



Call for the Development of Maternal Early Warning Systems (MEWS)

Florida PAMR Findings:

■ 55.3% of the maternal deaths in Florida in 2015 were preventable. In an additional 18.4% of the deaths, there was a possible chance to alter the outcome.¹

Contributing factors:

- lack of healthcare standardized policies and procedures (80%)
- delay of treatment (25%)
- lack of diagnosis (20%)
- lack of healthcare knowledge/skills assessment (20%)
- lack of treatment (15%)
- delay of diagnosis (10%)
- lack of care coordination/referrals/transfers, follow-up (10%)

PAMR MESSAGE TO PROVIDERS:

Deterioration of the clinical condition of a maternity patient can occur rapidly and lead to tragic consequences if adverse signs are not recognized early. Case reviews of maternal deaths have revealed a concerning pattern of delay in recognition of hemorrhage, hypertensive crisis, sepsis, venous thromboembolism, and heart failure.² Having a Maternal Early Warning System can help facilitate timely recognition, diagnosis, and treatment for women

developing critical illness. A number of organizations have recommended the use of maternal early warning tools as a method of addressing this problem. There are now clinical data suggesting that the use of these tools can reduce maternal morbidity and mortality especially due to hemorrhage and infection.³

PAMR MESSAGE TO HOSPITALS:

PAMR endorses the Joint Commission requirements that:

- Hospitals have a process in place for recognizing and responding as soon as a patient's condition appears to be worsening.
- Hospitals develop written criteria describing early warning signs of a change or deterioration in a patient's condition and when to seek further assistance.⁴

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PAMR Recommendations:

Follow the National Partnership for Maternal Safety, Patient Safety Tool, Maternal Early Warning System (MEWS) Protocol.⁵ An example of a MEWS protocol that could be used as an early warning system is provided in the table labelled “Maternal Early Warning System”.

- The early warning score is a guide used to determine the degree of sickness and is based on key vital sign measurements and clinical condition.
- Early recognition of vital sign changes is important to trigger further clinical evaluation.¹

The Maternal Early Warning System has two components:

- Maternal Early Warning Criteria/Signs
- Effective Escalation Policy

Urgent bedside evaluation is indicated if:

- Any value persists for more than one measurement.
- Any value recurs more than once.
- Values present in combination with additional abnormal parameters.

An Effective Escalation Policy includes:

- **Prompt notification** of abnormal values to an obstetrician or other qualified clinician (anesthesiologist, midwife, etc.).
- **Prompt bedside evaluation** by a physician or other qualified clinician with the ability to activate resources in order to initiate emergency diagnostic and therapeutic interventions as needed.⁶
- If unresolved, escalate level of care by either initiating an obstetric emergency response team, rapid response team, consulting maternal fetal medicine, or by transferring to a higher level acuity unit (ex. intensive care unit) or hospital.

MATERNAL EARLY WARNING SYSTEM

MEASUREMENT:	LESS THAN OR EQUAL TO:	BETWEEN:	BETWEEN:	GREATER THAN OR EQUAL TO:
Systolic BP (mmHg)	80	81–89	150–159	160
Diastolic BP (mmHg)	49		91–99	100
Respiratory Rate (breaths per minute)	10		22–29	30
Heart Rate (beats per minute)	50		111–119	120
Oxygen Saturation (% at room air)	94			
Urine output (ml per hour, for 2 hours)	35			
Any combination of the following: Maternal agitation, confusion, or unresponsiveness				
Patient with hypertension reporting a non-remitting headache or shortness of breath				
Patient complaining of constant, systemic, and severe musculoskeletal pain				
Red = any 1 red, requires immediate action, call provider immediately to come for bedside evaluation	Orange = any 1 orange, should be reassessed and confirmed prior to calling the provider within 10 minutes		Yellow = any 2 yellow, should be reassessed and confirmed prior to calling the provider within 10 minutes	

1. Florida Department of Health. Pregnancy Associated Mortality Review. 2015 Update. www.floridahealth.gov/statistics-and-data/PAMR/pamr-2015-update.pdf

2. Mhyre, Jill M., D’Oria, Robyn, Hameed, Afshan B., Lappen, Justin R., Holley, Sharon L., Hunter, Stephen K., et al. October 2014. The Maternal Early Warning Criteria: A Proposal from the National Partnership for Maternal Safety. ACOG. Obstetrics & Gynecology; Volume 124. Issue 4. Pp 782-786. [Abstract]. journals.lww.com/greenjournal/Abstract/2014/10000/The_Maternal_Early_Warning_Criteria__A_Proposal.19.aspx

3. Shields LE, Weisner S, Kleein C, Pelletreau B, Hedriana HL. 2016 April. Use of Maternal Early Warning Trigger tool reduces maternal morbidity. Am J Obstet Gynecol; 214 (4)

4. The Joint Commission: Preventing Maternal Deaths. Sentinel Event Alert. Issue 44. January 2010. www.jointcommission.org/assets/1/18/SEA_44.PDF

5. Council on Patient Safety in Women’s Health Care. Maternal Early Warning Criteria. safehealthcareforeverywoman.org/wp-content/uploads/2017/02/MEWS-Protocol.pdf

6. The American Congress of Obstetricians and Gynecologists. National Partnership for Maternal Safety: Maternal Early Warning System. www.acog.org/-/media/Districts/District-11/Public/SMI/v2/MaternalEarlyWarningSystem.pdf?dmc=1&ts=20170920T1849416299