

Sepsis 3.0

The New Sepsis Criteria: Sepsis-3 defines sepsis as “life-threatening organ dysfunction caused by a dysregulated host response to infection [suspected or confirmed].”

Sequential [Sepsis-related] Organ Failure Assessment Score (SOFA) is used to define organ dysfunction as an increase in the total SOFA score of 2 points or more. The SOFA requirement is met by a minimum of 1 point increase in at least 2 organ systems or by a 2 point increase (or more) in a single organ system. With SOFA, the function of six organ systems is graded on a scale of 0 to 4 depending on the degree of dysfunction using objective measurements. Zero represents normal function. For each organ system, the baseline SOFA score is assumed to be 0 in patients who don't have preexisting organ dysfunction.

Table 1: Sequential [Sepsis-Related] Organ Failure Assessment Points

¹ PaO₂ = arterial partial pressure of oxygen (mmHg); FIO₂ = fraction of inspired oxygen expressed as a decimal.

² MAP = mean arterial pressure; DPA = dopamine in mcg/kg/min for ≥ 1 hour; includes vasopressors other than dopamine.

Derived by author from Singer et al.¹

Organ system	Objective measurement	Points				
		0	1	2	3	4
Respiration	PaO ₂ /FIO ₂ ¹	≥ 400	< 400	< 300	< 200 with resp support	< 100 with resp support
Coagulation	Platelet count	> 150,000	< 150,000	< 100,000	< 50,000	< 20,000
Liver	Bilirubin (mg/dL)	< 1.2	1.2-1.9	2.0-5.9	6.0-11.9	>12.0
Cardiovascular ²	MAP (mmHg) or vasopressor	MAP ≥ 70	MAP < 70	DPA ≤ 5	DPA 5.1-15	DPA >15
CNS	Glasgow Coma Scale Score	15	13-14	10-12	6-9	3-6
Renal	Creatinine (mg/dL) or urine output	< 1.2 -	1.2 – 1.9 -	2.0-3.4 -	3.5-4.9 <500 ml/d	>5.0 <200 ml/d

Example:

A 76 year old woman who has no prior history of kidney disease, dementia or other mental impairment is admitted for UTI, AKI with creatinine of 1.4 and altered mental status. A Glasgow Coma Scale score is done totaling 13. It is presumed that her renal and CNS baseline states are normal (SOFA scores = 0). She therefore has sepsis due to UTI since she now has a SOFA score of 1 in the renal and CNS categories for a total SOFA score of 2 points.

Quick SOFA (qSOFA) is a bedside clinical approach used to identify patients who are likely to have a prolonged ICU stay or die in the hospital, but it does not substitute for SOFA for defining organ dysfunction.

Quick SOFA (qSOFA) Criteria

2 or more:
Altered mentation
Respiratory rate ≥ 22
Systolic blood pressure < 100 mmHg

Septic Shock

The new definition of septic shock is quite strict: “persisting hypotension requiring vasopressors to maintain MAP [mean arterial pressure] > 65 mmHg and having a serum lactate level > 2 mmol/L despite adequate volume resuscitation.” The requirement for both vasopressor-sustained MAP and an elevated lactate level seems extreme and inconsistent with other concepts and definitions of shock states.

References

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