ACTION PLANS

OHA Statewide Sepsis Initiative

January 13, 2016

USING DRIVER DIAGRAMS FOR ACTION PLANS

- Used to organize theories and ideas in an improvement effort

- Visual display of why things are the way they are and/or potential areas to leverage to change the status quo

USING DRIVER DIAGRAMS FOR ACTION PLANS

Aim: what is to be accomplished

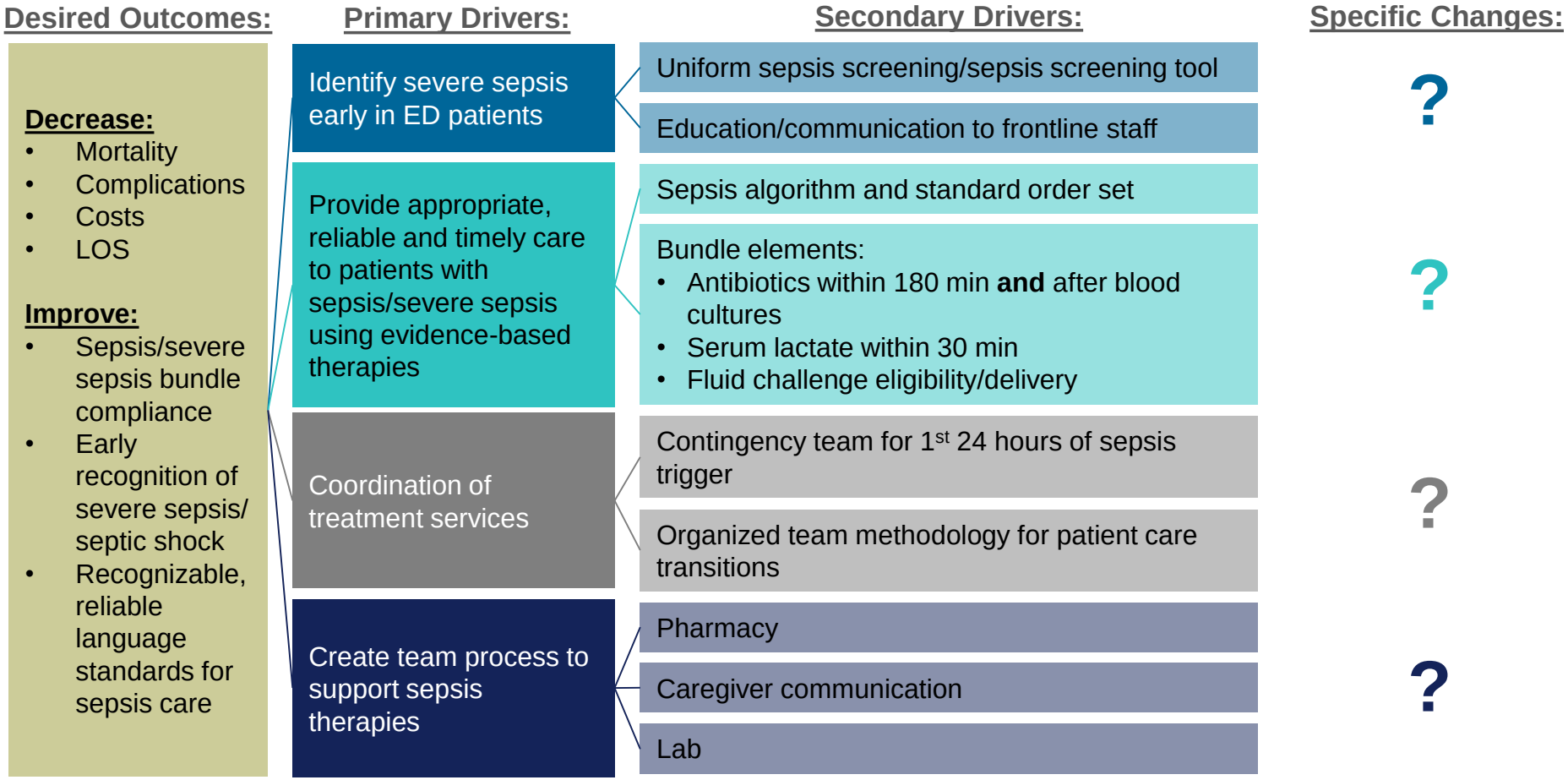
Primary Drivers: high level, major elements in a system that MUST change to accomplish the outcome of interest

Secondary Drivers: more actionable approaches, places or opportunities within the system where a change can occur

Specific Changes/Change Concepts: tangible, specific, concrete actionable ideas

DRIVER DIAGRAM EXAMPLE

Improve Severe Sepsis Care & Reduce Sepsis Mortality



Source: Adapted from Physicians Quality and Regional Safety Team. "Driver Diagram Examples." Retrieved January 11, 2016 from http://fha.physicianquality.ca/system/files/Driver%20Diagram%20Template%20and%20Examples.ppt

REFERENCES

- Bennett, B., & Provost, L. (2015, July). What's your Theory? Driver Diagram Serves as Tool for Building and Testing Theories for Improvement. *Quality Progress*, July 2015, 36–43.

- Haraden, C. (2012, September). Driver Diagrams: Moving Theory to Action. Presented at the Patient Safety Executive Development Program, Institute for Healthcare Improvement. Retrieved from http://app.ihi.org/extranetng/content/58886256-47d8-4f9c-bf7b-0afc352f013a/c285b7b4-c818-42e6-8d40-9aee3996727b/2_1_Driver%20Diagrams_CH.pdf

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Sepsis Process Improvement

Our Goal…

Early recognition +

Early intervention =

BETTER OUTCOME

Sepsis Steering Committee

1. Meets monthly
2. Physician Champion: Intensivist from ICU
3. Comprised of facility VP/Medical Affairs, ED Physician Lead, Director of Clinical Operations/ED, Hospitalist Physician Lead, Rapid Response/Resource Nurse, Chief Quality and Safety Officer, Chief Nursing Officer, ED Clinical Manager, Sepsis Coordinator
4. Have developed an ACTION PLAN to meet challenges
5. Review concurrent review data
6. Drive initiatives
7. Provide tools for success

Tools for Success

Resources for Physicians and Nursing

- Reference sheet on facility intranet page
- 2nd page of document outlines appropriate antibiotic selection.

SEPSIS

This measure applies to all patients with diagnosis of severe sepsis OR septic shock.

For questions regarding these core measures, please contact Lisa Steinke at X9892 or Jean Alt at X5512

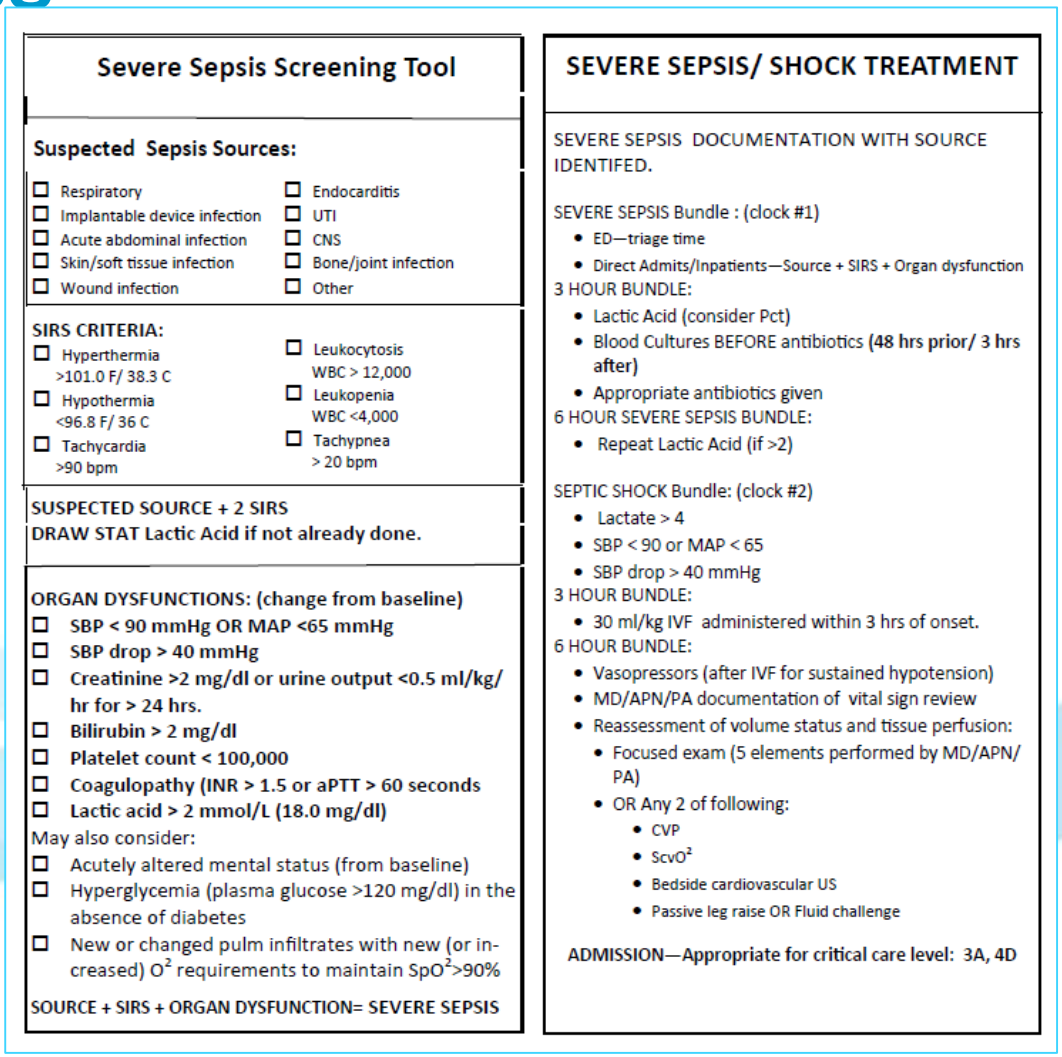
Measure	When	What
SEVERE SEPSIS present	Source + 2 SIRS + Organ dysfunction	
Lactic Acid	Within 3 hours of SEVERE SEPSIS presentation time.	Lactic acid ordered and drawn.
Blood culture	Within 3 hours of SEVERE SEPSIS presentation time.	Blood cultures X 2 before antibiotics.
Antibiotics Administration and Selection	Started within 3 hours of SEVERE SEPSIS presentation time.	Appropriate antibiotics ordered and started. (If 2, both must be started.)
Repeat Lactic Acid level	Within 6 hours of SEVERE SEPSIS presentation time.	If initial level >2.0, repeat lactic acid.
Crystalloid Fluid Administration	Within 3 hours if SBP < 90, MAP < 65, SBP drop > 40 mmHg, OR LACTIC ACID >4.	30 mg/kg fluids ordered and administered.
SEPTIC SHOCK present	SBP < 90 or MAP < 65 or SBP drop > 40 mmHg within 1 hour of documented fluid resuscitation end time. OR Initial Lactic level is >=4mmol/L	
Vasopressor administration	Initiated within 6 hours of onset of SEPTIC SHOCK.	Vasopressor support for persistent hypotension non-responsive to 30ml/kg fluid resuscitation.
Volume Status & Tissue Perfusion Reassessment	Within 6 HRS of presentation date/time of SEPTIC SHOCK.	Documentation by MD/ APN/ PA of either: 5 POINT ASSESSMENT: 1-T, HR, RR, BP (from single time entry), 2-Circulatory, 3-Periph pulse, 4-skin, 5-cardiopulm status doc. OR 2 of 4 TEST: 1-CVP, 2-SCVO2, 3-Bedside CV US, 4-Passive leg raise or fluid challenge.

See page 2 for Definitions and list of approved antibiotics. Revised 11/18/2015

Tools for Success

Resources for Physicians and Nursing (cont.)

- Pocket cards laminated and distributed to nursing.
- Attached to computer monitors in ED



Severe Sepsis Screening Tool

Suspected Sepsis Sources:

- ☐ Respiratory
- ☐ Implantable device infection
- ☐ Acute abdominal infection
- ☐ Skin/soft tissue infection
- ☐ Wound infection
- ☐ Endocarditis
- ☐ UTI
- ☐ CNS
- ☐ Bone/joint infection
- ☐ Other

SIRS CRITERIA:

- ☐ Hyperthermia >101.0 F/ 38.3 C
- ☐ Hypothermia <96.8 F/ 36 C
- ☐ Tachycardia >90 bpm
- ☐ Leukocytosis WBC > 12,000
- ☐ Leukopenia WBC <4,000
- ☐ Tachypnea > 20 bpm

SUSPECTED SOURCE + 2 SIRS
DRAW STAT Lactic Acid if not already done.

ORGAN DYSFUNCTIONS: (change from baseline)

- ☐ **SBP < 90 mmHg OR MAP <65 mmHg**
- ☐ **SBP drop > 40 mmHg**
- ☐ **Creatinine >2 mg/dl or urine output <0.5 ml/kg/ hr for > 24 hrs.**
- ☐ **Bilirubin > 2 mg/dl**
- ☐ **Platelet count < 100,000**
- ☐ **Coagulopathy (INR > 1.5 or aPTT > 60 seconds**
- ☐ **Lactic acid > 2 mmol/L (18.0 mg/dl)**

May also consider:

- ☐ Acutely altered mental status (from baseline)
- ☐ Hyperglycemia (plasma glucose >120 mg/dl) in the absence of diabetes
- ☐ New or changed pulm infiltrates with new (or increased) O^2 requirements to maintain SpO^2>90%

SOURCE + SIRS + ORGAN DYSFUNCTION= SEVERE SEPSIS

SEVERE SEPSIS/ SHOCK TREATMENT

SEVERE SEPSIS DOCUMENTATION WITH SOURCE IDENTIFED.

SEVERE SEPSIS Bundle : (clock #1)

- ED—triage time
- Direct Admits/Inpatients—Source + SIRS + Organ dysfunction

3 HOUR BUNDLE:

- Lactic Acid (consider Pct)
- Blood Cultures BEFORE antibiotics **(48 hrs prior/ 3 hrs after)**
- Appropriate antibiotics given

6 HOUR SEVERE SEPSIS BUNDLE:

- Repeat Lactic Acid (if >2)

SEPTIC SHOCK Bundle: (clock #2)

- Lactate > 4
- SBP < 90 or MAP < 65
- SBP drop > 40 mmHg

3 HOUR BUNDLE:

- 30 ml/kg IVF administered within 3 hrs of onset.

6 HOUR BUNDLE:

- Vasopressors (after IVF for sustained hypotension)
- MD/APN/PA documentation of vital sign review
- Reassessment of volume status and tissue perfusion:
  - Focused exam (5 elements performed by MD/APN/ PA)
  - OR Any 2 of following:
    - CVP
    - $ScvO^2$
    - Bedside cardiovascular US
    - Passive leg raise OR Fluid challenge

ADMISSION—Appropriate for critical care level: 3A, 4D

Tools for Success

Concurrent Review

- Based on admission list from the day before
- Current patients in our ED

Focus Study

- 3 hour bundle focus
- 6 hour bundle information on fluid administration

Weekly Reporting to Administration

- Results of the focus study on concurrent review from the previous week

Tools for Success

Weekly Reporting

- Data derived from the concurrent review process is run each Monday for the previous week. This data is analyzed and placed in a running report.
  - Shared with administration at their meeting each Tuesday morning.
  - Gives coordinator focus for most current improvement opportunities
    - Partner with pharmacy to troubleshoot areas of concern with antibiotic selection
    - Discuss areas of improvement opportunity with ED manager and physician leads

Tools for Success

Iodine Alert

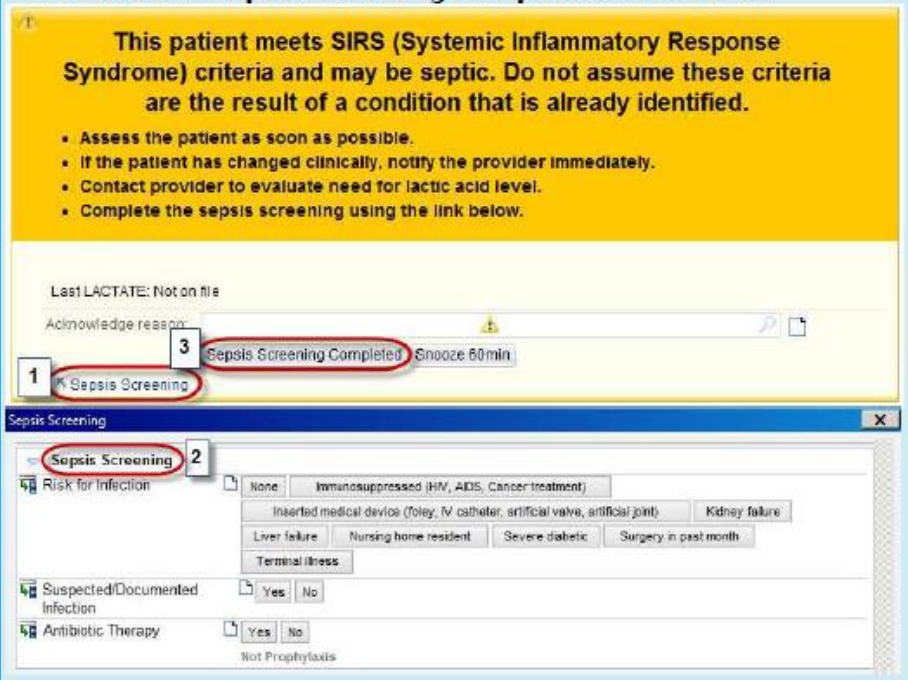
- Sent to Rapid Response/Resource Nurse from lab to phone when Lactic Acid results as >2.
- Rapid Response/Resource Nurse follows up.
  - One more layer of assurance that sepsis is not missed.
  - One more layer of assurance that sepsis care is initiated in a timely manner.
  - Rapid Response/Resource nurse trained in sepsis protocol and assists in guiding “next steps” with physicians and nursing.
  - Nurses not as familiar with sepsis care benefit from expertise
    - Time sensitive care for better outcomes
    - Fluid resuscitation (don’t fear the fluids)
    - Redrawing of lactic acid
    - Antibiotic administration

Tools for Success

Best Practice Alert (BPA) – ED Nursing

When the SIRS BPA fires, follow these steps:

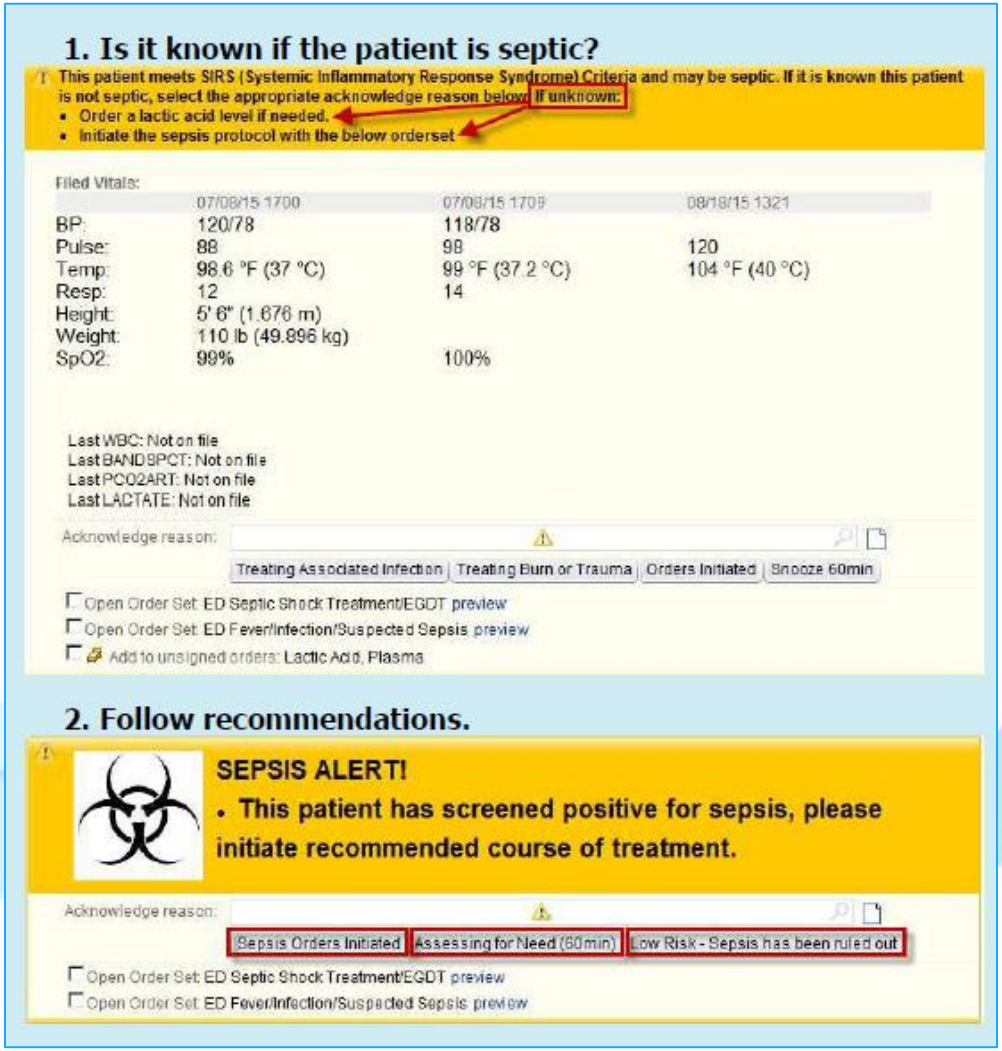
1. Click the Sepsis Screening hyperlink.
2. Answer the Sepsis Screening questions.
3. Mark the Sepsis Screening Completed on the BPA.



4. Notify the Provider with a positive sepsis screening.

Tools for Success

Best Practice Alert (BPA) – ED Physician

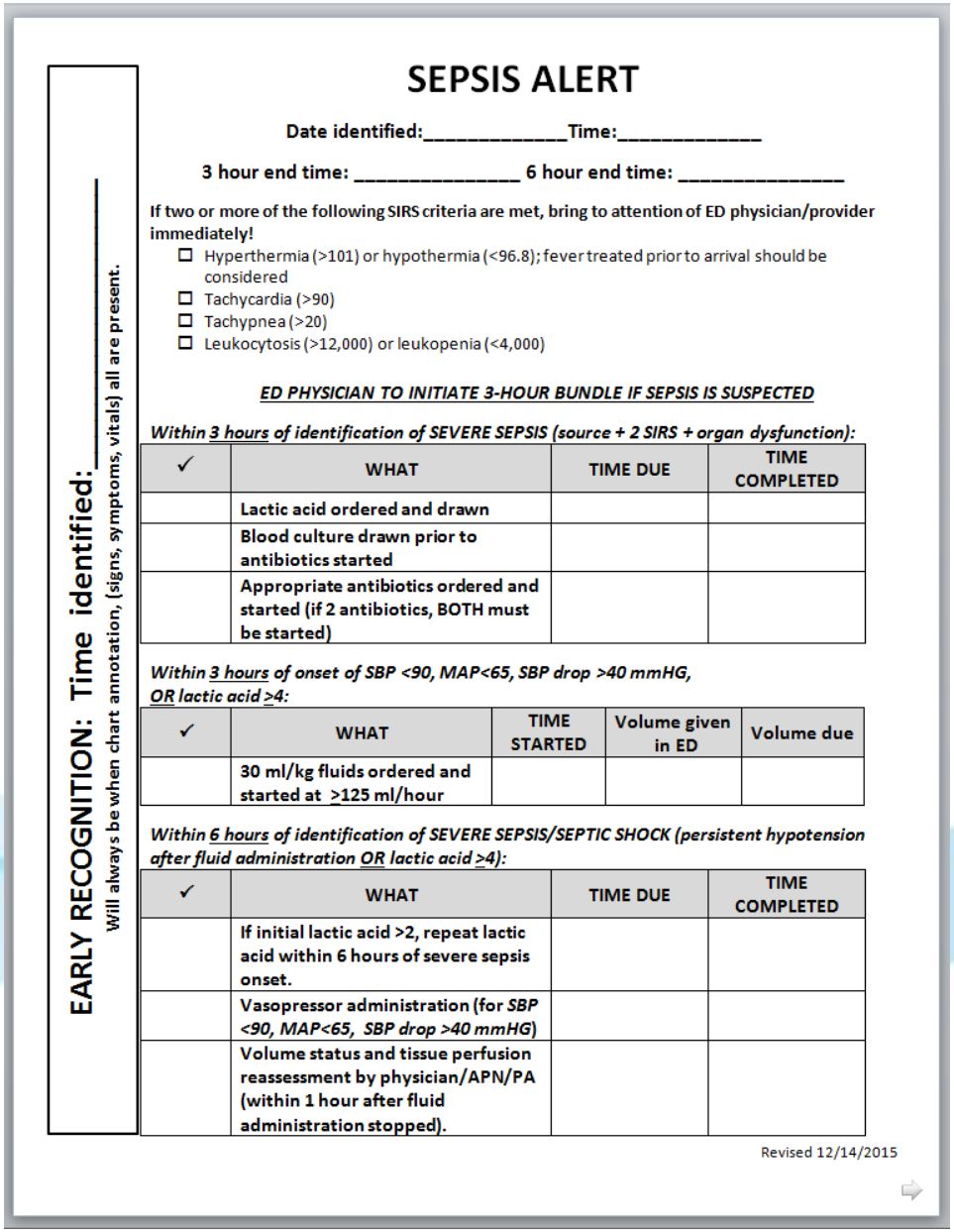


Tools for Success

Sepsis Alert Form

- Yellow
- On all ED charts
- Follows the patient

- Rapid Response/Resource nurse is notified whenever a patient with sepsis is admitted to floor other than ICU so that seamless care transition can be provided.



EARLY RECOGNITION: Time identified:_____
Will always be when chart annotation, (signs, symptoms, vitals) all are present.

SEPSIS ALERT

Date identified:_____Time:_____

3 hour end time: _____ 6 hour end time: _____

If two or more of the following SIRS criteria are met, bring to attention of ED physician/provider immediately!

- ☐ Hyperthermia (>101) or hypothermia (<96.8); fever treated prior to arrival should be considered
- ☐ Tachycardia (>90)
- ☐ Tachypnea (>20)
- ☐ Leukocytosis (>12,000) or leukopenia (<4,000)

ED PHYSICIAN TO INITIATE 3-HOUR BUNDLE IF SEPSIS IS SUSPECTED

Within 3 hours of identification of SEVERE SEPSIS (source + 2 SIRS + organ dysfunction):

✓	WHAT	TIME DUE	TIME COMPLETED
	Lactic acid ordered and drawn		
	Blood culture drawn prior to antibiotics started		
	Appropriate antibiotics ordered and started (if 2 antibiotics, BOTH must be started)		

Within 3 hours of onset of SBP <90, MAP<65, SBP drop >40 mmHG, OR lactic acid >4:

✓	WHAT	TIME STARTED	Volume given in ED	Volume due
	30 ml/kg fluids ordered and started at >125 ml/hour			

Within 6 hours of identification of SEVERE SEPSIS/SEPTIC SHOCK (persistent hypotension after fluid administration OR lactic acid >4):

✓	WHAT	TIME DUE	TIME COMPLETED
	If initial lactic acid >2, repeat lactic acid within 6 hours of severe sepsis onset.		
	Vasopressor administration (for *SBP <90, MAP<65, SBP drop >40 mmHG*)		
	Volume status and tissue perfusion reassessment by physician/APN/PA (within 1 hour after fluid administration stopped).		

Revised 12/14/2015

MERCYHEALTH

- Safe, Quality Care
Every Patient Every Time

Thank you

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Sepsis Initiative Action Plan

Mary Rutan HOSPITAL

Goal

Compliance with sepsis best practice and the CMS Sepsis Core Measure Set

Initial State

- Inconsistencies were noted in compliance with currently accepted and recommended sepsis care and best practice

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Action Plan

- Identification of current CMS standards of care for sepsis patients

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- Identification of gaps in current practice
  - Gap analysis

- Educate senior leadership on sepsis standards of care
  - Board of Directors
  - Administrative Team
  - Management Team

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- Formation of a core sepsis team responsible for the implementation and follow through of the sepsis action plan
  - Medical Director
  - Vice President of Patient Services
  - Emergency Department Medical Director
  - Hospitalist
  - Director of Quality
  - Director of Lab
  - Information Technology Clinical Lead

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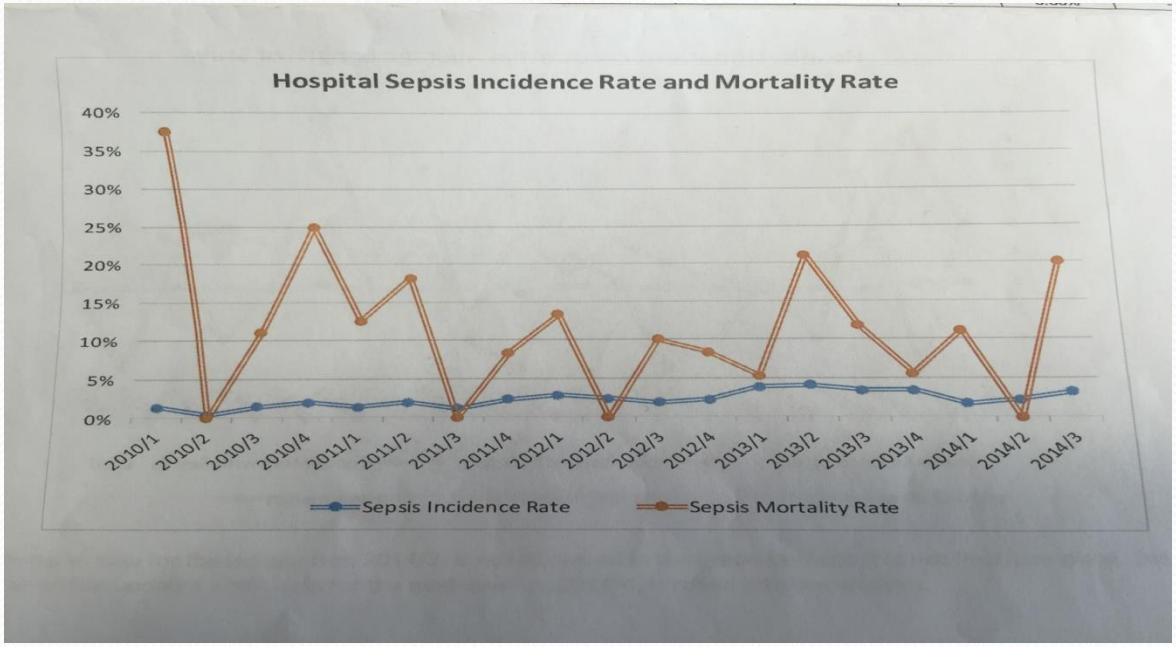
- Nursing and Medical Staff Education
- Transparency on current performance
  - Nursing staff meetings
  - Medical Executive Committee



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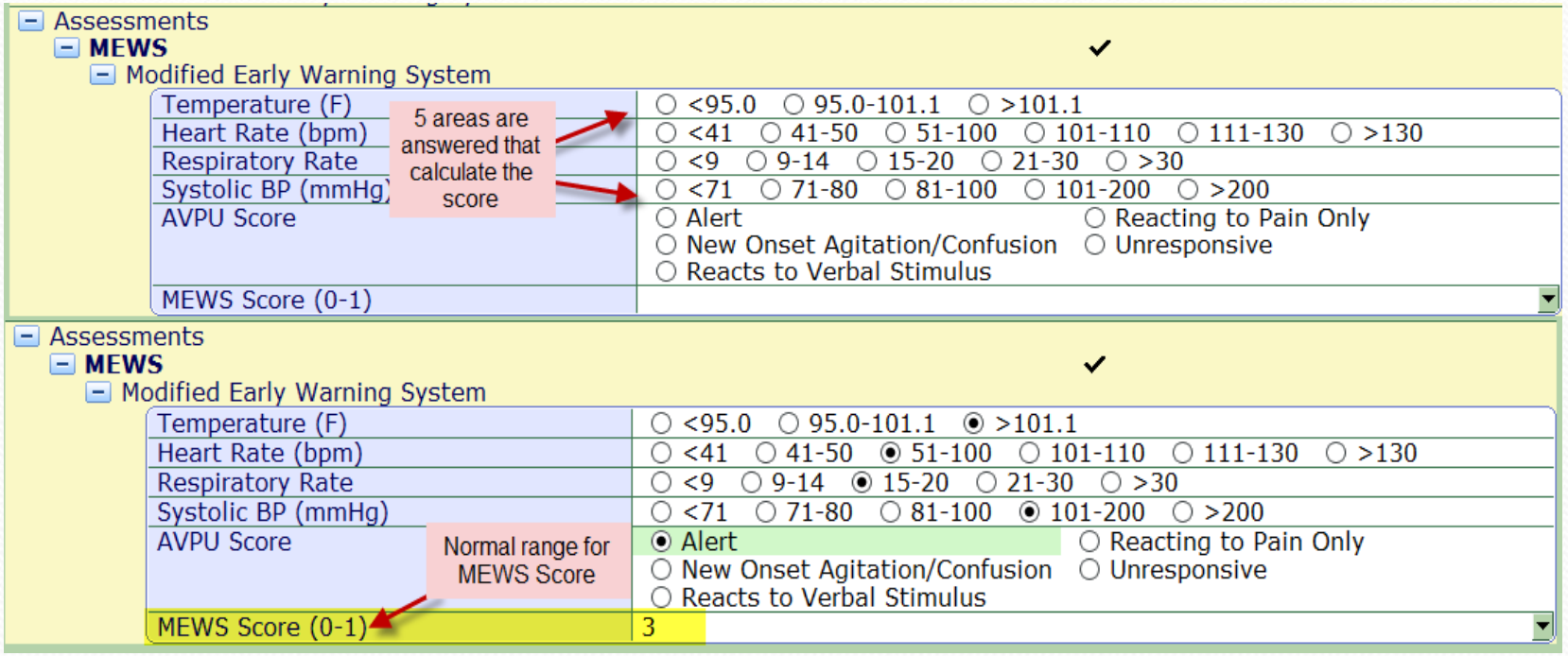
- Development of a triage and nursing assessment tool for early identification of possible sepsis cases
  - Modified Early Warning Signs (MEWS)



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- Development of reflex order sets for patients identified by MEWS as possible sepsis cases

Preview Order Set

Order	Start/Stop	View
Sepsis Alert-SIRS Set		
BLOOD CULTURE		
☑ Stat	Today Now	
COMPLETE BLOOD COUNT		
☑ Stat	Today Now	
COMPREHENSIVE METABOLIC PANEL		
☑ Stat	Today Now	
LACTIC ACID		
☑ Stat	Today Now	
LACTIC ACID		
☑ Timed	Today N+5H	
Notify Physician		
☑ ONCE	Today Now	
Physician Instructions	for IV Fluid and Antibiotic Orders-MEWS Scor...	

- Retrospective review of sepsis cases for compliance to standards of care
- Addition of Sepsis to the Mary Rutan Hospital scorecard
  - Compliance to the core measure set

OHA collaborates with member hospitals and health systems to ensure a healthy Ohio

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