

## **Emergency Department Sepsis Guidelines - 2022**

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The provincial Sepsis Clinical Expert Working Group developed the BC Emergency Department Adult Sepsis Guidelines, taking into account the most up-to-date literature (references below) and expert opinion. This guidance is for adult septic/septic shock patients. If COVID-19 is presumed etiology, please refer to [COVID-19 Therapeutics Committee Guidance](#).

For more information about the guidelines and to join the BC Sepsis Network, visit [bcpsqc.ca/sepsis](http://bcpsqc.ca/sepsis).

### **GUIDELINES**

**All patients with two out of four SIRS (heart rate greater than 90, respiratory rate greater than 20, temperature greater or equal to 38° C or less than 36° C, altered mental state) and suspected infection and one of the following risk factors should be considered at risk of sepsis:**

- Looks unwell
- Age greater than 65 years
- Recent surgery
- Immunocompromised (AIDS, chemotherapy, neutropenia, asplenia, transplant, chronic steroids)
- Chronic illness (diabetes, renal failure, hepatic failure, cancer, alcoholism, IV drug use)

**All patients with two out of four SIRS and suspected infection (with above risk factor):**

- Venous lactate measurement within 3 hours of presentation to triage
- If initial lactate is greater than 2 mmol/L, repeat venous lactate measurement in next 2-4 hours

**For adults in SHOCK (SBP less than 90 mmHg or MAP less than 65 mmHg) with POSSIBLE infectious cause (septic shock) or a HIGH likelihood of sepsis:**

- Blood culture before IV antibiotics
- Broad spectrum IV antibiotics within **1 hour**
- Selection of broad-spectrum antibiotics, including MRSA, MDRO and fungal coverage, should be based on local antibiograms and clinical indication (see SSCG 2021)
- Empiric antimicrobials should be discontinued if an alternative cause of illness is demonstrated or strongly suspected

**For adults NOT in SHOCK (SBP less than 90 mmHg or MAP less than 65 mmHg) with POSSIBLE sepsis, we suggest a *time-limited course of rapid investigation* and if concern for infection persists:**

- Blood culture before IV antibiotics
- Broad spectrum IV antibiotics within **3 hours**
- Administer at least 30 mL/kg of balanced crystalloid within first 3 hours of resuscitation if evidence of hypoperfusion (tachycardia, low urine output, acute kidney injury, elevated lactate, etc)

**For adults with a LOW LIKELIHOOD of infection and NOT in shock, we suggest deferring antimicrobials while continuing to closely monitor the patient.**

**ADDITIONAL RECOMMENDATIONS**

- Early investigations to determine infectious source (radiologic, surgical, other cultures i.e. CSF, joint aspiration) and early source control within 6-12 hours through appropriate consultation and using the least invasive technique.
- Consult ICU early (either locally or through the BC Patient Transfer Network) if you suspect the patient will need higher level of care.
- We suggest guiding resuscitation to decrease serum lactate in patients with elevated lactate level, over not using serum lactate.
- Lactate should be rechecked every 2-4 hours during resuscitation. An elevated lactate, or failure to clear lactate does not necessarily imply the patient needs IV fluid. Patients should be assessed for fluid responsiveness, need for vasopressors/inotropes or further imaging. We suggest using capillary refill time to guide resuscitation as an adjunct to other measures of perfusion.
- For adults with sepsis or septic shock who require ICU admission, we suggest admitting the patients to the ICU within 6 hours

**If hypotensive despite fluid bolus (30 cc/kg) we suggest:**

- Initiate norepinephrine targeting mean arterial pressure (MAP) of 65 mm Hg. We suggest starting norepinephrine peripherally (in or proximal to the antecubital fossa) to restore mean arterial pressure rather than delaying initiation until a central venous access is secured. Peripheral access sites running vasopressors should be checked every hour. Local protocols for extravasation management should be established. Central access and intra-arterial monitoring should be obtained within 6 hours.
- For further assessment of fluid resuscitation, we suggest using dynamic measures over physical examination or static parameters alone.
- For adults unable to obtain a MAP greater than 65 mmHg with 15 ug/min or 0.25 ug/kg/min of norepinephrine we suggested adding vasopressin 0.03 units/minute fixed dose (or 1.8 units/hr). Vasopressin should not be infused through peripheral IVs.

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- For adults with septic shock and inadequate mean arterial pressure levels despite norepinephrine and vasopressin, we suggest adding epinephrine. Norepinephrine and epinephrine may be infused through peripheral IVs for up to 6 hours.
- Using further hemodynamic assessment (such as assessing cardiac function) to determine the type of shock if the physical exam does not lead to a clear diagnosis.
- Using dobutamine and norepinephrine OR epinephrine as needed if evidence of sepsis induced myocardial suppression (determined by ECHO, low ScvO<sub>2</sub> or physical exam). Continue to assess response.
- For adults with septic shock and an ongoing requirement for significant vasopressor therapy (greater than 4 hours or expected to be greater than 4 hours) we suggest using IV hydrocortisone at a dose of 50 mg IV q6h.
- For adults with sepsis or septic shock we suggest against using IV vitamin C.
- Consultation with critical care services or transfer to ICU (either locally or through BC Patient Transfer Network).

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