improving the management of sepsis using the sepsis six bundle

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background
sepsis is a major cause of morbidity and mortality, accounting for 100,000 admissions and over 35,000 deaths a year. [1] sepsis is accountable for 12% of early inpatient deaths, with a further 26% coded as a respiratory cause of death. [2] sepsis is time-sensitive—in septic shock, for every hour antibiotics are delayed, there is an 8% increase in mortality. [3] early implementation of the sepsis six bundle reduces sepsis-related mortality and improves outcomes. [4, 5]

aim
this quality improvement project aimed to improve timely implementation of the sepsis six, at a large teaching district general hospital in kent.

method
3 x two-week prospective cycles in the acute medical unit between august and november 2015.

inclusion criteria:
- adult medical cases
- diagnosis of ‘sepsis’ on post-take ward round and/or ed clerking
- screened to have either severe sepsis or septic shock

standards
1. 100% of patients presenting to the emergency department (ed) with sepsis should have a lactate level, blood cultures and antibiotics initiated.
2. 100% of patients with severe sepsis/septic shock should have the sepsis six initiated within one hour of presentation.

results
- median age: 76.3
- male: 43.2%
- prompt initiation of iv fluids, o2 where appropriate, and urine output monitoring at baseline.
- time to antibiotics improved from mean 105 mins at baseline, to 83 mins post-education and 65 minutes post-sticker introduction.
- reduction in time to lactate and blood cultures post-education by 34.0% and 47.4% compared to baseline respectively.
- sticker use did not improve time to lactate and blood cultures.

conclusion
- education dramatically improved timely implementation of the sepsis six, and stickers further reinforced this.
- ongoing education is key in the effective management of sepsis and reducing associated mortality.
- stickers can provide a simple, sustainable method of ensuring continued adherence to the sepsis six bundle.
- a trust-wide protocol is being devised to improve the management of sepsis in all hospital departments.

references
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