Table 1: Definition of Severe Sepsis and Septic Shock

Term	Definition
Severe sepsis	Sepsis plus one of the following: cardiovascular organ dysfunction OR acute respiratory distress syndrome OR two or more other organ dysfunctions.
Sepsis	Systemic Inflammatory Response Syndrome (SIRS) in the presence of, or as a result of, suspected or proven infection
SIRS	The presence of at least two of the following four criteria, one of which must be abnormal temperature or leukocyte count: • Core temperature of > 38.5°C or < 36°C. • Tachycardia, defined as a mean heart rate > 2 SD above normal for age in the absence of external stimulus, chronic drugs, or painful stimuli; or otherwise unexplained persistent elevation over a 0.5-to 4-hr time period **OR** for children <1 yr old: bradycardia, defined as a mean heart rate <10th percentile for age in the absence of external vagal stimulus, β-blocker drugs, or congenital heart disease; or otherwise unexplained persistent depression over a 0.5-hr time period. • Mean respiratory rate > 2 SD above normal for age or mechanical ventilation for an acute process not related to underlying neuromuscular disease or the receipt of general anesthesia. • Leukocyte count elevated or depressed for age (not secondary to chemotherapy-induced leukopenia) or > 10% immature neutrophils.
Infection	A suspected or proven (by positive culture, tissue stain, or polymerase chain reaction test) infection caused by any pathogen OR a clinical syndrome associated with a high probability of infection. Evidence of infection includes positive findings on clinical exam, imaging, or laboratory tests (e.g., white blood cells in a normally sterile body fluid, perforated viscus, chest radiograph consistent with pneumonia, petechial or purpuric rash, or purpura fulminans).

Suspected infection	Infection is suspected when one of the following is documented:
	• Orders for antibiotics OR
	• Antibiotics administered OR
	• Orders for urine, blood or spinal culture OR
	• Urine, blood or spinal culture drawn OR
	• Chart notation of:
	  • "Rule out infection" OR
	  • "Suspected infection" OR
	  • "Rule out sepsis" OR
	  • "Suspected sepsis"

Severe sepsis	Sepsis plus one of the following: cardiovascular organ dysfunction OR acute respiratory distress syndrome OR two or more other organ dysfunctions.

Term	Definition
Organ dysfunctions	**Cardiovascular** Despite administration of isotonic intravenous fluid bolus ≥ 40 mL/kg in 1 hour, • Decrease in BP (hypotension) < 5th percentile for age or systolic BP < 2 SD below normal for age **OR** • Need for vasoactive drug to maintain BP in normal range (dopamine > 5 µg/kg/min or dobutamine, epinephrine, or norepinephrine at any dose) OR **OR** Two of the following: – Unexplained metabolic acidosis: base deficit > 5.0 mEq/L – Increased arterial lactate > 2 times upper limit of normal – Oliguria: urine output < 0.5 mL/kg/hr – Prolonged capillary refill: > 5 seconds – Core to peripheral temperature gap > 3°C **Respiratory** PaO_2/FIO_2 < 300 in absence of cyanotic heart disease or preexisting lung disease **OR** $PaCO_2$ > 65 torr or 20 mm Hg over baseline $PaCO_2$ **OR** Proven need or > 50% FIO_2 to maintain saturation ≥ 92% **OR** Need for non-elective invasive or noninvasive mechanical ventilation **Neurologic** Glasgow Coma Score ≤ 11 **OR** Acute change in mental status with a decrease in Glasgow Coma Score ≥ 3 points from abnormal baseline **Hematologic** Platelet count < 80,000/mm^3 or a decline of 50% in platelet count from highest value recorded over the past 3 days (for chronic hematology/oncology patients) **OR** International normalized ratio >2 **Renal** Serum creatinine ≥ 2 times upper limit of normal for age or 2-fold increase in baseline creatinine **Hepatic** Total bilirubin ≥ 4 mg/dL (not applicable for newborn) **OR** ALT 2 times upper limit of normal for age
Septic Shock	Sepsis and cardiovascular organ dysfunction

Table 2: Codes to Identify Severe Sepsis and Septic Shock

Condition Name	ICD-9 Code(s)
Septicemia	038.xx
Streptococcal septicemia	038.0
Staphylococcal septicemia	038.1
Staphylococcal septicemia, unspecified	038.10
Methicillin susceptible Staphylococcus aureus septicemia	038.11
Methicillin resistant Staphylococcus aureus septicemia	038.12
Other staphylococcal septicemia	038.19
Pneumococcal septicemia [Streptococcus pneumoniae septicemia]	038.2
Septicemia due to anaerobes	038.3
Septicemia due to other gram-negative organisms	038.4
Septicemia due to gram-negative organism, unspecified	038.40
Septicemia due to Haemophilus influenzae [H. influenzae]	038.41
Septicemia due to escherichia coli [E. coli]	038.42
Septicemia due to pseudomonas	038.43
Septicemia due to serratia	038.44
Other septicemia due to gram-negative organisms	038.49
Other specified septicemias	038.8
Unspecified septicemia	038.9
Severe sepsis	995.92
Sepsis	995.91
Septicemia [sepsis] of newborn	771.81
Systemic inflammatory response syndrome due to non-infectious process with acute organ dysfunction	995.94
Bacteremia	790.7
Septic shock	785.52

Table 3: Definition of Resolution of Severe Sepsis or Septic Shock

Term	Definition
Resolution of Severe Sepsis or Septic Shock	For children who are not hypotensive: resolution of tachycardia (see Table 4) AND resolution of any 2 signs of decreased perfusion including: • Altered alertness. • Delayed capillary refill (>2 seconds). • Mottled or cool extremities. • Decreased urine output of < 0.5 mL/kg/hour. For children who are hypotensive: resolution of hypotension (see Table 4) PLUS resolution of any 1 of the signs of decreased perfusion including: • Altered alertness. • Delayed capillary refill (>2 seconds). • Mottled or cool extremities. • Decreased urine output of < 0.5 mL/kg/hour. • Tachycardia (see Table 4)

Table 4: Age-Specific Vital Signs and Laboratory Variables

Age Group	Tachycardia (Heart Rate: Beats/Min)	Bradycardia (Heart Rate: Beats/Min)	Tachypnea (Respiratory Rate: Breaths/Min)	Abnormal Count (Leukocytes × $10^3/mm^3$)	Hypotension (Systolic BP: mm/Hg)
0 days to 1 week	>180	<100	>50	>34	<65
1 week to 1 month	>180	<100	>40	>19.5 or <5	<75
1 month to 1 year	>180	<90	>34	>17.5 or <5	<100
2 to 5 years	>140	NA	>22	>15.5 or <6	<94
6 to 12 years	>130	NA	>18	>13.5 or <4.5	<105
13 to <18 years	>110	NA	>14	>11 or <4.5	<117

Note: lower values for heart rate, leukocyte count, and systolic blood pressure are for the 5th percentile; upper values for heart rate, respiration rate, or leukocyte count are for the 95th percentile.