

Outcomes of an Evidence-Based Modified Sepsis Protocol in an Emergency Department in

Tanzania

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Abstract

Background and Purpose: Sepsis is a life-threatening condition affecting both high-income and resource-restricted settings. Sepsis-related mortality was found to be 47.2% in Africa compared to 13.1% in North America in a global audit of intensive care units. Sepsis is among the most common reasons for hospitalization and one of the top five causes of deaths in Tanzania. The purpose of this quality improvement project was to implement a standardized modified-sepsis protocol at a hospital in Tanzania.

Methods: This QI project used a pre-post intervention design in an emergency department to assess compliance among clinicians following the protocol, time to diagnose sepsis or septic shock, hospital lengths of stay, and sepsis-related mortality for pre-protocol and protocol groups in adult patients, 18 years and above, who were suspected of having sepsis or septic shock. Retrospective chart reviews collected data for the pre-protocol group. A modified-sepsis protocol was adapted and implemented. We surveyed clinicians at the completion of 12 weeks to determine the feasibility of the protocol.

Results: Three hundred nineteen patients were eligible, 159 in pre-protocol and 158 in the protocol group. A total of 126 patients included forty-eight (30.2%) and seventy-eight (49.4%) patients with sepsis or septic shock in the pre-protocol and protocol groups, respectively. Our results indicate statistically significant outcomes for key aims in compliance with sepsis bundle and a positive trend towards a reduction in lengths of hospital stay and sepsis-related mortality. Significant clinical improvements were observed in practice patterns with reassessment of vital signs, diagnostic chest x-rays, and time for identification and diagnosis of sepsis. We noted

staffing shortages, financial constraints, and knowledge gaps as barriers impacting the primary outcomes.

Conclusion: Our quality improvement project shows that a modified sepsis protocol can be successfully implemented in resource-restricted settings. It is imperative to recognize challenges and scarcity of resources to promote compliance and manage sepsis to effectively decrease sepsis-related mortality rates in resource-restricted settings.

Implications: Our results indicate that modifying existing protocols and addressing the barriers and challenges of resource-restricted settings could positively impact early identification and management of sepsis which could potentially lower lengths of stay and sepsis-related mortality in these settings.

Keywords: Sepsis, resource-restricted settings, protocol, hospital lengths of stay, sepsis-related mortality, compliance