Abstract:

INTRODUCTION: Nonessential central venous catheters (CVCs) should be removed promptly to prevent adverse events. Little is known about effective strategies to achieve this goal. The present study evaluates the effectiveness of a quality improvement (QI) initiative to remove nonessential CVCs in the intensive care unit (ICU).

METHODS: A prospective observational study was performed in two ICUs following a QI intervention that included a daily checklist, education, and reminders. During 28 consecutive days, all CVCs were identified and the presence of ongoing indications for CVC placement was recorded. The proportions of nonessential CVCs and CVC days were compared with pre-intervention proportions and between the participating units. Rates of central line-associated bloodstream infections (CLABSI) were measured separately through Ontario’s Critical Care Information System.

RESULTS: One hundred and ten patients and 159 CVCs were reviewed. Eighty-eight (11%) of 820 catheter days showed no apparent indication for CVC placement, and compared with the pre-intervention period, the proportion of patients with any number of nonessential CVC days decreased from 51% to 26% (relative risk 0.51; 95% confidence interval 0.34 to 0.74; P <
0.001). There was no significant difference in the proportion of nonessential catheter days between participating units. Reported rates of CLABSI decreased substantially during the intervention.

DISCUSSION: A checklist tool supported by a multifaceted QI intervention effectively ensured prompt removal of nonessential CVCs in two ICUs.
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