

Maternal Early Warning System

PURPOSE AND GOAL

Efforts to mitigate the severity of adverse events and ultimately improve outcomes require prompt recognition of and response to critical changes in the maternal condition. The American College of Obstetricians and Gynecologists (ACOG) committee opinion on Preparing for Clinical Emergencies in Obstetrics and Gynecology (2014) noted over the last decade there was a 75% increase in severe maternal morbidity from complications of delivery in the United States. Claims data from the CRICO Strategies Comparative Benchmarking Systems has revealed the incidence of maternal death cases between assert years 2009-2013 was 5.1 deaths per 100K births with a total incurred loss of over \$650,000 per claim.

This document provides guidelines for developing a Maternal Early Warning System (MEWS) for inpatient Obstetrics (OB). The accompanying algorithm outlines the response to a decline in an obstetrical patient's condition outside of the operating room, with the goal of preventing continued deterioration and facilitating a coordinated response, with effective communication among providers.

Maternal mortality reviews demonstrated a significant number of cases in which abnormal vital signs preceded a critical deterioration in patient condition. An effective early warning system, with prompt bedside evaluation may facilitate timely recognition, evaluation and treatment for obstetrical patients developing critical conditions such as hemorrhage, hypertensive crisis and sepsis.

EXPECTATIONS

Each institution should develop a MEWS, incorporating the principles within this document. Institutional leadership should provide necessary resources for implementation, including staffing, education, a quality improvement process, and leadership from senior medical and nursing personnel.

GUIDELINES FOR IMPLEMENTATION

1. Education and training in MEWS triggers for clinical staff including physicians, nurses, patient care assistants, and unit support staff.
2. Identification of bedside responders to a MEWS trigger
3. Effective communication: whom to notify, how to notify them, and when and how to activate the chain of command to ensure an appropriate response.
4. Identification of a Rapid Response Team to support bedside responders
5. Implementation of quality improvement metrics based on the individual institution's resources.
6. Leadership support for chain of command policy to provide prompt bedside evaluation and treatment.

STAFF REQUIREMENTS

The initial OB provider for patient assessment should be credentialed in obstetrics and may be a physician, certified nurse midwife, nurse practitioner or physician assistant. If no credentialed obstetrics provider is available, each institution should specify an appropriate initial bedside responder, while simultaneously contacting the obstetrical attending physician.

A Rapid Response Team (RRT) is composed of clinicians that bring critical care expertise to the patient. At a minimum, an RRT should include the obstetrical attending physician, anesthesiologist covering obstetrics, and charge nurse. This team will assist in stabilizing the patient and determining when transfer to a higher level of care is indicated.

MEWS TRIGGERS

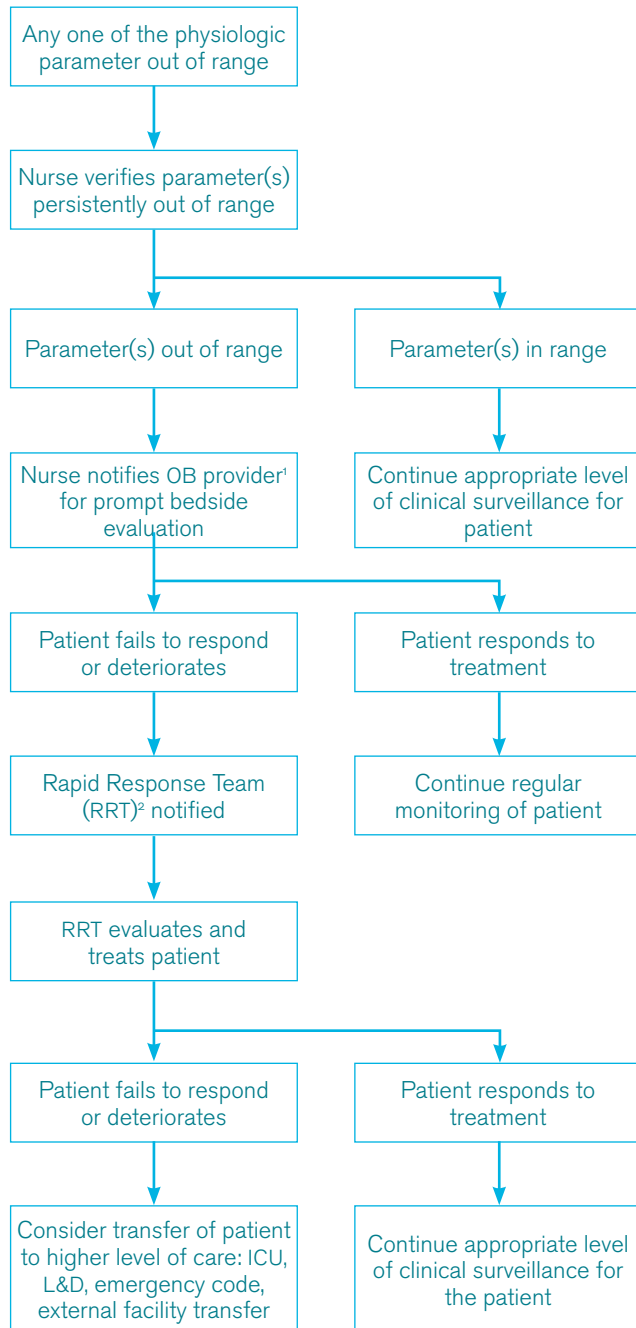
Patients may exhibit physiological changes that signify deterioration. These changes, or MEWS triggers are included in this guideline.

References

- ACOG Committee Opinion No. 590, March 2014; *Preparing for Clinical emergencies in Obstetrics and Gynecology*.
 Myhre, JM. The Maternal Warning Criteria. *Obstetrics and Gynecology*. 2014;124:782–86.

Maternal Early Warning System Algorithm

The Maternal Early Warning System (MEWS) algorithm identifies prompts for bedside assessment by providers with the ability to activate resources required for diagnostic and therapeutic interventions. Escalation of concern may be initiated by any team member at any point in the patient's care.



MEWS TRIGGER CRITERIA*	
parameter	value
systolic BP (mm Hg)	<80 or >160
diastolic BP (mm Hg)	>105
heart rate (beats per min)	<50 or >120
respiratory rate (breaths per min)	<10 or >30
oxygen saturation % (room air, at sea level)	<95
oliguria (mL for >2 hours): for catheterized patients	<30
maternal agitation, confusion, unresponsiveness	if any present
preeclampsia, with patient reporting non-remitting headache or shortness of breath	if either present

OBSTETRICS QUALITY TASK FORCE

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1. OB-MD,CNM, NP, PA. If OB provider (OBP) not in facility, identify bedside responder while awaiting OBP.

2. Charge nurse, OB attending, OB anesthesia attending

All members of the OB team and roles/responsibilities should be determined locally.

*Specific MEWS triggers may evolve as more evidence becomes available.