

## Effect of Nurse Staffing Ratios on Sepsis Care



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While adherence to evidence-based protocols for sepsis care ('SEP-1 bundles') can help reduce in-hospital mortality and length of stay, a new U.S. study (Lasater et al. 2020) says improving patient-to-nurse staffing ratios has greater impact on patient outcomes.

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Each additional patient in a nurse's workload, according to the study, is associated with 12% higher odds of death, 7% higher odds of 60-day readmission, and longer lengths of stay. "Improving hospital nurse staffing over and above implementing sepsis bundles holds promise for significant improvements in sepsis patient outcomes," study authors point out.

Nurses play a critical role in the management and treatment of sepsis. They need to have adequate time and resources to assess progression of sepsis (i.e. getting blood samples in a timely manner). Moreover, administration of antibiotic and vasopressor medication and fluid resuscitation to the patient requires close monitoring and titration.

This cross-sectional study utilised multiple linked data sources from 2017 including MEDPAR patient claims, Hospital Compare, American Hospital Association, and a large survey of registered nurses licensed in New York state. The nurses' survey, conducted between December 2019 and February 2020, yielded 13,000 responses (or 17% response rate).

In all, the study covered 116 hospitals, with average number of respondents at 24 (ranging from 5 to 139 nurses per hospital). The final patient sample consisted of 52,177 Medicare beneficiaries between the ages of 65 and 99 years old who were discharged from one of the 116 study hospitals between 1 January and 31 December 2017.

Based on the results, the effects of nurse staffing on patient outcomes are more pronounced than is hospital adherence to the SEP-1 bundles. For instance, each additional patient per nurse is associated with 12% higher odds of in-hospital mortality compared with a 10% change in SEP-1 adherence associated with only a 5% change in in-hospital mortality.

"Higher SEP-1 scores were also associated with shorter lengths of stay, but staffing had more than twice as large an effect on shorter lengths of stay, even when accounting for hospitals' SEP-1 scores," the authors explain. "Moreover, the effect of staffing was large and significant in terms of 60-day mortality and readmissions, while the SEP-1 scores revealed no association."

The study's findings, the authors add, are timely and policy relevant as New York state requires sepsis bundles and is currently considering the Safe Staffing for Quality Care Act, which would require hospitals to comply with safe nurse staffing ratios.

Improving nurse staffing ratios may not only reduce mortality and readmission among sepsis patients, according to the authors, but is likely to impact patients with a wide range of medical and surgical conditions, as previous research has suggested.

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