Candida auris Response: Experience from BJC

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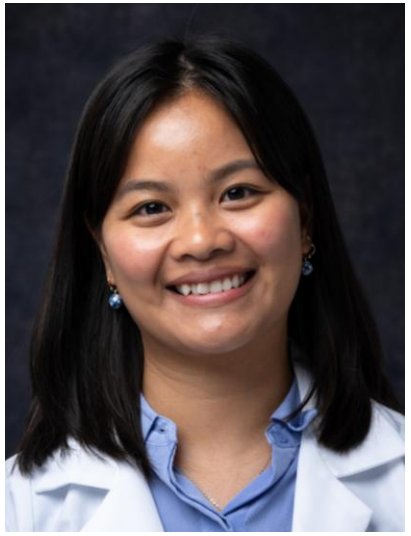

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Disclosures

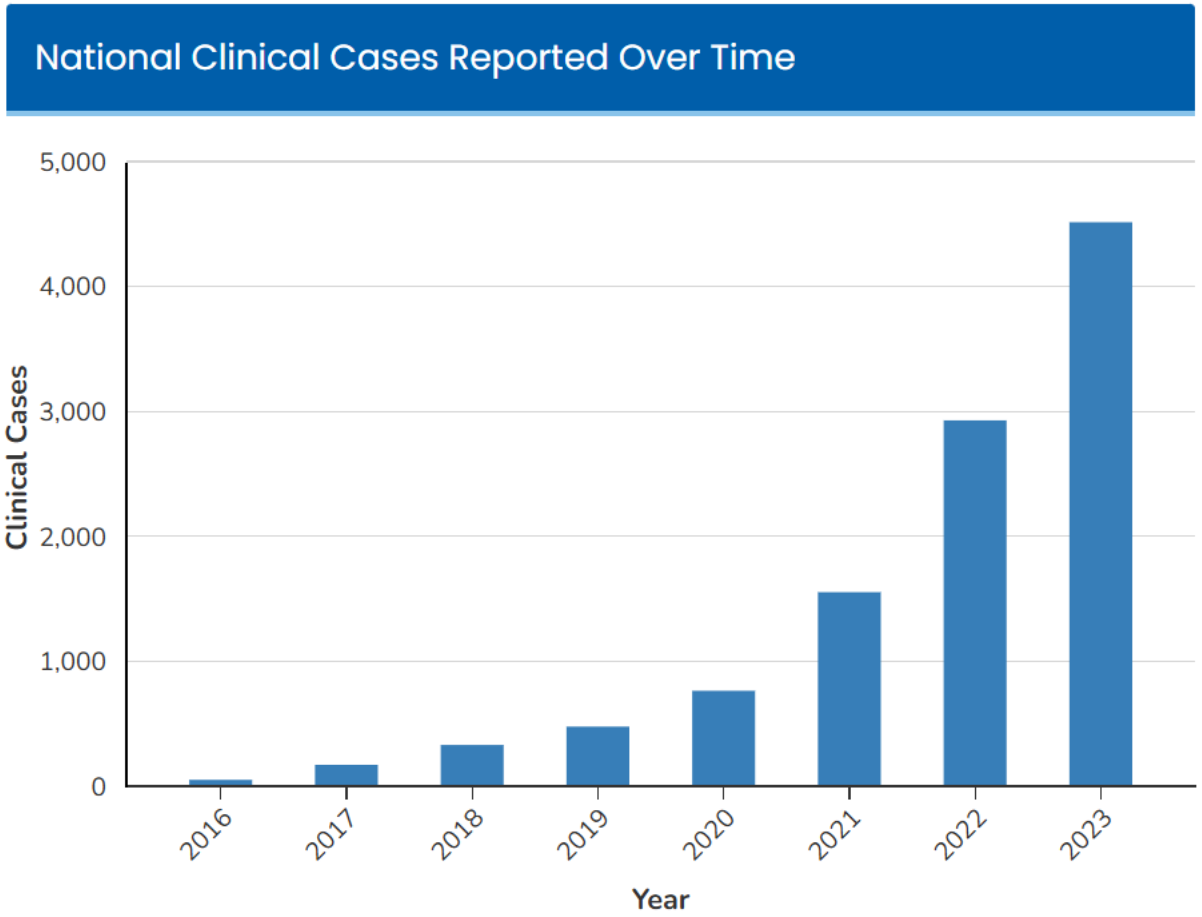
- No relevant disclosures

Objectives

- Brief review of the clinical significance and Infection Prevention implications of *Candida auris* in the healthcare setting
- Overview of BJC HealthCare system approach to *C. auris* testing and management strategies
- Review of *C. auris* lab diagnostics
- Share real-world experience and lessons learned from management of *C. auris* in an inpatient and home care setting

Candida auris

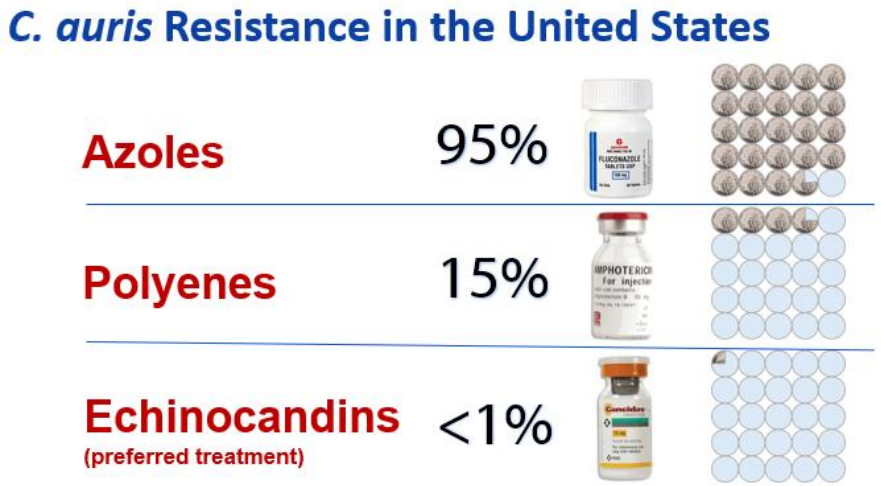
- Yeast that can cause colonization (asymptomatic carriage) or clinical infections (e.g., BSIs, wound infections)
- Patients with indwelling devices and those in LTACs are at higher risk of *C. auris* colonization and infection
- Increasing *C. auris* cases nationally and within BJC



https://www.cdc.gov/candida-auris/hcp/clinical-overview/index.html
https://www.cdc.gov/candida-auris/tracking-c-auris/index.html

Concerning Features of *Candida auris*

- Importantly, *C. auris* is often resistant to commonly used antifungals and requires specific environmental cleaning and disinfection practices
- ~34% crude mortality rate in adults (47% for adult BSIs)
- In addition to appropriate environmental cleaning, HH & CP are critical to prevent transmission to other patients



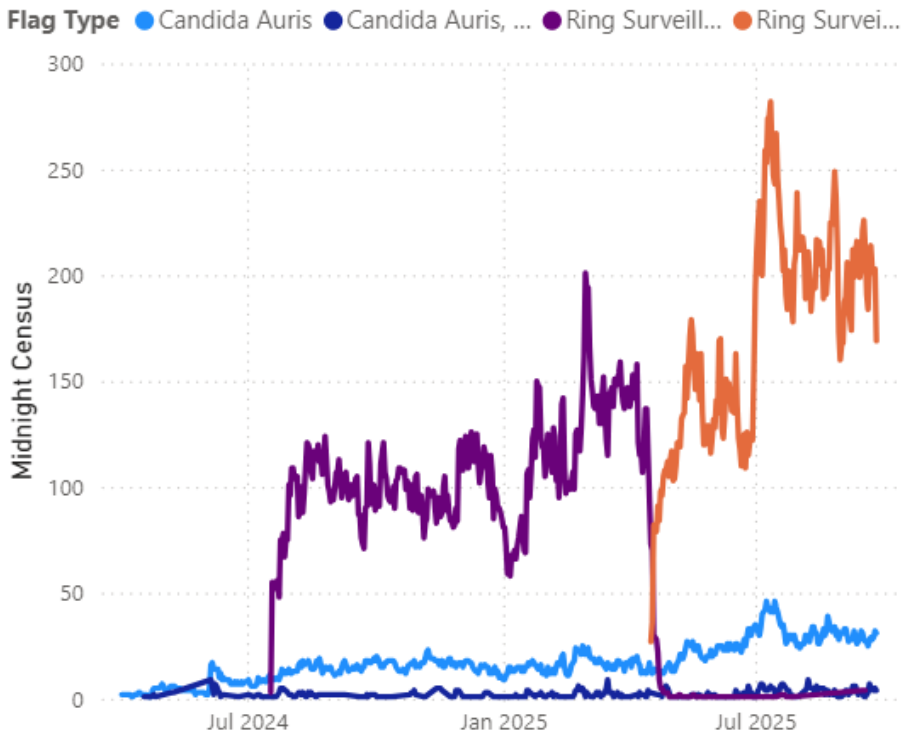
EPA United States Environmental Protection Agency

EPA's Registered Antimicrobial Products Effective Against Candida auris [List P]

https://wwwnc.cdc.gov/eid/article/29/7/23-0540_article
https://www.cdc.gov/candida-auris/hcp/clinical-overview/index.html
https://www.cdc.gov/coca/media/pdfs/2025/COCA-Call-Slides_09.18.25.pptx
https://www.epa.gov/pesticide-registration/epas-registered-antimicrobial-products-effective-against-candida-auris-list

Candida auris – BJC Experience

On a Given Day



Midnight Candida Auris

32

Ring Surveillance C. Auris

203

Past 12 Months

Cumulative # of C. Auris Tests

16,292

Cumulative # of C. Auris Positive Tests

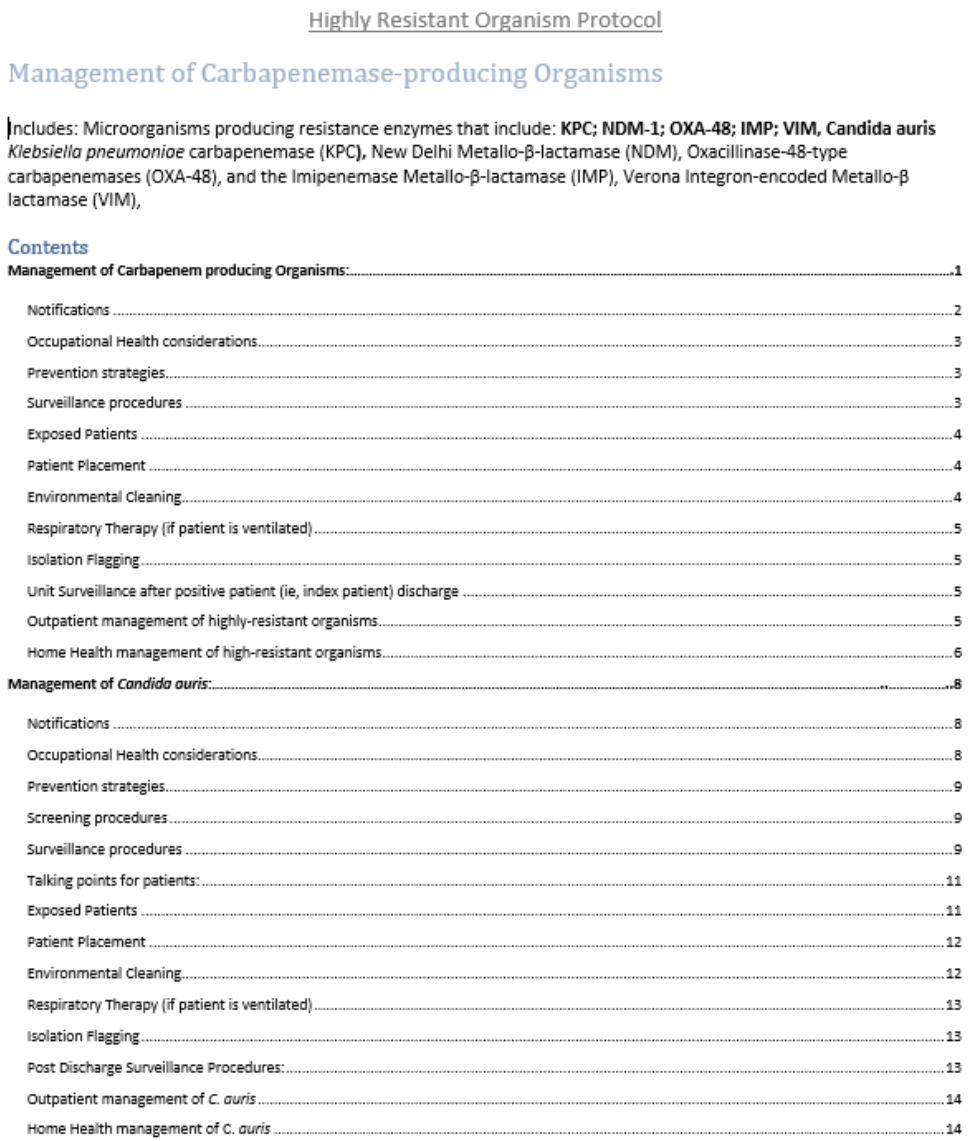
318

Total # of C. Auris Admissions

924

Call to Action

- Created HRO (highly resistant organism) workgroup
- Consists of IPs from multiple HSOs (community, academic, pediatrics) and ID medical director
- Continued build from previous CP-CRE/CRO protocol
- Workgroup meets monthly to review for updates



Highly Resistant Organism Protocol

Management of Carbapenemase-producing Organisms

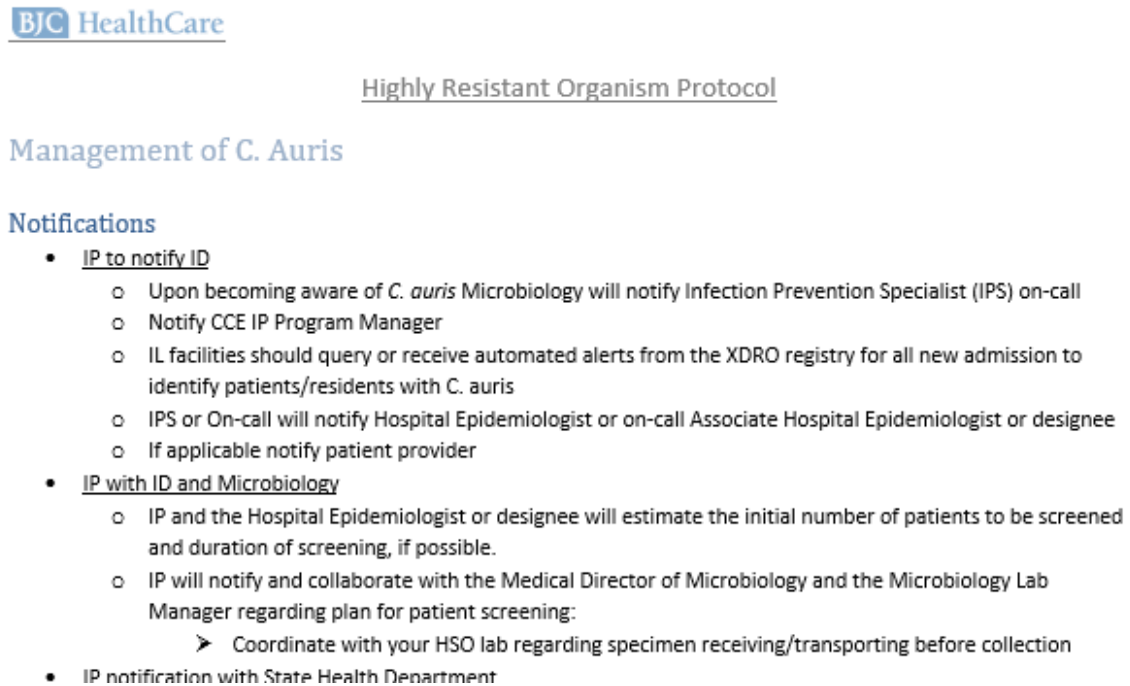
Includes: Microorganisms producing resistance enzymes that include: **KPC; NDM-1; OXA-48; IMP; VIM, Candida auris** *Klebsiella pneumoniae* carbapenemase (KPC), New Delhi Metallo-β-lactamase (NDM), Oxacillinase-48-type carbapenemases (OXA-48), and the Imipenemase Metallo-β-lactamase (IMP), Verona Integron-encoded Metallo-β lactamase (VIM),

Contents

Management of Carbapenem producing Organisms: 1
Notifications 2
Occupational Health considerations 3
Prevention strategies 3
Surveillance procedures 3
Exposed Patients 4
Patient Placement 4
Environmental Cleaning 4
Respiratory Therapy (if patient is ventilated) 5
Isolation Flagging 5
Unit Surveillance after positive patient (ie, index patient) discharge 5
Outpatient management of highly-resistant organisms 5
Home Health management of high-resistant organisms 6
Management of *Candida auris*: 8
Notifications 8
Occupational Health considerations 8
Prevention strategies 9
Screening procedures 9
Surveillance procedures 9
Talking points for patients: 11
Exposed Patients 11
Patient Placement 12
Environmental Cleaning 12
Respiratory Therapy (if patient is ventilated) 13
Isolation Flagging 13
Post Discharge Surveillance Procedures: 13
Outpatient management of *C. auris* 14
Home Health management of *C. auris* 14

HRO Protocol

- Separated into sections:
  - Notifications
  - OH considerations
  - Prevention strategies
  - Screening procedures
  - Surveillance procedures
  - Talking points for patients
  - Exposed patients
  - Patient placement
  - Environmental cleaning
  - Respiratory Therapy
  - Isolation flagging
  - Post discharge surveillance procedures
  - Outpatient management
  - Home health management



BJC HealthCare

Highly Resistant Organism Protocol

Management of C. Auris

Notifications

- IP to notify ID
  - Upon becoming aware of *C. auris* Microbiology will notify Infection Prevention Specialist (IPS) on-call
  - Notify CCE IP Program Manager
  - IL facilities should query or receive automated alerts from the XDRO registry for all new admission to identify patients/residents with C. auris
  - IPS or On-call will notify Hospital Epidemiologist or on-call Associate Hospital Epidemiologist or designee
  - If applicable notify patient provider
- IP with ID and Microbiology
  - IP and the Hospital Epidemiologist or designee will estimate the initial number of patients to be screened and duration of screening, if possible.
  - IP will notify and collaborate with the Medical Director of Microbiology and the Microbiology Lab Manager regarding plan for patient screening:
    - Coordinate with your HSO lab regarding specimen receiving/transporting before collection
- IP notification with State Health Department

Patient Education

Candida auris

Information for Patients and Family Members

Candida auris (*C. auris*) is a type of fungus that can cause serious illness in hospitalized patients. Infections with the fungus can be difficult to treat. *C. auris* only recently appeared in the United States and public health officials are researching more about how it is spread. Here's what you need to know if you or a family member have a *C. auris* infection.

What are the symptoms of *C. auris* infection?

- There is not a common set of symptoms.
- Symptoms may be similar to symptoms of infections caused by bacteria, like fever or chills.
- A simple screening test can be done to see who is colonized with *C. auris*. We do this screening to help protect all patients.
- *C. auris* can live on the skin. People may carry it on their skin without infection, but it may cause infection in others.
- Symptoms of *C. auris* infection depend on the part of the body affected. *C. auris* can cause many different types of infection, such as bloodstream infection, wound infection, and ear infection.
- Because symptoms can vary greatly, a laboratory test is needed to determine whether a patient has a *C. auris* infection.

Who is most likely to get *C. auris* infection?

- Healthy people usually don't get *C. auris* infections.
- *C. auris* mainly affects patients who already have many medical problems.
- It often affects people who have had frequent hospital stays or live in nursing homes.

Why does a patient with *C. auris* infection need special precautions during care?

- *C. auris* can spread from one patient to another in health care settings, such as hospitals and nursing homes, even if *C. auris* is on the skin or other body sites and the patient does not have symptoms.
- Special precautions reduce the chance of spreading the fungus to other patients. These precautions may include:
  - Placing the patient in a different room.
  - Having health care personnel or other caregivers wear gowns and gloves during patient care.
  - Cleaning the room with products known to kill *C. auris*.
  - Having family members and health care personnel clean their hands thoroughly after visiting the patient. The patient may also be encouraged to wash their hands often.
  - Having family members wear gown and gloves while in the patient room.

How long does a patient with *C. auris* need to be under these special precautions?

Understanding Candida Auris (*C. auris*)

What is candida auris?

Candida auris (*C. auris*) is a type of yeast that can cause serious infections, especially for people with weak immune systems or other underlying health problems. It can spread from one patient to another in healthcare settings and can be resistant to antifungal medicines, making it difficult to treat.

What is candida auris colonization?

Patients can carry *C. auris* somewhere on their body without having an infection or symptoms. This is called colonization. Without signs or symptoms, *C. arius* can still spread to other patients and cause infection. If someone carries *C. auris* on their skin, we will take special precautions to prevent the spread to other patients.

Testing for candida auris

A simple screening test can be done to see who is colonized with *C. auris*. We do this screening to help protect all patients.

- The clinician will gently swab the skin of your armpit and groin area. The test is not painful.
- The test results will be made available within approximately one week.

Prevention of candida auris :

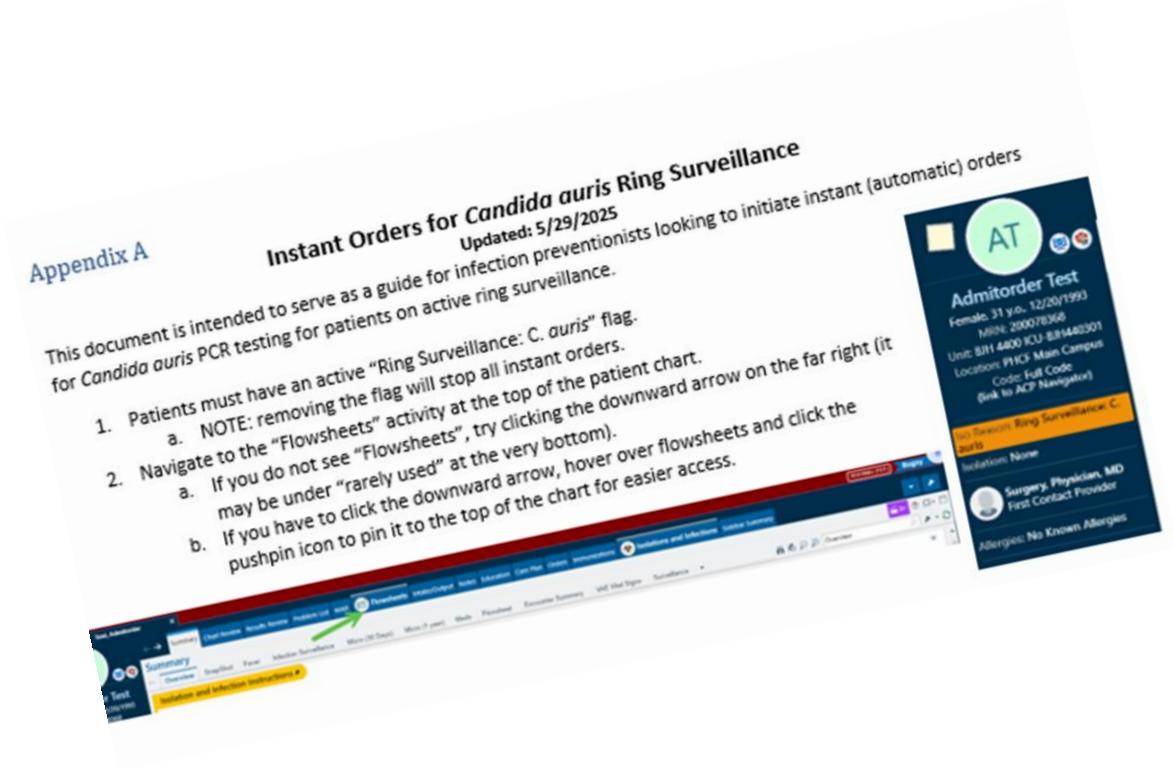
Our healthcare team will take the necessary precautions to prevent the spreading of *C. auris* to other patients in the hospital by following these protocols:

- Obtaining skin swabs to determine if patients have *C. auris* on their skin
- Using proper hand hygiene during all patient care
- Enhanced cleaning of patient rooms with specific disinfectant(s) that are effective against *C. auris*
- Wearing personal protective equipment (PPE) during patient care

We encourage you to speak with a member of your healthcare team if you have any questions.

EPIC

Instant Orders / Ring Surveillance / LTAC Screening / Travel Screening



Appendix A

Instant Orders for *Candida auris* Ring Surveillance

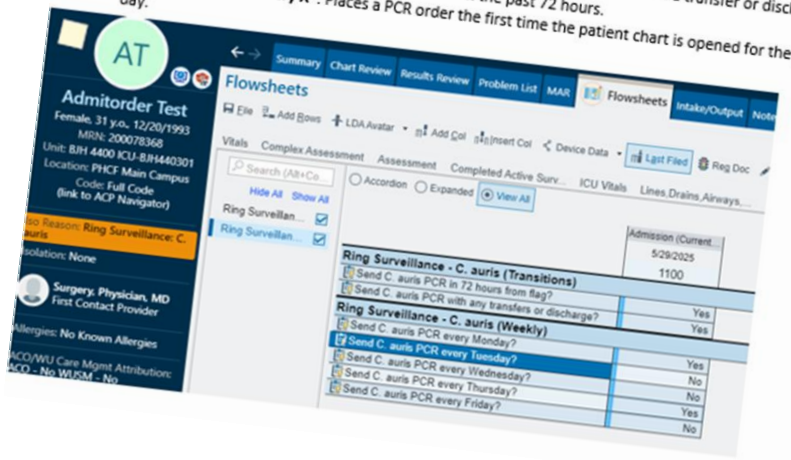
Updated: 5/29/2025

This document is intended to serve as a guide for infection preventionists looking to initiate instant (automatic) orders for *Candida auris* PCR testing for patients on active ring surveillance.

1. Patients must have an active "Ring Surveillance: C. *auris*" flag.
   a. NOTE: removing the flag will stop all instant orders.
2. Navigate to the "Flowsheets" activity at the top of the patient chart.
   a. If you do not see "Flowsheets", try clicking the downward arrow on the far right (it may be under "rarely used" at the very bottom).
   b. If you have to click the downward arrow, hover over flowsheets and click the pushpin icon to pin it to the top of the chart for easier access.

The flowsheet consists of seven scenarios for placing C. auris PCR orders automatically. These scenarios are divided into two groups: "Transitions" and "Weekly".

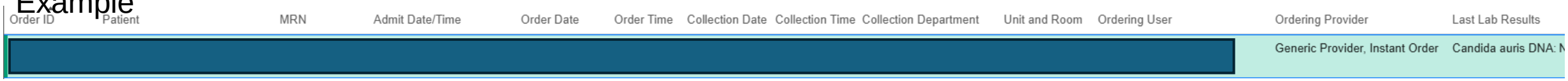
a. **"Send C. auris PCR in 72 hours from flag"**: Places a PCR order the first time the patient chart is opened after the isolation reason flag has been in place for 72 hours.
b. **"Send C. auris PCR with any transfers or discharge"**: Places a PCR order when a transfer or discharge order is placed, unless there was a previous test in the past 72 hours.
c. **"Send C. auris PCR every X"**: Places a PCR order the first time the patient chart is opened for the given day.



Bugsy IP Reports

- Candida auris-Ring Surveillance Infection Flag
- Candida auris Ring Surveillance Orders
- Candida auris, Exposure
- Candida auris, Infection flag
- Travel and Exposure Screening-Admitted Patient

Candida auris Ring Surveillance Orders – Example



WashU Medicine

Laboratory Testing for *Candida auris*

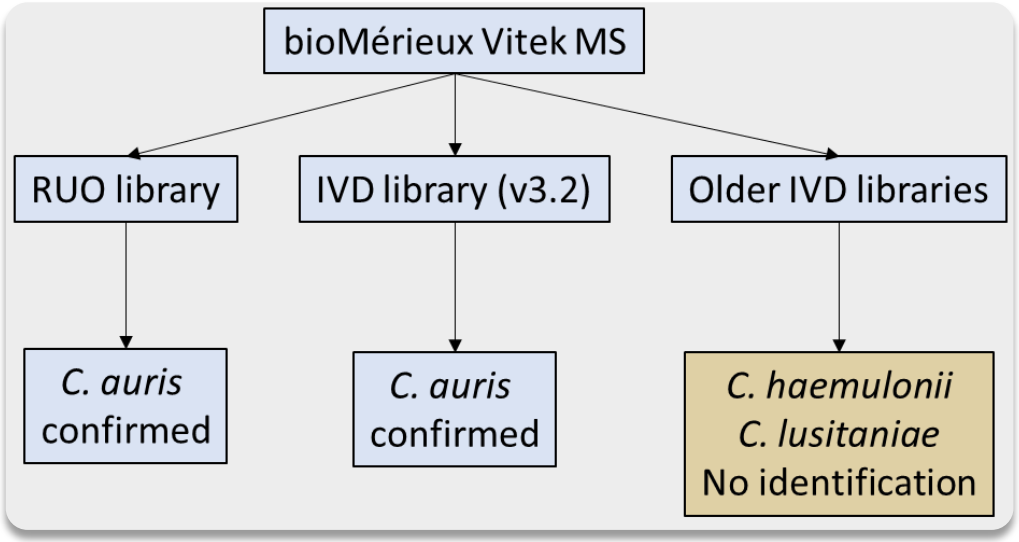
Tina Bui-Bullock, PhD

Department of Pathology and Immunology

Washington University in St. Louis

Initially challenging to identify *Candida auris*

- No established tools for identification
- Biochemical pattern unknown
- Mass spectrometry data not present in mass spectrometry (MS) databases



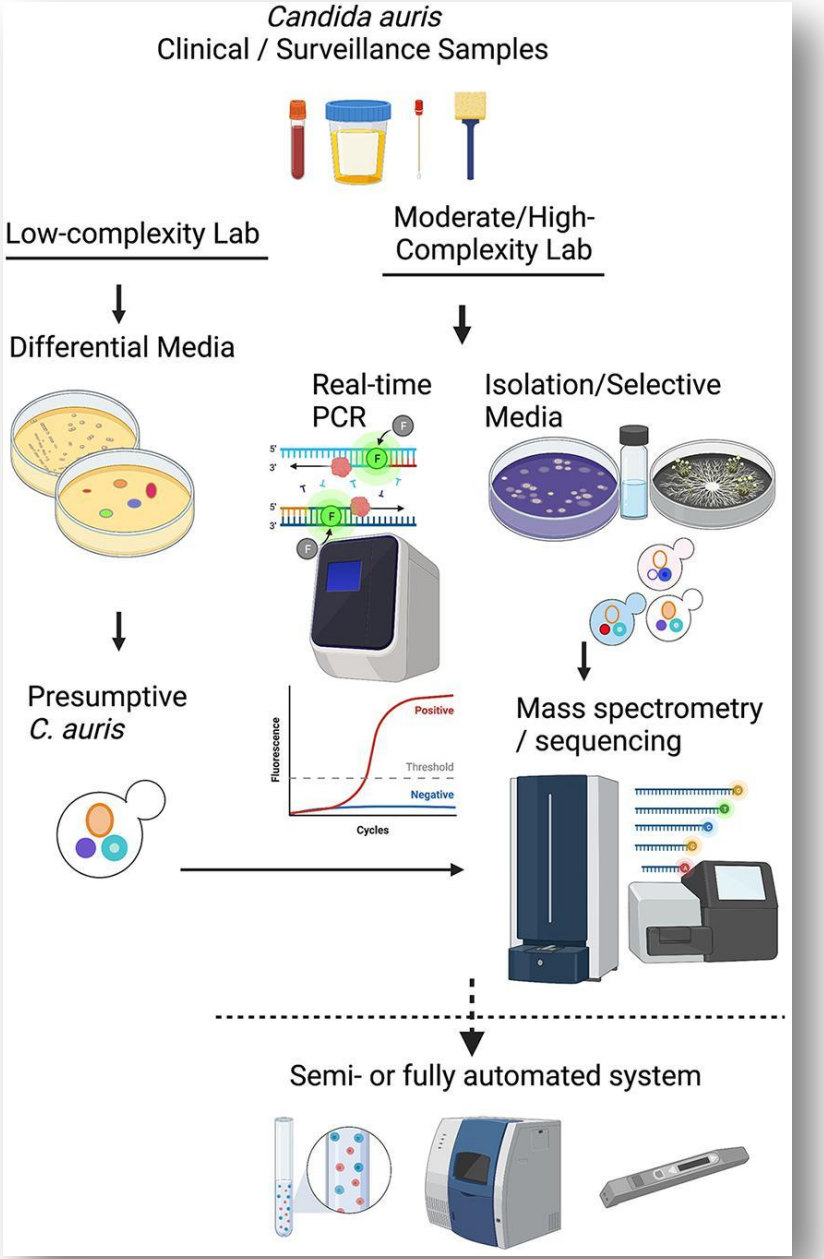
Identification Method	Organism *C. auris* can be misidentified as
Vitek 2 YST*	*Candida haemulonii* *Candida duobushaemulonii*
API 20C	*Rhodotorula glutinis* (characteristic red color not present) *Candida sake*
API ID 32C	*Candida intermedia* *Candida sake* *Saccharomyces kluyveri*
BD Phoenix yeast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

https://www.cdc.gov/candida-auris/hcp/laboratories/identification-of-c-auris.html

Current laboratory testing methods for *C. auris*

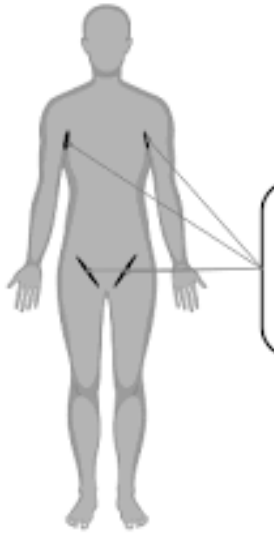
- Many new and revised diagnostic methods and database updates
- In addition to species-level identification from clinical samples; screening recommended by CDC on **axilla/groin** swabs
- Sensitivity varies by method:

PCR > Culture with broth enrichment > Culture



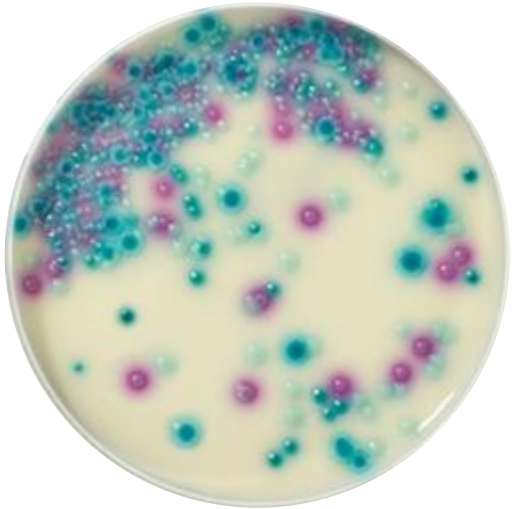
Dennis et al. *Front Microbiol*. 2021 Oct 7:12:757835

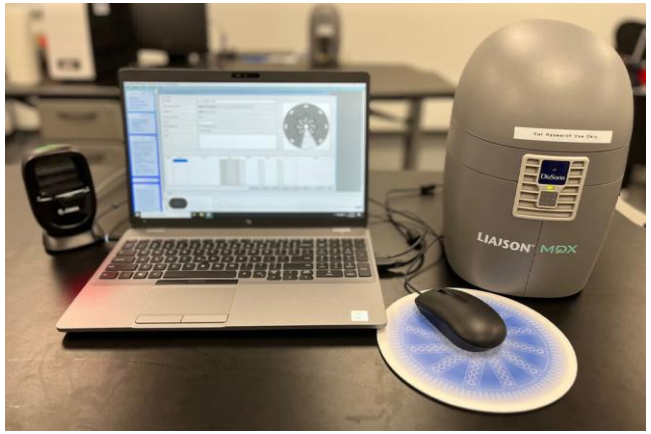
Screening algorithm for *C. auris* at BJH



Swab right and left axillae & groin with a single swab

Positives





Daily Testing

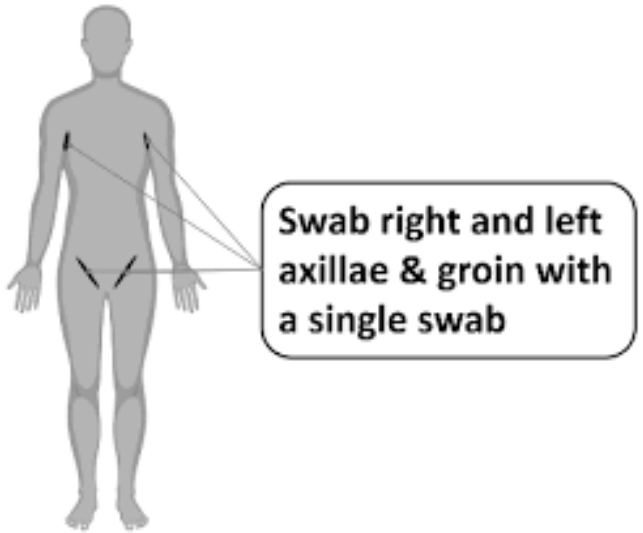
Mon-Fri:
~100 tests/day

Weekend:
~20 tests/day

Incubate for 5 days

Bruker BioTyper
MALDI-TOF MS for identification

Axilla/groin swab collection

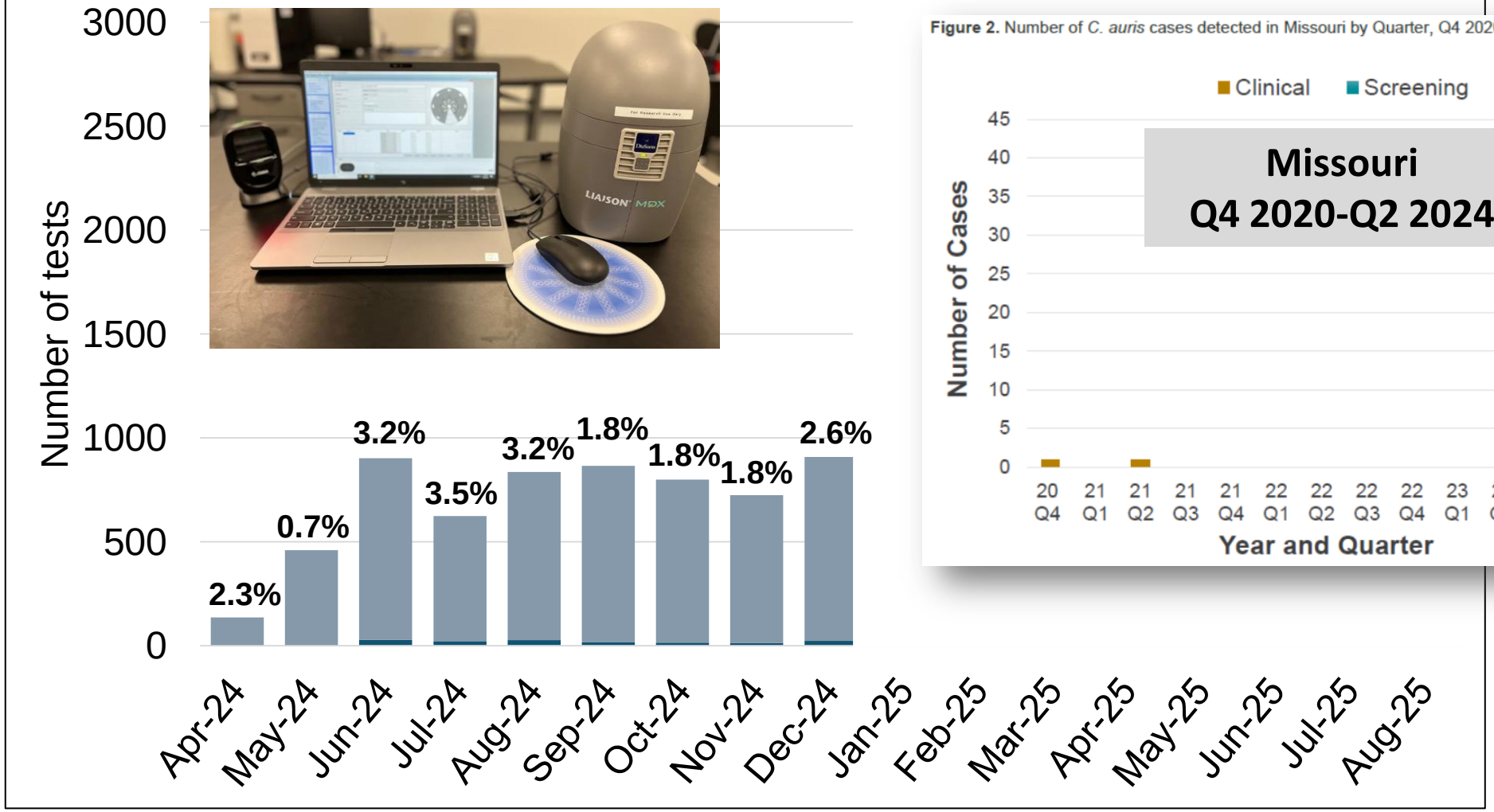


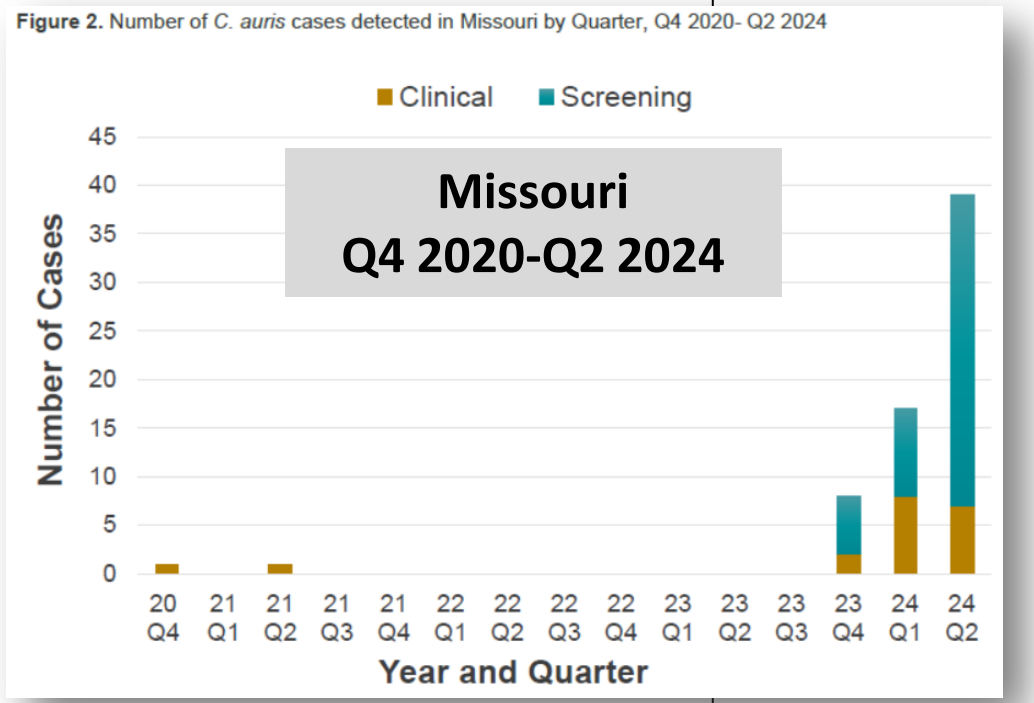
- Collection Procedure:
  1. Swab both the axilla and groin with the same swab
  2. If transport delayed, refrigerate specimen.

- **Minimum volume is ~0.5mL**
  - Gives the lab an opportunity to repeat in case of invalid testing
  - 1-2% invalids reported to date with potential PCR inhibitors

https://bjhlab.testcatalog.org/show/LAB2335

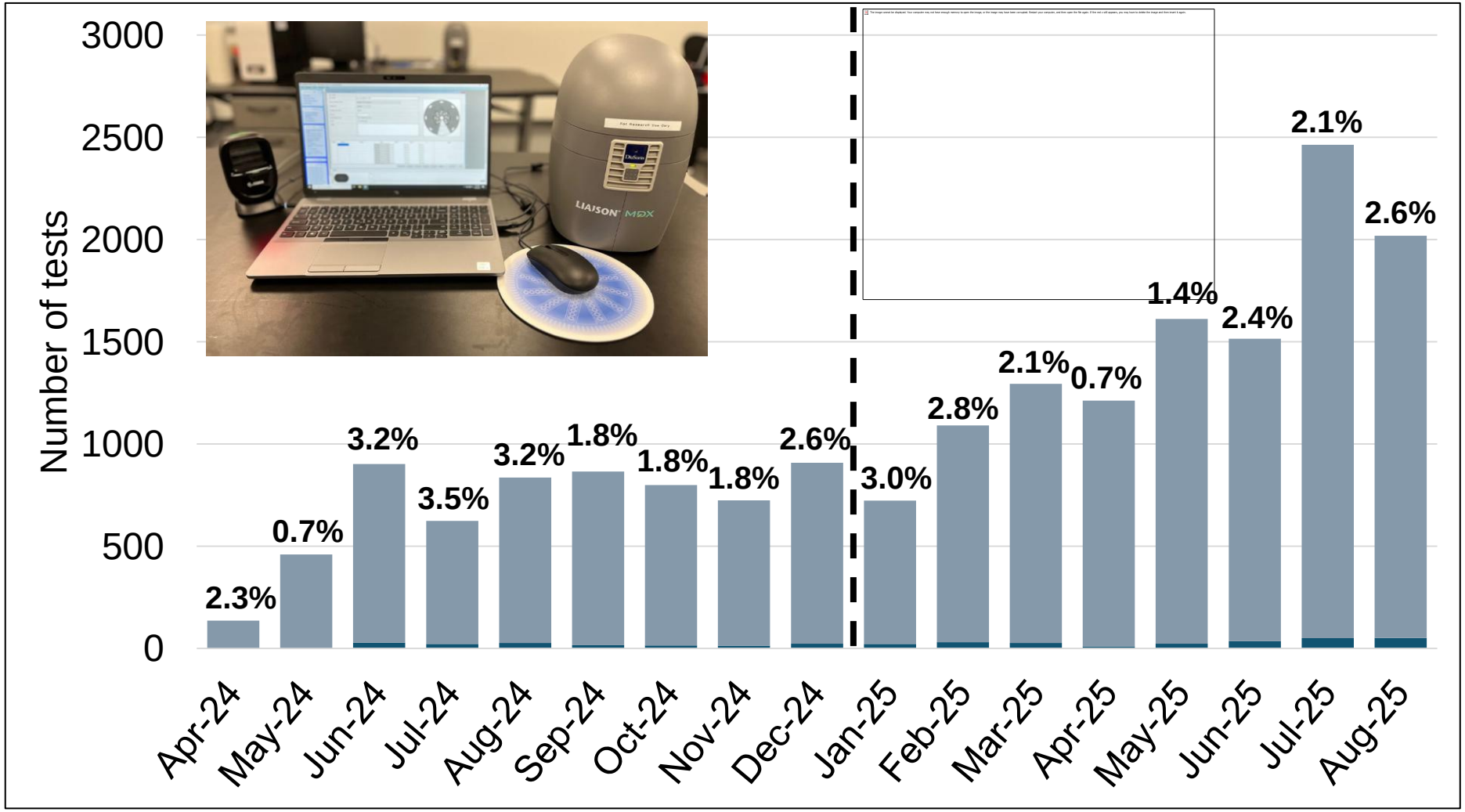
Positive screening rate at BJH





Does not exclude repeat positives from the same patient

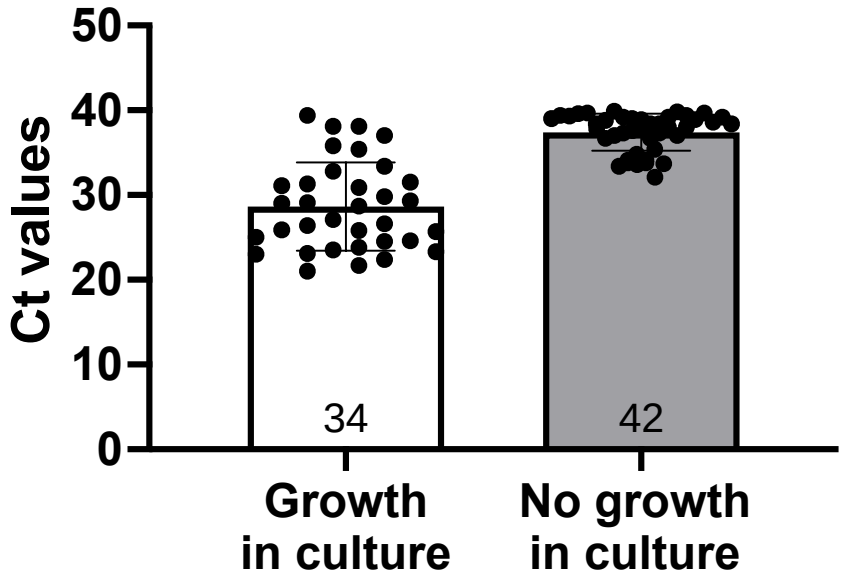
Positive screening rate at BJH



Does not exclude repeat positives from the same patient

Most specimens do not grow *C. auris* in culture

- When isolates do grow in culture:
  - Sendout to public health lab for genotyping no longer required
  - No susceptibility testing performed on isolates from *surveillance screening*



Data courtesy of Dr. Rebekah Dumm, PhD

Susceptibility testing patterns on clinical isolates

- **No official breakpoints**, but there are tentative breakpoints from the CDC based on those established for closely related *Candida* species and on expert opinion.
  - Correlation between breakpoints and clinical outcomes is not known at this time.

- Repeat susceptibility testing limited to once every 7 days from the same source/site

Trends from the literature

Yeast	% isolates with MICs ≥ resistant BP[a]					
	AMB	FLC	ITC	VRC	AND	5FC
Candida albicans	2	2.4	1.2	1.9	0.3	2.8
Candida auris[c]	34	100	37	78	9	20

Antifungal	***C. auris* Breakpoint**	**BJH %S**
Amphotericin B	R ≧2	81%
Micafungin	R ≧4	95%
Caspofungin	R ≧4	83%
Anidulafungin	R ≧2	90%
Fluconazole*	R ≧32	50%

N=53 clinical isolates, not adjusted for first time positives

*Consider using fluconazole susceptibility as a surrogate for second generation triazole susceptibility assessment. However, isolates that are resistant to fluconazole may respond to other triazoles occasionally.

Data courtesy of Dr. Rebekah Dumm, PhD

BARNES-JEWISH Hospital
BJC HealthCare
Washington University in St. Louis Physicians
NATIONAL LEADERS IN MEDICINE

INPATIENT EXPERIENCE WITH CANDIDA AURIS AT BJH

Carlee Hoxworth MPH, CIC

HEALTH ALERT

Missouri Department of Health and Senior Services

Paula F. Nickelson, Director **6 December 2023**

Emerging *Candida auris* Infection Cases in Missouri Health Care Facilities

Summary

- In recent weeks, the Missouri Department of Health and Senior Services (DHSS) has detected cases of *Candida auris* (*C. auris*) within health care facilities in the Saint Louis Metro area. The state of Missouri previously had no prevalence of locally

OUR PATH TO TODAY – THINGS WE'VE LEARNED AND WHAT WE'VE CHANGED

- Prior to the MO DHSS health alert, Barnes-Jewish Hospital (BJH) had had three *Candida auris* patients – our first in late 2020, a second patient in July 2021, and a third in early 2022. All had epidemiologic links to healthcare facilities outside of the Midwest.

- Between the health alert in 12/2023 and 06/2024, we saw low but consistent numbers of C. auris patients at BJH, including multiple without epidemiologic links to higher risk areas of the US.

- Due to continued increases in *C. auris* and the associated testing burden, BJH MID lab went live with in-house PCR testing for *C. auris* in Spring 2024

OUR PATH TO TODAY – THINGS WE'VE LEARNED AND WHAT WE'VE CHANGED

In response to potential transmission concerns after the go-live of in-house testing, a standardized ring surveillance escalation and de-escalation process was created to assist in identifying potential transmission as early as possible

Hallway – 1x/week

↓

Whole unit – 1x/week

↓

Whole unit – 2x/week

Unit must go 2 weeks without a new positive to de-escalate one level

OUR PATH TO TODAY – THINGS WE'VE LEARNED AND WHAT WE'VE CHANGED

We began tracking the demographics of our positive patients early on to identify trends in our hospital population.

Since June 2024, within our *C. auris* positives at BJH:

- 51.8% are within Heart & Vascular service line
  - 33.7% are within Medicine service line
- 26.7% are ICU patients
- 17.5% came to BJH from a long-term care facility such as a LTACH or SNF

OUR PATH TO TODAY – THINGS WE'VE LEARNED AND WHAT WE'VE CHANGED

51.8% of our positive patients are within the Heart & Vascular Service Line, 33.7% are within the Medicine Service Line, and 26.7% are ICU patients

2x/month high-risk units undergo routine surveillance with whole-unit *Candida auris* screening even if there are no *C. auris* patients on the unit

OUR PATH TO TODAY – THINGS WE'VE LEARNED AND WHAT WE'VE CHANGED

17.5% of our positive patients came to BJH from a long-term care facility such as a LTACH or SNF

Admission screening question was created in our EMR asking – "Did the patient arrive from one of the following facilities?

A, B, C, or D?"

OUR PATH TO TODAY – THINGS WE'VE LEARNED AND WHAT WE'VE CHANGED

Many routine cleaners are not effective against *C. auris* – looking for those that are on the EPA List P

Trialing universal use of an EPA List P agent in highest volume C. auris areas with an eventual desire to expand house wide

Infection prevention established and maintains a real-time tracker for enhanced cleaning requests and patient moves for housekeeping

- EPA's Registered Antimicrobial Products Effective Against *Candida auris* [List P]

OUR PATH TO TODAY – THINGS WE'VE LEARNED AND WHAT WE'VE CHANGED

Other Special Considerations

Case Management

Specialized Outpatient Services

Local/State Health Department Collaboration

C. Auris - Home Care Experience

Tanner Martin BSN, RN

Infection Prevention Specialist

Quality Assurance & Performance Improvement Coordinator

BJC Home Care Services

BJC Home Care

There is a patient being discharged with BJC Home Health who has been confirmed positive for *Candida auris*.

Patient Name:
MRN:
Date of positive swab:
Brief pt history:

Candida auris is a yeast that causes serious infections and spreads in healthcare facilities. Some strains of this yeast are resistant to commonly used antifungals. *C. auris* infections have primarily been identified in people with serious underlying medical conditions, who have had prolonged admissions to healthcare settings or reside in healthcare settings. Just like other multidrug-resistant organisms, *C. auris* can be transmitted in healthcare settings and cause outbreaks.

The infection prevention strategies for preventing transmission include:

- Schedule patient as last visit of the day
  - When appropriate, consolidate services to decrease the number of employees entering the home.
- Transmission-based precautions:
  - Adhere to strict contact precautions during all phases of the patent care
    - Gown and gloves worn by staff and use a barrier technique.
  - Thorough hand hygiene when encountering any of the 5 moments of hand hygiene.
    - Before touching a patient
    - Before clean/aseptic procedures
    - After body fluid exposure/risk
    - After touching a patient
    - After touching patient surroundings
  - Consider transporting supplies into the home in a disposable bag (not routine home health bag).
  - Utilize dedicated equipment when available.
- Cleaning and Disinfection
  - Ensure strict adherence to manufacturer directions for use of the surface disinfectant, including applying the product for the current contact time.
  - Use disinfectant with EPA claim effective against C. *auris or* C. *difficile* spores.
- If patient needs to be admitted or referred to another facility, inform receiving facility of patients' C. *auris* status.

Attached you will find a *C. auris* FAQ that can be given to patients. Please reach out with any questions.

Home Care Notification

- Chain of events created between inpatient Infection Preventionist & Home Care

- Standardized template used for consistent communication

Home Care Notification

Instructions added to isolation flag

Contact Precautions (gown and gloves).
- Schedule patient as last visit of day, if able
- Consider transporting supplies into the home in a disposable bag (not their routine home health bag)
- Utilize dedicated equipment when available
- Disinfect with an EPA-approved label claim for C. Auris (Super Sani-Cloth Germicidal Disposable Wipes (purple top) and ensure 2 min dwell time is followed
- Tanner Martin BSN, RN 9/22/25

Email sent with 4 additional attachments

1. C. Auris Colonization Face Sheet – CDC
2. BJC Infection Prevention Fact Sheet
3. Home Care C. Auris presentation
4. Information Fact Sheet for Patients & Families