

Each day in the hospital raises risk of multidrug-resistant infection

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If a patient contracts an infection while in the hospital, each day of hospitalization increases by 1% the likelihood that the infection will be multidrug-resistant, according to research presented at the 54th Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC) an infectious disease meeting of the American Society for Microbiology.

Researchers from the Medical University of South Carolina gathered and analyzed historical data from 949 documented cases of Gram-negative [infection](#) at their academic medical center. In the first few days of hospitalization the percentage of infections associated with Gram-negative bacteria classified as multidrug-resistant was about 20% and rose fairly steadily until four or five days, then jumped dramatically, peaking at over 35% at 10 days. Statistical analysis suggested an additional 1% risk per day of hospitalization.

Hospital-acquired infections represent a large and possibly preventable segment of hospital-related deaths and have been rising in recent years. A European study suggested that Gram-negative infections account for two thirds of the 25,000 hospital-acquired infection deaths each year. There is currently little data on how many infections and deaths are caused by Gram-negative bacteria, although in 2011 the CDC estimated that there were roughly 722,000 hospital-acquired infections that caused approximately 75,000 deaths. On any given day, about 1 in 25 hospital [patients](#) has at least one healthcare-associated infection and over a third of these infections are caused by Gram-negative bacteria, many of which

are resistant to one or more classes of antibiotics. This study is the first to quantify the risks for patients over time.

"Our findings emphasize one of the risks of being in the hospital, acquiring a multidrug-resistant infection" said John Bosso, an author of the paper. "At the very least, this observation argues against both unnecessary hospitalization and unnecessarily long hospitalization."

The data revealed several other surprising findings. The chances that a patient would become infected with a multidrug-resistant pathogen varied from one organism to another. This could have implications for clinicians and others hoping to reduce dangerous hospital-acquired infections, says Bosso.

More information: This research was presented as part of the ASM's 54th ICAAC held September 5-9, 2014 in Washington, DC.

Provided by American Society for Microbiology

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