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IMPACT OF INTERNATIONAL NOSOCOMIAL INFECTION CONTROL CONSORTIUM (INICC) STRATEGY ON BLOODSTREAM INFECTION RATES IN NEONATAL ICUs IN 7 DEVELOPING COUNTRIES

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Objective

We report a time-sequence-analysis of the effectiveness of outcome and process surveillance, plus performance feedback designed and implemented by the International Nosocomial Infection Control Consortium (INICC) on central line-associated bloodstream infection (CLAB) rates in 13 neonatal intensive care units (NICUs) from Argentina, Colombia, El Salvador, Mexico, Peru, Philippines and Turkey.

Methods

CDC-National Healthcare Safety Network (NHSN)'s definitions were applied to identify CLABs. Data collection was conducted at the participating PICUs, using INICC's outcome and process surveillance methods. From Oct/03-Dec/08, CLAB rates, and infection control practices during the baseline period were compared with the rates at intervention period. Statistical analysis was performed using Chi-square test.

Results

The baseline period (874 patients) included the first three months; the intervention period (2,981 patients) included a mean of 17.0 months (range 3-60 months).

Patient's characteristics were similar in both periods (Gender-P,0.3762-; Weight-P,0.8296-).

There was a significant improvement in the following practices: Hand hygiene compliance (44.3% vs 63.1%;RR,1.42;95%-CI,1.25-1.62;P,< 0.01); Hand hygiene with alcohol and hand rub before CL insertion (26.5% vs 97.8%;RR: 3.70; 95%-CI,2.31-5.91;P,< 0.01);

Use of Maximal Sterile Barriers during CL insertion (2.9% vs 94.0%;RR,31.9;95%-CI,7.97-128.1;P,< 0.01); CL inserted with sterile transparent dressing (5.9% vs 40.0%; RR,6.80;95%-CI,2.53-18.28;P,0.0001); Semi-rigid IV fluid containers (76.5% vs

56.2%;RR,0.73;95%-CI,0.55-0.99;P,0.0389; Glass bottle IV fluid containers; (35.3% vs. 3.6%;RR,0.10;95%-CI,0.06-0.19;P,< 0.01);

Infusion system containers vented with a needle (70.6% vs. 52.5%;RR,0.74;95%-CI,0.55-1.01;P, 0.0573); Active efforts were made to remove CL when not needed (32.4% vs. 100.0%;RR,3.09;95%-CI,2.02-4.73;P, 0.0001).

CLAB rate was reduced from 19.8 (51/2,574) to 11.5 (99/8,604) per 1000 device-days (RR,0.58;95%-CI,0.41-0.81;P 0.0014).

Conclusions

CLAB outcome and process surveillance, plus performance feedback, improved compliance with infection control practices, and was associated with a 42% reduction of CLAB incidence.