

# Containment of *Candida auris* and other Multidrug-resistant Organisms (MDRO) in the Context of COVID-19

September 1, 2020

Presented via Webinar

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# Objectives

- Describe emerging MDRO of concern in California, including *Candida auris*
- Understand principles of MDRO containment in individual healthcare facilities as well as regional healthcare facility networks
- Discuss how COVID-19 mitigation strategies might be contributing to the spread of *C. auris* and other MDRO
- Provide recommendations for limiting emergence and transmission of *C. auris* and other MDRO

# Emerging Healthcare-Associated MDRO

- Few treatment options, higher morbidity and mortality
- Highly transmissible within and between healthcare facilities
- Early and aggressive facility and public-health containment efforts can limit spread
  - Efforts currently hampered by the COVID-19 pandemic

# California Health Alerts



State of California—Health and Human Services Agency  
California Department of Public Health



**Health Advisory: Resurgence of *Candida auris* in Healthcare Facilities in the Setting of COVID-19**

**August 2020**



**CD HEALTH ALERT**

Critical Communicable Disease Information for Orange County Medical Providers

**Orange County *Candida auris* Update**

**August 05, 2020**

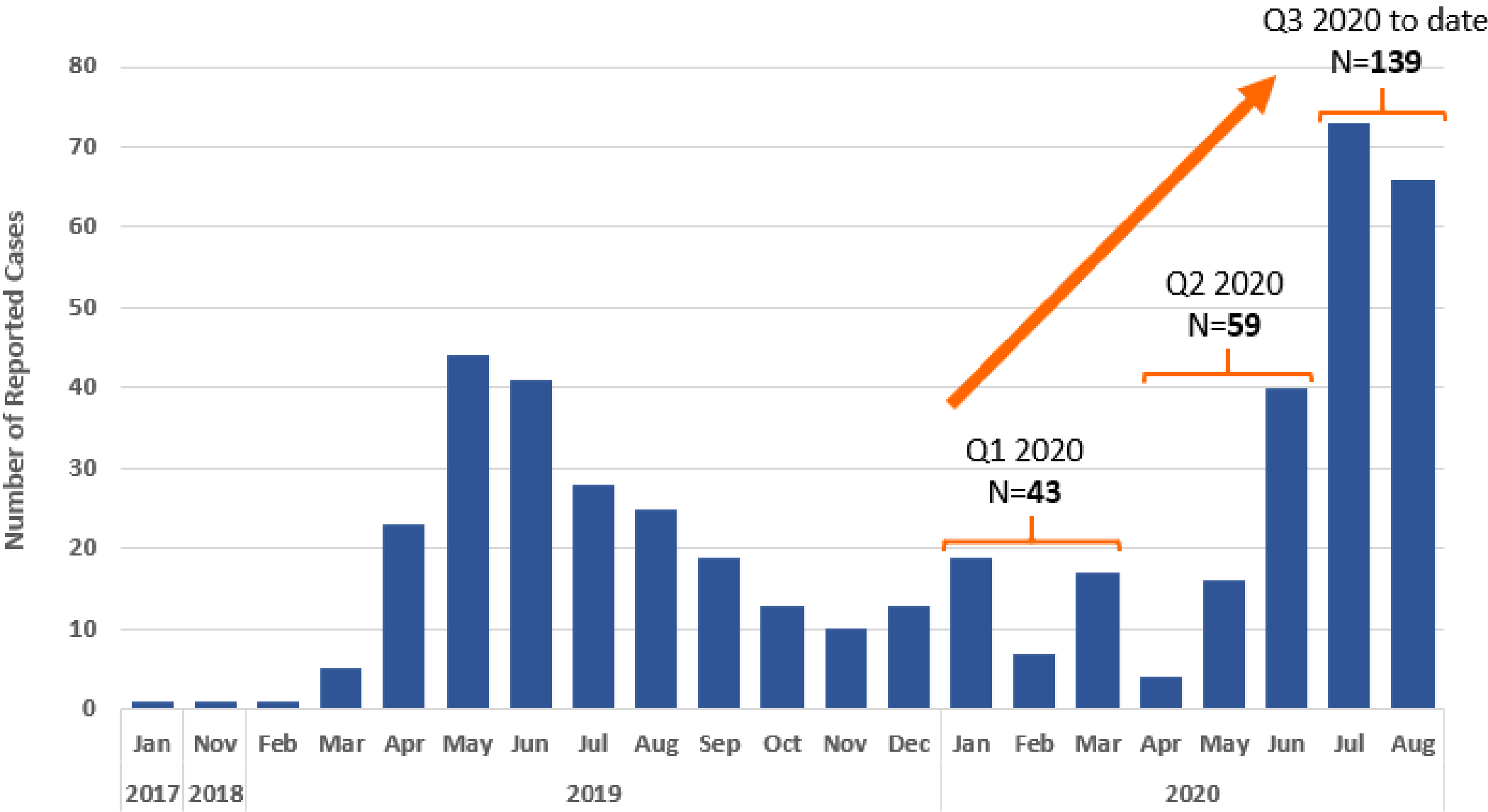


**LAC DPH Health Advisory:  
Resurgence of *Candida auris* in  
Los Angeles County**

**July 17, 2020**

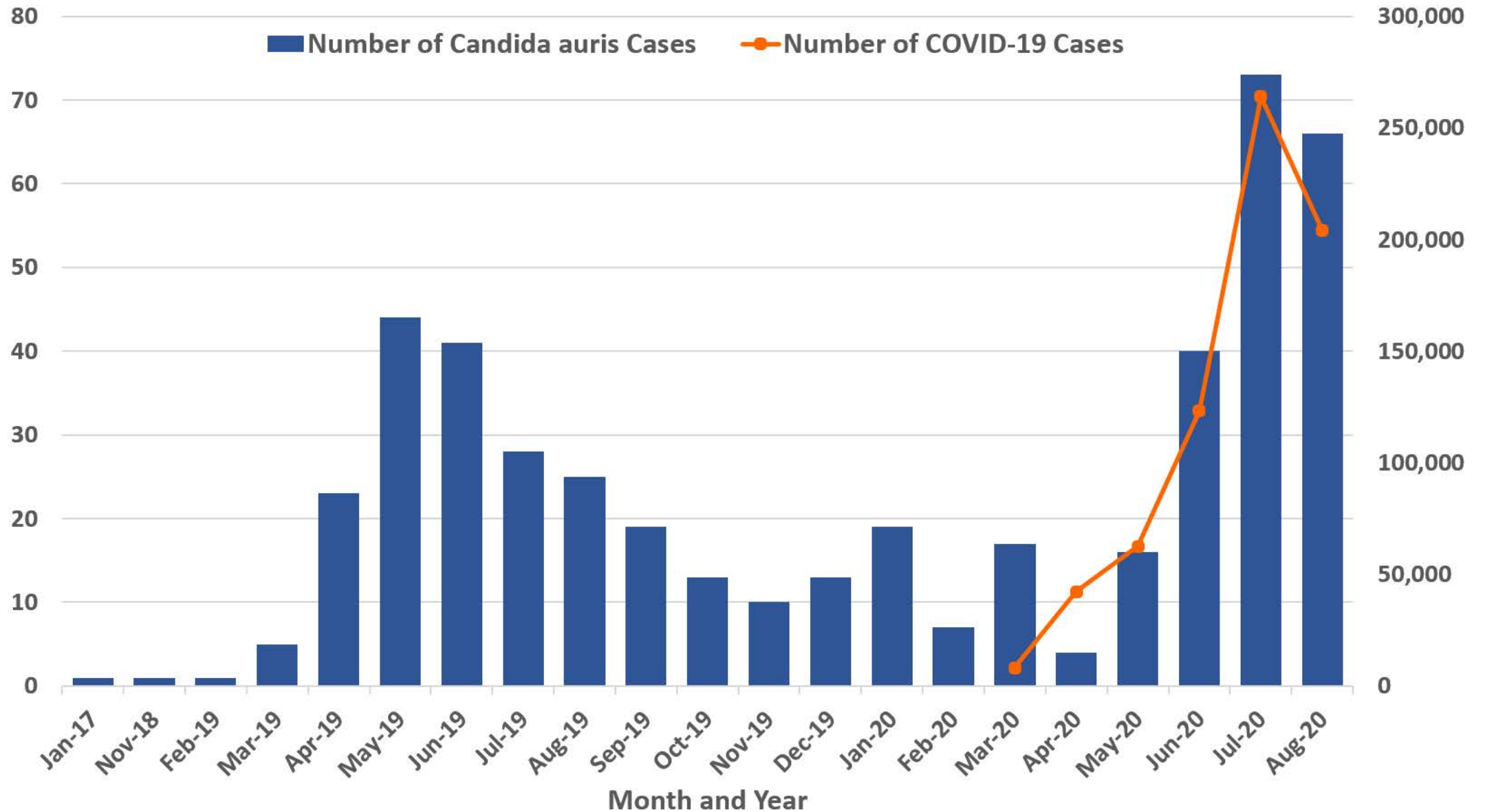


# C. auris Cases Reported in CA through August 30, 2020 (N=466)



Month and Year Specimen Collected

# *C. auris*, COVID-19 Cases in CA through August 30, 2020 (N=466)



**Early detection,  
infection control  
and public health-  
coordinated  
responses needed  
to contain spread**



Health care facilities, health departments, and CDC are **ON ALERT** for antibiotic resistance.



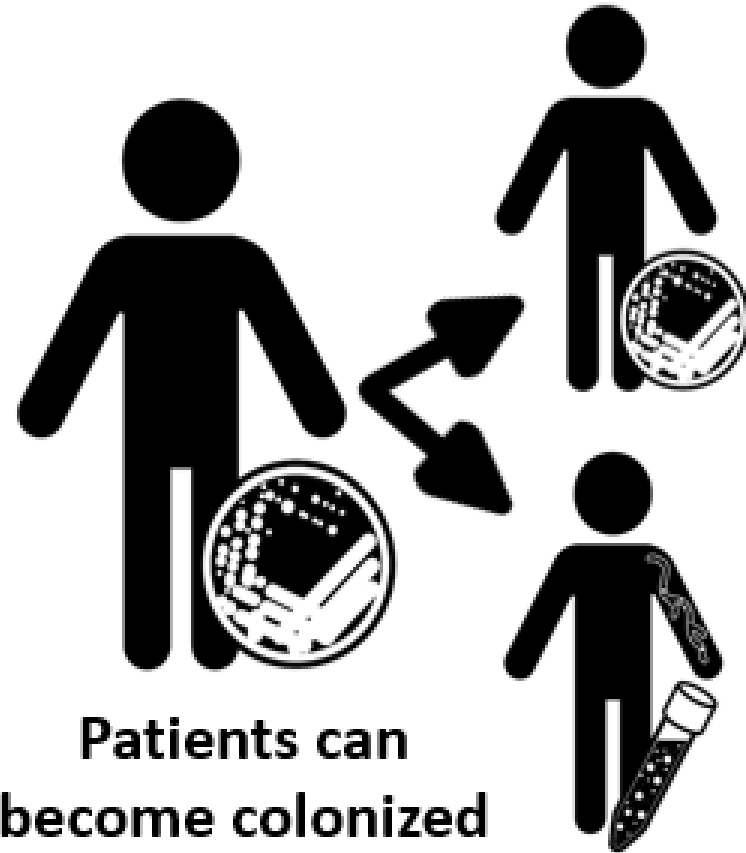
Public health teams nationwide can launch early, aggressive responses to contain spread and protect people— at the first sign of antibiotic resistance, every time.

Find guidance, lab protocols, and more resources:  
[www.cdc.gov/HAI/Outbreaks/MDRO](http://www.cdc.gov/HAI/Outbreaks/MDRO)

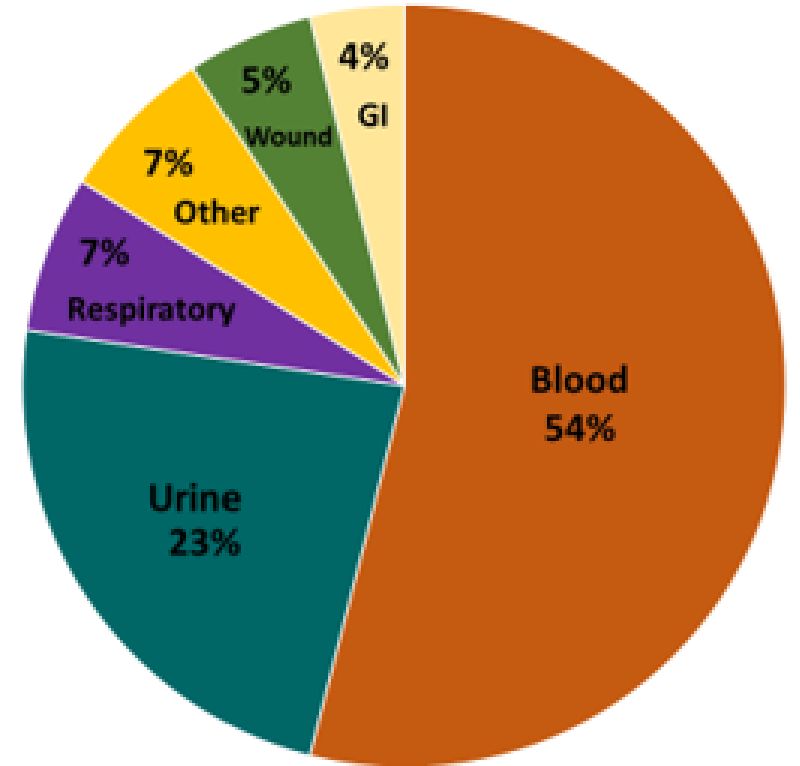
# *C. auris* causes outbreaks in health care settings



Highly  
drug-resistant



Patients can  
become colonized  
and develop  
invasive infections



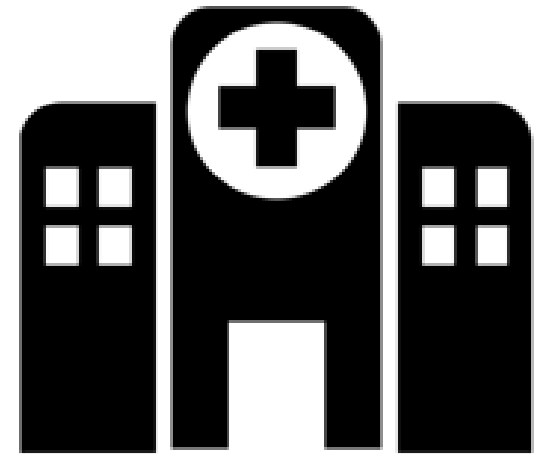
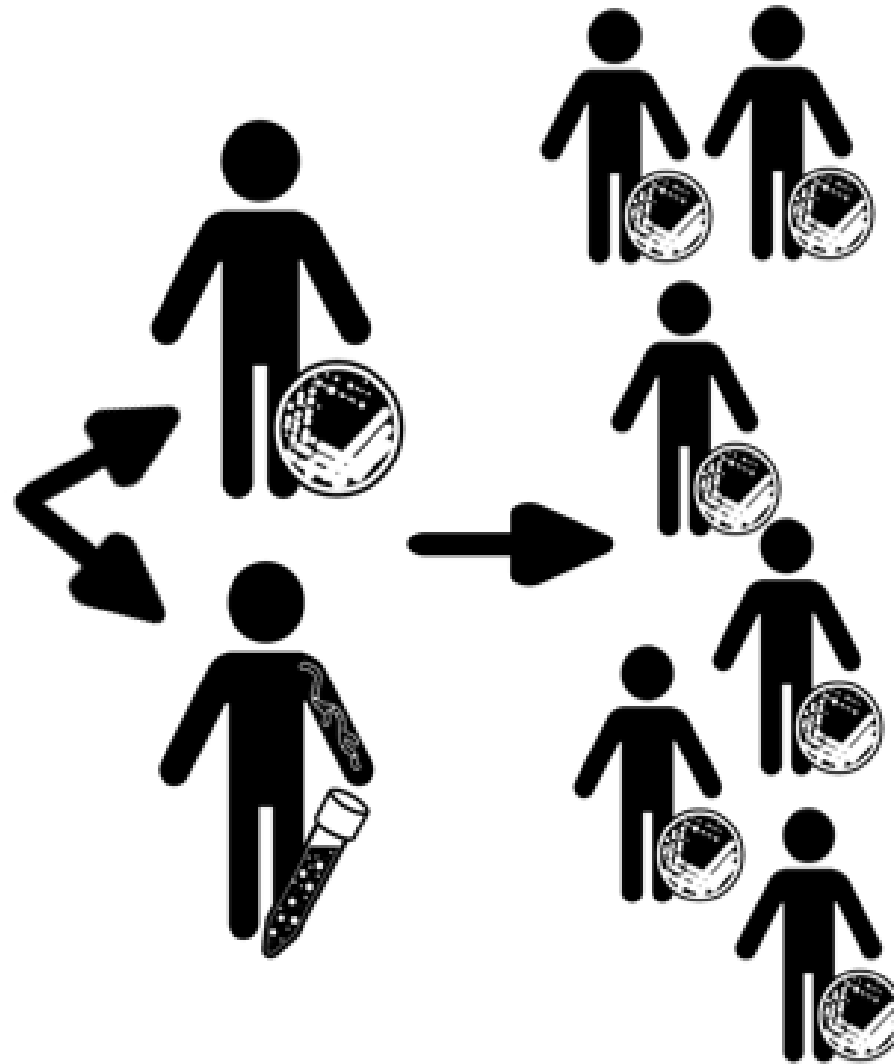
*Candida spp.* from non-invasive/non-sterile sources (e.g., urine, respiratory, wound) are not typically identified to the species level.



# *C. auris* causes outbreaks in health care settings



Patients can become colonized and develop invasive infections



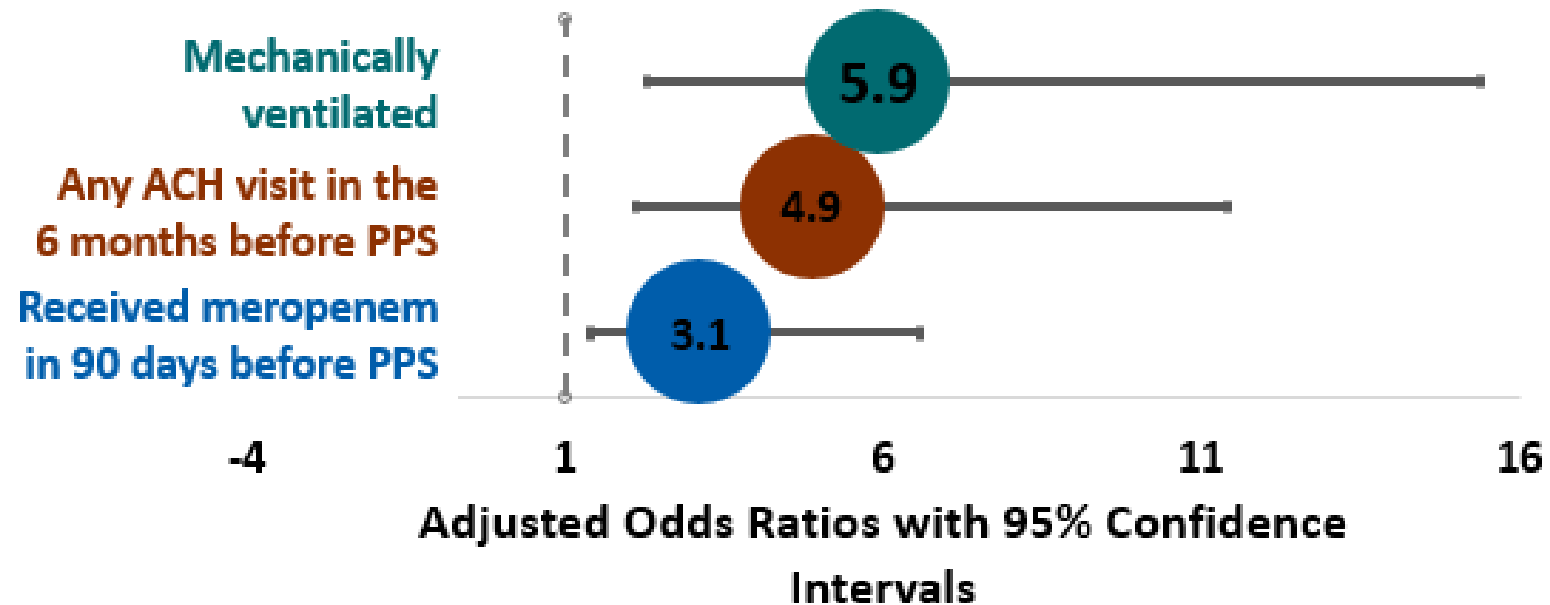
Spreads in healthcare settings

# Risk Factors for *C. auris*

- Tracheostomies
- Ventilator-dependent
- Colonized with other multidrug-resistant organisms
- Recently received antibiotics and antifungals
- Overnight hospitalization outside U.S.
- Long-term acute care (LTAC) hospital or ventilator-equipped skilled nursing facility (vSNF) stay



# Factors associated with colonization with *C. auris* after controlling for confounders\*:



\*Each characteristic was assessed with its own multivariable model, with potential confounders selected using DAGs and *a priori* information

Slide courtesy of John Rossow, CDC Epidemic Intelligence Service

# *C. auris* in acute care hospitals

- Outbreaks in hospital ICU
  - UK 2015-2016: 50 cases; 22 developed infections
  - UK 2015-2017: 70 cases; 7 invasive infections (reusable axillary temperature probes)
  - Colombia 2015-2016 (4 hospitals): 40 candidemia cases (12 in NICU)

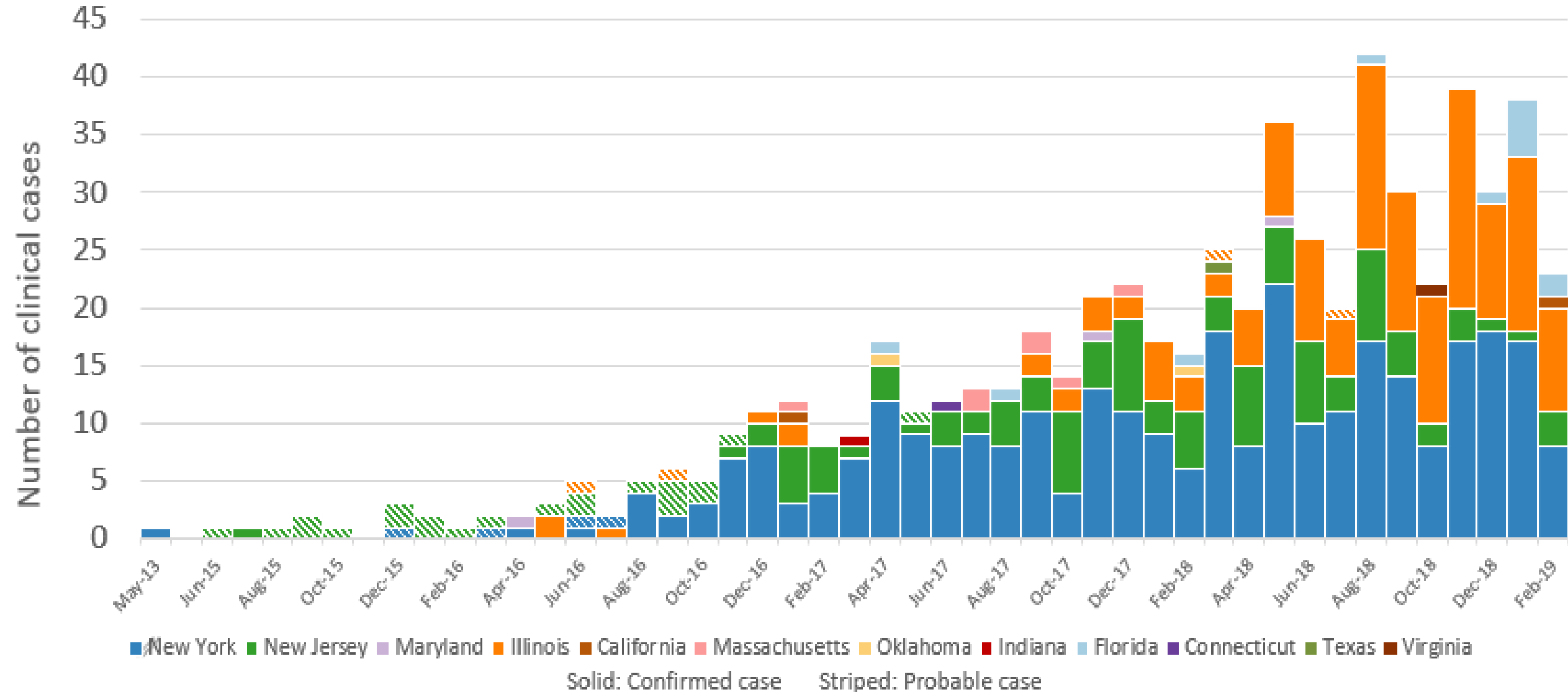
## Sources:

Schelenz S, Hagen F, Rhodes JL, et al. First hospital outbreak of the globally emerging *Candida auris* in a European hospital. *Antimicrob Resist Infect Control*. 2016;5:35–41.

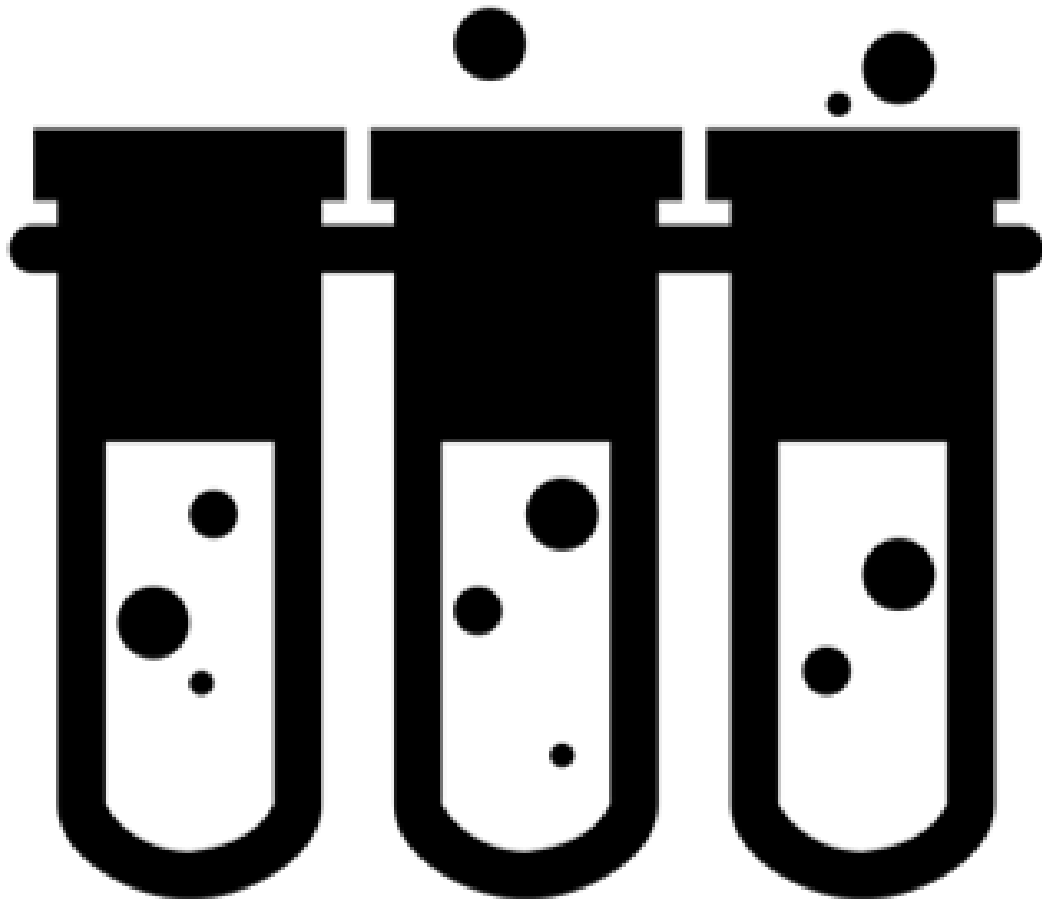
Eyre DW, Sheppard AE, Madder H, et al. A *Candida auris* outbreak and its control in an intensive care setting. *N Engl J Med*. 2018; 379:1322-1331.

Armstrong PA, Rivera SM, Escandon P, et al. Hospital-associated multicenter outbreak of emerging fungus *Candida auris*, Colombia, 2016. *Emerg Infect Dis*. 2019;25(7):1339-1346

# *C. auris* clinical cases reported by state — United States, May 2013 – February 2019



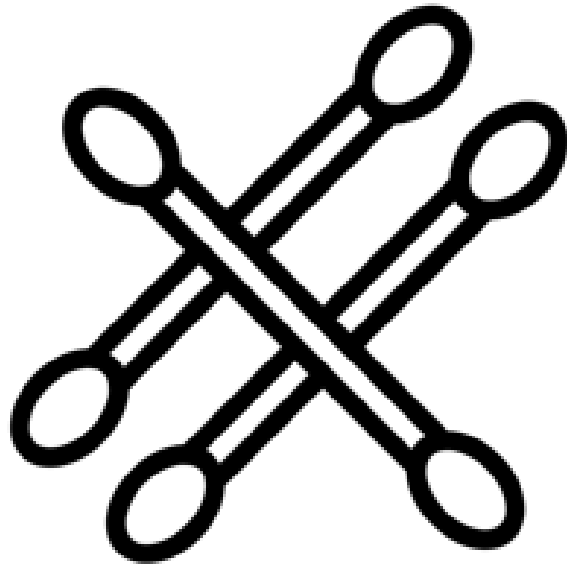
In August 2018, a lab serving majority of California's long-term acute care facilities began determining species of *Candida* on all yeast isolated from urine specimens.



In February 2019, *C. auris* identified in a urine culture from a patient at a long-term acute care hospital in Orange County

# Public health launched a rapid, county-wide *C. auris* containment response in all high-risk facilities

14 vSNF + 3 LTACH



Conduct case finding through point prevalence surveys at high-risk healthcare facilities

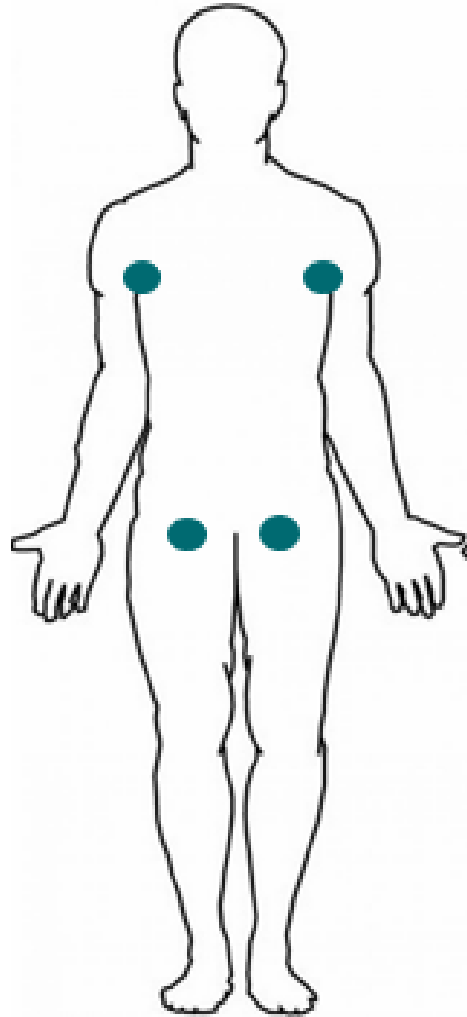


Assess and make recommendations to improve infection prevention practices

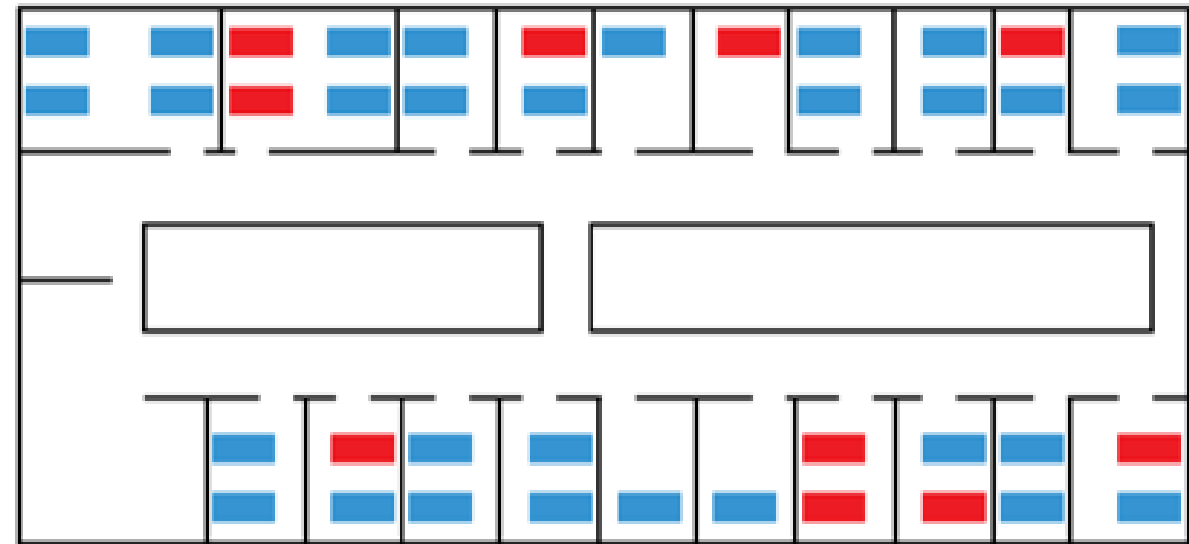
# Point prevalence surveys (PPS) help to determine the burden of *C. auris* colonization in facilities and risk of transmission.

## Axilla-Groin Swab

- Composite swab
- R/L axilla and R/L groin
- Polymerase chain reaction (PCR)



### Map of Facility A

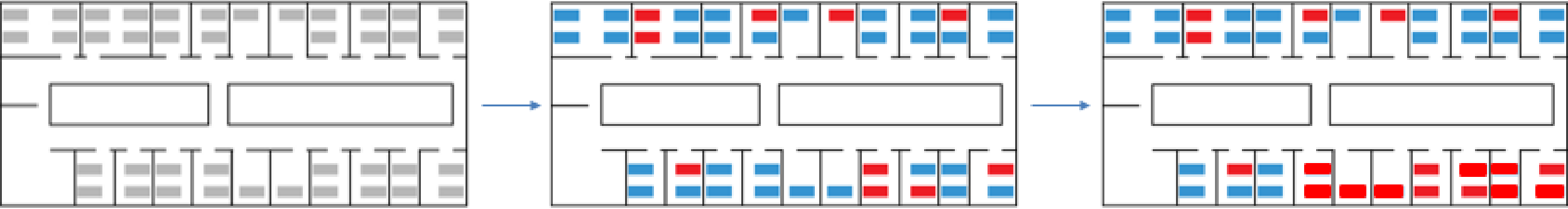


#### Case Status








# Repeated PPS help assess for ongoing transmission



**Case Status**

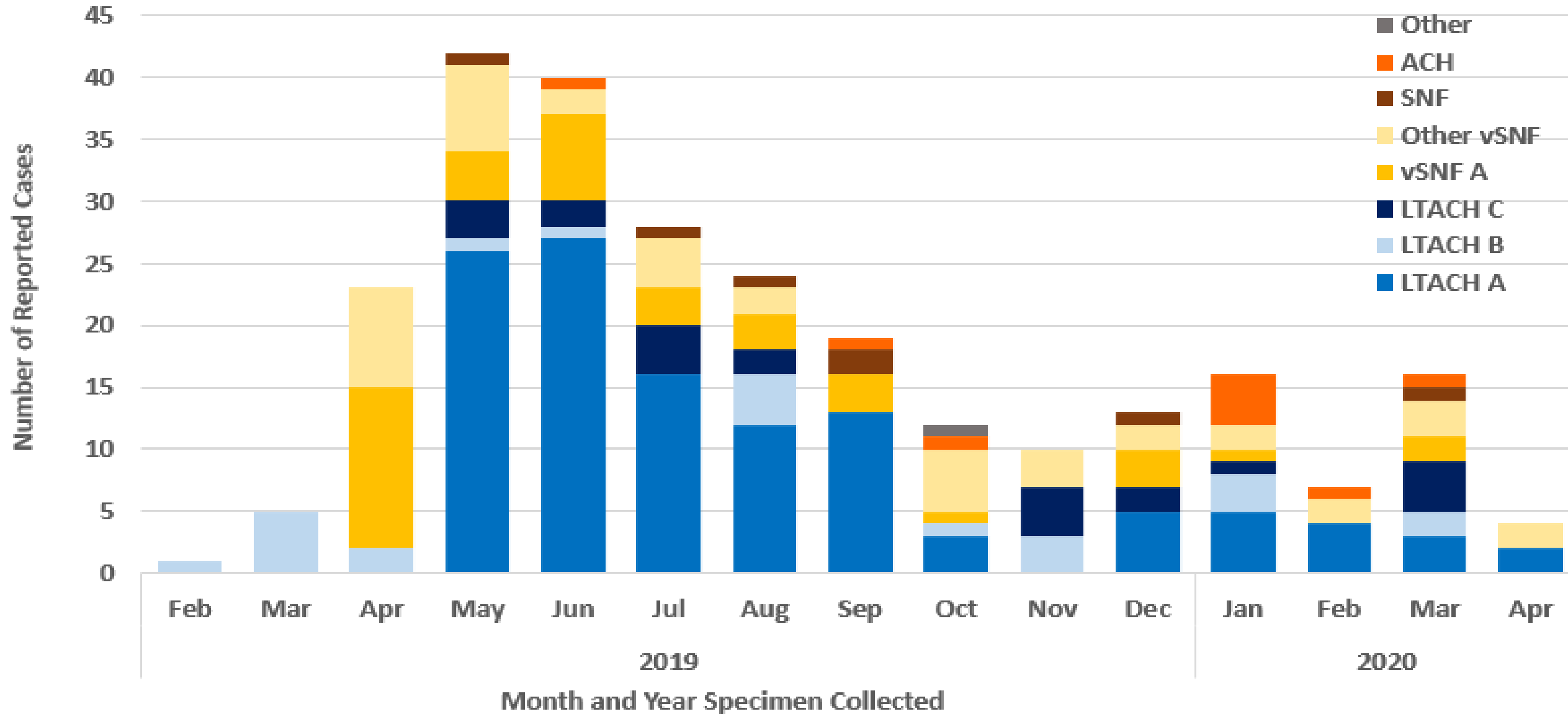
	Positive
	Negative
	Unknown

# Prevent further spread through infection prevention

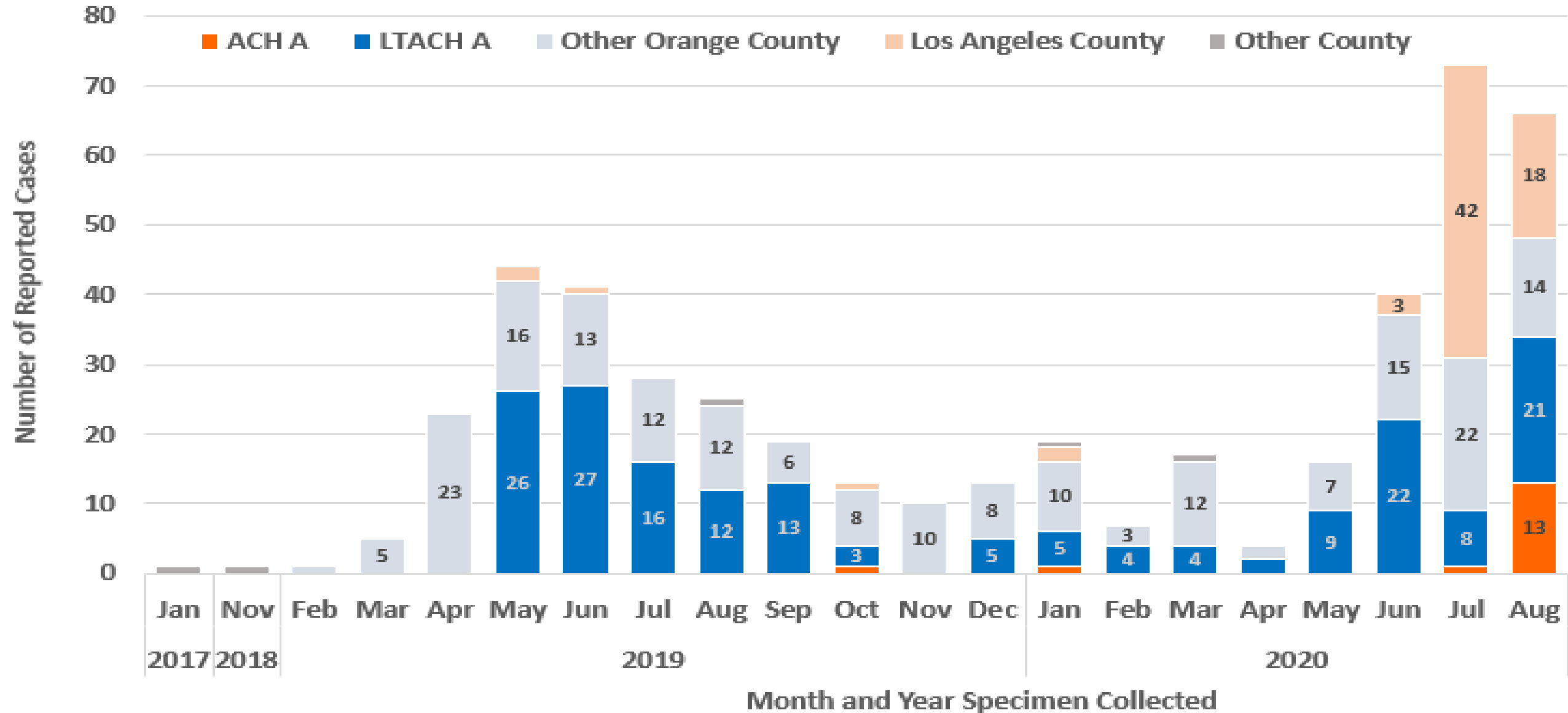
- **Contact precautions**
- **Availability of hand sanitizer**
- **Hand hygiene practices**
- **Environmental cleaning practices**



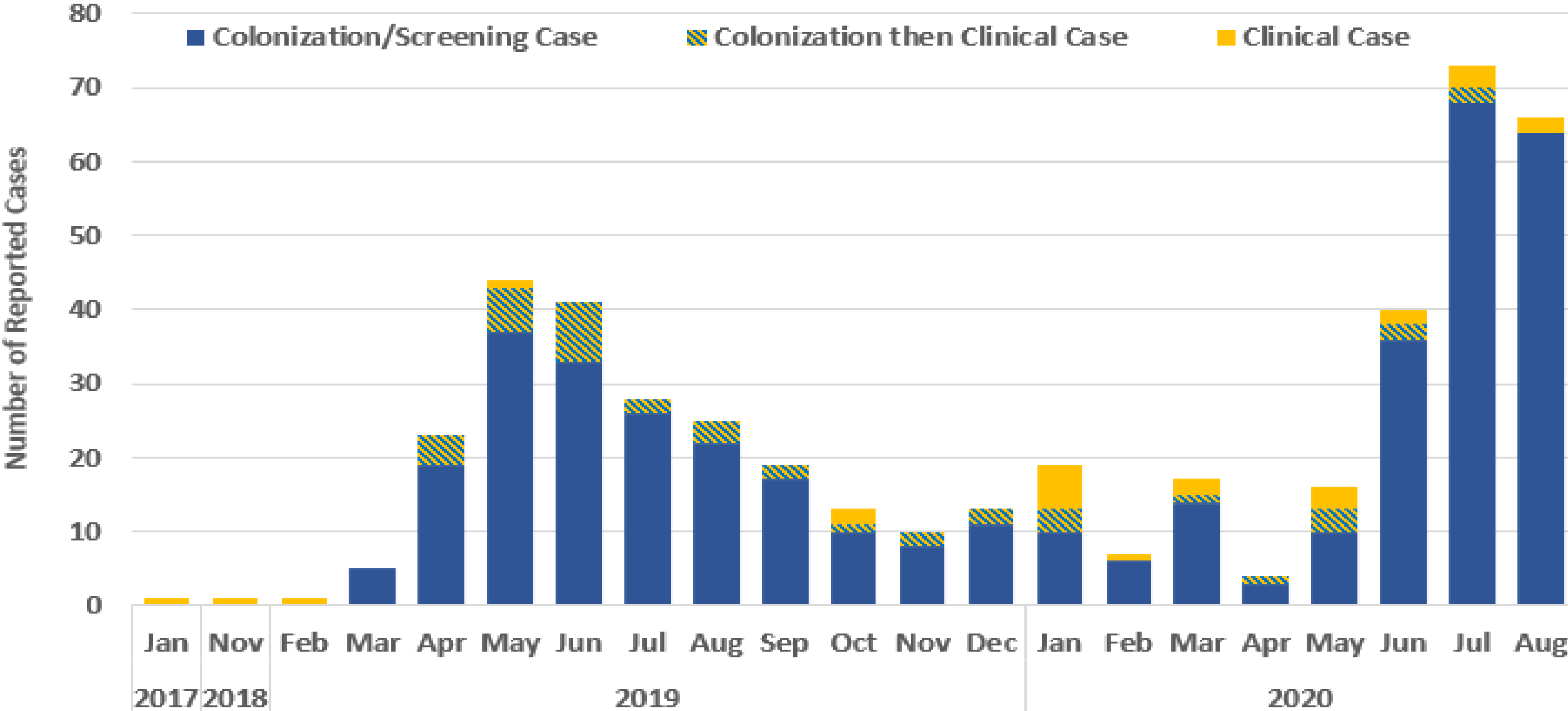
# C. auris Cases in Orange County February 2019 – April 2020



# *C. auris* Cases in CA by County through August 30, 2020 (N=466)



# C. auris Cases in CA by County through August 30, 2020 (N=466)

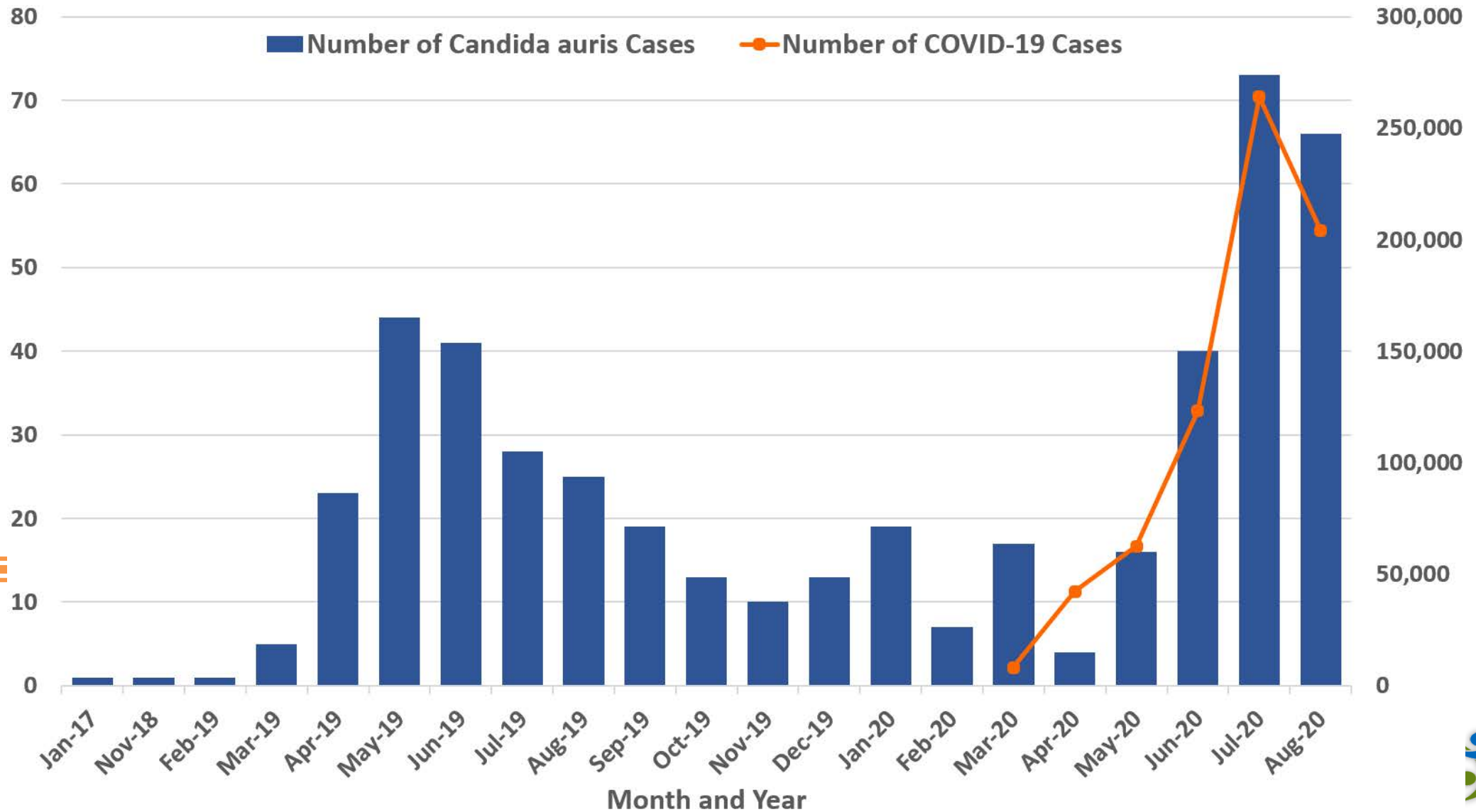


Month and Year Specimen Collected

## Other MDRO Transmission

- Since March 2020, we have identified other MDRO clusters/outbreaks
  - KPC-producing CRE in vSNF, ACH, LTACH
  - NDM+OXA-23-producing *Acinetobacter* in ACH
  - Other MDR-*Acinetobacter* in vSNF and ACH

# C. auris, COVID-19 Cases in CA through August 30, 2020 (N=466)



# *C. auris* and Other MDRO Spread in the Setting of COVID-19

- COVID-19 might be contributing to *C. auris* and other MDRO spread in high-risk healthcare facilities
  - Personal protective equipment (PPE) shortages and conservation strategies, especially extended use and reuse of gowns, and HCP wearing gowns in clean areas (e.g., nurses' station, break room)
  - Cohorting and room placement on the basis of COVID-19 status alone (i.e., without considering *C. auris* or other MDRO status)



# Recommendations for *C. auris* and Other MDRO Containment in the Setting of COVID-19

- Cohort patients by COVID-19 AND *C. auris* or other MDRO status, wherever possible
- During PPE supply shortage only – crisis conservation strategies
  - Extended use of gowns **ONLY** when patients are known to have the same *C. auris* or other MDRO AND COVID-19 status, and when housed in the same room; remove gown upon exiting room
  - Reserve gown use only for high-contact care activities
- Use an EPA-registered hospital-grade disinfectant effective against *C. auris* as well as COVID-19

# Strategies to Facilitate Early Detection and Containment of *C. auris* and Other MDRO

- Identify all *Candida* isolates from normally sterile sites to the species level; for *Candida* isolated from non-sterile sites, perform species-level identification of isolates from individuals at highest risk for *C. auris*
- Report all cases of *C. auris*, carbapenemase-producing organisms, or other highly-resistant organisms to your local public health department and the CDPH HAI Program
- *C. auris* and carbapenemase testing available via public health labs

# Strategies to Facilitate Early Detection and Containment of *C. auris* and Other MDRO

- Assess *C. auris* and other MDRO status for all patients and residents upon admission, by reviewing medical records and screening high-risk individuals
  - Place on pre-emptive Contact precautions individuals at highest risk of *C. auris* or other MDRO while awaiting screening results
  - *C. auris* and carbapenemase-producing bacteria screening resources available at no cost through CDC AR Lab
- Ensure communication of *C. auris*/MDRO status upon transfer
  - Work with facilities you commonly share patients with to develop a system
  - Include labs and any documentation (i.e., inter-facility transfer form)

# Strategies to Limit *C. auris* and Other MDRO Emergence, Transmission, Increasing Resistance, and Invasive Infections

- Antimicrobial stewardship
  - Broad-spectrum antimicrobials (e.g., meropenem)
  - Antifungal treatment not recommended for *C. auris* isolated from noninvasive sites (respiratory, urine and skin colonization) without evidence of infection
  - Echinocandin resistance can emerge rapidly in *C. auris*
- Management of medical devices
  - Central venous catheter and urinary catheter insertion and maintenance practices

# Key Messages

- Early and aggressive facility and public-health detection and containment efforts can limit emergence and spread of *C. auris* and other MDRO
- *C. auris* resurgence and concurrent outbreaks with COVID-19 present unique challenges, and will require focused attention to contain *C. auris* again
- Public health resources are available to support MDRO testing and containment

# Resources

- [CDPH \*C. auris\* Quicksheet](#) (PDF):  
([www.cdph.ca.gov/Programs/CHCQ/HAI/CDPH%20Document%20Library/C%20auris%20Quicksheet\\_Interim\\_070720\\_ADA.pdf](http://www.cdph.ca.gov/Programs/CHCQ/HAI/CDPH%20Document%20Library/C%20auris%20Quicksheet_Interim_070720_ADA.pdf))
- [CDPH CRE Quicksheet](#) (PDF):  
([www.cdph.ca.gov/Programs/CHCQ/HAI/CDPH%20Document%20Library/CRE\\_QuicksheetOct2019.pdf](http://www.cdph.ca.gov/Programs/CHCQ/HAI/CDPH%20Document%20Library/CRE_QuicksheetOct2019.pdf))
- [CDPH Antimicrobial Resistance Resources](#)  
([www.cdph.ca.gov/Programs/CHCQ/HAI/Pages/AntimicrobialResistanceLandingPage.aspx](http://www.cdph.ca.gov/Programs/CHCQ/HAI/Pages/AntimicrobialResistanceLandingPage.aspx))
- [CDPH Testing Resources](#)  
([www.cdph.ca.gov/Programs/CHCQ/HAI/Pages/CA\\_ARLN.aspx](http://www.cdph.ca.gov/Programs/CHCQ/HAI/Pages/CA_ARLN.aspx))
- [CDC \*C. auris\* Identification](#)  
([www.cdc.gov/fungal/candida-auris/identification.html](http://www.cdc.gov/fungal/candida-auris/identification.html))
- [CDC Disinfectants Effective against \*C. auris\*](#)  
([www.cdc.gov/fungal/candida-auris/c-auris-infection-control.html#disinfection](http://www.cdc.gov/fungal/candida-auris/c-auris-infection-control.html#disinfection))

# Contact Us

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