Clindamycin-resistant group B *Streptococcus*

Watch List

- Azole-resistant *Aspergillus fumigatus* (*A. fumigatus*)
- Drug-resistant *Mycoplasma genitalium* (*M. genitalium*)
- Drug-resistant *Bordetella pertussis* (*B. pertussis*)

Multi-drug Resistant

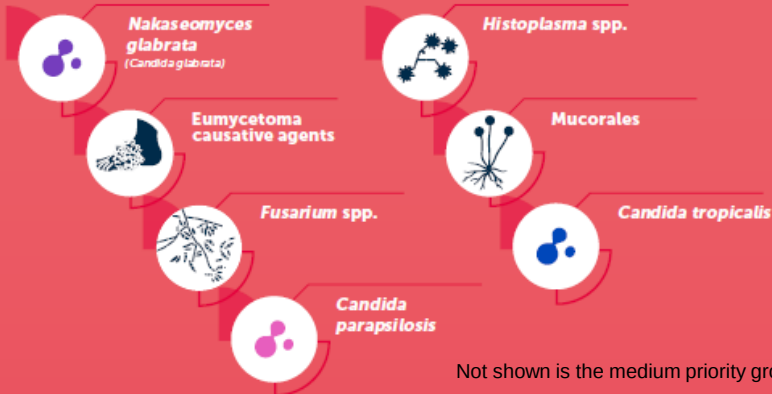
Fig. 1. WHO fungal priority pathogens list (WHO FPPL)

Critical Priority Group



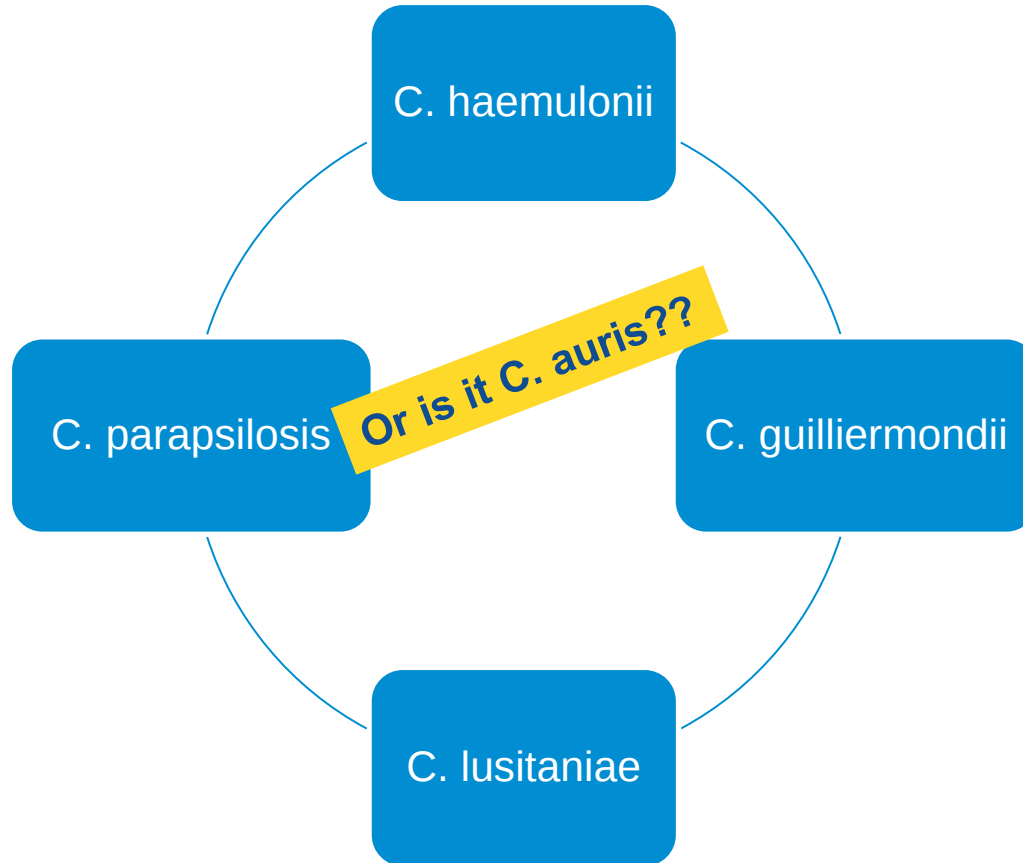
CRITICAL PRIORITY GROUP!

High Priority Group



Not shown is the medium priority group.

Difficult to identify



Misidentification

- Its not common to identify to species level when isolated from non-sterile body site.
- When hospital labs do speciate, it is often misidentified as other *Candida* sp.

Difficult to identify

When to suspect *C. auris*, when to speciate



Mixed culture of *Candida glabrata* (purple), *Candida tropicalis* (navy blue), and *Candida auris* (white, circled in red) on CHROMagar Candida.



Candida auris on CHROMagar Candida, displaying multiple color morphs.

Difficult to identify

Appropriate identification methods:

- MALDI-TOF
- DNA sequencing
- Enrichment broth

Misidentification

Identification Method	Organism <i>C. auris</i> can be misidentified as
Vitek 2 YST*	<i>Candida haemulonii</i> <i>Candida duobushaemulonii</i>
API 20C	<i>Rhodotorula glutinis</i> (characteristic red color not present) <i>Candida sake</i>
API ID 32C	<i>Candida intermedia</i> <i>Candida sake</i> <i>Saccharomyces kluyveri</i>
BD Phoenix yeast identification system	<i>Candida haemulonii</i> <i>Candida catenulata</i>
MicroScan	<i>Candida famata</i> <i>Candida guilliermondii</i> ** <i>Candida lusitanae</i> ** <i>Candida parapsilosis</i> **
RapID Yeast Plus	<i>Candida parapsilosis</i> **

Source: CDC: https://www.cdc.gov/fungal/candida-auris/identification.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Ffungal%2Fcandida-auris%2Frecommendations.html

Invasive infections - High mortality

Serious Infections

**Mortality
30-60%**

Colonization	Non-Invasive Infections	Invasive Infections
Urine or Stool	Wounds	Bloodstream
External ear canal	Otitis	Intra-abdominal
Wounds	UTI	Myocarditis
Respiratory tract	SSI	Meningitis
Skin (axilla, groin)	Skin abscesses	Osteomyelitis

Persists in the Environment

Survival on surfaces

Surface Type	Survival Time	# Studies
 Glass	3 days	1 study
 Stainless steel	>7 days	1 study
 Plastic	>14 days	3 studies

C. auris **contaminates** and **persists** in the environment

Spreads rapidly in healthcare settings

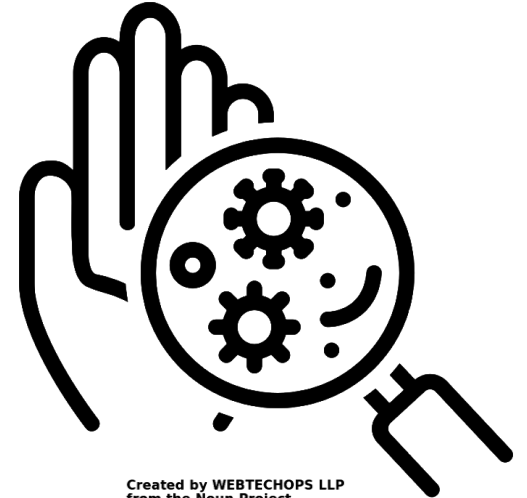
Transmission



Direct
Contact



Indirect
Contact



Created by WEBTECHOPS LLP
from the Noun Project

Spreads rapidly in healthcare settings

Rapid Spread → Outbreaks!

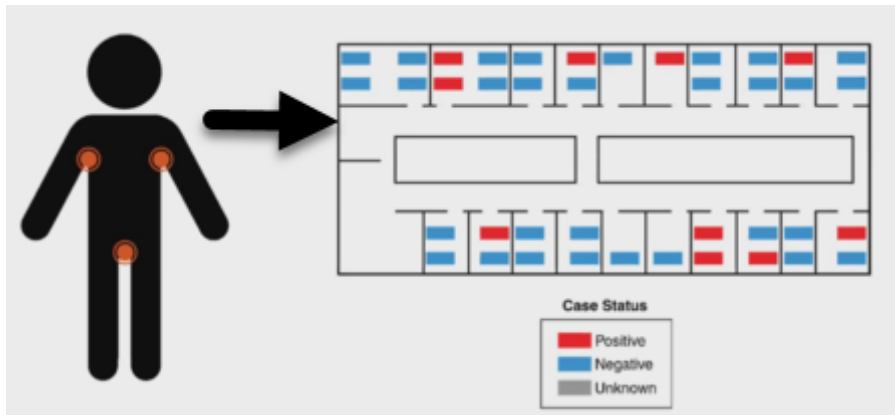


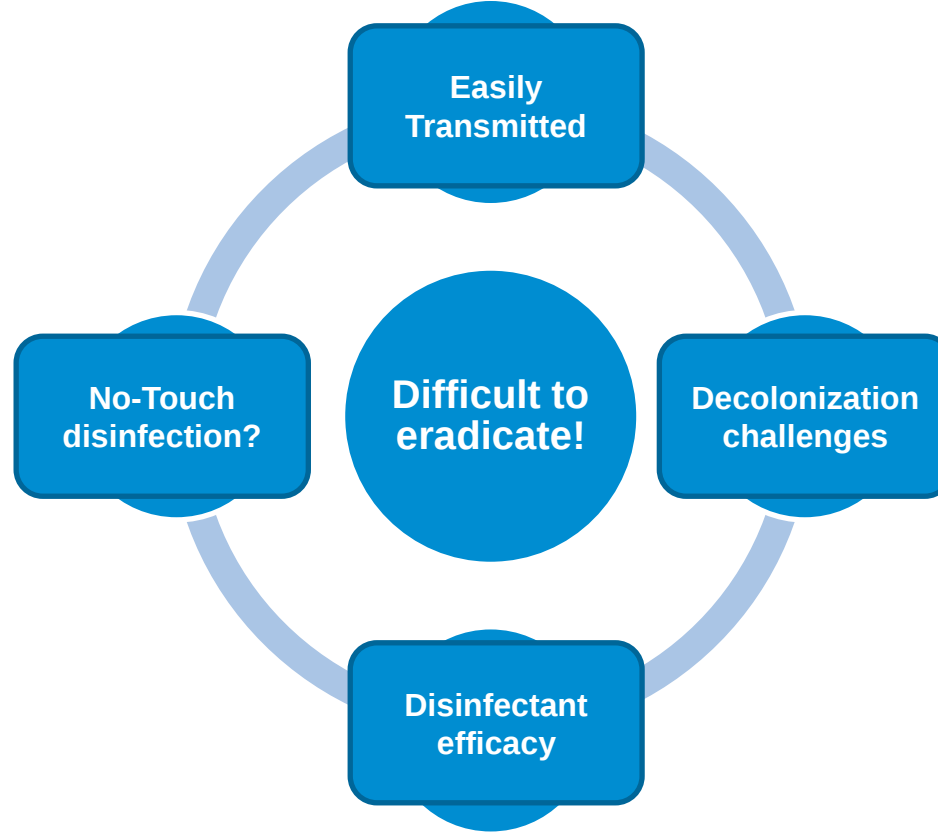
Image from CDC COCA call 6/20/2019

Easily transmitted:

- Spread by direct and indirect contact. Shedding from colonized pt's.
- Prolonged survival on environmental surfaces,
- Difficult to kill with some disinfectants.
- Sharing of pt's across the HC continuum.

- 1/3-1/2 of residents on a unit become colonized within weeks of an index case.
- *C. auris* prevalence increased from 43% to **71%** in the 2yr study period.
- **39%** of environmental samples tested (+) for *C. auris*.

Spreads rapidly in healthcare settings



References:

1. Hayden M, et al. Characterization of Skin Microbiota, and Relation of Chlorhexidine Gluconate (CHG) Skin Concentration to *C. auris* Detection Among Patients at a High-Prevalence Ventilator-Capable Skilled Nursing Facility (vSNF) with Established CHG Bathing. *Open Forum Infect Dis.* 2019; 6(Supple 2): S25-S26.
2. Council of State and Territorial Epidemiologists (CSTE). *C. auris* Update. May 2018. Available from https://www.cste.org/resource/dynamic/forums/20180822_092336_22224.pdf

Surveillance:
Don't let *C. auris* get a foot in the door

Active Surveillance: No Clear Guidance



Considerations

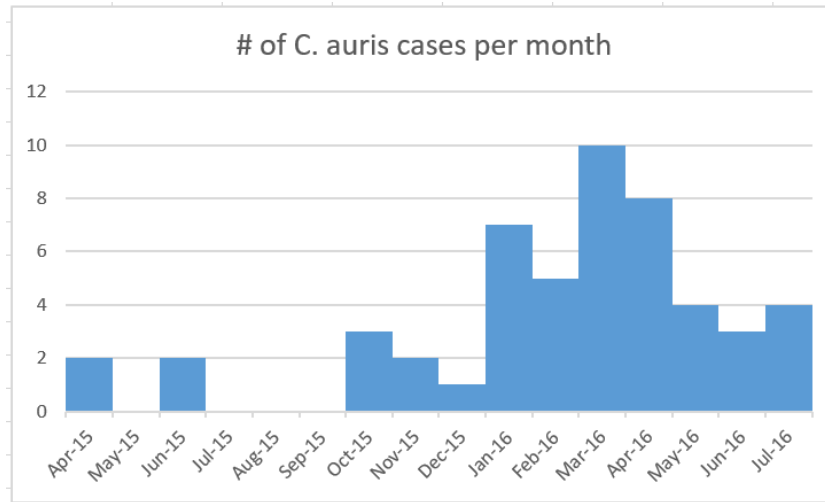
Patients transferred from an LTACH or vSNF.

Patients transferred from any healthcare facility in a geographical area experiencing *C. auris* transmission.

As otherwise determined by your facility or local public health dept.

UK Hospital Outbreak: One case becomes many

First Hospital Outbreak of *C. auris* (UK, 2015-16)



Adapted from Schelenz et al. (2016)

Clinical Manifestation	Total number (%)
Colonized only	28/50 (56%)
Candidemia	9/50 (18%)
Central line tip culture (+)	7/50 (14%)
Sternal wound SSI	3/50 (6.3%)
Invasive candidiasis of unknown primary infection site	2/50 (4%)
CAUTI	1/50 (2%)

One case is a big deal!

Epidemic

- Sudden increase in cases above normal in the population of a given area

Outbreak

- Same as epidemic but used for more limited geographic area

1 case: report, investigate
≥2 cases: outbreak!

References:

1. CDC. Division of Scientific Education and Professional Development Archives. Introduction to Epidemiology, 2012. Available from <https://www.cdc.gov/csels/dsepd/ss1978/lesson1/section11.html>.
2. APIC.(nd). Outbreaks, epidemics and pandemics – what you need to know. Available from https://apic.org/monthly_alerts/outbreaks-epidemics-and-pandemics-what-you-need-to-know/
3. CORHA. C. auris: Recommendations for Healthcare Outbreak Response, 2022. Available from <https://www.corha.org/resources/candida-auris-recommendations-for-healthcare-outbreak-response/>

Case Study: The start of the day...



DAY 1

- 90yr old female admitted from SNF
- OR to ICU
- Central line placed
- Broad spectrum antibiotics

DAY 2

- Fever
- C. haemulonii* in blood

Risk factors for *C. auris*



In the past year,
hospitalized **outside
of the US** in
endemic country

In the past year,
hospitalized in an
area **in the US**
seeing transmission

Multiple or prolonged
healthcare stays

Recent care in
post-acute care
(PAC) setting

Recent broad-
spectrum
antimicrobials

Patients infected or
colonized with CPOs

Presence of invasive
medical devices
(e.g., trache, central
line)

Certain chronic
conditions or
immunosuppressed

References:

1. Hu, S. (2021) Retrospective Analysis of Clinical Characteristics of *C. auris* Infection Worldwide 2009-2020. Microbiol., Vol 12.
2. CDC (2020). *Candida auris*: Information for IPs.. Available from <https://www.cdc.gov/fungal/candida-auris/fact-sheets/cdc-message-infection-experts.html>

4 Situations to Seek Species-Level Identification?

When to speciate for <i>C. auris</i>	
1	Yeast identified from sterile body site . ¹
2	Candida isolated from non-sterile body site when: ¹ • Clinically indicated • Patient is high-risk for <i>C. auris</i> (see previous slide) • Surveillance cultures as part of outbreak management
3	Identification of a fungal isolate known to represent potential misidentification of <i>C. auris</i> . Ex: <i>C. haemulonii</i> ²
4	An increase in infections due to <i>Candida</i> sp. on a unit or an increase in <i>Candida</i> from urine specimens. ²

References

1. CDC (2022). Surveillance for *Candida auris*. Available from <https://www.cdc.gov/fungal/candida-auris/c-auris-surveillance.html>
2. CDC (2022). Identification of *Candida auris*. Available from https://www.cdc.gov/fungal/candida-auris/identification.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Ffungal%2Fcandida-auris%2Frecommendations.html

Algorithm: When to seek species-level identification

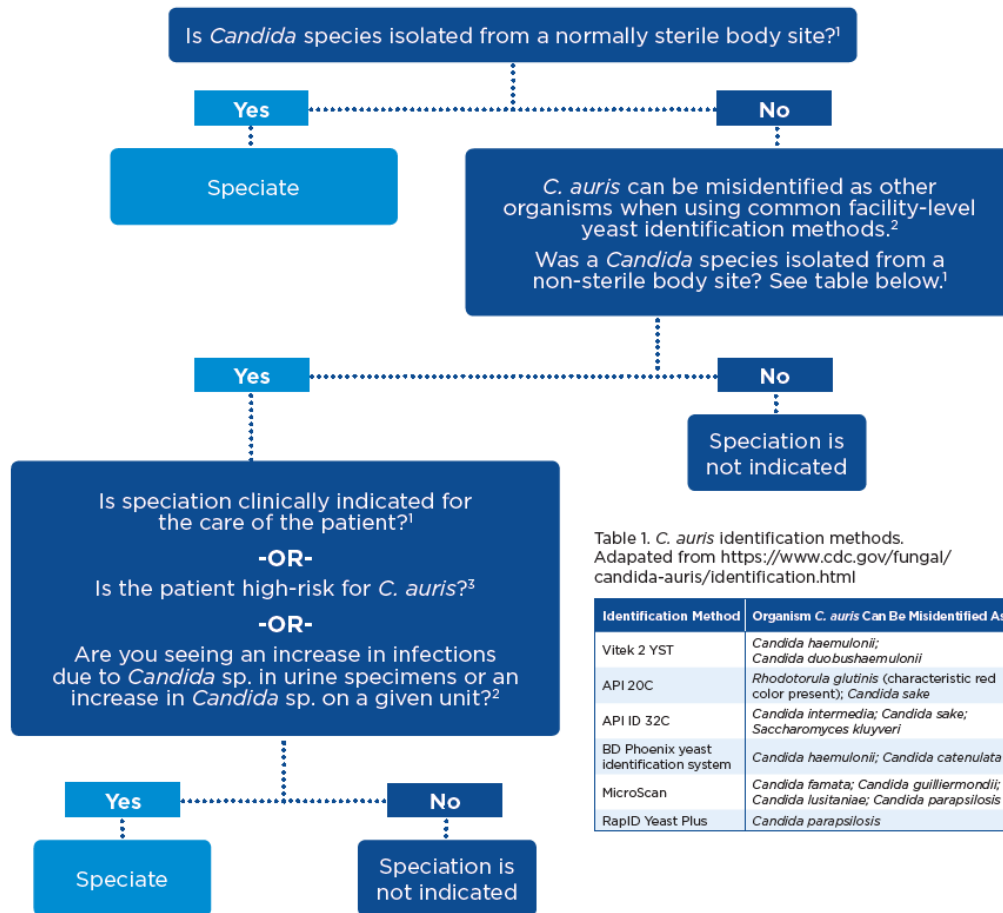


Table 1. *C. auris* identification methods.
Adapted from <https://www.cdc.gov/fungal/candida-auris/identification.html>

Identification Method	Organism <i>C. auris</i> Can Be Misidentified As
Vitek 2 YST	<i>Candida haemulonii</i> ; <i>Candida duobushaemulonii</i>
API 20C	<i>Rhodotorula glutinis</i> (characteristic red color present); <i>Candida sake</i>
API ID 32C	<i>Candida intermedia</i> ; <i>Candida sake</i> ; <i>Saccharomyces kluyveri</i>
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RapID Yeast Plus	<i>Candida parapsilosis</i>

A decision to be made



DAY 1

- 90yr old female admitted from SNF
- OR to ICU
- Central line placed
- Broad spectrum antibiotics

DAY 2

- Fever
- C. haemulonii* in blood

The results are in...



The results are in...





**You have a case.
Five things to do... NOW!**

Robust IP&C Response!

Infection control is for everyone – not just IPs!

1. Isolation

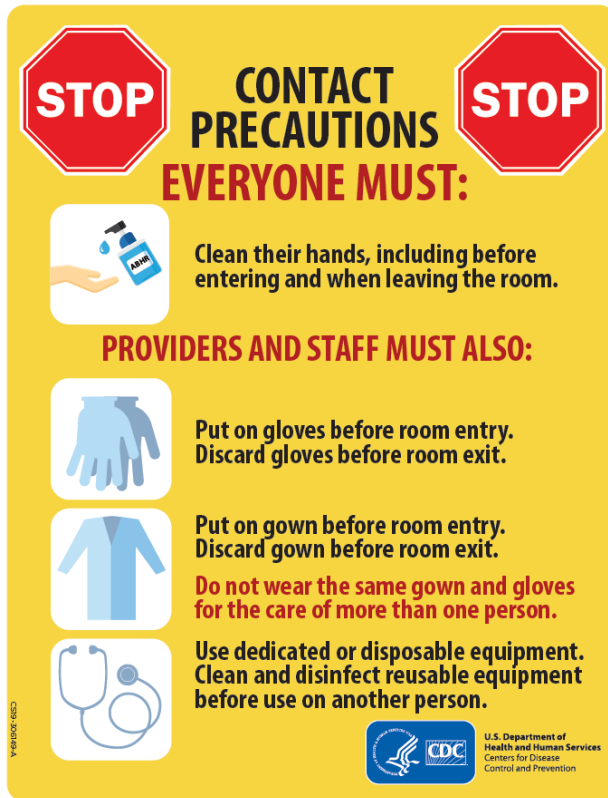
2. Notification

3. Adherence to
IC practices

4. Contact
screening

5.
Communication

1.Isolate – Contact Precautions



The infographic is on a yellow background. At the top, two red octagonal 'STOP' signs flank the title 'CONTACT PRECAUTIONS' in bold black text. Below the title, 'EVERYONE MUST:' is written in bold red text. The first instruction is 'Clean their hands, including before entering and when leaving the room.' accompanied by an icon of hands being washed with soap. Below this, 'PROVIDERS AND STAFF MUST ALSO:' is written in bold red text. There are four subsequent instructions, each with an icon: 1. 'Put on gloves before room entry. Discard gloves before room exit.' with a blue glove icon. 2. 'Put on gown before room entry. Discard gown before room exit.' with a blue gown icon. 3. 'Do not wear the same gown and gloves for the care of more than one person.' in red text. 4. 'Use dedicated or disposable equipment. Clean and disinfect reusable equipment before use on another person.' with a stethoscope icon. At the bottom right are the CDC logo and the text 'U.S. Department of Health and Human Services, Centers for Disease Control and Prevention'. On the left side, vertically, is the text 'CDC 2019-2020'.

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

CDC 2019-2020

- ▶ Private room or cohort with other *C. auris* pt's.
- ▶ Dedicate equipment to the room.
- ▶ Hand sanitizer, PPE, and disinfectant wipes should be readily available at the point-of-use.
- ▶ Ensure PPE is correctly donned/doffed.
- ▶ Consider cohorting staff.

2. Notification

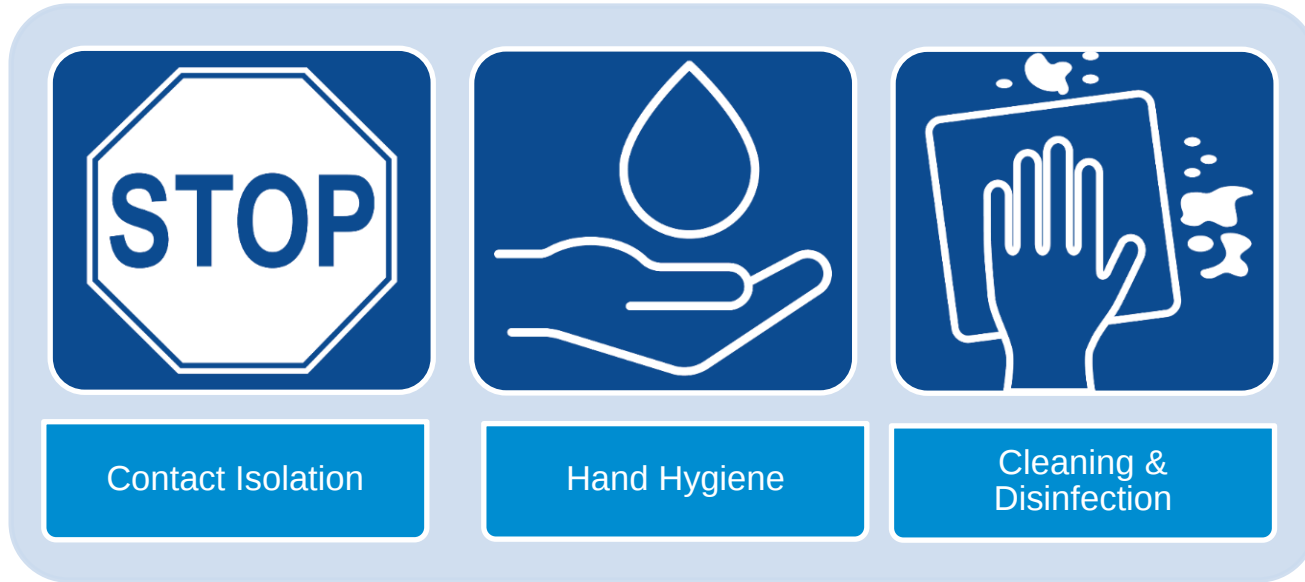
Report to Public Health Authorities
Notify Facility Leadership and & Risk Mgt

C. auris, clinical cases

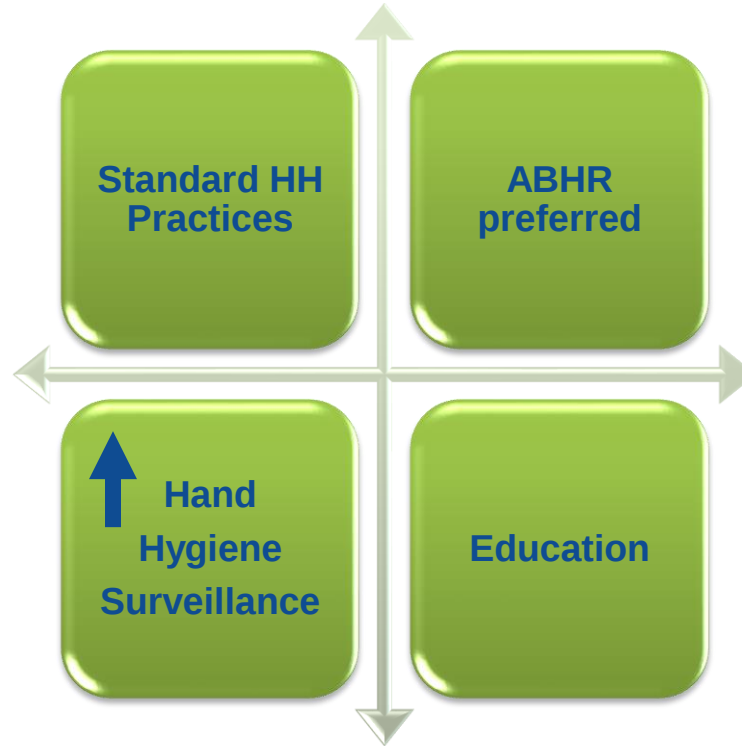
C. auris, colonization or
screening cases



3. Adherence to Infection Control Practices



3. Adherence to Infection Control Practices



4. Contact Screening



Pts who were
close contacts of
a case



Point prevalence
survey if ongoing
transmission



Composite swab of groin and axilla

5. Communication

Poor communication is at the root of every HAI or risk event.



Inter-facility Transfer Form:

Inter-facility Infection Control Transfer Form

This form must be filled out for transfer to accepting facility with information communicated prior to or with transfer.
Please attach copies of latest culture reports with susceptibilities if available.

Sending Healthcare Facility:			
Patient/Resident Last Name	First Name	Date of Birth	Medical Record Number
Name/Address of Sending Facility		Sending Unit	Sending Facility Phone
Sending Facility Contacts		Contact Name	Phone
Transferring RN/Unit			
Transferring physician			
Case Manager/Admin/SW			
Infection Preventionist			
Does the person* currently have an infection, colonization OR a history of positive culture of a multidrug-resistant organism (MDRO) or other potentially transmissible infectious organism?		Colonization or history (Check if YES)	Active infection on Treatment (Check if YES)
Methicillin-resistant <i>Staphylococcus aureus</i> (MRSA)		☐ Yes	☐ Yes
Vancomycin-resistant <i>Enterococcus</i> (VRE)		☐ Yes	☐ Yes
<i>Clostridioides difficile</i>		☐ Yes	☐ Yes
<i>Acinetobacter</i> , multidrug-resistant		☐ Yes	☐ Yes
Enterobacteriaceae (e.g., <i>E. coli</i> , <i>Klebsiella</i> , <i>Proteus</i>) producing Extended Spectrum Beta-Lactamase (ESBL)		☐ Yes	☐ Yes
Carbapenem-resistant Enterobacteriaceae (CRE)		☐ Yes	☐ Yes
<i>Pseudomonas aeruginosa</i> , multidrug-resistant		☐ Yes	☐ Yes
<i>Candida auris</i>		☐ Yes	☐ Yes
Other, specify (e.g., lice, scabies, norovirus, influenza):		☐ Yes	☐ Yes

Does the person* currently have any of the following? (Check here ☐ if none apply)

- ☐ Cough or requires suctioning
- ☐ Diarrhea
- ☐ Vomiting
- ☐ Incontinent of urine or stool
- ☐ Open wounds or wounds requiring dressing change
- ☐ Drainage (source):
- ☐ Central line/PICC (Approx. date inserted)
- ☐ Hemodialysis catheter
- ☐ Urinary catheter (Approx. date inserted)
- ☐ Suprapubic catheter
- ☐ Percutaneous gastrostomy tube
- ☐ Tracheostomy

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

Facilitate adherence to infection control measures

Education & competency



```
graph TD; A[Education & competency] --> B[Monitor compliance]; B --> C[Supply availability]; C --> D[Flag the medical record]; D --> E[Supervised cleaning];
```

Monitor compliance

Supply availability

Flag the medical record

Supervised cleaning

UK Hospital Outbreak: Infection Control Measures

First Hospital Outbreak of *C. auris* (UK, 2015-16)

Isolation
Precautions

PPE

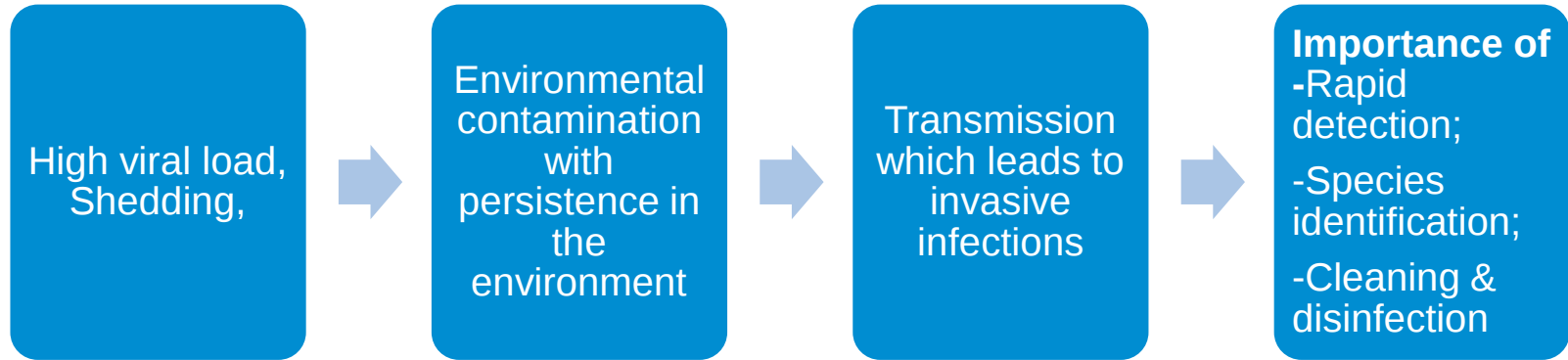
Surveillance &
screening

CHG
impregnated
discs for central
lines

Enhanced
cleaning &
disinfection
(bleach)

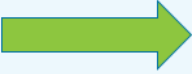
Reference: Schelenz et al. (2016). First Hospital Outbreak of the Globally Emerging *Candida auris* in a European Hospital. *Antimicrobial Resistance and Infection Control*, 5:35.

Lessons Learned from Outbreaks



Considerations for Cleaning & Disinfection

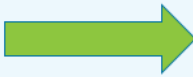
Option 1 of 2 Disinfectant for *C. auris*

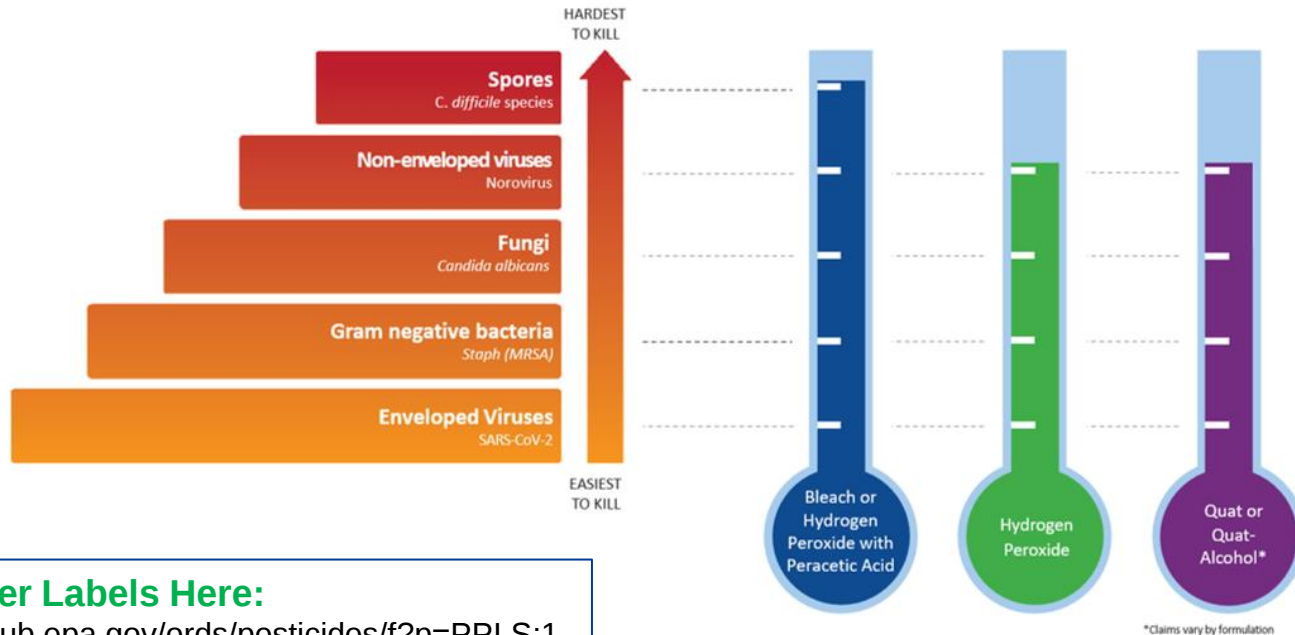
Option 1  Use product that has kill claims for *C. auris* (EPA List P)

List P Sampling

EPA Registration #	Active Ingredient	Product Brand Name	Company	Contact Time (minutes)
56392-7	Sodium Hypochlorite	Dispatch Hospital Cleaner Disinfectant with Bleach	Clorox Professional Products Company	3
67619-12	Sodium Hypochlorite	Clorox Healthcare Bleach Germicidal Wipes	Clorox Professional Products Company	3
67619-24	Hydrogen Peroxide	Clorox Healthcare Hydrogen Peroxide Cleaner Disinfectant	Clorox Professional Products Company	2
67619-25	Hydrogen Peroxide	Clorox Healthcare Hydrogen Peroxide Cleaner Disinfectant Wipes	Clorox Professional Products Company	2
67619-40	Sodium Hypochlorite	Clorox Spore Defense Cleaner Disinfectant	Clorox Professional Products Company	3

Option 2 of 2 Disinfectant for *C. auris*

Option 2  Use product that has kill claims for *C. difficile* (EPA List K)



Find Master Labels Here:

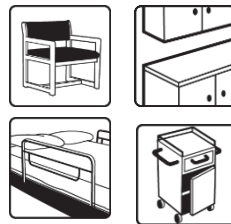
<https://ordspub.epa.gov/ords/pesticides/f?p=PPLS:1>

What to Clean

Outbreak studies have isolated *C. auris* from these surfaces:

High-touch surfaces:

- Around the patient → overbed table, bed rails, remote/call button
- Remote from patient → chair, countertops, windowsills, floor



Mobile medical equipment

- Transport equipment, equipment monitors, keypads, infusion pumps, glucometers, temperature probes, blood pressure cuffs, ultrasound machines, nursing carts, and crash carts.



Key:

1. Mobile equipment
2. Increase frequency of cleaning
3. Declutter

References:

Vallabhaneni S. Investigation of the First Seven Reported Cases of *Candida auris* in the US. MMWR. 2016 / 65(44);1234–1237

Schelenz S. First hospital outbreak of the globally emerging *Candida auris* in a European hospital. Antimicrob Resist Infect Control (2016) 5:35

Tsay S. Notes from the Field: Ongoing Transmission of *Candida auris* in Health Care Facilities — United States, June 2016–May 2017. MMWR. 2017 / 66(19);514–515

CDC. Infection Prevention and Control for *Candida auris*. <https://www.cdc.gov/fungal/candida-auris/c-auris-infection-control.html>

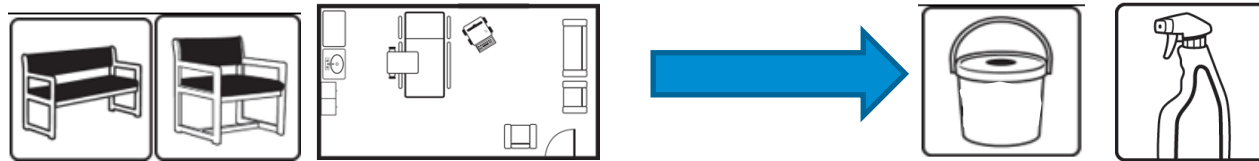
Sansom S, et al. Abstract 50. Presented at: Society for Healthcare Epidemiology of America Spring Meeting; April 12-14, 2022

Ideal Product Format by Surface

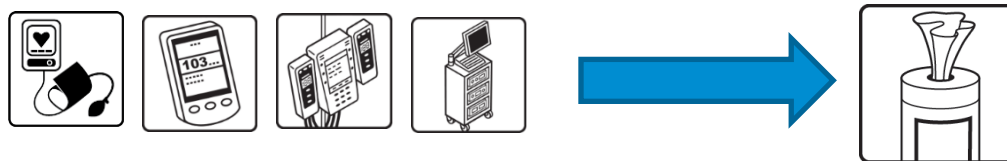
High-touch surfaces



Environmental surfaces



Mobile equipment



Adjunct technologies for use against *C. auris*



Ultraviolet-C (UVC)

- Research is ongoing
- Early studies show low susceptibility*
- **No EPA claims permitted**
- Exposure and contact times will be device- and protocol-dependent

Cost: \$\$\$\$\$

* For efficacy studies, see Infection Prevention and Control for *Candida auris* <https://www.cdc.gov/fungal/candida-auris/c-auris-infection-control.html>



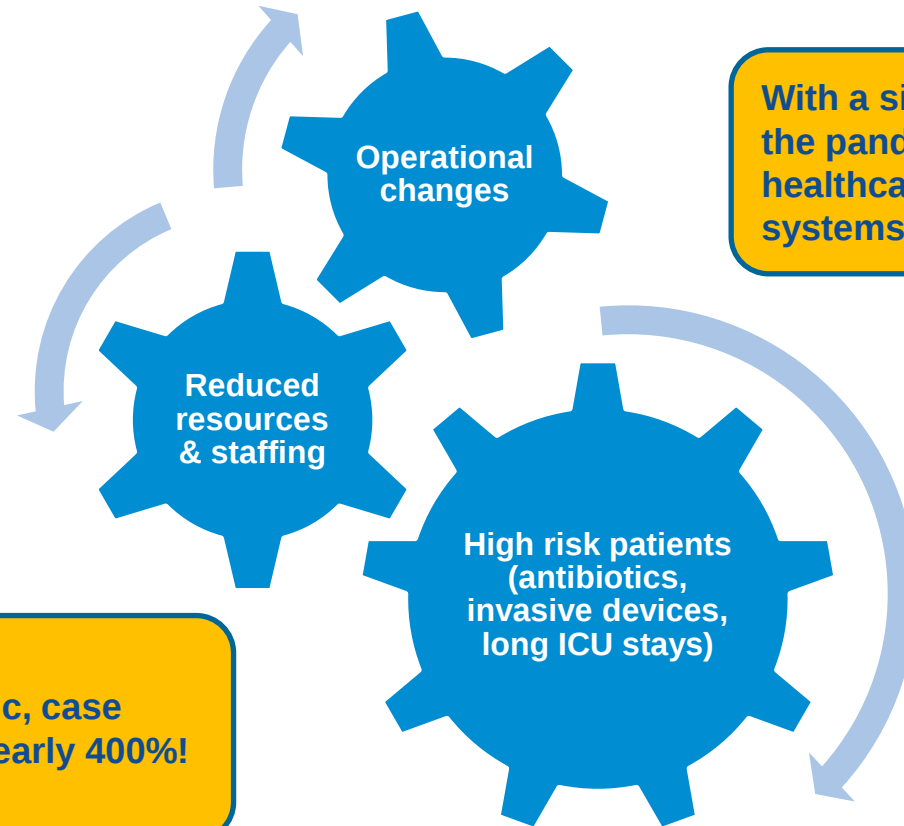
Electrostatic sprayer

- Product-specific
 - Must be approved for use through sprayer
 - Must have *C. auris* or *C. difficile* spore claim

Cost: \$\$

Impact of COVID-19 on *C. auris*

COVID-19 impact on *C. auris*

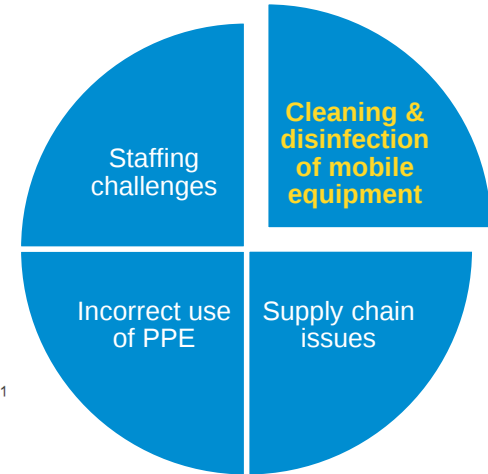
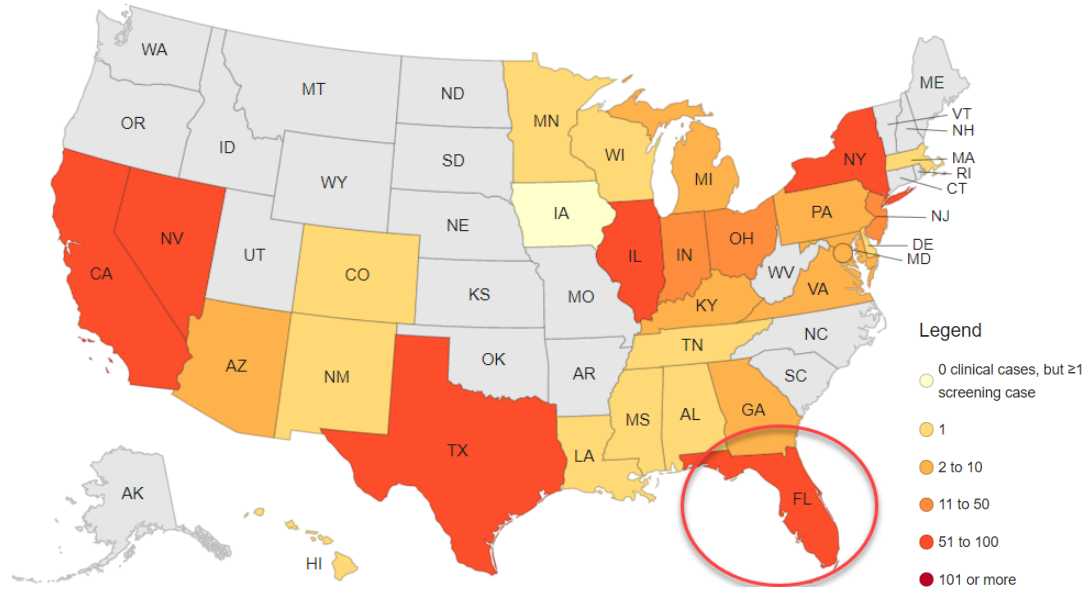


With a single pathogen focus, the pandemic strained our healthcare and public health systems.

During the pandemic, case counts increased nearly 400%!

C. auris outbreaks in the face of COVID

Reported clinical cases of *C. auris*, Feb1 2020-Jan 31, 2021



References

1. CDC. (2021). Tracking *C. auris*. [online]. [cited 2021 May15]. Available from <https://www.cdc.gov/fungal/candida-auris/tracking-c-auris.html>
2. CDC. (2021). MMWR Vol. 70: *Candida auris* Outbreak in a COVID-19 Specialty Care Unit – Florida, July-August 2020. [online]. [cited 2021 Mar 15]. Available from <https://www.cdc.gov/mmwr/volumes/70/wr/mm7002e3.htm>

C. auris outbreaks in the face of COVID

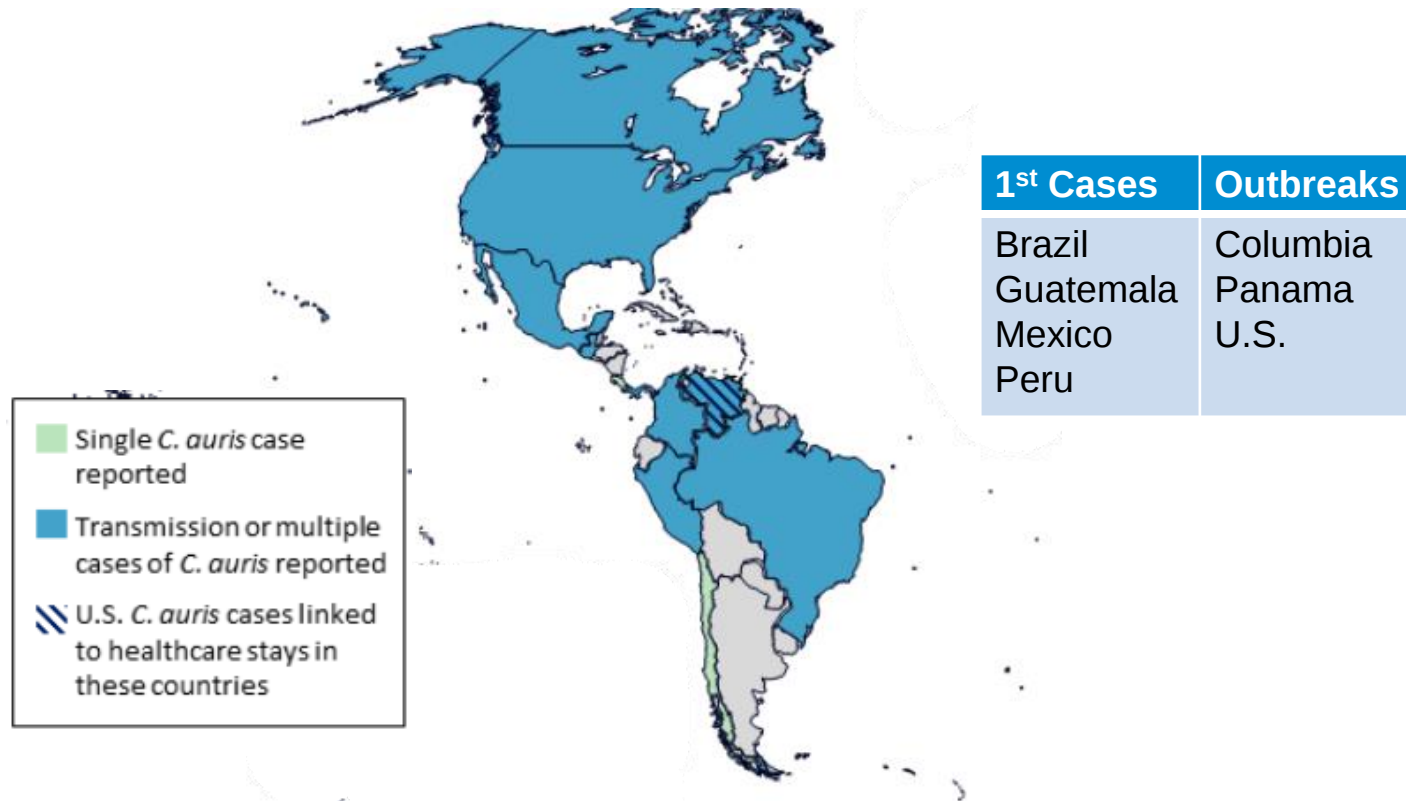


Image retrieved from <https://www.cdc.gov/fungal/candida-auris/tracking-c-auris.html>



Summary

Let's review

Here's what we have learned today:

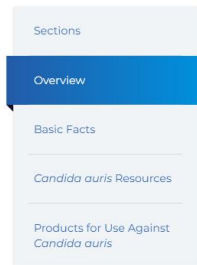
1. The history of *C. auris* and how quickly a single case of an emerging threat can spread (2009 to present)
2. Why this pathogen is so problematic (e.g., high mortality rate, difficult to identify, MDR, easily transmitted in HC facilities, difficult to eradicate from a facility once it gets a foot hold)
3. Infection control measures to take and how to facilitate adherence if a case is identified in your facility
4. Special considerations around cleaning & disinfection for this unique pathogen including kill claims and what to clean
5. Impact of the COVID-19 pandemic on *C. auris*

Questions



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Overview



<https://www.cloroxpro.com/resource-center/candida-auris/>