Surviving Sepsis Campaign

Statement from SSC Leadership on Time Zero in the Emergency Department

Questions about the use of triage time in the emergency department as "time zero" for starting the clock to score compliance with the elements of the Surviving Sepsis Campaign (SSC) bundles have been raised since the bundles' 2005 introduction as a performance improvement tool.

The first revision of the SSC Sepsis Bundles was recently completed and included in the publication of the second revision of *Surviving Sepsis Campaign: International Guidelines for Management of Severe Sepsis and Septic Shock: 2012* (1,2). Because the next phase of the performance improvement initiative will be based on these new bundles, and because of the debates and discussion on the topic over the last few years, the leadership of the Surviving Sepsis Campaign deliberated potential alternatives to triage time as time zero in the ED. In addition, correspondence and discussion generated by the Infectious Disease Steering Committee of the National Quality Forum (NQF) testimony as well as SSC list serve comments were also considered.

Thoughtful consideration resulted in the following consensus points:

1) Time zero must offer the best balance of reliability and reproducibility while optimizing the value of the performance improvement program to early diagnosis and appropriate treatment of severe sepsis.
2) Key to achieving a reduction in mortality from severe sepsis is not just standardized evidence based treatment, but equally important, the early recognition of sepsis.
3) While some patients will not meet severe sepsis criteria on ED arrival, altering time zero to chart documentation of severe sepsis would:
    a. Turn the bundle into a treatment-only bundle (not a diagnosis and treatment bundle).
    b. Diminish practitioners' incentive to identify patients at risk based on history, symptoms, and exam findings at ED presentation.
    c. Reduce the reliability and reproducibility of time zero.
    d. Make data collection more onerous and costly.
4) Time zero based solely on physician diagnosis will miss the opportunity to clearly identify the time period leading up to diagnosis, a period that establishes the best

target for performance improvement. Without recognition that the clock is ticking, there is no incentive to recognize a challenging diagnosis early. Despite best intentions, patient care may be compromised.

We remain sympathetic to those who point to the potential scenario of a patient's only criteria for the diagnosis of severe sepsis being hypotension, with previous normotensive blood pressure recordings in the ED. However, the alternative of adjusting time zero for this particular occurrence in the bundle timeline would add a level of complexity to data entry and analysis judged to be counterproductive to the performance improvement program. For example: The alternative of making time zero the onset of hypotension--if it occurs later in ED stay--would falsely penalize sites for initiation of treatment prior to the onset of hypotension and or decrease the number of observed cases meeting severe sepsis criteria. If a site opts to use first time of hypotension as time zero, compliance with lactate, blood culture, antibiotics, and likely fluid administration will fall out of the time window, as they were likely done prior to time of presentation. This suggested alternative method of tracking performance may increase the time window to resuscitation endpoints, but cannot ensure that a timely response to resuscitation measurement will be made or achieved.

The importance of close monitoring in the sepsis patient population cannot be underestimated. Later development of hypotension in patients who were normotensive at ED triage is not the only indication of severe sepsis. Awareness of organ dysfunction other than hypotension is equally important. Frequent observations for changes in vital signs will lead to early recognition and improved outcomes, despite the occasional inability to achieve all of the time sensitive indicators. Despite *a provider's* true occasional inability to achieve the time sensitive indicators:

- due to late onset of symptoms
- due to long elapsed time in the ED

*Patients* will say: **"**Early detection and treatment of *my health problem* is preferable."

The conclusions and recommendations for the next phase of the Surviving Sepsis Campaign performance improvement initiative are to:

- Continue to use triage time as time zero in patients presenting to the ED
- Maximize the bundle's effectiveness for diagnosis as well as treatment
- Acknowledge that a percentage of patients may not meet criteria for severe sepsis or septic shock at ED triage

Recognize that 100% compliance for some indicators is not always possible, but that whatever compliance can be achieved is likely converted to percentiles of performance by regulatory

agencies as is done for other compliance metrics. P90 performance may be lower levels of compliance yet still top decile.

**References**

**1.** Dellinger RP, Levy MM, Rhodes A, et al: Surviving Sepsis Campaign: International Guidelines for Management of Severe Sepsis and Septic Shock: 2012. *Crit Care Med.* 2013; 41:580-637 **2.** Dellinger RP, Levy MM, Rhodes A, et al: Surviving Sepsis Campaign: International Guidelines for Management of Severe Sepsis and Septic Shock: 2012. *Intensive Care Med.* 2013; 39:165-227