



The objectives of this study were to evaluate organisational factors associated with CLABSI in Victorian ICUs to determine the nature and relative contribution of modifiable and non-modifiable risk factors” Spelman et al (2017).

Abstract:

Central line-associated bloodstream infections (CLABSIs) in intensive care units (ICUs) result in poor clinical outcomes and increased costs. Although frequently regarded as preventable, infection risk may be influenced by non-modifiable factors. The objectives of this study were to evaluate organisational factors associated with CLABSI in Victorian ICUs to determine the nature and relative contribution of modifiable and non-modifiable risk factors. Data captured by the Australian and New Zealand Intensive Care Society regarding ICU-admitted patients and resources were linked to CLABSI surveillance data collated by the Victorian Healthcare Associated Infection Surveillance System between 1 January 2010 and 31 December 2013. Accepted CLABSI surveillance methods were applied and hospital/patient characteristics were classified as ‘modifiable’ and ‘non-modifiable’, enabling longitudinal Poisson regression modelling of CLABSI risk.

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In total, 26 ICUs were studied. Annual CLABSI rates were 1.72, 1.37, 1.00 and 0.93/1000 CVC days for 2010-2013. Of non-modifiable factors, the number of non-invasively ventilated patients standardised to total ICU bed days was found to be independently associated with infection (RR 1.07; 95% CI 1.01-1.13; $P = 0.030$). Modelling of modifiable risk factors demonstrated the existence of a policy for mandatory ultrasound guidance for central venous catheter (CVC) localisation (RR 0.51; 95% CI 0.37-0.70; $P < 0.001$) and increased number of sessional specialist full-time equivalents (RR 0.52; 95% CI 0.29-0.93; $P = 0.027$) to be independently associated with protection against infection. Modifiable factors associated with reduced CLABSI risk include ultrasound guidance for CVC localisation and increased availability of sessional medical specialists.

Reference:

Spelman, T., Pilcher, D.V., Cheng, A.C., Bull, A.L., Richards, M.J. and Worth, L.J. (2017) Central line-associated bloodstream infections in Australian ICUs: evaluating modifiable and non-modifiable risks in Victorian healthcare facilities. *Epidemiology and Infection*. September 4th.

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