OVERLAKE MEDICAL CENTER

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Manual(s): Labor and Delivery
Mother Baby Unit
Women and Infants Admin

Protocol : Severe Hypertension in Obstetrics: Emergent Treatment

PURPOSE:

Early identification and treatment of severe hypertension.

SUPPORTIVE INFORMATION

Hypertensive disorders of pregnancy are leading causes of maternal death, contributing greatly to neonatal morbidity and mortality. Controlling blood pressure is the optimal intervention to prevent deaths due to stoke in women with preeclampsia. Preeclampsia is associated with an elevated risk cardiovascular disease later in life.

Acute onset, severe hypertension (≥160 systolic OR diastolic ≥110) that is accurately measured using a standard technique, and is persistent for 15 minutes or more is considered a **hypertension emergency**. Early treatment of antihypertensive therapy is recommended within 60 minutes. Intravenous Labetalol and IV Hydralazine are considered first line drugs of choice. However, labetalol is preferred. Oral Nifedipine may be administered if unable to obtain IV access.

Postpartum Considerations: Up to 26% of eclamptic seizures occur beyond 48 hours and as late as four to six (4-6) weeks after delivery. However, most of these cases occur in the first seven (7) days after delivery. As many as 78% of patients have no previous diagnosis of hypertensive disease with pregnancy. While the clinical presentation of delayed postpartum preeclampsia may be atypical, headache up to 69% of patients is the most common complaint. The natural progression of postpartum hypertension includes an initial decrease in blood pressure (BP) within 48 hours, but BP rises again between three to six (3-6) days postpartum. Preeclampsia may occur (6) weeks postpartum.

Labetalol HCL (Normodyne) – A non-selective alpha – and beta – adrenergic antagonist, onset of action 2-5 minutes after IV administration. Labetalol decreases heart rate, but does not significantly decrease cardiac output. Patients with asthma, cocaine and amphetamine use or low pulse (less than 60) are not candidates for labetalol.

Relative Contraindications:

- Asthma
- Congestive Heart Failure
- 2nd and 3rd degree heart block
- Bradycardia
- Conduction defects (Wolfe-parkinson White syndrome)
- Cardiogenic shock
- Prolonged hypotension (SBP<90)

Hydralazine (Apresoline) – a direct vasodilator, onset of action 5-20 minutes after IV administration. Hydralazine reduces systemic vascular resistance, increases heart rate, and increases cardiac output. May cause tachycardia.

STEPS → KEY POINTS

1. Blood Pressure Assessment:
    a. Position patient sitting of semi-fowlers
    b. Position arm level with the heart
2. If Systolic BP (SBP) is ≥ (greater or equal to)160 **OR** Diastolic BP (DBP) is ≥ 110:
    a. Recheck in 15 minutes with patient sitting
    b. If second BP reading is still ≥160 SBP OR DBP ≥ to 110:

Key Point →Do not re-position patient to either side to obtain a lower BP due to risk of false reading

Initiate Protocol Emergent Treatment Protocol: Labetalol 1st line

Treatment for blood pressure threshold: Systolic BP (SBP) is ≥ (greater or equal to)160 OR Diastolic BP (DBP) is ≥ 110)

Key Point→If clinical situation warrants Hydralazine as 1st line refer to Algorithm B, if patient does not have immediate IV access Oral Nifedipine is an alternative 1st line treatment

Key Point→ If patient is on **Mother Baby Unit** transfer to Labor and Delivery, or have L & D RN assume care on MBU if needed

a. Notify Provider
b. Initiate EFM if undelivered and fetus is viable
c. Admit if not inpatient
d. Start IV
e. Place on pulse oximeter
f. Get labetalol hydrochloride (HCL) ready: 20 milligrams intravenously **over two (2) minutes**
g. Use continuous pulse oximetry with HR during administration and for at least one hour after last IV labetalol dose
h. Repeat Blood pressure in 10 minutes and record result
    - If either SBP or DBP are greater than threshold, administer Labetalol HCL 40 milligrams IV over (2) minutes
    - If BP below threshold continue to monitor closely
i. Repeat BP in 10 minutes and record result
    - If either SBP or DBP are greater than threshold, administer Labetalol HCL 80 milligrams IV over (2) minutes
    - If BP below threshold continue to monitor closely
j. Repeat BP in 10 minutes and record result
    - If either SBP or DBP are greater than threshold, administer Hydralazine 10 milligrams IV over (2) minutes
    - If BP below threshold continue to monitor closely
k. Repeat BP measurement in 20 minutes and record results
    - If either SBP or DBP are greater than threshold notify provider

- Obtain consultation
- Give additional Antihypertensive medication as ordered

l. BP thresholds achieved:
- Repeat BP every 10 minutes x 1 hour
- then every 15 minutes x 1 hour
- then every 30 minutes x 1 hour
- then every hour for 4 hours
- Institute additional BP timing per specific orders

m. Consider IV magnesium as a CNS protectant

See Appendix A: Algorithm for Severe intrapartum or postpartum Hypertension

Key Point→ If clinical situation warrants Hydralazine as 1st line refer to Algorithm B e.g. Bradycardia (pulse less than 60), Asthma

Key Point→Goal is to administer within 1 hour and slowly reduce Blood Pressure to less than 160/110

4. OUTPATIENT Algorithm:

a. **Emergency Department**: Pregnant or postpartum patients presenting with severe HTN **(≥160 systolic OR diastolic ≥110)** :

- If patient presents pregnant to main ED
  - Notify OB ED
  - RN transport to OB ED for emergent treatment of hypertension and magnesium as a CNS protectant
- If patient presents postpartum (up to six weeks post delivery)
  - Notify Primary OB
  - ED physician enters orders
  - Place patient on Heart Monitor (3 lead)
- **Emergent Treatment Protocol: Labetalol** refer to Appendix A
- If clinical situation warrants Hydralazine as st line refer to Algorithm B
- Admit patient to L & D (preferred) or designated unit for continued care
- Consider IV magnesium as a CNS protectant LINK: Preeclampsia Management (Lucidoc)

Key Point→RRT does not need to monitor heart rhythm prior to administration of IV labetalol in ED setting

b. **Mom & Baby Care Center:**

- Notify Primary OB office
- Notify OB ED
  - Initiate Nifedipine (oral) 1st line option if ordered and available prior to arrival to OBED for continued evaluation
- Call 911 for transport to OB ED for emergent treatment of hypertension
  - Declination of 911 transport may occur if patient assumes risks/benefits and signs refusal of treatment form LINK: EMTALA Expanded Policy for Outpts. Seeking Emergency Care (Lucidoc)
- **Emergent Treatment Protocol: Nifedipine 1st line**

If patient does not have immediate IV access Oral Nifedipine is an alternative st line treatment

Treatment for blood pressure threshold: Systolic BP (SBP) is ≥ (greater or equal to)160 OR Diastolic BP (DBP) is ≥ 110)

a. Notify Provider
b. Initiate EFM if undelivered and fetus is viable
c. Admit if not inpatient
d. Start IV
e. Administer st dose nifedipine 10 milligrams orally
f. Repeat BP in 20 minutes record result
   - If either SBP or DBP are greater than threshold, administer 2nd dose nifedipine 20 milligrams orally
   - If BP below threshold continue to monitor closely
g. Repeat BP in 20 minutes and record result
   - If either SBP or DBP are greater than threshold, administer 3rd dose nifedipine 20 milligrams orally
   - If BP below threshold continue to monitor closely
h. Repeat BP in 20 minutes and record result
   - If either SBP or DBP are greater than threshold, administer Labetalol HCL 40 milligrams IV over (2) minutes
   - Obtain Consultation
   - Give additional Antihypertensive medication as ordered
   - If BP below threshold continue to monitor closely
i. BP thresholds achieved:
   - Repeat BP every 10 minutes x 1 hour
   - then every 15 minutes x 1 hour
   - then every 30 minutes x 1 hour
   - then every hour for four hours
   - Institute additional BP timing per specific orders
j. Consider IV magnesium as a CNS protectant LINK: Preeclampsia Management (Lucidoc)

Emergent Treatment Protocol: Hydralazine 1st line

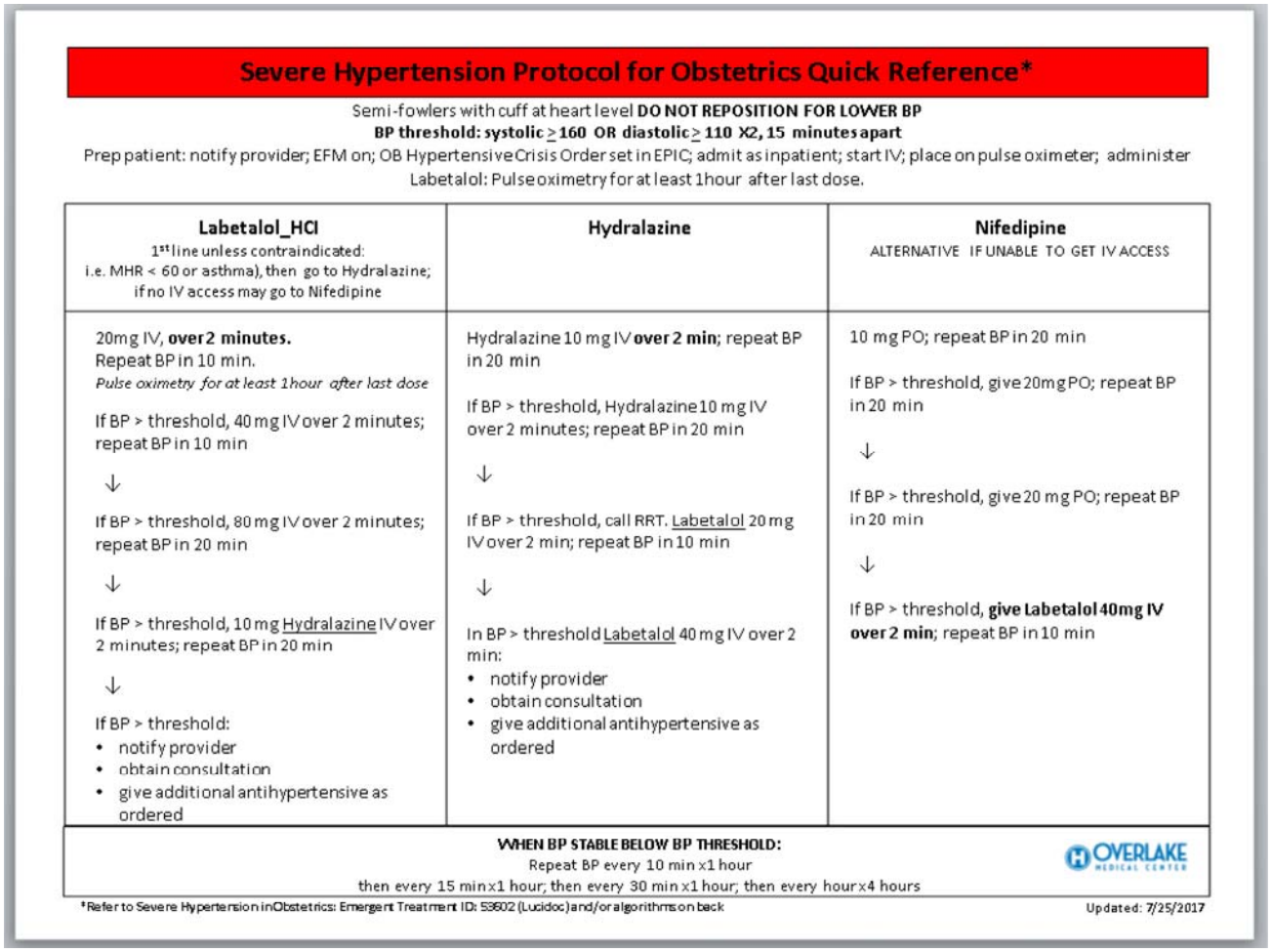
Treatment for blood pressure threshold: Systolic BP (SBP) is ≥ (greater or equal to)160 OR Diastolic BP (DBP) is ≥ 110)

a. Notify Provider
b. Initiate EFM if undelivered and fetus is viable
c. Admit if not inpatient
d. Start IV
e. Administer hydralazine 10 milligrams intravenously over two (2) minutes
f. Repeat BP in 20 minutes record result
   - If either SBP or DBP are greater than threshold, hydralazine 10 milligrams intravenously over two (2) minutes
   - If BP below threshold continue to monitor closely
g. Repeat BP in 20 minutes and record result
   - If either SBP or DBP are greater than threshold, administer Labetalol HCL 20 milligrams IV over (2) minutes
   - If BP below threshold continue to monitor closely
h. Repeat BP in 10 minutes and record result
   - If either SBP or DBP are greater than threshold, administer Labetalol HCL 40 milligrams IV over (2) minutes
   - Obtain Consultation
   - Give additional Antihypertensive medication as ordered
   - If BP below threshold continue to monitor closely

i. BP thresholds achieved:
   - Repeat BP every 10 minutes x 1 hour
   - then every 15 minutes x 1 hour
   - then every 30 minutes x 1 hour
   - then every hour for four hours
   - Institute additional BP timing per specific orders

j. Consider IV magnesium as a CNS protectant LINK: Preeclampsia Management (Lucidoc)

See Appendix B: Algorithm for Severe obstetrical Hypertension



Severe Hypertension Protocol for Obstetrics Quick Reference*

Semi-fowlers with cuff at heart level **DO NOT REPOSITION FOR LOWER BP**
BP threshold: systolic ≥ 160 OR diastolic ≥ 110 X2, 15 minutes apart
Prep patient: notify provider; EFM on; OB Hypertensive Crisis Order set in EPIC; admit as inpatient; start IV; place on pulse oximeter; administer Labetalol: Pulse oximetry for at least 1hour after last dose.

Labetalol_HCl 1st line unless contraindicated: i.e. MHR < 60 or asthma), then go to Hydralazine; if no IV access may go to Nifedipine	**Hydralazine**	**Nifedipine** ALTERNATIVE IF UNABLE TO GET IV ACCESS
20mg IV, **over 2 minutes.** Repeat BP in 10 min. *Pulse oximetry for at least 1hour after last dose* If BP > threshold, 40 mg IV over 2 minutes; repeat BP in 10 min ↓ If BP > threshold, 80 mg IV over 2 minutes; repeat BP in 20 min ↓ If BP > threshold, 10 mg Hydralazine IV over 2 minutes; repeat BP in 20 min ↓ If BP > threshold: • notify provider • obtain consultation • give additional antihypertensive as ordered	Hydralazine 10 mg IV **over 2 min**; repeat BP in 20 min If BP > threshold, Hydralazine 10 mg IV over 2 minutes; repeat BP in 20 min ↓ If BP > threshold, call RRT. Labetalol 20 mg IV over 2 min; repeat BP in 10 min ↓ In BP > threshold Labetalol 40 mg IV over 2 min: • notify provider • obtain consultation • give additional antihypertensive as ordered	10 mg PO; repeat BP in 20 min If BP > threshold, give 20mg PO; repeat BP in 20 min ↓ If BP > threshold, give 20 mg PO; repeat BP in 20 min ↓ If BP > threshold, **give Labetalol 40mg IV over 2 min**; repeat BP in 10 min

WHEN BP STABLE BELOW BP THRESHOLD:
Repeat BP every 10 min x1 hour
then every 15 min x1 hour; then every 30 min x1 hour; then every hour x4 hours

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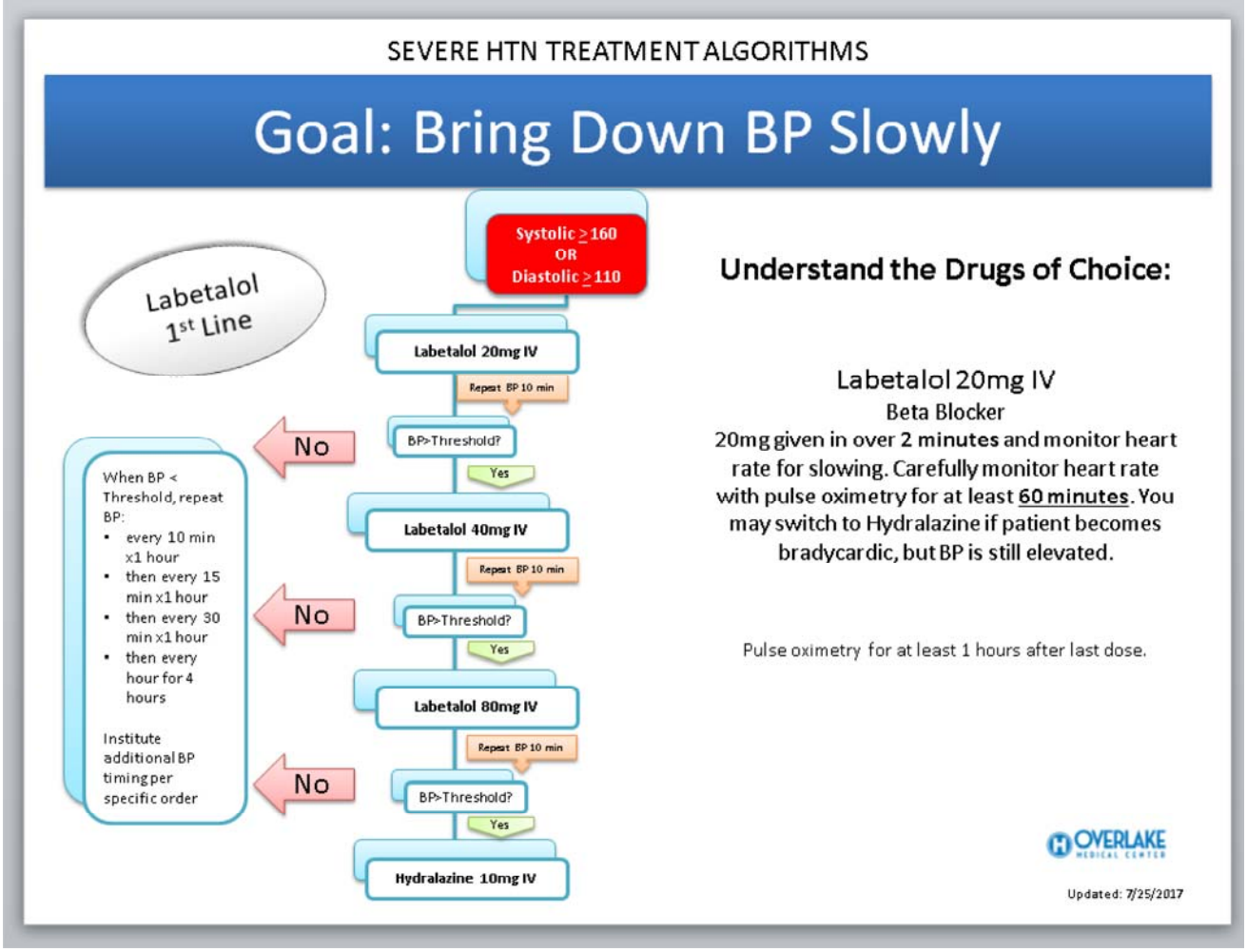
*Refer to Severe Hypertension in Obstetrics: Emergent Treatment ID: 53602 (Lucidoc) and/or algorithms on back

Updated: 7/25/2017

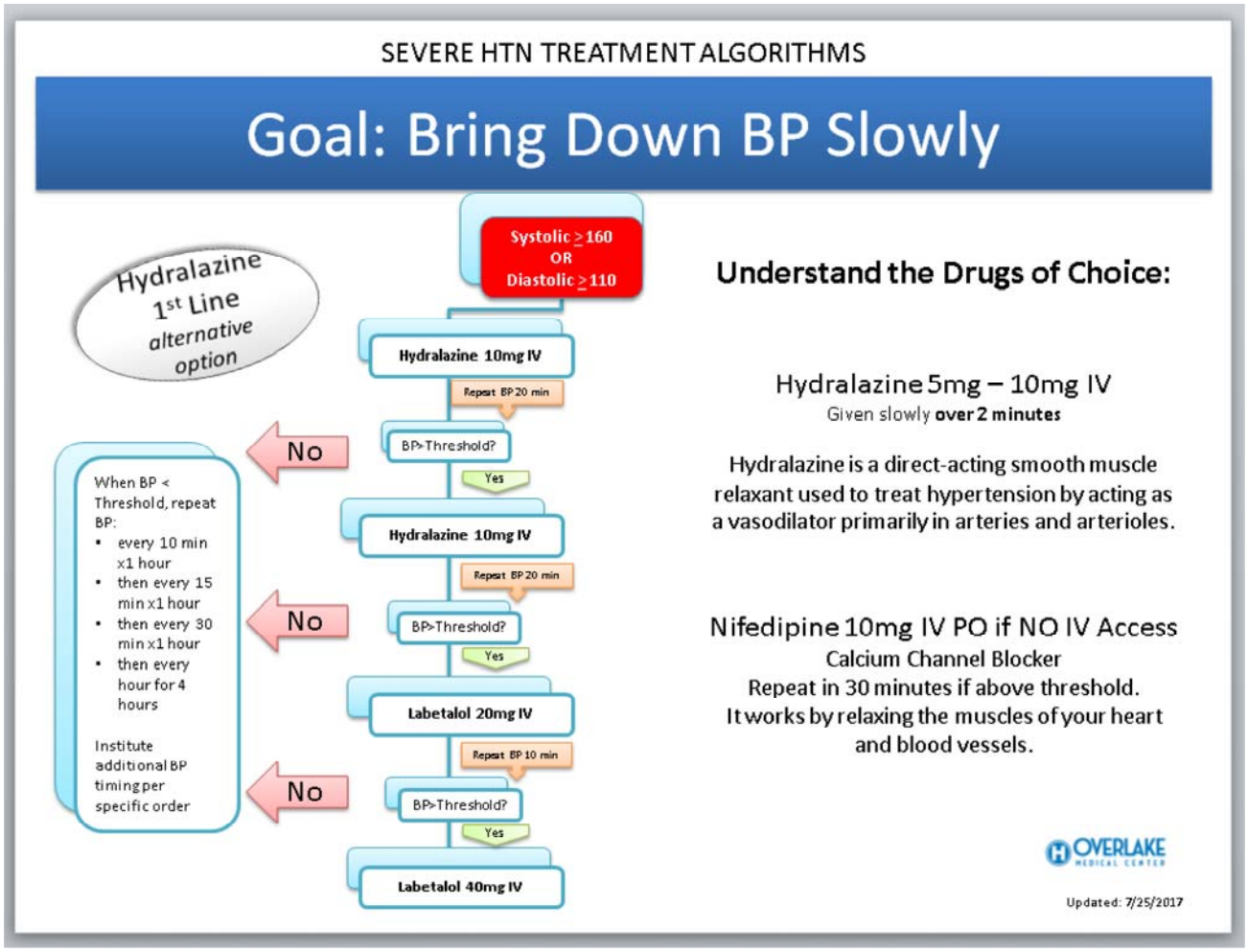
Algorithm A - Emergent Treatment Protocol: Labetalol

Treatment for blood pressure threshold: Systolic BP (SBP) is ≥ (greater or equal to)160 OR Diastolic BP (DBP) is ≥ 110



Algorithm for Severe Obstetric Hypertension: Treatment for blood pressure threshold: Systolic BP (SBP) is ≥ (greater or equal to)160 OR Diastolic BP (DBP) is ≥ 110)

Appendix B - Emergent Treatment Protocol: Hydralazine



Resources

ACOG (2017). Emergent Therapy for acute-onset, severe hypertension during pregnancy and the postpartum period. Committee Opinion. Number 692.

ACOG (2013) Executive summary on hypertension

CMQCC (2014) Improving health care. Response to preeclampsia: A California Quality Improvement Toolkit.

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Attachments: (REFERENCED BY THIS DOCUMENT)	EMTALA Expanded Policy for Outpts. Seeking Emergency Care Hypertension Management in Pregnancy
Other Documents: (WHICH REFERENCE THIS DOCUMENT)	Patients Transferred From Women's Clinic To The Hospital OB Triage Assessment/Medical Screening Exam for Obstetrics