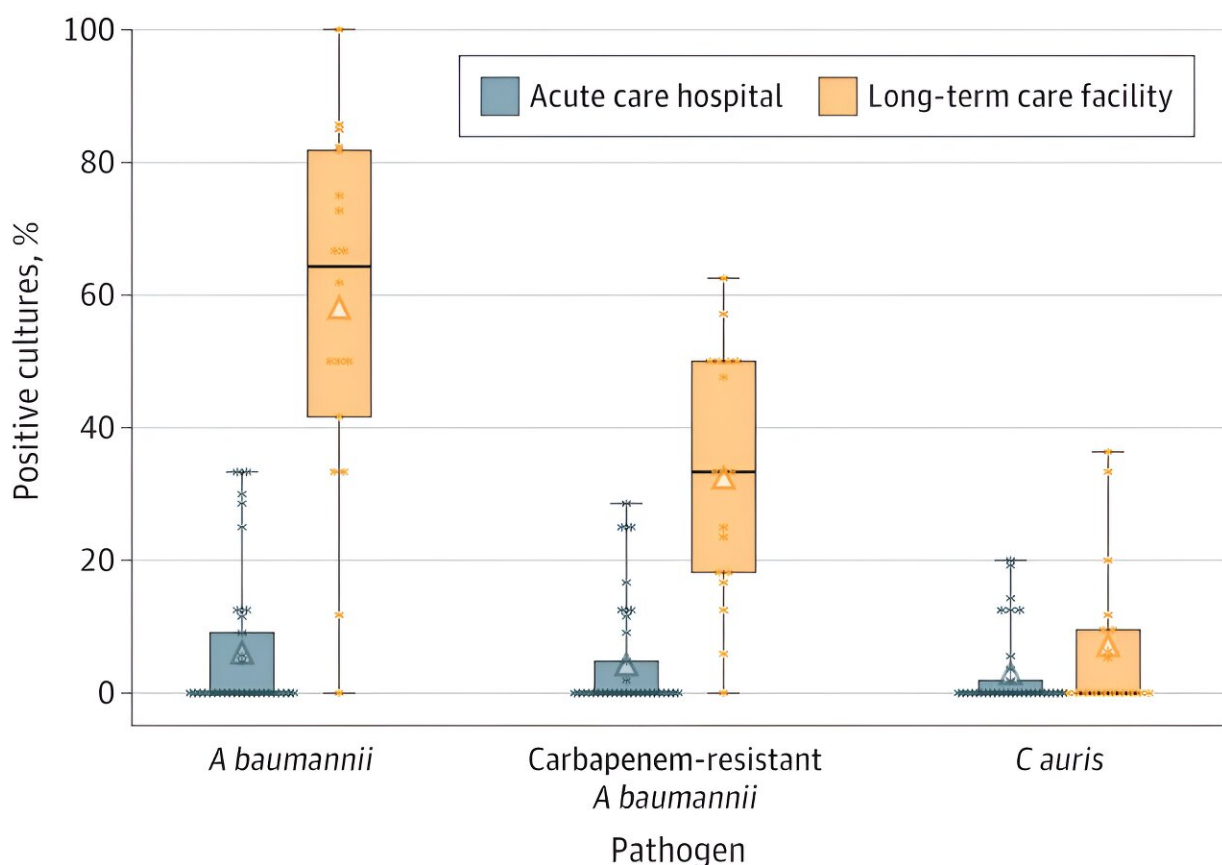


Maryland researchers provide first statewide prevalence data on two new emerging pathogens in health care settings

October 13 2023



Sites with 0 positive cultures

Acute care 22/33 (67%)
hospital

Long-term 1/18 (6%)
care facility

23/33 (70%)

1/18 (6%)

24/33 (73%)

10/18 (56%)

Prevalence of *Acinetobacter baumannii*, Carbapenem-Resistant *A baumannii*,

and *Candida auris* Colonization Stratified by Type of Facility. Credit: *JAMA* (2023). DOI: 10.1001/jama.2023.21083

University of Maryland School of Medicine (UMSOM) researchers conducted a statewide survey of all patients on breathing machines in hospitals and long-term care facilities and found that a significant percentage of them harbored two pathogens known to be life-threatening in those with compromised immune systems.

One pathogen, *Acinetobacter baumannii*, was identified in nearly 31 percent of all patients on ventilators to assist with their breathing; *Candida auris* was identified in nearly 7 percent of patients on ventilators, according to the study which was published this week in the *Journal of the American Medical Association (JAMA)*.

They conducted the study with colleagues at the Maryland Department of Health and presented their findings at this week's Infectious Disease Society of America annual meeting in Boston.

"We found patients in long-term care facilities, like skilled nursing homes, were more likely to be colonized with these pathogens than those getting treated in hospitals," said study leader Anthony Harris, MD, MPH, Professor of Epidemiology & Public Health at UMSOM and infectious disease specialist at University of Maryland Medical Center.

"We were the first in the nation to get a statewide survey of all ventilated patients, and I think it points to the stringency of the infection control programs in place in the state of Maryland and the excellent collaboration between the University of Maryland and the State Health Department."

Both *A. baumannii* and *C. auris* have been highlighted by the federal Centers for Disease Control and Prevention (CDC) as emerging pathogens that present a global health threat. *C. auris* is a fungus that spreads within and among local health care facilities—usually in those hospitalized and on breathing machines (ventilators).

Older people with weakened immune systems are particularly susceptible to this infection, which resists treatment with common anti-fungal medications. *A. baumannii*, a bacteria, also poses a threat to these same types of patients and has become very resistant through the years to treatment with most antibiotics.

To conduct the study, Dr. Harris and his colleagues obtained culture swabs from all 482 patients receiving mechanical ventilation in Maryland health care facilities between March and June of this year. All eligible health care facilities, 51 in total, participated in the survey. They identified *A. baumannii* from at least one patient in one-third of the acute care hospitals and from 94 percent of the long-term care facilities. They identified *C. auris* in nearly 5 percent of hospitalized patients and in 9 percent of patients in [long-term care facilities](#).

"Testing positive, however, does not mean that patients have symptoms or active infections that are potentially life-threatening," said study co-author J. Kristie Johnson, Ph.D., Professor of Pathology at UMSOM whose lab did the *A. baumannii* testing for the study. "But knowing which patients are colonized with these pathogens can help contain their spread to other patients."

Over the course of 2022, state and local health departments around the country reported 2,377 clinical cases, according to the CDC, nearly five times the number infections in 2019, which was less than 500 cases. Maryland alone had 46 cases in 2022. While these infections don't normally pose much of health risk to hospital workers, they pose a

significant risk of death in patients with weakened immune systems. Often the infections can be spread from patient to patient by health care workers carrying the germs on their hands, equipment or clothing.

"There is a need for more health care facilities nationwide to be aware of the extent of the problem through surveillance testing," Dr. Harris said. Certain measures can be implemented to help reduce spread of these pathogens including more stringent use of disposable gloves and gowns between patients and the use of chlorhexidine bathing of the critically ill to disinfect their skin.

"Emerging [pathogens](#) that are resistant to available therapeutics present a growing challenge in our country, especially with a projected increased growth in our aging population entering long term care facilities," said UMSOM Dean Mark Gladwin, MD, who is also Executive Vice President for Medical Affairs, UM Baltimore, and the John Z. and Akiko K. Bowers Distinguished Professor at UMSOM. "Nearly half of patients who contract *C. auris* infections die within 90 days, according to the CDC, and this pathogen is now found in nearly 50 states. This is why it is critical for these surveillance studies to be conducted nationwide, not just in Maryland."

UMSOM faculty members Lisa Pineles, MA, Lyndsay O'Hara, Ph.D., Leigh Smith, MD, and Indira French, MS, were co-authors on this study.

More information: Anthony D. Harris et al, Prevalence of *Acinetobacter baumannii* and *Candida auris* in Patients Receiving Mechanical Ventilation, *JAMA* (2023). [DOI: 10.1001/jama.2023.21083](https://doi.org/10.1001/jama.2023.21083)

Provided by University of Maryland School of Medicine

Citation: Maryland researchers provide first statewide prevalence data on two new emerging pathogens in health care settings (2023, October 13) retrieved 11 May 2024 from <https://medicalxpress.com/news/2023-10-maryland-statewide-prevalence-emerging-pathogens.html>

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