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Unnecessary antibiotic use responsible for $163M in potentially avoidable hospital costs

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The Centers for Disease Control and Prevention (CDC) and Premier, Inc. have released new research on the widespread use of unnecessary and duplicative antibiotics in U.S. hospitals, which could have led to an estimated $163 million in excess costs. The inappropriate use of antibiotics can increase risk to patient safety, reduce the efficacy of these drugs and drive up avoidable healthcare costs. The study is published in the October issue of *Infection Control and Hospital Epidemiology*, the journal of the Society for Healthcare Epidemiology of America (SHEA).

"The overuse of antibiotics is an industry-wide public health issue that is occurring across all care settings," said Leslie Schultz, RN, PhD, the lead author of the study and director of the Premier Safety Institute®, Premier, Inc. "Sometimes in an effort to 'do whatever it takes' to fight a serious infection, clinicians use multiple antibiotics to treat the same infection. This practice can contribute to antimicrobial resistance, put patient safety at risk and increase costs. We hope these findings help to enhance the antimicrobial stewardship initiatives that the majority of U.S. hospitals already have in place today."

Researchers found that 70 percent of potential unnecessary therapies represented three specific drug combinations used to treat anaerobic infections. The drug combination metronidazole and piperacillin-tazobactam accounted for more than 50 percent of the variation. These findings can help hospitals focus and improve their antimicrobial usage efforts by pointing clinicians to areas where potential overuse is highest.

Specifically, researchers conducted a retrospective analysis of inpatient pharmacy data from more than 500 U.S. hospitals from 2008-2011 to identify the potential inappropriate usage of 23 intravenous antimicrobial combinations. The analysis showed that 78 percent of hospitals had evidence of potentially unnecessary combinations of antibiotics being administered for two or more days, with a total of 32,507 cases of redundant antibiotics treatment.

Overall, these cases represented 148,589 days of potentially inappropriate antibiotic therapy, resulting in nearly $13 million in potentially avoidable healthcare costs from antimicrobial drugs, alone. If these cases were representative of all U.S. hospitals over the same time period, an estimated $163 million could have been saved through appropriate prescribing. These costs do not include other operational factors, such as the associated supply and labor costs, or patient safety complications.

"Improving the way antibiotics are prescribed not only helps reduce rates of Clostridium difficile infection and antibiotic resistance, but can also improve individual patient outcomes, all while reducing healthcare costs," said Arjun Srinivasan, MD, associate director for Healthcare Associated Infection Prevention Programs in the Division of Healthcare Quality Promotion at CDC. "Eliminating these unnecessarily duplicative antibiotic therapies is a simple way that all facilities can both protect their patients and save healthcare dollars."

In addition to antimicrobial resistance and excess costs, unnecessary intravenous combinations can increase the risk of adverse drug events. Each drug has a risk of side effects, and combinations increase those risks as well as the risks for drug-drug interactions.

Antimicrobial stewardship is an effective strategy for reducing antimicrobial resistance, patient harm, and unjustified variation in

healthcare costs. These interventions help physicians choose the right antibiotic, at the right dose and for the right duration.

A policy statement by SHEA, Infectious Diseases Society of America and the Pediatric Infectious Diseases Society outlines recommendations for the mandatory implementation of antimicrobial stewardship throughout healthcare, suggests process and outcome measures to monitor these interventions, and addresses deficiencies in education and research in this field as well as the lack of accurate data on antimicrobial use in the U.S.

More information: Leslie Schultz, Timothy Lowe, Arjun Srinivasan, Dwight Neilson, Gina Pugliese. "Economic Impact of Redundant Antimicrobial Therapy in U.S. Hospitals." *Infection Control and Hospital Epidemiology* [35:10] (October 2014).

Provided by Society for Healthcare Epidemiology of America