Published in final edited form as:

J Hosp Med. 2015 May ; 10(5): 340. doi:10.1002/jhm.2361.

In Reference to, "Development, Implementation, and Impact of an Automated Early Warning and Response System for Sepsis"

Poushali Bhattacharjee, MD and

Hospitalist Scholar/Clinical Associate, University of Chicago Medicine | Section of Hospital Medicine, 5841 S. Maryland Ave, MC 5000, Chicago, IL 60637, Ph: 773-834-553, Fax: 773-795-7398, pbhattacharjee@medicine.bsd.uchicago.edu

Dana Edelson, MD MS

Assistant Professor of Medicine, University of Chicago Medicine | Section of Hospital Medicine, 5841 S. Maryland Ave, MC 5000, Chicago, IL 60637, Ph: 773-834-2191, Fax: 773-795-7398, dperes@medicine.bsd.uchicago.edu

We read with interest the study published by Umscheid, et al¹ which concluded that their automated sepsis recognition system lead to an increase in early treatment delivery. We were disappointed but not surprised by the positive predictive value of 26%, which matches similar studies that utilize SIRS (Systemic Inflammatory Response Syndrome) criteria for early detection of sepsis.^{2,3}

Originally, the SIRS criteria were developed as a bedside diagnostic tool for rapid identification of septic patients.⁴ They have also been criticized, by their proponents no less, to be overly sensitive and non-specific.⁵ However, with increasing use of electronic health records, we have the capability to not only discover more specific diagnostic parameters but also to develop more complex scoring systems.

In fact, our group has previously compared various early warning scores and their accuracy in detecting similar outcomes for hospitalized patients. We found that aggregate weighted early warning scores were more accurate than other types of scoring systems in detecting cardiac arrest, ICU transfer, mortality and the composite outcome.⁶

In an era where providers are already suffering from alarm fatigue and information overload, we should maximize the potential of electronic health systems by developing sepsis detection scores with predictive abilities that surpass the SIRS criteria.

Acknowledgments

Dr. Edelson has received a career development award from the National Heart, Lung, and Blood Institute (K23 HL097157). She has also received research support from Philips (Andover, MA), the American Heart Association (Dallas, TX) and Laerdal Medical (Stavanger, Norway). She has ownership interest in Quant HC (Chicago, IL), which is developing products for risk stratification of hospitalized patients. Dr. Edelson has a patent pending (ARCD. P0535US.P2).

Correspondence to: Poushali Bhattacharjee.

Dr. Bhattacharjee has no financial conflicts of interest.

References

1. Umscheid CA, Betesh J, Vanzandbergen C, et al. Development, Implementation, and Impact of an Automated Early Warning and Response System for Sepsis. *Journal of Hospital Medicine*. 2015; 10.1:26–31. [PubMed: 25263548]
2. Buck KM. Developing an Early Sepsis Alert Program. *Journal of Nursing Care Quality*. 2014;1. [PubMed: 24275892]
3. Larosa JA, Ahmad N, Feinberg M, Shah M, Dibrienza R, Studer S. The Use of an Early Alert System to Improve Compliance with Sepsis Bundles and to Assess Impact on Mortality. *Critical Care Research and Practice*. 2012; 2012:1–8.
4. Bone R, Balk R, Cerra F, et al. Definitions for Sepsis and Organ Failure and Guidelines for the Use of Innovative Therapies in Sepsis. The ACCP/SCCM Consensus Conference Committee. American College of Chest Physicians/Society of Critical Care Medicine. *Chest*. 1992; 101.6:1644–655. [PubMed: 1303622]
5. Levy MM, Fink MP, Marshall JC, et al. 2001 SCCM/ESICM/ACCP/ATS/SIS International Sepsis Definitions Conference. *Critical Care Medicine*. 2003; 31.4:1250–1256. [PubMed: 12682500]
6. Churpek MM, Yuen C, Edelson DP. Risk Stratification of Hospitalized Patients on the Wards. *CHEST Journal*. 2013; 143.6:1758.