
New Strategy for Identifying Sepsis Arising in the ICU



A new methodology using administrative codes coupled to a SIRS screening protocol can help identify patients whose sepsis initially appears during their ICU stay, with up to 94 percent accuracy, according to a new study published in *Journal of Critical Care*.

See Also: [Surviving Sepsis Guidelines 2016 Update](#)

"We found that we could reliably identify a patient population with sepsis by coupling a refined code set with SIRS criteria. Manual review revealed a 6% error rate. The patients erroneously identified as septic were nevertheless critically ill. Among the patients with authentic sepsis, only about 1/3 became septic in the ICU," say researchers with the Critical Care Center, Emory University School of Medicine, Emory Healthcare, Atlanta, GA.

Sepsis, the life-threatening inflammatory response to infection, frequently causes inpatient death. Almost half of all patients who survive severe sepsis (sepsis accompanied by organ failure) to hospital discharge die within the following year. Early detection and treatment of sepsis is therefore important in preventing decompensation to organ failure.

The research team sought a standardised, high-specificity strategy to accurately identify a cohort of patients whose sepsis initially appears during their intensive care unit (ICU) stay. Their study covered all patients discharged from an academic hospital between 1 September 2013 and 31 October 2014. Administrative codes and minimal physiologic and laboratory criteria were used to identify patients at high risk of developing the onset of sepsis in the ICU.

Two clinicians then independently reviewed the patient record to verify that the screened-in patients appeared to become septic during their ICU admission. Clinical chart review verified sepsis in 437/466 ICU stays (93.8%). Of these 437 encounters, only 151 (34.6%) were admitted to the ICU with neither SIRS nor evidence of infection and therefore appeared to become septic during their ICU stay.

"Again, our purpose was not to capture all septic patients but rather to identify a cohort of patients arriving in the ICU without clinical evidence of sepsis and becoming septic during that ICU stay," the authors note. "Approximately 1/3 of patients screened manifested sepsis for the first time during (not prior to) the ICU admission. This subpopulation is of significant importance to studies using high-intensity monitoring for early detection and targeted treatment of sepsis."

This study has several limitations. It was a single institution exploratory analysis covering a 14-month period. The methodology excluded septic ICU patients that failed to meet the study's sampling criteria. Also, no attempt was made to estimate the number of excluded patients.

"While it is possible our protocol failed to capture the entire population of septic patients and while it is possible that our protocol failed to accurately identify the time of sepsis onset, analysis of the cohort suggests that it is close to complete and sufficiently precise to ask more detailed questions aimed at early detection and intervention, which is central to modern sepsis care," the authors write.

Source: [Journal of Critical Care](#)

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Published on : Tue, 14 Feb 2017