Sepsis and Septic Shock Bundle

Sepsis-3 definitions, the Hour-1 bundle and SSC 2026 changes for exam review

DEFINITIONS AND SCREENING

TERM	EXAM DEFINITION
Sepsis	Suspected or confirmed infection plus acute SOFA rise ≥2
Septic shock	Pressor for MAP ≥65 plus lactate >2 mmol/L (18 mg/dL) after adequate fluids
qSOFA (2 of 3)	RR ≥22, altered mentation, SBP ≤100
SIRS (2 or more)	T >38 or <36 °C; HR >90; RR >20 or PaCO2 <32; WBC >12K, <4K or >10% bands

EXAM TIP qSOFA predicts a poor outcome but does not diagnose sepsis. SSC 2026 strongly prefers NEWS, NEWS2, MEWS or SIRS over qSOFA as a single screening tool.

HOUR-1 BUNDLE

Start at recognition. Not every element must finish within 60 minutes. This is the 2018 SSC bundle, still the usual exam framework; SSC 2026 gives the 30 mL/kg over the first 3 h.

1. Measure lactate; repeat if >2 mmol/L
2. Blood cultures before antibiotics
3. Broad-spectrum antibiotics
4. 30 mL/kg crystalloid for hypotension or lactate ≥4
5. Vasopressors if hypotensive during or after fluids, for MAP ≥65

SITUATION	ANTIBIOTICS (SSC 2026)
Possible shock, or probable/definite sepsis	Immediately, ideally within 1 h
Possible sepsis, no shock	Rapid workup; within 3 h if infection is still a concern

EXAM TIP "What first?" Cultures, then antibiotics, unless drawing cultures would delay antibiotics by 45 min or more (SSC 2021). SSC 2026 (new, strong): blood cultures as soon as possible, ideally before antimicrobials.

FLUIDS AND REASSESSMENT

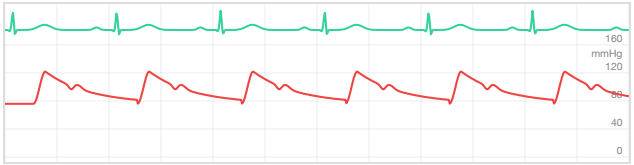
- At least 30 mL/kg crystalloid in the first 3 h (actual weight; adjusted or ideal if BMI >30)
- Balanced crystalloid (LR, Plasma-Lyte) over 0.9% saline; saline in TBI
- Albumin: SSC 2026 suggests crystalloids alone; may fit after large volumes or in cirrhosis; avoid in TBI. No starches or gelatin
- Guide more fluid with dynamic measures (passive leg raise, SVV, PPV)
- Trend lactate and capillary refill time (goal 3 s or less)

SAFETY Reassess after every bolus. New crackles, rising oxygen needs, JVD or edema suggest fluid intolerance: stop the bolus and notify the provider.

VASOPRESSORS AND MAP

STEP	AGENT	EXAM POINT
1st	Norepinephrine	First-line; may start peripherally
2nd	Vasopressin	Fixed 0.03 units/min, added as NE rises; not titrated
3rd	Epinephrine	If MAP still low on NE plus vasopressin
Cardiac dysfunction	Add dobutamine, or epi alone	Low output despite fluids and pressors

- MAP goal 65 mm Hg; age 65 or older: 60 to 65 (new in 2026)
- NE over dopamine (strong): dopamine causes more arrhythmias
- Vasopressin: SSC 2026 sets no NE threshold (panel median start 0.3 mcg/kg/min); SSC 2021 said 0.25 to 0.5
- Cardiac dysfunction: NE or epi may be the first pressor (new in 2026)
- NE can start during fluids if hypoperfusion is life-threatening



Normal arterial waveform (about 122/76) with a dicrotic notch. An arterial line shows beat-to-beat pressure, useful when pressor doses are high or rising. SSC 2026 suggests either an arterial line or a cuff; 2021 preferred the arterial line.

SAFETY Peripheral NE: SSC 2026 suggests starting it peripherally but says data are insufficient to set a duration, dose, catheter size or site. SSC 2021 advised a short period through a vein at or above the antecubital fossa, as many protocols still do. Check the site often for extravasation and follow your institution's protocol.

STEROIDS, SOURCE CONTROL AND MORE

- IV hydrocortisone, with or without fludrocortisone, if the NE need persists; not a last resort
- SSC 2026 sets no dose or start threshold; most panelists still give 200 mg/day. Classic exam answer (SSC 2021): 50 mg every 6 h once NE or epi is ≥0.25 mcg/kg/min for at least 4 h
- Source control ideally within 6 h
- Insulin at glucose ≥180 mg/dL; typical target 144 to 180 (SSC 2021)
- Bicarbonate: not for lactic acidemia alone; suggested if pH ≤7.2 with AKI
- Not advised: IV vitamin C, beta-blockers, antipyretics to improve outcomes

Doses are typical adult values for exam study. Follow your institution's protocols.

CMS SEP-1 VS SSC

ITEM	SEPSIS-3 / SSC	CMS SEP-1
Terms	Sepsis, septic shock (severe sepsis retired)	Severe sepsis, septic shock
Sepsis criteria	Infection + SOFA rise ≥2	Infection + 2 SIRS + organ dysfunction (e.g., lactate >2)
Shock	Pressors plus lactate >2	Hypotension after fluids, or lactate ≥4
Timing	Hour-1 bundle	3-hour and 6-hour bundles

EXAM TIP "Severe sepsis" or a 3- or 6-hour bundle in the stem signals SEP-1. Its 6-hour items: pressors for persistent hypotension, a documented perfusion reassessment, and a repeat lactate if the first was over 2.

PEDIATRIC NOTE (PHOENIX 2024)

- Sepsis: suspected infection plus Phoenix score ≥2 (respiratory, cardiovascular, coagulation, neuro); under 18, not preterm newborns
- Septic shock: sepsis plus ≥1 cardiovascular point (severe hypotension for age, lactate 5 or more, or any vasoactive)
- SSC 2026 (children) describes Phoenix but requires no set criteria; it uses probable sepsis and suspected septic shock
- SSC 2026: antimicrobials ideally within 1 h for suspected septic shock; for probable sepsis without shock, rapid workup, then within 3 h if sepsis is substantiated
- 10 to 20 mL/kg boluses with reassessment; up to 40 to 60 mL/kg in hour 1 where ICU care exists

Sources (11) are listed with links at icubasics.com/sheets/sepsis-bundle.html. For education and exam preparation only. Not medical advice; follow current guidelines and your institution's protocols. ICU Basics is an independent study aid not affiliated with any certifying body.