# Appendix N: Sample EMR Integration Care Pathway for Preeclampsia

Note: This is a SAMPLE developed by a particular facility and the content is NOT specifically endorsed by the HDP Task Force. The sample is provided as an example to work from. You may need to adjust based on the individual circumstances of your facility.

## LLUCH: Preeclampsia Protocol

### Identification and Treatment Algorithm

<table>
<thead>
<tr>
<th>Inclusion criteria (must meet ALL of the following):</th>
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<tbody>
<tr>
<td>- Age ≤ 60 years</td>
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<tr>
<td>- Pregnant or within 6 weeks postpartum</td>
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<tr>
<td>- In TCBC location</td>
</tr>
<tr>
<td>- Has order to Initiate Preeclampsia Protocol; items in red have standing orders (TCBC-7) and do not require Initiate Preeclampsia Protocol order</td>
</tr>
</tbody>
</table>

### For all patients on this protocol:  
- Notify attending physician if SBP ≥ 180; x54128
- Start fetal monitoring if applicable
- If patient has unrelenting headache or neurological symptoms: Notify provider to evaluate need for brain imaging
- If 24 - 34 weeks gestation (documented GA in EPIC):  
  - Administer antenatal corticosteroids, if not given within past 14 days
  - Betamethasone, 12 mg, IM, Q24hr, x2 (if patient received 1st dose at OSH: x1, 24 hours after prior administration)
- Apply SCDs for VTE prophylaxis
- Monitor strict I&O (no less than Q2hr)
- Inclusion criteria (must meet ALL of the following):
  - Age ≤ 60 years
  - Pregnant or within 6 weeks postpartum
  - In TCBC location
  - Has order to Initiate Preeclampsia Protocol; items in red have standing orders (TCBC-7) and do not require Initiate Preeclampsia Protocol order

### Algorithm

1. **Pregnant or <6 weeks postpartum patient has documentation of high blood pressure**  
   - (SBP ≥ 160 OR DBP ≥ 110)

2. **Recheck blood pressure in 5 minutes**

3. **Blood pressure remains elevated?**  
   - (SBP ≥ 160 OR DBP ≥ 110)

4. **Call for assistance**  
   - Put side rails up

5. **Does patient have IV access?**  
   - Yes
   - No

   - **Use Oral Nifedipine Algorithm**

   - **Use Labetalol Algorithm**

   - **Use Hydralazine Algorithm**

6. **Does patient meet any of the following criteria:**
   - Pulse pressure ≤ 50
   - Heart rate < 60
   - CHF, cardiomyopathy, moderate persistent asthma, OR severe asthma on medical hx/problem list
   - Oral labetalol on MAR, Med Rec, or PTA meds

7. **Use Hydralazine Algorithm**

### Sample

Loma Linda University Children’s Hospital Pathway for EMR Integration

Not Intended as a Standard of Care

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### REFERENCES:

**Oral Nifedipine Algorithm**

*Items in red are Standing Orders*

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1. **Administer 1st dose nifedipine, PO, 10 mg, x1 now**
   - Notify provider
   - Notify attending physician if SBP ≥ 180

2. **Repeat BP 20 minutes after nifedipine administration**
   - IS SBP ≥ 160 OR DBP ≥ 110?
     - Yes: Is patient now have IV access?
     - Yes: Continue to monitor BP:
       - Q10min x1hr
       - Q15min x1hr
       - Q30min x1hr
       - Q1hr x 4hrs
     - No: Does patient now have IV access?
       - Yes: Use Labetalol Algorithm Starting with 1st dose
       - No: Notify attending physician if SBP ≥ 180

3. **Administer 2nd dose nifedipine, PO, 20 mg, x1 now**
   - Notify provider

4. **Repeat BP 20 minutes after nifedipine administration**
   - IS SBP ≥ 160 OR DBP ≥ 110?
     - Yes: Does patient now have IV access?
     - Yes: Use Hydralazine Algorithm Starting with 1st dose
     - No: Notify attending physician if SBP ≥ 180
   - No: Does patient now have IV access?
     - Yes: Use Labetalol Algorithm Starting with 1st dose
     - No: Notify attending physician if SBP ≥ 180

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*Administer seizure prophylaxis: Magnesium sulfate 1
10g of 50% soln, IM (5g in each buttock; 2.5g / injection)*

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1. **Do not administer Magnesium Sulfate if any of the following apply:**
   - Myasthenia Gravis on PMH or problem list
   - SpO2 <92%
   - Respiratory rate >24 breaths/minute
   - Has received magnesium within 24 hours

2. **Inability to obtain IV access should not delay progression through the algorithm**

3. **Draw labs, if not resulted within 4 hours:**
   - CBC w/o diff
   - CMP
   - PT
   - PTT
   - Fibrinogen
   - Uric Acid
   - Type & Screen, if not resulted within 72 hours

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**Return to top of algorithm:**

- If creatinine is ≤1:
  - Check Mg level 3 hrs after IM loading dose
  - If <4mMol/L and has IV access:
    - Start maintenance 4 hours after IM loading dose, 2g/hr, IV, continuous infusion

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**03/29/2019**
Pregnant or <6 weeks postpartum patient has 2nd documentation of high blood pressure (SBP ≥ 160 OR DBP ≥ 110) within 5-60 minutes (readings do not need to be consecutive)

Administer 2nd dose labetalol, 40 mg, IV, over 2 minutes, now

Notify provider

Notify Attending physician if SBP ≥ 180

If referred from Nifedipine algorithm and creatinine is ≤ 1:
Check Mg level 3 hrs after IM loading dose if <4mMol/L and has IV access:
Start maintenance 4 hours after IM loading dose 2g/hr, IV, continuous infusion

Administer seizure prophylaxis:
Magnesium sulfate
- Loading dose: 4g 10% in 100mL soln, IV, over 20 min
- If Creatinine is ≤ 1, follow with maintenance:
  2g/hr, IV, continuous infusion

Draw labs
- Ask if patient has h/o CHF, cardiomyopathy, or moderate persistent or severe asthma, if not on medical hx/problem list – if yes, notify provider and switch to Hydralazine algorithm

Continue to monitor BP:
- Q10min x1hr
- Q15min x1hr
- Q30min x1hr
- Q1hr x 4hrs

If high within 60 minutes of last dose, readminister 1st dose and continue algorithm.
If high more than 60 minutes after last dose, start from beginning (recheck BP in 5 minutes and administer 1st dose if high).

Obtain emergency consult from MFM, internal medicine, anesthesiology, or critical care

If any time pulse pressure (SBP – DBP) drops to 50 or below, OR heart rate drops below 60, notify provider and switch to Hydralazine Algorithm

Do not administer Magnesium Sulfate if any of the following apply:
- Myasthenia Gravis on PMH or problem list
- SpO2 <92%
- Respiratory rate >24 breaths/minute
- Has received Magnesium within 24 hours

Draw labs, if not resulted within 4 hours:
- CBC w/o diff
- PTT
- Urine protein/Cr
- CMP
- Fibrinogen
- Uric Acid
- Type & Screen, if not resulted within 72 hours
- If Magnesium loading dose given IM, draw Mg level 3 hours later
Pregnant or <6 weeks postpartum patient has 2nd documentation of high blood pressure (SBP ≥ 160 OR DBP ≥ 110) within 5-60 minutes (readings do not need to be consecutive)

Does patient meet any of the following criteria:
- Pulse pressure ≤ 50
- Heart rate < 60
- CHF, cardiomyopathy, moderate persistent asthma, OR severe asthma on medical hx/problem list
- Oral labetalol on MAR, Med Rec, or PTA meds

Administer 1st dose hydralazine, 5 mg, IV, over 2 minutes, now
Notify provider
Notify Attending physician if SBP ≥ 180

Administer seizure prophylaxis:
- Magnesium sulfate
  - Loading dose: 4g 10% in 100mL soln, IV, over 20 min
  - If Creatinine is ≤ 1, follow with maintenance: 2g/hr, IV, continuous infusion

Draw labs¹

If referred from Nifedipine algorithm and creatinine is ≤ 1:
Check Mg level 3 hrs after IM loading dose if <4mMol/L and has IV access.
Start maintenance 4 hours after IM loading dose 2g/hr, IV, continuous infusion

Notify provider
Obtain emergency consult from MFM, internal medicine, anesthesiology, or critical care
Administer Labetalol, starting from step 5, if not contraindicated

IS SBP ≥ 160 OR DBP ≥ 110?
Yes
Administer 2nd dose hydralazine, 10 mg, IV, over 2 minutes, now
Notify provider
Notify Attending physician if SBP ≥ 180
Repeat BP 20 minutes after hydralazine administration

IS SBP ≥ 160 OR DBP ≥ 110?
No
Continue to monitor BP:
- Q10min x 1hr
- Q15min x 1hr
- Q30min x 1hr
- Q1hr x 4hrs
If high within 60 minutes of last dose, readminister 1st dose and continue algorithm.
If high more than 60 minutes after last dose, start from beginning (recheck BP in 5 minutes and administer 1st dose if high).

If referred from Nifedipine algorithm and creatinine is ≤ 1:
Check Mg level 3 hrs after IM loading dose
If <4mMol/L and has IV access:
Start maintenance 4 hours after IM loading dose 2g/hr, IV, continuous infusion

¹Do not administer Magnesium Sulfate if any of the following apply:
- Myasthenia Gravis on PMH or problem list
- SpO₂ < 92%
- Respiratory rate >24 breaths/minute
- Has received Magnesium within 24 hours

¹Draw labs, if not resulted within 4 hours:
- CBC
- CMP
- PT
- PTT
- Fibrinogen
- Uric Acid

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