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Abstract (oral session)

Intervention to improve sepsis management in general hospital wards

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Objectives: Early intervention including timely antibiotics in patients with severe sepsis on admission to hospital improves survival, but less is known about patients who develop sepsis in hospital and the potential to improve their care. The aim of this study was to develop and implement an intervention to improve care for these patients in an acute NHS hospital. **Methods:** Patients developing sepsis were identified prospectively by screening patients who had blood cultures taken in medical, surgical and orthopaedic wards. The primary study outcome measure was the proportion of septic patients that received antibiotics within four hours of sepsis onset. Baseline data were collected from Sept 08 – Feb 09 and post-intervention from Oct 09 – Mar 10. The design of the intervention was informed by the baseline clinical data and the findings of a questionnaire and interview survey of junior medical staff. A multifaceted intervention consisting of education, a care pathway, and audit and feedback was developed. The effect was evaluated by segmented regression analysis of interrupted time series (ITS) data. **Results:** Among the 241 baseline patients, only 91 (38%, 95% CI 32-44%) received antibiotics within four hours. The mean and median times to administration were 11.0 hours (95% CI 9.3-12.7hrs) and 6.0 hours (IQR 2.5-13.3hrs) respectively. Problems identified in the clinical data, and in the findings of 147 questionnaires (35% response rate) and ten interviews with junior doctors, included delays in the recognition of sepsis and in clinical decision-making. Post-intervention, 139/297 (47%, 95% CI 41-52%) patients met the primary outcome measure of antibiotics within four hours of sepsis onset and the 9% increase from baseline was statistically significant (X2 test $p=0.04$). Run charts of the data pre- and post-intervention (Figure) suggested a chaotic process and formal run chart analysis indicated non-random variation. Segmented regression analysis of ITS data did not show a statistically significant intervention effect (p value for change in level = 0.91, and for change in slope = 0.21). **Conclusion:** The management of patients with sepsis in our hospital leaves room for improvement. Descriptive analysis indicated that this intervention had some effect, but this was not confirmed as a statistically significant intervention effect in ITS analysis. Further rigorous research informing quality improvement in this area is required.

