SURVIVING SEPSIS
Scope and Impact of the Problem:

Severe sepsis is a major healthcare problem that affects millions of people around the world each year with an extremely high mortality rate of 30 to 60 percent.

Mortality from sepsis is greater than breast cancer, lung cancer, and colon cancer combined and is the number one cause of death in the non-coronary ICU.

The incidence of severe sepsis is expected to double over the next 25 to 30 years.
**Sepsis** is a range of clinical conditions caused by the body’s systemic inflammatory response (**SIRS**) to an **infection**.

**Severe sepsis** is a condition in which **sepsis** is accompanied by **organ dysfunction or failure**.

**Sepsis** can rapidly progress to **severe sepsis** to **septic shock** within **24** hours if left untreated.
The Sepsis Continuum

SIRS  Sepsis  Severe Sepsis  Septic Shock

A clinical response arising from a nonspecific insult, with ≥ 2 of the following:

- T > 101°F or < 96.8°F
- HR > 90 beats/min
- RR > 20/min
- WBC > 12,000/mm³ or <4,000/mm³ or > 10% bands

SIRS = systemic inflammatory response syndrome

SIRS with a presumed or confirmed infectious process

Sepsis with organ failure

Refractory hypotension

Chest 1992;101:1644
Managing Sepsis/Severe Sepsis

• The rapid diagnosis and management of sepsis is critical to successful treatment. The sepsis patient is usually already critically ill and requires immediate attention to avoid rapid deterioration; therefore, it is necessary to treat the patient at the same time as confirming the diagnosis.

The management of sepsis patients involves a variety of therapeutic interventions. Treatment is more likely to be effective, and severe sepsis avoided, if appropriate therapy is used early. Once diagnosed, the goal of therapy is to eliminate the underlying infection with antibiotics.
Goals of the OBMC Sepsis Response Team

• Build awareness of sepsis.
• Improve diagnosis
• Increase the use of appropriate treatment
• Educate healthcare professionals
• Develop guidelines of care
• Facilitate data collection for the purposes of audit and feedback
• Reduce mortality rates
Severe Sepsis is a Medical Emergency

- With acute Heart attack

- With acute Stroke
• With acute Sepsis
What are the early signs of sepsis?

- Elevated heart rate
- Fever
- High WBC count
- Elevated respiratory rate

Often overlooked
What will we do at OBMC to improve our patients outcomes?

- Early Recognition
  - Early Intervention
    - Improved Survival
What is my role as the nurse?

- You are the closest in proximity to the patient, take a lead in assessment! Stop the progression of Sepsis and promote early detection and early treatment.
- Screen for sepsis once a shift and PRN
- Suspect sepsis – if SIRS criteria is met and there is known or suspected infection
- When the patient screens positive for sepsis notify the doctor providing SBAR.
- Expect orders for the sepsis bundle (labs: STAT lactate and blood cultures, oxygen, fluids, close monitoring of urine output, **start antibiotics within 1 hour**.)

If the attending or consulting physician fails to return your call after 15 minutes, the staff should check all numbers, attempt contact again, and notify the Administrative Supervisor of the physician failure to respond. The Administrative Supervisor will consult with the care staff on the urgency of the patient’s condition and attempt to notify the physician after verification of listed contact numbers. If the physician fails to respond 15 minutes after the second notification, the Administrative Supervisor will notify the Chairman of the Medical Staff Department of which the attending/consulting physician is a member.

If there is no primary team response within 30mins (total) and the patient displays signs of organ dysfunction, or deteriorating status, call the Rapid Response Team.
• Sepsis Screening Tools have been shown to improve the early diagnosis of sepsis and severe sepsis.

OakBend Medical Center Sepsis Screening will be utilized for every inpatient.

• The RN will Screen **every** inpatient, **every** shift (and PRN) for sepsis. (Excluded – Hospice/Comfort care patients and pts. < 18 years old)

  Screening in Clinical Care Station on Admission and Daily Assessments
On this tab you will document your screening of the patient.
This is also where you need to document the date/time you collected the lactic acid and the blood cultures the doctor orders.
Patients will appear on the dashboard if their WBC is >12 or less than 4, if their lactate level is >20, if their HR is > 90, if their RR is > 20, or if their Temp > 101 or <96.8.

If you see a patient on this list with at least 2 or more abnormal values, your patient could be positive for sepsis. Check the patient’s chart for mention of suspected infection. Next, check for signs of organ dysfunction.
IDENTIFYING ACUTE ORGAN DYSFUNCTION AS MARKERS OF SEPSIS AND SEVERE SEPSIS

- Altered Consciousness
- Confusion
- Psychosis

- Tachypnea
  - \( \text{PaO}_2 < 70 \text{ mm Hg} \)
  - \( \text{SaO}_2 < 90\% \)
  - \( \text{PaO}_2/\text{FiO}_2 < 300 \)

- Jaundice
  - ↑ Enzymes
  - ↓ Albumin
  - ↑ PT

- Tachycardia
- Hypotension
- Altered CVP
- Altered PAOP

- Oliguria
- Anuria
  - ↑ Creatinine

- Platelets
  - ↑ PT/APTT
  - ↓ Protein C
  - ↑ D-dimer

Once the patient has screen positive for sepsis or severe sepsis, call the physician utilizing the SBAR Report. Document the name of the physician notified and the time the physician was notified.

**SBAR:**

**Situation:**
- Patient has screened Positive for Sepsis

**Background:**
- Positive SIRS (Describe areas positive)
- Suspected Infection
- Signs of organ dysfunction that may indicate severe sepsis (describe areas positive)

**Assessment:**
- Mental Status, BP, HR, RR, Temp, O2 Sat on____, Urine output over the last ____hrs. has been____

**Recommendation:**
- 1. Since this patient may have sepsis, would you like to me to obtain a stat serum lactate and blood cultures?
- 2. What antibiotics would you like me to initiate after the blood cultures have been drawn?
- 3. What oxygen and/or fluids would you like me to give?
SEPSIS RESUCITATION BUNDLE:
A bundle refers to a group of interventions that should be initiated together to have better patient outcomes than if the intervention alone is implemented separate from one another.
TREATMENT to be completed within the first 3 hours of presentation of Sepsis:
    1. Measure Lactate Level Stat- Nurse must document “Lactic Acid Drawn and sent to lab at 1/1/2015 @ 1030” for example.
    2. Obtain blood cultures prior to the administration of antibiotics. Nurse Must document “Blood Cultures Drawn and sent to lab at 1/1/2015 @ 1030” for example.
    3. Initiate broad spectrum antibiotic (within 1 hour)
    4. Administer 30 ml/kg crystalloid (NS or LR) for hypotension or lactate ≥36mg/dL
To be completed within 6 hours of presentation:
    5. Administer vasopressors (for hypotension that does not respond to initial fluid resuscitation) to maintain a mean arterial pressure (MAP) ≥65mmHg- Transfer to ICU
    6. In the event of persistent hypotension after initial fluid administration (MAP < 65 mmHg) or if initial Lactate ≥ 36mg/dL, reassess volume status and tissue perfusion and document findings
    7. Re-measure lactate if initial lactate elevated
Sepsis Algorithm

Sepsis is confirmed or suspected infection, plus two or more of the following:
- T ≥101F or < 96.8F
- HR > 90 bpm
- RR > 20
- WBC > 12 or < 4 or > 10% bands

If the attending or consulting physician fails to return your call, you must follow the chain of command policy.

If no response from attending in 30 min, rapid response team will be called.

If determined that patient only has SIRS, then stop here, and resume sepsis screening.
Consider transfer to ICU for MAP < 65, lactate > 36, or other signs of organ dysfunction.

Consider CVC or arterial line
For Severe Sepsis/Septic Shock (ICU only)

Maintain Therapeutic Endpoints

Resuscitation Complete
Therapy Across the Sepsis Continuum

SIRS

Sepsis

Severe Sepsis

Septic Shock

Antibiotics and Source Control

* Early Goal Directed Therapy

Chest 1992;101:1644,
Time to antibiotics=a critical determinant of survival

• Mortality risk increases 7.8% per every hour of delay.

• Reminding physicians to use the sepsis order set will improve the turn-around time of broad spectrum antibiotics.
The patient screened positive now what?

• The physician diagnosis is SIRS- not sepsis
  – The RN will resume screening each shift.

• The physician confirms the diagnosis of sepsis/severe sepsis
  – The RN will rescreen in 24 hrs, but will not need to re-
    notify the physician. Document: “Patient with positive
    diagnosis sepsis. MD Aware. No call at this time.” on
    the Sepsis Screening Tab.
Make the Commitment

Stop Severe Sepsis

Early Screening...

Early & Aggressive Goal Directed Treatment