Central Maine Health System – Rumford Hospital
Rumford, Maine
Bed size: 25

## SETTING THE STAGE

### Why did you select this project and what methods were used to identify the need?

> In 2017, the Sepsis team continued to see variances in the SEP 1 bundle compliance in three process areas:

1. Reliability in obtaining Blood Cultures prior to administering the antibiotic.
2. Reliability in repeating a lactate when the initial was > 2 mmol/L.
3. Provider documentation of focused exam requirements within 6 hours of Septic Shock.

Clinical variance: ED staff current practice is to judiciously give IV fluids to patient with CHF and CRF in order to avoid pulmonary edema and other fluid overload issues. For Sepsis patients, IV fluids recommendation is for 30 cc/kg despite these co-morbidities due to better outcomes in this type of clinical issue.

### ROOT CAUSES of Bundle Compliance Issues

<table>
<thead>
<tr>
<th>People</th>
<th>Process</th>
<th>Clinical Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education needed Best Practice</td>
<td>Unreliable barcoding sequence of blood cultures</td>
<td></td>
</tr>
<tr>
<td>Inconsistent ED and Inpatient screening</td>
<td>Unreliable process for repeat lactates</td>
<td>Practice concerns – with IV fluids and clinical co-morbidities</td>
</tr>
<tr>
<td>Lack of handoff communication – IV fluids</td>
<td>Priority on lab draws Lab/Phlebotomist – repeat lactate</td>
<td>Clinical Practice</td>
</tr>
<tr>
<td>Priority on lab draws Lab/Phlebotomist – repeat lactate</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FY 18: increase bundle compliance by 85%
FY 19: Target 55%
Who was involved in the improvement effort?
- Mary Philbrick MSed, RN; Kate Carepenter BSN, RN; Nancy Murphy BSN, RN; Tamara Willoughby, MD; Erwey Teng, MD; Kara Callahan, MD; Al Riel, MD

Our system began a journey to evaluate compliance of the Surviving Sepsis Campaign (SSC) bundles of care, in July 2015. A multidisciplinary Sepsis Improvement Team began meeting monthly and developed an improvement plan based on initial data results of compliance rates of the SSC bundle of care.

What strategy was developed to focus on improvement?
- Sepsis Education on early recognition and bundles of care:
  - Screening and handoff tool – trial in ED then house wide/regional – revised 1/2018 for additional handoff info.
  - Provider education – S. Sepsis screening, criteria and bundles of care. IV Fluid practice change: ED, Intensivists, FP, Hospitalist & Surgeons. NEW 2018 – Focused exam requirements improved change from CMS – should help with this variance.
  - Regional connection – improvement team members, staff education to mirror CM plans.
- Sepsis Order Sets for current best practice:
  - Revisions needed for best practice and bundle requirements
  - Repeat lactate order to be triggered off the > 2.0 results – Sepsis Advisor and order sets. Repeat lactate bundle order set done.
  - Sepsis Advisor – Cerner project – orders to match current order set.
  - Continue to encourage the use of the Sepsis Advisor.
- Concurrent reviews of cases – Quality Coordinator to review daily cases that qualify for Severe Sepsis and Septic Shock – report to lead providers for follow up on variances during the week that the patients are admitted.
- ED Staff education in huddles and staff meetings to review the correct process of barcoding blood cultures prior to hanging antibiotic and the handoff communication of remaining IV fluids.
- Process Issue work: Repeat lactate misses and Blood cultures prior to antibiotics: Lab/phlebotomists to review of repeat lactate as a priority in lab draws. ED added phlebotomist to busy times of the day to assist with repeat lactate and blood culture sequence.
- Continued education to new staff on this process issue.

Describe the data collected and results demonstrated from the start to end of the project.
- The CMMC multidisciplinary team which began meeting in July 2015 established goals, created screening tools and order sets for patients who were suspected to have severe sepsis or septic shock. One goal was to increase compliance of SSC guidelines and bundle elements by 10% and the second was to decrease mortality rate for Severe Sepsis and Septic Shock by 25% by June of 2016. See graphs below.
LESSONS LEARNED AND NEXT STEPS

> Our Sepsis Improvement Team Implemented many process and patient care standards of practice based on the guidelines from the SSC, which included:

  » Developed an early recognition of patient with sepsis by developing screening tool/handoff tool in the ED. Currently working on an electronic version.

  » Multidisciplinary education was done and continues to be done regularly.

  » Monthly team evaluation on variances and lessons learned. We report out on whether the issue is root knowledge based or process based.

  » In January 2017, we expanded the Sepsis Team to all three organizations for CMH as we wanted to increase awareness of best practice of Sepsis care throughout all three organizations.

> Our barriers continue to be addressed each month. The Sepsis team is currently on the SEP 1 bundle compliance in three process areas: reliability in obtaining blood cultures prior to administering antibiotics, reliability in repeating a lactate when the initial was > 2mmol/L, and provider documentation of a focused exam requirement within 6 hours of septic shock.