RESPONSE DOCUMENTS

The Response section documents include facility wide standard protocols with checklists and escalation policies for management and treatment of severe hypertension, eclampsia, postpartum severe hypertension, and timeliness of follow up after discharge from the postpartum unit.

- Risk Appropriate Care Considerations for Intrapartum Inpatient Settings
  https://www.in.gov/health/laboroflove/files/Risk-Appropriate-Care-Considerations-for-Intrapartum-Inpatient-Settings.pdf
- Risk Appropriate Care Considerations for Post-Discharge and Outpatient Settings
  https://www.in.gov/health/laboroflove/files/Risk-Appropriate-Care-Considerations-for-Post-Discharge-and-Outpatient-Settings.pdf
- Nursing Acuity Assessment
  https://www.in.gov/health/laboroflove/files/Nursing-Acuity-Assessment.pdf
- Management of Pregnant/Postpartum Patients in the ED
  https://www.in.gov/health/laboroflove/files/Management-of-Pregnant-Patient-in-ED.pdf
- Postpartum Preeclampsia Checklist
  https://www.in.gov/health/laboroflove/files/Postpartum-Preeclampsia-Checklist.pdf
- CMQCC Eclampsia Algorithm
  https://www.in.gov/health/laboroflove/files/CMQCC_ECLAMPSIA_ALGORITHM.pdf
- Hypertension Pre-Transport Checklist
  https://www.in.gov/health/laboroflove/files/Hypertension-PreTransport-Checklist.pdf
- Maternal-Fetal GO-No-Go Transport Algorithm
  https://www.in.gov/health/laboroflove/files/Maternal-Fetal-Go-No-Go-Transport-Algorithm.pdf
- Sample Medication Toolbox (CMQCC)
  https://www.in.gov/health/laboroflove/files/Sample-Medication-Toolbox-CMQCC.pdf
- Badge Buddy Labor and Delivery
  https://www.in.gov/health/laboroflove/files/Badge-Buddy-Labor-and-Delivery.pdf
- Badge Buddy Postpartum
  https://www.in.gov/health/laboroflove/files/Badge-Buddy-Postpartum.pdf
- ENA – AWHONN Consensus Statement on Emergency Care for Patients during Pregnancy and Postpartum
  https://www.in.gov/health/laboroflove/files/ENA-AWHONN-Consensus-Statement-Final-11.1.2020.pdf

INDIANA PERINATAL QUALITY IMPROVEMENT COLLABORATIVE [IPQIC]

SEVERE HYPERTENSION IN PREGNANCY: RISK APPROPRIATE CARE CONSIDERATIONS FOR INTRAPARTUM INPATIENT SETTINGS

Utilize each ZONE as a PROACTIVE way to prepare for the potential need to increase the perinatal level of care in any part of the ongoing assessment and monitoring of the maternal-fetal dyad.

GREEN ZONE

1. Maternal stabilization achieved
2. Fetal gestational age appropriate for perinatal level of care
3. Nurse: patient staffing ratios appropriate for high acuity patient
4. All maternal and fetal resuscitation equipment and supplies are available and ready

Action Items:

1. **Ongoing monitoring for worsening maternal or fetal status**
2. **Review nurse acuity assessment**
3. **Assessment for antenatal corticosteroids**

YELLOW ZONE

1. Signs/symptoms of maternal status worsening
2. Fetal gestational age appropriate for level of care based on best knowledge of EGA
3. Nurse: patient ratio not optimal but plan is in place for adequate ratios to be achieved
4. Stabilization equipment and supplies are readily available, but depending on fetal EGA the ability to continue care post-delivery may not be available

Action Items:

1. **Consults for maternal and/or fetal status in place if needed**
2. **Review nurse acuity assessment**
3. **Review pre-transport checklist**
4. **Evaluate availability and adequacy of resuscitation equipment and supplies**

RED ZONE

1. Maternal status requires higher level of care
2. Fetal gestational age not appropriate for level of care
3. Nurse: patient staffing ratios cannot be achieved to accommodate the care of maternal-fetal dyad
4. Necessary maternal and/or fetal resuscitation equipment and supplies are not available beyond those of initial stabilization

Action items:

1. **Review nurse acuity assessment**
2. **Review transport checklist &arrange for transport to higher level of care appropriate to the maternal-fetal status**
3. **Ensure stabilization of both mom and baby prior to transport (this may be post-delivery in**

Perinatal Level of Care

Ongoing Assessment for appropriate level of care

Perinatal Level of Care

SEVERE HYPERTENSION IN PREGNANCY: RISK APPRPRIATE CARE CONSIDERATIONS FOR POST-DISCHARGE AND OUTPATIENT SETTINGS

Postpartum Triggers:

SBP ≥ 160 or DBP ≥ 110 or

SBP ≥ 140-159 or DBP ≥ 90-109 with unremitting headaches, visual disturbances or epigastric/RUQ pain

***AntiHTN therapy suggested if persistent **SBP ≥ 150** or **DBP ≥ 100** on at least two occasions at least 4 hours apart

***Persistent **SBP ≥ 160** or **DBP ≥ 110** should be treated within 1 hour

GREEN ZONE

1. Good maternal response to treatment and asymptomatic
2. Staffing
3. Consider facility readiness
    - Monitoring capabilities
    - Access to medications
    - Equipment and supplies
    - Time and distance to travel

Action Items:

1. **Review nurse acuity assessment**
2. **Plan for admission to hospital for further observation and management**
3. **Review pre-hospitalization checklist**

YELLOW ZONE

1. Maternal response equivocal and signs & symptoms present
2. Staffing
3. Consider facility readiness
    - Monitoring capabilities
    - Access to medications
    - Equipment and supplies
    -

Action Items:

1. **Review nurse acuity assessment**
2. **Consult specialist (OB, MFM, internal med, critical care)**
3. **Plan for admission to hospital for further observation and management**
4. **Review pre-hospitalization checklist**
5. **Review pre-transport checklist**

RED ZONE

1. Maternal response inadequate and/or recurrent and severe signs & symptoms are present
2. Staffing
3. Consider facility readiness
    - Monitoring capabilities
    - Access to medications
    - Equipment and supplies

Action Items:

1. **Review nurse acuity assessment**
2. **Consult specialist (OB, MFM, internal med, critical care)**
3. **Review pre-transport checklist**
4. **Arrange transport to hospital with appropriate level of care**
5. **Review pre-hospitalization checklist**

Nursing Acuity Assessment

Assess: Daily weights, medication schedule, physical assessment, mental status, B/P and trends, and hourly intake and output

GREEN ZONE: All Clear	**S/S and Labs**	**ACTION**
• Patient is thinking clearly • Patient is seeing clearly • Patient is breathing clearly 	• No headache • Not dizzy • Can do usual activities • No pain in belly or pelvis • Baby is moving normally • Urinating 50 ml or more per hour • Plt >100, AST up to twice upper limit of normal value, creatinine less than 1.1	**Green Zone: Patient is doing well** • Patient plan of care is working • Administer hypertensive agent as prescribed • Follow doctors' orders

YELLOW ZONE: Caution	**S/S and Labs**	**YELLOW ZONE: WARNING, INCREASE SURVELLIANCE**
• Patient is not thinking clearly • Patient has blurry or impaired vision • Patient is not breathing clearly • Patient has a mild HA • Patient feels dizzy • Patient is abnormally drowsy	• Patient is anxious or upset • Altered mental status • Patient has nausea and vomiting • Patient has chest, belly, or pelvic pain • Urinating less than 30-49 ml per hour • Plt 50-100, AST> twice upper limit of normal • Creatinine 1.1 or greater; or more than twice the serum creatinine in the absence of renal disease • BP 140/90-159/109; Heart rate is 111-129 • Category II Fetal tracing	• Perform physical assessment • Monitor B/P and HR per policy • Contact charge nurse, primary doctor, anesthesia, and newborn resuscitation team 

RED ZONE: IMMEDIATE ATTENTION	**S/S and Labs**	**RED ZONE: EMERGENCY, GET HELP! CALL RAPID RESPONSE**
• Patient unresponsive • Ongoing, unrelieved headache • Temporary blindness • Decrease in respiration (<12) 	• Ongoing nausea and vomiting • Patient has chest, abdominal, or pelvic pain • Urinating less than 30ml in 2 hours • Plt <50, AST to twice upper limit of normal and creatinine >1.1 or more than twice serum Creatinine Blood pressure • SBP≥160 or DBP≥ 110 (Hypertensive Emergency State if B/P remains elevated for 15 minutes • Depressed patellar reflexes • Category III Fetal tracing	• Evaluate patient immediately • 1:1 ratio; Mag Sulfate infusion • Consider Neurology consult, CT Scan to R/O intracranial hemorrhage • Initiate HTN medication panel in 30 minutes • Apply Supplemental O2 w/ nonrebreather • R/O Pulmonary edema • Contact charge RN, primary doctor, anesthesia, newborn resuscitation team immediately

Management of Pregnant/Postpartum Patients in the ED

Patient of Childbearing Age arrives to ED
(Age 15-55)

ASK:
- *Are you currently pregnant?*
- *Have you had a baby in the last 6 months?*

Pregnant? — *Yes* → Follow **ED Pregnancy Management** algorithm in ED

Postpartum? — *Yes* →
- Triage Priority
- Consult OB RN
- Assess for **Maternal Warning Signs** for
  - *Severe HTN Emergency*
  - *Postpartum Hemorrhage*
  - *Maternal Sepsis*
  - *Venous Thromboembolism*

Follow **ED Pregnancy Management** algorithm in ED → Patient is **Critical, Unstable**, or **Triage 1 or 2 (ED terms)**

No → *GESTATION ≥ 16 Weeks?

Yes → **ED Nurse CALL** OB RN for OB/ED Triage → **Is Patient HIGH RISK?** *See criteria at right*

No → **ED REGULAR CARE** for the pregnant patient

Yes → **ED CARE for the HIGH-RISK pregnant or postpartum patient**

- **TRIAGE** patient as **2** or **1**
- **MOVE** patient to treatment room immediately
- **NOTIFY** ED physician and OB RN

ED Physician
- **SEE** patient ASAP
- **INITIATE the OB CONSULT PROCESS with the MFM, OB-GYN , or OB provider on call**
  - Time Target: 30 minutes

OB Nurse
- **ASSESS** fetal HR
- **MONITOR** patients ≥ 23 weeks gestation

ED REGULAR CARE
for the pregnant patient

All ED/OB staff:
- **ENSURE** that the OB Charge RN has been consulted for every case ≥ 16 weeks gestation*
  - OB Charge RN should be notified of all pregnant patients arriving in the ED.

  Provide patient education and enroll patients in the Maternal Newborn Navigator program. If not available, contact Mom's Help Line (1-844-624-6667) or Indiana 211.
- **DOCUMENT** (OB RN) presence of fetal HR for patients <23 weeks gestation. Evaluate and treat as appropriate
- **USE** Fetal monitor by OB RN for patients ≥ 23 weeks gestation
- **CONSULT** MFM/OB-GYN on call after OB/ED MSE

HIGH RISK CRITERIA

- ☐ Critical, unstable, or Triage 1 or 2
- ☐ Abdominal pain (e.g., upper right quadrant pain) or trauma (as from falls, domestic violence)
- ☐ Injury from MVA
- ☐ Uterine contractions or abdominal cramping
- ☐ Decreased Fetal Movement
- ☐ Advanced cervical dilation or ruptured membranes
- ☐ Vaginal bleeding
- ☐ HTN >135/85 (esp. with headaches or visual changes)
- ☐ Other serious medical conditions e.g., sepsis, seizure, hypotension, respiratory difficulty

*Gestational Age may differ based on facility

Adapted with permission from IU Jay Hospital

EMERGENCY DEPARTMENT

POSTPARTUM PREECLAMPSIA CHECKLIST

If patient < 6 months postpartum with:

- BP ≥ 160/110 or
- BP ≥ 140/90 with unremitting headache, visual disturbances, epigastric pain

- ☐ Call for assistance
- ☐ Designate:
  - Team leader
  - Checklist reader/recorder
  - Primary RN
- ☐ Ensure side rails up
- ☐ Call obstetric consult: Document call
- ☐ Place IV; Draw preeclampsia labs
  - CBC
  - PT
  - PTT
  - Fibrinogen
  - Chemistry Panel
  - Uric Acid
  - Hepatic Function
  - Type and Screen
- ☐ Ensure medications appropriate given patient history
- ☐ Administer seizure prophylaxis
- ☐ Administer antihypertensive therapy
  - Contact MFM or Critical Care for refractory blood pressure
- ☐ Consider indwelling urinary catheter – Maintain strict I & O, patient at risk for pulmonary edema
- ☐ Brain imaging if unremitting headache or neurological symptoms

*Active Asthma is defined as:

- Symptoms at least once a week, or
- Use of an inhaler, corticosteroids for asthma during the pregnancy, or
- Any history of intubation or hospitalization for asthma

Medications listed here are safe for breastfeeding/lactation

Adapted from ACOG Safe Motherhood Initiative

Magnesium Sulfate

Contraindications: Myasthenia gravis: avoid with pulmonary edema, use caution with renal failure

Magnesium toxicity treatment: Calcium gluconate: Medication should be administered intravenously or by infusion.

IV access: Always infuse Magnesium Sulfate with Lactated Ringers. The total infusion rate for Magnesium Sulfate and Lactated Ringer should be no greater than 125ml/hr. If other medications are infusing, modifications to the LR rate must maintain a total infusion rate of 125ml/hr.

- ☐ Load 4-6 grams 10% magnesium sulfate in 100 mL solution over 20 minutes
- ☐ Label magnesium sulfate; connect to labeled infusion pump
- ☐ Magnesium sulfate maintenance 1-2 grams/hour

NO IV access:

- ☐ 10 grams of 50% solution IM (5g in each buttock

Antihypertensive Medications

For SBP ≥ 160 or DBP ≥ 110 (*See SMI algorithms for complete management when necessary to move to another agent after 2 doses)*

- ☐ Labetalol (initial dose: 20mg) Avoid *parenteral labetalol with active asthma*, heart disease, or congestive heart failure; use with caution with history of asthma*
- ☐ Hydralazine (5-10 mg IV** over 2 minutes): May increase risk of maternal hypotension
- ☐ Oral Nifedipine (10 mg capsules); Capsules should be administered orally, not punctured or otherwise administered sublingually

** *Maximum cumulative IV-administered doses should not exceed 300 mg labetalol or 25 mg hydralazine in 24 hours*

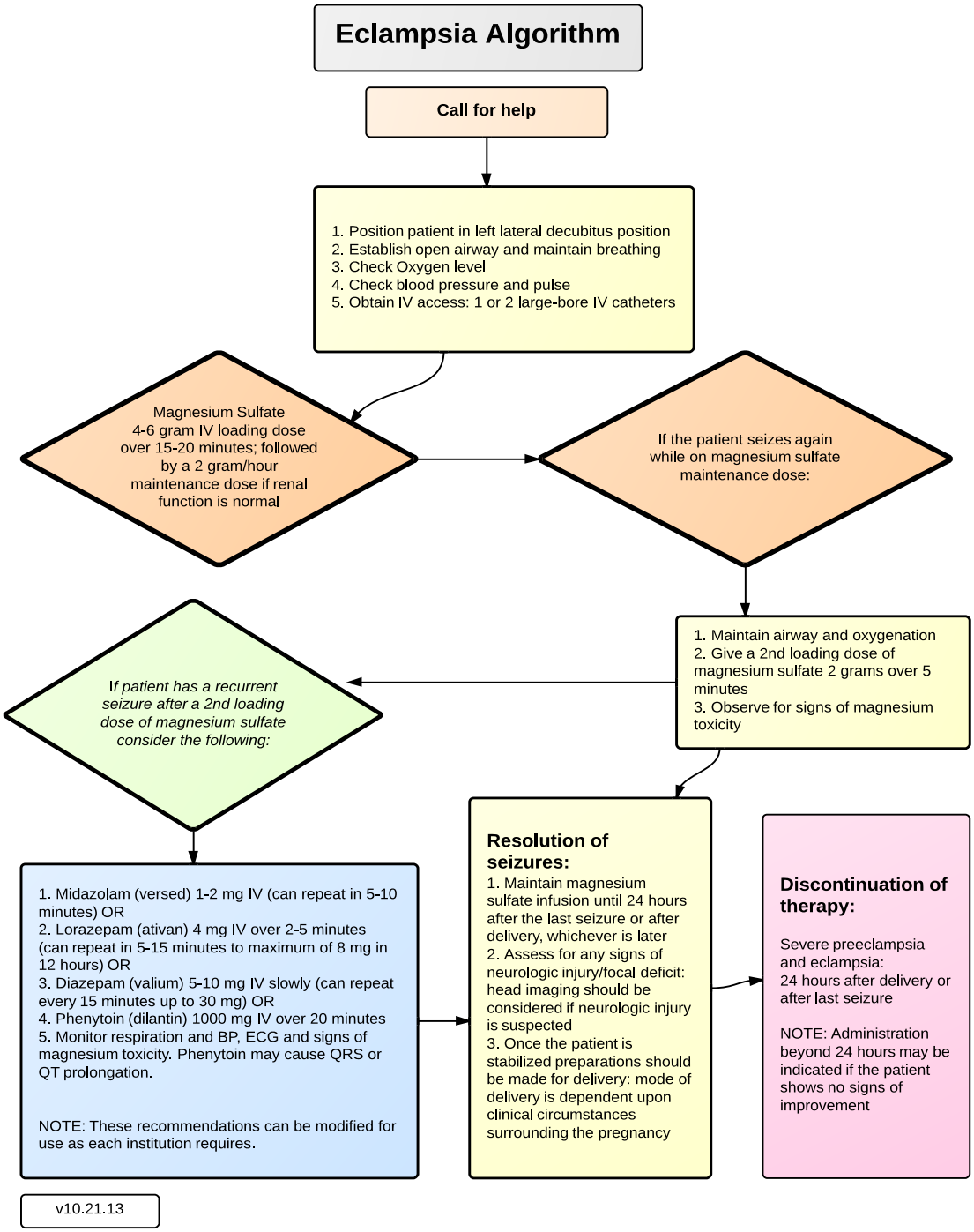
Note: *If first line agents unsuccessful, emergency consult with specialist (MFM, internal medicine, OB anesthesiology, critical care) is recommended.*

Anticonvulsant Medications

For recurrent seizures or when magnesium sulfate contraindicated

- ☐ Lorazepam (Ativan): 2-4 mg IV x 1, may repeat once after 10-15 minutes
- ☐ Diazepam (Valium): 5-10 mg IV q 5-10 minutes to maximum dose 30 mg

APPENDIX E: ECLAMPSIA ALGORITHM



Hypertension Specific Pre-Transport Checklist

Patient MUST BE STABLE for Transport

Maternal Stability Criteria	**Fetal Stability Criteria**
Blood Pressure Stabilized: BP <160 systolic and <110 diastolic	Category I Tracing OR Category II Tracing with moderate variability, intermittent decelerations, AND not worsening (Fetus(es) <32 weeks may exhibit FHR tracings displaying CNS immaturity)
Pulse Rate ≤120 and ≥40	
No active seizure activity	
No Active Vaginal Bleeding	
No Acute Psychiatric Episode	***If fetus unstable, arrange NICU transport and prepare for delivery at your facility***
Cervical Dilation ≤5 cm*	
Refer to Maternal Fetal Transport Go/No-Go Algorithm for guidance as needed	

Initiate Transport and Prepare Patient

- ☐ IV Access Established

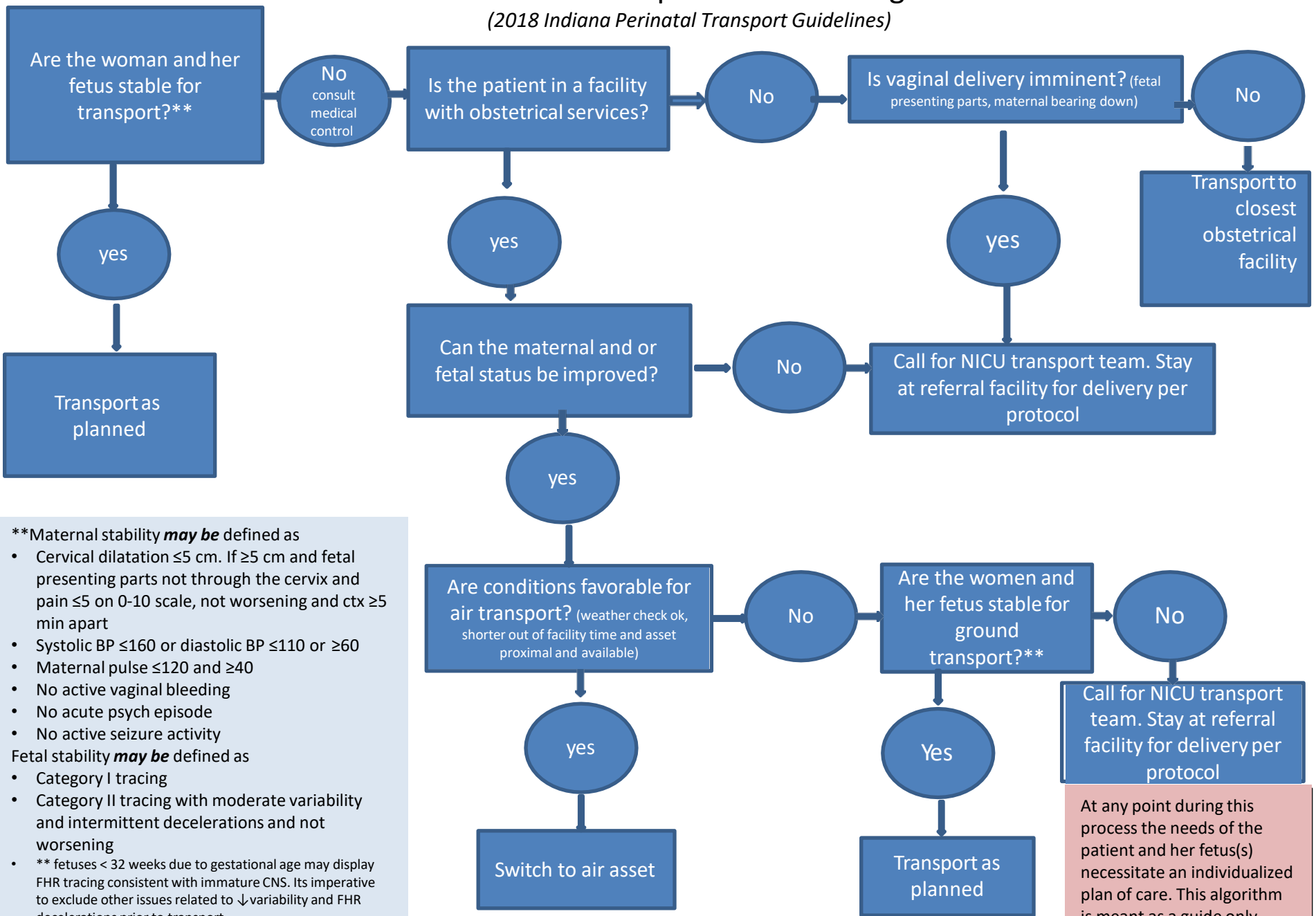
  Start Second IV site (if time allows/ do not delay transport if unable to obtain second line)
- ☐ Baseline Labs Drawn/Sent (do not delay transport for results)
- ☐ Magnesium Infusion Started (if not contraindicated)

  Frequent reassessment while awaiting transport
- ☐ Consider Foley Catheter Placement as needed
- ☐ Dependent on Gestational Age:

  Consider/Administer steroids for fetal lung maturity as needed
- ☐ Prepare Chart for Transport complete with medication administration record

Maternal Fetal Transport Go-No Go Algorithm

(2018 Indiana Perinatal Transport Guidelines)



Maternal stability ***may be* defined as

- Cervical dilatation ≤5 cm. If ≥5 cm and fetal presenting parts not through the cervix and pain ≤5 on 0-10 scale, not worsening and ctx ≥5 min apart
- Systolic BP ≤160 or diastolic BP ≤110 or ≥60
- Maternal pulse ≤120 and ≥40
- No active vaginal bleeding
- No acute psych episode
- No active seizure activity

Fetal stability ***may be*** defined as

- Category I tracing
- Category II tracing with moderate variability and intermittent decelerations and not worsening
- ** fetuses < 32 weeks due to gestational age may display FHR tracing consistent with immature CNS. Its imperative to exclude other issues related to ↓variability and FHR decelerations prior to transport

At any point during this process the needs of the patient and her fetus(s) necessitate an individualized plan of care. This algorithm is meant as a guide only.

SAMPLE PREECLAMPSIA/ECLAMPSIA MEDICATION TOOLBOX LIST

Each institution should prepare its own medication toolbox specific to its protocols.

L&D Severe Preeclampsia & Eclampsia Box – Content and Dose Guideline	
Magnesium 20 grams/500 ml bag	**<u>IV (Use Magnesium Sulfate Continuous Infusion under L&D protocol in Alaris Pump Library):</u>** *Initial (Loading Dose):* 4-6 g (100 ml – 150 ml) over 20 minutes *Maintenance Dose:* 1-2 g/hour (25 ml/hr – 50 ml/hr) continuous infusion
Labetalol 100mg/20ml vial	***Initial: Draw 4 ml from the vial.*** **20 mg (4 ml)** IV bolus followed by **40 mg (8 ml)** if not effective within 10 minutes; then **80 mg (16 ml)** every 10 minutes (maximum total dose of 300 mg/60ml)
Hydralazine 20mg/ml vial	***Initial: Draw 0.25 ml from the vial.*** **5-10 mg (0.25-0.5 ml)** doses IV every 15-20 minutes
Esmolol 100mg/10ml vial **(By Anesthesiologists ONLY) ***	**1-2 mg/kg (0.1-0.2 ml/kg)** IV over 1 minute
Propofol 10mg/ml, 20ml vial **(By Anesthesiologists ONLY) ***	**30-40 mg (3-4 ml)** IV bolus
Calcium gluconate 1000 mg/10ml vial	1000 mg/10 ml IV over 2-5 minutes
Labetalol 200 mg tablets	200 mg PO and repeated in 30 minutes if needed
Nifedipine 10 mg PO	10 mg PO and repeated in 30 minutes if needed
Supply contents	3 ml, 10 ml, and 20 ml syringes, appropriate needles and appropriate tubing sets

Kindly used with permission of Stanford University Medical Center and Gillian Hilton, MD 2013

*Indiana note: Each facility should identify where anesthesia supplies are housed. The medicines can only be administered by an anesthesiologist or nurse anesthetist.

Antihypertensive agents in Preeclampsia

Treated sustained SBP>160 and/or dbp> 110 (sustained = BP confirmed > 15 minutes)

*Labetalol: effects seen within 1 – 2 minutes
(max. effect 5 – 10 minutes)

- Give 20 mg IV slow IVP, repeat BP 10 minutes
- If BP > 160/110, give 40 mg IV slow IVP, repeat in 10 minutes
- If BP > 160/110, give 80 mg IV slow IVP and repeat BP in 10 minutes (up to total 3 doses every 10 minutes)

Maximum IV dose Labetalol= 300 mg in 24 hours

Patient must be on continuous pulse ox. for minimum 1 hour after IV Labetalol

Hydralazine: Effects seen within 5 – 50 minutes (maximum effects 20 – 30 minutes)

- Give 5 – 10 mg IV slow IVP q 20 minutes

Maximum IV DOSE Hydralazine = 25 mg in 24 hours

*Nifedpine: effects seen within 10 minutes (max. effects 60 minutes)

- 10 mg PO every 20 minutes (option if patient has no IV access)

Maximum 60 mg PO

If no response to initial agent → switch agents!

Treatment of Eclampsia

CALL FOR HELP

Call for HELP, turn patient to a lateral position, establish IV access, monitor vitals & 02 Sat, maintain airway, administer 02 and suction prn

Magnesium Sulfate

- **If not on magnesium, run loading dose 4 – 6 g IV over 20 minutes and then 2 g per hour maintenance** (if normal renal function)
- **Monitor for signs of magnesium toxicity**

Monitor Symptoms

- If current seizures after magnesium, consider:
  - Lorazepam 1 mg every 1 minute (max 8 mg)
  - Midazolam 1 – 2 mg IV every 5 – 10 minutes (max. 5 mg), or
  - Phenytoin 1,000 mg over 20 minutes
- Monitor for vital signs and observe for evidence of neurological injury or focal deficit
- Prepare for delivery as indicated
- Continue magnesium for 24 hours after last seizure or delivery, whichever is later

Antihypertensive agents in Preeclampsia

Treated sustained SBP>160 and/or dbp> 110 (sustained = BP confirmed > 15 minutes)
*Labetalol: effects seen within 1 – 2 minutes (max. effect 5 – 10 minutes) • Give 20 mg IV slow IVP, repeat BP 10 minutes • If BP > 160/110, give 40 mg IV slow IVP, repeat in 10 minutes • If BP > 160/110, give 80 mg IV slow IVP and repeat BP in 10 minutes (up to total 3 doses every 10 minutes) Maximum IV dose Labetalol= 300 mg in 24 hours Patient must be on continuous pulse ox. for minimum 1 hour after IV Labetalol
*Hydralazine: Effects seen within 5 – 50 minutes (maximum effects 20 – 30 minutes) • Give 5 – 10 mg IV slow IVP q 20 minutes Maximum IV DOSE Hydralazine = 25 mg in 24 hours
*Procardia: effects seen within 10 minutes (max. effects 60 minutes) • 10 mg PO every 20 minutes (option if patient has no IV access) Maximum 60 mg PO If no response to initial agent → switch agents! ©Franciscan Health

After PRN medication
Blood Pressure Cycles
Every 10 minutes x 1 hour Every 15 minutes x 1 hour Every 30 minutes x 1 hour Every 4 hours *****A scheduled medication is not an acceptable PRN medication*****
Blood Pressure Ranges
Postpartum patient: SBP > 150 mmHg OR DBP > 100 mmHg Severe Range: ≥ 160 mmHg **and/or** ≥ 110 mmHg
When does a Medication dose considered effective?
Medication is effective after the **first hour** of blood pressures if they fall under call orders. After the **first hour** after a medication has been given: the blood pressure spikes → give medication that was effective ©Franciscan Health

EMERGENCY NURSES ASSOCIATION

AWHONN
PROMOTING THE HEALTH OF WOMEN AND NEWBORNS

Consensus Statement

ENA | 930 E. Woodfield Road, Schaumburg, IL 60173 | 800.900.9659 | ena.org
AWHONN | 1800 M Street, NW, Suite 740S, Washington, DC 20036 | 800.673.8499 | awhonn.org

Emergency Care for Patients During Pregnancy and the Postpartum Period: Emergency Nurses Association and Association of Women's Health, Obstetric and Neonatal Nurses Consensus Statement

Description

During pregnancy and the postpartum period, it is common for patients to present to emergency settings for emergent and non-emergent care (Kilfoyle et al., 2017). The overall number of these patients triaged in any setting exceeds the hospital birth volume by 20% to 50% (Association of Women's Health, Obstetric and Neonatal Nurses [AWHONN], 2011). When pregnant or postpartum patients present to emergency settings, risk assessment, evaluation for early warning signs of maternal and fetal compromise, followed by timely communication and coordination with obstetric clinicians are essential.

A pregnant patient may access the health care system before establishing prenatal care to determine pregnancy status or to seek treatment for early complications in pregnancy, such as excessive nausea and vomiting, threatened or incomplete spontaneous abortion, or symptoms of ectopic pregnancy. After prenatal care has been established, a pregnant patient may be assessed in an emergency setting for non-obstetric conditions (e.g., appendicitis, cholecystitis) or obstetric complications (e.g., severe hypertension/preeclampsia, shortness of breath, vaginal bleeding, acute abdominal pain, and decreased fetal movement (American College of Obstetricians and Gynecologists [ACOG], 2016). If the hospital does not have an obstetric service, the patient may be evaluated for complaints associated with labor, such as uterine contractions or loss of amniotic fluid. Critical conditions (e.g., trauma, seizures, abruptio placentae, or hemorrhage) may result in maternal and fetal compromise and demand emergent triage and intervention. In the postpartum period, 5% to 12% of patients present to an emergency setting within 6 weeks of giving birth (Batra et al., 2017; Brousseau et al., 2018; Clark et al., 2010; Patel et al., 2020). Complications, including infection, excessive vaginal bleeding, shortness of breath, hypertension, or depression, may cause the patient to reenter the hospital through the emergency system during this period.

Other factors that influence emergency care during pregnancy and the postpartum period are access to care, preferred language, immigration, and insurance status (Wolf et al., in press). In recent years, various factors have reduced access to obstetric care, including closures of rural hospitals, elimination or transfer of obstetric care services, and the lack of available obstetric clinicians. Between 2004 and 2014, the percentage of rural counties in the United States with obstetric services decreased from 55% to 46% (Kozhimannil et al., 2018). In addition, one half of all U.S. counties lack access to obstetric and gynecologic care clinicians (ACOG, 2014). One resulting outcome is a significant increase in out-of-hospital births and births in non-delivering hospitals (Kozhimannil et al, 2018). In addition, the lack of obstetric clinicians and services may force pregnant patients to travel longer distances to access care or to seek care in emergency settings. A preferred language other than English and the

lack of private insurance also increases the likelihood of non-urgent emergency department use during pregnancy (Kilfoyle et al, 2017).

Care of a pregnant or postpartum patient necessitates specialized education, training, and competencies that are not routinely acquired by emergency nurses. Physiologic and anatomical changes in pregnancy result in altered norms for assessment of laboratory values, electrocardiogram changes, symptom morphology, radiologic examinations, and early warning signs of compromise. In addition, there are pregnancy related disease processes that can result in critical illness and/or instability for the patient and/or fetus. Awareness of these changes, early collaboration with obstetric clinicians, and rapid use of standardized emergency protocols to stabilize the patient and fetus are essential (Mhyre et al., 2014).

ENA and AWHONN Consensus Statements

It is the consensus of the Emergency Nurses Association (ENA) and the Association of Women's Health, Obstetric, and Neonatal Nurses (AWHONN) that the following standards should be achieved in emergency services:

1. Perinatal and emergency nurses collaborate to assess staff to determine clinical competency in emergent care of the pregnant or postpartum patient.

2. Emergency nurses recognize the possibility that a woman of reproductive age, regardless of presenting symptoms, may be pregnant or may have been pregnant in the past year.

3. Assessment(s) that establish pregnancy and postpartum status be incorporated into triage intake. Ideally, these assessment data point(s) are integrated into the electronic health record.

4. Education and training provided for emergency and obstetric nurses include common high-risk and life-threatening obstetric presentations, early warning signs of maternal compromise, and protocol management.

5. Access to emergency care for a pregnant or postpartum patient is not denied or delayed based on race or ethnic background, gender identity or expression, sexual orientation, socioeconomic status, language, culture, national origin, religious affiliation, age, disability status, nature of health problem, or ability to pay.

6. Hospital-based policies and procedures are developed in compliance with jurisdictional regulatory agencies and the Emergency Medical Treatment and Active Labor Act (EMTALA) that specify triage, care, and disposition of a patient who is pregnant or in the postpartum period.

7. Hospital bylaws outline clinicians designated as qualified medical providers to perform medical screening examinations.

8. In the absence of an available obstetric clinician, telehealth may be considered to determine the plan of care for a pregnant or postpartum patient.

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9. Hospital-based policies identify gestational age and weeks postpartum to determine timely consultation and/or an appropriate plan of care and disposition of the patient. For example, the policy may include gestational age parameters that indicate whether a patient is evaluated in the emergency room or an obstetric care setting.

10. Emergency, obstetric, and outside hospital emergency response systems collaborate to determine the appropriate environment of care for situations in which an obstetric patient presents, including antenatal, intrapartum, and postpartum settings. These structured guidelines include stabilizing protocols and provisions for early transfer to an appropriate maternal level of care facility as indicated.

11. Stabilizing, emergent care procedures, including radiologic examination, surgery, and/or medication administration are not delayed due to pregnancy or postpartum status, gestational age, or lactation status.

12. Emergency facilities maintain immediate access to equipment, supplies, and medications necessary to properly assist with precipitous birth, resuscitative hysterotomy, and postpartum complications.

13. Responses to obstetric emergencies are practiced and rehearsed by interprofessional teams in the emergency setting.

14. Supportive care, empathy, and education are provided to obstetric patients and family members who have experienced fetal loss.

15. Disaster preparedness plans include care of a patient during pregnancy and the postpartum period.

Background

The statements listed are not intended to be inclusive or imply standard of care. Based on scope of service and the patient population served, each hospital should determine how care is provided in the emergency setting for a woman during pregnancy or in the postpartum period. Health care professionals are expected to be prepared to stabilize and/or treat any type of patient who presents to an emergency setting, including a patient who is pregnant or has recently given birth. These emergent presentations vary in severity, and most causes of obstetric compromise are preceded by early warning signs (Mhyre et al, 2014). Systems and processes within the emergency setting are evaluated and designed to enable early recognition of pregnancy or postpartum status and acute obstetric complications. These processes include expedient consultation and engagement with obstetric clinicians and protocol-driven, stabilizing interventions (ACOG, 2016).

Triage acuity tools used in emergency settings, such as the Emergency Severity Index (Gilboy et al., 2020) and the Canadian Triage and Acuity Scale (Bullard et al., 2017) do not provide in depth surveillance questioning and assessment to address maternal and fetal physiologic needs. The Maternal Fetal Triage Index, developed and validated by AWHONN, is used to assess acuity and to prioritize care using a five-tiered system (Ruhl et al., 2015a, 2015b, 2020; Wolf et al., in press). However, this tool has not been routinely used in non-obstetric settings. Therefore, consideration of acuity assignment, recognition of early warning signs of maternal compromise, and

high-risk prioritization of care are commonly applied during the triage process for patients during pregnancy or the postpartum period.

Scenarios are often enacted in mock drills and simulations to prepare for emergency care of patients. However, obstetric emergencies, such as ectopic pregnancy, precipitous birth, postpartum hemorrhage, hypertensive crisis, postpartum depression/psychosis, cardiac arrest, and resuscitative hysterotomy are rarely rehearsed and can create unsafe and/or chaotic care. Conditions of pregnancy and the postpartum period that can be managed in emergency settings should be planned and practiced.

Evaluation of the fetal heart rate with a Doppler device or ultrasound may confirm fetal life and can be considered in emergency nurse competencies. Electronic fetal monitoring equipment is used to record the fetal heart rate and uterine activity. Use of an electronic fetal monitoring device and interpretation of data requires specialized knowledge and competency to interpret assessment parameters, patterns, and trends (AWHONN, 2018). Therefore, the treatment of a pregnant patient requires early collaboration with obstetric clinicians to determine fetal monitoring needs. As with any intervention, a collaborative plan of care developed between obstetric and emergency clinicians takes into consideration the patient's stability, gestational age of the fetus, clinical diagnosis, and management needs. This collaborative model for a medical screening and treatment can use multiple modalities to occur, including telehealth if supported by hospital policy as a qualified medical provider (Chang et al., 2018).

Pregnancy loss may occur in the emergency department, especially in the absence of clinicians with specialized training or education to support the psychological and emotional needs of the patient and family. Approximately 10% to 20% of all pregnancies end in spontaneous abortion before 20 weeks gestation, which makes this one of the most common pregnancy-related complications (Lariviere-Bastien et al., 2019; MacWilliams et al., 2016). Fetal demise at any gestational age may be associated with physical trauma or maternal compromise. Emergency nurses, in partnership with obstetric colleagues, may acknowledge the death of a fetus or newborn through supportive, understanding, and empathetic approaches. Appropriate education of the patient and family regarding psychological effects, follow-up care, and physical symptoms that may persist after the loss are essential (Lariviere-Bastien et al., 2019).

Training for emergency nurses to recognize pregnancy or postpartum status and identify obstetric conditions that may be managed or initially stabilized in an emergency setting is essential to improve outcomes for the patient and fetus (Kozhimannil et al., 2018). It is also important to recognize that many disaster preparedness plans do not include specific provisions for pregnant patients or those who recently gave birth. To mitigate potentially preventable adverse outcomes, emergency nurses should include the needs of these patients in pre-disaster planning for emergency preparedness (ACOG, 2017). Depending on the facility, this may include care of the mother–infant dyad.

Determination for transfer out of the emergency care setting is based on several considerations. Hospital-specific policies or guidelines may dictate transfer to either an obstetric or non-obstetric unit for care depending on gestational age, maternal condition, and the unit's scope of practice. This is of particular importance as penalties for violations related to obstetric emergencies are steep and occur with some frequency for failure to provide a screening examination (82%), stabilizing treatment (51%), or arranging for appropriate transfer (36%; Terp et al., 2020). Once viability of the fetus is established, optimal care for the pregnant patient is an obstetric unit unless the patient is critically ill or an obstetric intensive care room is not available. If treatment of the patient's condition

is outside the scope of practice for the hospital (e.g., lack of obstetric services, higher maternal acuity, anticipated care needs of the newborn), the patient should be stabilized and transported to a facility with the appropriate level of maternal and/or newborn resources. This approach to risk-appropriate care is best accomplished with a coordinated regionalized system (ACOG & Society for Maternal Fetal Medicine, 2019). Postpartum conditions may be best addressed on an obstetric unit, depending on diagnosis (ACOG, 2016). However, some non-obstetric conditions, such as influenza or varicella, may be best cared for on a non-obstetric unit to limit exposure to other pregnant patients and newborns (ACOG, 2016).

Resources

American College of Emergency Physicians. https://www.acep.org/

American College of Obstetricians and Gynecologists. https://www.acog.org

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