

Variability in Emergency Physician Care for Severe Sepsis: How do we Measure up?

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Background

In patients with severe sepsis and septic shock delays in recognition and timely administration of appropriate antibiotics have been shown to increase mortality. Despite this robust relationship, most emergency physicians are unaware of their personal performance in regards to this important marker of sepsis care. We sought to explore MD variation on key performance metrics in sepsis care using administrative data to generate aggregate and individual physician-specific reports.

Methods

Severe sepsis patients were identified as those who had an infection-related primary admitting ICD-10 code and an elevated lactate ($>2.0\text{mmol/L}$) that received antibiotics while in the ED. We assessed a 3-year period from 2011 to 2013. Multiple time-points during the patient's ED stay were captured using administrative databases. Our primary outcome of sepsis care was the time from meeting criteria for severe sepsis to first antibiotic administration. Other indicators of quality sepsis care and compliance with published guidelines were evaluated on both an aggregate and individual level. Descriptive statistics were used for all metrics with median and interquartile range for the primary outcome.

Results

The aggregate data consisted of 2197 severe sepsis patient visits seen by 146 emergency physicians. The median time from meeting criteria for severe sepsis to antibiotic administration was 41mins (IQR = 7 to 101mins) with 441(20%) patients experiencing in excess of a 120min delay. Median time from triage to ordering of a serum lactate was 72mins (IQR = 38 to 151mins) with 453(21%) of patients having a delay greater than 3 hrs. Serial lactate was assessed in only 44% of cases, but demonstrated a reduction in 82% of those. Blood cultures were drawn 86% of the time.

Conclusions

ED physicians demonstrate significant variation in practice, which has the potential to adversely affect patient care. Time to antibiotics, and other markers of severe sepsis care, can be determined and reported back to physicians using administrative datasets.