

Effect of the use of an antiseptic barrier cap on the rates of central line–associated bloodstream infections in neonatal and pediatric intensive care

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Abstract

Background: The use of antiseptic barrier caps reduced the occurrence of central line-associated bloodstream infections (CLABSI) in adult intensive care settings. We assessed the effect of the use of antiseptic barrier caps on the incidence of CLABSI in infants and children and evaluated the implementation process. Methods: We performed a mixed-method, prospective, observational before-after study. The CLABSI rate was documented during the "scrub the hub method" and the antiseptic barrier cap phase. Main outcomes were the number of CLABSIs per 1,000 catheter days (assessed with a Poisson regression analysis) and nurses' adherence to antiseptic barrier cap protocol. Results: In total, 2,248 patients were included. The rate of CLABSIs per 1,000 catheter days declined from 3.15 to 2.35, resulting in an overall incidence reduction of 22% (95% confidence interval, -34%, 55%; $P = .368$). Nurses' adherence to the antiseptic barrier cap protocol was 95.2% and 89.0% for the neonatal intensive care unit and pediatric intensive care unit, respectively. Discussion: The CLABSI reducing effect of the antiseptic barrier caps seems to be more prominent in the neonatal intensive care unit population compared with the pediatric intensive care unit population. Conclusions: The antiseptic barrier cap did not significantly reduce the CLABSI rates in this study.