Sepsis is a serious, life-threatening rapidly progressive infection. The death rate can exceed 50% without rapid implementation of treatment protocols. The patient’s outcome depends on the etiology of the infection and the swiftness with which medical interventions commence.

The guidelines set forth in this document outline the treatment protocol for patients in both the clinic and hospital setting. These guidelines are based upon the “Surviving Sepsis Campaign Guidelines” implemented as part of the Sepsis Initiative at Mercy Medical Center, Dubuque IA. The initiative incorporates elements of disease definition, intervention protocol, data collection, auditing all cases presenting with severe sepsis and septic shock, feedback, and education.

Table 1: Defining Sepsis as a Disease Continuum

<table>
<thead>
<tr>
<th>Infection/SIRS*</th>
<th>Sepsis</th>
<th>Severe Sepsis</th>
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<tbody>
<tr>
<td><strong>Adult Criteria</strong></td>
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<td>A clinical response arising from a non-specific insult, including ≥ two of the following:</td>
<td>SIRS with a presumed or confirmed Infectious process</td>
<td>Sepsis with ≥ 1 sign of organ dysfunction hypo-perfusion, or hypotension. Examples: cardiovascular renal, respiratory hepatic, CNS, hematologic, unexplained metabolic acidosis</td>
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<td>Temperature: &gt; 38°C or &lt; 36°C</td>
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<tr>
<td>Heart Rate: &gt; 90 beats/min</td>
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<td>Respiration: &gt; 20/min</td>
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<tr>
<td>WBC count: &gt; 12,000/mm³, or &lt; 4,000/mm³, or &gt; 10% immature neutrophils</td>
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*SIRS = systemic inflammatory response syndrome

*Bone et al. Chest: 1992; 101:1644-1654*
Sepsis Intervention for Clinic Setting

1) Activate EMS (911).

2) Evaluate patient, address any immediate or life threatening issues.

3) Activate EMS again if necessary, especially for transport from West Campus to hospital.

4) Notify Mercy Medical Center to arrange for the encounter and a bed (589-####).

5) Re-evaluate patient, perform history and physical.

6) Transport patient as soon as possible.

7) Enter orders (preferably in Cerner Powerchart), using sepsis bundle.

8) Notify hospital rounder of admission, and share pertinent clinical information.

Sepsis Intervention for Hospital Setting: Goals

**WITHIN 3 HOURS of Presentation:**

1) Measure lactic acid level (order follow up, if lactic acid is elevated).

2) Obtain blood culture prior to administration of antibiotics.

3) Administer broad-spectrum antibiotics.

4) Administer bolus: **30 ml/kg crystalloid** for hypotension or a lactate of > 4 mmol/L.
WITHIN 6 HOURS of Presentation:

5) Determine **source of infection** by imaging and laboratory (e.g., chest x-ray, CT abdomen/pelvis, urinalysis, blood culture, etc).

6) **Apply vaspressors** (for hypotension that does not respond to fluid bolus) to maintain a mean arterial pressure (MAP) of 65 mm/Hg or greater. **Norepinephrine is first choice**.

7) Obtain **central venous access** in the event of persistent arterial hypotension despite volume resuscitation (septic shock) or initial lactate greater than 4 mmol/L.
   - measure central venous pressure (CVP)
   - measure central venous oxygen saturation (ScVo2)

ONGOING MANAGEMENT:

8) If fluid resuscitation and vasopressors do not restore hemodynamic stability, use **IV hydrocortisone** 200 mg/day

9) **Intubation/Ventilation**: goal for tidal volume is 6 ml/kg predicted body weight. Plateau pressure goal is < 30 cm H2O.

10) Target for **glucose control** is an upper level of 180 mg/dl, preferred management with insulin.

References:
