

Use of Disinfection Cap to Reduce Central-Line–Associated Bloodstream Infection and Blood Culture Contamination Among Hematology–Oncology Patients

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OBJECTIVE

In this study, we examined the impact of routine use of a passive disinfection cap (SwabCap[®], ICU Medical Inc., San Clemente, CA) for catheter hub decontamination in hematology–oncology patients.

SETTING

A tertiary care cancer center in New York City

METHODS

In this multiphase prospective study, we used 2 preintervention phases (P1 and P2) to establish surveillance and baseline rates followed by sequential introduction of disinfection caps on high-risk units (HRUs: hematologic malignancy wards, hematopoietic stem cell transplant units and intensive care units) (P3) and general oncology units (P4). Unit-specific and hospital-wide hospital-acquired central-line–associated bloodstream infection (HA-CLABSI) rates and blood culture contamination (BCC) with coagulase negative staphylococci (CONS) were measured.

RESULTS

Implementation of a passive disinfection cap resulted in a 34% decrease in hospital-wide HA-CLABSI rates (combined P1 and P2 baseline rate of 2.66–1.75 per 1,000 catheter days at the end of the study period). This reduction occurred only among high-risk patients and not among general oncology patients. In addition, the use of the passive disinfection cap resulted in decreases of 63% (HRUs) and 51% (general oncology units) in blood culture contamination, with an estimated reduction of 242 BCCs with CONS. The reductions in HA-CLABSI and BCC correspond to an estimated annual savings of \$3.2 million in direct medical costs.

CONCLUSION

Routine use of disinfection caps is associated with decreased HA-CLABSI rates among high-risk hematology oncology patients and a reduction in blood culture contamination among all oncology patients.

Full Study Available In:

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