

## BACKGROUND

- In 2012 our mortality rate was at 1.76 upon review of our mortality cases we noted that a one of the patients had been septic and this was not identified during the patient's hospital course.
- Sepsis mortality relies on prompt recognition of sepsis symptoms.
- The early goal directed treatment/bundles were complicated and cumbersome to understand and follow.

## SITUATION

- According to the CDC 270,000 die as a result of sepsis.
- 1 in 3 patients die in the hospital as a result in sepsis.
- On an average length of stay is > than 7 days.
- An estimated 18 patients with severe sepsis/shock need to be treated with Sep 1— bundles to prevent one death while hospitalized.
- Additional cost per patient is on average \$18,000 per hospital stay.

## OBJECTIVES

- Discuss resources required for development and collaboration in a successful multidisciplinary sepsis rapid response team.
- Identify current interventions that have improved observed to expected mortality results.
- Review strategies to coordinate, standardize, and sustain sepsis improvement efforts.

## INTERVENTIONS

- Standardize approach to Sepsis with scorecard.
- Dedicated Sepsis Coordinator reviews cases.
- Sepsis Rapid Response Team with designated roles.
- Checklist created for Physicians to ensure all bundle requirements are met and documented.
- Root Cause Analysis performed on all outliers.
- Peer review for outliers.
- Monthly case studies shared at all department and Hospitalists meetings.
- CDI review of all Sepsis cases with appropriate queries to capture severity of Sepsis.
- Lessons learned shared monthly hospital wide.
- Recognition for exceptional care.
- Timely Palliative Care consults.

## TOOLS

**Severe Sepsis and Septic Shock**

Severe Sepsis: Patient has suspected or proven infection + 2 or more SIRS + atleast 1 sign of organ dysfunction

**3 HOUR BUNDLE**

1. Measure lactate level

2. Administer broad spectrum antibiotics

3. Obtain blood cultures prior to antibiotics

4. Administer fluid resuscitation

5. Obtain lactate level

6. Obtain arterial blood gas

7. Obtain urine output

8. Obtain central venous pressure

9. Obtain central venous oxygen saturation

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### Sepsis Lessons Learned

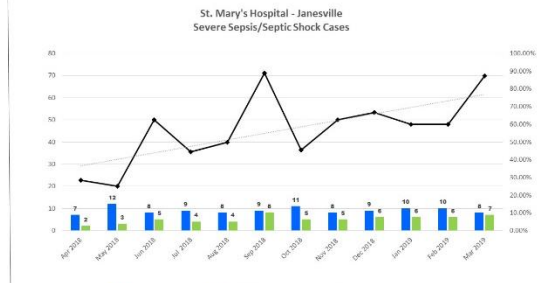
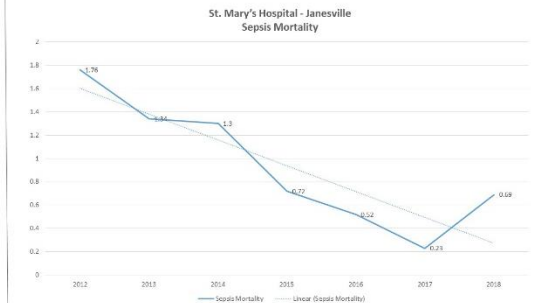
- Administer broad spectrum antibiotics before any other antibiotic
  - Important that the broad spectrum antibiotic is started within 3 hours of presentation time, with a goal of 1 hour.
- How do you know which is broad spectrum?
  - Conversations with provider
  - Antibiotic cheat sheet in each Sepsis 6 Binder
  - Comment located in the MAR Admin Instructions

2018 SEPSIS SCORECARD														
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD	90th %ile
Overall CMS SEP-1 Rate	83%	83%	83%	83%	83%	83%	83%	83%	83%	83%	83%	83%	83%	80%
Initial Lactic Acid	100%	100%	86%	86%	75.00%	100%	89%	100%	100%	100%	100%	100%	100%	95%
Blood Cultures Prior to Antibiotics	92%	100%	86%	86%	100.00%	100%	89%	100%	100%	100%	88%	100%	100%	94%
Antibiotic Administered within 1 hour	92%	100%	86%	86%	100.00%	100%	89%	100%	100%	100%	88%	100%	100%	88%
Fluid Resuscitation	89%	75%	75%	87%	85.71%	100%	83%	100%	100%	100%	86%	100%	100%	88%
Repeat Lactic Acid	89%	75%	75%	87%	85.71%	100%	83%	100%	100%	100%	86%	100%	100%	88%
Repeat Tissue Perfusion Assessment (Exam or CVF)	100%	100%	NA	100%	NA	100%	NA	100%	NA	100%	75%	100%	100%	86%
Vasopressors	100%	100%	NA	100%	NA	100%	NA	100%	NA	100%	100%	100%	100%	86%
Sepsis 6 Activations (on sampled population)	75%	83%	83%	83%	75.00%	100%	83%	100%	100%	100%	86%	100%	100%	78%
Sepsis Order Set Usage	75%	83%	83%	83%	83.33%	100%	78%	75%	100%	100%	75%	100%	100%	77%
Patients Receiving Broad Spectrum Antibiotic in a 60 min	89%	100%	86%	86%	75.00%	100%	89%	100%	100%	100%	86%	100%	100%	88%
Average time to Antibiotic Administration (Goal < 60 min)	54.4	54.2	54.7	53.4	31.08	37.42	50.4	57.25	52	29.3	41.1	48.4	63.1	
Average Length of Stay (Goal < 7.5 days)	6.8	6.2	4.4	4.1	4.75	4.85	4.89	6.5	4.3	5.2	3.8	3.2	5.2	
Sepsis 6 Activations Overall (Raw #)	21	22	20	23	24	24	20	23	19	17	9	22	244	

## LESSONS LEARNED

- One rollout of sepsis education in 2013 was not enough.
- Opportunities identified after initial roll out:
  - Lack in data collection
  - Inconsistencies in rapid response use
  - Roles and responsibilities of rapid response members not clearly defined
  - Resistance from hierarchy
  - Lack of structured feedback to clinicians on sepsis cases
  - Formal recognition did not exist

## RESULTS



## NEXT STEPS

- Best Practice Advisory implemented in the Electronic Medical record to identify patients at risk for developing sepsis
- Integration of a team approach with quality, Clinical Documentation specialist and coding in ensuring appropriate severity of Sepsis/shock is captured.

## REFERENCES

- About SSM Health. (2019). Retrieved from <https://www.ssmhealth.com/about>
- Data & Reports | Sepsis | CDC. (2019). Retrieved from <https://www.cdc.gov/sepsis/datareports/index.htm>
- Surviving Sepsis Campaign. (2014). *Critical Care Medicine*, 42(1). doi:10.1097/ccm.000000000000192

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