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What's New in the Patient Safety World

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Sequential Organ Failure Assessment (SOFA)-2 Score

The Sequential Organ Failure Assessment (SOFA) score was originally developed in 1996. A group of 60 experts has now developed a consensus-based update to the original SOFA score, using a modified Delphi approach (Ranzani 2025, Moreno 2025). The new SOFA-2 score was then validated in 10 international multicenter cohorts of 3.3 million adult ICU patients.

SOFA-2 includes the original 6 organ systems with a total score ranging from 0 to 24 (higher scores indicate worse organ dysfunction). The updated score also incorporates commonly used drugs and mechanical organ supports that were rarely or not used when the original version was published in 1996. Some thresholds were modified to improve predictive validity against ICU mortality. Organ systems included in both SOFA-1 and SOFA-2 are hepatic, renal, cardiac, respiratory, neurologic, and blood coagulation. The SOFA-2 consensus panel considered adding immune and gastrointestinal systems but these were ultimately not able to be included in the new score.

Reclassification between total SOFA-1 and SOFA-2 occurred for nearly half of the patients (SOFA-2 was greater in 11% and lower in 40%).

SOFA-2 scores may be predictive of mortality in ICU patients. An increase in the SOFA-2 score is correlated with worse ICU outcomes. A 1-unit increase in SOFA-2 was associated with an increase in the odds of ICU mortality of 38% (odds ratio, 1.378).

Actually, a better title for this column could have been "SOFA-2: A Score in Search of an Application". The SOFA score has been utilized in clinical trials, but it really hasn't caught on as a clinical tool to use daily. Seymour, in an editorial accompanying the Ranzani paper (Seymour 2025), states "The SOFA score, despite its many applications, is yet to become a bedside tool, discussion topic on ICU rounds, or a score that directly influences clinical practice." But he does note that organ failure scores are still incorporated into contemporary risk prediction models, syndromic criteria like Sepsis-3, and disaster triage tools and are also used to compare ICU populations and outcomes

from randomized clinical trials. He also says that organ failure scores are used widely by clinicians, researchers, and quality improvement teams.

We did note that the SOFA score was used in development of a new definition of sepsis (see our March 2016 What's New in the Patient Safety World column "Finally…A More Rational Definition for Sepsis"). But it certainly has had limited applicability in clinical practice. Moreno et al. (Moreno 2025) note that the sponsoring bodies of the International Sepsis-3 Definitions should determine whether SOFA-2 should supersede SOFA-1 to better reflect current practices.

References:

Ranzani OT, Singer M, Salluh JIF, et al. Development and Validation of the Sequential Organ Failure Assessment (SOFA)-2 Score. JAMA 2025; 334(23): 2090-2103 https://jamanetwork.com/journals/jama/fullarticle/2840822

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