



COHESIVE HEALTHCARE MANAGEMENT & CONSULTING

HOSPITAL NAME

TITLE		POLICY	
Sepsis-Care and Management Guidelines for the Adult Patient		NUR-026	
MANUAL	EFFECTIVE DATE	REVIEW DATE	
Nursing			
DEPARTMENT	REFERENCE		
Nursing	See below		

SCOPE

This policy applies to all adult patients of **insert name of hospital** (Hospital) and nursing staff (RNs, LPNs, CNAs), respiratory therapists, and medical providers (MDs/DOs, NPs, PAs) who are responsible for the care and management of patients who present or develop sepsis and/or septic shock.

PURPOSE

The purpose of this policy is to:

- Provide early identification and recognition of sepsis;
- Provide prompt care and treatment of patients with sepsis; and
- Improve patient outcomes, decrease length of hospital stays, decrease debility and mortality associated with sepsis, and decrease costs associated with sepsis and septic shock.

According to the Sepsis Alliance Organization sepsis is the number one cost of hospitalization in the U.S. Costs for acute sepsis hospitalization and skilled nursing are estimated to be \$62 billion annually. This is only a portion of all sepsis-related costs since there are substantial additional costs after discharge for many. The average cost per hospital admission for sepsis is double the average cost per admission across all other conditions. And, sepsis is the primary cause of readmission to the hospital, costing more than \$3.5 billion each year. The Center for Disease Control (CDC) reports each year, at least 1.7 million adults in America develop sepsis, and nearly 270,000 Americans die as a result of sepsis, and one in three patients who dies in a hospital has sepsis. In addition, up to 50% of patients who survive sepsis may suffer from Post-Sepsis Syndrome (PSS). With this condition, physical or psychological symptoms may persist after the patient has been discharged from the hospital after being treated for sepsis.

Studies investigating survival have reported slightly different numbers, but it appears that on average, approximately 30% of patients diagnosed with severe sepsis do not survive. Up to 50%

of survivors suffer from post-sepsis syndrome. Until a cure for sepsis is found, early detection and treatment is essential for survival and limiting disability for survivors.

Sepsis is more likely to affect very young children, older adults, people with chronic illnesses, and those with weakened immune systems. Sepsis is an equal-opportunity killer, affecting people of all ages and levels of health. Sepsis occurs most often in people 65 years or older or younger than one (1) year, persons with weakened immune systems, or with chronic medical conditions (e.g., diabetes). While less common even healthy infants, children, and adults can develop sepsis from an infection, especially when not treated properly. The CDC reports sepsis begins outside of the hospital for nearly 80% of patients.

Certain infections and germs lead to sepsis most often. Common germs that can cause sepsis are Staphylococcus Aureus (*S. aureus*), Escherichia Coli (*E. coli*), and some types of Streptococcus. Four types of infections are often associated with sepsis:

- Lung infection (e.g., pneumonia); the respiratory tract is the most common site of infection that leads to sepsis.
- Urinary Tract Infection (e.g., kidney infection).
- Gut Infection.
- Skin Infection.

DEFINITIONS

Mean Arterial Pressure (MAP): Defined as the average pressure in a patient's arteries during one cardiac cycle. It is considered a better indicator of perfusion to vital organs than systolic blood pressure (SBP). True MAP can only be determined by invasive monitoring and complex calculations; however, it can also be calculated using a formula of the SBP and the diastolic blood pressure (DBP). Formula for MAP: double the diastolic blood pressure and add the sum to the systolic blood pressure, then divide by 3 (e.g., $SBP + 2(DBP)/3 = MAP$).

Multiple Organ Dysfunction Syndrome (MODS): Present when there is more than one failing organ in the body. MODS is progressive organ dysfunction in which the patient cannot maintain homeostasis without medical intervention. It may be caused by an infectious etiology as sepsis or septic shock, or it may be of noninfectious etiology as in the case of SIRS from pancreatitis. Primary MODS is organ dysfunction related to the injury directly. Secondary MODS results from the host's response to an injury elsewhere.

Quick Sepsis Related Organ Failure Assessment (qSOFA): Quick Sepsis Related Organ Failure Assessment is a risk stratification tool and is incorporated into the Sepsis Screen to:

- Identify patients with suspected infection that are at a high risk for in-hospital mortality; and
- Can help increase suspicion or awareness of a severe infectious process and prompt further testing and/or closer monitoring.

Sepsis: Sepsis is a life-threatening, time sensitive condition and medical emergency that occurs when the body's systemic inflammatory response to a source of infection causes injury to tissues and organs. It is a dysregulated immune response to infection that results in organ dysfunction and is the leading cause of death from infection if not recognized early and treated quickly.

Septic Shock: Sepsis with the presence of circulatory, cellular, metabolic dysfunction, and tissue hypoxia caused by reduced oxygen delivery or increased oxygen consumption or inadequate oxygen utilization that can be attributed to various causes and is associated with a higher risk of mortality than sepsis alone. In addition, patients with septic shock can be identified with a clinical construct of sepsis with persisting hypotension requiring vasopressors to maintain MAP \geq 65 mm/Hg and having a serum lactate level $>$ 2 mmol/L despite adequate volume resuscitation.

Systemic Inflammatory Response Syndrome (SIRS): Systemic inflammatory response, which is an appropriate response by the body to an infection or any other stimulus that activates inflammation (SIRS is not exclusively the result of infection; there are many noninfectious causes of SIRS, e.g., MI, cirrhosis, adrenal insufficiency, and autoimmune disorders).

POLICY

The hospital will use an interdisciplinary approach in identifying patients who have a suspected or confirmed infection and/or condition and may develop or progress to sepsis. In addition, the hospital will utilize evidence-based practices and tools in the identification, care, and treatment of patients with signs or symptoms of sepsis. Hospital leadership including but not limited to, the Infection Preventionist (IP) and Chief Clinical Officer (CCO) are responsible for ensuring that all clinical staff adhere to the requirements of this policy.

Early recognition of sepsis is critical. Early identification of sepsis is paramount at first contact and later in the continuum of care as sepsis can develop at any time during care. Older adults often present atypically with infection and sepsis requiring astute evaluation of the patient.

Effective sepsis management is about time. It is important to look for a combination of the warning signs of sepsis. Identifying these symptoms early could prevent the patient from progressing to septic shock and could save a life. Watch for TIME:

- **T-Temperature:** higher or lower than normal;
- **I-Infection:** May have signs and symptoms of infection;
- **M-Mental decline:** Confused, sleepy, difficult to rouse; and
- **E-Extremely ill:** Severe pain, discomfort, shortness of breath.

PROCEDURE

- A. **Initial Assessment-** All patients with signs and symptoms suggestive of sepsis whether an inpatient or who present to the Emergency Department (ED) should be treated as a potential life-threatening situation. The primary care nurse should immediately assess the patient for sepsis using the Adult Sepsis Screen (NUR-026A Adult Sepsis Screen). Signs and symptoms that may indicate sepsis:
 1. Shivering, fever, or very cold;

2. Extreme pain or discomfort;
 3. Clammy or sweaty skin;
 4. Confusion or disorientation;
 5. Short of breath;
 6. High heart rate.
- B. If the patient presents or exhibits any of the above symptoms and is suspect for or has a known infection, the patient should be assessed using the qSOFA criteria on the Adult Sepsis Screen by the primary care nurse.
- C. If the patient qSOFA score is 2 or more with suspect or confirmed infection OR less than 2 and infection still suspected the primary care nurse will notify the Provider immediately. A positive qSOFA in a patient who otherwise was not believed to have infection should be a prompt to suspect infection. A score of two (2) or more with suspected or confirmed infection may indicate the need for prompt and aggressive treatment. A score of two (2) or more may pose a greater risk for a poor outcome; if the score is two (2) or less and infection is still suspected proceed to the SIRS screening assessment. Criteria for qSOFA includes:
1. Respiratory rate 22 or greater;
 2. Systolic blood pressure 100mm/Hg or lower; and
 3. Altered mental status (confusion, disorientation, changes in the Glasgow Coma Scale {GCS} of less than 15).
- D. The qSOFA tool should be utilized at regular intervals to evaluate inpatients for sepsis to assist in the rapid and prompt identification of patients with suspected or confirmed infection.
- E. If the patient qSOFA scores are 2 or more or less than 2 and infection is still suspected assess the patient using the SIRS assessment. Clinically, the Systemic Inflammatory Response Syndrome (SIRS) is the occurrence of at least two of the following criteria and includes:
1. Temperature greater than 100.4° or less than 96.8° (Hyperthermia at time of presentation with sepsis has been found to strongly indicate progression of sepsis to shock within 72 hours of presentation);
 2. Heart rate greater than 90 bpm;
 3. Respiratory rate greater than 20;
 4. PaCO₂ less than 32 mm/Hg;
 5. Leukocyte (WBC) count greater than 12,000 mm³ or less than 4,000 mm³ or over 10% immature forms or bands.
- F. **Important note:** When a patient presents with two or more SIRS criteria but with hemodynamic stability (i.e. blood pressure at baseline), a clinical assessment must be made to determine the possibility of an infectious etiology versus a non-infectious etiology (e.g., viral illness).
- G. The primary care nurse will initiate the Sepsis Bundle for a patient with a SIRS score of 2 or more and/or symptoms indicative of sepsis or patient presents with known or suspected infection (NUR-026B Adult Sepsis Standing Orders).
- H. The Provider will conduct an initial investigation to determine the suspected source of sepsis to help guide empiric therapy and additional testing. Components of the initial investigation include:
1. Brief history and head-to-toe physical examination;

2. Laboratory and microbiology (including cultures) studies; and
 3. Imaging studies (e.g., x-ray).
- I. Consider organ dysfunction if the following are present:
1. Significantly decreased urine output.
 2. Abrupt change in mental status.
 3. Decrease in platelet count.
 4. Difficulty breathing.
 5. Abnormal heart function.
 6. Abdominal pain.
- J. The primary care nurse will be responsible for performing a rapid and focused head to toe assessment of the patient.
- K. **Initial Care and Management-** For adults with sepsis/septic shock, the following management steps should be initiated within **one hour** of recognition:
1. Secure the airway and stabilize respiration. Supplemental oxygen should be supplied to all patients with sepsis. Apply O₂ per nasal cannula 2-6 LPM to maintain oxygen saturation greater than 90%.
 2. Obtain baseline vital signs: Temperature, Pulse, Respiration, Blood Pressure, and SpO₂.
 3. Obtain Mean Arterial Pressure (MAP). True MAP can only be determined by invasive monitoring and complex calculations; however, it can also be calculated using a formula of the systolic blood pressure (SBP) and the diastolic blood pressure (DBP). Formula for MAP: double the diastolic blood pressure and add the sum to the systolic blood pressure, then divide by 3:
 - $SBP + 2(DBP)/3 = MAP$.
 4. Obtain IV access times two.
 5. Obtain stat labs and diagnostics:
 - Lactate level; remeasure lactate if initial lactate elevated (>2 mmol/L).
 - CBC with differential.
 - CMP.
 - D-dimer.
 - Blood Cultures. Obtain blood cultures times two before antibiotics are administered whenever possible. Do not delay antibiotic administration solely to complete this task. Once a patient is identified as having septic shock, an antibiotic should be administered as soon as possible within one hour. Once the decision is made for antibiotics, the antibiotic(s) should be ordered on a STAT basis with accelerated delivery and initiation of the antibiotic(s) to the patient.
 - Urine Culture & Sensitivity (C&S).
 - Sputum Culture & Sensitivity (C&S).
 - Wound Culture & Sensitivity (C&S) (if applicable).
 - Fingertick Blood Sugar (FSBS).
 - ABGs.
 - EKG.
 - Chest X-ray.
 6. Obtain weight in kilograms.
 7. Place urinary catheter.

8. Administer broad-spectrum antibiotics as ordered by the Provider.
9. Begin rapid administration of fluid bolus of 30 mL/kg crystalloid for hypotension or lactate \geq 4 mmol/L. A history of heart failure, liver failure, or renal failure is **not** a contraindication to fluid resuscitation. These patients might need less total fluid or smaller boluses with more frequent reassessment of intravascular volume status. Do not delay fluid and vasopressor therapy if indicated.
10. Apply vasopressors if hypotensive during or after fluid resuscitation to maintain a mean arterial pressure (MAP) \geq 65 mm/Hg.

L. Patient Monitoring

1. Monitor vital signs and oxygen saturation every 15 minutes until stable, then every hour. Oxygenation should be monitored continuously with pulse oximetry. Notify Provider if:
 - Temperature $>$ 100.4°F or $<$ 96.8°F.
 - Pulse $>$ 90 BPM.
 - Respiratory Rate $>$ 20.
 - SpO₂ $<$ 90%.
 - Blood pressure.
2. Monitor MAP every 30 minutes until stable, then every hour; if MAP $<$ 60 mm/Hg notify Provider.
3. Monitor FSBS values every hour; if FSBS value is $>$ 180 mg/dL or $<$ 60mg/dL notify Provider.
4. Monitor urinary output every hour; if output $<$ 0.5 mL/kg hour notify Provider.
5. After fluids and empiric antibiotics have been administered, the therapeutic response should be assessed frequently at a minimum of every hour or more if indicated.
6. Monitor skin color every hour.
7. Monitor mental status every hour.
8. Monitor ABGs. Worsening gas exchange may be a clue to the presence of pulmonary edema from excessive fluid resuscitation and also help detect other complications including pneumothorax from central catheter placement, acute respiratory distress syndrome, or venous thromboembolism. ABGs may be obtained based on assessment of the patient:
 - Failure to maintain SpO₂ $>$ 90%.
 - Respiratory distress.
9. The following lab studies may be performed every 6 hours or more as indicated until values have reached normal or baseline or as otherwise ordered by the Provider:
 - Lactate level.
 - Platelet count.
 - Serum chemistries.
 - Liver function tests.
 - CBC.
 - Additional cultures as ordered by the Provider. The results should prompt alteration of antibiotic choice if a better and safer regimen can be substituted and/or directed toward source control.

- Additional imaging studies (e.g., MRI, CT) may be required to determine a source cause.
- M. The primary care nurse will be responsible for documenting the care and treatment of the patient.

N. Post-Acute Sepsis Care:

1. Additional investigations may be required by the Provider to determine the suspected source(s) if unknown and should be considered in patients with sepsis as promptly as feasible (e.g., within the first 12 hours) using imaging, lab, and microbiologic diagnostic samples.
2. Source Control: Source control (i.e., physical measures to eradicate a focus of infection and eliminate or treat microbial proliferation and infection) should be undertaken in a timely manner (6-12 hours) after diagnosis by the Provider. The assessment and evaluation of invasive devices or procedures (e.g., implants/hardware, lines, drains, surgical procedures, etc.), and wounds to determine if this may be a source of infection. Source control should consider the risk of a specific intervention and its potential risk of complications.
3. Once the patient has demonstrated a response to therapy, the Provider should direct attention to:
 - a. De-escalation of fluids:
 - Patients who respond to initial fluid therapy should have the rate of fluid administration reduced or stopped, vasopressor support weaned, and, if necessary, diuretics administered.
 - b. Careful and frequent monitoring of the patient is essential because:
 - Patients with sepsis may develop cardiogenic and noncardiogenic pulmonary edema (i.e., acute respiratory distress syndrome {ARDS}).
 - c. De-escalation and duration of antibiotics:
 - It is appropriate that de-escalation and duration of antimicrobial agents be assessed daily.
 - After culture and susceptibility results return and/or after patients clinically improve, consider narrowing antimicrobial therapy to a few days.
 - Antimicrobial therapy should also be pathogen and susceptibility directed if known.
 - If a broad-spectrum antimicrobial therapy is used and the patient demonstrates improvement (vital signs, lab, and imaging data) then a fixed course of therapy of 3 to 5 days may be appropriate.
 - d. Duration of antibiotics:
 - The duration of antibiotics should be individualized for each patient.
 - Antibiotics should be discontinued as early as is feasible to minimize colonization for infection with drug-resistant microorganisms and superinfection with other pathogens.
 - For most patients, the duration of therapy is typically 7 to 10 days.

- Longer courses may be appropriate in patients who have a slow clinical response or other causation (e.g., undrainable focus of infection, bacteremia, viral infection, endocarditis, osteomyelitis, large abscesses, highly resistant gram-negative pathogens with limited sensitivities, neutropenia, or immunological deficiencies).

POST-SEPSIS SYNDROME (PSS)

- A. Symptoms of PSS can be physical or psychological and vary in severity:
1. Insomnia, difficulty getting to sleep or staying asleep.
 2. Nightmares, vivid hallucinations, and panic attacks.
 3. Disabling muscle and joint pains.
 4. Extreme fatigue.
 5. Poor concentration.
 6. Decreased mental (cognitive) functioning.
 7. Loss of self-esteem and self-belief.
- B. There is no specific treatment for PSS. Interventions include emotional and psychological support, and physical therapy. Health professionals, particularly nurses, need to ensure that sepsis survivors are given appropriate information and that appropriate referrals are made upon discharge by the Case Manager, so they can access help should they develop post-sepsis syndrome.

CLINICAL ROLES AND RESPONSIBILITIES IN SEPSIS CARE

A. Providers:

- Perform an appropriate assessment if an inpatient or Medical Screening Exam if an Emergency Department patient upon notification by the nurse of the patient's qSOFA score.
- Assist in stabilizing the patient and placing orders for care and treatment of the patient based on patient assessment, lab and diagnostic findings.
- Discuss need for admission to the Hospital or transfer to a higher level of care provider with the patient/family.
- Establish contact with a higher level of care provider if indicated to request emergent transfer and acceptance of patient with sepsis. Complete transfer orders and transfer protocol.
- For ED patients, ensure all appropriate EMTALA forms are completed prior to patient transfer.
- Complete all documentation related to the care and treatment of the patient with sepsis.

B. Inpatient and Emergency Department Nurses:

- Rapid and prompt identification of the patient's level of urgency and recognizing signs and symptoms of infection.
- Assess for signs and symptoms of sepsis/septic shock: shivering, fever, or very cold, extreme pain, discomfort, clammy or sweaty skin, confusion, or disorientation, short of breath, high heart rate.
- Screen patient for sepsis/septic shock using the Adult Sepsis Screen.

- Conduct qSOFA assessment: Respiratory rate 22 or greater, systolic blood pressure 100mm/Hg or lower, altered mental status (confusion, disorientation, changes in the Glasgow Coma Scale less than 15) and notify Provider immediately if score is 2 or more with suspect or confirmed infection OR less than 2 and infection still suspected.
- Initiate the Sepsis Bundle for patient with a SIRS score of 2 or more and/or symptoms indicative of sepsis or patient presents with known or suspected infection.
- Complete a full nursing assessment of the patient.
- Obtain vital signs.
- Ensure standing orders are implemented.
- Monitor the patient's status, response to treatment, or change in status. Notify Provider as directed per standing orders or as indicated by the patient's condition.
- Communicate effectively and thoroughly with fellow staff members to coordinate care of the patient with sepsis. If there is a concern about a patient, express that concern with the Provider, House Supervisor/Charge Nurse, or other Nurses during a shift change. Be the patient's advocate, communicate to the team you are concerned about sepsis in the patient.
- Ensure proper precautions are followed to help prevent the spread of Healthcare Associated Infections (HAIs).
- Educate and inform patients and families about sepsis; to prevent, recognize, and report symptoms of infection promptly.
- Ensure that aides who collect vital signs report abnormalities directly to the nurse.
- Be vigilant about sepsis and signs and symptoms that may indicate sepsis for inpatients.
- Complete all documentation related to the care and treatment of the patient with sepsis.

C. Nurse Aides/Techs:

- Promptly report vital signs or changes in the patient's mental status or condition to the primary care nurse that may indicate impending sepsis to the patient.
- Ensure proper precautions are followed to help prevent the spread of Healthcare Associated Infections (HAIs).

D. Respiratory Therapists:

- Be vigilant about sepsis and signs and symptoms that may indicate sepsis for patients (e.g., RR > 20, PaCO₂ less than 32 mm/Hg), or altered mental status (e.g., confusion, disorientation).
- Assist with monitoring the patient's respiratory status.
- Promptly report findings to the primary care nurse that may indicate impending sepsis to the patient.
- Ensure proper precautions are followed to help prevent the spread of Healthcare Associated Infections (HAIs).

ADDITIONAL INFORMATION

A. Sepsis Criteria:

1. Diagnostic criteria for sepsis:
 - a. Generalized Variables:
 - Temperature changes (temperature range less than 96.8°F or greater than 100°F).
 - Extreme pain or discomfort.
 - Clammy or sweaty skin.
 - Altered Mental Status: confusion or disorientation.
 - Short of breath.
 - Tachypnea (RR greater than 20).
 - High Heart Rate (greater than 90 bpm).
 - b. Inflammatory Variables:
 - Leukocytosis (white blood cell count greater than 12,000 mm³).
 - Leukopenia (white blood cell count less than 4,000 mm³).
 - Normal white blood cell count with greater than 10% immature forms.
 - Plasma c-reactive protein greater than 3.0 mg/L.
 - c. Hemodynamic Variables:
 - Hypotension < 90 mm/Hg, or a systolic blood pressure drop greater than 40 mm/Hg in adults.
 - d. Organ Dysfunction Variables:
 - Arterial hypoxemia (PAO₂/FiO₂ less than 300).
 - Acute oliguria (< 0.5 mL/kg/hr for at least 2 hours despite fluid resuscitation).
 - Creatinine increase (> 0.5 mg/dL or 44.2 mmol/L).
 - Coagulation abnormalities (PTT > 60 seconds, INR > 5).
 - Ileus (absent bowel sounds).
 - Thrombocytopenia (platelet count < 100,000).
 - Hyperbilirubinemia (plasma bilirubin > 4 mg/dL or 70 mmol/L).
 - Hyperlactatemia (> 1 mmol/L).
 - Decreased capillary refill or mottling.

B. Pharmacological/Antibiotic Considerations:

1. **Antibiotics:** Obtain appropriate cultures before antibiotics are initiated, but do not delay antibiotic administration solely to complete this task. Once a patient is identified as having septic shock, an antibiotic should be administered as soon as possible within one hour.
2. Selection of antibiotic(s) should take into consideration the history and physical examination of the patient, and culture results if known. The Infectious Disease Society of America (IDSA) recommends that, if the Provider decides that infection is plausible, antibiotics can and should be administered promptly with due consideration being given to noninfectious conditions, or infections that do not benefit from antibacterial agents, for example, viral infections and the severity of illness of the patient.
3. For patients with presumed sepsis or septic shock, the administration of antibiotic(s) should be initiated promptly; within one hour.

4. Once the decision is made for antibiotics, the antibiotic(s) should be ordered on a STAT basis with accelerated delivery and initiation of the antibiotic(s) to the patient.
5. While most patients with septic shock should receive broad spectrum Gram-positive and Gram-negative coverage that includes *Pseudomonas* coverage, it is important to consider when such coverage may not be needed, on the basis of the suspected source of infection, the previous health status of the patient, and the patient's severity of illness.
6. Narrower regimens should be considered when there is a concern about infection, but the patient is not demonstrating severe illness (i.e., patient who has a rapid response to fluids or does not require fluids at all), has no vasopressor requirement, and/or barely meets the sepsis definition).
7. Broad-spectrum therapy may be considered when a patient is critically ill.
8. Treatment duration considerations and recommendations should be determined per specific condition and discontinued as soon as feasible based on the patient's response to therapy.
9. **Vasopressors:** Intravenous vasopressors are useful in patients who remain hypotensive despite adequate fluid resuscitation or who develop cardiogenic pulmonary edema. The following vasopressors are recommended:
 - a. Norepinephrine: first choice in vasoactive medication.
 - b. Vasopressin or epinephrine: can be added to norepinephrine to raise MAP to target goal or adding to vasopressin to decrease epinephrine dosage.
 - c. Dopamine: recommended as an alternative to norepinephrine only in patients with low risk for tachyarrhythmias or absolute or relative bradycardia.
 - d. Dobutamine: recommended for patients with persistent hypoperfusion despite fluids and vasopressors. Dobutamine is an inotropic agent that may cause a blood pressure drop initially in low doses as a result of systemic artery dilation caused by peripheral vascular resistance. But as the dose increases, cardiac output increases enough to overcome the peripheral vascular resistance, and blood pressure is increased.
10. **Glucocorticoid Therapy:** Glucocorticoids are recommended only if the patient's blood pressure does not respond to adequate fluid resuscitation and vasopressor medications.
11. **Blood Transfusion if Indicated:** Blood transfusions are reserved for those patients who have a hemoglobin level of less than 7 unless it is suspected that the patient has myocardial ischemia, severe hypoxemia, or acute hemorrhagic shock.
12. **Insulin Therapy if Indicated:** Blood glucose levels should be kept under 180 mg/dL. Insulin therapy should not be started unless there are two consecutive blood glucose levels greater than 180 mg/dL. Levels should be monitored every one-to-two hours until stabilized.
13. **Venous Thromboembolism Prophylaxis:** Patients who have sepsis or septic shock are at risk for developing blood clots, measures should be taken to prevent the formation of clots. Pharmacologic and mechanical agents may be useful and include:
 - a. Low molecular weight heparin.

- b. Lovenox may be used to prevent or treat deep vein thrombosis (DVT).
 - c. Pneumatic compression or compression stockings.
14. **Stress Ulcer Prophylaxis:** Stress ulcer prevention may include proton pump inhibitors (PPIs), or histamine receptor antagonists in the patient who has factors for gastrointestinal bleeding. The use of stress ulcer prophylaxis should be used with caution to avoid an adverse reaction (e.g., C. diff, spontaneous bacterial peritonitis in patients with cirrhosis).

PREVENTION OF SEPSIS

- A. The prevention of a Healthcare Acquired Infection (HAI) and sepsis is a high priority, and all Healthcare Workers (HCWs) are responsible for ensuring infection control and prevention measures are practiced and adhered to as designed to provide optimal outcomes for all patients. Following are general recommendations for the prevention of infection and sepsis.
1. Assess patients for the need for isolation precautions:
 - Neutropenic, immunological disorder.
 - Diarrhea.
 - Skin rashes.
 - Known communicable diseases.
 - Known carriers of an epidemic bacteria (e.g., MRSA, VRE, ESBL, MDRO).
 2. Identify patients who are at risk for developing an HAI:
 - Age greater than 70 years.
 - Shock.
 - Major trauma.
 - Coma.
 - Prior antibiotics.
 - Mechanical ventilation.
 - Drugs affecting immune system (steroids, chemotherapy).
 - Indwelling catheters.
 3. Standard Precautions should be followed with every patient:
 - a. **Gloves**
 - Sterile gloves should be worn after hand hygiene while touching mucous membranes, nonintact skin, performing sterile procedures (e.g., insertion of central line or foley catheter).
 - Clean nonsterile gloves are safe for touching blood, other body fluids, contaminated items, any other potentially infectious materials.
 - Change gloves between tasks and procedures in the same patient, especially when moving from a contaminated body area to a clean body area.
 - Never wear the same pair of gloves for the care of more than one patient.
 - Remove gloves after caring for patient.

- Practice hand hygiene whenever gloves are removed.

b. Gown

- Wear gown to prevent soiling of clothing and skin during procedures likely to generate splashes of blood, body fluids, secretions, or excretions.
- Sterile gown is required only for aseptic procedures (e.g., insertion of central line), for the rest a clean nonsterile gown is sufficient.
- Remove soiled gown as soon as possible, with care to avoid contamination.

c. Mask

- Wear a mask with adequate eye protections or a face shield to protect mucous membranes of the eyes nose, and mouth during procedures and patient care activities likely to generate splashes/sprays of blood and body fluids.
- Patients, relatives, and health care workers presenting with respiratory symptoms (e.g., cough) should also use mask.

d. Device Related Measures

- Remove devices if no longer necessary.
- Do not insert devices if they are not indicated.
- Consider alternative non-invasive devices if feasible (e.g., external male and female catheters).
- Pay close attention to infection control prevention measures for patient care devices at these key points: insertion, maintenance, and removal.
- Ventilator Associated Pneumonia (VAP) Prevention Bundle.
- Catheter Associated Urinary Tract Infection (CAUTI) Prevention Bundle.
- Catheter Associated Bloodstream Infection (CAUTI) Prevention Bundle.

e. Hand Hygiene

- Adherence to CDC Hygiene Guidelines.
- When using soap and water hand hygiene: wash hands thoroughly for a minimum of 20 seconds.
- When using an alcohol-based hand rub (ABHR) thoroughly rub product into hands, and rub until product is dry.
- If hands are visibly dirty, wash with soap and water.
- If hands are not visibly dirty, use an alcohol-based hand rub (ABHR).
- Before direct contact with patient and after patient contact.
- Before donning sterile gloves for an invasive procedure (e.g., central line, foley insertion).

- Before donning gloves for peripheral catheter placement, urinary catheter placement, or placing other invasive devices that do not require surgery.
- After contact with a patient's skin (e.g., taking VS, positioning/moving patient).
- After contact with body fluids or excretions, nonintact skin, wound dressings, mucous membranes.
- Before moving to clean body site after touching a contaminated body site during care of the patient.
- After contact with inanimate objects in the same general area as the patient (tables, chairs, IV poles, computer keyboards).
- After removing gloves.
- Note: Use soap and water hand hygiene after contact with a patient with infectious diarrhea, C. diff, Bacillus anthracis, before eating, and after using the restroom.

DOCUMENTATION

- A. Nursing will document sepsis care and treatment for the adult patient.
- B. Providers shall document sepsis care and treatment for the adult patient.

STAFF EDUCATION

- A. Medical, nursing, and clinical staff (RNs, LPNs, CNAs, RTs) will receive education and training on sepsis upon initial orientation, annually, and as needed (e.g., such as when guidelines and recommendations change, performance improvement initiatives). At a minimum education will include:
 1. Hospital policy;
 2. What is sepsis, septic shock;
 3. Early recognition and identification of sepsis;
 4. Signs and symptoms of septic shock;
 5. Risk groups and risk factors;
 6. Care and management of the patient with sepsis; and
 7. Prevention of infection and sepsis.
- B. Documentation of training will be retained in the employee's personnel file.

QUALITY ASSURANCE

- A. The Infection Control and Prevention Department will track and monitor compliance to the sepsis guidelines as outlined by this policy. For any identified areas of concern or non-compliance a corrective action plan will be developed, implemented, and monitored to ensure the actions demonstrate improvement.
- B. All findings will be reported to following committees: Infection Prevention, Quality, Medical Staff and Governing Board.

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ATTACHMENTS

NUR-026A Adult Sepsis Screen
NUR-026B Adult Sepsis Standing Orders

REVISIONS/UPDATES

Date	Brief Description of Revision/Change