

Curbside Consultations - “Hey doc - got a minute?”

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ACOI's 2022 Clinical Challenges in Inpatient Care

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Disclosures: none
Comments: my own

Blackburn's Rule # 3

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- Never ask an I.D. doc a question and expect a short answer!



- “When the Next Big One arrives.....it will be signaled first by quiet, puzzling reports from faraway places - reports to which disease scientists and public health officials, but few of the rest of us, pay close attention.”

- D. Quammen. NYT 5/9/13

(Think HIV, “Reston” and other strains of Ebola, SARS MERS, Chikungunya, Zika, pandemic H1N1, COVID-19)

So.....Blackburn, what's the scoop on this fungus I heard about that seems kinda scary?

“ You mean *Candida auris*?

Yeah... I talked briefly about this sometime around 2015 at this same meeting, promptly putting everyone to sleep”

Let me tell you a more recent story:

(3/17/22)

- Asked to see “routine” consult for a patient with a + blood culture for “yeast”
- Unfortunate 25 yo w/ a brain stem tumor, with a port in place in L chest wall. Sister present, but with some language issues, limiting history

- Only because of my seeing him late in the day, was the identification of the yeast as *Candida auris* available.
- Lab had not notified anyone as to this result (other than the earlier report of “yeast”)
- More to this story; however, it includes near constant medical care for the past two years, at multiple hospitals, oncology visits and, more recently, residence at an extended care facility.
Never in isolation.

- Major glitch: Upon removal and culture of the port, “< 15 colonies of yeast” was the final report. Never speciated because of misinterpretation of this result
- Extensive time and resources recruited to address this. Too early to know if spread within our institution has occurred, but at the least, the most recent stay at the ECF has almost certainly led to spread to others, quite possibly including caregivers

C. auris

- Initially reported from a patient in **Japan** with an ear infection in 2009
- may have been misidentified prior to 2009; looking back, reported from **S. Korea** in 1996
- multiple strains (clades) reported from multiple countries and continents. Unknown why now. Relationship to climate change?
- First identified in the U.S. in New York in 2016, possibly imported by a patient or patients who had received prior medical care in a country where C. auris is endemic

C. auris

- increasingly spread throughout the U.S. (first case in Michigan reported 5/21), particularly in patients and their caregivers where an ECF/LTAC has been involved and/or who have previously received antifungals
- colonized patients may asymptotically carry this for more than 3 months (note: unknown as to how to “decolonize” an individual)
- environmental reservoir w/ long term survival on multiple surfaces, both moist and dry
- once introduced into a health care unit/facility, very difficult to eliminate or control

C. auris

- Not only ECFs and LTACs, widespread transmission has been described in various hospital units, particularly where aggressive, invasive care is provided: ICUs
- considered highly virulent, w/ mortality 30-60%, though likely this is related, at least in part, to patient population most affected

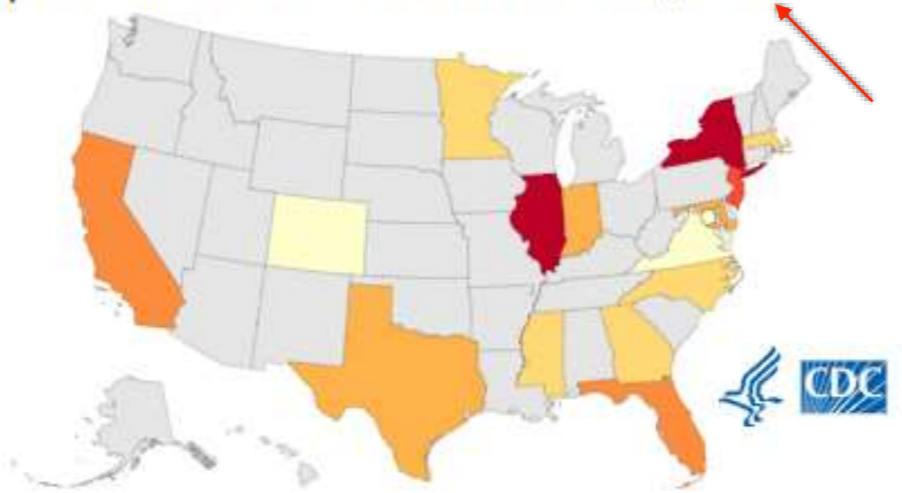
Reported clinical cases of *Candida auris*, 2017



Reported clinical cases of *Candida auris*, 2018



Reported clinical cases of *Candida auris*, 2019



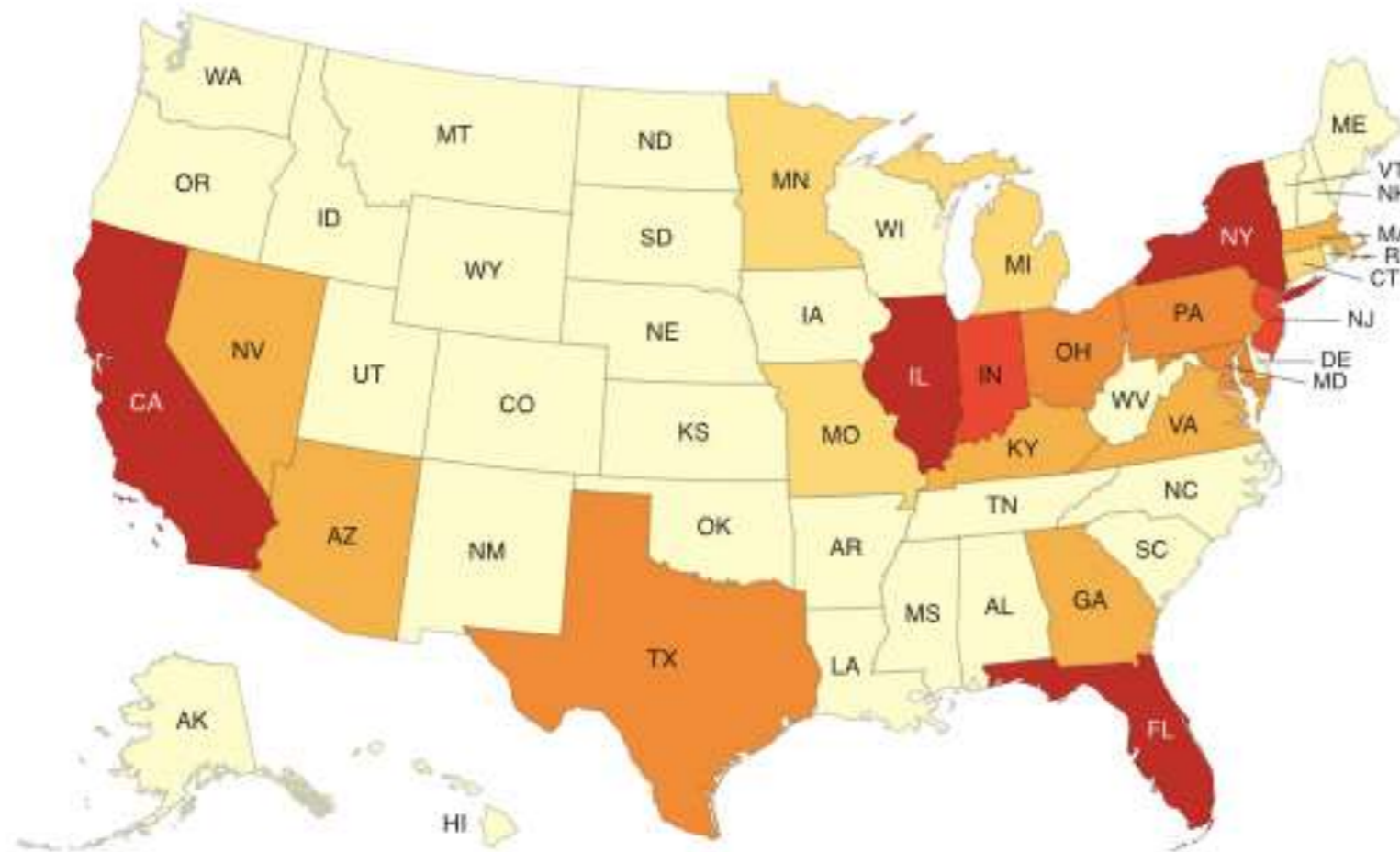
Reported clinical cases of *Candida auris*, 2020



Legend

- 1
- 2 to 10
- 11 to 50
- 51 to 100
- 101 or more

Reported clinical cases of *Candida auris*, January 01, 2021-December 31, 2021



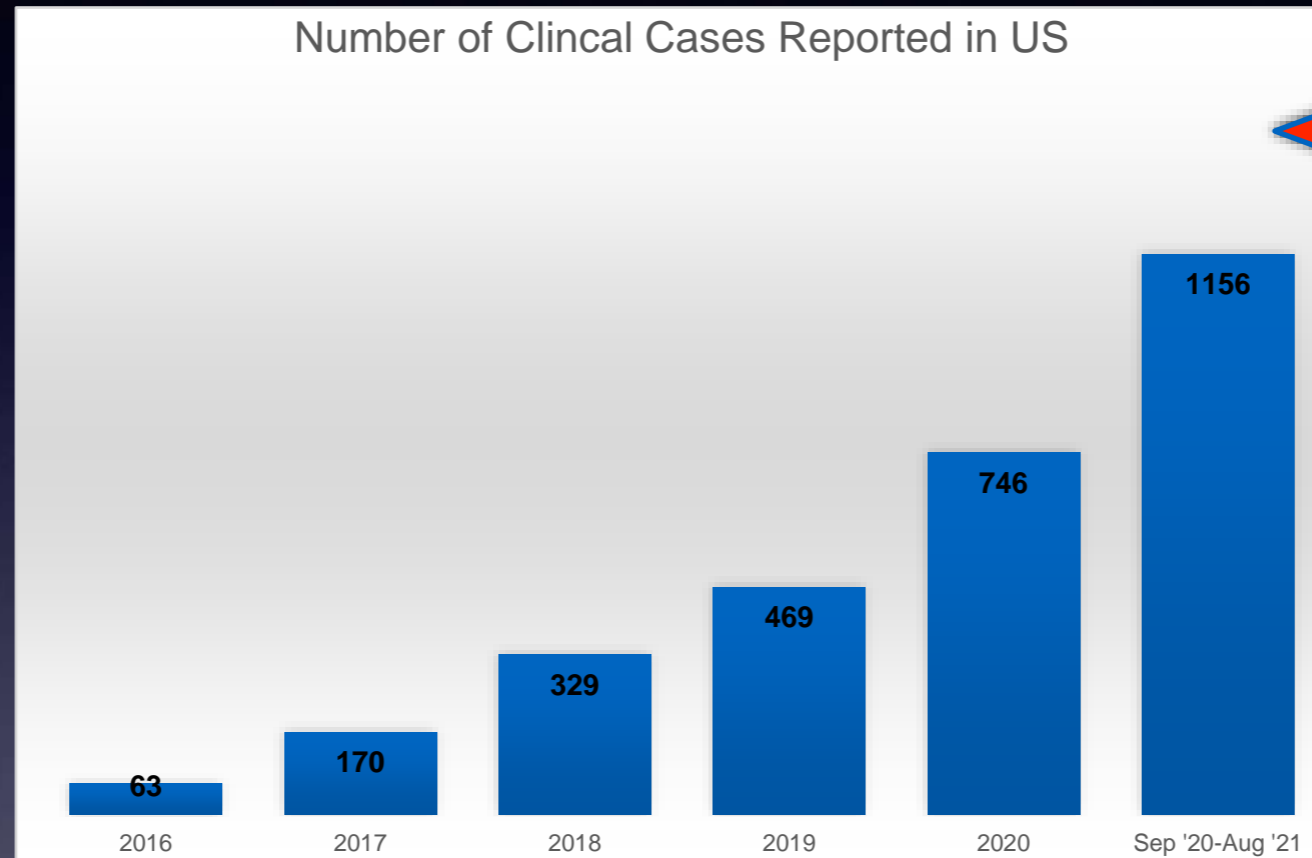
Number of Clinical Cases

- No cases reported
- 1
- 2 to 10
- 11 to 50
- 51 to 100
- 101 or more

Territories



C. auris 2021



← 1156

at least > 3700 individuals colonized

C. auris - the Nightmare

- Innate and acquired resistance, in some instances to all three currently available classes of antifungals:
 - azoles (e.g. fluconazole, voriconazole): >85% resistant (our pt resistant)
 - echinocandins (e.g. micafungin, caspofungin, anidulafungin): resistance low, but increasing (our pt susceptible)
 - polyenes (amphotericin B): >33% resistant (our pt resistant)
 - “pan-resistance” increasing (currently ~ 10%)

Current Empiric Rx of C. auris:

- Echinocandins: micafungin, caspofungin, anidulafungin, but..... resistance developing while on therapy has been described.
Increased resistance anticipated
- unknown if combination therapy beneficial

C. auris -Why this will only get worse:

- Wow! - double gloving and double gowning led to 52% of 67 pts being colonized in a dedicated COVID-19 unit in a Florida hospital! (Kuehn BM. JAMA. February 23, 2021)
- Resources of hospital and health departments diverted to COVID-19

Tracking *Candida auris*



Notice: *C. auris* tracking updates may be delayed due to the COVID-19 response.



screen shot CDC
website 3/6/22

C. auris -Why this will only get worse:

- patient characteristics
- characteristics of C. auris
- suboptimal staffing
- isolation fatigue

C. auris -Why this will only get worse:

- lack of awareness by both providers and hospital systems
- inadequate surveillance - e.g. Currently, C. auris testing in MI, including at MDHHS & most hospitals, is focused on clinical specimens, not screening swabs, likely **missing** potential sources of introduction into the hospital environment



“It’s always something”

Roseanne Roseannadanna



- Melioidosis outbreak (2021) scattered throughout the U.S. as a result of contaminated “aroma” therapy
- Listeria outbreak from contaminated salads (reported 2/4/22)
- Cronobacter sakazakii associated with Powdered Infant Formula
- A resurgence of polio? - now reported in 6 countries including Ukraine
- Spread of tick-borne Heartland virus

“So....Blackburn....What’s going to kill us ?”

- nuclear war?
- more Covid? (especially if you are not vaccinated)
- **C. auris?**, especially if your own state of health makes you vulnerable?
- Polio - resurgence? Tick-Borne Heartland virus? VRSA? Hanta virus?
- Disease Y? (another Spillover?) - No worries - we will likely be slow in dealing with this one as well!
- Climate change? - Don’t Look Up!



CLIMATE IN CRISIS

Derek Davis / Portland Press Herald via Getty Images file

28 percent of Americans don't want to be carbon neutral, new poll finds

3/1/22

Dire U.N. report warns of conflicts worsened by climate change

Time Is Running Out to Avert a Harrowing Future, Climate Panel Warns

The impacts of global warming are appearing faster than expected, according to a major new scientific report. It could soon become much harder to cope.

Fast changes, food woes and who's vulnerable: 7 big takeaways from the U.N. climate report

U.N. Secretary-General António Guterres called the more than 3,600-page report “an atlas of human suffering” and a “damning indictment of failed climate leadership.”



CLIMATE IN CRISIS

Tony Karumba / AFP - Getty Images file

Drought, disease and displacement: Climate report projects a bleak future for Africa

A child born in 2021 will live on average through seven times as many heat waves, twice as many wildfires and nearly three times as many droughts, crop failures and river floods as their grandparents,



A reminder -

Not only will you and everyone you love, someday be
a patient,
but.....

our collective actions (or inaction) today regarding
climate change will determine the world we leave to
our future generations

Hey - Blackburn - isn't it about time for coffee (or something a bit stronger)?

Answer: most definitely

Thanks!





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ACOI’s 2022 Clinical Challenges in Inpatient Care

- Our contributing members:
 - Bing Liem DO, FACOI, FHRS, FACC
 - Clinical Professor of Medicine, University of California San Francisco
 - Ella M. Noel, DO, FACOI
 - Medicare Contractor Medical Director, National Government Services
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