The objective of this study was to evaluate burden of illness, aetiology, and time-trends for central and peripheral line-associated bloodstream infections (CLABSI and PLABSI) in Australian neonatal and paediatric intensive care units (ICUs) between 1 July 2008 and 31 December 2016" Worth et al (2017).

Summary:

Background: Healthcare-associated infections in neonatal and paediatric populations are associated with poorer outcomes and healthcare costs, and surveillance is a necessary component of prevention programs. The objective of this study was to evaluate burden of illness, aetiology, and time-trends for central and peripheral line-associated bloodstream infections (CLABSI and PLABSI) in Australian neonatal and paediatric intensive care units (ICUs) between 1 July 2008 and 31 December 2016.

Methods: Using National Healthcare Safety Network methods, surveillance in neonatal and paediatric units was performed by hospitals participating in the Victorian Healthcare Associated Infection Surveillance System. Mixed effects Poisson regression was used to model infections over time.

Results: Overall, 82 paediatric CLABSI events were reported over 37125 CVC days (2.21/1000 CVC days), 203 neonatal CLABSI events were reported over 92169 CVC days (2.20/1000 CVC days), and 95 neonatal PLABSI events were reported over 142240 peripheral line-days (0.67/1000 peripheral line-days). Over time, a significant decrease in quarterly risk for neonatal CLABSI events was observed (risk ratio 0.98, 95% CI 0.97-0.99, p=0.023) and this reduction was significant for the 751-1000g birth weight cohort (RR 0.97, p=0.015). Most frequently, coagulase-negative Staphylococcus spp. (24.2%) and Staphylococcus aureus (16.1%) were responsible for CLABSI events. A significant reduction in Gram-negative neonatal infections was observed (annual RR 0.85, p<0.001).

Conclusions: CLABSI rates in neonatal and paediatric ICUs in our region are low, and neonatal infections have significantly diminished over time. Evaluation of infection prevention programs is required to determine if specific strategies can be implemented to further reduce infection risk.

Reference:

Worth, L.J., Daley, A.J., Spelman, T., Bull, A.L., Brett, J.A. and Richards, M.J. (2017) Central and peripheral line-associated bloodstream infections in Australian neonatal and paediatric intensive care units: findings from a comprehensive Victorian surveillance network, 2008-2016. The Journal of Hospital Infection. December 5th. .

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