



Learning Outcomes:

- Participants will be able to verbalize aspects of enhanced postpartum education to improve maternal outcomes
- Maternal Morbidity and Mortality – Connection to Early Warning Signs
- What are Maternal Early Warning Signs
- How can this be adapted for the Postpartum Woman
- Enhanced Postpartum education
- Question & Answer





Maternal Mortality in the News

Figure 1. Distribution of Pregnancy-Related Deaths by Timing of Death in Relation to Pregnancy



REPORT FROM NINE
MATERNAL MORTALITY
REVIEW COMMITTEES

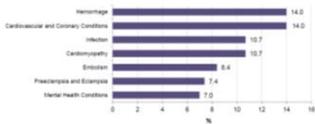
63% of Pregnancy related deaths are in the Postpartum Period

<http://reviewaction.org/sites/default/files/national-portal-material/Report%20from%20Nine%20MMRCs%20final%20edit.pdf>

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Leading causes of pregnancy related deaths in women – Pregnancy – 1 year Postpartum

Figure 4. Leading Underlying Causes of Pregnancy-Related Deaths*



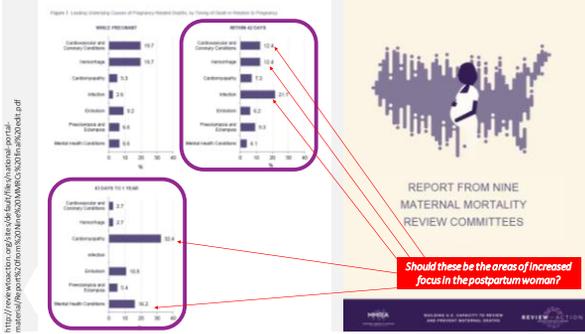
* Hemorrhage, but embolism is not included in the underlying category due to differences in coding and opportunities for prevention.
* The underlying cause of death, as defined by the International Classification of Diseases, 10th Revision or higher that released the date of cause leading directly to death or the complication of the condition or condition which produced the fatal event.



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How does Maternal Mortality Connect to Early Warning Signs?

What do we know? Raise your hands

What are Maternal Early Warning Signs

Basics of EWS's

- Early Warning Systems
 - identified as key in the timely recognition of impending changes in patient stability as identified by the Agency for Healthcare Research and Quality (AHRQ)
 - developed and implemented in a variety of ways across acute care hospitals
 - focus = consistently identify pending patient issues with the goal to improve patient outcomes
 - failure to recognize what researchers have identified as frequent, yet subtle changes prior to an arrest, may lead to delay in patient care, ICU admissions, extended hospital stays, and serious negative patient outcomes
 - dependent on the successful communication of those changes to the appropriate person or team



Diane Halden, MS, RN-BC, CIO, et al. Creating a Culture of Safety Through Integration of an Early Warning System. ORA Volume 46, Number 2, pp 63-68

How does the clinical reasoning change in emergent situations or when a patient's condition changes?



- "Many times, hospitalized patients exhibit warning signs in the hours before experiencing critical health problems (e.g., cardiopulmonary arrest), but these signs are often not recognized, leading to the patient's death (i.e., a situation commonly known as "failure to rescue")."
- "Modified Early Warning System is a simple scoring system applied to patients' routinely measured physiological vital signs to identify patients likely to deteriorate, notify physicians and other caregivers when appropriate, and take other necessary steps to avert further decline."



<https://innovations.ahrq.gov/profiles/early-warning-scoring-system-proactively-identifies-patients-risk-deterioration-leading>

The Modified Early Warning System

- Tool for nurses to help monitor their patients and improve how quickly a patient experiencing a sudden decline receives clinical care. The color-banded patient chart gives a visual cue as to when to calculate a MEWS score.



- Scoring is based on:
 - Respiratory rate
 - Heart rate
 - Systolic blood pressure
 - Conscious level
 - Temperature
 - Hourly urine output (for previous 2 hours)



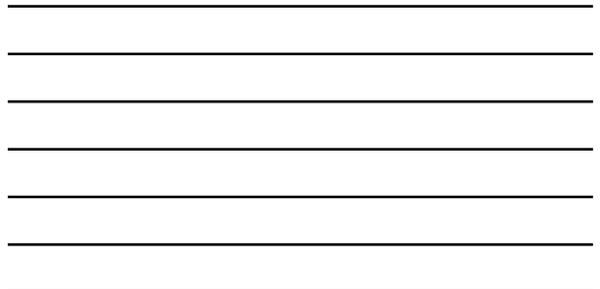
<https://innovations.ahrq.gov/qualitytools/modified-early-warning-system-mews>

"MEWS": Maternal Early Warning System



- Goal of early warning systems is to ensure timely recognition of patients developing acute illness
 - The early warning systems in use for non-Obstetric patients do not work well for Obstetric patients.
- We know abnormal physiologic signs and symptoms often precede critical illness
- In 2010 the Joint Commission issued a requirement for birth facilities to develop written criteria describing early warning signs indicating a change or deterioration in a patient's condition and the requirement to promptly seek further assistance.
- In 2007, the United Kingdom recommended adoption of the Modified Early Obstetric Warning System

1. M'haug, et al. *Obstetrics & Gynecology*, October 2014 - Volume 124 - Issue 4 - p 782-786. The Maternal Early Warning Criteria: A Proposal From the National Partnership for Maternal Safety
 2. O'Wilson, et al. *VOL 123, NO. 5, MAY 2014 OBSTETRICS & GYNECOLOGY* The National Partnership for Maternal Safety



Early Obstetric warning System



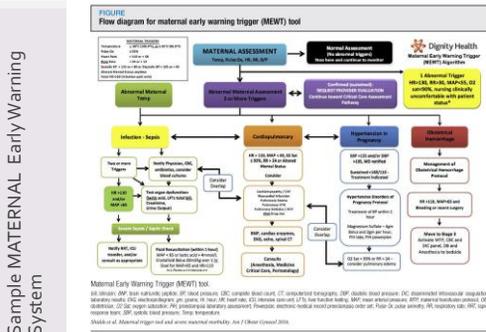
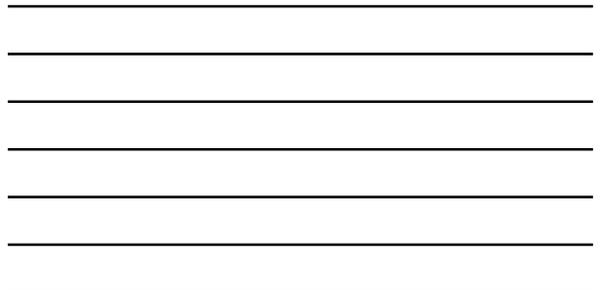
- Differences in the OB Warning system:
 - physiologic changes that occur during pregnancy
 - small number of conditions responsible for most maternal severe morbidity and mortality.
- "In this system, 2 moderately abnormal parameters (yellow alerts) or 1 severely abnormal parameter (red alert) triggers a clinical response to urgently assess the patient's status and make a follow-up surveillance plan."

Table 3
A modified early obstetric warning system

Physiologic Parameters	Yellow Alert	Red Alert
Respiration rate	21-30	<10 or >30
Oxygen saturation	<95	<95 or >98
Temperature	35-36	<35 or >38
Systolic blood pressure	150-160 or 90-100	<90 or >160
Diastolic blood pressure	90-100	>100
Heart rate	100-120 or 40-50	>120 or <40
Pain score	3-3	
Neurologic response	Voice	Unresponsive, pain

2 yellows = 4 trigger for clinical response
 1 red = 1 trigger for clinical response

Alexander M. Friedman, MD, Maternal Early Warning Systems. *Obstet Gynecol Clin N Am* 42 (2015) 289-298



Shields, et al. (2015) *American Journal of Obstetrics and Gynecology*. Use of Maternal Early Warning Trigger tool reduces maternal morbidity. 2016-04-02, Volume 214, Issue 4, Pages 577-582.

Sample MATERNAL Early Warning System



Obstacles for universal adoption of MEWS

- Maximizing the ease of use by labor and delivery staff
- Alert frequency must be low enough to prevent "alarm fatigue"
- Positive predictive value must be high enough that clinicians associate value with the alert



Shelds, et al. (2016) American Journal of Obstetrics and Gynecology. Use of Maternal Early Warning Trigger tool reduces maternal morbidity. 2016-04-01, Volume 214, Issue 4, Pages 527.e1-527.e6.

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Impacts on Maternal Outcomes

- Patient safety initiatives include recognition of preventable errors (To Err is Human – Institute of Medicine, 1999)
- Need to explore why women are dying and whether or not there is a preventable aspect associated
- TERCAP - Taxonomy of Error, Root Cause Analysis and Practice-Responsibility
 - Allows for systematic Tracing and evaluation of adverse patient events from individual and system perspectives
 - Nursing error categories:
 1. safe medication administration, specifically, the right dose at the right time through the right route to the right patient
 2. documentation that is complete, accurate, and timely
 3. attentiveness and surveillance related to the precise observation and monitoring of the patient's clinical condition
 4. clinical reasoning that consists of accurate interpretation of the patient's status, which includes timely identification of any significant clinical changes, and ensures that patient care is adjusted accordingly, which includes notification of the patient's primary care provider
 5. prevention to ensure that standard procedures are followed to minimize potential risks and hazards, such as fall prevention
 6. occurrence of interventions in a timely manner and provision of the right intervention on the right patient
 7. interpretation of the authorized provider's orders correctly
 8. demonstration of professional responsibility and advocacy for the patient and family by protecting their vulnerabilities



Agostino, Margaret-Rose et al. Identifying Potentially Preventable Elements in Severe Adverse Maternal Events. Journal of Obstetric, Gynecologic & Neonatal Nursing, Volume 45, Issue 6, 865-869

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Development of a Tool to Measure Nurse Clinical Judgment During Maternal Mortality Case Review

Mario J. Saorin, Danielle Abell

Journal of Obstetric, Gynecologic & Neonatal Nursing
Volume 45, Issue 6, Pages 670-677 (November 2016)
DOI: 10.1016/j.jogn.2016.05.004



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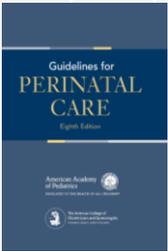


Let's define the Postpartum Time Period - "4th Trimester"

- Defining Postpartum (uptodate.com):
 - Postpartum period, also known as the puerperium, refers to the time after delivery when maternal physiological changes related to pregnancy return to the nonpregnant state.
 - In addition to physiologic changes and medical issues that may arise during this period, health care providers should be aware of the psychological needs of the postpartum mother and sensitive to cultural differences that surround childbirth, which may involve eating particular foods and restricting certain activities.
 - There is consensus that the postpartum period begins upon delivery of the infant. The end is less well-defined but is often considered the six to eight weeks after delivery because the effects of pregnancy on many systems have largely returned to the prepregnancy state.
 - However, all organ systems do not return to baseline within this period, and the return to baseline is not necessarily linear over time. For this reason, some authors describe women as postpartum for as long as 12 months after delivery.
- Postpartum time: (Gabbe, S. Obstetrics Normal and problem pregnancies 7th Edition, 2017)
 - The postpartum period, also called the puerperium, lasts from delivery of the placenta until 6 to 12 weeks afterward.
 - Most of the physiology that has changed in pregnancy will have returned to its prepregnancy state by 6 weeks.
 - However, many of the cardiovascular changes and psychological changes may persist for many more months; and some, such as changes in the pelvic musculature and cardiac remodeling, will last for years.

Postpartum Care: Guidelines for Perinatal Care 8th Edition

- Immediate Postpartum:
 - Blood pressure levels and pulse should be monitored at least every 15 minutes for 2 hours, but more frequently and for longer duration if there are complications.
 - The woman's temperature should be taken at least every 4 hours for the first 8 hours for the first 8 hours after delivery, and at least every 8 hours subsequently.
- Postpartum follow-up
 - All women should undergo a comprehensive postpartum visit within the first 6 weeks after birth.
 - This visit should include a full assessment of physical, social, and emotional well-being.
 - Early postpartum follow up is recommended for women with hypertensive disorders of pregnancy.
 - Early follow-up also may be beneficial for women at high risk of complications, such as postpartum depression, cesarean or perineal wound infection, lactation difficulties, or chronic conditions such as seizure disorders that require postpartum medication titration.
 - Women with severe hypertension or severe preeclampsia on any antihypertensive medication should be seen by their obstetric care providers within 72 hours of discharge and within 7-10 days of discharge if they are not receiving antihypertensive medication.



Traditional postpartum care



- The postpartum visit is scheduled at the time of discharge and routinely occurs 4 to 6 weeks after delivery.
- Some women may benefit from a visit sooner, such as women at risk for depression, those with a more complicated labor and delivery, and women who underwent a cesarean section for delivery.
- During Visit:
 - breastfeeding can be addressed
 - incisional checks
 - assessment of mood
 - open-ended questions should be asked to detect problems
 - At the routine postpartum visit, questions regarding depression, energy, sexuality, contraception, and future pregnancies should be addressed.
- If health issues need to be addressed, such as blood glucose or thyroid level assessment, they may be performed or scheduled at this visit.

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How Do We Need to Change Postpartum Visits?

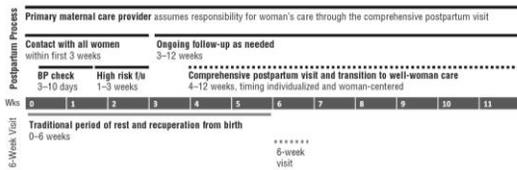


Figure 1. Proposed paradigm shift for postpartum visits. The American College of Obstetricians and Gynecologists' Presidential Task Force on Redefining the Postpartum Visit and the Committee on Obstetric Practice propose shifting the paradigm for postpartum care from a single 6-week visit (bottom) to a postpartum process (top). Abbreviations: BP, blood pressure; ft, follow-up.

ACOG Committee Opinion #736: Optimizing Postpartum Care May 2018

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ACOG Committee Opinion #736: Optimizing Postpartum Care May 2018

Recommendations and Conclusions

- The American College of Obstetricians and Gynecologists makes the following recommendations and conclusions:
- To optimize the health of women and infants, postpartum care should become an ongoing process, rather than a single encounter, with services and support tailored to each woman's individual needs.
- Anticipatory guidance should begin during pregnancy with development of a postpartum care plan that addresses the transition to parenthood and well-woman care.
- Prenatal discussions should include the woman's reproductive life plans, including desire for and timing of any future pregnancies. A woman's future pregnancy intentions provide a context for shared decision-making regarding contraceptive options.

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Recommendations and Conclusions - Continued

- All women should ideally have contact with a maternal care provider within the first 3 weeks postpartum. This initial assessment should be followed up with ongoing care as needed, concluding with a comprehensive postpartum visit no later than 12 weeks after birth.
- The timing of the comprehensive postpartum visit should be individualized and woman centered.
- The comprehensive postpartum visit should include a full assessment of physical, social, and psychological well-being.
- Women with pregnancies complicated by preterm birth, gestational diabetes, or hypertensive disorders of pregnancy should be counseled that these disorders are associated with a higher lifetime risk of maternal cardiometabolic disease.



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Recommendations and Conclusions - Continued

- Women with chronic medical conditions, such as hypertensive disorders, obesity, diabetes, thyroid disorders, renal disease, mood disorders, and substance use disorders, should be counseled regarding the importance of timely follow-up with their obstetrician-gynecologists or primary care providers for ongoing coordination of care.
- For a woman who has experienced a miscarriage, stillbirth, or neonatal death, it is essential to ensure follow-up with an obstetrician-gynecologist or other obstetric care provider.
- Optimizing care and support for postpartum families will require policy changes. Changes in the scope of postpartum care should be facilitated by reimbursement policies that support postpartum care as an ongoing process, rather than an isolated visit.



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Other Issues

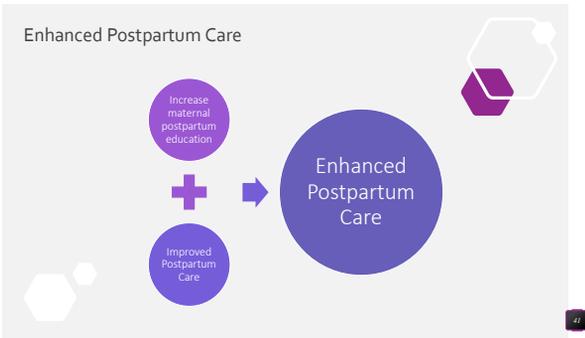
- Currently, as many as 40% of women do not attend a postpartum visit.
- Strategies for increasing attendance include but are not limited to the following measures:
 - discussing the importance of postpartum care during prenatal visits;
 - using peer counselors, intrapartum support staff, postpartum nurses, and discharge planners to encourage postpartum follow-up;
 - scheduling postpartum visits during prenatal care or before hospital discharge;
 - using technology (eg, email, text, and apps) to remind women to schedule postpartum follow-up;
 - increasing access to paid sick days and paid family leave.



ACOG Committee Opinion #736: Optimizing Postpartum Care May 2018

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What are we teaching new moms about taking care of themselves?

- "Many women are not aware of their health needs after they give birth, particularly how to differentiate normal from abnormal signs and symptoms or when they should seek help for these symptoms."
- Findings from this study suggested that most nurses provided women with education about potential complications that can occur in the postpartum period and what signs and symptoms to self-assess.
- However, how messages were conveyed to women, which women received certain messages, what information was provided, and when the education was conducted varied.

reminder:
take care of yourself!

Bupka, P. et al. JOON 45, 894-904, 2016.

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How do we teach moms?

Table 2. Descriptions of Signs and Symptoms of Potential Complications

Complication	Signs and Symptoms
Maternal Hemorrhage	
Hypertensive Disorders	
Maternal Infection	
Postpartum Hemorrhage	
Stroke	



• *What are you saying to your patients?*

Supke, P. et al. JGIM, 45, 894-904, 2016.

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What should we be saying to our patients?

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SAVE YOUR LIFE! Get Care for These POST-BIRTH Warning Signs

Call 911 if you have:

- 1. Pain in chest
- 2. Obstructed breathing or shortness of breath
- 3. Seizures
- 4. Thoughts of hurting yourself or your baby

Call your healthcare provider if you have:

- 1. Bleeding, spotting through your postpartum or breast pads, the size of an egg or bigger
- 2. Swelling, warmth through your postpartum or breast pads
- 3. Redness that is not fading
- 4. Red or swollen leg, that is painful or warm to touch
- 5. Temperature of 101.4°F or higher
- 6. Headache that does not go away with acetaminophen
- 7. Headache that does not go away with acetaminophen after taking medicine, or that worsens with vision changes

Call 911 or your healthcare provider if:

- 1. You had a baby on _____ and _____
- 2. You have _____

GET HELP

AWHONN

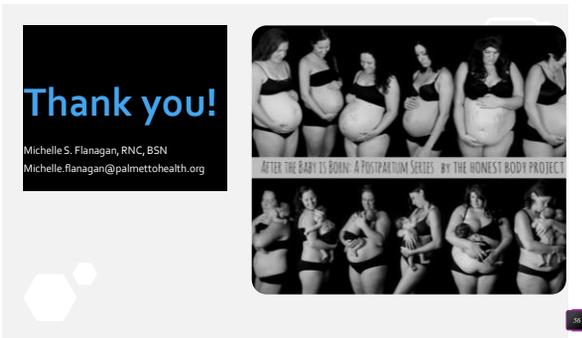


<https://www.awhonn.org/general/custom.asp?page=FOURBIRTH>

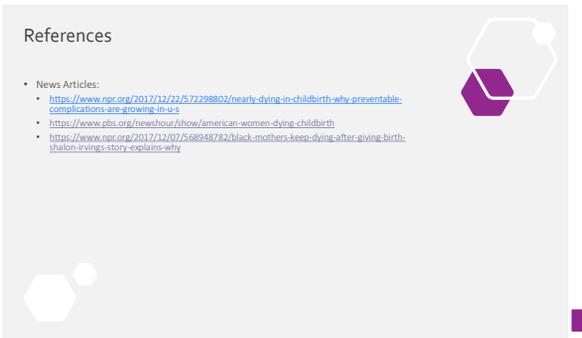
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References

- News Articles:
 - <https://www.npr.org/2017/12/22/57229802/nearly-dying-in-childbirth-why-preventable-complications-are-growing-faster>
 - <https://www.pbs.org/newshour/show/american-women-dying-childbirth>
 - <https://www.npr.org/2017/12/07/568948782/black-mothers-keep-dying-after-giving-birth-shalon-irving-s-story-explains-why>

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