Tele - Obstetrical Emergency Department Protocol

TELE-OB ED

THIS A PILOT OF THE Tele-OB ED PROGRAM

The purpose of the pilot is to troubleshoot the processes and procedures to give optimal patient care.

Your comments, thoughts, and innovation are important to this pilot. Use this QR code to provide feedback at any time.

https://tinyurl.com/3ytd4ueh

This most-up-to-date document and training can be found at our website:

Medical College of Georgia
MCG Center for Telehealth

HOURS OF OPERATION **7AM to 7PM** (7 DAYS A WEEK)

TELE-ER IS 24/7 (The Tele-ER program cannot read NST's, but can be consulted any time for patient needs, including OB patients)

Request a Telemedicine Consult

https://www.augustahealth.org/virtualcare/consult/

Important Contacts
WMCGH IT Problems 706-721-7500 Option 4
Consult Problems — In portal select "report issue"
Stephanie Sharpe, RN, Tele Coordinator 706-446-4920
AirCare Helicopter - 706-721-AIR1

Telemedicine Consults
Emergency Communications Center (ECC)

706-721-5600 Option 1
(Transfers Option 2)

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Tele - Obstetrical Emergency Department Protocol

Note: **All** patients must have a Medical Screening Exam (MSE)

Pregnant or potentially pregnant patient

Generally 14 weeks or greater or up to 6 weeks postpartum

Triage Guidlines

Note: Patients who are unsure of dates or have no prenatal care, are to be considered at least 14 weeks pregnant if they felt baby movements, are showing, or if their funds is at their umbilicus.

RED - Level 1 - EMERGENT

A condition that may include the following but not limited to this list. Any condition that may be life threatening will be assessed immediately and requires continuous nursing care.

- Imminent birth
- Abruption-suspected
- Hemorrhaging
- Acute mental status change, unresponsive (cannot follow verbal commands)
- Signs of uterine rupture
- Seizures
- Severe respiratory distress (apnea, SPO2 < 93%)
- Prolapsed cord
- FHR < 110 for 60 seconds
- No fetal heart rate per Doppler (unless previously diagnosed IUFD)
- Fetal parts visible
- Active maternal bearing down efforts
- Trauma (Evaluate Trauma Injuries First - ATLS Protocol)
- Cardiac compromise
- Diabetic coma
- Abnormal vital signs: report to ER Provider IMMEDIATELY
  - Respirations: apnea
  - OC sat < 93
  - HR < 40 or > 130
- Symptoms (HA, CP, SOB, Edema, Seizure) and Elevated Blood Pressure
  - Systolic B/P: ≥ 160
  - Diastolic B/P ≥ 110

Orange - Level 2 - Urgent

A condition that may include the following but not limited to this list. The patient requires placement in room, and reassessments every 30 minutes.

- Known placenta previa with bleeding and/or labor
- Delivery en route to hospital
- Biophysical Profile (BPP) < 6
- Severe pain not related to contractions
- Unstable high-risk medical conditions
- Stable trauma/transfer already evaluated in the ED
- < 34 weeks with c/o detectable contraction or ruptured membranes
- ≥ 34 weeks with regular contractions or SROM with any of the following:
  - HIV+
  - Breech or other malpresentation
  - Multiple gestation
  - Planned medically indicated cesarean delivery (maternal or fetal reasons)
- Decreased fetal movement
- Difficulty breathing
- Altered mental status, conscious
- Active vaginal bleeding (not bloody show or spotting)
- Fetal heart rate > 160 for 60 seconds or any decelerations
- Abnormal vital signs: Notify OB Provider quickly for:
  - Maternal heart rate > 120 or < 50
  - Temperature ≥ 38.3
  - Respiratory rate > 26 or < 12
  - Systolic BP ≥ 140 or diastolic BP ≥ 90, symptomatic (headache with vision changes)
  - BP < 80/40 x 2
  - SPO2 < 95%

Yellow - Level 3 - Prompt

A condition that may include the following but not limited to this list. The patient may be asked to wait in the waiting room until a bed is available and be checked on every 30 minutes to assess for a change in Triage category.

- Active labor ≥ 34 weeks
- ≥ 34 weeks multiple gestation, irregular contractions
- Planned elective repeat cesarean with regular contractions ≥ 34 weeks
- Signs/symptoms early labor or SROM ≥ 34 weeks by < 37 weeks
- Extended fetal monitoring sent from OB Provider
- Nausea/vomiting with fever (consider isolation)
- BP monitoring sent from OB Provider
- R/O DVT, red or swollen leg with calf pain
- Postpartum bleeding > 1 pad/hour
- Abnormal vital signs. Notify provider for:
  - Temperature > 38.0
  - SBP ≥ 140 or DBP ≥ 90, asymptomatic

For Asymptomatic Elevated Blood Pressure See Hypertension Protocol

- Systolic B/P: ≥ 160
- Diastolic B/P ≥ 110

Green - Level 4 - Non-Urgent

A condition that allows patients to wait in turn to be seen may be asked to wait in waiting room and will be reassessed every hour for any change in status.

- ≥ 37 weeks early labor or C/O SROM
- Vaginal discharge, spotting
- Nausea/vomiting without fever
- Round ligament pain, back pain
- Dysuria, flank pain, hematuria
- Upper respiratory infection/cough (consider isolation with fever during flu season)
- Rash
- Constipation
- Wound infection
- Headache unrelieved with medication

Protocol Based On AWHONN Maternal Fetal Triage Index

1) Obtain Vital Signs including oxygen saturation and fetal heart tones, 2) Obtain clean catch urine, 3) Protocol for Are based on chief complaint, 4) Assess fetal movements per patient perception, by palpation or audibly

Patients >24 Weeks - Initiate Fetal Monitoring for fetal heart tone and uterine activity monitoring - **See Fetal Monitoring Protocol (NST)**

Stabilize and Arrange Transfer	Assess, Initiate Treatment Protocol	Assess, Initiate Treatment Protocol	Assess, Initiate Treatment Protocol
Initiate Tele-ER Consult Immediately (Emergent)	Initiate Tele-ER Consult ASAP (Emergent)	Initiate Tele-ER Consult ASAP (Emergent)	Initiate Tele-ER Consult (Urgent)

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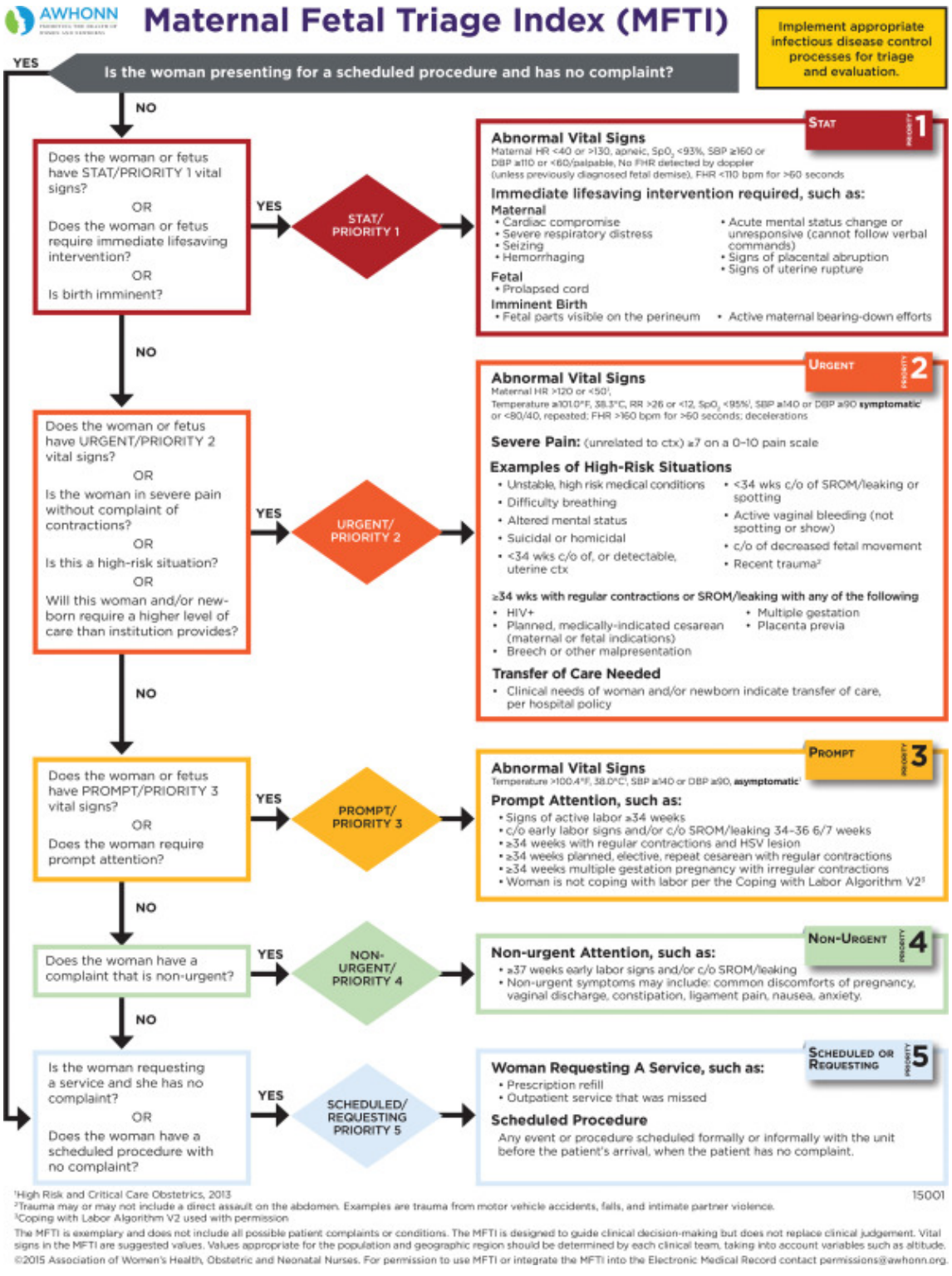
AWHONN
Maternal Fetal Triage Index (MFTI)
Implement appropriate infectious disease control processes for triage and evaluation.
YES
Is the woman presenting for a scheduled procedure and has no complaint?
NO
Does the woman or fetus have STAT/PRIORITY 1 vital signs?
OR
Does the woman or fetus require immediate lifesaving intervention?
OR
Is birth imminent?
YES
STAT/ PRIORITY 1
STAT 1
Abnormal Vital Signs
Maternal HR <40 or >130, apneic, SpO2 <93%, SBP ≥160 or DBP ≥110 or <60/palpable, No FHR detected by doppler (unless previously diagnosed fetal demise), FHR <110 bpm for >60 seconds
Immediate lifesaving intervention required, such as:
Maternal
• Cardiac compromise
• Severe respiratory distress
• Seizing
• Hemorrhaging
• Acute mental status change or unresponsive (cannot follow verbal commands)
• Signs of placental abruption
• Signs of uterine rupture
Fetal
• Prolapsed cord
Imminent Birth
• Fetal parts visible on the perineum
• Active maternal bearing-down efforts
NO
Does the woman or fetus have URGENT/PRIORITY 2 vital signs?
OR
Is the woman in severe pain without complaint of contractions?
OR
Is this a high-risk situation?
OR
Will this woman and/or newborn require a higher level of care than institution provides?
YES
URGENT/ PRIORITY 2
URGENT 2
Abnormal Vital Signs
Maternal HR >120 or <50[1],
Temperature ≥101.0°F, 38.3°C, RR >26 or <12, SpO2 <95%[1], SBP ≥140 or DBP ≥90 symptomatic[1] or <80/40, repeated; FHR >160 bpm for >60 seconds; decelerations
Severe Pain: (unrelated to ctx) ≥7 on a 0–10 pain scale
Examples of High-Risk Situations
• Unstable, high risk medical conditions
• Difficulty breathing
• Altered mental status
• Suicidal or homicidal
• <34 wks c/o of, or detectable, uterine ctx
• <34 wks c/o of SROM/leaking or spotting
• Active vaginal bleeding (not spotting or show)
• c/o of decreased fetal movement
• Recent trauma[2]
≥34 wks with regular contractions or SROM/leaking with any of the following
• HIV+
• Planned, medically-indicated cesarean (maternal or fetal indications)
• Breech or other malpresentation
• Multiple gestation
• Placenta previa
Transfer of Care Needed
• Clinical needs of woman and/or newborn indicate transfer of care, per hospital policy
NO
Does the woman or fetus have PROMPT/PRIORITY 3 vital signs?
OR
Does the woman require prompt attention?
YES
PROMPT/ PRIORITY 3
PROMPT 3
Abnormal Vital Signs
Temperature >100.4°F, 38.0°C[1], SBP ≥140 or DBP ≥90, asymptomatic[1]
Prompt Attention, such as:
• Signs of active labor ≥34 weeks
• c/o early labor signs and/or c/o SROM/leaking 34–36 6/7 weeks
• ≥34 weeks with regular contractions and HSV lesion
• ≥34 weeks planned, elective, repeat cesarean with regular contractions
• ≥34 weeks multiple gestation pregnancy with irregular contractions
• Woman is not coping with labor per the Coping with Labor Algorithm V2[3]
NO
Does the woman have a complaint that is non-urgent?
YES
NON-URGENT/ PRIORITY 4
NON-URGENT 4
Non-urgent Attention, such as:
• ≥37 weeks early labor signs and/or c/o SROM/leaking
• Non-urgent symptoms may include: common discomforts of pregnancy, vaginal discharge, constipation, ligament pain, nausea, anxiety.
NO
Is the woman requesting a service and she has no complaint?
OR
Does the woman have a scheduled procedure with no complaint?
YES
SCHEDULED/ REQUESTING PRIORITY 5
SCHEDULED OR REQUESTING 5
Woman Requesting A Service, such as:
• Prescription refill
• Outpatient service that was missed
Scheduled Procedure
Any event or procedure scheduled formally or informally with the unit before the patient's arrival, when the patient has no complaint.
[1]High Risk and Critical Care Obstetrics, 2013
[2]Trauma may or may not include a direct assault on the abdomen. Examples are trauma from motor vehicle accidents, falls, and intimate partner violence.
[3]Coping with Labor Algorithm V2 used with permission
15001
The MFTI is exemplary and does not include all possible patient complaints or conditions. The MFTI is designed to guide clinical decision-making but does not replace clinical judgement. Vital signs in the MFTI are suggested values. Values appropriate for the population and geographic region should be determined by each clinical team, taking into account variables such as altitude.
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If patient is <14 weeks pregnant to 6 weeks postpartum and ANY of the symptoms or diagnosis below, consider a telemedicine consult

LEVEL 1-RESUSCITATIVE	LEVEL 2- EMERGENT	LEVEL 3- Urgent	LEVEL 4-PROMPT
Imminent delivery	Previa with labor or bleeding, T ≥ 38.3	Active labor > 34 weeks	37 weeks early labor r/o SROM
Suspected abruption	Del en route	Repeat C/S with regular ctx > 34 wk	UTI (urinary tract Infection), dysuria, flank pain, hematuria
Hemorrhaging	Active bleeding	Early Labor/SROM > 34 but < 37 weeks	Vag. Discharge or spotting
AMS/Unconscious	Severe pain not ctx.	Extended fetal monitoring	Nausea/ Vomiting/ Diarrhea no fever
DKA/diabetic coma	Unstable high-risk medical issues	BP monitoring	Round ligament or back pain
Visible fetal parts	< 34 weeks PROM or preterm labor	N/V with fever	URI (upper Respiratory Infection), cough
Cardio-respiratory distress, SPO2 < 93	> 34 weeks SROM or ctx. w/HIV+, twins, breech or for medically indicated planned C/S	T > 38.0	Rash, toothache
Seizure/Eclampsia	¯ fetal movement	BP > 140/90, asymptomatic	H/A unrelieved with medication
Prolapsed cord	AMS/conscious	R/O DVT, red swollen leg with calf pain	Wound infection
MHR < 40 or > 130	BP > 140/90 (symptomatic, H/A w/ vision changes)	Postpartum bleeding > 1 pad/hour	Constipation
SBP ≥ 160 or < 70	Decelerations, BPP < 6	Twins w/irreg. ctx. > 34 weeks	
DBP ≥ 110 or < 35	BP < 80/40 x 2, HR > 120 or < 50		
FHR < 110 for 60 sec	SPO2<95, RR < 12 or > 26		
No FHT per Doppler	Difficulty breathing		
Active pushing	FHR > 160 for 60 sec.		
Trauma	Stable Trauma S/P ED eval		

Tele-ER is 24 hours a day / 7 days a week
Adult, Pediatric, OB, Surgical Patients

Tele - Obstetrical Emergency Department Protocol

Perinatal Management of Acute Onset, Severe Hypertension During Pregnancy and Postpartum Protocol

Background: During pregnancy and postpartum, patients can experience an acute onset of severe hypertension. When a patient presents with a hypertensive emergency, the risk of a stroke is decreased if these patients receive treatment with first line agents within 30-60 minutes. The goal of this emergent therapy is to achieve a range of 140-150/90-100 mmHg to prevent maternal and neonatal complications.

Definitions: Severe hypertension for the purpose of activating this protocol is defined as systolic blood pressures ≥ 160 mmHg or diastolic ≥ 110 mmHg measured twice fifteen minutes apart.
Patients should be sitting or semi-reclining when having their blood pressure (BP) measured with the correct size cuff.

Procedures

Patients with a systolic BP ≥ 160 mmHg or diastolic BP ≥ 110 mmHg in a sitting or reclining position will have their BP re-measured in 15 minutes.

1. If the patient has two consecutive readings with either a systolic BP of ≥ 160 mmHg and/or a diastolic BP ≥ 110 mmHg, Initiate Tele-ER Consult. A saline lock will be placed by the RN.
2. Initiate the **Acute Onset Severe Hypertension Protocol.**
3. If > 22 weeks gestation, Initiate Fetal Monitoring - See Fetal Monitoring Protocol

Acute Onset Severe Hypertension Protocol

1. Initiate Tele-ER Consult
2. For patients with IV access, the **IV Labetalol Protocol** should be initiated.
3. Patients with asthma, heart disease or congestive heart failure use the **IV Hydralazine Protocol** (instead of the IV Labetalol Protocol).
4. Patients receiving IV Labetalol or IV Hydralazine **do not** require cardiac monitoring.
5. Patients with a diagnosis of chronic hypertension (antepartum or postpartum) may be removed from the protocol after Tele-OB consult.
6. If medications in this protocol do not lower the systolic BP to < 160 mmHg and/or the diastolic BP to < 110 mmHg, refer to Emergent Tele-ER consult.
7. Once BP stabilized with systolic BP < 160 and diastolic BP < 110, BP should be taken q 10 minutes for an hour, every 15 minutes for an hour then every thirty minutes for one hour then hourly for at least four hours
8. Magnesium sulfate is recommended for seizure prophylaxis for women with acute onset severe hypertension during pregnancy and postpartum regardless of whether cause of hypertension is gestational hypertension with severe features, preeclampsia with severe features or eclampsia.
9. Obtain CBC, CMP, LDH, Uric Acid, Urine Analysis Stat

SEVERE HYPERTENSION

SBP ≥ 160 **or** DBP ≥ 110

- Repeat BP every 5 min for 15 min
- Notify physician after one severe BP value is obtained

HYPERTENSIVE EMERGENCY

Persistent, severe hypertension that can occur antepartum, intrapartum, or postpartum
Two severe BP values (≥ 160/110) taken 15-60 minutes apart
Severe values do not need to be consecutive

- If severe BP elevations persist for 15 min or more, begin treatment ASAP. **Preferably within 60 min of the second elevated value.**
- If two severe BPs are obtained *within* 15 min, treatment may be initiated if clinically indicated

Goals Of Care: Anti-hypertensive therapy within 30-60 minutes of diagnosis and initiation of Tele-ER Consult within 30 minutes.

Oral Nifedipine (Immediate Release) Protocol - *For patients with **no** IV access*

1. Administer Nifedipine (immediate release) 10 mg PO (do not administer sublingual)
2. Repeat BP in 20 minutes. If systolic BP ≥ 160 mmHg or diastolic BP ≥ 110 mmHg, administer Nifedipine (immediate release) 20 mg PO
3. Repeat BP in 20 minutes. If systolic BP ≥ 160 mmHg or diastolic BP ≥ 110 mmHg, administer Nifedipine (immediate release) 20 mg PO
4. Repeat BP in 20 minutes.
5. If BP remains ≥ 160 systolic or ≥ 110 diastolic, administer Labetalol 20 mg IV over 2 minutes and page OB Provider for further orders

IV Labetalol Protocol

1. Administer Labetalol 20 mg IV labetalol over 2 minutes
2. Repeat BP in 10 minutes. If systolic BP ≥ 160 mmHg or diastolic BP ≥ 110 mmHg, administer Labetalol 40 mg IV over 2 minutes
3. Repeat BP in 10 minutes. If systolic BP ≥ 160 mmHg or diastolic BP ≥ 110 mmHg, administer Labetalol 80 mg IV over 2 minutes
4. Repeat BP in 10 minutes. If systolic BP ≥ 160 mmHg or diastolic BP ≥ 110 mmHg, administer Hydralazine 10 mg IV over 2 minutes and contact Tele-OB for additional interventions

IV Hydralazine Protocol

1. Administer Hydralazine 5 mg IV over 2 minutes.
2. Repeat BP in 20 minutes. If systolic BP ≥ 160 mmHg or diastolic BP ≥ 110 mmHg, administer Hydralazine 10 mg IV over 2 minutes
3. Repeat BP in 20 minutes. If systolic BP ≥ 160 mmHg or diastolic BP ≥ 110 mmHg, contact Tele-OB for further orders (Hydralazine 5 mg IV every 15-20 min is recommended in patients who cannot receive labetalol)

If Patient Has a Seizure Initiate the Eclampsia Protocol

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Tele - Obstetrical Emergency Department Protocol

Labetalol Algorithm

EXAMPLE

Trigger: If severe elevations (SBP ≥160 or DBP ≥ 110) persist* for 15 min or more **OR** If two severe elevations are obtained within 15 min and tx is clinically indicated

1. **Labetalol 20 mg† IV over 2 minutes**
2. **Repeat BP in 10 minutes**
3. **If SBP ≥ 160 or DBP ≥ 110, administer labetalol 40 mg IV over 2 minutes; If BP below threshold, continue to monitor BP closely**
4. **Repeat BP in 10 minutes**
5. **If SBP ≥ 160 or DBP ≥ 110, administer labetalol 80 mg IV over 2 minutes; If BP below threshold, continue to monitor BP closely**
6. **Repeat BP in 10 minutes**
7. **If SBP ≥ 160 or DBP ≥ 110, administer hydralazine§ 10 mg IV over 2 minutes; If below threshold, continue to monitor BP closely**
8. **Repeat BP in 20 minutes**
9. **If SBP ≥ 160 or DBP ≥ 110 at 20 minutes, obtain emergency consultation from specialist in MFM, internal medicine, anesthesiology, or critical care**
10. **Give additional antihypertensive medication per specific order as recommended by specialist**
11. **Once BP thresholds are achieved, repeat BP:**
12. **- Every 10 minutes for 1 hour**
    - Then every 15 minutes for 1 hour
    - Then every 30 minutes for 1 hour
    - Then every hour for 4 hours
13. **Institute additional BP monitoring per specific order**

- Notify provider after one severe BP value is obtained
- Institute fetal surveillance if viable
- Hold IV labetalol for maternal pulse under 60
- Maximum cumulative IV-administered dose of labetalol should not exceed 300 mg in 24 hours
- There may be adverse effects and contraindications. Clinical judgement should prevail.

* Two severe readings more than 15 minutes and less than 60 minutes apart

† **Avoid parenteral labetalol with active‡ asthma, heart disease, or congestive heart failure; use with caution with history of asthma. May cause neonatal bradycardia.**

‡ "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.

§ Hydralazine may increase risk of maternal hypotension.

Safe Motherhood Initiative

ACOG The American College of Obstetricians and Gynecologists District II

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Tele - Obstetrical Emergency Department Protocol

Eclampsia Protocol

Background: Hypertensive disorders of pregnancy are arranged into four categories: chronic hypertension, gestational hypertension, pre-eclampsia, and pre-eclampsia superimposed on chronic hypertension.Eclampsia is a known complication of preeclampsia during pregnancy and is associated with morbidity and mortality of both the mother and fetus if not properly diagnosed.Eclampsia is defined as the new onset of generalized tonic-clonic seizures in a woman with preeclampsia. Eclamptic seizures can occur antepartum, 20 weeks after gestation, intrapartum, and postpartum. Seizures before 20 weeks are rare but have been documented in gestational trophoblastic disease.

Definitions: Severe hypertension for the purpose of activating this protocol is defined as systolic blood pressures ≥ 160 mmHg or diastolic ≥ 110 mmHg measured twice fifteen minutes apart.

Procedures

Patients with a systolic BP ≥ 160 mmHg or diastolic BP ≥ 110 mmHg in a sitting or reclining position will have their BP re-measured in 15 minutes.

1. If the patient has two consecutive readings with either a systolic BP of ≥ 160 mmHg and/or a diastolic BP ≥ 110 mmHg, Initiate Tele-ER Consult. A saline lock will be placed by the RN.
2. Initiate the **Acute Onset Severe Hypertension Protocol.**
3. If > 22 weeks gestation, Initiate Fetal Monitoring - See Fetal Monitoring Protocol

Protocol

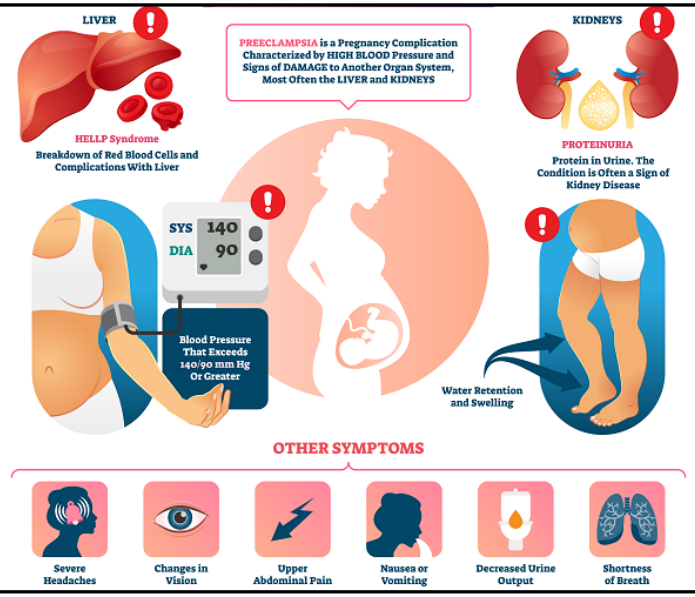
1. The main therapy is supportive care and initiation of safety measures to avoid maternal injury.
2. Monitor VS and Maintain oxygenation to mother and fetus
    1. Oxygen
    2. Pulse oximetry
    3. Control severe hypertension
3. Minimize aspiration
    1. Lateral decubitus position
    2. Suctioning of vomitus and oral secretions
    3. **Initiate IV Magnesium Sulfate Protocol**
    4. Consider head imaging and intubation in cases refractory to Magnesium Sulfate

IV Magnesium Sulfate Protocol

1. Recommended regimens of magnesium sulfate in the treatment of eclamptic convulsions
2. **Loading dose**: 6 g IV over 30 min (6 g of 50% solution diluted in 150 cc D5W)
3. **Maintenance dose**: 2 g IV per hr (40 g in 1 L D5LR at 50 cc/h)
4. Goal therapeutic range of 4.8-9.6 mg/dL (4-8 mEq/L)
5. Additional 2-4 g IV over 5–10 min can be given with persistent convulsions and may be repeated if necessary.
6. **If no IV access** is anticipated for a prolonged period: 10g IM loading dose can be given divided in 2 doses (5g injection into each buttock)
7. If convulsions persist (2% of cases) defined as a seizure lasting for more than 5 minutes, may give other agents to control seizure (sodium amobarbital (250mg IV in 3 minutes), thiopental, or phenytoin (1250mg IV at a rate of 50mg/minute).

Management of Magnesium Toxicity

1. Discontinue magnesium sulfate infusion
2. Begin supplemental oxygen administration
3. Obtain serum magnesium level
4. Administer 1 g Calcium Gluconate (10 cc of 10% Calcium Gluconate) by slow intravenous push over 5-10 minutes
5. Repeat Calcium Gluconate administration if necessary
6. If respiratory arrest occurs, begin cardiopulmonary resuscitation (CPR)



Serum Magnesium Levels and Associated Findings

8–12 mg/dL	Loss of patellar reflex
9–12 mg/dL	Feeling of warmth, flushing
10–12 mg/dL	Double vision
10–12 mg/dL	Somnolence
10–12 mg/dL	Slurred speech
15–17 mg/dL	Muscular paralysis
>12 mg/dL	Respiratory paralysis
24-30 mg/dL	Cardiac arrest

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Hypertensive Emergency Checklist

Hypertensive Emergency:

- Two severe BP values (≥160/110) taken 15-60 minutes apart. Values do not need to be consecutive.
- May treat within 15 minutes if clnically indicated

- ☐ Call for Assistance
- ☐ Designate:
  - ○ Team leader
  - ○ Checklist reader/recorder
  - ○ Primary RN
- ☐ Ensure side rails up
- ☐ Ensure medications appropriate given patient history
- ☐ Administer seizure prophylaxis (magnesium sulfate first line agent, unless contraindicated)
- ☐ Antihypertensive therapy within 1 hour for persistent severe range BP
- ☐ Place IV; Draw preeclampsia labs
- ☐ Antenatal corticosteroids (if <34 weeks of gestation)
- ☐ Re-address VTE prophylaxis requirement
- ☐ Place indwelling urinary catheter
- ☐ Brain imaging if unremitting headache or neurological symptoms
- ☐ Debrief patient, family, and obstetric team

"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.

Magnesium Sulfate

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

IV access:

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

No IV access:

- ☐ 10 grams of 50% solution IM (5 g 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 min); **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 220 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 min
- ☐ **Diazepam (Valium)**: 5-10 mg IV q 5-10 min to maximum dose 30 mg

Tele - Obstetrical Emergency Department Protocol

Postpartum Hemorrhage

Background and Definition: Postpartum hemorrhage is defined as a cumulative blood loss of greater than 1000 ml of blood regardless of mode of delivery OR bleeding accompanied by symptoms of hypovolemia in the first 24 hours after delivery. Postpartum hemorrhage usually happens within 1 day of birth but can happen up to 12 weeks after delivery.

Procedures

Management

1. First-line treatment for postpartum hemorrhage is IV oxytocin. IM ergometrine, oxytocin-ergometrine fixed dose, oral prostaglandin drug (eg, sublingual misoprostol) can be used if IV oxytocin is unavailable or oxytocin fails to control the bleeding.
2. IV Tranexamic Acid (TXA) should be administered as soon as postpartum hemorrhage is diagnosed.
3. Uterine massage should be included in the management of postpartum hemorrhage.
4. Four units of PRBC should be given prior to other blood products in an acetyl bleeding patient who is approaching the maximum allowable blood loss.
5. **Massive hemorrhage protocol** may be used if bleeding is severe. Ratios of RBC to FFP to Platelets of 1:1:1 or 2:1:1 should be used.

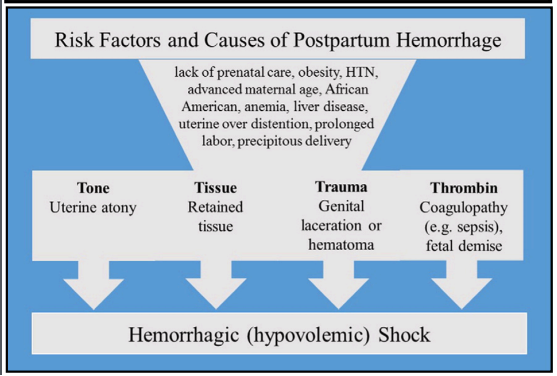
Massage of Uterus
- Massage until uterus has contracted or for 1 minute

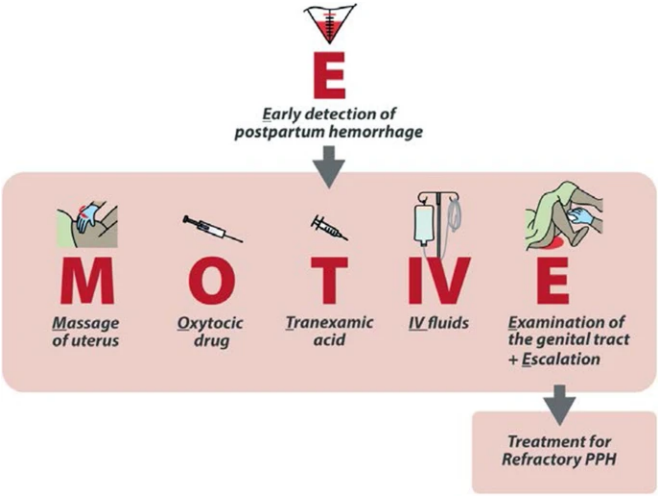
Oxytocin Drugs
- 10 IU IV Oxytocin injected or diluted in 200-500 ml crystalloid over 10 min plus a maintenance dose of 20IU IV oxytocin diluted in 1L saline over 4 hours (with misoprostol 800 micrograms if used)

TXA
- 1 gram IV injection of TXA or diluted in 200 ml crystalloid over 10 min period

IV Fluids
- IV fluids in addition to the infusion should be given if clinically indicated for resuscitation through second IV

Examination
- Ensure bladder is empty, evacuate clots and check for tears with internal examination and placenta for completeness.





Postpartum Hemorrhage Medication Box Recommendations

PP Hemorrhage Medications	ROUTE	Needed
Oxytocin (10units/1mL vial)	IV or IM use	4 vials
Methergine (.2mg/mL vial)	IM use q2-4hrs	2 ampules
Hemabate (250mcg/mL)	IM use q15-90 min	3 ampules
Cytotec (200mcg tab)	PR/SL/PO 600-1000mcg	5 tablets

Stage 0 - Risk Assessment

Both Antenatal and Perinatal
- Awareness of Postpartum Hemorrhage
- **Measure and record all blood loss**

Stage 1 - >500 ml Blood Loss

Initiate Tele-OBED / Tele-ER consult
- Establish 1 large bore (18 g) anticubital vascular access
- Measure and record all blood loss
- **Evaluate for cause of bleeding (4 - T's)**

Stage 2 - >1000 ml Blood loss or Clinical Concern or Abnormal Vital Signs

Initiate Tele-OBED / Tele-ER consult
- Establish 2nd large bore (18 g) anticubital vascular access
- Measure and record all blood loss
- Consult on medication administration with Tele-OBED / Tele-ER
- Initiate Transfer Protocol
- Obtain CBC, Lactate, Fibrinogen, PT/INR/aPTT, CMP, Type and Cross
- **Initiate PRBC 4 units uncross matched O negative blood**

Stage 3 - >1500 ml Blood Loss or Abnormal Vital Signs

Initiate Tele-OBED / Tele-ER consult
- Establish 2nd large bore (18 g) anticubital vascular access
- Measure and record all blood loss
- Consult on medication administration with Tele-OBED / Tele-ER
- Initiate Transfer Protocol
- Obtain CBC, Lactate, Fibrinogen, PT/INR/aPTT, CMP, Type and Cross
- Initiate PRBC 4 units uncross matched O negative blood
- **Initiate Massive Hemorrhage Protocol (send with EMS)**

Do not transport without giving treatment for postpartum hemorrhage.

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Tele - Obstetrical Emergency Department Protocol

Minor Trauma in Pregnancy (Antenatal Hemorrhage Protocol)

Background: Minor trauma in pregnancy is common. As pregnancy progresses, the risk of placental abruption increases even with minor trauma. Ultrasound and physical exam may not detect a placental abruption. In fact a significant placental abruption can be asymptomatic or associated with minimal maternal symptoms. Fetal monitoring is a key component of assuring the fetus is uninjured even in a minor trauma.

Procedures

All pregnant patients > 24 weeks gestation should be evaluated via Tele-OB ER and Tele-ER Consult

1. If the patient is known to be >24 weeks gestation, minor trauma can result in placental abruption that can be clinically silent initially. This algorithm assists the Tele-OB ER consult process in safely evaluating the patient and baby.
2. If the patient gestation is not known, the Fetal Ultrasound (POCUS) Protocol can be used to help establish gestational age.
3. If the patient is at **less than 24 weeks gestation**, Rh Immune Globulin (if Rh negative) may be considered and a Tele-ER, or OB eConsult may be utilized to guide treatment.
4. If the patient is unstable, has penetrating trauma, or other concomitant traumatic injury such as orthopedic, neurological, or other systemic injury, ATLS protocols should be performed with transfer to the trauma center.

Trauma Pregnant Patient

Evaluate Mother via ATLS protocol Primary and Secondary Survey

If Blunt Trauma AND no other concomitant injury or only minor injury

If Penetrating Trauma OR Hemodynamically Unstable, Acute Abdomen, Hemorrhagic Vaginal Bleeding OR Concomitant Systemic Injury

Minor Trauma In Pregnancy Protocol

Initiatie Tele-OB ED Tele - ER Consult

Initiate Fetal Monitoring Protocol

Serial Abdominal Exam

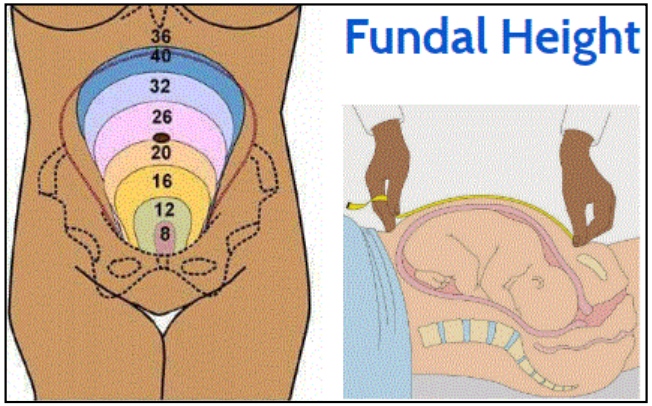
Disposition of Patient Determined by Tele-OB Consult

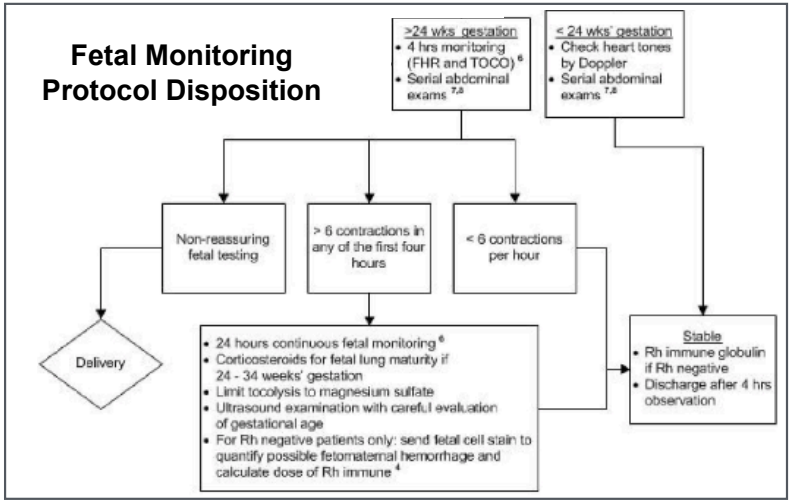
Obtain CBC, T&S, Hold Blood for Fetal Stain

Rh Immune Globulin (if Rh negative)

During Evaluation If Patient Has Hemodynamically Unstable Vital Signs, Acute Abdomen, Hemorrhagic Vaginal Bleeding OR Concomitant Systemic Injury

Continue ATLS Protocol
Initiate Transfer to Trauma Center





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Tele - Obstetrical Emergency Department Protocol

Fetal Ultrasound (POCUS) Protocol

Background: Point of Care Ultrasound (POCUS) is a tool to asses the mother and baby at bedside, guiding the clinician in appropriate care. The goals of POCUS depend on the trimester of the pregnancy.

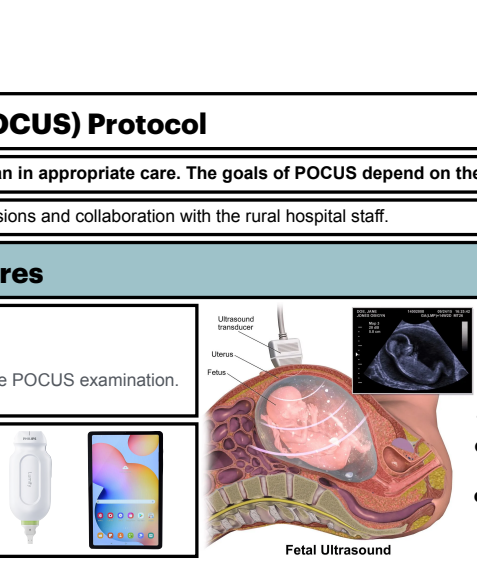
Goal: To aid the Tele-ER or Tele-OB physician in obtaining the necessary ultrasound images to provide optimal treatment decisions and collaboration with the rural hospital staff.

Procedures

1. Determine the fetal age by Last Menstrual Period (LMP) if possible.
2. Obtain a urine pregnancy test assuring the patient is pregnant.
3. POCUS of the pelvis for pregnancy may be performed at any stage of pregnancy, including when the LMP is unknown.
4. Optimal ultrasound imaging is performed when the patient's bladder is full. If time allows, have patient drink fluids prior to the POCUS examination.
5. Obtain a B-hcg quantitative level if possible. Interpretation of the B-hcg level can be done after the POCUS imaging.

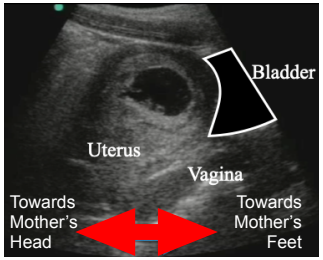
Equipment and Protocol

1. POCUS of the Pelvis is performed with the Philips Lumify Portable Ultrasound on the Telemedicine Cart.
2. The phased array or cardiac transducer is used for imaging the pelvis. The ultrasound "preset" is OB/GYN.
3. Ultrasound gel is used between the transducer and the patient's skin. Any lubricant can be used.
4. The transducer is placed on the patient's abdomen, generally, just above the pubic symphysis



Fetal Ultrasound

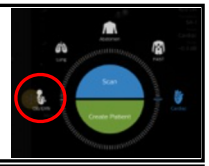
Place transducer oriented up and down on patient's abdomen



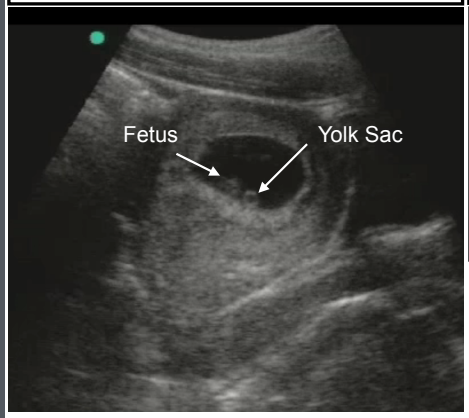
Tele-Ultrasound Connection

1. Notify Tele-ED or Tele-OB physician that an POCUS is going to be shared through Zoom.
2. Click on the AU Icon or navigate to https://www.augusta.edu/mcg/mcg-center-for-telehealth/ and look for the "Telehealth Virtual Meeting Access" button or use the QR code
3. Open Zoom and join audio
4. Share screen
5. Connect the ultrasound transducer to the tablet. Connecting the transducer to the tablet should start the Lumify app. If not, select Lumify from the menu and select OB/GYN

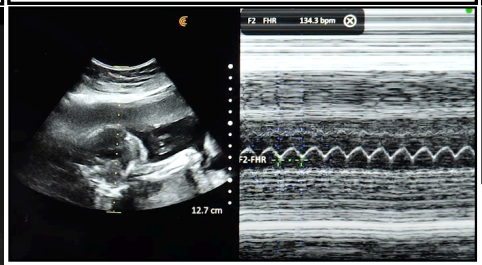
TELEHEALTH VIRTUAL MEETING ACCESS



1st Trimester POCUS Goals
Identification of Fetus



2nd Trimester POCUS Goals
Identification of Fetal Heart Rate (FHR)

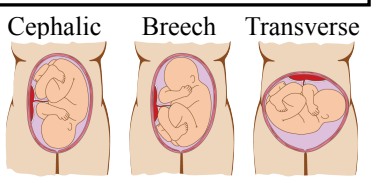


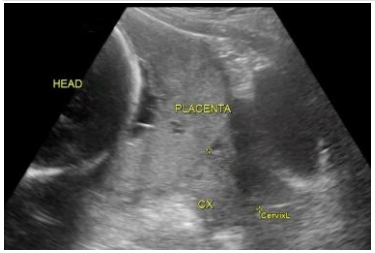
Video on how to obtain a M-mode tracing of the FHR

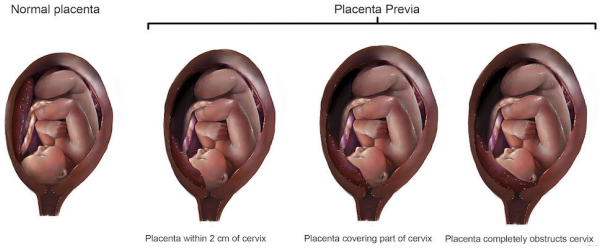
3rd Trimester POCUS Goals
Identification of FHR, Presentation & Placental Location

Is there imminent delivery - contractions present?

1. *Find Fetal Head*
   - ✳ Fetal Head should be oriented opposite direction from mother's head (if not oriented opposite, consider **Breech or Transverse** lie and expect complicated vaginal delivery).
2. *Find the placenta and cervix*
   - ✳ The placenta should not be located near or over the cervix (If so then consider **Placenta Previa** - Hemorrhage Risk High).







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Tele - Obstetrical Emergency Department Protocol

Fetal Monitoring Protocol (NST)

Background: Electronic fetal heart rate monitoring (Fetal Monitoring) is commonly used to assess fetal well-being during labor. The fetal heart rate undergoes constant and minute adjustments in response to the fetal environment and stimuli. Fetal heart rate patterns are classified as reassuring, non-reassuring or ominous. Non-reassuring patterns such as fetal tachycardia, bradycardia and late decelerations with good short-term variability require intervention to rule out fetal acidosis. Ominous patterns require emergency intrauterine fetal resuscitation and immediate delivery. Differentiating between a reassuring and non-reassuring fetal heart rate pattern is the essence of accurate interpretation, which is essential to guide appropriate triage and patient care decisions.

Goal: To obtain an adequate Fetal Monitoring record for interpretation by the Tele-Obstetrician.

Procedures

Education For Mother: Non-Stress Test (NST) is a safe and noninvasive test used to check a baby's health before birth. The NST will monitor the baby's heart rate, movement and mother's contractions. Using these measurements we can determine if the baby is getting an adequate oxygen supply and determine if the baby is under is having distress.

How to Perform a NST

Apply Ultrasound Gel over the Abdomen of the Mother

Apply the "transducer" which a fetal ultrasound Doppler to the abdomen - use the sounds to detect the fetal heart rate which should be greater than 100 beats per minute. Use the strap to secure the transducer to the mother's abdomen.

Place the contractions transducer to the lower abdomen of the mother using the strap to hold this in place.

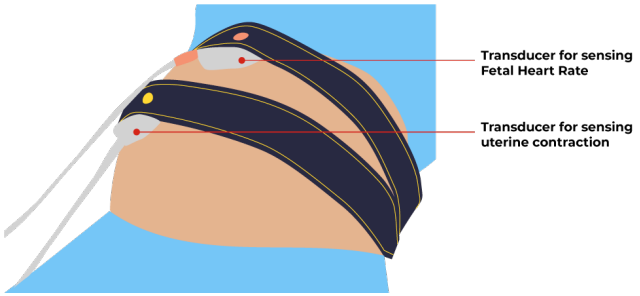
The connections are color coded for the transducers and the NST machine.

Give the mother the contraction ":clicker" or button. The mother is to click if she feels a contraction.

FC 1400

Antepartum Fetal Monitor for Twin Fetuses

7" Full Touch Screen Color TFT LCD



▣ Data Save

Trace a period of time, stored on a USB storage device. When you insert a USB storage device is displayed on the LCD screen on the right. Trace mode from the main menu, touch the "Data Save" button appears.

When "Data Save" is touched, data will be saved to USB. The first position of the Trace of current screen will be saved as data image up to 3hrs within one page. Duration will depend on the print speed, 30 min for 3cm/min, 60 min for 2cm/min and 90 min for 1cm/min. In the situation of patient change, the data until before the change will be saved.

The following windows appear, approximately 10 seconds after the end of the progress bar window disappears automatically. Data storage device recognition can be found at the path "\NewFC1400\data".

The name of the file will be saved "{Patient ID}_{Patient Name}_({Gestational-age})_{YearMonthDayHourMinuteSecond}.jpg".

Warning	
⚠	Do not remove USB from the device during the data transportation.

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Tele - Obstetrical Emergency Department Protocol

Uploading The NST For Reading Through POWERSHARE

Background: For our OB/GYN physicians to read the NST readings, the images must be loaded into our radiology (PACS) system. This is a web-based process and is outlined below.

Procedures

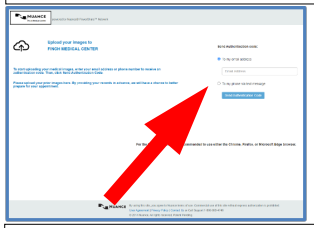
NST should be exported to a thumb drive and thumb drive inserted into computer ready for upload.

Nuance® PowerShare™ Network
Easy Upload

https://widgets.nuancepowershare.com/easyupload/WellstarMCGHealth

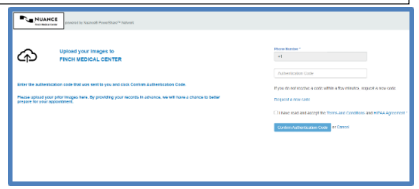
Navigate to the Easy Uploader using the URL above (QR code)

Before uploading, you need to request an Authentication Code by providing either your email address or your phone number.



Once you receive the code, provide the code on the following screen.

Note: Your authentication code expires in 5 minutes.

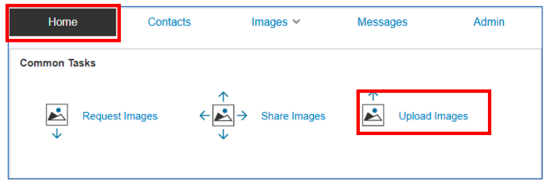


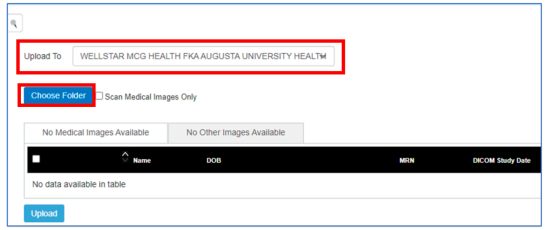
Go to “Home”
Click “Upload Images”

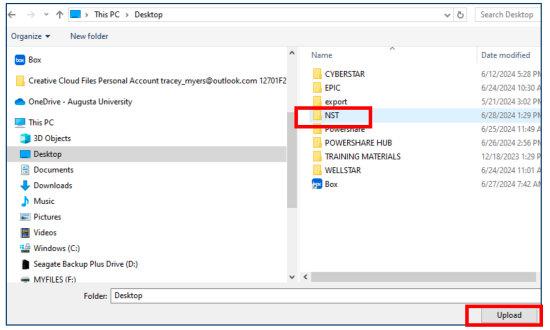
Under “Upload to”, Select **Wellstar MCG Health**
Click “Choose Folder”

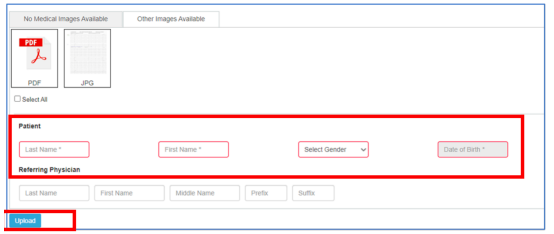
Select the “NST” Folder Click “Choose Folder”
Click “Upload”

Type in the required patient information
Click “Upload”









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