



UCF/HCA GME CONSORTIUM GREATER ORLANDO OB/GYN RESIDENCY PROGRAM NEWS

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# Patient Safety

## Leapfrog

Osceola Regional Medical Center was recently awarded a safety grade "A" by the Leapfrog Group, a not-for-profit group that focuses on safety, quality, and affordability of health care through data collection and public reporting initiatives. We are one of only 855 hospitals in the country to receive this grade!

Furthermore, we were also recognized as a 2018 Leapfrog Top Teaching Hospital in the small hospital category! We were one of only 2 winners of this designation in the state of Florida and 53 nationwide. This requires both receiving an "A" safety grade and achieving quality outcomes in the top 10% in the nation!

I want to sincerely thank everyone for your continued participation in our Patient Safety and Quality Initiatives, Root Cause Analyses, and reporting processes for patient safety events and near misses.

## PAMR Urgent Messages

The Florida Pregnancy Associated Mortality Review (PAMR; our statewide maternal mortality database) tracks causes of maternal mortality and releases Urgent Maternal Mortality Messages periodically. More information can be found here:

<http://www.floridahealth.gov/statistics-and-data/PAMR/>

Two of these recent messages are attached.

- 📄 Peripartum Cardiomyopathy
- 📄 Maternal Early Warning System (implementation of this would be a great QI project!)

Dr. Anna Varlamov, Chair of the ACOG District XII Maternal Mortality Committee, will be coming to give us a special lecture on Maternal Mortality utilizing PAMR data review on Tuesday, 2/12/19 at 0730 in GME 250, Side A. All residents and faculty are invited!



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## Noteworthy News

- New ACOG Practice Bulletins on:
  - ◆ Benefits & Risks of Sterilization
  - ◆ Use of Hormonal Contraception in Women with Coexisting Medical Conditions
  - ◆ Vaginal Birth After Cesarean Delivery
  - ◆ Fetal Growth Restriction
  - ◆ Chronic Hypertension in Pregnancy
  - ◆ Gestational Hypertension & Preeclampsia
  - ◆ Pregestational Diabetes Mellitus
- No more stipend starting next year (everything built into budget) – will discuss further at Resident/PD Meeting
- Patient Keeper Handoff Tool coming July 1, 2019



- ACOG Annual Conference – New Orleans, LA
  - ◆ March 24-29, 2019
- SGS Annual Scientific Meeting – Tucson, AZ
  - ◆ March 31-April 3, 2019
- NASPAG Annual Clinical & Research Meeting – New Orleans, LA
  - ◆ April 11-13, 2019
- ACOG Annual Clinical & Scientific Meeting – Nashville, TN
  - ◆ May 2-6, 2019

## CREOG Corner

Excerpted from: *Pearls of Excellence - Intrahepatic Cholestasis of Pregnancy*; Shelby Dickison, MD

Intrahepatic cholestasis of pregnancy (ICP) is the most common pregnancy-specific liver disease. The incidence is between 0.2%-2%. Risk factors include multifetal gestations, a personal or family history of ICP, in vitro fertilization, cholelithiasis, advanced maternal age, and Hepatitis C. Transport of bile acids from the liver to the gallbladder is disrupted and bile acids become transported from the liver to the blood, resulting in systemic effects.

ICP classically presents in the third trimester with pruritis, generally of the palms and soles, often worse at night. Patients may have excoriations, but typically do not have a rash. Patients may also demonstrate dark urine, pale stools, and rarely, jaundice. A small proportion of patients may present earlier in gestation, with similar outcomes to patients presenting in the third trimester.

The diagnosis is confirmed by elevated total serum bile acids in the absence of an alternative diagnosis. The primary bile acids are cholic and chenodeoxycholic acid. Most labs use an upper limit of normal of 10 micromoles/L. Liver enzymes may be elevated, but this is not necessary for the diagnosis. Bile acids cross the placenta into the fetal circulation, posing significant risk to the fetus. ICP is associated with preterm delivery (spontaneous and indicated), nonreassuring fetal status, meconium staining, respiratory distress syndrome, and stillbirth. These pregnancies are at an increased risk for preeclampsia and gestational diabetes. There is a linear relationship between serum bile acid levels and the risk of fetal complications.

Ursodeoxycholic acid (UDCA) is the preferred treatment for symptomatic ICP. Liver indices, bile acids, and pruritis may improve with treatment. It is unclear if fetal outcomes improve. The mechanism of action may involve a reduction of serum bile acids in both maternal and fetal circulations.

Given the increased risk of fetal demise after 37 weeks, many experts recommend antenatal testing and serial growth scans. Some experts also suggest risk thresholds based upon bile acid levels. Some studies suggest an increased risk of adverse neonatal outcomes when bile acid levels exceed 40 micromoles/L. Weekly monitoring of bile acids may be warranted as those individuals could be managed more aggressively and delivered sooner. Recommendations vary, but most experts suggest delivery by 37 weeks. There is no contraindication to a vaginal delivery.



### CREOG STUDY RESOURCES

ACOG Prologs are wonderful, succinct, and portable resources for CREOG studying!

PROLOG Games

<https://www.acog.org/Clinical-Guidance-and-Publications/PROLOG/Games>

CREOG Quizzes:

<https://www.acog.org/About-ACOG/ACOG-Departments/CREOG/CREOG-Search/CREOG-Quiz>

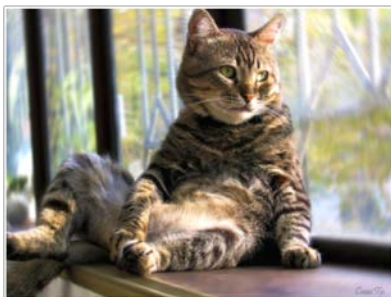
Countdown to CREOG

<https://learning.acog.org/creog/countdown>

Pearls of EXXcellence:

<https://www.excellence.org/pearls-of-excellence/list-of-pearls/>

COZY CAT CALENDAR



- 2/12/19: Guest Lecture - Dr. Varlamov (ACOG)
- 2/13/19: Guest Lecture - Dr. Catania
- 2/15/19: Resident/PD Meeting
- 2/21/19: Wellness Hour - Difficult Events
- 2/25/19: Morbidity & Mortality Conference
- 2/27/19: Quality Council 12:00
- 3/1/19: HCA GRAD Grant Applications due
- 3/15/19: ACGME Back to Bedside Proposals due
- 3/15/19: MATCH DAY!
- 3/27/19: Quality Council 12:00

FAST FACTS

32.8%

Q32018 NSTV C section rate (Goal < 33.3%)

27.26%

Overall 2018 NTSV C section rate (Q1-3)

100%

Q32018 PC-01 Elective Deliveries > 39 Weeks (Goal 100%)

This video from the HCA Cyber Defense Center gives more info on identifying, avoiding, & reporting phishing attempts  
[https://mediacnect.medcity.net/media/How+to+Catch+a+Phish/o\\_gejqie1](https://mediacnect.medcity.net/media/How+to+Catch+a+Phish/o_gejqie1)



*Don't forget to do your CITI & Healthstream training prior to starting any IRB paperwork!*

*IHI QI modules are required prior to starting PGY1-2 QI project!*

## Research Road

### New IRB & Updates to "Common Rule"

Recently, UCF IRB changed from the iRIS system to the Huron system. You can find a link to the new system here (<https://ucf1.huronresearchsuite.com/sp>) or at the top right corner of the IRB website (<http://www.research.ucf.edu/compliance/irb.html>). Along with this transition has come new Protocol and Application forms. Please make sure to update any old blank forms you have downloaded to the Drive or your computer. Any new submissions of projects going forward will need to use the new forms. You MUST submit form [HRP-251 – Faculty Advisor Review](#) with your initial documents to the IRB. Also, if you are working with anyone from outside UCF, you would need to include forms [HRP-253 – External Team Member Information](#) and [HRP-252 – Individual Investigator Agreement](#).

The Department of Health & Human Services' Federal Policy for the Protection of Human Subjects ("Common Rule") was also updated on 1/21/19. This included changes to the categories of research that are "exempt" from IRB review, the addition of a "limited" IRB review category, and new instructions for retrospective data review (termed "secondary research"). These changes will be updated in the new forms.

Training resources to get started using Huron are available at: <http://www.research.ucf.edu/Compliance/IRB/Submissions/index.html>

### Submitting Research to Publish Through External Data Release

- Any research to be published or presented in any way must be submitted for approval through EDR first.
- Allow 30-60 days for approval (know your deadlines!).
- In the Office of Research-GME folder on Medhub, under the EDR/Pubclear folder, there is a new EDR/Pubclear Guide (2019 Version) with helpful hints and tips – please review this before preparing submission.
- Must utilize HCA-approved poster templates for any poster presentation

Use of the term "publication" is intentionally defined as broadly as possible to include but not be limited to:

- 1) peer reviewed journals,
- 2) professional society journals and/or blogs,
- 3) poster presentations,
- 4) live podium or recorded presentations (including the supporting slide decks and/or other supporting materials),
- 5) traditional media, social media, blogs and other internet sites and/or
- 6) making the content available to the general public, in any manner whatsoever.



# Sepsis

Sepsis is one of the major medical emergencies where quick intervention has a high chance of improving outcome and reducing the risk of death. To that end, the Surviving Sepsis Campaign was created by the Society of Critical Care Medicine. Implementation of the Sepsis Bundle has been shown to improve patient outcomes. The bundle includes"

To be started within 1 hour of recognition of sepsis (completed within 3 hours):

- Measure serum lactate level (repeat if > 2 mmol/L)
- Obtain blood cultures prior to administration of antibiotics
- Administer broad spectrum antibiotics
- Administer 30 mL/kg crystalloid for hypotension or lactate > 4 mmol/L

To be completed within 6 hours:

- Apply vasopressors to maintain a MAP > 65 mmHg
- Measure central venous pressure & central venous O<sub>2</sub> sat
- Remeasure lactate

**BUNDLE**

**HOURLY ONE BUNDLE: INITIAL RESUSCITATION FOR SEPSIS AND SEPTIC SHOCK (BEGIN IMMEDIATELY):**

- 1) Measure lactate level.\*
- 2) Obtain blood cultures before administering antibiotics.
- 3) Administer broad-spectrum antibiotics.
- 4) Rapidly administer 30 mL/kg crystalloid for hypotension or lactate ≥ 4 mmol/L.
- 5) Apply vasopressors if hypotensive during or after fluid resuscitation to maintain a mean arterial pressure ≥ 65 mm Hg.

\*Remeasure lactate if initial lactate elevated (> 2mmol/L).

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www.survivingsepsis.org

## Coding Corner

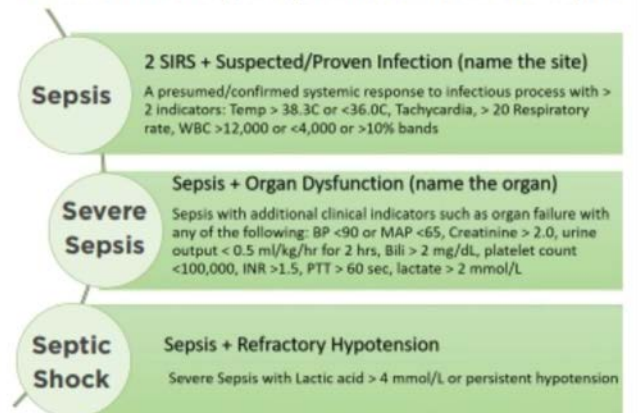
### Sepsis Query Reduction Tips:

Document **Sepsis** as soon as suspected or confirmed

Specify the underlying cause of the **Sepsis**.

Specify the level of severity

Indicate if the organ dysfunction is due to sepsis



When **Suspected Sepsis** is **ruled out**, document **"Sepsis Ruled Out"** as soon as known

Do not use abbreviation "r/o". Document **Ruled Out** or **Rule Out**

**Close the loop** on documentation that states:

Suspected • Rule Out • Possible • Probable

# Didactic Den

Attendance is being tracked at all required lectures utilizing a sign-in sheet.

Antepartum Conference is officially here! First or second Wednesday of every month at 0800

Calendar						
February 2019						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
27	28 Morbidity & Mortality Conference 7:30 am	29 ATTENDING LECTURE - Olivares - OB Pharmacology 7:30 am	30 Immediate Postpartum LARC Insertion Training 9:00 am	31 REFLECTION 7:30 am	1 ATTENDING LECTURE - Sorensen - Septic Shock/ARDS/Allergic Reactions 7:30 am	2
3	4 ACOG WELLNESS WEEK 7:30 am CO REVIEW - Pre-pregnancy Counseling - McCarty 7:30 am Dr. Tramont present for Didactics 7:30 am	5 BOOK CLUB 7:30 am BOOK CLUB - TeLinde's Ch. 28 - Surgery for benign disease of the ovary - Wright 7:30 am	6 ANTEPARTUM CONFERENCE - PTL 8:00 am	7 (Today) No Academic Half Day	8 Rank List Meeting 7:30 am	9
10	11 PB REVIEW - PB #203 - CHTN in Pregnancy - Louis 7:30 am	12 ATTENDING LECTURE - Dr. Varlamov (ACOG) - Maternal Mortality in FL 7:30 am	13 ATTENDING LECTURE - Dr. Catania - Respiratory Tract Infections 7:30 am	14 TUMOR BOARD 7:30 am	15 Resident/PD Meeting 7:30 am	16
17	18 ATTENDING LECTURE - Figueroa 7:30 am	19 BOOK CLUB - Williams Gyn Ch 9 - Pelvic Mass - Kuchta 7:30 am	20 ATTENDING LECTURE - Reina 7:30 am	21 WELLNESS HOUR - Difficult Events 7:30 am WELLNESS HOUR - Difficult Events 7:30 am	22 RESIDENT LECTURE - Brown - Third Trimester Bleeding 7:30 am	23
24	25 Morbidity & Mortality Conference 7:30 am	26 BOOK CLUB - Williams Gyn Ch. 41 - MIS Fundamentals -	27 ATTENDING LECTURE - Ozcan - STIs 7:30 am	28 TUMOR BOARD 7:30 am	1 ATTENDING LECTURE - Rojas 7:30 am	2

# Wellness Way

by Michelle S. Ozcan, MD

The UCF/HCA Greater Orlando OB/Gyn residents continue working together to foster our wellness and resilience!

In the past few months, we have had CREOG Wellness Pilot Curriculum sessions on: Gratitude where we wrote a gratitude letter and started collecting stickers for our Superhero cards, Building Resilience where we filled out our own resilience tree and learned how to nourish it, and Time Management and Priorities where we discussed what is important to each of us and created our personal Time Matrix.



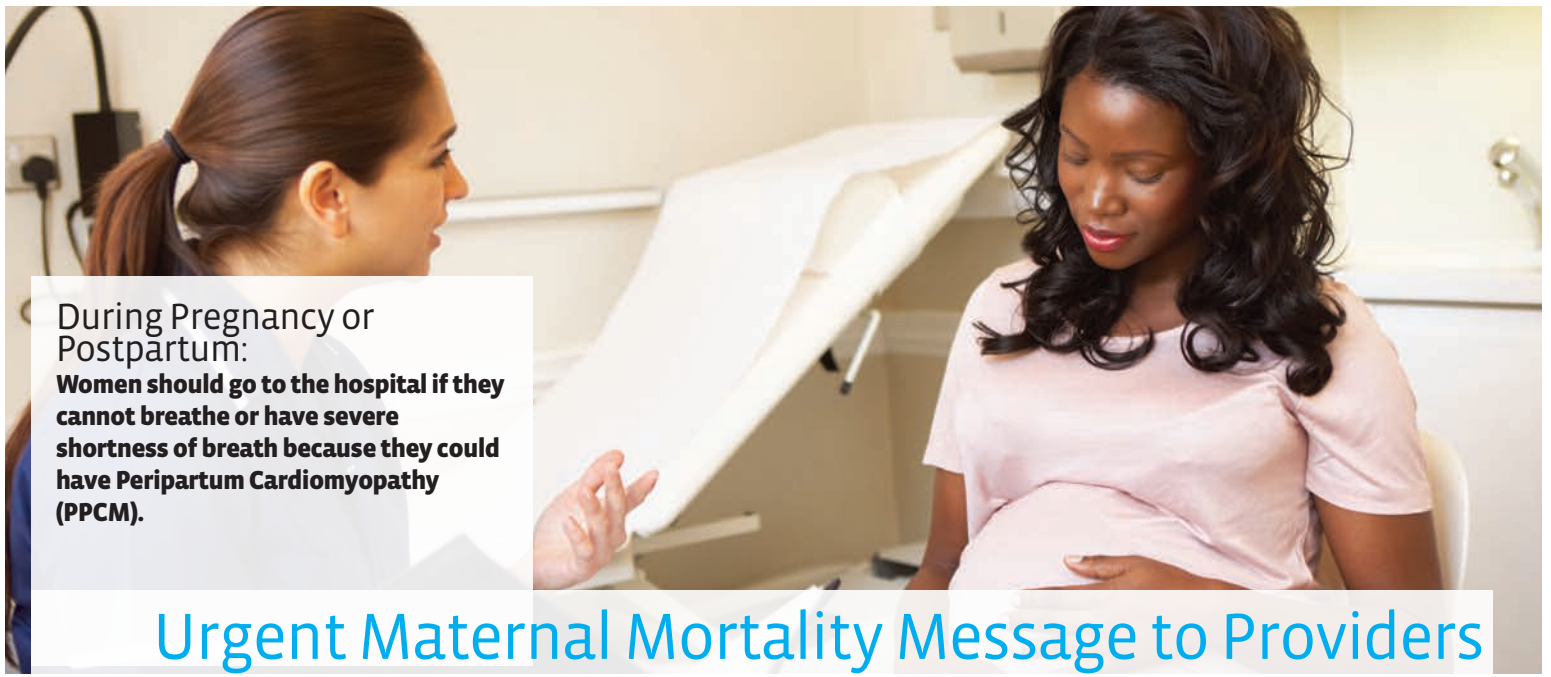
We recently had a Reflection session where we discussed the difficult topics of Physician suicide and depression. We will be purchasing a subscription to MoodGym for all of our residents. There are also many resources available at <https://med.ucf.edu/academics/graduate-medical-program/trainee-wellness-program/> and <https://healthadvocate.personaladvantage.com/portal/landing?a=1>. The Health Advocate 24/7 assistance number is: 877-240-6863 and the National Suicide Prevention Lifeline is: 800-273-TALK (8255). Don't forget that there are many people available whenever you need to talk, including your program leadership, faculty, fellow residents, and your Wellness Partners as well as an independent Ombudsman through UCF.

Finally, the UCF/HCA GME Greater Orlando Local Wellness Committee is off to a great start as well! We held our first meeting, brainstormed some wonderful ideas for initiatives, formed some small groups (like the Marathon group, the Sports group, the Disney group, etc.) and planned our first GME Holiday Party which took place on January 4, 2019. We now have a bulletin board in the GME department where we will be posting announcements, invitations, and pictures! We are excited to have 2 events coming up in the Spring – the UCF Challenge Course (a team-building ropes course) and a Family Field Day! More information to follow!

The Gyn  
Times  
Quarterly

720 W. Oak St.  
Kissimmee, FL 34741

NATIONAL  
**SUICIDE**  
PREVENTION  
**LIFELINE**<sup>TM</sup>  
1-800-273-TALK (8255)  
[suicidepreventionlifeline.org](http://suicidepreventionlifeline.org)



### During Pregnancy or Postpartum:

**Women should go to the hospital if they cannot breathe or have severe shortness of breath because they could have Peripartum Cardiomyopathy (PPCM).**

## Urgent Maternal Mortality Message to Providers

Consider echocardiogram in pregnant or postpartum patients with persistent moderate or severe respiratory symptoms. Initial presentation of PPCM can be mistaken for upper respiratory illnesses. Pregnancy Associated Mortality Review (PAMR) findings.

### Florida PAMR Findings:

**1999–2012:** 11.1% of pregnancy-related deaths in Florida were due to cardiomyopathy.<sup>1</sup>

**1999–2011:** 78% of pregnancy-related **deaths occurred** during the **postpartum** period.<sup>2</sup>

#### From 2009–2013:

- The percent of pregnancy-related deaths due to cardiomyopathy for non-Hispanic black women was 55% versus 25% for non-Hispanic white women.
- 80% of women who died from pregnancy-related cardiomyopathy were either overweight or obese (BMI > 25).<sup>3</sup>

### Providers:

**Peripartum cardiomyopathy is the development of heart failure in the last month of pregnancy or within 5 months postpartum in the absence of prior heart failure with no identifiable cause and echocardiogram indicative of left ventricular (LV) dysfunction.<sup>4</sup>**

### SIGNS/SYMPTOMS—ONSET CAN BE EASILY MISSED<sup>5</sup>

- Marked limitation of physical activity. Comfortable at rest. Less than ordinary activity causes **fatigue, palpitation or dyspnea**<sup>6</sup>
- Unable to carry on any physical activity without discomfort, symptoms of heart failure at rest; if any physical activity is undertaken, discomfort increases<sup>6</sup>
- Arrhythmia/Cardiac Arrest
- Women with PPCM most commonly have dyspnea, dizziness, chest pain, cough, neck vein distention, fatigue and peripheral edema<sup>5</sup>

### PPCM CRITERIA

- Idiopathic (no other cause) heart failure characterized by left ventricular (LV) systolic dysfunction
- At the end of pregnancy or during the postpartum period (spectrum of timing)
- Diagnosis of exclusion
- Ejection fraction (EF) generally below 45%
- Left ventricular (LV) dilation not required

### RISK FACTORS<sup>7,3</sup>

**Social:** Advanced maternal age, smoking, malnutrition, African American race

**Medical:** Hypertension, Diabetes, family history, sleep apnea, obesity

**Obstetric:** Gravidity and parity, number of children, labor inducing medications, multiple gestation, family history

*continued*

### For more information, contact:

**Angela Thompson, RN, BSN**  
Maternal and Child Health  
Florida Department of Health

**Angela.Thompson@flhealth.gov**  
**(850) 558-9686**



# Urgent Maternal Mortality Message to Providers

27/5;=A7A

- Early diagnosis is essential—watch for early signs and symptoms and a decline in function
- Echocardiogram, the primary diagnostic test, to identify left ventricular systolic dysfunction<sup>4</sup>
- Differential Diagnosis: myocardial infarction, amniotic fluid embolism, severe preeclampsia, pericarditis, pulmonary thromboembolism, myocarditis, sepsis, drug toxicity, metabolic disorders, and aortic dissection<sup>8</sup>
- When a postpartum patient presents with a cough and shortness of breath a careful physical examination should follow. If hypoxemia is identified or risk factors raise suspicion an echocardiogram should be considered

## PAMR Recommendations (2015):

**Importance of identifying barriers for participation in treatment for non-compliant patients.**

### MANAGEMENT

- Similar to standard treatment for other forms of heart failure
- Avoid routine use of ACE-inhibitors or angiotensin receptor blockers (ARBs) during pregnancy

- Collaboration between cardiologists, obstetricians, perinatologists, neonatologists and anesthesiologists is essential
- Consider transfer to high risk perinatal center and potential for early delivery

## PAMR Recommendations (2015):

**Important to provide preconception and interconception care for patients with co-morbidities.**

### DISCHARGE

- Ensure follow-up appointment in one week and consider more frequent follow-up care if history of cardiac symptoms.
- Patient and family should be counseled to return immediately to emergency room or L&D triage if showing any signs or symptoms
- Educate on the importance of long-acting reversible contraceptives (LARCs), interconception care and risks of future pregnancies

1. Florida Department of Health. Pregnancy-Associated Mortality Review 2013 Update. [http://www.floridahealth.gov/%5C/statistics-and-data/PAMR/\\_documents/2013-pamr-update-092215.pdf](http://www.floridahealth.gov/%5C/statistics-and-data/PAMR/_documents/2013-pamr-update-092215.pdf)

2. Florida Department of Health. Pregnancy-Associated Mortality Review. Pregnancy-Related Deaths during the Postpartum Period, 1999-2011. <http://www.floridahealth.gov/%5C/statistics-and-data/PAMR/pamr-1999-2011-ppbrief.pdf>

3. Florida Department of Health, Florida Pregnancy-Associated Mortality Review (PAMR) data. Deaths due to cardiomyopathy 2009-2013 data request.

4. Pearson, G., Veille, J., Rahimtoola, S., Hsia, J., Oakley, C., Hosenpud, J., Ansari, A., & Baughman, K. <http://jama.jamanetwork.com/article.aspx?articleid=192436>

5. Johnson-Coyle [http://ajcc.aacnjournals.org/mwg-internal/de5fs23hu73ds/progress?id=f1ct96lIXoZGGx9N5f8tYe6\\_VEGwXp15l508ou9A64,&dl](http://ajcc.aacnjournals.org/mwg-internal/de5fs23hu73ds/progress?id=f1ct96lIXoZGGx9N5f8tYe6_VEGwXp15l508ou9A64,&dl)

6. American Heart Association. Classes of Heart Failure. [http://www.heart.org/HEARTORG/Conditions/HeartFailure/AboutHeartFailure/Classes-of-Heart-Failure\\_UCM\\_306328\\_Article.jsp#Vw\\_tzv5lhr4](http://www.heart.org/HEARTORG/Conditions/HeartFailure/AboutHeartFailure/Classes-of-Heart-Failure_UCM_306328_Article.jsp#Vw_tzv5lhr4)

7. Sliwa, K., Hilfiker-Kleiner, D., Petrie, MC, Mebazaa, A., Pieske, B., Buchmann, E., McMurray, JJ. (2010). Current state of knowledge on aetiology, diagnosis, management, and therapy of peripartum cardiomyopathy: a position statement from the Heart Failure Association of the European Society of Cardiology Working Group on peripartum cardiomyopathy. *European Journal of Heart Failure*, 12, 767-778. DOI: 10.1093/eurjhf/hfq120

8. Peripartum Cardiomyopathy. Okeke, T., Ezenyeaku, C., Ikeako, L. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3793431/>





## 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.<sup>1</sup>

### 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.<sup>2</sup> 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.<sup>3</sup>

### 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.<sup>4</sup>

### For more information, contact:

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(850) 558-9686





## PAMR Recommendations:

Follow the National Partnership for Maternal Safety, Patient Safety Tool, Maternal Early Warning System (MEWS) Protocol.<sup>5</sup> 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.<sup>1</sup>

### 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.<sup>6</sup>
- 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			
<b>Any combination of the following: Maternal agitation, confusion, or unresponsiveness</b>				
<b>Patient with hypertension reporting a non-remitting headache or shortness of breath</b>				
<b>Patient complaining of constant, systemic, and severe musculoskeletal pain</b>				
<b>Red = any 1 red, requires immediate action, call provider immediately to come for bedside evaluation</b>	<b>Orange = any 1 orange, should be reassessed and confirmed prior to calling the provider within 10 minutes</b>		<b>Yellow = any 2 yellow, should be reassessed and confirmed prior to calling the provider within 10 minutes</b>	

1. Florida Department of Health. Pregnancy Associated Mortality Review. 2015 Update. [www.floridahealth.gov/statistics-and-data/PAMR/pamr-2015-update.pdf](http://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](http://journals.lww.com/greenjournal/Abstract/2014/10000/The_Maternal_Early_Warning_Criteria__A_Proposal.19.aspx)

3. Shields LE, Weisner S, Klecin 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](http://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](http://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](http://www.acog.org/-/media/Districts/District-11/Public/SMI/v2/MaternalEarlyWarningSystem.pdf?dmc=1&ts=20170920T1849416299)