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Impact of Outcome and Process Surveillance in Reducing Device Associated Infections in 78 ICUs of 37 Cities of 13 Limited Resources Countries. Findings of INICC.

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Objectives: To determine the effect of INICC outcome and process surveillance on the central line-associated bloodstream infection (CLABSI), catheter-associated urinary tract infection (CAUTI) and ventilator-associated pneumonia (VAP) rates in 78 ICUs, of 37 cities, of 13 countries (Argentina, Brazil, Colombia, Costa Rica, Cuba, El Salvador, India, Macedonia, Mexico, Morocco, Philippines, Peru and Turkey).

Methods: An open label, prospective cohort, active device-associated infection (DAI) surveillance, sequential study was conducted on adult, pediatric and neonatal patients admitted to ICUs. CDC-NHSN system definitions were applied. The intervention consisted in outcome surveillance, process surveillance, education and performance feedback. The protocol, forms, and outcome and process surveillance methodology were developed by the INICC. Data were collected in the ICUs and uploaded and analyzed at the INICC headquarters on proprietary software. For CLABSI and CAUTI, the rate reduction analysis was conducted on ICUs that participated at least during 6 months in the study; for VAP reduction analysis, the analyzed ICUs were those with at least 16 months of participation.

Results: We found a significant CLABSI rate reduction in all 78 ICUs included in this analysis, a significant CAUTI rate reduction in all 71 ICUs included in this analysis, and a significant VAP rate reduction in 38 out of 39 analyzed ICUs.

DAI	# ICUs included	Baseline phase DAI rate	Baseline phase period Mean (SD)	Intervention phase DAI rate	Intervention Phase Period Mean (SD)	RR	95% CI	P value
CLABSI	78	16.1	3 (+- 0)	10.1	17.9 (+- 17.5)	0.63	0.57 - 0.70	0.0001
CAUTI	71	8.2	3 (+- 0)	6.9	19.4 (+- 18.4)	0.85	0.73 - 0.98	0.0282
VAP	38	22.5	8 (+- 0)	18.6	21.08 (+- 19.7)	0.83	0.74 - 0.92	0.0007

Conclusions: When applying INICC outcome surveillance, process surveillance, education, and performance feedback, we found a statistically significant reduction of CLABSI, CAUTI and VAP rates in the INICC ICUs. Impact on CLABSI rate reduction was higher than on CAUTI and VAP rate.