

Seminars in Anesthesia

Perioperative Medicine and Pain

Striving to eliminate catheter-related bloodstream infections: A literature review of evidence-based strategies

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KEYWORDS

Nosocomial infection;
Antibiotic catheter;
Patient safety;
Catheter

This report has three objectives. First, to provide a concise summary of the current state of mandatory reporting legislation on nosocomial infection rates. Second, to identify and briefly summarize the evidence-based patient safety practices shown to reduce catheter-related bloodstream infections. And, finally, to demonstrate the significant cost benefit hospitals may achieve by undertaking programs to prevent these device-associated infections. Specifically, the following topics are addressed: public policy, prevention strategies and their clinical impact, role of technology, and economic implications.

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Reducing catheter-related bloodstream infections becomes key patient safety goal

The Institute of Medicine's 1999 report *To Err Is Human*, which estimated the number of deaths in the United States attributable to medical errors at 44,000 to 98,000 annually,¹ resulted in a number of patient quality initiatives both from public agencies and private organizations. One of the consequences of this focus on improving patient safety was a critical look at nosocomial, or hospital-acquired, infections. While these infections are a significant problem—two million per year in US hospitals resulting in 88,000 deaths and nearly \$5.0 billion in additional healthcare expenditures—most of them are preventable.^{2,3} Because of intense lobbying campaigns by consumer groups such as Consumers Union, which operates the website www.stophospitalinfections.org, as well as by patients coming forward with dramatic and

sympathetic testimonials, most state legislatures have either passed or are considering mandatory reporting laws on nosocomial infection rates. Indeed, these states have embraced the rationale articulated by Consumers Union's Stop Hospital Infection Project that "informing the public about infection rates will put pressure on hospitals to do a better job of minimizing infections, thus reducing unnecessary illness and keeping patients safer."⁴ Whether this strategy will ultimately be effective remains to be seen because, as noted by the Centers for Disease Control and Prevention (CDC) in its *Guidance on Public Reporting of Healthcare-Associated Infections*, no evidence exists substantiating a link between public reporting and a reduction in hospital-acquired infections.⁵ Nonetheless, many hospitals find themselves faced with the prospect of future public disclosure of their infection rates and the potential of payers and consumers choosing hospitals based on these numbers. Already Medicare has started a "pay for performance" demonstration with 274 hospitals, offering them financial bonuses for achieving quality scores in the top 20% in inpatient care for heart attack, heart failure, pneumonia, coronary artery bypass graft, and hip and knee replacement. Once hospital-acquired infection rates are known, they are a reasonable candidate to be integrated into such a system. A hospital with a high rate of nosocomial infections may find claims rejected by payers.

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