

CONCLUSIONS: Strategies adapted from specialty units can serve as a catalyst for organizational programs. Feedback, implementing recommended guidelines, and adapting effective strategies to new situations are essential components.

2:55-3:10 PM

Abstract ID 54459

Blue Ribbon Abstract Award

Increased central venous catheter-associated bloodstream infection rates temporally associated with changing from a split-septum to a Leur-access mechanical valve needleless device: A nationwide outbreak?

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ISSUE: When split-septum needleless devices (SSs) were first introduced, several central venous catheter-associated bloodstream infection (BSI) outbreaks ensued, traced to inadequate infection control practices. Since the introduction of Leur-access mechanical valve needleless devices (MVs), there have been increasing reports of increased CVC BSI rates, after switching from SSs to MVs. MVs from multiple manufacturers have been involved, and increased BSI rates were reported from hospitals across the United States.

PROJECT: To obtain a better understanding of the frequency of this problem and the potential factors associated with increased BSI rates, infection control professionals (ICPs) who had documented increased BSI rates associated with switching from SSs to MVs were invited to meetings in Phoenix (June 2004) and Washington, D.C., (October 2004) and asked to share their data.

RESULTS: BSI rate (per 1000 CVC days) data were available from ICPs at five hospitals. Reasons for changing from SSs to MVs included: to reduce percutaneous needlestick injuries (NSIs), for infusion pump compatibility, or in response to concerns about SS availability in the future.

Hospital	Location	SS Period	BSI Rate	MV Period	BSI Rate
A	Hospital-wide-pediatrics	1/03-3/03	1.7	4/03-6/03	8.6
B	Hospital-wide	10/03-12/03	1.5	2/04-4/04	5.1
C	Hospital-wide	1/02-5/02	2.3	6/02-4/03	3.5
D	Pediatric ICU	1/04-3/04	5.4	7/04-9/04	17.3
E	All ICUs	7/00-6/03	5.7	7/03-6/04	8.6

In all the hospitals, there was no evidence of decreased NSI and the increase in BSIs in the MV period continued despite re-education of healthcare workers about CVC insertion/maintenance aseptic technique, introduction of chlorhexidine skin antiseptic or patch for the CVC skin site, and use of maximal barriers for CVC insertion. At three hospitals, BSI rates decreased to pre-MV period rates after discontinuing the MV and returning to SS use; at the other two hospitals where MVs are still used, BSI rates have not returned to SS baseline rates.

LESSONS LEARNED: Five hospitals where MVs were introduced to replace SSs experienced subsequent increased BSI rates. MV-associated BSI rates did not return to preceding SS baseline BSI rates, despite implementation of multiple CDC Intravenous Guideline recommendations. Introduction of MVs were not associated with decreased NSI rates. Further studies are needed to determine whether the increased BSI rates associated with MVs are related to infection control practices or intrinsic device design characteristics.

3:10-3:25 PM

Abstract ID 54589

A multidisciplinary approach towards the reduction of ventilator-associated pneumonia (VAP)

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ISSUE: VAP is the second most frequent healthcare-acquired infection and contributes to significant morbidity and mortality, with an added cost of up to \$40,000 per patient. Multiple studies have been published that show significant reduction in VAP rates with a multidisciplinary team approach targeted on risk-reduction strategies. Infection control (IC) surveillance for April-June 2004 (Q2) showed high VAP rates in the 25-bed medical-surgical intensive care unit (ICU), 19-bed neuro-critical care unit (NCCU), and 16-bed coronary care unit (CCU), as compared to the National Nosocomial Infection Surveillance System (NNIS) used for benchmarking at our 478-bed acute care level II trauma facility.

PROJECT: As part of a multidisciplinary taskforce, IC worked collaboratively with the critical care committee and the respiratory therapy (RT) department toward implementation of a ventilator bundle. This included a comprehensive oral care protocol (OCP) along with other evidence-based practices, including elevation of the head of the bed to >30 degrees, daily sedation holiday, and daily assessment of readiness to extubate. In September 2004, RT assumed responsibility for performing 2-hourly OCP using a dilute hydrogen peroxide solution, oropharyngeal suctioning every 6 hours, and sharing responsibility for brushing every 12 hours with nursing. Steps were taken to ensure bedside availability of the OCP kit. A comprehensive education campaign was undertaken to disseminate the practice recommendations and to emphasize hand hygiene, adherence to contact precautions, and proper disinfection measures. Compliance was assessed and reinforced during daily multidisciplinary rounds by the nurse managers and random rounds by IC, with frequent feedback to nursing and medical staffs.

RESULTS: Our performance improvement initiatives resulted in significant reduction in VAP rates, from 21/1523 ventilator days in Q2 to 3/1734 ventilator days for October-December 2004 (Q4), a decrease of 26% (range 18-100%; $p < 0.05$). From Q2 to Q4, the unit-specific VAP rates per 1000 ventilator days decreased from 13.18 to 2.36 for ICU, from 17.24 to 0.0 for CCU, and from 12.01 to 2.96 for NCCU ($p < 0.001$ for all three units), all well below the 2003 NNIS benchmark ($p < 0.001$).

LESSONS LEARNED: Implementation of a collaborative effort led to a significant VAP rate reduction in our three adult critical care units, especially after RT assumed ownership for implementation of the OCP.

3:25-3:40 PM

Abstract ID 54643

Peripherally inserted central catheter (PICC) bloodstream infection surveillance rates in medical intensive care, medical-surgical wards, extended care, and outpatients

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