DEPARTMENT OF HEALTH

Protecting, Maintaining and Improving the Health of All Minnesotans

August 18, 2021

Dear Minnesota Hospital Infection Preventionist:

The Minnesota Department of Health (MDH) has updated recommendations for hospital-admission screening to identify patients colonized with carbapenemase-producing organisms (CPOs) and *Candida auris*. The MDH Public Health Lab (MDH-PHL) continues to offer free testing to support hospitals conducting admission screening. This letter has been sent to inform infection control programs of these recommendations and to increase awareness of MDH-PHL testing capacity. These organisms are not yet endemic in Minnesota. Efforts taken to detect CPOs and *C. auris* upon inpatient admission of high-risk patients will allow health care organizations to take early action to prevent nosocomial spread and to manage the risk of transmission to post-acute settings.

We recognize that throughout the course of the COVID-19 pandemic, the capacity of our acute care partners to implement admission screening has been stretched. However, facilities have continued to detect patients with CPO colonization and infection and have responded to CPO outbreaks. Some of these outbreaks have been associated with colonized patients admitted after inpatient stays in international and domestic locations where CPOs are endemic. To date, two cases of *C. auris* have been detected in Minnesota, but in other parts of the U.S., this organism has spread rapidly throughout health care facilities and regions. Strains of *C. auris* in recent Texas and Washington D.C. outbreaks have been pan-resistant (resistant to all classes of systemic antifungal agents).

We *must* work together to prevent these highly resistant and transmissible organisms from establishing endemicity in Minnesota and to ensure that healthcare-associated infections are prevented through prompt detection of colonized individuals.

Summary of Recommendations

MDH strongly recommends that, on admission, all Minnesota hospitals screen patients with the following exposures to detect both CPOs and *C. auris*:

- Overnight stay in a health care facility outside the United States or Canada in the previous 12 months.
- Ambulatory surgery or hemodialysis outside of the United States or Canada in the previous 12 months.
- Inpatient or skilled nursing facility stay in the previous 12 months in areas with documented transmission according to tracking data from the Centers for Disease Control and Prevention (CDC, see detail below).

Patients should be placed on Contact Precautions while awaiting test results. Please review the entire recommendation on page 2 of this document.

Background

CPOs are highly antibiotic-resistant organisms that can cause infections that are difficult to treat, and in some cases, infections are resistant to all classes of available antibiotics. These organisms produce enzymes called carbapenemases, which break down carbapenems and other antibiotic drugs. The genes encoding carbapenemase production are easily transferred between bacteria, contributing to the spread of antibiotic-resistant infections. Prompt implementation of Contact Precautions and other infection control measures is essential to prevent patient-to-patient transmission of CPOs in health care settings.

The most commonly identified carbapenemase in Minnesota is the *Klebsiella pneumoniae* carbapenemase (KPC). CPOs that produce other carbapenemase enzymes (e.g., NDM, VIM, IMP, OXA-48) are less common in Minnesota but are endemic in the health care systems of other countries. Minnesota acute care hospitals with established admission screening programs continue to identify CPOs in patients with recent international healthcare. Early CPO identification and infection control efforts may help prevent spread of these organisms within MN facilities.

C. auris is a globally emerging, difficult to identify, and often multidrug-resistant fungus that can cause serious invasive, difficult to treat infections. Only two cases of *C. auris* have been detected in Minnesota patients, yet case counts continue to rise elsewhere in the U.S. In 2018, 329 clinical cases were detected in 9 states and jurisdictions, in 2019, 467 cases from 13 states and jurisdictions, and in 2020, 718 cases from 21 states and jurisdictions. Outbreaks of *C. auris* have occurred in international and domestic health care settings, including in New York City, New Jersey, Chicago, Los Angeles, Texas, and Washington D.C. This year, two independent outbreaks of pan-resistant *C. auris* were identified in patients with no previous exposure to antifungal treatment. Because *C. auris* is able to contaminate patient care environments and survive on surfaces for weeks, these outbreaks have been difficult to control, even with enhanced infection control efforts. Several *C. auris* cases have been linked to receipt of health care in countries outside the U.S.

Individually, CPOs and *C. auris* can cause asymptomatic colonization in patients, which can later lead to infection and transmission of the organism to other patients within a health care facility if infection control measures are inadequate. Co-colonization of CPOs and *C. auris* has also been frequently observed. The CDC recognizes foreign health care exposure as a risk factor for colonization with both CPOs and *C. auris.* Since 2013, CDC has recommended that U.S. hospitals conduct admission screening for CPO colonization among patients with a recent history of receiving inpatient health care abroad. In late 2018, CDC released recommendations to screen patients who had an overnight stay in a health care facility outside the United States in the previous 12 months for *C. auris* colonization. Please follow the links below to access the full CDC recommendations.

- CDC Health Advisory: New Carbapenem-Resistant Enterobacteriaceae Warrant Additional Action by Healthcare Provider (https://stacks.cdc.gov/view/cdc/25250)
- CDC: Screening for Candida auris Colonization (https://www.cdc.gov/fungal/candida-auris/c-auris-screening.html)

MDH CPO and *C. auris* Hospital-Admission Screening Recommendations

Aligned with CDC recommendations and based on the epidemiology of these organisms, **MDH strongly recommends that Minnesota hospitals screen on admission individuals with a history of an overnight stay in a health care facility outside the United States or Canada in the previous 12 months for CPOs and *C. auris* and individuals with a history of ambulatory surgery or hemodialysis outside of the United States or Canada in the previous 12 months.** Patients should be placed on Contact Precautions while awaiting testing results.

Because CPOs and *C. auris* are more common in certain U.S. regions (e.g., New York City, New Jersey, Chicago) and *C. auris* outbreaks are currently occurring in other regions (e.g., Texas, Washington D.C.), **hospitals should consider admission screening for individuals with a history of inpatient or skilled nursing facility stay in the previous 12 months in areas with documented transmission according to CDC tracking data.**

- CDC: Antibiotic Resistance and Patient Safety Portal: Carbapenem-Resistant Enterobacteriaceae (https://arpsp.cdc.gov/profile/arln/cre)
- CDC: Tracking *Candida auris* (https://www.cdc.gov/fungal/candida-auris/tracking-c-auris.html)

MDH does not have specific recommendations for the threshold for number of cases in a U.S. state or region to warrant screening after inpatient stay. **Minnesota hospitals should consider current and recent CDC CPO and *C. auris* case data as well as other factors (e.g., length of stay, procedures, risk profile of admitted patient; risk profile of hospital/unit patient population) to establish facility-specific admission screening protocols.**

CDC recommendations refer to health care exposures within the last 6 months for CPO screening and exposures in the last year for *C. auris* screening. Because of the frequency of co-colonization with CPOs and *C. auris*, the potential for prolonged CPO colonization, and the ability to streamline processes, MDH recommends screening for CPO and *C. auris* if health care exposures occurred in the last 12 months.

Specimen Collection and Laboratory Testing

The MDH-PHL is one of seven labs in CDC's Antibiotic Resistance (AR) Laboratory Network (https://www.cdc.gov/drugresistance/solutions-initiative/ar-lab-network.html) with enhanced capacity to detect and respond to emerging antimicrobial-resistant threats. As the AR Lab Network Central Region Laboratory, MDH-PHL supports colonization testing for CPOs and C. auris by:

- Providing health care facilities with specimen collection swabs and accompanying instructions
- Laboratory testing of specimens
- Reporting results quickly so that facilities can take action

CPO screening is conducted through rectal swab (Copan™ dual swab) testing by using the Cepheid® Xpert® Carba-R assay. This PCR assay is FDA-approved and detects the five most common carbapenemases (KPC, NDM, OXA-48, VIM, and IMP). Results are typically available the day of specimen receipt or in up to 2 business days. Rectal swabs positive by PCR are also cultured for organism identification and to perform relatedness studies in the event of transmission.

C. auris screening is conducted by performing PCR testing of skin swab specimens. Body sites with the greatest yield for *C. auris* are bilateral axilla and groin. Specimens are collected by using one composite E-Swab™. Results are typically available the day of specimen receipt or in up to 2 business days. Positive specimens are cultured to obtain the *C. auris* organism for additional characterization.

How to Get Started

Please contact an MDH epidemiologist (Laura Tourdot 651-201-4881 or Sean O'Malley 651-201-4569) or the MDH-PHL (arlnmn@state.mn.us) to discuss implementation of admission screening and laboratory coordination.

Thank you for your partnership in containing antimicrobial-resistant pathogens and protecting the health and safety of Minnesota patients.

Sincerely,

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