

A quality improvement study evaluating the effectiveness of identifying sepsis with the **Redivus Health Sepsis App[®]**

VERSUS

traditional SIRS criteria
in patients admitted to an inpatient medicine service.

Authors:

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Introduction:

Sepsis has been and remains one of the top causes of death in the inpatient population. Hospital mortality of patients with sepsis ranges from 28.3 to 41.1% in North America and Europe (1). The early detection and timely administration of appropriate medications are the most important factors in improving the outcome of patients with sepsis (2). One of the most widely used diagnostic criteria's for early identification of sepsis is the systemic inflammatory response syndrome (SIRS) criteria which include 4 objective measurements. Redivus Health Sepsis App[®] was developed with the hypothesis that it will assist in early identification of sepsis.

Methods:

Using Cerner Powerchart, patient data was gathered from first academic block of 2015 and 2016. Every chart was reviewed using the patient's initial three vital signs upon arrival to the emergency department, initial white blood cell count (WBC) and the 'History and Physical' Note at their admission. It was then assessed for whether or not sepsis was properly identified based on the H&P documentation. In the 2015 period, the UMKC family medicine residents were using the traditional SIRS criteria methodology, meaning the criteria was only applied to patient care if the resident subjectively thought the patient was septic. In 2016, the Redivus Health Sepsis App[®] was to be applied to all patients admitted to the inpatient medicine service.

Results:

During the first block of 2015 and 2016 there were 113 and 136 admissions recorded, respectively, after nonmedical admits excluded. In 2015, there were 39 of 113 cases that met sepsis criteria and 28% (11/39) cases were properly documented. In 2016, there were 27 of 136 cases that met sepsis criteria and 85% (23/27) cases were properly documented.

Discussion:

The Redivus Health Sepsis App[®] was associated with a statistically significant (p -value < 0.05) higher percentage of sepsis identification at time of admission (85% versus 28%) when comparing 2016 to 2015. The next phase of this continued research will involve the UMKC internal medicine residents at Truman Medical Center – Hospital Hill. If successful, this could lead to an expansion of the application's capabilities to include sepsis treatment protocols with appropriate timelines.

References:

1 Levy MM, Artigas A, Phillips GS, Rhodes A, Beale R, Osborn T, Vincent JL, Townsend S, Lemeshow S, Dellinger RP. "Outcomes of the Surviving Sepsis Campaign in intensive care units in the USA and Europe: a prospective cohort study." *Lancet Infect Dis*. 2012 Dec; 12(12):919-24.

2 Marik, PE. "Don't Miss the Diagnosis of Sepsis." *Critical Care* 2014, 18:529