

# Maternal Sepsis Initiative

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## ABSTRACT

Maternal sepsis is the third most common cause of maternal death, contributing to about 11% of maternal deaths globally (Bonet, et al., 2018). The objective of this project was to align with the goals of the Global Maternal Sepsis Study, the American College of Obstetricians and Gynecologists (ACOG), and the Association of Women's Health, Obstetric, and Neonatal Nurses' (AWHONN) recommendations for early identification and management of maternal sepsis to decrease the incidence of maternal morbidity and mortality related to sepsis.

In February 2019, subject matter experts across the Baptist Health System collaborated to develop and validate specific criteria to identify sepsis and severe sepsis in the maternal population. This project resulted in an evidence-based screening tool, treatment criteria and standing orders to support the collaboration of nurses and physicians and eliminate barriers to early intervention.

The Women's and Newborns Service Line quality goal was to attain a median time from a positive sepsis screen to antibiotic administration of less than 60 minutes by June 30, 2019.

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## INTRODUCTION

In response to recent National awareness on Obstetrical Morbidity and Mortality in the United States, the Baptist Health organization placed focus on identifying areas of OB care variation and opportunities to improve processes that lead to better outcomes for our mothers and babies.

Upon analysis of current state of Obstetrical care across our system, and taking into account factors such as the leading cause of death in the US as sepsis with incidence on the rise, and the absence of an appropriate screening tool that aligns with the normal physiologic changes occurring in pregnancy, a collaborative decision was made by the Women's and Newborn Service Line and the OB Nursing Resource Council to develop a clinically significant Maternal Sepsis Bundle geared toward early recognition and goal directed therapy for maternal sepsis.

This project focused on developing a maternal specific screening tool, Nurse driven standing orders to initiate upon positive screen, and a consolidated maternal specific treatment order set for Providers categorized by Antenatal and Postnatal infection sources.

## SIRS CRITERIA COMPARISON

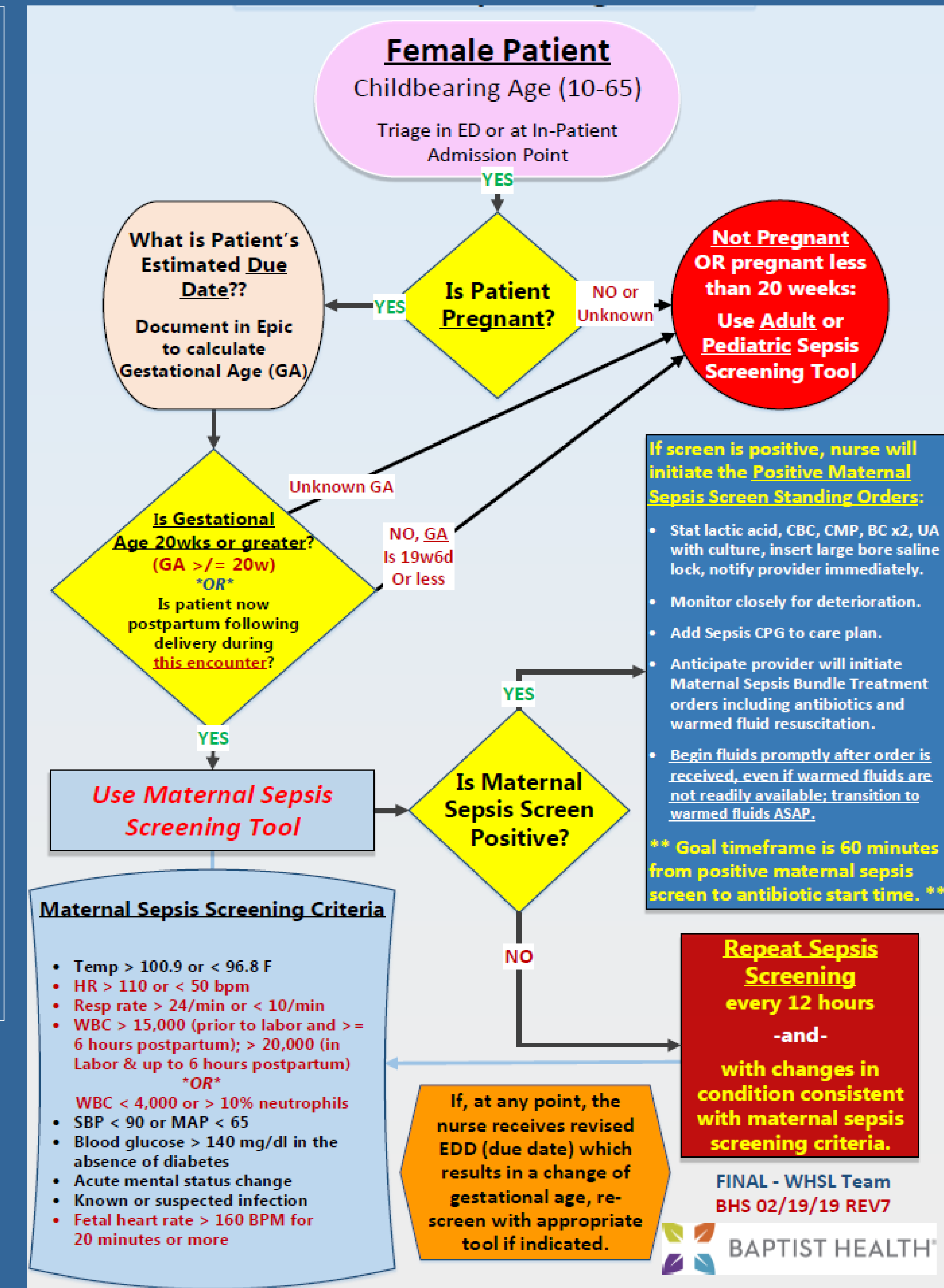
### Adult Sepsis Screening Criteria

- Temperature > 100.9 F or 96.8 F
- Heart Rate > 90
- Respiratory Rate > 20/min
- WBC > 12,000 or < 4,000 or > 10% neutrophils
- SBP < 90 or MAP < 65
- Blood Glucose > 140 mg/dl in the absence of diabetes
- Acute mental status change
- Known or Suspected Infection

### Maternal Sepsis Screening Criteria (differences noted in yellow)

- Temperature > 100.9 F or < 96.8 F
- Heart Rate > 110 or < 50
- Respiratory Rate > 24/min or < 10/min
- WBC > 15,000 (prior to labor & ≥ 6 hour postpartum);
- > 20,000 (in labor and up to 6 hour postpartum) or WBC < 4,000 or > 10% neutrophils
- SBP < 90 or MAP < 65
- Blood Glucose > 140 mg/dl in the absence of diabetes
- Acute mental status change
- Known or Suspected Infection
- Fetal Heart Rate > 160 BPM for 20 mins

## MATERNAL SEPSIS ALGORITHM



## CONCLUSIONS

The normal physiologic changes that occur during pregnancy and in the immediate postpartum stages thereafter delivery may result in a false positive screen for sepsis if the patient is assessed using the original adult sepsis screening tool.

The Pharmacy Review Committee collaborated with Dr. Barton to develop a treatment order set in the electronic health record that is evidence based and aligns with Baptist Health antibiograms and CMS Sepsis Bundle Measures.

As of July 30<sup>th</sup>, the Baptist System obtained a median time of 78 minutes from positive screen to antibiotic start. Barriers to meeting goal such as live time documentation of screening by Nursing were quickly identified as negatively impacting timelines and opportunities to achieve the target median time of > 60 min.

The scope of this project included education being provided to all Baptist Health's Nursing staff within Emergency Departments, Inpatient Nursing units, Antepartum units, Mother/Baby, and Labor & Delivery as well as Obstetricians, Hospitalists, and ED Providers

## INPATIENT MATERNAL SEPSIS SCREENING TOOL IN EPIC

## INPATIENT NURSE BPA TO PLACE STANDING ORDERS

## SPECIAL THANKS

1. The Women's and Newborns Service Line at Baptist Health
2. OB Resource Council
3. Dr. John R. Barton, MD, FACOG, & Chair, Kentucky Maternal Mortality Review Committee
4. Baptist Health Pharmacy Review Committee