

Abstract:

BACKGROUND: Preventing central line-associated bloodstream infection (CLABSI) and catheter-associated urinary tract infection (CAUTI) remains challenging in intensive care units (ICUs).

OBJECTIVE: The Agency for Healthcare Research and Quality Safety Program for ICUs aimed to reduce CLABSI and CAUTI in units with elevated rates.

METHODS: Invited hospitals had at least one adult ICU with elevated CLABSI or CAUTI rates, defined by a positive cumulative attributable difference metric (CAD >0) in the Centers for Disease Control and Prevention's Targeted Assessment for Prevention strategy. This externally facilitated programme implemented by a national project team and state hospital associations included on-demand video modules and live webinars reviewing a two-tiered approach for implementing key technical and socioadaptive factors to prevent catheter infections, using principles and tools based on the Comprehensive Unit-based Safety Program. CLABSI, CAUTI and catheter use data were collected (preintervention 13 months, intervention 12 months). Multilevel negative binomial models assessed changes in catheter-associated infection rates and catheter use.

RESULTS: Of 366 recruited ICUs from 220 hospitals in 16 states and Puerto Rico for two cohorts, 280 ICUs completed the programme including infection outcome reporting; 274 ICUs had complete outcome data for analyses. Statistically significant reductions in adjusted infection rates were not observed (CLABSI incidence rate ratio (IRR)=0.75, 95% CI 0.52 to 1.08, $p=0.13$; CAUTI IRR=0.79, 95% CI 0.59 to 1.06, $p=0.12$). Adjusted central line utilisation (IRR=0.97, 95% CI 0.93 to 1.00, $p=0.09$) and adjusted urinary catheter utilisation were unchanged (IRR=0.98, 95% CI 0.95 to 1.01, $p=0.14$).

CONCLUSION: This multistate programme targeted ICUs with elevated catheter infection rates, but yielded no statistically significant reduction in CLABSI, CAUTI or catheter utilisation in the first two of six planned cohorts. Improvements in the interventions based on lessons learnt from these initial cohorts are being applied to subsequent cohorts.

Reference:

Meddings, J., Greene, M.T., Ratz, D., Ameling, J., Fowler, K.E., Rolle, .AJ., Hung, L., Collier, S. and Saint, S. (2020) Multistate programme to reduce catheter-associated infections in intensive care units with elevated infection rates. *BMJ Quality & Safety*. January 6th. doi: 10.1136/bmjqs-2019-009330. (Epub ahead of print).



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