

New definitions created for sepsis and septic shock

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Updated definitions and clinical criteria for sepsis should facilitate earlier recognition and more timely management of patients with or at risk of developing sepsis. The report, which appears in the February 23 issue of *JAMA*, is being released to coincide with its presentation at the Society of Critical Care Medicine's 45th Critical Care Congress.

Sepsis, a syndrome of physiologic, pathologic, and biochemical abnormalities induced by infection, is a major public health concern, accounting for more than \$20 billion (5.2 percent) of total U.S. hospital costs in 2011. The reported incidence is increasing. Although the true incidence of sepsis is unknown, conservative estimates indicate that sepsis is a leading cause of mortality and critical illness worldwide. In addition, there is increasing awareness that patients who survive sepsis often have long-term physical, psychological, and cognitive disabilities with significant health care and social implications.

Definitions of sepsis and septic shock were last revised in 2001. Considerable advances have since been made into the pathophysiology, management, and epidemiology of sepsis, suggesting the need for reexamination. In January 2014, a task force (n = 19) with expertise in sepsis pathophysiology, clinical trials, and epidemiology was convened by the Society of Critical Care Medicine and the European Society of Intensive Care Medicine to evaluate and, as needed, update definitions for sepsis and septic shock. Definitions and clinical criteria were generated through meetings, Delphi processes, analysis of electronic health record databases, and voting, followed by circulation to

international professional societies, requesting peer review and endorsement.

Among the Recommendations:

- Sepsis should be defined as life-threatening organ dysfunction caused by a dysregulated host response to infection.
- Septic shock should be defined as a subset of sepsis in which particularly profound circulatory, cellular, and metabolic abnormalities are associated with a greater risk of mortality than with sepsis alone.
- In out-of-hospital, emergency department, or general hospital ward settings, adult patients with suspected infection can be rapidly identified as being more likely to have poor outcomes typical of sepsis if they have at least 2 of the following clinical criteria that together constitute a new bedside clinical score termed quick Sequential (Sepsis-related) Organ Failure Assessment (qSOFA): respiratory rate of 22/min or greater, altered mentation (mental activity), or systolic blood pressure of 100 mm Hg or less.

"The debate and discussion that this work will inevitably generate are encouraged. Aspects of the new definitions do indeed rely on expert opinion; further understanding of the biology of sepsis, the availability of new diagnostic approaches, and enhanced collection of data will fuel their continued reevaluation and revision," the authors write.

"Although the present definition for sepsis provides needed evolution in categorization of this syndrome, incorporation of more information about the molecular and cellular characterization of sepsis may have been helpful," writes Edward Abraham, M.D., of the Wake Forest School of Medicine, Winston-Salem, N.C., in an accompanying editorial.

"Hopefully, the next iteration of this consensus process will take full advantage of the rapidly advancing understanding of molecular processes that lead from infection to organ failure and death so that [sepsis](#) and [septic shock](#) will no longer need to be defined as a syndrome but rather as a group of identifiable diseases, each characterized by specific cellular alterations and linked biomarkers. Such evolution will be required to truly transform care for the millions of patients worldwide who develop these life-threatening conditions."

More information: *JAMA*, [DOI: 10.1001/jama.2016.0287](https://doi.org/10.1001/jama.2016.0287)
JAMA, [DOI: 10.1001/jama.2016.0290](https://doi.org/10.1001/jama.2016.0290)

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