

What's New in the Patient Safety World

October 2015

Even Earlier Recognition of Severe Sepsis

Our September 8, 2015 Patient Safety Tip of the Week “[TREWScore for Early Recognition of Sepsis](#)” discussed a new real-time early warning score developed at Johns Hopkins ([Henry 2015](#)) to identify patients at risk for septic shock and several similar tools to identify sepsis earlier.

But how about identifying sepsis patients even before they reach the hospital! A new study suggests that may be possible. Polito and colleagues at Emory University ([Polito 2015](#)) derived and validated a predictive model and novel emergency medical services (EMS) screening tool for severe sepsis. The PRESS score defined at-risk patients as having all 3 of the following criteria present in the EMS setting: (1) heart rate greater than 90 beats/min, (2) respiratory rate greater than 20 breaths/min, and (3) systolic blood pressure less than 110 mm Hg. Six EMS characteristics were found to be predictors of severe sepsis: older age, transport from nursing home, Emergency Medical Dispatch (EMD) 9-1-1 chief concern category of “sick person”, hot tactile temperature assessment, low systolic blood pressure, and low oxygen saturation. Sensitivity of the final model was 91% in the derivation group and 78% in the validation group. At a predefined threshold of 2 or more points, prehospital severe sepsis (PRESS) score sensitivity was 86% and specificity of 47%. The authors noted that additional validation is needed before this tool can be recommended for widespread clinical use.

Though we agree that the PRESS score needs to be validated at other sites before widespread adoption, this is most encouraging. Identification of patients likely to have sepsis before they even reach the ED should make early intervention much more likely and improve patient outcomes. It's even conceivable that someday the early sepsis interventions might even begin while the patient is in transport to the hospital.

Hopefully, tools like the TREWScore and PRESS score will prove to be valuable additions to our armamentarium of tools in our fight to reduce morbidity and mortality from sepsis.

Some of our other columns dealing with sepsis, severe sepsis, and septic shock:

- March 15, 2011 Patient Safety Tip of the Week “[Early Warnings for Sepsis](#)”

- October 18, 2011 “[High-Risk Surgical Patients](#)”
- February 2013 “[More Evidence Favoring Restriction of Transfusions](#)”
- May 14, 2013 “[Acute Colonic Pseudo-Obstruction \(Ogilvie’s Syndrome\)](#)”
- April 1, 2014 “[Expensive Aspects of Sepsis Protocol Debunked](#)”
- January 2015 “[Beneficial Effect of EMR on Patient Safety](#)”
- September 8, 2015 “[TREWScore for Early Recognition of Sepsis](#)”

References:

Henry KE, Hager DN, Pronovost PJ, Saria S. A targeted real-time early warning score (TREWScore) for septic shock. Science Translational Medicine 2015; 299(7): 299ra122; 05 Aug 2015

<http://stm.sciencemag.org/content/7/299/299ra122>

Polito CC, Isakov A, Yancey AH, et al. Prehospital recognition of severe sepsis: development and validation of a novel EMS screening tool. Amer J Emerg Med 2015; 33(9): 1119–1125 Published online: April 22 2015

<http://www.ajemjournal.com/article/S0735-6757%2815%2900272-7/abstract>



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