1. Strong relationship between each hour until antibiotics and mortality for **septic shock** but a less pronounced relationship for sepsis without shock

2. Up to 90 mins until antibiotics for patients with **sepsis without shock** make little difference

3. Intervals of ≥ 5 hours are clearly and consistently associated with higher mortality rates.
2019 - North Central Texas Trauma Regional Advisory Council (NCTTRAC) surveyed regional EMS systems

<table>
<thead>
<tr>
<th>Survey Questions</th>
<th>No. of Respondents</th>
<th>EAGLES Survey</th>
<th>North Texas Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have a specific sepsis protocol</td>
<td>29</td>
<td>68.9%</td>
<td>97.7%</td>
</tr>
<tr>
<td>Activate a sepsis alert</td>
<td>29</td>
<td>58.6%</td>
<td>81.4%</td>
</tr>
<tr>
<td>Sepsis team activated at receiving hospital</td>
<td>29</td>
<td>17.0%</td>
<td>N/A</td>
</tr>
<tr>
<td>Parameters used to assess sepsis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tachycardia</td>
<td>N/A</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Temperature</td>
<td>29</td>
<td>79.3%</td>
<td>69.8%</td>
</tr>
<tr>
<td>EtCO2</td>
<td>29</td>
<td>58.6%</td>
<td>69.8%</td>
</tr>
<tr>
<td>Tachypnea</td>
<td>29</td>
<td>34.5%</td>
<td>74.4%</td>
</tr>
<tr>
<td>Blood Pressure</td>
<td>29</td>
<td>44.8%</td>
<td>83.7%</td>
</tr>
<tr>
<td>Lactate</td>
<td>29</td>
<td>6.9%</td>
<td>4.7%</td>
</tr>
<tr>
<td>Administered antibiotics in the field</td>
<td>29</td>
<td>13.8%</td>
<td>16.3%</td>
</tr>
</tbody>
</table>
Promising Practices

1. Early assessment and activation of “sepsis alert”

2. Priority on starting IV and initiating IVF bolus if no contraindications

3. Antibiotics for sepsis with shock, unclear benefit for sepsis without shock
The NCTTRAC Regional Adult Sepsis Alert Criteria was developed by the NCTTRAC Emergency Operations Committee to provide pre-hospital providers with a regional sepsis activation template for the purpose of expediting the care and treatment of sepsis patients. This criteria should be implemented only with the support and approval of an agency’s EMS Medical Director.

NCTTRAC Regional Adult Sepsis Alert Criteria

STEP 1 - BOTH OF THESE:

☐ Age ≥16
☐ An identified or suspected source of infection:
  ☐ Cough and/or Dyspnea
  ☐ UTI symptoms
  ☐ NVD
  ☐ Fatigue and/or Malaise
  ☐ Wound Infection (with or without drainage)
  ☐ Hx of Immunosuppressive condition (e.g. cancer, leukemia, chemo, HIV, post-transplant)
  ☐ Fever and/or chills
  ☐ Resident of a Skilled Nursing Facility

STEP 2 - AND AT LEAST ONE OF THESE:

☐ SBP < 100 and/or MAP < 65
☐ ETCO₂ < 25 mmHg
☐ Two or more of the following criteria:
  ☐ Temp >100.4° F (38° C) or <96.8° F (36° C)
  ☐ HR >90
  ☐ RR >20
  ☐ AMS from baseline
  ☐ New onset oxygen dependence to maintain SpO₂ ≥90%

If a check is present in BOTH BOXES of STEP 1 and AT LEAST ONE BOX of STEP 2 (Age at least 16 yr, identified or suspected infection, and one or more physiologic criteria are met) activate a SEPSIS ALERT at the receiving facility.
BROWARD SEPSIS ALERT

Date:  
Unit #:  
Age:  
Sex:  
☐ Male  
☐ Female  
Patient’s Name:  
Incident Number:  

Documentation of SEPSIS (2 Criteria Required)

1. SIRS
(Systemic Inflammatory Response Syndrome)

☐ YES  
☐ NO
________________________

Does the patient have 2 or more of the following SIRS criteria?

☐ Temperature  ≥ 100.4 or ≤ 96.8 F  
☐ Heart Rate  ≥ 90  
☐ Respiratory Rate  ≥ 20

If "YES" proceed to next section

2. INFECTION

Does the patient have any of the listed infections, high risk criteria or symptoms?

Documented Infections:

Pneumonia/UTI/Sepsis/Wounds/Skin infections/Decubitus ulcers

High risk Criteria:

Nursing home resident/Recent surgery/Immunosuppressed/Infusion device

Symptoms:

Cough/Increased work of breathing/Stiff neck/ALRI/Urinary pain or frequency

Inflamed joint/Abdominal pain, distention or firmness/Infected wound

If both boxes are checked "YES" this patient is a SEPSIS ALERT

Pre-Hospital Treatment Determination (Severe Sepsis Only)

Does the patient meet one or more of the following criteria?

☐ YES  
☐ NO

Cardiovascular: MAP < 65 (see display on monitor)
Neurological: Acute Change in Mental Status
Metabolic: Lactate ≥ 4 (If Available)
ETCO2 × 25 (correlates to lactate of x 4)

If the box above is "YES" administer Normal Saline 30 cc/kg bolus

Titrage Fluids to Goal MAP > 70. Consider pressors after 1L NS infused. Max of 2 L NS

EMS Script: This is Rescue ___ coming in with a Sepsis Alert. The patient is a ___ year old [male/female] with suspected sepsis. The patient is positive for SIRS criteria and a suspected infection. Vital signs are as follows [state VS], with a MAP of ____. The patient does/does not qualify for a 30 cc/kg bolus based on criteria for severe sepsis. We [are/are not] requesting further orders. ETA is ___ minutes.

Broward Sepsis Alert - Final - 3/3/14
Table 1: Polk County Fire Rescue Sepsis Alert checklist for adults > 18 years old

Check "Yes" or "No" for the following
(if any of the below is "No," the patient is not a septic alert)

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
</table>
| Blood pressure: SBP < 90 mmHg or DBP < 60 mmHg  
OR  
Respiratory rate: < 10 or > 20 breaths per min.  
OR  
Pulse rate: < 60 or > 90 beats per min.  
OR  
Temperature: < 97.8 or > 99.1 degrees F |

The patient has **2 or more** of the following SIRS variables:

- Temperature of > 38°C (100.4°F) or < 36°C (96.8°F)
- Heart rate > 90 beats per min.
- Respiratory rate > 20 breaths per min.
- There's a documented infection (e.g., pneumonia, urinary tract infection, MRSA), or is patient high risk (e.g., nursing home, cancer patient, indwelling catheters, immune-compromised, etc.)

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
</table>
| The patient has a shock index (SI) of > 1  
SI = Heart rate/systolic blood pressure  
OR  
The patient has a modified shock index (MSI) of < 0.7 or > 1.3  
MSI = Heart rate/MAP |