



INTRAVASCULAR CATHETER-RELATED INFECTION (BSI) PREVENTION GUIDELINES  
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## Guidelines for the Prevention of Intravascular Catheter-Related Infections (2011)

## KEY POINTS

Background Information: Epidemiology and Microbiology in Adult and Pediatric Patients from the Guidelines for the Prevention of Intravascular Catheter-Related Infections (2011).

# Epidemiology and Microbiology in Adult and Pediatric Patients

National estimates of CLABSI rates are available through CDC's NHSN, a surveillance system for healthcare-associated infections, and are available on CDC's website. A recent report highlights data from 1,545 hospitals in 48 States and the District of Columbia that monitor infections in one or more ICUs and/or non-ICUs (e.g., patient care areas, wards) [207]. Because BSI rates are influenced by patient-related factors, such as severity of illness and type of illness (e.g., third-degree burns versus post-cardiac surgery), by catheter-related factors, (such as the condition under which the catheter was placed and catheter type), and by institutional factors (e.g., bed-size, academic affiliation), these aggregate, risk-adjusted rates can be used as benchmarks against which hospitals can make intra-and inter-facility comparisons.

The most commonly reported causative pathogens remain coagulase-negative staphylococci, *Staphylococcus aureus*, enterococci, and *Candida* spp [208]. Gram negative bacilli accounted for 19% and 21% of CLABSI reported to CDC [209] and the Surveillance and Control of Pathogens of Epidemiological Importance (SCOPE) database, respectively [208].

For all common pathogens causing CLABSIs, antimicrobial resistance is a problem, particularly in ICUs. Although methicillin-resistant *Staphylococcus aureus* (MRSA) now account for more than 50% of all *Staphylococcus aureus* isolates obtained in ICUs, the incidence of MRSA CLABSIs has decreased in recent years, perhaps as a result of prevention efforts [210]. For gram negative rods, antimicrobial resistance to third generation cephalosporins among *Klebsiella pneumoniae* and *E. coli* has increased significantly as has imipenem and ceftazidime resistance among *Pseudomonas aeruginosa* [209]. *Candida* spp. are increasingly noted to be fluconazole resistant.

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