Admission screenings find superbug infections in Virginia

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Antibiotic-resistant superbugs like carbapenem-resistant Enterobacteriaceae (CRE) present a challenge to healthcare professionals as patients move from different care settings and facilities, unknowingly spreading healthcare-associated infections. In a new study, researchers screened all patients for CRE at admission to a long-term acute care hospital (LTACH). They found patients colonized with CRE coming into the LTACH from hospitals, but they also found transmission occurring among patients in the LTACH. LTACHs provide similar care as hospitals but focus on patients who, on average, stay more than 25 days.

The findings of this study provide an indication of the prevalence of CRE in hospitalized patients in one specific region, as well as the frequency of transmission based on transitions between healthcare facilities. The study is published in the August issue of *Infection Control and Hospital Epidemiology*, the journal of the Society for Healthcare Epidemiology of America.

"Identification of asymptomatic CRE carriers admitted to LTACHs may help identify patients who could benefit from interventions that reduce risks for subsequent CRE transmission and break cycles of resistance that develop when patients move between healthcare facilities," said Costi Sifri, MD, an author of the study.

Recent research has shown that LTACHs can play important roles in the regional transmission of CRE. These facilities are reservoirs of

healthcare-associated infections, since patients admitted to these facilities are highly susceptible to CRE colonization due to risk factors such as complex medical conditions, extended hospitalizations, invasive medical devices and unnecessary antibiotic use.

Researchers at the University of Virginia Health System prospectively screened patients admitted to a 40-bed central Virginia LTACH for CRE colonization. Additionally, weekly surveillance for CRE was performed on all patients in the facility. During the 24-month study period, 262 patients received care at the LTACH and 20 had positive CRE cultures.

The investigators identified six patients positive for CRE on admission who had no known history of CRE infection or colonization. Two of these patients were admitted from the affiliated academic hospital and four were admitted from four separate regional hospitals.

Additionally, six patients had a prior history of CRE colonization or infection and seven patients had no known history of CRE infection or colonization, but tested positive during hospitalization.

In a commentary published alongside the study, L. Silvia Munoz-Price, MD, Associate Professor of Medicine at University of Miami notes "healthcare professionals who work in this field are concerned with the inter-facility, inter-regional, and inter-continental spread of CREs. However, we are attempting to solve a population health problem by using snapshots of what occurs in our own hospitals or within a limited set of facilities where we have professional networks... over simplifications are hindering us from determining the extent in which all the contributing factors are affecting this dynamic population model."

More information: Jessica D. Lewis, Matthew Bishop, Brenda Heon, Amy J. Mathers, Kyle B. Enfield, Costi D. Sifri. "Admission Surveillance for Carbapenamase-Producing Enterobacteriaceae at a

Long-TermAcute Care Hospital." *Infection Control and Hospital Epidemiology* 34:8 (August 2013).

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