MHA Lean Six Sigma Project Summary

INITIATIVE TITLE: ***Emergency Department – 3 Hour Sepsis Bundle Process***

ORGANIZATION NAME: ***Boone Health***

ELECTRONIC MED RECORD: Meditech

PARTICIPANT / CONTACT INFORMATION

Team Leader Name	Title	Preferred contact-type email address/phone#
Jose Velarde, Rojina Basnet	Lead Process Improvement; Data Quality Analyst	Jose.Velarde@boone.health, Rojina.basnet@boone.health

DEFINE – Problem Statement & Goal

There is not a consistent 3 Hour Bundle screening process for Sepsis patients in the ED due to lack of an automated Sepsis Toolkit in our EMR. Also, staff turnover has led to lack of awareness and proper training. The ED averages less than 40% compliance, meaning that 1. blood culture drawn 2. lactate level drawn 3. antibiotics administered, were all completed within the first 180 minutes of arrival and in the correct sequence. It is important that the screening process is clearly identified as over 90% of sepsis patients originate in the ED.

Increase compliance to 80% presented in the CMS Sepsis Core Measure, create a meaningful tool for sepsis screening and to increase awareness of the key pieces (Lactate, blood cultures, antibiotics). Current Six Sigma value is 1.0 (676,161DPMO), goal is to change it to 2.6 (134,932 DPMO)

DEFINE - Initiative Scope

Patients arriving to the Emergency Department ambulatory or via ambulance, who have been screened for Sepsis.

DEFINE –BIG Y

Big Y - # of patients receiving all 3 bundle elements within 180 minutes.

All 3 elements must be completed within the 3-hour window. If one of them is not done within 3 hour, then compliance was not met. A defect will also occur if antibiotics are given before a Blood Culture is done. An opportunity will be defined as a patient arrival in ED with suspected Sepsis.

MEASURE - Data Collection / MSA

1. Business & Clinical Analytics – ED patients with Sepsis diagnosis
2. Acmeware Dashboard – ED patients, Y/N for Lactate, Blood Culture, Antibiotics. Blood Culture before Antibiotics, Total Compliance
3. Data was acquired from June 2021 through December 2021
4. Aha moment: data was available for 6 months plus and was able to sort it to make analysis easier.

ANALYZE - Critical Xs / Root Causes Identified

Statistically Not Significant

- Lactate within 3 Hours
- Blood Culture within 3 Hours
- Blood Culture before Antibiotics

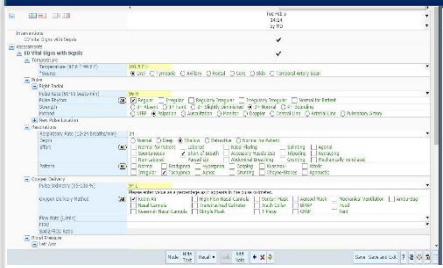
Statistically Significant

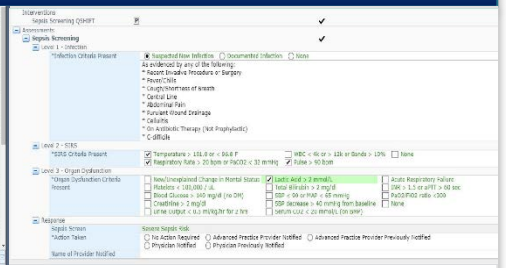
- Antibiotic within 3 Hours
- Provider 3 Hour Bundle Compliance

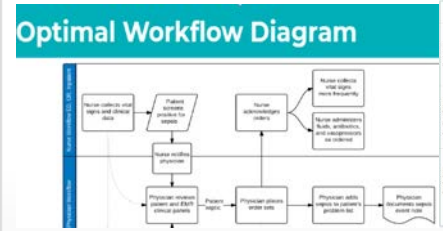
IMPROVE - What was Implemented

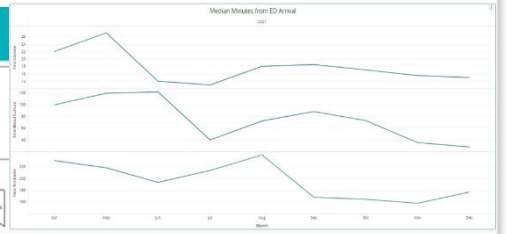
1. Sepsis Toolkit – Guides medical staff to follow CMS protocol for Sepsis patients and improves proper documentation in Meditech.
2. Reinstated the Sepsis Team which will meet monthly to monitor progress of compliance.
3. Created an ED Sepsis Dashboard which provides data to monitor compliance progress.
4. The team will update policies and protocols
5. Aha moment – the ED staff is very supportive of the initiative and are looking forward to make changes

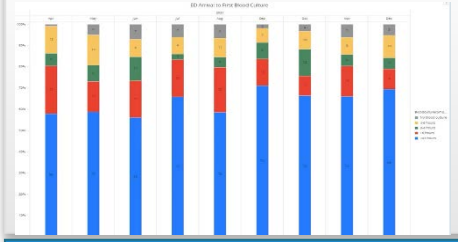
IMPROVE – What was Implemented











IMPROVE – Results to Date

1. Sepsis Toolkit is going to be implemented by the end of May 2022.
2. Sepsis Team will have it's first regular meeting on May 10th

CONTROL – Next Steps

1. Monthly Sepsis Team meeting – will focus on case review
2. Monitor data and create graphs to show current compliance
3. Monitor for proper documentation
4. The Sepsis Team will take ownership of the improvement plan.
5. Implement improvements to Inpatient areas – there is an IP staff in the Sepsis Team
6. Aha: The creation of the toolkit has been progressing very quickly.

OVERALL LESSONS LEARNED

Takes a lot of team effort to implement changes.
Sepsis being time critical diagnosis has not had frequent process reviews in comparison to other time critical diagnosis. During the hospital's transition to a stand alone, Sepsis protocols were not reviewed and updated to be integrated into the new system.
Chi – Square analysis is a very powerful tool and it allowed us to analyze and make conclusions that were not seen before.
We found that Lean and Six Sigma compliment each other, Six Sigma uncovers areas where improvements need to be made and Lean brings the tools to make those improvements.

NEXT PROJECT(S)

Room Changeover – Identify all tasks and who is responsible to get the inpatient room ready for the next patient.

REWARD AND RECOGNITION

Executive Sponsor: Troy Greer CEO
Process Manager(s): Drew Wilkinson (ED Director), Corey Hardin (Dept. Manager), Leslie Duckworth (Quality Director)
Physician Champion: Dr. H. Orlando (Facility Medical Director)
Team Members: Katie Belamer, RN (ED), Jessica Black, RN (ED), Mary Lee Harlan-Newberry (Audit Compliance Specialist), Alison Smith (Information Systems), Blaine Meek, RN (Inpatient), Jenna Long – Clinical Quality Patient Safety(Ad Hoc).