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### Impact of International Nosocomial Infection Control Consortium (INICC) Strategy on Bloodstream Infection Rates in Pediatric ICUs in 5 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 5 pediatric intensive care units (PICUs) from Colombia, El Salvador, India, Mexico, and Philippines.

#### 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 (516 patients) included the first four months; the intervention period (1,099 patients) included a mean of 17.0 months (range 5-60 months).

Patient's characteristics were similar (Gender-P:0.7081-; Endocrine Disease-P:0.343-; Cardiac Failure-P:0.4764-; Cancer-P:0.1972-; Renal failure-P:0.1799-; Abdominal Failure-P:0.8844-; Thoracic Surgery-P:0.942-; Immune-compromise-P:0.0648-). There was a significant improvement in the following practices: Hand hygiene (50.9% vs 65.5%;RR,1.42;95%-CI,1.25-1.62,P:< 0.01); Hand hygiene with alcohol hand rub before CL insertion (0.0% vs 92.4%,P:< 0.01); CL inserted with common nonsterile tape (71.2% vs 39.0%;RR,0.55;95%-CI,0.42-0.71;P< 0.01); CL inserted with sterile transparent dressing (28.8% vs 100%; RR,3.47;95%-CI,2.45-4.91;P,< 0.01); Semi-rigid IV containers (20.3% vs 2.0%; RR,0.10;95%-CI,0.05-0.21;P,0.0001); Glass bottle IV containers (39% vs 7.6%;RR,0.20;95%-CI,0.13-0.30;P,0.0001); Active efforts made to remove CL when not needed (28.8% vs 100%;RR,3.47;95%-CI,2.45-4.91;P,< 0.01).

CLAB rate was reduced from 10.4 (25/2,404) to 5.9 (21/3,588) per 1000 device-days (RR,0.56;95%-CI,0.32-1.01;P,0.0489).

#### Conclusions

CLAB outcome and process surveillance, plus performance feedback, improved compliance with infection control practices, and was associated with a 44% reduction of CLAB incidence.