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Cost-Effectiveness of an Emergency Department Based Early Sepsis Resuscitation Protocol

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Abstract:

Background Guidelines recommend that sepsis be treated with an early resuscitation protocol, such as early goal directed therapy (EGDT). Our objective was to assess the cost-effectiveness of implementing EGDT as a routine protocol. Design Prospective before and after study. Setting Large urban hospital ED with >110,000 visits/year. Patients The target population was patients with consensus criteria for septic shock. We excluded those with age <18 yrs, no aggressive care desired, or need for immediate surgery. Interventions Clinical and cost data were prospectively collected on two groups: 1) patients from 1 yr before and 2) 2 yrs after implementing EGDT as standard-of-care. Before phase patients received nonprotocolized care at attending discretion. The primary outcomes were one year mortality, discounted life expectancy, and quality adjusted life years (QALYs). Using costs and QALYs, we constructed an incremental cost-effectiveness ratio and performed a net monetary benefit (NMB) analysis, producing the probability that the intervention was cost-effective given different values for the willingness to pay for a QALY. Results 285 subjects, 79 in the before and 206 in the after phases, were enrolled. Treatment with EGDT was associated with an increased hospital cost of \$7028 and an increase in both discounted sepsis-adjusted life expectancy and QALYs of 1.5 and 1.3 yrs, respectively. EGDT use was associated with a

cost of \$5397 per QALY gained and the NMB analysis indicates a 98% probability ($p = .038$) that EGDT is cost-effective at a willingness to pay of \$50,000 per QALY. Conclusion Implementation of EGDT in the ED care of severe sepsis patients is cost effective.

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