Superbug CRE may endure in patients one year after initial infection

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Patients who tested positive for carbapenem-resistant Enterobacteriaceae (CRE) took an average of 387 days following hospital discharge to be clear of the organism, according to a new study published in the March issue of the *American Journal of Infection Control*, the official publication of the Association for Professionals in Infection Control and Epidemiology (APIC).

The study was conducted in the Shaare Zedek Medical Center, a 700-bed university-affiliated general hospital in Jerusalem, Israel. The research team analyzed follow-up cultures from 97 CRE-positive patients who had been discharged from the medical center between January 2009 and December 2010.

The average time until cultures became negative was 387 days. At three months, 78 percent of patients remained culture positive; at six months, 65 percent remained positive; at nine months, 51 percent, and at one year 39 percent of patients remained positive, meaning they could potentially become re-infected or transmit the germ to others.

Risk factors for extended carriage included the number of hospitalization days, whether and how often the patient was re-hospitalized, and whether the patient had an active infection as opposed to colonization without signs of active disease.

This is one of the first studies to determine length of CRE duration after hospital discharge and provides vital insight into treating formerly CRE-

positive patients upon readmission as to limit the spread of this virulent and often deadly pathogen.

The authors state, "Patients with multiple hospitalizations or those who were diagnosed with clinical CRE disease should be assumed to have a more extended duration of CRE coverage and should therefore be admitted under conditions of isolation and cohorting until proven to be CRE-negative. These measures will reduce the hospitalization of CRE-positive patients among the general patient population, potentially preventing the spread of CRE."

CRE are extremely difficult-to-treat, multidrug-resistant organisms that are emerging in the United States. A CRE strain of *Klebsiella pneumoniae* recently spread through the National Institutes of Health hospital outside Washington, DC, killing six people. Because of increased reports of these multidrug-resistant germs, the Centers for Disease Control and Prevention recently alerted clinicians about the need for additional prevention steps to prevent transmission.

More information: "Duration of carriage of carbapenem-resistant Enterobacteriaceae following hospital discharge" by Frederic S. Zimmerman, Marc V. Assous, Tali Bdolah-Abram, Tamar Lachish, Amos M. Yinnon and Yonit Wiener-Well appears in the American Journal of Infection Control, Volume 41, Issue 3 (March 2013).

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