

Cases of drug-resistant superbug significantly rise in southeastern US

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Cases of the highly contagious, drug-resistant bacteria, carbapenem-resistant Enterobacteriaceae (CRE), have increased fivefold in community hospitals in the Southeastern United States, according to a new study published in the August issue of *Infection Control and Hospital Epidemiology*, the journal of the Society for Healthcare Epidemiology of America.

"This dangerous bacteria is finding its way into [healthcare facilities](#) nationwide. Even this marked increase likely underestimates the true scope of the problem given variations in hospital surveillance practices," said Joshua Thaden, MD, a lead author of the study. "A CRE epidemic is fast approaching. We must take immediate and significant action in order to limit the transmission of these [dangerous pathogens](#) throughout our hospitals and acute care facilities."

CRE are a class of highly antibiotic-resistant bacteria that are not susceptible to most commonly-used antibiotics. Labeled "one of the three greatest threats to human health" by the World Health Organization, these dangerous pathogens can cause infections in the urinary tract, lungs, blood, and other areas. Patients with CRE infections have high risk of mortality, with at least 48 percent of cases proving fatal.

Over the five-year study period, researchers identified 305 unique patients with CRE through the Duke Infection Control Outreach Network (DICON), a cluster of 25 community hospitals in the Southeastern U.S. In this retrospective cohort, infection prevention professionals identified cases via prospective surveillance using standardized protocols in all hospitals. However, the majority of microbiology laboratories in the study had not adopted the most recent, and more sensitive, guidelines for detecting the bacteria. In hospitals that had adopted the guidelines, the rate of CRE detection was more than three times higher.

Half of the patients with CRE were symptomatic (59 percent) and nearly all cases were healthcare-associated (60 percent community-onset, healthcare-associated, 34 percent hospital onset). The higher rate of infection was found to stem from a combination of factors, including:

- Increased use of broad-spectrum antibiotics;
- Ease of which CRE enzymes could be transmitted among bacteria; and
- Increased transmission between long-term acute care facilities and community hospitals.

"This is a wake up call for community hospitals. More must be done to prepare and respond to CRE, specifically [infection control](#) to limit person-to-person transmission and improved laboratory detection," said Thaden.

In a commentary accompanying the study, Christopher Pfeiffer, MD, noted increased financial and staffing shortages as two challenges [community hospitals](#) faced in trying to prevent transmission of the superbug. Pfeiffer offered, "CRE prevention and control could benefit from regional collaborative networks armed with knowledge and resources to assist individual facilities and coordinate between facilities, which have been successful in the control of other antibiotic-resistant bacteria."

In 2012, the Centers for Disease Control and Prevention developed a CRE toolkit to help protect patients and prevent transmission.

More information: *Infection Control and Hospital Epidemiology* [35:8] (August 2014). The toolkit is available at <http://www.cdc.gov/hai/organisms/cre/cre-toolkit>.

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