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Surviving Sepsis Guidelines Smackdown

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Take Home Points

- **Many of the recommendations of the new Surviving Sepsis campaign bundle are not evidence based.**
- **There is no real evidence of benefit and these treatments are cumbersome and logistically difficult.**
- **There is evidence that portions of these guidelines may be harmful.**

- **In May of 2018, we saw the release of the Surviving Sepsis campaign bundle for 2018. Everyone has a sepsis protocol and many of the recommendations are derived from recommendations of this group.** This is problematic because sometimes these recommendations are not evidence based. Weingart discussed this in May.
- **What was in the 2016 Surviving Sepsis campaign bundle?** It was an extensive document that essentially involved a 3 and 6 hour bundle.
  - The 3 hour bundle included 4 requirements; measuring a lactate level, obtaining blood cultures prior to administration of antibiotics, initiating broad spectrum antibiotics and administering 30cc/kg crystalloid bolus. This was for patients who were either hypotensive or had lactate greater than 4.0
  - The 6 hour bundle was less discussed but involved giving vasopressors for patients that were hypotensive with a target of a MAP of 65 mmHg or greater. If patients remained hypotensive, they were assessed for fluid responsiveness in some measure if they remained hypotensive. The lactate level was re-measured if it was elevated. One of the most difficult aspects of compliance was the repeated and documented focused exam which included two of the following elements; measuring the CVP, measuring the SCVO2, having a bedside cardiac ultrasound or some dynamic assessment of fluid responsiveness.
    - **This is probably discussed less in emergency medicine as we hope the patient will be out of the ED by six hours.** This may be why we focus on the 3 hour bundle.
  - **It can be difficult to complete all of these tasks within 3 hours, especially if the patient had cryptic septic shock that wasn't easily identified.**
- **In the most recent update, they combined some elements of the previous 3 and 6 hour bundles into a single 1 hour bundle.** Within 1 hour, we are supposed to somehow magically achieve the following; we need to check a lactate level, get blood cultures, start antibiotics and give 30cc/kg of fluid for patients who are hypotensive or have a lactate greater than 4.0 mmol/L. We need to start pressors if the patient is hypotensive despite starting fluid.
- **Is there anything good about these guidelines?** Logistically, it may make it easier to be compliant with the guidelines. If you look at the data on how emergency departments fail in compliance; they fail to recognize the sepsis until later and don't complete everything in the first 3 hour bundle or they fail to document the focused re-examination in the 6 hour bundle. These are the patients who are boarding in the emergency department way beyond the three hour time limit. We have already moved on and are seeing other patients. We forget to document the bundle. By combining it into a one hour bundle, it may be easier to turn into a protocol via EHR.

- **What is the downside?** Just because it is good for the hospital's bottom line doesn't mean it is good for patients. If you look at the data, we are already terrible at initiating these treatments and completing them within the 3 hour time window. Typically, the way we make improvements is with blanket treatment protocols that ensure that everyone with even the slightest chance of infection gets placed in these sepsis pathways.
  - **By condensing the time allowed until completion, most emergency departments will turn to an even more rapid and non-discriminatory approach.**
  - **We have been through this before.** Remember the guidelines that we need to give antibiotics to every pneumonia patient within 4 hours? That was a disaster. It led to incomplete diagnosis, increased pressure and inappropriate antibiotics. There are some reports of hospitals that had C. difficile outbreaks linked to these pneumonia pathway packages. **These recommendations were harmful and were eventually withdrawn.**
  - **The current 1 hour timeline for sepsis is even worse.**
- **We rarely discuss trade offs when examining these guidelines.** We only look at the subset of patients that may potentially benefit from this type of aggressive care. But by being forced to treat these patients in the time allotted, we are forced to treat a larger cohort of patients who likely don't have sepsis and almost certainly don't benefit from this care. We never consider the logistical burden these guidelines place on the emergency department as a whole and how it distracts from the care of other patients.
- **There is little to no evidence demonstrating that this will have any benefit on our patient outcomes.**
- **The studies cited as the basis for these protocols have numerous flaws.** They are often before and after studies on the implementation of a bundle or studies that look at harms when the bundle wasn't completed on time. None is a randomized controlled trial. None has high quality evidence. All have so many inherent biases that it reduces the meaningfulness of their findings.
- **This data is suboptimal.** Retrospective studies correlating time to intervention with outcome are junk. These studies mostly measure confounding factors. For example, patients getting better care overall are going to receive faster treatment. That doesn't prove causality. The fact that the guidelines are based on this sort of evidence is bizarre.
- **Even worse than the fact that there is no real evidence of benefit and these treatments are cumbersome and logistically difficult, there is mounting evidence that portions of these guidelines may be harmful.** There have been multiple studies demonstrating the detrimental effects of aggressive fluid resuscitation. Given these data, the continued demand for an empiric 30 cc/kg fluid bolus that is mandatory even if the treating clinician thinks it is harmful, is intolerable.
- **These guidelines are out there.** They going to be thrust upon us. We need to know about them so we can push back. We need to understand why these are not just unattainable goals but also not good for the majority of our patients. Protocols are good when we don't know the best care or for people who don't know what they are doing. Emergency physicians who practice in emergency departments are experts. We need to move outside of protocols and say that our patient doesn't fit them.

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