

# Improving ED Sepsis Identification and Time to Treatment Initiation



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## BACKGROUND

- In 2015, the Centers for Medicare & Medicaid Services implemented the Severe Sepsis and Septic Shock Early Management Bundle, a new measure to assess quality of care for septic patients.
- In the FY 2019, there were **56 failures** of the Sepsis CMS Core (**SEP-1**) Measure in our hospital
- A quarter of these failures resulted from **missing the 3-hour window for appropriate antibiotic administration**, indicating room for improvement in identifying these patients sooner so care can be initiated promptly

## PROJECT AIM

**Global Aim:** To improve quality of care and time to treatment initiation for septic patients presenting to VMC's Emergency Department

**Specific Aim:** To decrease the number of sepsis bundle failures by 25% by the end of FY 2021

## PROJECT DESIGN/STRATEGY

- Nursing focused interventions

**Triage Screening tool:** based on SIRS criteria, intended to both raise awareness & identify common patient attributes

**Sepsis Gimkit Game:** education tool

**Sepsis Narrator:** nursing based documentation tool that prompts time-based interventions

- Provider focused interventions

**ED Sepsis Order Set:** prompts appropriate fluids, antibiotics, labs

## CHANGES MADE (PDSA CYCLES)

### •PDSA #1: Triage Screening Tool

- Within a week of the roll-out, very few tools had been completed. Feedback indicated that adding a manual step to existing workflow was unnecessarily complicated, so the tool was discontinued

### •PDSA #2: Sepsis Narrator

- Nursing documentation tool that prompts time-based interventions based on patient presentation and vital signs. Following implementation, staff felt it was double documentation and wanted to explore other job aids including: paper check lists, reminder signs

### •PDSA #3: Sepsis Gimkit Game

- An online interactive educational tool, the game consists of 50 questions about sepsis management. This was distributed to ED nursing staff as part of their required education.

### •PDSA #4: Sepsis Order Set (current cycle)

- When patients are identified as septic or at risk for sepsis, the order set can be used to prompt appropriate interventions. It includes suggested labs, fluid, and antibiotic suggestions based on suspected source

SEPSIS SCREENING TOOL

HAR:

Does the patient have a fever greater than 38.3C or 100.4F?  
 Yes  
 No

Is the patient 65 years old or older?  
 Yes  
 No

Does the patient have the following risk factors?  
 1. Immunocompromised (taking immunosuppressant's)  
 2. History of HIV  
 3. Being treated for Cancer

Does the patient take beta blockers?  
 Yes  
 No

Does the patient have a mews of greater than 5?  
 Yes  
 No

Antibiotics - Urinary Source (Select One Option)

Risk Factors for Resistant Pathogens

Option A: Urinary Source - NO RISK FACTORS for Resistant Pathogens  
 ceftriaxone (ROCEPHIN) infusion 1 g, ED ONCE, Starting 12/1/20, Give first dose immediately

Option B: Urinary Source - RISK for Resistant Pathogens  
 cefepime (MAXIPIME) infusion 2 g 2 g, ED ONCE, Starting 12/1/20, Give first dose immediately

Option C: Urinary Source: ZOSYN - RISK For Resistant Pathogens  
 piperacillin-tazobactam (ZOSYN) infusion 3.375 g (Patient B Administer over 30 Minutes, ED ONCE, Starting 12/1/20, cultures are collected.

Option D: Urinary Source: ZOSYN High Dose -RISK for Resistant Pathogens Greater Than 40  
 piperacillin-tazobactam (ZOSYN) infusion 4.5g (Patient B Administer over 30 Minutes, ED ONCE, Starting 12/1/20, cultures are collected.

## LESSONS LEARNED

- Successful interventions are integrated into preexisting workflow, not separate from it
- We have had success without a single “home-run” intervention, indicating that a combination of the approaches (or simply raising awareness) has been key
- Challenges of COVID-19 and quality improvement initiatives

## NEXT STEPS

- Recently developed a “tips sheet” for the Sepsis Order Set that will be included in upcoming ED resident education
- Planned partnership with Quality and IT to validate new DI index to increase identification.

## RESULTS/OUTCOMES

	SEP-1 Rate
FY 2019	44%
FY 2020	46%

Represents a **5%** reduction in the failure rate

While we have not yet met our goal of 25% reduction, we are moving in the appropriate direction. This month, our success rate has been 100% thus far, an encouraging start for FY 2021

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