

Sepsis-like Signs and Symptoms: Management (Adult 17 years and older)

Site Applicability

VCH and PHC

- Emergency Departments (ED)
- Urgent Care Centres (UCC)
- Health Care Centres (HCC):
 - Pemberton Health Centre
 - Whistler Health Care Centre

Practice Level

Profession	Setting(s)	Basic Skill	Advanced Skill (requiring additional education)
RN	<ul style="list-style-type: none"> • Emergency Department • Urgent Care Centre • Health Care Centre 	<p>With advanced education where the following are core competencies and expectations of the role:</p> <ul style="list-style-type: none"> • Fluid administration • Venipuncture to establish IV access • Venipuncture to collect blood samples • Administer supplemental oxygen via nasal prongs or mask if SpO₂ is less than 94%, unless otherwise indicated. 	<p>Nurse Initiated Protocol (NIP):</p> <p>Upon successful completion of the NIA/NIP Learninghub Course, the following nurse initiated protocols (NIPs) have been approved for use as noted in the site applicability above, by following the management of sepsis like illness algorithm to:</p> <ul style="list-style-type: none"> • Obtain urine sample • Obtain a 12 lead ECG • Obtain bloodwork • Initiate cardiac monitoring • Initiate IV fluid Lactated Ringers

Goal:

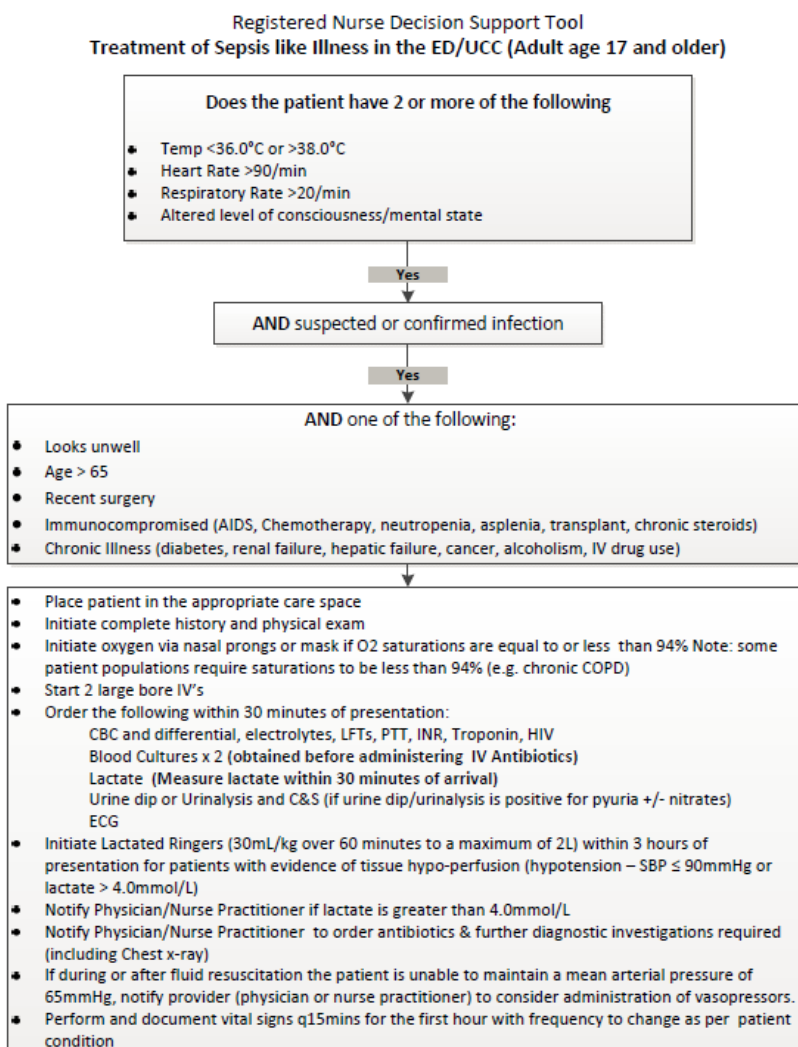
- To expedite the initiation of basic investigations, treatment of symptoms, and the initiation of fluid resuscitation in the patient suspected to be suffering from sepsis-like signs and symptoms
- To alleviate significant delays in the treatment of patients presenting with sepsis-like symptoms.

Requirements

- This document **does not reflect the ongoing management of patient presenting with sepsis-like symptoms. Consultation with a physician or nurse practitioner (NP) involved in the client's care is still required.**
- The use of NIA/NIP is supported within VCH/PHC and is defined:
 - Policy: [Nurse Initiated Activities \(NIA\) and Nurse-Initiated Protocols \(NIP\) \(BCD-11-11-40001\)](#).
 - Education includes: [LearningHub NIA Course](#)
- Physician or NP orders override the use of NIA or NIP.
- For sites on Cerner, use the [Sepsis – Early Identification and Treatment using Cerner EHR- Protocol](#)

Algorithm

Initial Management of Sepsis like Illness



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Need to Know

- Sepsis-like presentation alone or in combination with other signs and symptoms can be indicative of many conditions. [Algorithm](#) provides pre-approved sepsis criteria.
- If patient meets 'Sepsis Criteria', perform the NIA/NIP and collaborate with provider (emergency physician or nurse practitioner) to initiate the site specific Sepsis Protocol and/or preprinted orders.

VCH:

- VA: [VCH.VA.PPO.555](#)
- Coastal: [VCH.CO.3030](#)
- RH: [VCH.RD.RH.0075](#)

PHC: See ED Sepsis Protocol

- Place patient in an appropriate care space to enable a thorough history and physical assessment.
- The most commonly infected systems are respiratory, genitourinary, gastrointestinal, and integumentary (i.e. skin) systems. See [Appendix A: Infection Sources and Factors](#) (i.e. potential causes) extracted from the Sepsis Advisor in the Sepsis – Early Identification and Treatment Using Cerner EHR – Protocol.
- Early identification of sepsis can improve patient outcomes if rapid response is initiated.
- Along with early administration of antibiotics, it is paramount to identify, remove, or control the source of infection. Clinical assessment and reporting of signs and symptoms that may help identify the source of infection are nursing measures that can additionally promote source control.

Guideline

Assessment

Assess the following:

Assessment	Signs, Symptoms and Risk Factors
Sepsis-like symptoms	<p>Signs and symptoms are non-specific but may include:</p> <ul style="list-style-type: none"> Symptoms and signs specific to an infectious source (i.e. pain and purulent exudate in a surgical wound) Signs of end-organ perfusion: <ul style="list-style-type: none"> Warm, flushed skin may be present in early phases of sepsis Sepsis progression to shock: the skin may become cool, decreased capillary refill, cyanosis, or mottling Altered mental state, obtundation or restlessness, oliguria, anuria Ileus or absent bowel sounds

Vital Signs	Vital signs, including oxygen saturation. Findings might include: <ul style="list-style-type: none"> • Irregular pulse or cardiac rhythm or changes in heart rate • Hypo- or hypertension • Shortness of breath, decreased O2 saturation • Hypo- or hyperthermia • Tachypnea
Health History	<ul style="list-style-type: none"> • Personal medical history chronic illness (diabetes, renal failure, hepatic failure, cancer, alcoholism, IV drug use) • Advanced age (age 65 years or older) • Immunosuppression (i.e. AIDS, chemotherapy, neutropenia, asplenia, transplant) • Community acquired pneumonia • Previous hospitalizations • Genetic factors (defects of antibody production or a lack of T cells, phagocytes, natural killer cells, or complement)
Medication History	<ul style="list-style-type: none"> • Immunosuppressants (i.e. steroids)

Precautions or Special Considerations:

- Patients may present with signs and symptoms specific to an infectious source (i.e. cough and dyspnea may suggest pneumonia).
- Signs and symptoms may be modified by pre-existing disease or medications (i.e. patients who take beta-blockers may not exhibit appropriate tachycardia).
- Identification of sepsis like signs and symptoms can be challenging in elderly patients, as they may present with more generalize signs such as delirium, and often do not present with fever.
- Extra vigilance is required when providing fluid boluses to patients with pre-existing cardiac conditions, or chronic renal failure to identify signs and symptoms of fluid overload.
- Consider the need to place the patient on contact, airborne, or droplet precautions.

Interventions:

1. If vitals are unstable, or if the patient has a history of syncope, place patient on the cardiac monitor and inform the provider (emergency physician or nurse practitioner) immediately.
2. Review health history, acute or chronic disease, and lab data if available.
3. Assess if the patient meets the following criteria:
 - a. Two or more of the following Systemic Inflammatory Response Syndrome (SIRS) criteria
 - heart rate greater than 90 beats per minute
 - respiratory rate greater than 20 breaths per minute
 - temperature greater than or equal to 38°C or less than 36°C
 - altered level of consciousness or mental state
 - b. Suspected or confirmed infection.
 - c. One of the following risk factors:

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- 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)
4. If patient meets the above:
 - a. Place patient in the appropriate care space.
 - b. Perform a complete 'head to toe' assessment on the patient to identify a potential source of infection.
 - c. Initiate oxygen via nasal prongs or mask if oxygen saturations are equal to or less than 94%. Note: some patient populations require saturations less than 94% (e.g. chronic COPD)
 - d. Obtain intravenous access:
 - If stable: 1 x 20 gauge catheter
 - If unstable: 2 x 18 gauge catheter
 - e. Obtain the following within 30 minutes of presentation and mark for processing STAT:
 - CBC and differential, electrolytes, LFTs, PTT, INR, Troponin, HIV
 - Blood Cultures x 2 (obtained before administering IV Antibiotics but do not delay Antibiotic treatment by more than 30 minutes)
 - Lactate
 - Urine-dip or urinalysis and urine for culture and sensitivity (if urine dip/urinalysis is positive for pyuria +/- nitrates.
 - 12 Lead ECG
 - f. For patients with evidence of tissue hypo-perfusion (hypotension - SBP less than or equal to 90mmHg or lactate greater than 4mmol/L) - Initiate Lactated Ringers IVF (30mL/kg over 60 minutes to a maximum of 2L) within 3 hours of presentation to the ED or 1 hour of hypoperfusion.
 5. **Notify provider (physician or nurse practitioner) as soon as possible of patients with sepsis like syndrome meeting the above criteria to facilitate early administration of antibiotics** and further diagnostic investigations (i.e. chest x-ray) as required.
 6. Notify provider if lactate is greater than 4mmol/L.
 7. Reassessment:
 - a. Document verses every 15 minutes for the first hour
 - b. If giving fluid resuscitation:
 - Assess for evidence of fluid overload
 - Consider need for foley catheter insertion
 - c. Ongoing fluid output
 8. If during or after fluid resuscitation the patient is unable to maintain a mean arterial pressure of 65mmHg, notify provider (physician or nurse practitioner) to consider administration of vasopressors.
 9. Collaborate with provider as necessary for ongoing management of sepsis-like symptoms.
 10. Discontinue cardiac monitoring upon consultation with the provider.

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Expected Patient, Client or Resident Outcomes

Intended Outcomes

- To identify patient with sepsis-like illness and intervene to prevent deterioration.
- Improvement in initial vital signs (e.g. decrease heart rate, blood pressure return to normal range).
- Facilitate early access to early antibiotic administration and definitive treatment

Unintended Outcomes

- The fluid bolus may increase the risk of respiratory distress due to fluid overload.

Patient, Client or Resident Education

- Explain the treatments being provided, including rationale and possible side effects.

Documentation

- Document initial and on-going nursing assessments.
- NIA or NIP Documentation (in the Orders section of the client chart) – should be in accordance with Health Authority NIA or NIP Policy: Nurse Initiated Activities (NIA) and Nurse-Initiated Protocols (NIP) [[BCD-11-11-40001](#)].
- Interventions or treatments performed and patient's response to treatment.
- For Cerner documentation, see CST Sepsis Protocol.

Related Documents

- [Sepsis - The Whys and the Wherefores](#)
- [Sepsis - Early Identification and Treatment using Cerner EHR- Protocol](#)
- [Interactive Injury Prevention and Control \(IPAC\) Pocket Reference Card](#)

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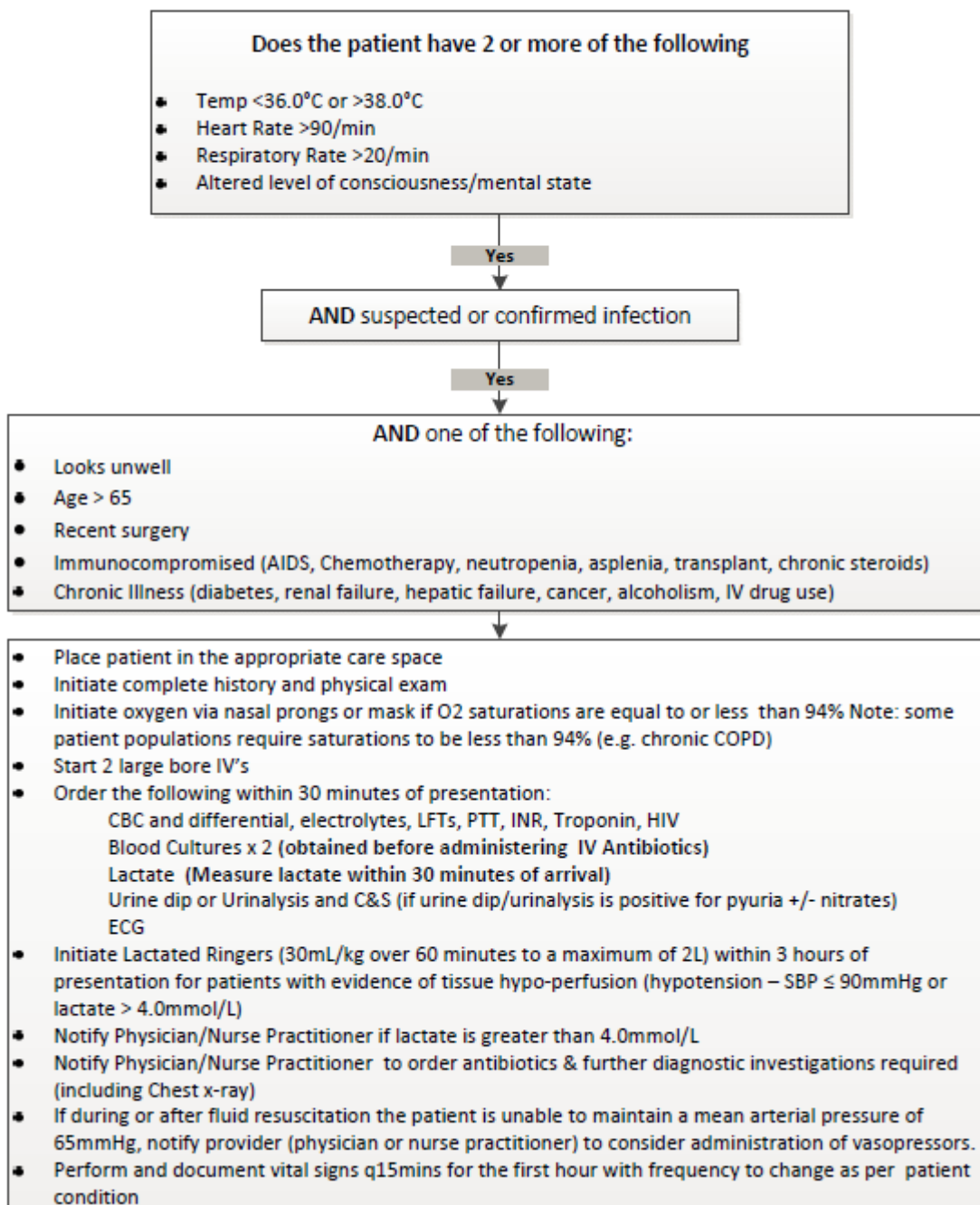
Appendix A: Infection Sources and Factors

Infection Source	Infection Factor
Urosepsis	<ul style="list-style-type: none"> N/A
Biliary source	<ul style="list-style-type: none"> N/A
Necrotizing fasciitis/myositis	<ul style="list-style-type: none"> N/A
Meningitis/Encephalitis	<ul style="list-style-type: none"> Community Post neurosurgery
Febrile neutropenia	<ul style="list-style-type: none"> N/A
Intra-abdominal	<ul style="list-style-type: none"> Primary Peritonitis Secondary Peritonitis
Osteomyelitis/Joint Infections/ Septic Arthritis	<ul style="list-style-type: none"> No risk factors Septic Arthritis – STD Risk (Neisseria gonorrhea (adults only))
Chorionitis/intra amniotic (Adult only)	<ul style="list-style-type: none"> N/A
Pneumonia	<ul style="list-style-type: none"> Aspiration Pneumonia (community) Community Acquired Pneumonia (CAP): atypical suspected Healthcare associated pneumonia or CAP: with risk factors CAP – no risk factors
Skin/soft tissue (cellulitis)	<ul style="list-style-type: none"> Non diabetic Diabetic
Intravascular Catheters/Suspected Endocarditis	<ul style="list-style-type: none"> Intravascular catheters Suspected endocarditis
Wound infection	<ul style="list-style-type: none"> Post trauma wound infection Surgical (not GI or GU) wound infection Surgical (GI or GU) wound infection
Source unclear (not neutropenia)	<ul style="list-style-type: none"> N/A

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Appendix B: Decision Support Tool – Treatment

Registered Nurse Decision Support Tool Treatment of Sepsis like Illness in the ED/UCC (Adult age 17 and older)



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Last Revised:	09-OCTOBER-2020	
Last Reviewed:	09-OCTOBER-2020	
Approved By: <i>(committee or position)</i>	PHC	VCH
	Endorsed By: PHC Professional Practice Standards Committee	Endorsed By: (Regional SharePoint 2nd Reading) Health Authority Profession Specific Advisory Council Chairs (HAPSAC) Health Authority & Area Specific Interprofessional Advisory Council Chairs (HAIAC) Operations Directors Professional Practice Directors Final Sign Off: Vice President, Professional Practice and Chief Clinical Information Officer, VCH
Owners: <i>(optional)</i>	PHC / VCH	
	Developer Lead(s): <ul style="list-style-type: none"> Regional Program Planning Lead – Emergency and Trauma Services, VCH Trauma Nurse Clinician, VGH Development Team member(s): <ul style="list-style-type: none"> (former) Associate Medical Director – Regional Emergency Service Program, VCH/PHC Associate Medical Director – Regional Emergency Services Program, VCH-PHC Practice Initiatives Lead, Professional Practice, VCH 	

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