OB Teams Call: Maternal Hypertension Initiative

January 22, 2018
12:30 – 1:30 PM
Overview

- Updates & Annual Conference Review
- HTN - Finishing Strong
- HTN - Sustainability
- Guest Speaker
- Next Steps
ILPQC 5th Annual Conference

- 400 Attendees!
- 44 Posters with 9 Abstract of Excellence Awards
- 53 Quality Improvement Award Winners
- 1,261 Diapers collected
ILPQC Severe HTN Quality Improvement Award Winners

GOLD

- HSHS St. John’s Hospital
- NorthShore University HealthSystem Evanston Hospital
- Northwestern Memorial Hospital
- Loyola University Medical Center
- Rush University Medical Center
- Edward Hospital
- Advocate Lutheran General Hospital
- AMITA Health Alexian Brothers Women and Children’s Hospital
- Memorial Hospital Belleville
- Westlake Hospital
- Rush Copley Medical Center
- Mount Sinai Hospital
- Northwestern Medicine Central DuPage Hospital
- Presence Saint Frances Hospital
- Advocate Sherman Hospital
- Memorial Hospital of Carbondale
- Advocate Illinois Masonic Medical Center
- NorthShore University HealthSystem Highland Park Hospital
- FHN Memorial Hospital
- Genesis Medical Center- Silvis
- Heartland Regional Medical Center
- Memorial Medical Center
- St. Bernard Hospital
- St. Margaret’s Hospital
- Northwestern Medicine Kishwaukee Hospital
- University of Illinois Hospital
ILPQC Severe HTN Quality Improvement Award Winners (cont.)

- AMITA Health Adventist Medical Center Hinsdale
- AMITA Health Adventist Medical Center Bolingbrook
- Little Company of Mary Hospital
- Advocate BroMenn Medical Center
- SSM St. Mary’s Hospital- St. Louis
- Centegra Hospital- Huntley
- AMITA Health Adventist Medical Center GlenOaks

SILVER

- University of Chicago Medicine Comer Children’s Hospital
- Jackson Park Hospital
- Abraham Lincoln Memorial Hospital
- Palos Hospital

- West Suburban Medical Center
- AMITA Health Adventist Medical Center La Grange
- Northwestern Medicine Delnor Hospital

BRONZE

- Gibson Area Hospital
- Centegra Hospital McHenry
- Presence Saint Joseph Medical Center
- Advocate Christ Medical Center
- McDonough District Hospital
- Presence Saint Mary and Elizabeth Medical Center
- HSHS St. Mary’s Hospital
ILPQC OB Posters
Abstracts of Excellence

• **Advocate Illinois Masonic Medical Center** - Opioid Medication Use Reduction (Best Implementation Plan)

• **Northwestern Memorial Hospital** - Severe Maternal Hypertension Initiative in a Level III Academic Center with a High Birth Volume - (Best Use of Data)

• **Northwest Community Healthcare** - Teachback and Roadmap: Bridging the Gap to Discharge

• **Northwestern Medicine Central DuPage Hospital** - Improving Recognition and Treatment of Severe Sepsis in Obstetric Patients at NM CDH

• **Northwestern Medicine Delnor Hospital** - Utilizing Innovative Quality Structures to Decrease Cesarean Sections

• **University of Illinois Hospital & Health Science System** - Breaking the Silence of Hypertensive Disorders in Pregnancy
Where are our Teams in their Maternal HTN Initiative Journey?

- Working to achieve QI goals (56%)
- Goals achieved, developing sustainability plan (28%)
- Goals achieved, implementing sustainability plan (15%)

ILPQC Team Survey, 2017
Working Together to Cross the Finish Line

- All teams complete provider/staff education, share data & goals
- All teams submit complete data to date
- Perinatal Network Administrators outreach to teams not yet at 80%
- ILPQC QI support calls to teams in need of additional support

### Quarterly
- Implementation Checklist
- AIM Quarterly Measures

### Monthly
- Severe Maternal Hypertension Form
Support for Teams to Complete Education

• Resources to facilitate all providers and nurses completing education (click to access resources online)
  – **AIM emodules** – 5 modules, 5-20 mins. each with comprehensive quiz and completion certificate
  – **AIM Hypertension Webcast** – 10 minute webcast with Drs. Martin, Shields, and Druzin
  – **ILPQC Grand Rounds Slide Set** – Comprehensive initiatives slide set for use in grand rounds/education
Checklist to Complete Initiative – Available for Download NOW!

- Submit data through December 2017 by Feb 15, 2018 in REDCap
  - ILPQC Severe Hypertension Data Form
  - ILPQC AIM Quarterly Measures
  - ILPQC Severe HTN Implementation Checklist

- All providers and nurses complete education
- Review your time to treatment data with your team
- Develop sustainability plan (draft provided)
- Continue data collection for compliance monitoring, HTN Compliance Form in REDcap available in March
Support for Teams to Finish Strong

• ILPQC will reach out to teams with data missing in quarter 3 2017 including monthly and quarterly data to discuss strategies for data completion

• Perinatal Network Administrator or ILPQC will connect with teams still working towards the 80% time to treatment goal

• All teams (1) submitting all data through December 2017 by February 15, 2018 and (2) meeting or exceeding the 80% time to treatment goal by December 2018 will receive a certificate of QI achievement and a letter to their hospital leadership acknowledging their achievements
Maternal Hypertension Data: Time to Treatment

ILPQC: Maternal Hypertension Initiative
Percent of Cases with New Onset Severe Hypertension Treated in <30, 30-60, 60-90, >90 minutes or Not Treated
All Hospitals, 2016-2017

*November: 61 Teams Reporting
December: 50 Teams Reporting*
Maternal Hypertension Data: Time to Treatment

ILPQC: Maternal Hypertension Initiative
Percent of Women with New Onset Severe Hypertension Treated Within 60 Minutes and Proportion of Hospitals in Collaborative Treating Women Within 60 Minutes
All Hospitals, 2016-2017

- Proportion of Hospitals with 80% of women treated within 60 min
- Proportion of Hospitals with 0-79% of women treated within 60 min
- Percent overall women in collaborative treated within 60 min
Maternal Hypertension Data: Patient Education

ILPQC: Maternal Hypertension Initiative
Percent of Women with New Onset Severe Hypertension Who Received Discharge Education Materials and Proportion of Hospitals in Collaborative Giving Discharge Education to Women
All Hospitals, 2016-2017

Baseline | July-16 | Aug-16 | Sep-16 | Oct-16 | Nov-16 | Dec-16 | Jan-17 | Feb-17 | Mar-17 | Apr-17 | May-17 | June-17 | July-17 | Aug-17 | Sep-17 | Oct-17 | Nov-17 | Dec-17

- Proportion of Hospitals with 80% of women who received discharge materials
- Proportion of Hospitals with 0-79% of women who received discharge materials
- Percent overall women in collaborative who received discharge materials
Maternal Hypertension Data:
Patient Follow-up

ILPQC: Maternal Hypertension Initiative
Percent of Women with New Onset Severe Hypertension Where Follow-up Appointments were Scheduled within 10 Days and Proportion of Hospitals in Collaborative Where Follow-Up Appointments were Scheduled within 10 Days All Hospitals, 2016-2017

Proportion of hospitals with 80-100% of women with follow up
Proportion of hospitals with 0-79% of women with follow up
Percent overall women in collaborative with follow up
Maternal Hypertension Data: Debrief

ILPQC: Maternal Hypertension Initiative
Percent of Women with New Onset Severe Hypertension with Cases Debriefed and Proportion of Hospitals in Collaborative with Cases Debriefed
All Hospitals, 2016-2017

- **Proportion of Hospitals with 50-100% of cases debriefed**
- **Proportion of Hospitals with 0-50% of cases debriefed**
- **Percent of women in collaborative with Cases Debriefed**
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<thead>
<tr>
<th></th>
<th>Total Records</th>
<th># Teams with Data</th>
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<td>December</td>
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<tr>
<td>Overall</td>
<td>13795</td>
<td>106</td>
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</table>
AIM Quarterly Measures: Provider & Nurse Education

Culumative percent of OB providers and nurses completed (within the last 2 years) implementation education on the Severe HTN/Preeclampsia bundle elements and unit-standard protocol

Wow!
Implementation Checklist:
Standard Policies / Protocols Across Units

<table>
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<th>Quarter</th>
<th>hospitals (N)</th>
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<tr>
<td>Q2 2016 (Apr-Jun) (N=21)</td>
<td>0%</td>
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<tr>
<td>Q3 2016 (Jul-Sep) (N=32)</td>
<td>20%</td>
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<tr>
<td>Q4 2016 (Oct-Dec) (N=41)</td>
<td>40%</td>
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<td>Q1 2017 (Jan-Mar) (N=51)</td>
<td>60%</td>
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<tr>
<td>Q2 2017 (Apr-Jun) (N=47)</td>
<td>80%</td>
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<tr>
<td>Q3 2017 (Jul-Sep) (N=30)</td>
<td>100%</td>
</tr>
</tbody>
</table>

Percent of hospitals with standard protocols for early warning signs, updated diagnostic criteria, monitoring and treatment of severe preeclampsia/eclampsia (include order sets and algorithms)

Way to go!
Maternal Hypertension Outcome Data: Severe Maternal Morbidity

ILQPC: Women with New Onset HTN with Severe Maternal Morbidity
All Hospitals, 2016-2017

- Intracranial Hemorrhage or Ischemic event (stroke)
- Eclampsia
- Pulmonary Edema
- HELLP Syndrome
- Oliguria
- DIC
- Renal Failure
- Liver Failure
- Ventilation
- Placental Abruption
- OB Hemorrhage
- ICU Admission

13,263 patients included
SUSTAINABILITY
Develop Your Sustainability Plan

Sustainability Plan

- Compliance Monitoring
- New Hire Education
- Ongoing Staff/Provider Education
Developing a sustainability plan – Template available for download now!

• Who will enter compliance data into REDCap?
• Will you continue to track additional data on internal forms?
• When will you meet with your team to
  – Monitor compliance via ILPQC Data System Reports?
  – Develop a plan and implement PDSA cycles if compliance on measures starts slipping?
Support for Teams to Sustain the Improvements

• Submit your sustainability plan to your perinatal network administrator
• Discuss challenges and strategies with hospitals in your network at your perinatal network meetings
• ILPQC Team Calls on HTN Sustainability in January, March, June, September and end of year 2018
• QI Topic Call on Sustainability Plans with Centegra on February 21 at 12pm 1-877-860-3058; 850 207 6731#
Continue to review and share your data in sustainability.
Education Resources for Teams

• New hires should complete the AIM e-modules / AIM webcast
• Request Grand Rounds at info@ilpqc.org
• Incorporate HTN education into ongoing unit education: drills / simulations / e-modules
• Post protocols
• Continue active “debrief” = “how did we do on Time to Treatment?”
Strategies for Sustaining Success

- **Know Your Champions** – nursing leaders, providers, quality
- **Transparency and Accountability** – monthly calls/meetings, distribute outcomes/metrics by facility
- **Physician Collaboration** – system and facility level engagement
- **Standardized Education** – new hire orientation, annual review
- **Standardized High Risk Scenario** – simulation/drills
- **Share Learnings** – case reviews, “good catches” and near misses
- **Utilize Tools and Technology** – laminated algorithms, electronic health record alerts and reminders
Compliance Monitoring in REDCap

- Time to treatment severe HTN < 60 minutes
- Magnesium provided
- Early follow up for BP check within 7-10 days
- Patient discharge education
HTN Compliance Data Form in REDCap

Maternal Severe HTN Compliance Form

Assign record to a Data Access Group? -- select a group --

Adding new Record ID 4

| Record ID | 4 |
| Hospital ID | |
| Postpartum | Yes |
| GA at maternal event | |
| Weeks | |
| Days | |
| Maternal Race/Ethnicity | White |
| Diagnosis | Chronic HTN |
| Date of Maternal severe HTN (BP systolic ≥ 160 and/or diastolic ≥110) | |
| Blood Pressure at initiation of antihypertensive treatment: Systolic: | |
| Diastolic: | |

How long after the BP reached systolic ≥160 and/or diastolic ≥110 and persistent for 15 minutes was first BP medication given?

- must provide value

- < 30 mins
- 30-59 mins
- ≥ 60 mins
- No action taken / Missed opportunity

Was Magnesium Sulfate administered?

- must provide value

- Yes
- No

GA at delivery

- must provide value

Weeks

- Days

Discharge Management: Was a follow-up appointment scheduled for within 3-10 days for all women with any severe range hypertension (preclampsia)?

- must provide value

- Yes
- No

Discharge Education: Were education materials about preclampsia given?

- must provide value

- Yes
- No

Adverse Maternal Outcome

- must provide value

- OB Hemorrhage with transfusion of ≥4 units of blood products
- Intracranial Hemorrhage or Ischemic event
- Pulmonary Edema
- ICU Admission
- HELLP Syndrome
- Oliguria
- Eclampsia
- DIC
- Renal failure
- Liver failure
- Ventilation
- Placental Abruption
- Other
- None

Form Status

Complete? Incomplete ▼
Support for Teams for Compliance Monitoring

- Compliance monitoring form and reports in REDCap
- ILPQC QI Support Calls quarterly to teams falling out of compliance
- Letter to chair/hospital administrator about ACOG Guidelines if provider/staff buy-in is an issue to develop escalation procedures
Magnesium Compliance Monitoring

- Review your magnesium compliance data and missed opportunities
- Run a PDSA cycle if not at goal
- ACOG Executive Summary on Hypertension In Pregnancy, Nov 2013: “Proteinuria is not a requirement to diagnose preeclampsia with new onset severe hypertension and a sign/symptom of end organ dysfunction.”
Discussion: Improving compliance with Mag administration

• What has worked at your hospital?
• Best practices?
Severe Hypertension in Pregnancy Treatment Algorithm
Antepartum, Intrapartum and Postpartum

Blood Pressure Triggers
(Persistent over 15 minutes)
SBP ≥ 160 and/or DBP ≥ 110

Notify Provider
Proceed below, per MD Orders

IV Access
Fetal Heart Rate monitoring
Obtain labs per order

IV Antihypertensives
First Line Medications

Labetalol or Hydralazine

IV Labetalol *
20 mg (over 2 min)
Repeat BP in 10 minutes
If elevated, administer
IV Labetalol 40 mg
Repeat BP in 10 minutes
If elevated, administer
IV Hydralazine 10 mg
Repeat BP in 20 minutes
If elevated, administer
IV Hydralazine 10 mg

IV Hydralazine
5-10mg (over 1-2 min)
Repeat BP in 20 minutes
If elevated, administer
IV Labetalol 10 mg
Repeat BP in 20 minutes
If elevated, administer
IV Labetalol 10 mg
Repeat BP in 20 minutes
If elevated, administer
IV Labetalol 20 mg

Seizure Prophylaxis

Magnesium Sulfate

Bolus Dose: 4gm over 20 minutes
Maintenance Dose: 2gm per hour

PO Nifedipine if no IV access, this
option should be considered.

Initial Dose: 10 mg
May repeat dose at 20 minute
intervals for a maximum of 5 doses.

*If the maternal HR is <60
bpm starting with
hydralazine may be
preferable
Preeclampsia Bundle Compliance

1. Treat elevated BP
2. Give magnesium sulfate
3. Early PP follow-up
Compliance Monitoring

Mentorship Model

Hospital Teams
Monthly Meetings

Perinatal Network Administrators
Outreach

ILPQC QI Support and Quarterly Team Check in Calls

Sustained Improvements
Cynthia Sawyer, MSN, CNS, RNC-OB, CLE
Perinatal Clinical Nurse Specialist
PIH Health Hospital – Whittier, California

GUEST SPEAKER
PIH HEALTH HOSPITAL - WHITTIER

- 547 Beds
- Serve L.A., Orange County, San Gabriel Valley
- Level II
- 32-Bed L & D / MN Unit
- 1800 Deliveries - FY 2017
CMQCC Timely Treatment for Severe Hypertension - Q3 2017

Trend: Timely Treatment for Severe Hypertension

- Definition
- Comparisons
- Benchmark: CA MDC Top 10%
- Displaying: X PIH Health-Whittier, X CA MDC Average

Chart review is incomplete for December 2016. Complete it now.

<table>
<thead>
<tr>
<th>Period</th>
<th>PIH Health-Whittier</th>
<th>CA MDC Average Rate</th>
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</thead>
<tbody>
<tr>
<td>Q3 2017</td>
<td>78.6%</td>
<td>58.0%</td>
</tr>
<tr>
<td>Q2 2017</td>
<td>78.9%</td>
<td>53.3%</td>
</tr>
<tr>
<td>Q1 2017</td>
<td>64.3%</td>
<td>52.9%</td>
</tr>
</tbody>
</table>
Action Plan

• Developed Severe Hypertensive Order Set per OB Committee consensus.
• Revised Magnesium (Mg) Policy to reflect current evidence-based practices to align with CMQCC recommendations.
• Educated nursing personnel on preeclampsia with mild and severe features.
• Implemented a hypertensive crisis and eclampsia simulation program for Labor and Delivery and Maternal-Newborn.
• Staff performed return demonstration of Severe Hypertensive Crisis algorithm, evidence-based eclampsia interventions, and magnesium bolus.
• Modified Preeclampsia with Severe Features Debriefing Tool from CMQCC and Miller Children’s Hospital and educated Charge Nurses on use.
• Modified Mg medication boxes to reflect CMQCC recommendations.
• Collaborated with ED educator to disseminate ED treatment algorithm to Ed physicians and staff.
• Perinatalogist educated healthcare providers on new protocols.
Tools for the Staff

Treatment for Severe Preeclampsia

- Systolic BP ≥ 160 mmHg and/or DBP ≥ 105 mm Hg

  - Inform OB team
  - If preeclampsia proceed below

**IV Access**
- Monitor FHT
- Send labs

**IV Antihypertensive Medication** (either chain below)

- **Labetalol 20 mg**
- **Hydralazine 5-10 mg**

  - Repeat BP in 10 mins if elevated administer labetalol 40 mg
  - Repeat BP in 10 mins if elevated administer hydralazine 10 mg

- **Labetalol 80 mg**

  - Repeat BP in 10 mins if elevated administer hydralazine 10 mg

- **Hydralazine 10 mg**

  - Repeat BP in 20 mins if elevated administer labetalol 20 mg

- **Magnesium Sulfate**
  - Bolus dose: 4 - 6 g (over 20 mins)
  - Maintenance dose: 1 - 2 g/hr

- **Check serum magnesium levels (if indicated)**

**Seizure Prophylaxis**

- Magnesium sulfate maintenance dose

See reverse side for eclampsia management
Tools Designed by Staff

Treatment for Severe Preeclampsia

Systolic BP ≥ 160 mmHg and/or
DBP ≥ 105 mmHg

Inform OB team & obtain severe hypertensive order set first.
*Call MD before each med, if subsequent doses are needed and MD does not call back within 5 min give med and continue to try & contact MD. If no response call backup or chief of OB

If pre eclampsia proceed below

IV Antihypertensive Medication
(ether chain below)

Seizure Prophylaxis

Magnesium Sulfate
bolus dose 6 g (over 20 mins) if not already on mag

Magnesium Sulphate
bolus dose 2 g (over 5 mins) if already on mag or 6 g did not work

Magnesium Sulfate
Maintenance dose
1 – 2 g/hr

Check serum mag levels (if indicated)

If seizure not terminating administer
midepsin 2 mg IV / floxazepam 4 mg
IV is an alternative

Repeat BP in 10 min if elevated
Labetalol 40 mg

Repeat BP in 10 min if elevated
Labetalol 80 mg

Repeat BP in 10 min if elevated
Hydralazine 10 mg

Repeat BP in 20 min if elevated
Labetalol 20 mg

Repeat BP in 20 min if elevated
Hydralazine 10 mg

Repeat BP in 10 min if elevated
Labetalol 20 mg

Repeat BP in 10 min if elevated
Labetalol 40 mg AND Obtain anesthesia consult

Repeat BP in 20 min if elevated
Obtain anesthesia consult

Date/Time Started

BP/Pulse Ox Monitoring
1st hr q 10 min
2nd hr q 15 min
3rd hr q 30 min
4th hr hourly x 4

Maximum dose of Labetalol
is 300 mg IV, Hydralazine
126 mg IV in 24 hrs &
Hydralazine 20 mg IV in 1 hr

1st dose __________ 6th dose __________ Running Total
2nd dose __________ 7th dose __________
3rd dose __________ 8th dose __________
4th dose __________ 9th dose __________
5th dose __________ 10th dose __________
## Severe Hypertension Order Set for Intrapartum or Postpartum [6 orders of 25 are selected]

### Blood Pressure (BP) threshold:
- Systolic blood pressure (SBP) greater than or equal to 160 mmHg or diastolic blood pressure (DBP) greater than or equal to 105 mmHg.

<table>
<thead>
<tr>
<th>Order</th>
<th>Instructions</th>
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<tr>
<td>Blood Pressure</td>
<td>recheck in 15 minutes if SBP greater than or equal to 160 mmHg or DBP greater than or equal to 105 mmHg, administer initial...</td>
</tr>
<tr>
<td>Pulse Oximetry</td>
<td>Continuous until 6 hours after last dose of antihypertensive medication given.</td>
</tr>
</tbody>
</table>

Consider maximum dosages:
- Labetalol: Max cumulative dose is 300 mg in 24 hours.
- Hydralazine: Max total dose is 20 mg in one hour and 120 mg in 24 hours.

### Medications - First Line Management

#### Option 1 - 4 item(s)

<table>
<thead>
<tr>
<th>Order</th>
<th>Dose</th>
<th>Route</th>
<th>Frequency</th>
<th>PRN</th>
<th>PRN Reason</th>
<th>Special Instructions</th>
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<tbody>
<tr>
<td>Labetalol Injection</td>
<td>20</td>
<td>IV</td>
<td>One Time</td>
<td>☐</td>
<td></td>
<td>Initial dose. Give over 2 minutes. Recheck BP in 10 minutes. If SBP is less than 160 mmHg and DBP is less...</td>
</tr>
<tr>
<td>Labetalol Injection</td>
<td>40</td>
<td>IV</td>
<td>One Time</td>
<td>☑</td>
<td>If SBP is still greater than or...</td>
<td>Second dose, give 10 minutes after initial dose. Give over 2 minutes. Recheck BP in 10 minutes. If SBP is less...</td>
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<tr>
<td>Labetalol Injection</td>
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<td>IV</td>
<td>One Time</td>
<td>☑</td>
<td>If SBP is still greater than or...</td>
<td>Third dose, give 10 minutes after 2nd dose. Give over 2 minutes. Recheck BP in 10 minutes. If SBP is less than...</td>
</tr>
<tr>
<td>Hydralazine Injection</td>
<td>10</td>
<td>IV</td>
<td>One Time</td>
<td>☑</td>
<td>If SBP is still greater than or...</td>
<td>Give 10 minutes after labetalol 80 mg. Give over 2 minutes. NOTIFY ANESTHESIOLOGIST and recheck BP in 20...</td>
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#### Option 2 - 4 item(s)

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<th>Frequency</th>
<th>PRN</th>
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<td>Hydralazine Injection</td>
<td>5</td>
<td>IV</td>
<td>One Time</td>
<td>☑</td>
<td></td>
<td>Initial dose. Give over 2 minutes. Recheck BP in 20 minutes. If SBP is less than 160 mmHg and DBP is less...</td>
</tr>
<tr>
<td>Hydralazine Injection</td>
<td>10</td>
<td>IV</td>
<td>One Time</td>
<td>☑</td>
<td>If SBP is still greater than or...</td>
<td>Second dose, give 20 minutes after initial dose. Recheck BP in 20 minutes. If SBP is less...</td>
</tr>
<tr>
<td>Hydralazine Injection</td>
<td>20</td>
<td>IV</td>
<td>One Time</td>
<td>☑</td>
<td>If SBP is still greater than or...</td>
<td>Give 20 minutes after hydralazine 10 mg. Give over 2 minutes. Recheck BP in 10 minutes...</td>
</tr>
<tr>
<td>Hydralazine Injection</td>
<td>40</td>
<td>IV</td>
<td>One Time</td>
<td>☑</td>
<td>If SBP is still greater than or...</td>
<td>Give 10 minutes after labetalol 20 mg. Give over 2 minutes. NOTIFY ANESTHESIOLOGIST and recheck BP in 10...</td>
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### Medications - Additional Management

#### Nifedipine - 3 item(s)

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<th>PRN Reason</th>
<th>Additional Instructions</th>
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<td>oral</td>
<td>One Time</td>
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<td></td>
<td>Initial dose. Recheck BP in 20 minutes. If SBP is less...</td>
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<tr>
<td>Nifedipine</td>
<td>20</td>
<td>oral</td>
<td>One Time</td>
<td>☑</td>
<td>If SBP is still greater than or...</td>
<td>Second dose, give 20 minutes after initial dose. Recheck BP in 20 minutes. If SBP is less than 160 mmHg and...</td>
</tr>
<tr>
<td>Nifedipine</td>
<td>20</td>
<td>oral</td>
<td>One Time</td>
<td>☑</td>
<td>If SBP is still greater than or...</td>
<td>Third dose, give 20 minutes after second dose. Recheck BP in 20 minutes. If SBP is less than 160 mmHg and...</td>
</tr>
</tbody>
</table>

#### Other Injections - 3 item(s)

<table>
<thead>
<tr>
<th>Order</th>
<th>Dose</th>
<th>Route</th>
<th>Frequency</th>
<th>PRN</th>
<th>PRN Reason</th>
<th>Additional Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labetalol Injection</td>
<td>10</td>
<td>IV</td>
<td>One Time</td>
<td>☑</td>
<td></td>
<td>Give over 2 minutes. Notify Anesthesiologist and recheck BP in 20 minutes. If SBP is still greater than or...</td>
</tr>
<tr>
<td>Labetalol Injection</td>
<td>40</td>
<td>IV</td>
<td>One Time</td>
<td>☑</td>
<td></td>
<td>Give over 2 minutes. Notify Anesthesiologist and recheck BP in 10 minutes. If SBP is still greater than or...</td>
</tr>
<tr>
<td>Labetalol Injection</td>
<td>30</td>
<td>IV</td>
<td>One Time</td>
<td>☑</td>
<td></td>
<td>Give over 2 minutes. Notify Anesthesiologist and recheck BP in 10 minutes. If SBP is still greater than or...</td>
</tr>
</tbody>
</table>

### Miscellaneous Orders

<table>
<thead>
<tr>
<th>Order</th>
<th>Consult Type</th>
<th>Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consult Physician</td>
<td>Maternal Fetal Medicine</td>
<td></td>
</tr>
<tr>
<td>Consult Physician</td>
<td>Internal Medicine</td>
<td></td>
</tr>
<tr>
<td>Consult Physician</td>
<td>Anesthesia</td>
<td></td>
</tr>
<tr>
<td>Consult Physician</td>
<td>Intensive</td>
<td></td>
</tr>
<tr>
<td>Social Work Consult</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miscellaneous Nursing</td>
<td>Severe Hypertension. Once SBP is less than 160 mmHg and DBP is less than 105 mmHg, monitor BP every 10 minutes for one hour, every...</td>
<td></td>
</tr>
<tr>
<td>Miscellaneous Nursing</td>
<td>Severe Hypertension. BP target NOT to be less than 140/90 mmHg as it will decrease fetal perfusion.</td>
<td></td>
</tr>
<tr>
<td>Miscellaneous Nursing</td>
<td>Severe Hypertension. Observe diabetic patients closely as Labetalol can mask signs and symptoms of hypoglycemia.</td>
<td></td>
</tr>
<tr>
<td>Miscellaneous Nursing</td>
<td>Notify MD</td>
<td>Once BP has achieved a threshold below parameters but then again exceeds the parameters, Notify Physician and ANTICIPATE REVERTING...</td>
</tr>
</tbody>
</table>
## Preeclampsia with Severe Features Debriefing Form

<table>
<thead>
<tr>
<th>Person completing form:</th>
<th>Date &amp; time:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient’s MedEx Sticker</td>
<td>Print team names present:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time of first B/P ≥ 160 or 105</th>
<th>Time:</th>
<th>Patient location (check all that apply)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>□ Triage □ NST □ L&amp;D □ M-N □ ED</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time of second confirming B/P</th>
<th>Time:</th>
<th>Done in 15 minutes? □ Yes □ No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order set initiated</td>
<td>□ Yes □ No</td>
<td></td>
</tr>
<tr>
<td>Antihypertensive given within 60 minutes of confirming B/P</td>
<td>□ Yes □ No</td>
<td></td>
</tr>
<tr>
<td>Medications given: (check all that apply)</td>
<td>Why was there a delay?</td>
<td></td>
</tr>
<tr>
<td>□ Labetalol □ IV □ PO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Hydralazine □ IV □ PO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Nifedipine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magnesium Sulfate:</td>
<td>Steroids given &lt; 34 weeks? □ Yes □ No</td>
<td></td>
</tr>
<tr>
<td>Loading dose: □ 4g □ 6g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintenance: □ 1g □ 2g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>What went well?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Communication □ Teamwork □ Leadership □ Other</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opportunities for improvement:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Successes:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Outcome: (If unknown leave blank) | |
|----------------------------------| |
| □ Delivery: □ C/S □ VD □ or | |
| □ Continued hospitalization: □ 24-48 hrs □ > 48 hrs | |
| Please give form to Director | Midas completed: □ Yes □ No |
Simulations
Collaborated with ED Educator

**Evaluation and Treatment of Antepartum and Postpartum Preeclampsia and Eclampsia in the Emergency Department**

**1st Line Anti-Hypertensive Treatment**: Labetalol & Hydralazine*
- Target BP: 140-160/90-100 (BP<140/90 = decreased fetal perfusion)
- See CMQCC Preeclampsia Toolkit for "Antihypertensives in Preeclampsia" for 2nd line therapy

<table>
<thead>
<tr>
<th>LABETALOL as Primary Anti-Hypertensive</th>
<th>HYDRAZINE as Primary Anti-Hypertensive</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Administer Labetalol 20 mg IV</td>
<td>1. Administer Hydralazine 5 or 10 mg IV</td>
</tr>
<tr>
<td>2. Repeat BP in 10 min</td>
<td>2. Repeat BP in 20 min</td>
</tr>
<tr>
<td>- If BP threshold is still exceeded, administer Labetalol 40 mg IV</td>
<td>- If BP threshold is still exceeded, administer Hydralazine 10 mg IV</td>
</tr>
<tr>
<td>- If SBP&lt;160 and DBP&lt;100, continue to monitor closely</td>
<td>- If SBP&lt;160 and DBP&lt;100, continue to monitor closely</td>
</tr>
<tr>
<td>3. Repeat BP in 10 min</td>
<td>3. Repeat BP in 20 min</td>
</tr>
<tr>
<td>- If BP threshold is still exceeded, administer Labetalol 80 mg IV</td>
<td>- If BP threshold is still exceeded, administer Hydralazine 10 mg IV</td>
</tr>
<tr>
<td>- If SBP&lt;160 and DBP&lt;100, continue to monitor closely</td>
<td>- If SBP&lt;160 and DBP&lt;100, continue to monitor closely</td>
</tr>
<tr>
<td>4. Repeat BP in 10 min</td>
<td>4. Repeat BP in 10 min</td>
</tr>
<tr>
<td>- If BP threshold is still exceeded, administer Hydralazine 10 mg IV</td>
<td>- If BP threshold is still exceeded, administer Labetalol 20 mg IV</td>
</tr>
<tr>
<td>- If SBP&lt;160 and DBP&lt;100, continue to monitor closely</td>
<td>- If SBP&lt;160 and DBP&lt;100, continue to monitor closely</td>
</tr>
<tr>
<td>5. Repeat BP in 20 min; if BP threshold is still exceeded, obtain emergent consultation from maternal-fetal medicine, internal medicine, anesthesiology, or critical care</td>
<td>5. Once target BP achieved, monitor BP q10 min for 1 hour, q 15 min for 2nd hour</td>
</tr>
</tbody>
</table>

**Magnesium**

**Initial Treatment**
- 1. Loading Dose: 4-6 gm over 15-20 min
- 2. Maintenance 1-2 gm/hr
- 3. Close observation for signs of toxicity
  - Disappearance of deep tendon reflexes
  - Decreased RR, shallow respirations, shortness of breath
  - Heart block, chest pain
  - Pulmonary edema

**If Patient Seizes While on Magnesium:**
- 1. Secure airway and maintain oxygenation
- 2. Give 2nd loading dose of 2 gm Magnesium over 5 min
- 3. If patient seizes after 2nd magnesium bolus, consider the following:
  - Midazolam 1-2 mg IV; may repeat in 5-10 min **OR**
  - Lorazepam 2 mg IV may repeat **OR**
  - Diazepam 5-10 mg IV. May repeat q15 min to max of 30 mg
  - Phenytoin 1g IV over 20 min

**Seizures Resolve**
- 1. Maintain airway and oxygenation
- 2. Monitor VS, cardiac rhythm/ECG for signs of medication toxicity
- 3. Consider brain imaging for:
  - Head trauma
  - Focal seizure
  - Focal neurologic findings
  - Other neurologic diagnosis is suspected

*Labetalol and Hydralazine recommendations based on 2011 ACOG Committee Opinion #514 and Practice Bulletin #33, Reaffirmed 2012
**Sustainability**

- Review of debriefings with nursing leadership
- Continued simulations
- Education at staff meetings, case studies, and huddles
- Posting of compliance on staff bulletin board
NEXT STEPS
HTN Next Steps & Key Takeaways

• Periodic call schedule going forward (still at 12:30pm): March, June, September, year end
• Enter ALL data by Feb 15 & develop sustainability plan and submit to PNA
• Ongoing data collection for compliance monitoring, HTN Compliance REDCap Data Form available in March
• Teams will be contacted to provide team talks on sustainability plan implementation for future calls
• Please contact info@ilpqc.org if you are willing to be a mentor hospital to other HTN teams
MNO Wave 1 Calls – if you are participating

• Essential feedback from Wave 1 Teams will be solicited at the following call(s) in February and March. Attendance is highly encouraged:
  – 3rd Monday of the Month (MNO Neonatal Work Group) – open to all teams
    • February 19 @ 1PM
    • March 19 @ 1PM
  – 4th Monday of the Month (MNO OB Teams Calls)
    • February 26 @ 12:30PM (no HTN)
    • March 26 @ 12:30PM (1st hour = HTN; 2nd hour = MNO)
Q&A

• Ways to ask questions:
  – Raise your hand on Adobe Connect to ask your question by phone
  – Post a question in the Adobe Connect chat box
Contact

• Email info@ilpqc.org
• Visit us at www.ilpqc.org
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