Maternal Hypertension Initiative Teams Call

Response

August 22, 2016
12:30 – 1:30 pm
Overview

• Tools for Communication & Collaborative Learning
• Data
• Quality Improvement Tools
• Clinical Education
  • Blood Pressure Medication and Treatment Algorithms – Drs. Jim Keller and Angelique Rettig
• CA Teams: Order Sets & Protocol Integration
  • Connie von Kholer, MSN, RNC-OB, C-EFM, CPHQ - Miller Children's Hospital, Long Beach, CA
• Team Talks
  • Peggy Boron – HSHS St. Elizabeth Hospital
• 4th Annual Conference
• Next Steps & Questions
HTN Communications

- ILPQC implemented bi-weekly emails to teams with important information
- Please review at team meeting
- 3 emails sent to date
- Please email Kate at info@ilpqc.org if you are not receiving HTN Team communications
Additional Opportunities for Collaborative Learning

• Upcoming QI Topic Call on Thursday, September 1
  • Focus on getting started with HTN initiative
  • Please attend if you are still working to get started OR if you have tips to share for getting started

• Working FAQs posted to ILPQC website
  [http://ilpqc.org/?q=Hypertension](http://ilpqc.org/?q=Hypertension)

• Discussion boards on in ilpqc.org member’s area – topics posted will be listed in the twice monthly teams email
  • Current topics: BP kits & Changing provider practice around treatment
  • Goal to have one member of your hospital team, check the discussion board weekly, post or respond to discussion board at least 1x per month!
Sign Up for Member’s Only Area on ilpqc.org

Create your user account today to have access to discussion boards online!

Click Fill in info
Sign Up for Member’s Only Area on ilpqc.org

- Share initiative specific resources
- Collaborate and communicate via online ILPQC initiative forums/discussion boards
Data

AIM Quarterly Measures
Review of Severe HTN Data
SMM Data
AIM Quarterly Data

• To date, **42 hospital teams (38%)** have completed this form, all teams need to complete each quarter to track progress.

• If have not completed, due this week, next quarter 10/15

• Provider education on severe HTN/preeclampsia
  • Over 75% of responding hospitals have ≤50% of Providers who have received education on severe HTN/preeclampsia in last 2 years

• Nursing education on severe HTN/preeclampsia
  • Over 60% of responding hospitals have ≤50% of Nurses who have received education on severe HTN/preeclampsia in last 2 years

• Drills
  • Average # of drills Q2 2016 = 2.8
  • Most covered topics: Hemorrhage (23), Shoulder Dystocia (17), Maternal Code (11)
  • Severe HTN least covered drill – only 4 hospitals had a drill on severe HTN during Q2 2016
## Severe Hypertension Data Entry Status

<table>
<thead>
<tr>
<th></th>
<th>Total Records</th>
<th># Teams with Data</th>
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<tbody>
<tr>
<td>Baseline (2015)</td>
<td>1282</td>
<td>73</td>
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<tr>
<td>January</td>
<td>71</td>
<td>17</td>
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<tr>
<td>February</td>
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<td>March</td>
<td>164</td>
<td>22</td>
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<td>April</td>
<td>137</td>
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<tr>
<td>May</td>
<td>301</td>
<td>39</td>
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<td>June</td>
<td>399</td>
<td>58</td>
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<tr>
<td>July</td>
<td>273</td>
<td>51</td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td><strong>2762</strong></td>
<td><strong>84</strong></td>
</tr>
</tbody>
</table>
Maternal HTN: Time to Treatment

ILPQC: Maternal Hypertension Initiative
Percent of Cases with New Onset Severe Hypertension Treated within 60 Minutes
All Hospitals, 2016

Percent of Cases

<table>
<thead>
<tr>
<th></th>
<th>Jan-16</th>
<th>Feb-16</th>
<th>Mar-16</th>
<th>Apr-16</th>
<th>May-16</th>
<th>Jun-16</th>
<th>Jul-16</th>
<th>Aug-16</th>
<th>Sep-16</th>
<th>Oct-16</th>
<th>Nov-16</th>
<th>Dec-16</th>
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<tr>
<td>Baseline (2015)</td>
<td>38.3%</td>
<td>38.3%</td>
<td>38.3%</td>
<td>38.3%</td>
<td>38.3%</td>
<td>38.3%</td>
<td>38.3%</td>
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<td>38.3%</td>
<td>38.3%</td>
<td>38.3%</td>
<td>38.3%</td>
</tr>
<tr>
<td>All Hospitals</td>
<td>39.6%</td>
<td>42.6%</td>
<td>52.1%</td>
<td>56.4%</td>
<td>54.4%</td>
<td>58.1%</td>
<td>47.8%</td>
<td>51.8%</td>
<td>47.8%</td>
<td>51.8%</td>
<td>47.8%</td>
<td>51.8%</td>
</tr>
</tbody>
</table>

N

<table>
<thead>
<tr>
<th></th>
<th>Baseline (2015)</th>
<th>All Hospitals</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>1053</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>119</td>
<td>140</td>
</tr>
<tr>
<td></td>
<td>114</td>
<td>263</td>
</tr>
<tr>
<td></td>
<td>341</td>
<td>249</td>
</tr>
</tbody>
</table>
IL State SMM Data

- ILPQC, in collaboration with IDPH, providing AIM with SMM data at the aggregate state level
- SMM data reported quarterly for 2011 – 2014 to provide baseline
- Data reported with and without hemorrhage and by race/ethnicity
- ILPQC will use as an additional mechanisms to track initiative outcome measure to reduce SMM by 20% by December 2017
Illinois Severe Maternal Morbidity Rate per 10,000 Births
Quarterly and Annually, 2011 - 2014
IL State SMM Data: Excluding Hemorrhage

Illinois Severe Maternal Morbidity Rate per 10,000 Births Excluding Hemorrhage
Quarterly and Annually, 2011 - 2014
ILPQC Severe Maternal HTN: SMM Data

**ILPQC: Maternal Hypertension Initiative**
Percent of Cases with New Onset Severe Hypertension with Any Adverse Maternal Outcomes
All Hospitals, 2016

- ILPQC initiative outcome goal to reduce SMM by 20% by Dec. 2017
- Need to ensure hospitals are accurately reporting outcome measures
  - ILPQC data form does not capture ALL SMM codes
  - May be entering outcome data at time points during pregnancy/postpartum
    - Potentially leads to falsely lowered SMM rate
  - ILPQC continue to track at state aggregate level
Quality Improvement Tools

Opportunities for Quality Improvement
HTN Toolkit Binder
Opportunities for Quality Improvement

• Early recognition of hypertension and response to clinical triggers of preeclampsia (pregnant and pp)
• Importance of accurate BP measurement and identify severe range BP across all units.
• Reduce time to treatment for BP ≥160/110(105)
• Implement standardized use of ACOG protocols for acute treatment of severe range BP
• Coordination of care (L&D, PP, ED, ICU) and timely evaluations and consultations
• Standardize postpartum follow-up and patient education at discharge all pts severe range BP
<table>
<thead>
<tr>
<th>Call Date</th>
<th>Topic</th>
<th>Team Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 27</td>
<td>Readiness and Reporting - Drills, Simulation, and Debriefs</td>
<td>Sherry Jones, Melissa Claudio, Sam Schoenfelder</td>
</tr>
<tr>
<td>12:30 – 2:30 pm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>July 25</td>
<td>Recognition - Accurate BP Measurement &amp; Diagnosis</td>
<td>Heather Stanley Christian, Soti Markuly, Debbie Schy, Mona LaGrand, Sam Schoenfelder, Robbin Uchison</td>
</tr>
<tr>
<td>12:30 – 1:30 pm</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>August 22</strong></td>
<td><strong>Response - BP Medication and Treatment Algorithms</strong></td>
<td>Jim Keller, Angelique Rettig, Felicia Fitzgerald, Deena Layton, Roma Allen</td>
</tr>
<tr>
<td><strong>12:30 – 1:30 pm</strong></td>
<td></td>
<td></td>
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<tr>
<td>September 26</td>
<td>Response - Timing of Delivery</td>
<td>Jim Keller, Deena Layton, Sue Fulara</td>
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<tr>
<td>12:30 – 1:30 pm</td>
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<tr>
<td>October 24</td>
<td>Response - Patient Education/Engagement and Postpartum Follow-up</td>
<td>Angelique Rettig, Debbie Schy, Roma Allen</td>
</tr>
<tr>
<td>12:30 – 1:30 pm</td>
<td></td>
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</tr>
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</table>
HTN Toolkit Binder

• August clinical education topics linked to HTN Toolkit Binder:
  • Under Tab 6 in the Binder (or click hyperlink below):
    • ACOG Sample Order Sets:
      • Labetalol
      • Hydralazine
      • Nifedipine
  • Under Tab 7 in the Binder (or click hyperlinks below):
    • BP Medication and Treatment Algorithms
      • ACOG Committee Opinion 623, Emergent Therapy for Acute-Onset, Severe Hypertension During Pregnancy
      • CMQCC Sample Preeclampsia/Eclampsia Medication Toolbox
      • CMQCC Steps for Preparation, Storage, Ordering and Administration of Magnesium Sulfate
      • Algorithms for Treatment
        • ACOG DII (New York) Labetalol Algorithm
        • ACOG DII (New York) Hydralazine Algorithm
        • ACOG DII (New York) Oral Nifedipine Algorithm
        • ACOG DII (New York) Algorithm for Postpartum Education

• All resources available on ILPQC Maternal Hypertension page
Response

Blood Pressure Medication & Treatment Algorithms
BP Medication and Treatment Algorithms

August 22, 2016

R. Allen, L. Brach, C. Burke, F. Fitzgerald, J. Keller, D. Layton,
A. Rettig, P. Toledo
Readiness (every Provider and Unit)

Recognition & Prevention (every patient)

Response (every case of HIP)

Process for timely triage and evaluation of pregnant and postpartum women with hypertension including emergency department and outpatient
Controlling blood pressure is the optimal intervention to prevent deaths due to stroke in women with preeclampsia.

Over the last decade, the UK has focused QI efforts on aggressive timely treatment of both systolic and diastolic blood pressure and has demonstrated a significant reduction in deaths.
The critical initial step in decreasing maternal morbidity and mortality is to administer anti-hypertensive medications as soon as possible within 30-60 minutes of documentation of persistent (retested within 15 minutes) BP ≥160 systolic, and/or >105-110 diastolic.

Ideally, antihypertensive medications should be administered as soon as possible, and availability of a “preeclampsia box” will facilitate rapid treatment.

In Martin et al., stroke occurred in:

- 23/24 (95.8%) women with systolic BP ≥ 160mm Hg
- 24/24 (100%) had a BP ≥ 155 mm Hg
- 3/24 (12.5%) women with diastolic BP ≥ 110mm Hg
- 5/28 (20.8%) women with diastolic BP ≥ 105mm Hg

Clinical Pearl

• Younger, healthier gravid patients are at risk for hemorrhagic stroke at lower blood pressure thresholds because their cerebral vasculature has not undergone vascular remodeling
BP $\geq 160/110 (105)$

*BP persistent 15 minutes, activate treatment algorithm with IV therapy ASAP, < 30-60 minutes*
When to Treat
(ACOG Committee Opinion 623)
ACOG protocol
Standing Order (Hydralazine)

Hydralazine 5 or 10 mg IV over 2 minutes
• Recheck in 20 min

If still elevated, hydralazine 10 mg IV over 2 min
• Recheck 20 min

If still elevated, labetalol 20 mg IV over 2 min
• Recheck in 10 min

If still elevated, labetalol 40 mg IV over 2 min
• Emergency consults: MFM and anesthesia

ECG not required
ACOG protocol
Standing Order (Labetalol)

Labetalol 20 mg IV over 2 minutes
• Recheck in 10 min

If still elevated, labetalol 40 mg IV over 2 min
• Recheck in 10 min

If still elevated, labetalol 80 mg IV over 2 min
• Recheck in 10 min
• Seek consultation MFM, Critical Care, Anesthesia, Internal medicine

If still elevated, Repeat labetalol 80mg over 10 minutes to achieve total dosage of 220mg (includes all previous administrations)

Switch to hydralazine 10 mg IV over 2 min
• Recheck in 20 min

Do not exceed 80 mg in a single dose

ECG with CHTN, or heart disease
ACOG protocol
Standing Order (Oral Nifedipine)

Nifedipine 10 mg PO (never crush or give SL)
  • Recheck in 20 min

If still elevated, nifedipine 20 mg PO
  • Recheck 20 min

If still elevated, nifedipine 40 mg PO
  • Recheck in 20 min

If still elevated, labetalol 40 mg IV over 2 min

Emergency consults: MFM and anesthesia
Goal

• Safely reduce the BP below the level that may cause a stroke or placental abruption but sufficient to maintain adequate arterial perfusion to vital organs

• The critical initial step in decreasing maternal morbidity and mortality is to administer anti-hypertensive medications as soon as possible within 30 - 60 minutes of documentation of persistent (retested within 15 minutes) BP ≥ 160 systolic, and/or ≥ 110(105) diastolic.

• Not lower than 140 / 90
ACOG Management of Preeclampsia

*With Severe Features &/or HELLP*

- **Antihypertensive medications to control severe BP**
- **Magnesium Sulfate**
  - 4 or 6 gram loading dose over 20 minutes
  - 2-3 grams per hour maintenance dose
- For labor analgesia or surgical anesthesia, neuraxial techniques recommended if time permits
- For cesarean delivery, continue intraoperative administration of magnesium sulfate
- Decision to deliver should not be based on the amount of proteinuria
Preeclampsia Seizure Prophylaxis

Preeclampsia with severe features or eclampsia
  - magnesium sulfate
Quality of evidence: High
Recommendation: Strong
If Cesarean → continue magnesium intraoperatively

Preeclampsia without severe features
  - magnesium is NOT universally needed
Quality of evidence: Low
Recommendation: Qualified

Task Force
Recommendations

Strong:
- well supported by evidence
- appropriate for virtually all patients
- recommended

Qualified:
- appropriate for most patients
- suggested

Evidence quality:
- low
- moderate
- high

Magnesium Therapy: Key Clinical Pearl

- Magnesium sulfate therapy for seizure prophylaxis should be administered to any patients with:
  - Preeclampsia with “severe features” i.e., subjective neurological symptoms (headache or blurry vision), abdominal pain, epigastric pain, OR BP > 160/110
  - Eclampsia
  - *Should be considered* in patients with preeclampsia without severe features
**ACOG Executive Summary, 2013: for preeclampsia without severe features, it is suggested that magnesium sulfate not be administered universally for the prevention of eclampsia.**

* Should be considered: Numbers needed to treat (NNT) = 109 for “mild”, 63 for “severe”

<table>
<thead>
<tr>
<th></th>
<th>Preeclampsia without severe features</th>
<th>Preeclampsia with Severe Features</th>
<th>Eclampsia</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACOG</td>
<td>**</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>NICE</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>SOGC</td>
<td>X*</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>CMQCC</td>
<td>X*</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>WHO</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
Facility-wide standard protocols with checklists, algorithms and escalation policies for management and treatment of severe range blood pressure

STRATEGIES TO REDUCE TIME TO TREATMENT ACROSS SETTINGS
Every case of severe hypertension/preeclampsia

- Rapid access to medications used for severe hypertension:
  - medications should be stocked and immediately available
  - Include brief guide for administration & dosage.

- System plan for escalation for maternal hypertension, obtaining appropriate consultation, and maternal transport, as needed
Every case of severe hypertension/preeclampsia

Facility-wide standard protocols with checklists and escalation policies for management and treatment of:

- severe hypertension
- eclampsia, seizure prophylaxis, and mag over-dosage
- postpartum presentation of severe hypertension/preeclampsia
Minimum requirements for protocol:

- Notification of primary physician or primary care provider if systolic BP ≥160 or diastolic ≥110 for 2 measurements within 15 min
- After second elevated reading, treatment should be initiated ASAP (within 60 min of verification)
- Includes onset and duration of magnesium sulfate therapy
- Appropriate labs sent and fetal assessment
Every case of severe hypertension/preeclampsia

Minimum requirements for protocol (cont):
• Includes escalation measures for those unresponsive to standard treatment
• Describes management and verification of follow-up within 7 to 14 days postpartum
• ILPQC recommends outpatient post-discharge follow-up:
  – within 3 days if medication was used during labor and delivery OR postpartum
  – within 7-14 days if no medication was used
• Describe postpartum patient education for women with preeclampsia
• Discharge instructions to include warning signs of HTN for ALL postpartum patients
Every case of severe hypertension/preeclampsia

- Postpartum patients presenting to the ED with hypertension (BP ≥140/90), preeclampsia or eclampsia should either be assessed by or admitted to an obstetrical service

Systems should be in place to screen all women for pregnancy AND postpartum status in the ER
An organized tool to identify “clinical signs,” of high concern or triggers can aid clinicians to recognize and respond in a more timely manner to avoid delays in diagnosis and treatment.
<table>
<thead>
<tr>
<th>ASSESS</th>
<th>NORMAL (GREEN)</th>
<th>WORRISOME (YELLOW)</th>
<th>SEVERE (RED)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awareness</td>
<td>Alert/oriented</td>
<td>• Agitated/confused</td>
<td>• Unresponsive</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Drowsy</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Difficulty speaking</td>
<td></td>
</tr>
<tr>
<td>Headache</td>
<td>None</td>
<td>• Mild headache</td>
<td>• Unrelieved headache</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Nausea, vomiting</td>
<td></td>
</tr>
<tr>
<td>Vision</td>
<td>None</td>
<td>• Blurred or impaired</td>
<td>• Temporary blindness</td>
</tr>
<tr>
<td>Systolic BP</td>
<td>100-139</td>
<td>140-159</td>
<td>≥160</td>
</tr>
<tr>
<td>(mm Hg)</td>
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<td></td>
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<tr>
<td>Diastolic BP</td>
<td>50-89</td>
<td>90-105</td>
<td>≥105</td>
</tr>
<tr>
<td>(mm Hg)</td>
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<tr>
<td>HR</td>
<td>61-110</td>
<td>111-129</td>
<td>≥130</td>
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<tr>
<td>Respiration</td>
<td>11-24</td>
<td>25-30</td>
<td>&lt;10 or &gt;30</td>
</tr>
<tr>
<td>SOB</td>
<td>Absent</td>
<td>Present</td>
<td></td>
</tr>
<tr>
<td>O2 Sat (%)</td>
<td>≥95</td>
<td>91-94</td>
<td>≤90</td>
</tr>
<tr>
<td>Pain: Abdomen or Chest</td>
<td>None</td>
<td>• Nausea, vomiting</td>
<td>• Nausea, vomiting</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Chest pain</td>
<td>• Chest pain</td>
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<tr>
<td></td>
<td></td>
<td>• Abdominal pain</td>
<td>• Abdominal pain</td>
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<tr>
<td>Fetal Signs</td>
<td>• Category I</td>
<td>• Category II</td>
<td>• Category III</td>
</tr>
<tr>
<td></td>
<td>• Reactive NST</td>
<td>• IUGR</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Non-reactive NST</td>
<td></td>
</tr>
<tr>
<td>Urine Output</td>
<td>≥50</td>
<td>30-49</td>
<td>≤30 (in 2 hrs)</td>
</tr>
<tr>
<td>(mL/hr)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proteinuria</td>
<td>Trace</td>
<td>• &gt; +1**</td>
<td></td>
</tr>
<tr>
<td>(Level of proteinuria is not an accurate predictor of pregnancy outcome)</td>
<td></td>
<td>• ≥300mg/24 hours</td>
<td></td>
</tr>
<tr>
<td>Platelets</td>
<td>&gt;100</td>
<td>50-100</td>
<td>&lt;50</td>
</tr>
<tr>
<td>AST/ALT</td>
<td>&lt;70</td>
<td>&gt;70</td>
<td>&gt;70</td>
</tr>
<tr>
<td>Creatinine</td>
<td>&lt;0.8</td>
<td>0.9-1.1</td>
<td>&gt;1.2</td>
</tr>
<tr>
<td>Magnesium Sulfate Toxicity</td>
<td>• DTR +1</td>
<td>• Depression of patellar reflexes</td>
<td>• Respiration &lt;12</td>
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<tr>
<td></td>
<td>• Respiration 16-20</td>
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Clinical Signs to Watch for:

YELLOW = WORRISOME
Increase assessment frequency

<table>
<thead>
<tr>
<th># Triggers</th>
<th>TO DO</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Notify provider</td>
</tr>
<tr>
<td>≥2</td>
<td>Notify charge RN</td>
</tr>
<tr>
<td></td>
<td>In-person evaluation</td>
</tr>
<tr>
<td></td>
<td>Order labs/tests</td>
</tr>
<tr>
<td></td>
<td>Anesthesia consult</td>
</tr>
<tr>
<td></td>
<td>Consider magnesium sulfate</td>
</tr>
<tr>
<td></td>
<td>Supplemental oxygen</td>
</tr>
</tbody>
</table>

GREEN = NORMAL
Proceed with protocol

**Physician should be made aware of worsening or new-onset proteinuria

RED = SEVERE
Trigger: 1 of any type listed below

<table>
<thead>
<tr>
<th>Trigger</th>
<th>TO DO</th>
</tr>
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<tbody>
<tr>
<td>1 of any type</td>
<td>Immediate evaluation</td>
</tr>
<tr>
<td></td>
<td>Transfer to higher acuity level</td>
</tr>
<tr>
<td></td>
<td>1:1 staff ratio</td>
</tr>
<tr>
<td>Awareness</td>
<td>Consider Neurology consult</td>
</tr>
<tr>
<td>Headache</td>
<td>CT Scan</td>
</tr>
<tr>
<td>Visual</td>
<td>R/O SAH/intracranial hemorrhage</td>
</tr>
<tr>
<td>BP</td>
<td>Labetalol/hydralazine in 30 min</td>
</tr>
<tr>
<td></td>
<td>In-person evaluation</td>
</tr>
<tr>
<td></td>
<td>Magnesium sulfate loading or maintenance infusion</td>
</tr>
<tr>
<td>Chest Pain</td>
<td>Consider CT angiogram</td>
</tr>
<tr>
<td>Respiration</td>
<td>O2 at 10 L per rebreather mask</td>
</tr>
<tr>
<td>SOB</td>
<td>R/O pulmonary edema</td>
</tr>
<tr>
<td>O2 SAT</td>
<td>Chest x-ray</td>
</tr>
</tbody>
</table>
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 clinically indicated

☐ Call for Assistance
☐ Designate:
  - Team leader
  - Checklist reader/recorder
  - Primary RN
☐ Ensure side rails are up
☐ 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

ANTIHYPERTENSIVE MEDICATIONS
For SBP ≥ 160 or DBP ≥ 110
- Labetalol (20 mg, 40, 80 IV* over 2 min, escalating doses, repeat q 10 min); Avoid in asthma or heart failure
- Hydralazine (5-10 mg IV* over 2 min, repeat q 20 min until target BP reached)
- Oral Nifedipine (10, 20, 40 mg capsules; repeat BP q 20 min until target BP reached); 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 (Vallum): 5-10 mg IV q 5-10 min to maximum dose 30 mg

Call for assistance
- Designate team leader, checklist reader, primary RN
- Ensure side rails are up
- Administer seizure prophylaxis
- Antihypertensive therapy within 1 hr for persistent severe range BP
- Place IV; Draw PEC labs
- Antenatal corticosteroids is <34 wks gestation
- Re-address VTE prophylaxis requirement
- Place indwelling urinary catheter
- Brain imaging if unremitting headache or neurological symptoms
- Debrief patient, family, OB team
Eclampsia Checklist

核酸检测

- Call for Assistance
- Designate
  - Team leader
  - Checklist reader/recorder
  - Primary RN
- Ensure side rails up
- Protect airway and improve oxygenation:
  - Maternal pulse oximetry
  - Supplemental oxygen (100% non-rebreather)
    - Lateral decubitus position
    - Bag-mask ventilation available
    - Suction available
- Continuous fetal monitoring
- Place IV; Draw preeclampsia labs
- Administer magnesium sulfate
- Administer antihypertensive therapy if appropriate
- Develop delivery plan, if appropriate
- Debrief patient, family, and obstetric team

**Magnesium Sulfate**
- Contraindications: pulmonary edema, renal failure, myasthenia gravis
- 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 buttck)

**Antihypertensive Medications**
- For SBP ≥ 160 or DBP ≥ 110
  - Labetalol (20 mg, 40, 80 IV* over 2 min, escalating doses, repeat q 10 min); Avoid in asthma or heart failure, can cause neonatal bradycardia
  - Hydralazine (5-10 mg IV* over 2 min, repeat q 20 min until target BP reached)
  - Maximum cumulative IV-administered doses should not exceed 220 mg labetalol or 25 mg hydralazine in 24 hours
- Note: If persistent seizures, consider anticonvulsant medications and additional workup

**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

**For Persistent Seizures**
- Neuromuscular block and intubate
- Obtain radiographic imaging
- ICU admission
- Consider anticonvulsant medications

ACOG
District II
Postpartum Preeclampsia Checklist

**IF PATIENT < 6 Weeks Postpartum with:**
- BP ≥ 160/110 or
- BP ≥ 140/90 with unremitting headache, visual disturbances, epigastric pain

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

**MAGNESIUM SULFATE**
- Contraindications: pulmonary edema, renal failure, myasthenia gravis
- 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
  - Labetalol (20 mg, 40, 80 IV* over 2 min, escalating doses, repeat q 10 min); Avoid in asthma or heart failure
  - Hydralazine (5-10 mg IV* over 2 min, repeat q 20 min until target BP reached)
  - Oral Nifedipine (10, 20, 40 mg capsules; repeat BP q 20 min until target BP reached); 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 anesthesia, 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

- Call for assistance
- Designate team leader, checklist reader, primary RN
- Ensure side rails up
- Call OB consult; Document call
- Place IV; Draw PEC labs
- Administer seizure prophylaxis
- Administer antihypertensive therapy
- Consider indwelling urinary catheter. Maintain strict I&O
- Brain imaging if unremitting headache or neurological symptoms
Resources

- https://usfhealth.app.box.com/s/tzgt2d3l9bicoifhe3y7cov1b9ennxao
- http://health.usf.edu/publichealth/chiles/fpqc/hip_toolbox
- https://www.cmqcc.org/resources-tool-kits/toolkits/preeclampsia-toolkit
CA Teams: Order sets & Protocol Integration

• Connie von Kholer, MSN, RNC-OB, C-EFM, CPHQ
  • Miller Children's Hospital, Long Beach, CA
Antihypertensive medications and treatment algorithms

Connie von Köhler, MSN, RNC-OB, C-EFM, CPHQ
Long Beach, California
“Acute Hypertensive” Order Set

• Follows the algorithm in the toolkit
• Eliminates the need for physicians to give exact orders & the nurse to remember the algorithm details to coach the orders.
• Develop sample SBAR
  – Recommendation: “Implement the Acute Hypertensive order set”
Administering IV Push Meds for severe HTN – building confidence

• What’s allowed for the unit
• What’s comfortable
  – Peer support
    • L&D coordinator to M/B coordinator
  – Physician support
    • Perinatologist provided mini educational sessions (24/7)
Team Talks

- Peggy Boron – Northwest Community Healthcare
Team Talks – HTN Initiative

- Teams assigned an OB Teams Call – look for email from Kate
  - September
    - Advocate Sherman
    - Norwegian American
  - October
    - St. John’s
    - Silver Cross

- Generate discussion and learning through sharing
  - Good foundation for storyboard/poster presentations!
- Present 5-10 mins. on current QI work, including:
  - Implementation of the data form
  - Process for identifying opportunities for improvement
  - Organization of your team meetings
  - PDSAs testing strategies to
    - Reduce time to treatment
    - Incorporate debriefs
    - Implement changes to patient education processes
# ILPQC 4th Annual Conference

11/3/16 Tentative Agenda

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>8:00-8:45</td>
<td><strong>Welcome</strong> – Ann&lt;br&gt;Ask Dir. Shah to give welcome</td>
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<tr>
<td>8:45-10:15</td>
<td><strong>Panel</strong> – Bill Sappenfield (FPQC), Mike Marcotte (OPQC), Munish Gupta (MA)&lt;br&gt;• 25 minutes each, 15 minutes for questions&lt;br&gt;• Focus on 2 initiatives each (brief overview of all initiatives, deep dive into 2 initiatives)&lt;br&gt;  o Bill – HTN, Golden Hour, Hemorrhage&lt;br&gt;  o Mike – 17OHP, NAS, ANS&lt;br&gt;  o Munish – NAS (maternal and NICU side), QI with Hemorrhage/HTN</td>
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<td>10:15-10:30</td>
<td>Break</td>
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<tr>
<td>10:30-11:10</td>
<td><strong>Surviving a Perinatal Crisis: The Patient Perspective</strong> – Eleni Tsigas</td>
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<td>11:10-12:00</td>
<td><strong>Keynote on Maternal Morbidity</strong> – Mary D’Alton</td>
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<td>12:00-1:30</td>
<td>Lunch &amp; Poster Session</td>
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<td>1:30-2:15</td>
<td><strong>How to Use Quality Improvement Measurement in Hospital QI Efforts</strong> – Munish Gupta</td>
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<tr>
<td>2:15-3:00</td>
<td><strong>Reduction of Primary Cesarean</strong> – Maurice Druzin</td>
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<td>3:00 – 3:15</td>
<td>Break</td>
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<tr>
<td>3:15 – 5:00</td>
<td>Breakouts&lt;br&gt;• Hot Topics in Obstetrics&lt;br&gt;• Hot Topics in Neonatal&lt;br&gt;• Patient &amp; Family Engagement</td>
</tr>
<tr>
<td>5:00 – 5:15</td>
<td>Wrap-up &amp; Evaluation</td>
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ILPQC 4<sup>th</sup> Annual Conference: Call for Abstracts!

• Now accepting abstracts for 4<sup>th</sup> Annual Conference
  • https://www.surveymonkey.com/r/ILPQCposters2016
• Attendees to submit perinatal quality improvement abstracts in one of three categories:
  • Obstetrics
  • Neonatal
  • Patient & Family Engagement
• Abstracts in each category will be blindly reviewed for excellence on predetermined criteria by a panel of reviewers
• Top abstracts will be recognized in the program and on the day of the event
• Abstracts due by **September 9<sup>th</sup> EOB** for review
• Late breaking abstracts due by **October 1<sup>st</sup> EOB** (not reviewed)
Patient/Family Advisors

- Patient and family advisors help advance QI efforts by providing the vitally important patient perspective.
- Patient and family advisors are best recruited from physician and staff recommendations.
- Please identify potential patient advisors for your team!
- Invite patient/family team member to attend ILPQC Annual Conference on November 3rd.
- One Pager is posted to front page of ILPQC website!
Next Steps

• Submit “ILPQC AIM Quarterly Measures” in REDCap
• Submit baseline data - July 31st
• Submit July maternal hypertension data - August 15th
• Submit August maternal hypertension data – September 15th
• Complete DUA
• Next call is Monday, September 29th, 12:30 – 1:30 pm
• Email info@ilpqc.org with any questions!
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