

Antimicrobial use in hospitals appears to be common

October 7 2014

A one-day prevalence survey of 183 hospitals found that approximately 50 percent of hospitalized patients included in the survey were receiving antimicrobial drugs, and that about half of these patients were receiving 2 or more antimicrobial drugs, according to a study in the October 8 *JAMA*, a theme issue on infectious disease. Most antimicrobial use was for infection treatment.

Despite the evidence supporting early, appropriate antimicrobial therapy, a substantial proportion of antimicrobial use in U.S. acute care hospitals may be inappropriate, based on factors such as lack of indication or incorrect drug selection, dosing levels, or treatment duration. Exposure to antimicrobial drugs is a risk factor for the acquisition of resistant and difficult-to-treat pathogens, and is a leading cause of adverse drug events. It is important to understand patterns of inpatient antimicrobial drug use in order to improve use and reduce antimicrobial-resistant infections, according to background information in the article.

Shelley S. Magill, M.D., Ph.D., of the Centers for Disease Control and Prevention, Atlanta, and colleagues performed an antimicrobial-drug use prevalence survey to determine the prevalence of inpatient antimicrobial-drug use, the most common antimicrobial drug types, and the reasons for their use. The one-day prevalence surveys were conducted in 183 acute care hospitals in 10 states between May and September 2011. Patients were randomly selected from each hospital's morning census on the survey date, and data were collected regarding antimicrobial drug use.

The study included 11,282 [patients](#); of these, 5,635 (49.9 percent) were confirmed to have received 1 or more antimicrobial drugs at the time of the survey. Of this group of patients, 49.9 percent were receiving 1 antimicrobial drug; 32.7 percent, 2 antimicrobial drugs; 12.1 percent, 3 antimicrobial drugs; and 5.4 percent, 4 or more antimicrobial drugs.

Overall, of the patients receiving antimicrobial drugs, 75.9 percent were receiving them to treat infections; 19.0 percent for surgical prophylaxis; 6.9 percent for medical prophylaxis; and 6.9 percent for no documented rationale.

Although there were 83 different antimicrobial drugs administered to treat infections, just 4—parenteral vancomycin, piperacillintazobactam, ceftriaxone, and levofloxacin—made up approximately 45 percent of all antimicrobial drug treatment. These 4 drugs were not only the most common drugs for treating health care facility-onset infections and for treating patients in critical care units but were also the most common drugs for treating community-onset infections and patients outside of the critical care setting.

Additionally, approximately 54 percent of treatment antimicrobial drugs were given to treat lower respiratory tract, urinary tract, or skin and soft tissue infections only. "Taken together, focusing stewardship efforts on these 4 drugs and 3 infection syndromes could address more than half of all inpatient antimicrobial drug use," the authors write

"Results from this prevalence survey provide patient-level information that augments data on [antimicrobial drug](#) consumption and points to specific areas where interventions to improve antimicrobial use may be needed, such as vancomycin prescribing and respiratory infection treatment, supporting the CDC's recommendation that every acute care hospital implement an antimicrobial stewardship program."

"To minimize patient harm and preserve effectiveness, it is imperative to critically examine and improve the ways in which antimicrobial drugs are used," the researchers write. "Improving antimicrobial use in hospitals benefits individual patients and also contributes to reducing [antimicrobial resistance](#) nationally."

More information: [DOI: 10.1001/jama.2014.12923](https://doi.org/10.1001/jama.2014.12923)

Provided by The JAMA Network Journals

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