Admission Screening for *Candida auris* in Acute Care Hospitals in California

Webinar
January 23, 2024

Healthcare-Associated Infections (HAI) Program
Center for Health Care Quality
California Department of Public Health

Objectives

- Understand the current epidemiology for *C. auris* in California and the importance of screening

- Hear from three California hospital systems on their experience implementing *C. auris* admission screening for high-risk patients

- Learn about steps your facility can take to screen high-risk admissions for *C. auris*

Implicit Bias

- Describes how our unconscious attitudes or judgements can influence our thoughts, decisions or actions

- Includes involuntary, unintentional perceptions made without awareness

- Occurs as our brains sort information and perceive data to understand our world

- Affects our decisions, contributing to societal disparities

  ▪ Self awareness about implicit bias can promote healthcare diversity and equality

- Learn more about your own implicit bias at Project Implicit (implicit.harvard.edu/implicit/)

Candida auris is an urgent public health threat

Highly drug-resistant
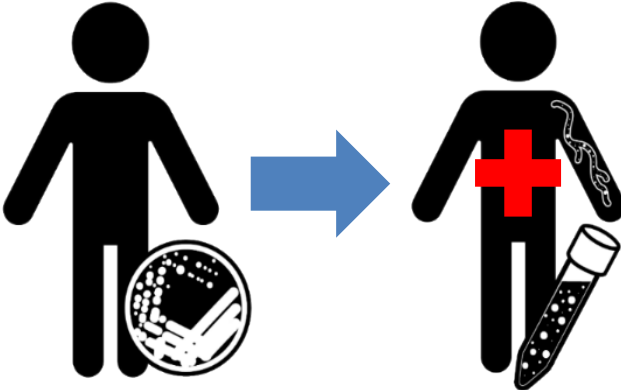
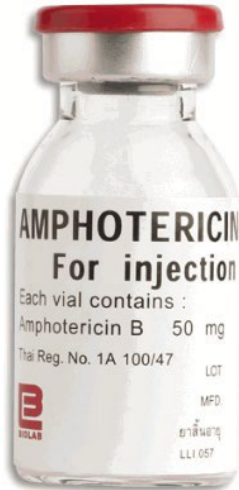**Colonized patients can develop invasive infections with high mortality**

Spreads easily in healthcare settings

C. auris can be multidrug-resistant, even pan-resistant
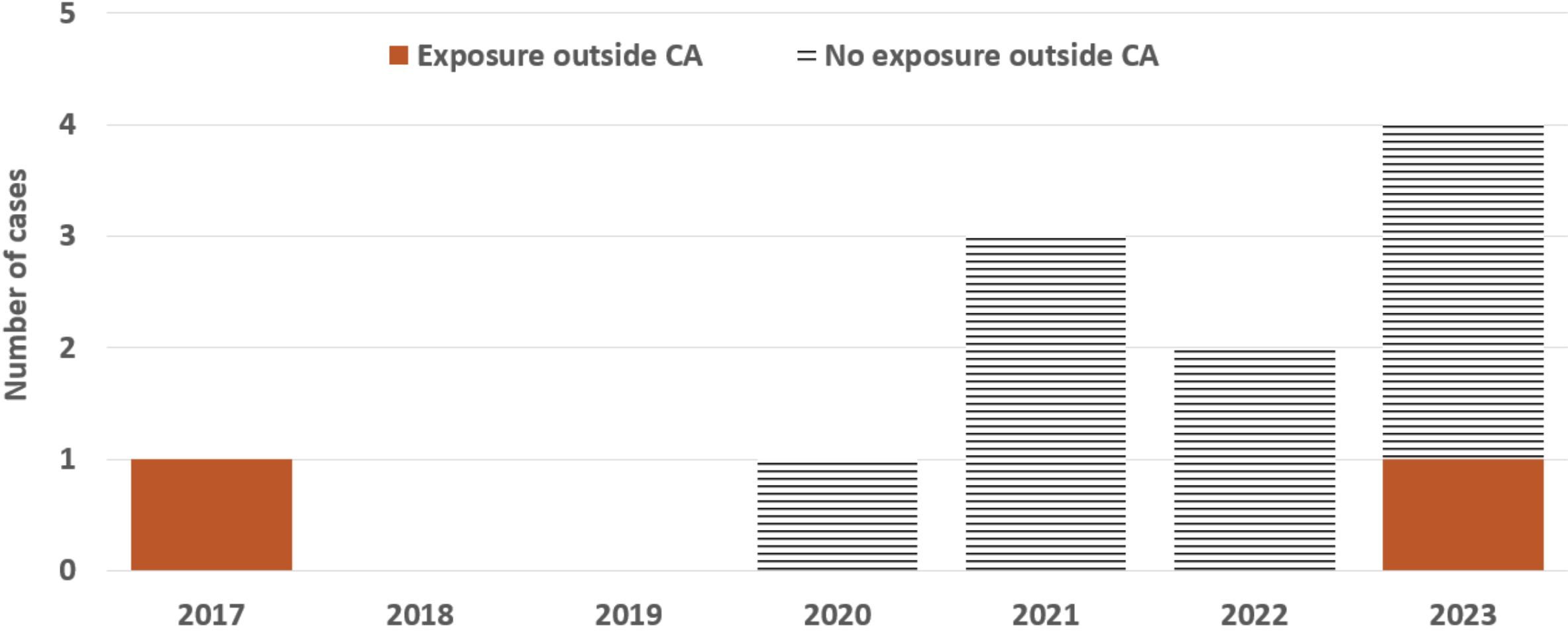
Fluconazole

Amphotericin B

Echinocandins

1st-line treatment for *C. auris* **infections**

99%

2%

<1%

CA-subset of CA isolates submitted to WA regional AR Lab Network lab, 2018–July 2023 (n=1199)
(www.doh.wa.gov/ForPublicHealthandHealthcareProviders/PublicHealthLaboratories/ARLNLabTestMenu)

Echinocandin resistance is rare, but increasing

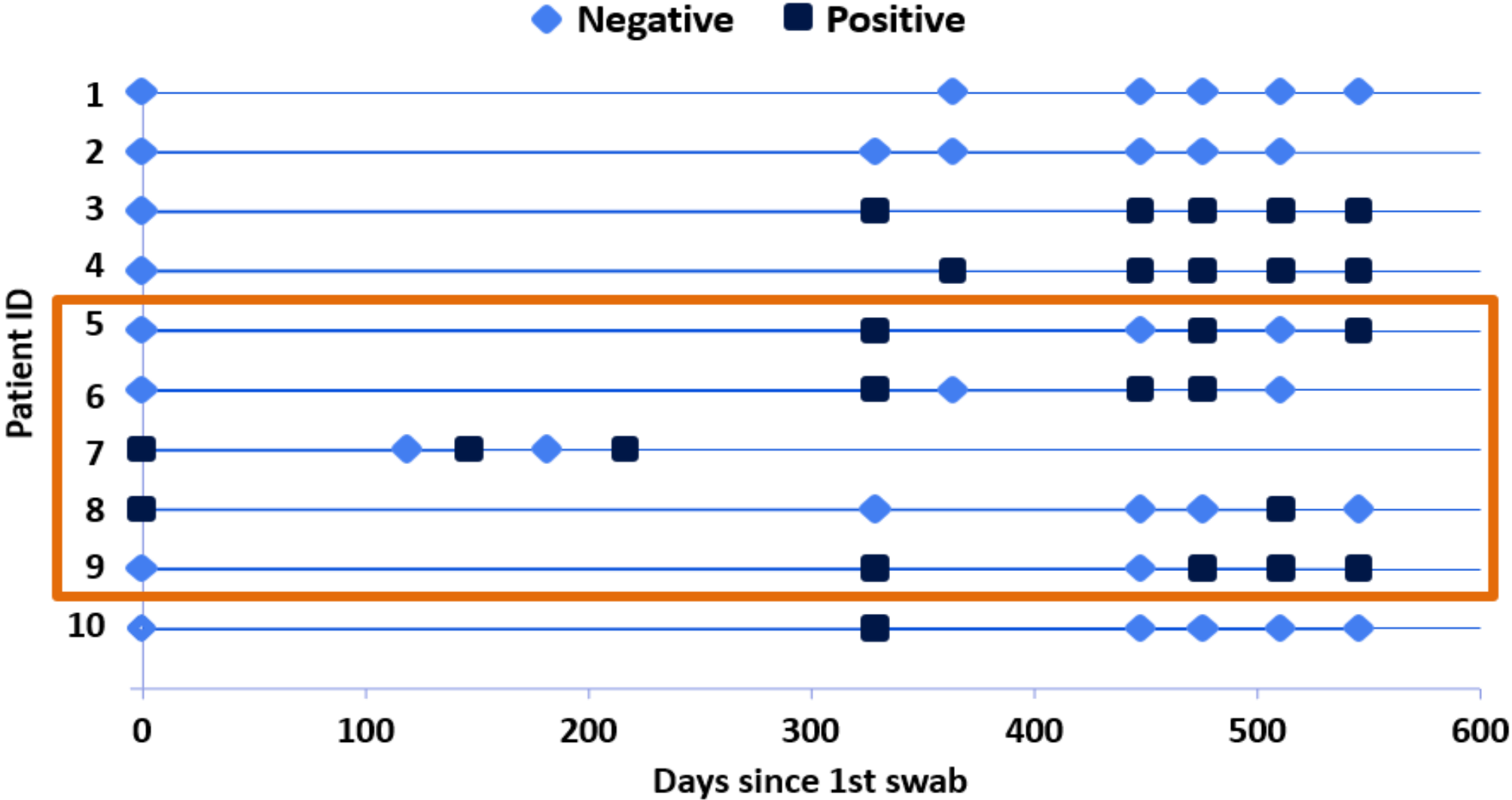Preliminary data reported to CDPH through 1/8/24

C. auris colonizes the skin and other body sites

- Body sites include:
  - Axilla
  - Inguinal creases
  - Nares
  - Hands
  - Toes
  - Other skin sites
- **Screening recommendation** is to use composite axilla/groin swabs
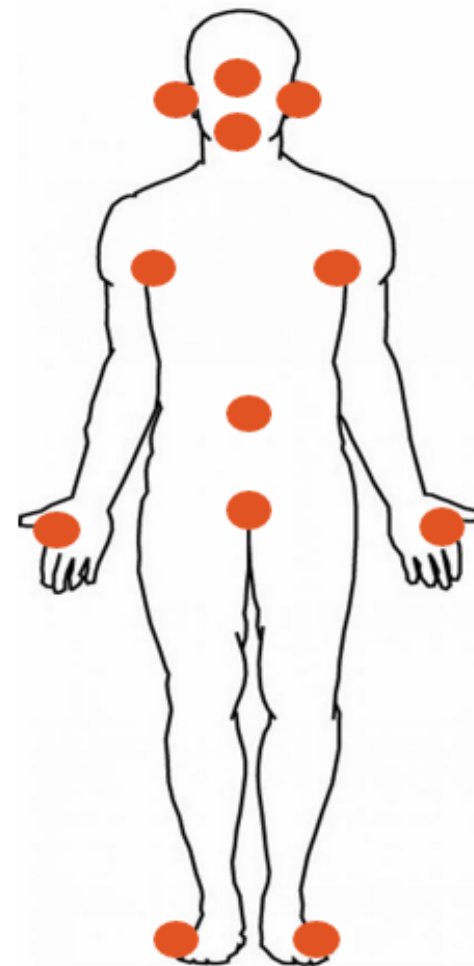
C. auris colonization can be long-term

Pacilli et al, SHEA 2019 (academic.oup.com/cid/article/71/11/e718/5820113)

Mortality among patients with *C. auris* can be high

- **8%** of **all** patients (and **7%** of patients **screening positive**) had blood specimens

	Total	30-day	90-day
Blood specimen	342	92 (26)	156 (45)
Non-sterile site	571	116 (21)	212 (38)
Screening swab only	3,451	609 (18)	1,044 (30)
Total Patients	4,365	817 (19)	1,412 (32)

26% patients with **blood specimens** died within 30 days

30% of patients who **screened positive** and never had a clinical specimen died within 90 days

Preliminary data reported to CDPH through 10/13/23

C. auris is persistent in the environment

Dire, et al. *J Hosp Infect*. (2023). DOI: (doi.org/10.1016/j.jhin.2023.04.007)
Eyre, et al. *N Engl J Med* (2018). DOI: (doi.org/ 10.1056/NEJMoa1714373)

Transmission can happen quickly

- In one outbreak, minimum contact time to acquire *C. auris* was <u>four</u> hours

- Invasive infections have occurred in patients within 48 hours of admission in ICU settings

Ahmad and Asadzadeh. *Curr Fungal Infect Rep*. (2023) (doi: 10.1007/s12281-023-00451-7)

Special disinfectants are needed to effectively kill *C. auris*

- **CDPH recommends using a List P agent for Long-term Acute Care Hospitals (facility-wide) and Acute Care Hospitals (high-acuity units like ICU and SDU), as well as in vSNF vent units. Depending on local epidemiology, List P agents are also recommended for SNF.**

EPA List P (www.epa.gov/pesticide-registration/list-p-antimicrobial-products-registered-epa-claims-against-candida-auris)
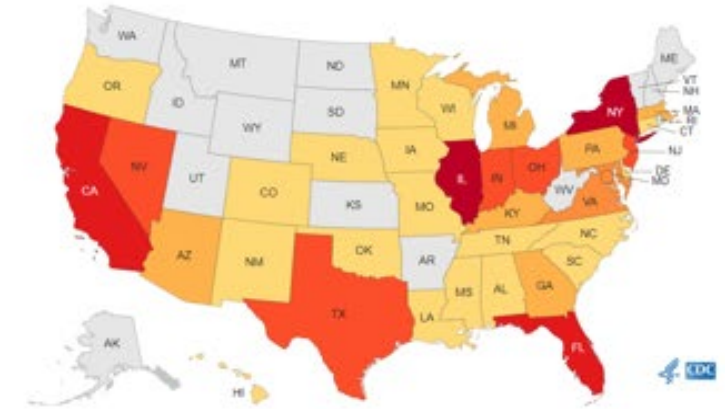EPA List K (www.epa.gov/pesticide-registration/list-k-antimicrobial-products-registered-epa-claims-against-clostridium)

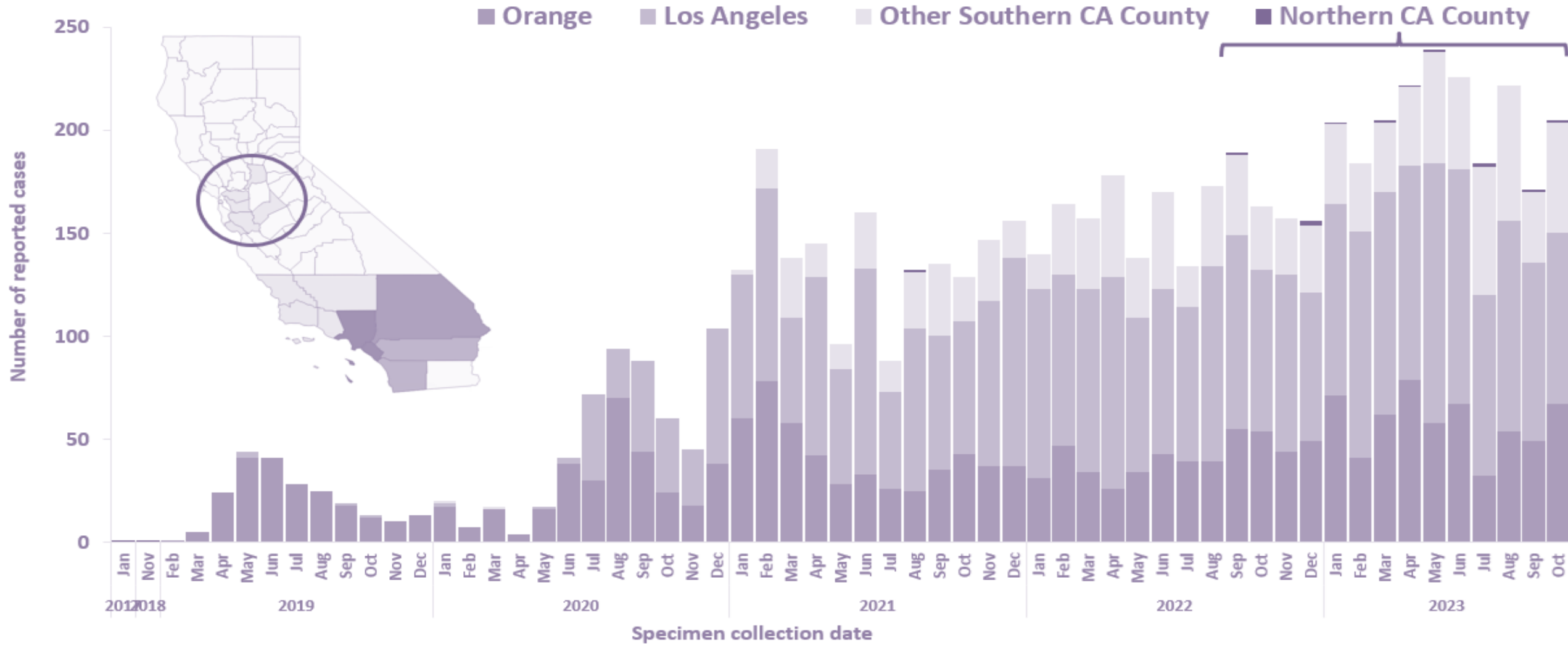# *C. auris* has spread quickly across the US and California
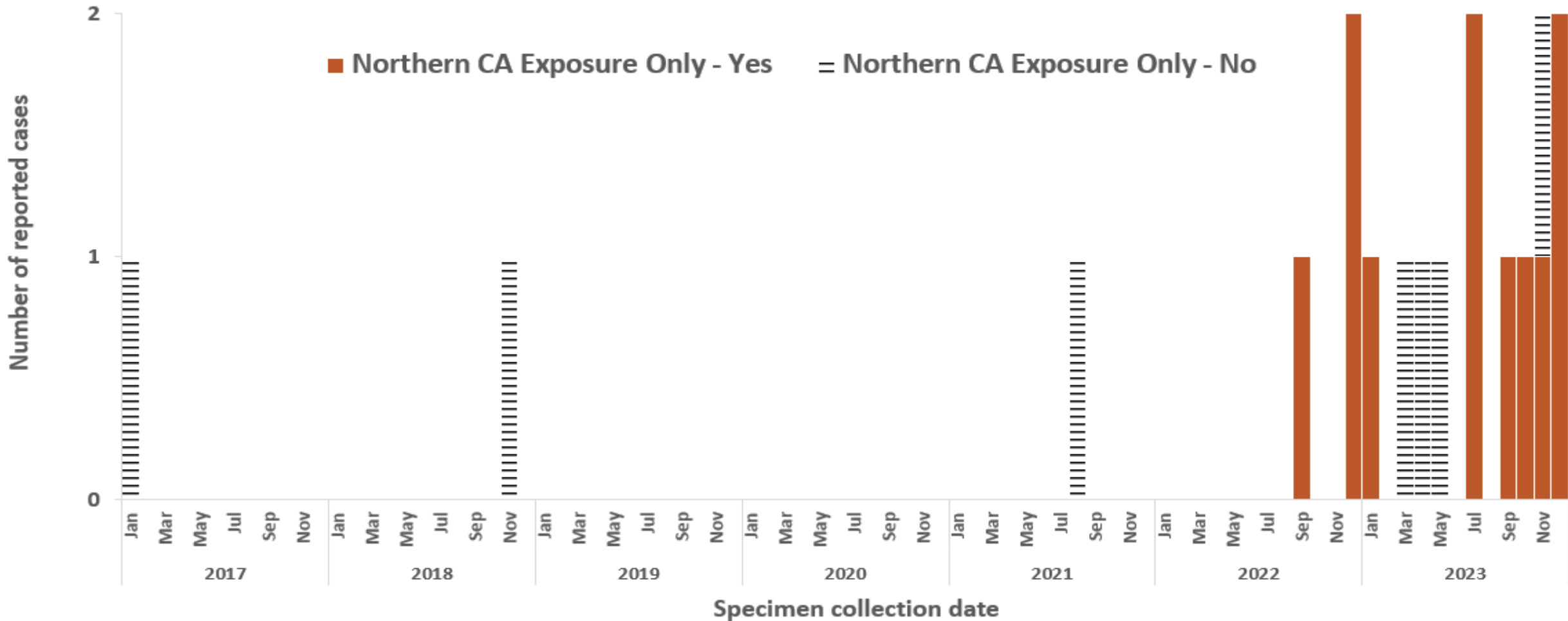

2017

2019

2022

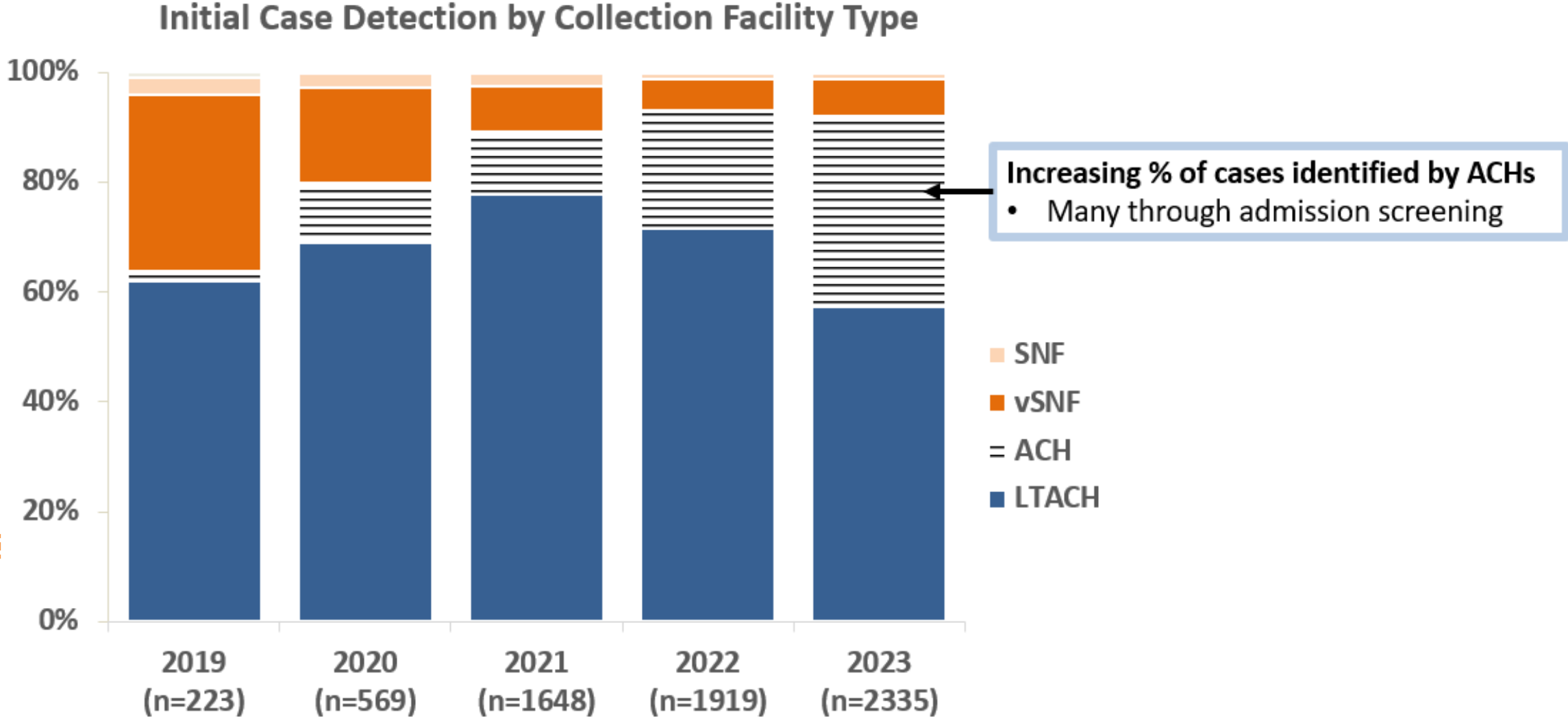# Since 2022, cases have also spread from Southern to Northern CA

Preliminary data reported to CDPH through 1/8/24

Wider spread is likely occurring in Northern CA: most cases only have exposure within the region

Preliminary data reported to CDPH through 1/8/24

C. auris is increasingly being detected by ACHs

Initial Case Detection by Collection Facility Type

Increasing % of cases identified by ACHs
- Many through admission screening

Legend:
- SNF
- vSNF
- = ACH
- LTACH

X-axis: 2019 (n=223), 2020 (n=569), 2021 (n=1648), 2022 (n=1919), 2023 (n=2335)

Public health recommendations for follow-up of new cases in ACHs

Identified <u>on</u> admission:

- ✓ notify transferring facility of positive result

Identified <u>during</u> admission:

Single case identified during clinical care

- ✓ Screen high-risk patients (shared room or bathroom with or occupied bed space immediately after index)
- ✓ Conduct point prevalence survey (PPS) if high-acuity unit

Transmission suspected, cluster identified

- ✓ Screen high-risk patients
- ✓ Conduct PPS at 2-week intervals until 2 rounds negative
- ✓ Identify all patients overlapping with index; screen upon readmission or at receiving facility if discharged

CDPH *C. auris* Screening Decision Tree (PDF)
(www.cdph.ca.gov/Programs/CHCQ/HAI/CDPH%20Document%20Library/Tier2_Pathogen_Screening_Decision_Tree.pdf)

Admission screening for high-risk patients

To prevent further transmission of *C. auris* in California, CDPH recommends admission screening for high-risk patients

Today we'll hear from 3 hospital systems on their implementation of *C. auris* admission screening
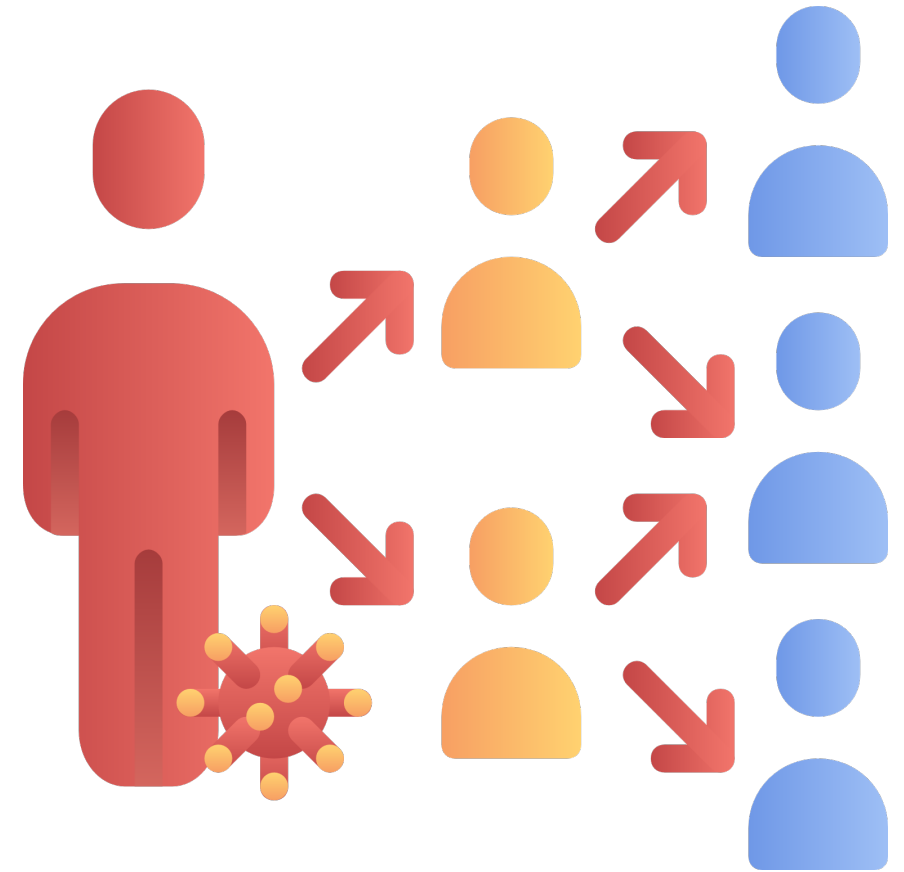
Hospitals Implementing *C. auris* admission screening – Kaweah Health

Shawn Elkin, IP Manager
Kathy Wittman, IP Data Coordinator

Kaweah Health

- 613 licensed bed healthcare facility in Visalia, California

Cardiovascular Services
- Cardiac Cath Lab
- Cardiac Rehab
- Cardiac Surgery
- Carotid Stenting
- Coronary Interventions
- Vascular Intervention
- Vascular Surgery

Emergency Services
- Emergency Department

Neurosciences
- Electroencephalography (EEG)
- Sleep Studies

Oncology Services
- Chemotherapy
- Radiation Therapy

Orthopedic Services
- Arthroscopy
- Joint Replacement
- Spine Surgery

Other Services
- Hemodialysis
- Home Health
- Hospice
- Lithotripsy (ESWL)
- Obstetrics

Radiology/Nuclear Medicine/Imaging
- Computed Tomography (CT)
- Computer Tomography-Angiography (CTA)
- Digital Mammography
- Intensity-Modulated Radiation Therapy (IMRT)
- Magnetic Resonance Imaging (MRI)
- Positron Emission Tomography (PET)
- Single Photon Emission Computerized Tomography (SPECT)

Rehabilitation Services
- Physical Therapy
- Speech Therapy

Special Care
- Intensive Care Unit (ICU)
- Neonatal Intensive Care

Subprovider Units
- Psychiatric
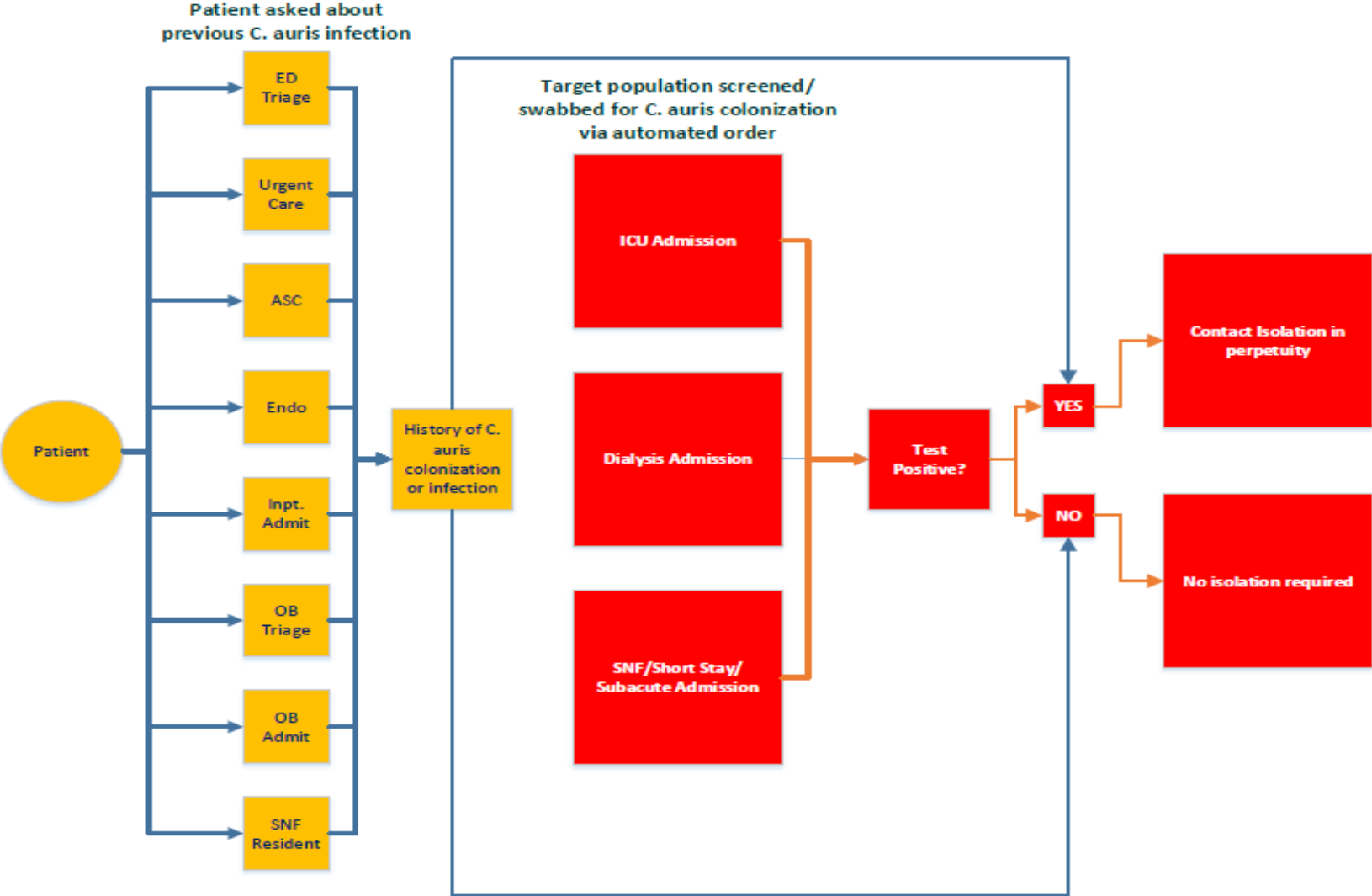- Rehabilitation
- Skilled Nursing (SNF)

Surgery
- Inpatient surgery
- Radiosurgery
- Robotic Surgery

Wound Care
- Wound Care

Background on *C. auris* admission screening

- Close call event

- Employee needing a project for his MPH degree

- Proactive response

- Prefabricated process in place for MRSA screening/swabbing

Implementation Process

- Target Patient Populations
  - Candida auris colonization is more common in patients with frequent healthcare encounters, where there is more opportunities for physical contact with contaminated healthcare surfaces.
  - IP Committee determined that high risk factors included patients admitted from a LTC or LTACH or Subacute facility. Patients admitted to the ICU. Patient admitted to our organization's Subacute care facility. Dialysis patients upon admission and/or those new to receiving dialysis.
  - Orders for swabbing the axillae and groin are automated and triggered by responses gathered during screening for admission.
  - Contact precautions are auto-ordered upon a positive C. auris test result.

Laboratory

- Candida auris testing is performed:
  - Onsite
  - For blood cultures the Biofire PCR testing platform detects Candida auris
  - For swabbing to detect colonization, MALDI-TOF mass spectrometry is used
  - If there is an instance in which MALDI-TOF is unable to speciate a positive Candida sp. result, the State Regional Lab would be used
  - Turnaround time is typically a few hours for Candida auris colonization testing

Rollout of Process

- Discussion with the State and County Public Health partners for guidance
- Charter was created and EMR & Clinical Practice Change Request form submitted for approval
- Taskforce developed and meetings and action plans followed thereafter
- Laboratory created new order workflows to include *C. auris* screening
- Hospital informatics teams worked on automation between the electronic medical record and screening questions/lab results
- Clinical Education and Medical Staff Office distributed reference information related to the computer patient screening process and the auto-orders for swabbing and isolation.
- The entire process (from decision to rollout) took 7 months.

Lessons Learned/Advice for Other Hospitals?

- What went well?
  - Development of an IP/Lab/IS Workgroup
  - Developing a charter with clear project scope and action plans
  - Ensuring the right stakeholders for developing and implementing a new process
  - Collaborative communication and respect for individual expertise
- What was challenging?
  - Developing a recurring flag in the electronic medical record for outside positive lab results
  - Developing a process by which outside lab results are scanned and trigger recurring contact precautions with every inpatient encounter

Lessons Learned/Advice for Other Hospitals?

- What advice would you give to other hospitals considering implementing admission screening for *C. auris*?
  - Identifying a small group with the correct stakeholders can yield improvement in identifying solutions with great positive impact.
  - Stakeholders must always have a positive vision in order for solutions to become viable. The first response for any request should never be no.
  - *"When you open your mind, you open new doors to new possibilities for yourself and new opportunities to help others."* — Roy T. Bennett

Appreciation and recognition to the following:

- Kathy Wittman, IP Data Coordinator for facilitating solution project

- Shawn Elkin, IP Manager, for supporting a new work flow concept.

- Luz Aceves Foxen for her clinical guidance.

- Rachel Perez for her willingness to take on a challenge and providing wonderful data from the lab.

- Tim Story for his quiet, but efficient IT support from the lab.

- Monica Lopez for her work to facilitate electronic solutions whenever possible.

- Kimberly Roller, our Clinical Informaticist, for testing and putting our dreams into action.

All are appreciated immensely and define TEAM

Together **E**verybody **A**chieves **M**ore

Hospitals Implementing *C. auris* admission screening – Sharp Healthcare

Lindsay Schimpf, IP

Sharp Healthcare

- Four acute care hospitals and three specialty hospitals serving San Diego County and surrounding areas
  - Sharp Chula Vista Medical Center
  - Sharp Coronado Hospital
  - Sharp Grossmont Hospital
  - Sharp Memorial Hospital
  - Sharp Mary Birch Hospital for Women & Newborns
  - Sharp Mesa Vista Hospital
  - Sharp McDonald Center

Background on *C. auris* admission screening

- Sharp Healthcare Infection Prevention Committee (SHIP) – Decision making body for infection prevention at Sharp Healthcare
  - Multidisciplinary team with representation from ID, IP, lab, pharmacy, ASP, nursing, executive leadership, & others
    - Concerns about 2-5 day turn-around-time for C. auris cultures
    - Concerns about throughput/bed availability with empiric contact precautions
    - Cost considerations for adopting PCR testing

Background on *C. auris* admission screening
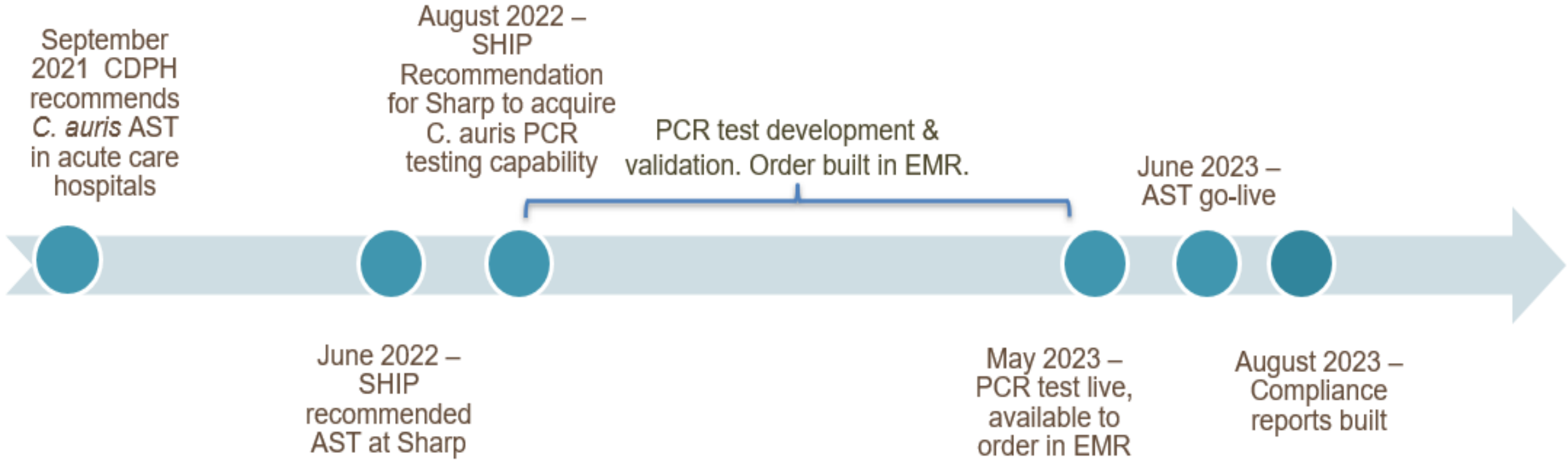
Laboratory

- Testing done by an internally validated PCR test at Sharp Copley lab
- DiaSorin Liaison MDX platform
- Need staff/resources for validation, writing validation report, staff training
- Worked with stakeholder to determine frequency of running tests
- 24-48 hour turn-around-time

Implementation Process

- Populations screened based on public health recommendations for San Diego County
  - Individuals transferring from any high-risk facility (e.g., long-term acute care hospital, or subacute unit of a skilled nursing facility)
  - Individuals with history of overnight hospitalization or invasive procedure abroad within the last 12 months
  - Those colonized with carbapenem resistant organisms
  - Persons with tracheostomies and/or mechanically ventilated

Implementation Process

- Process if fully integrated into cerner EMR.
  - Part of acute intake infectious disease/travel screening
  - Testing done on admitted patients only
  - A "yes" response + admission orders automatically triggers lab order
  - Contact precautions order prompt

Candida Auris Screen
Does patient meet any of the following criteria?
-Current transfer from LTAC, Sub-Acute, or SNF?
-Overnight hospitalization or invasive procedure outside the U.S. in the past 12 months?
-History of positive Carbapenum Resistant Organism (CRO)?
-Currently trached or mechanically ventilated?

○ Yes   ○ No   ○ Unknown

If you select Yes,
1) You MUST ENTER "Contact Precautions" below, or the most appropriate Isolation Order if other communicable disease risks identified.

2) A Candida Auris Molecular Amp order will be automatically placed IF patient admitted to the hospital.

California Department of
PublicHealth

Rollout of Process

- Please include:
  - Collaborative effort with our nurse educators and Clinical Nurse Specialist team
  - Education done with ED and acute care RNs on screening process
    - SBAR regarding C. auris epidemiology, details on specimen collection, type of precautions required
    - SBAR specifically for case managers/discharge planners with scripting for patients with tests pending at the time of discharge
    - C. auris FAQ
  - Education efforts started during PCR validation process. Lots of lead time.

Lessons Learned/Advice for Other Hospitals?

- Start small
    - Tackle operational challenges one at a time
    - Consider 'pilot'
- Integration AND automation in EMR was critical to success
- Establish compliance monitoring process

Hospitals Implementing *C. auris* admission screening - UCSF Health

Daniel J. Escobar, MD
Associated Medical Director, Hospital Epidemiology & Infection Prevention
Assistant Clinical Professor of Medicine, Division of Infectious Diseases
January 23, 2024

UCSF Health

- Quaternary care center located in San Francisco, California
- 1290 beds across 3 campuses in San Francisco & 1 campus in Oakland
  - **Moffit-Long (Parnassus)**
    - All specialties available
  - **Mission Bay**
    - Surgical Oncology
    - Benioff Children's Hospital
  - **Mount Zion**
    - General Medicine
    - Orthopedic Surgery
  - **Benioff Children's Oakland**
- 41,000 admissions per year

UCSF Health

Background on *C. auris* admission screening

- Rising clinical cases nationally
- Highest number of cases in NV & CA
- New cases reported in Contra Costa County

JAN 2023

- CDPH recommends healthcare facilities implement active surveillance through colonization testing

MARCH 2023

- HEIP proposes instituting active surveillance of C.auris across UCSF Health
- Approval from Department of Quality Leadership
- Selection of Key Stakeholders

APRIL 2023

- HEIP leadership schedules first C.auris Surveillance Taskforce meeting with key stakeholders

MAY 2023

UCSF Hospital Epidemiology & Infection Prevention (HEIP) program begins discussions on pursuit of C.auris active surveillance

HEIP Directors create *C.auris* Control Plan

Stakeholders: HEIP, Microbiology Lab, Transfer Center Leadership, Emergency Department Leadership, Registration Office, Center of Nurse Excellence, EPIC Technical Specialists, Nursing Leadership, PACU Leadership, Environmental Services, Hospital Medicine, Pediatric Emergency Department Leadership, Oakland HEIP

California Department of PublicHealth

Implementation Process

- Reviewed UCSF Transfer data from 2022
- Taskforce elected to screen any patient transferred/presenting from:
  - LTACH in California
  - vSNF in California
  - Nevada Facilities
- Only patients directly transferred from these facilities are screened

  - No look-back window for screening

C.auris **Surveillance Taskforce Stakeholders**:
- Infection Prevention
- Hospital Medicine
- Emergency Medicine
- Microbiology Lab
- Transfer Center
- Center for Nurse Excellence
- Nursing Leadership
- Pediatric Infection Prevention
- Pediatric Emergency Medicine
- EPIC Technical Support
- PACU Leadership

California Department of PublicHealth

Implementation Process

Patient in LTACH, vSNF or NV Facility

UCSF Transfer Center

EPIC C.auris Screen Order

UCSF Adult & Peds ER

EPIC C.auris Screen Order

Admitting Provider signs order in Admission order set

Patient admitted to UCSF *No Contact Isolation unless *C. auris* positive*
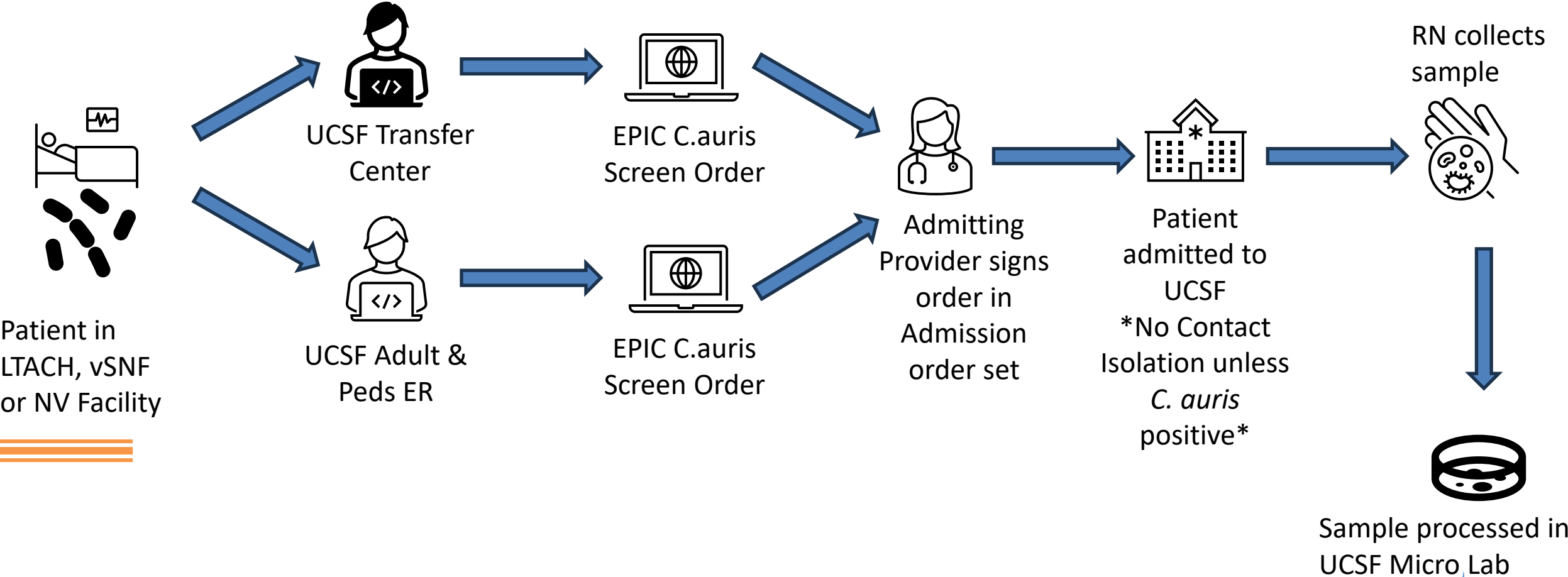
RN collects sample

Sample processed in UCSF Micro Lab

Implementation Process

Implementation Process

Implementation Process

Laboratory

- Close collaboration with the UCSF Health Microbiology lab
- UCSF Health Microbiology lab validated an internal PCR-based test
  - Panther Fusion Instrument – Sample to answer
  - Turnaround time 2.5 hours
  - Validation with excellent performance – 100% accuracy
- PCR test requires 1 E-swab used in bilateral axilla and groin

Rollout of Process

- Education & Communication:
  - Hospital Medicine:
    - Announcements and brief lectures by HEIP Medical Directors
  - Nursing:
    - Infection preventionists communications and C.auris sample collection tip sheet <u>here</u>
  - Emergency Medicine Providers:
    - Announcements and brief lectures by HEIP Medical Directors
  - Emergency Medicine Registration Staff:
    - Registration leadership responsible for communicating with staff
  - Transfer Center:
    - Trained by transfer center leadership and EPIC technical specialists
  - Microbiology Lab:
    - Screening test added to lab manual with sample collection instructions
- Go-Live October 11, 2023 – Approximately 5 months of planning

Lessons Learned/Advice for Other Hospitals?

- What went well:
    - Institutional engagement & support
    - Active collaboration from large multidisciplinary group
    - Excellent EPIC Technical support
    - Microbiology lab efforts to validate internal test
- Challenges:
    - How to identify patients coming from high-risk facilities in the ER
    - Lab validation required several months to complete
- Would you change anything in the implementation process?
    - C. auris screening and isolation strategies may evolve depending on epidemiology
- Advice:
    - Sustain multidisciplinary group after implementation in case modifications to screening must be made
    - Work closely with lab & EHR technical support
    - Helpful to review institutional transfer and admission data to tailor screen to facility needs

Thank you!

Questions?

For more information,
contact
HAIProgram@cdph.ca.gov