The implementation of our multidisciplinary ED sepsis bundle, including improved early identification and protocolized medical care, was associated with improved time to achieve key therapeutic interventions and a reduction in 30-day mortality" McColl et al (2016).

Abstract:

BACKGROUND: In 2008-2009, the Canadian Institute for Health Information reported over 30,000 cases of sepsis hospitalizations in Canada, an increase of almost 4,000 from 2005. Mortality rates from severe sepsis and septic shock continue to remain greater than 30% in Canada and are significantly higher than other critical conditions treated in the emergency department (ED). Our group formed a multidisciplinary sepsis committee, conducted an ED process of care analysis, and developed a quality improvement protocol. The objective of this study was to evaluate the effects of this sepsis management bundle on patient mortality.

METHODS: This before and after study was conducted in two large Canadian tertiary care EDs and included adult patients with suspected severe infection that met at least two systemic inflammatory response syndrome (SIRS) criteria. We studied the implementation of a sepsis bundle including triage flagging, RN medical directive, education campaign, and a modified sepsis protocol. The primary outcomes were 30-day all-cause mortality and sepsis protocol use.

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RESULTS: We included a total of 167 and 185 patients in the pre- and post-intervention analysis, respectively. Compared to the pre-intervention group, mortality was significantly lower in the post-intervention group (30.7% versus 17.3%; absolute difference, 13.4%; 95% CI 9.8-17.0; p=0.006). There was also a higher rate of sepsis protocol use in the post-intervention group (20.3% versus 80.5%, absolute difference 60.2%; 95% CI 55.1-65.3; p<0.001). Additionally, we found shorter time-intervals from triage to MD assessment, fluid resuscitation, and antibiotic administration as well as lower rates of vasopressor requirements and ICU admission. Interpretation The implementation of our multidisciplinary ED sepsis bundle, including improved early identification and protocolized medical care, was associated with improved time to achieve key therapeutic interventions and a reduction in 30-day mortality. Similar low-cost initiatives could be implemented in other EDs to potentially improve outcomes for this high-risk group of patients.

Reference:

McColl, T., Gatien, M., Calder, L., Yadav, K., Tam, R., Ong, M., Taljaard, M. and Stiell, I. (2016) Implementation of an Emergency Department Sepsis Bundle and System Redesign: A Process Improvement Initiative. CJEM. September 9th. .

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