

Sepsis Alert Systems, Mortality, Adherence to SSC



Sepsis is a global health issue with high mortality and morbidity rates among hospitalised patients. To enhance the quality of sepsis management, the Surviving Sepsis Campaign (SSC) developed an evidence-based bundle comprising five key elements to be implemented within the first hours of sepsis recognition. These elements include fluid resuscitation with 30 mL/kg of crystalloid, blood culture before antibiotic administration, broad-spectrum antibiotic therapy, lactate measurement, and vasopressor support for refractory hypotension. Adherence to this sepsis bundle has been shown to improve clinical outcomes despite the varying quality of evidence supporting some of its components.

Patients with sepsis who visit the emergency department (ED) experience high rates of hospitalisation (70%) and mortality (10%). Timely diagnosis and treatment of sepsis are crucial, as delays can significantly increase the risk of mortality and morbidity. However, ED staff face challenges in promptly identifying and effectively managing sepsis due to frequent overcrowding and the urgent care needs of many patients.

To address these challenges, sepsis alert systems have been developed as potential solutions to facilitate the early recognition of sepsis in the ED. Several studies have investigated the role of sepsis alert systems in improving early identification of sepsis. A 2020 systematic review examined the diagnostic accuracy of these systems and found they had acceptable sensitivity for identifying patients with sepsis. However, the clinical impact of sepsis alert systems on patient outcomes, including mortality rates and timelines of sepsis management in the ED, remains unclear.

A recent review assessed the association of sepsis alert systems with mortality and adherence to the SSC sepsis bundle for the initial management of patients with sepsis in the ED. The review aims to provide insights into the potential benefits of sepsis alert systems in improving clinical outcomes and optimising sepsis management in the challenging ED environment.

A comprehensive search was performed and studies that evaluated sepsis alert systems designed for adult ED patients and reported on mortality, ICU admissions, hospital stay duration, and adherence to sepsis management protocols were included.

Of the 3,281 studies initially identified, 22 (0.67%) met the inclusion criteria, encompassing 19,580 patients. Sepsis alert systems were associated with a reduced mortality risk and shorter hospital stays. These systems also improved adherence to sepsis bundle elements, notably reducing the time to fluid administration, blood culture, antibiotic administration, and lactate measurement. Electronic alerts, in particular, were associated with reduced mortality and better adherence to blood culture guidelines.

These findings suggest that sepsis alert systems in EDs are associated with improved patient outcomes and better adherence to sepsis management protocols. These systems show promise for enhancing ED responses to sepsis, potentially leading to significantly better patient outcomes.

Source: [JAMA](#)

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