Sampling over 2 fixed days per week provides a valid alternative to daily collection of CLABSI denominator data” Kourkouni et al (2018).

Abstract:

BACKGROUND: Active daily surveillance of central-line days (CLDs) in the assessment of rates of central-line-associated bloodstream infections (CLABSIs) is time-consuming and burdensome for healthcare workers. Sampling of denominator data is a method that could reduce the time necessary to conduct active surveillance.

OBJECTIVE: To evaluate the accuracy of various sampling strategies in the estimation of CLABSI rates in adult and pediatric units in Greece.

METHODS: Daily denominator data were collected across Greece for 6 consecutive months in 33 units: 11 adult units, 4 pediatric intensive care units (PICUs), 12 neonatal intensive care units (NICUs), and 6 pediatric oncology units. Overall, 32 samples were evaluated using the following strategies: (1) 1 fixed day per week, (2) 2 fixed days per week, and (3) 1 fixed week per month. The CLDs for each month were estimated as follows: (number of sample CLDs/number of sampled days) × 30. The estimated CLDs were used to calculate CLABSI rates. The accuracy of the estimated CLABSI rates was assessed by calculating the percentage error (PE): [(observed CLABSI rates – estimated CLABSI rates)/observed CLABSI rates].

RESULTS: Compared to other strategies, sampling over 2 fixed days per week provided the most accurate estimates of CLABSI rates for all types of units. Percentage of estimated CLABSI rates with PE ≤±5% using the strategy of 2 fixed days per week ranged between 74.6% and 88.7% in NICUs. This range was 79.4%-94.1% in pediatric oncology units, 62.5%-91.7% in PICUs, and 80.3%-92.4% in adult units. Further evaluation with intraclass correlation coefficients and Bland-Altman plots indicated that the estimated CLABSI rates were reliable.

CONCLUSION: Sampling over 2 fixed days per week provides a valid alternative to daily collection of CLABSI denominator data. Adoption of such a monitoring method could be an
important step toward better and less burdensome infection control and prevention.

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