Title:
Implications of the Sepsis-3 Definition on Nursing Research and Practice

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Session Title:
Promoting Health in the Clinical Setting
Slot:
C 07: Sunday, 29 October 2017: 10:45 AM-11:30 AM
Scheduled Time:
10:45 AM

Keywords:
Epidemiology, Sepsis and Septic Shock

References:
Chan, J.K., Roth, J., Oppenheim, J.J., Tracey, K.J., Vogl, T, Feldmann, M.,….Nanchahal, J. (2012). Alarmins: awaiting a clinical response. *The Journal of Clinical Investigation*, 122(8), 2711-2720.

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Gaieski, D.F., Edwards, J.M., Kallan, M.J., & Carr, B.G. (2013). Benchmarking the incidence and mortality of severe sepsis. *Critical Care Medicine*, 41(5), 1167-1174.

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Singer M, Deutschman CS, Seymour CW, Shanker-Hari M, Annane D, Bauer M, …Angus, D.C. (2016). The third international consensus definitions for sepsis and septic shock (Sepsis-3). *JAMA*, 315(8), 801–10.

Abstract Summary:
In February 2016, the Society of Critical Care Medicine and the European Society of Intensive Care Medicine announced a striking change in the sepsis definition. The new definition, known as Sepsis-3, replaces the SIRS criteria with the SOFA Score. This presentation will discuss the implications of this radical change.
Learning Activity:

LEARNING OBJECTIVES	EXPANDED CONTENT OUTLINE
The learner will be able to explain why a change in the sepsis definition was necessary.	The lecturer will discuss the five justifications given by the Society of Critical Care Medicine/European Society of Intensive Care

		Medicine task force for why a change in the sepsis definition was necessary.
	The learner will be able to define sepsis and septic shock according to the new Sepsis-3 definitions.	The lecturer will discuss the components of the new operationalized sepsis and septic shock definitions.
	The learner will be able to identify how the new qSOFA score could be used in practice.	The lecturer will discuss which variables compose the qSOFA score, settings it could be used in, and early validation study results.
	The learner will be able to discuss the potential implications of the new Sepsis-3 definitions and the qSOFA score on research and practice.	The lecturer will discuss potential implications of the new definition on epidemiological data, and patient outcomes.

Abstract Text:

INTRODUCTION:

Sepsis is now the 10th leading cause of overall death in the United States (U.S.), and is the leading cause of death in intensive care units in high income countries. The Agency for Healthcare Research and Quality reported that sepsis is the most expensive condition treated in U.S. hospitals, at a cost of more than $20 billion/year. According to the Centers for Disease Control and Prevention (CDC), the number of admissions for sepsis almost doubled between 2000 and 2008, and one study found sepsis cases increase approximately 9% annually. Reasons for this increase include an aging population, a rise in chronic disease burden, increased use of invasive procedures, immunosuppressant medications, chemotherapy, organ transplantation, antibiotic resistance, and flawed epidemiology.

In February 2016, the Society of Critical Care Medicine and the European Society of Intensive Care Medicine announced a striking change in the sepsis definition in the Journal of the American Medical Association. An international task force composed of 19 sepsis clinicians and researchers from the two organizations created this new definition based on recent advances in the pathobiological understanding of sepsis, with a goal of improving the epidemiological tracking of this syndrome.

SUMMARY OF CHANGE:

The systemic inflammatory response syndrome (SIRS) criteria, the hallmark of the Sepsis-1 and Sepsis-2 definitions, was replaced by the Sequential Organ Failure Assessment (SOFA) score in the newly operationalized definition. Instead of using signs of inflammatory changes, the new definition relies on organ failure markers. Additionally, the three levels of acuity in the previous definition were reduced to two. The task force also endorsed validation of the new quick SOFA (qSOFA) risk stratification tool in non-ICU settings. The qSOFA may prove useful in identifying patients who may be septic or at risk of developing sepsis in non-ICU clinical settings. Justifications for these changes and results from early validation studies will be discussed during this presentation.

IMPLICATIONS ON NURSING RESEARCH & PRACTICE:

The short and long-term implications of this change in definition on nursing research and practice will be discussed at length during the presentation. Some of the topics to be discussed include how adjustments in medical coding using the new definition will impact data quality, availability, and the epidemiological understanding of sepsis. Additionally, the speaker will discuss how this change in definition may result in improved differentiation between sepsis and other inflammatory events, and subsequently result in better patient outcomes. Adoption of the new definition is likely to be delayed as a result of the Centers for Medicare and Medicaid Services bundle which uses the previous definition (Sepsis-2). The speaker will

discuss how the qSOFA score may prove more useful than other risk stratification tools in identifying patients that require a higher level of care, and early validation study results will be reviewed.

CONCLUSIONS:

The new operationalized Sepsis-3 definition appears to be an improvement over the previous two iterations, but it remains to be seen if research data will be of better quality using the new definition. There is the potential for improved patient outcomes if clinicians are better able to differentiate sepsis from inflammatory events using the new definition, and if sepsis cases are identified sooner using the qSOFA risk stratification tool. The impact of this definition change on research and practice must be studied, to determine if the Sepsis-3 definition, its associated clinical criteria, and the qSOFA require further revision. Results from early validation studies of the qSOFA tool appear promising, and clinicians and administrators may wish to consider adopting this tool in their facilities.