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Effectiveness of Outcome Surveillance for Reducing Central Vascular Catheter-Associated Blood Stream Infection in a Hospital of India. Findings of the INICC.

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OBJECTIVE:

To determine the effect of outcome surveillance (intervention) on the rate of central vascular catheter associated blood stream infection (CVC-BSI) in one intensive care unit (ICUs) of Mumbai, India.

METHODS:

Prospective cohort surveillance of DAI was conducted on adult patients. The protocol and forms design and data uploading and analysis were in charge of INICC. Data collection was performed in the participating ICU (Outcome Surveillance), and CDC-NNIS definitions were applied. Infection control measures were applied based on CDC guidelines. The rate of CVC-BSI during baseline was compared to the rate during an intervention period.

RESULTS:

From 07/05 to 03/07, 2,032 adult ICU patients were enrolled (737 in the baseline period from 7/05 to 2/06 and 1,295 in the intervention period from 3/06 to 3/07) Patient's demographics (Patient gender, RR = 1.02, 95% CI = 0.92 - 1.14, P = 0.6868; Age, P = 0.2447; Thoracic Surgery, RR = 0.00, 95% CI = undefined, P = 0.0608; Previous Infection, RR = 0.00, 95% CI = undefined, P = 0.1849) were similar over the two periods. The incidence of CVC-BSI rate during the intervention period was significantly lower than during the baseline period (12.0 [28 CVC-BSI and 2,332 CVC days] versus 5.05 [24 CVC-BSI and 4,749 CVC days] CVC-BSI per 1000 CVC days, RR = 0.42, 95% CI = 0.24 - 0.73, P = 0.0013.). The percentage of patients with CVC-BSI was also significantly lower after the intervention period (3.8% [28 CVC-BSI and 737 patients] versus 1.9% [24 CVC-BSI and 1,295 patients]).

CONCLUSION:

Outcome surveillance and infection control measures resulted in a significant reduction of CVC-BSI rate, which was reduced 58%.