



# Maternal Hypertension Initiative Teams Call *Readiness & Reporting/ Systems Learning*

June 27, 2016  
12:30 – 2:30 pm

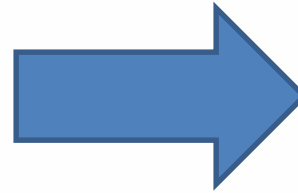
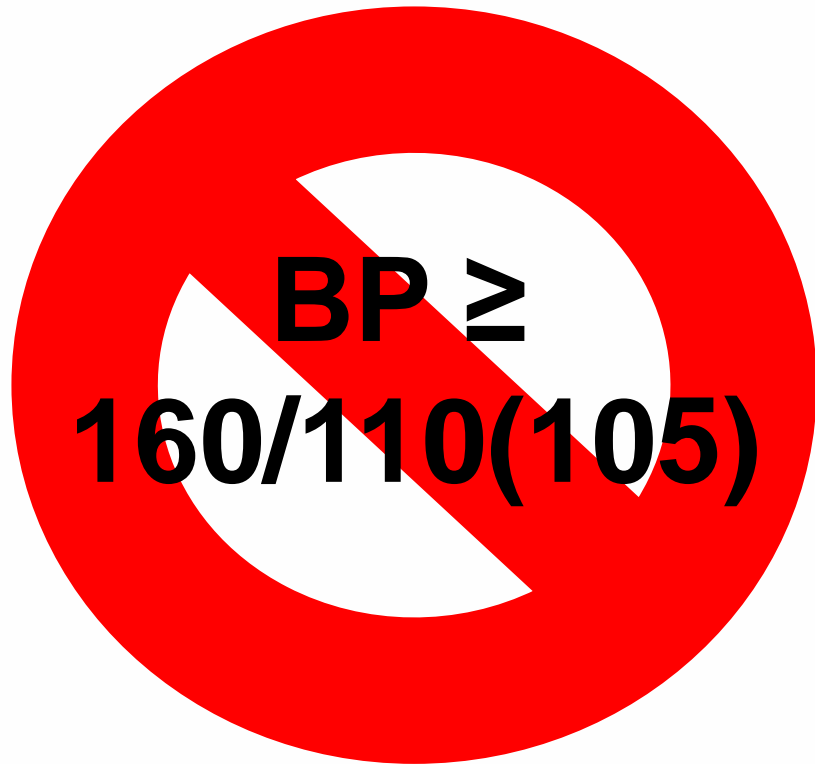
# Overview

- HTN Initiative Overview & Education Plan
- Face-to-Face Recap
- 11 Steps for Getting Started & Implementation Checklist
- Data
  - Review data
  - Data Q&A
  - Baseline data
  - Data collection strategies
  - AIM Quarterly data collection
- Next Steps
- Clinical Education – Drills, Debriefs, & Simulations
  - Dr. Sherry Jones, Melissa Claudio, Samantha Schoenfelder
- NY ACOG DII Teams – Checklists
  - Komal Bajaj, MD MS-HPed - Montefiore Medical Center
- Team Talks
  - Roma Allen, MSN, RNC-OB – NorthShore University HealthSystem Evanston
- 4<sup>th</sup> Annual Conference
- Communications Update
- Questions

# GOALS

# What are we trying to accomplish?

- Early recognition of hypertension and correct diagnosis during and after pregnancy
- Reduce time to treatment of severe range blood pressure, 160/110(105)
- Deliver not too early and not too late
- Provide patient education and appropriately timed follow up
- Implementation of evidence based protocols



**Need  
To  
Treat\***

\*BP persistent 15 minutes, activate treatment algorithm with IV therapy ASAP, < 30-60 minutes

# ILPQC HTN Initiative

## Goal & Measures



Goal: Reduce preeclampsia maternal morbidity

IL Measure	Type	Goal
<b>Severe Maternal Morbidity</b> No. of women with severe maternal morbidities (e.g. Acute renal failure, ARDS, Pulmonary Edema, Puerperal CNS Disorder such as Seizure, DIC, Ventilation, Abruptio) / No. pregnant & postpartum women with new onset severe range HTN	Outcome	20% reduction
<b>Appropriate Medical Management in under 60 minutes</b> No. of women treated at different time points (30,60,90, >90 min) after elevated BP is confirmed / No. of women with new onset severe range HTN	Process	100%
<del><b>Debriefs on all new onset severe range HTN* cases</b></del>	Process	100%
<b>Discharge education and follow-up</b> within 10 days for all women with severe range HTN, 72 hours with all women with severe range HTN on medications	Process	100%

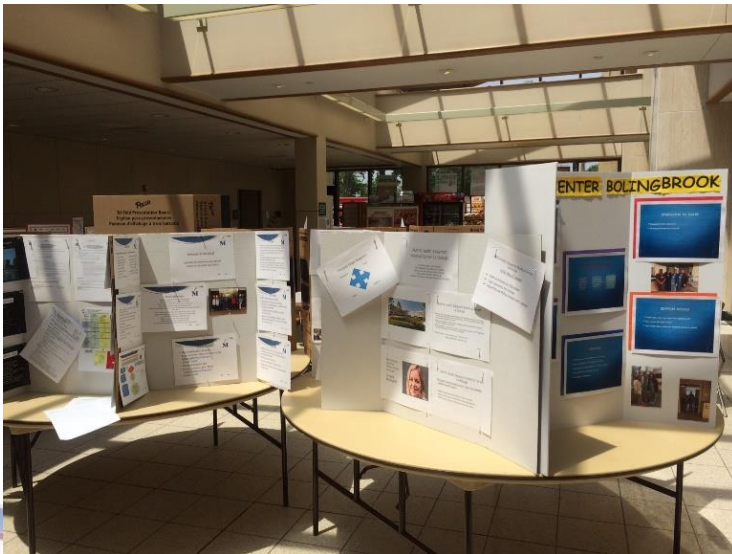
Severe range HTN: ~~≥160 systolic / ≥110(105) diastolic per hospital standard~~

\*New onset severe range HTN: first episode of persistent severe range HTN (lasting >15 minutes) in a hospitalization (ER, L&D, or other inpatient setting), can be chronic HTN, gestational HTN, preeclampsia and/or postpartum diagnosis.

# GETTING STARTED

# HTN Face-to-Face Update

- Monday, May 23<sup>rd</sup> from 9:30 am – 3:30 pm
- 288 attendees, 303 registered, 101 hospitals – 95% attendance rate!
- Storyboard session
- Implementation cafés





# 11 Steps to getting started with the ILPQC Maternal HTN Initiative



1. Initiate monthly team meetings & make plans to be on ILPQC monthly team calls
2. Develop ILPQC data collection strategies (baseline/ongoing)
3. Complete the Data Use Agreement
4. Submit the AIM Baseline Survey and Implementation Checklist
5. Diagram your process flow for severe HTN management
6. Identify opportunities for improvement
7. Review Toolkit Binder for resources
8. Develop your first PDSA with your team
9. Outline 30, 60, 90 day implementation plan
10. Identify strategies for implementing debriefs
11. Ask for help and celebrate small successes

# AIM: Baseline Survey & Implementation Checklist



- Captures a snapshot of your team's starting point and provides
  - Valuable initial assessment for your team and
  - Information that ILPQC will use to provide you quality improvement support:  
<https://www.surveymonkey.com/r/AIMbaselinesurvey>
- If you haven't already, please designate one team member to complete the baseline survey!

# Baseline Implementation Checklist



- 14 item assessment of what bundle components hospital has in place, appended to AIM Survey
- Complete at:
  - Implementation Baseline (May 2016)
  - Quarterly for the duration of the initiative
- Responses highlight opportunities:
  - For change at the hospital level
  - For QI support and resources at the collaborative level
- Baseline results reveal opportunities for change across the board

# Highlights from Results: “Most Wanted List”

The following bundle components are needed in 50% or more of hospitals based on approximately 74 hospitals reporting:

- Readiness
  - Standard protocols for ID and tx of severe HTN (50%)
  - Process for timely id, triage, and eval across hospital (65%)
  - Needs for protocol/process for timely ID much greater in triage/ER (70-80%)
- Recognition & Prevention
  - Facility wide standards for patient education (78%)
- Response
  - Facility wide standard protocols and checklist and escalation policies for management and treatment (86%)
  - Support plan for patients, family, and staff (86%)
- Reporting & Systems Learning
  - Monitoring of quality outcomes and process metrics (78%)

# HTN Education Plan for OB Teams Calls



## Call Date

## Topic

## Team Members

June 27  
12:30 – 2:30 pm

Readiness and Reporting - Drills,  
Simulation, and Debriefs

Sherry Jones, Melissa Claudio, Sam  
Schoenfelder

July 25  
12:30 – 1:30 pm

Recognition - Accurate BP  
Measurement & Diagnosis

Heather Stanley Christian, Soti Markuly,  
Debbie Schy, Mona LaGrand, Sam  
Schoenfelder, Robbin Uchison

August 22  
12:30 – 1:30 pm

Response - BP Medication and  
Treatment Algorithms

Jim Keller, Angelique Rettig, Felicia  
Fitzgeralds, Deena Layton, Roma Allen

September 26  
12:30 – 1:30 pm

Response - Timing of Delivery

Jim Keller, Deena Layton, Sue Fulara

October 24  
12:30 – 1:30 pm

Response - Patient  
Education/Engagement and  
Postpartum Follow-up

Angelique Rettig, Debbie Schy, Roma Allen

# DATA

# Data Entry Status



	<b>Total Records</b>	<b># Teams with Data</b>
Baseline (Oct-Dec 15)	240	22
January	60	13
February	121	21
March	150	18
April	111	17
May	198	24
June	33	8
<b>Overall</b>	<b>913</b>	<b>42</b>

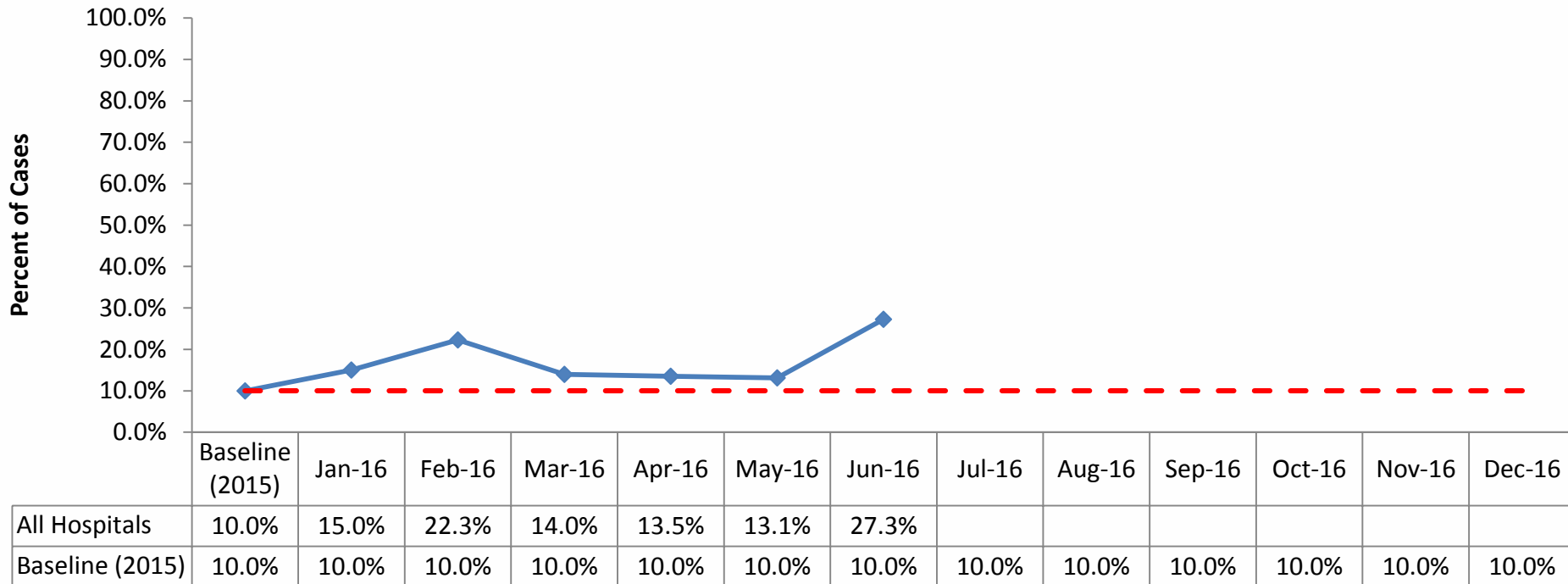




# Maternal HTN: Maternal Outcomes



## ILPQC: Maternal Hypertension Initiative Percent of Cases with New Onset Severe Hypertension with any Maternal OB Outcomes\* All Hospital, 2016

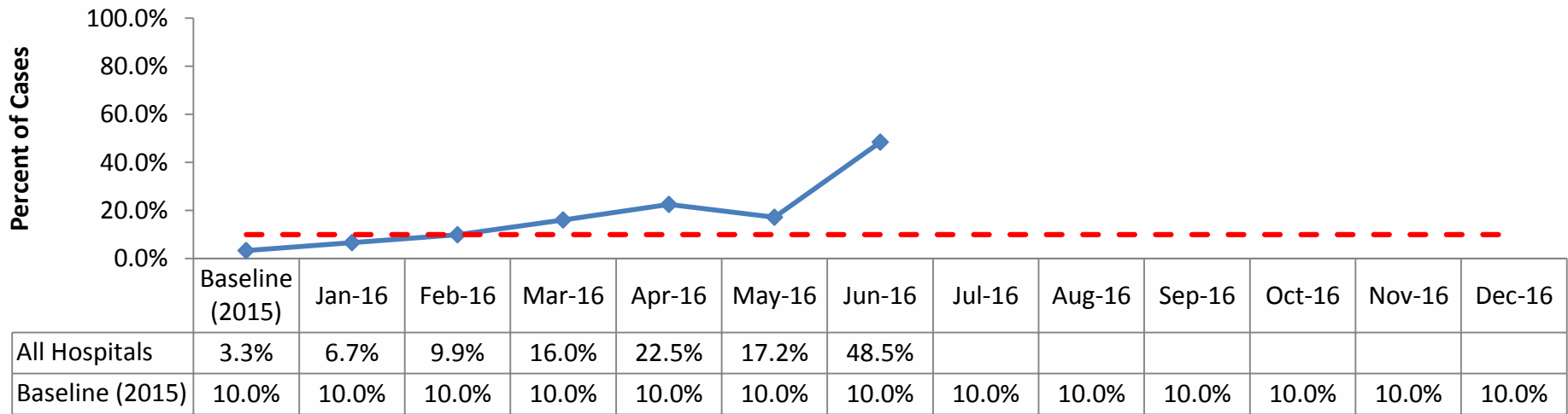


\*OB Hemorrhage with transfusion of  $\geq 4$  units, Intracranial Hemorrhage or Ischemic event, Pulmonary Edema, ICU admission, HELLP Syndrome, Oliguria, Eclampsia, DIC, Renal failure, Liver failure, Ventilation, Placental Abruption

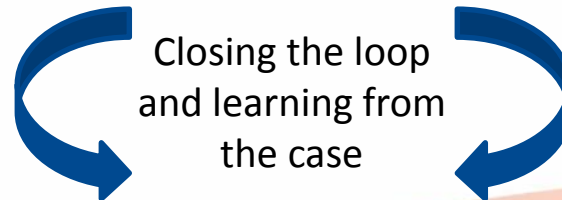
# Maternal HTN: Debriefs



## ILPQC: Maternal Hypertension Initiative Percent of Cases with New Onset Severe Hypertension with Debrief Completed Hospital 3 & Select Comparisons, 2016 - 2017



\*CMQCC found debriefs were the process measure most associated with improving hemorrhage outcomes\*



# Baseline Data: All Hospitals

- Baseline data collection instructions – download from file box
- Data due date extended – July 31!
- Retrospective chart review for Oct-Dec 2015 using:
  - ICD-10 codes for Preeclampsia Diagnosis codes in L&D, ED, Triage, Antepartum, Postpartum (last tab of AIM SMM excel file - download [here](#))
  - EMR searches/reports using keywords for pregnant/postpartum patients such as: chronic HTN, preeclampsia, eclampsia, superimposed preeclampsia, preeclampsia with severe features, systolic BP  $\geq$  160, diastolic BP  $\geq$  110(105), etc.
  - Delivery logs
  - Pharmacy records for Labetalol, Hyrdalazine, Nifedipine, and Magnesium Sulfate

## Baseline Data: Level I & II

- If <5 patients are identified for Oct-Dec 2015, 2 options to expand baseline collection window:
  - Pull an additional 3 months of patients from Jan-Mar 2016. Enter these patients into REDCap with dates of **Jan-Mar 2015 (use the same month and date, but enter 2015 as the year)**. This is to allow the REDCap reports to accurately calculate baseline data for the initiative.

**OR**

- Pull an additional 3 months of patients from Jul-Sep 2015.
  - Use same criteria for charts from Oct-Dec 2015 **EXCEPT use ICD-9 codes instead of ICD-10 codes** (ICD-9 codes switched to ICD-10 codes in October 2015).

# Data Q&A (1/2)

- Patients to include?
  - Pregnant/postpartum (6 weeks) with sustained (>15 mins) elevated systolic BP  $\geq 160$  and/OR diastolic BP  $\geq 110(105)$
  - Any inpatient location (L&D, triage, ED, antepartum, postpartum)
  - Include patients with chronic/gestational HTN
- How to handle maternal transports?
  - Transferred out:
    - Enter data into REDCap on any patients that meet criteria before they were transferred.
    - F/U with the receiving hospital to which the patient was transferred in order to obtain patient outcomes (diagnosis at discharge, patient education, follow-up appointments).
  - Transferred in:
    - Enter data into REDCap ONLY on patients that meet the above requirements at their facility.
    - If a patient has already been started on medications for elevated BP prior to arriving at your facility, do not complete a data form.

# Data Q&A (2/2)

- Medications that count as HTN treatment?
  - Measure time to treatment from confirmatory BP for Labetalol, Hydralazine, Nifedipine
  - Do NOT measure time to treatment for Magnesium Sulfate – not an anti-hypertensive!
- What to do with repeat patients?
  - 1st hospitalization
    - Patient meets criteria: fill out data form
    - Patient does not meet criteria: do not fill out data form
  - 2nd hospitalization
    - Patient meets criteria: fill out a data form – every new hospitalization should be counted!
    - Patient does not meet criteria: do not fill out data form

# Data Collection Process



Frequency	Form	Content	Timeframe
<b>Monthly</b>	Severe HTN Data Form	Bedside and Chart Review	January 2016 (Wave 1) May 2016 (Wave 1 & 2)
<b>Quarterly</b>	Short Implementation checklist	Opportunities for improvement	June 2016 Sept 2016 Dec 2016 March 2017
	AIM Report 3 items Y/N	Education Unit Drills	June 2017 September 2017 December 2017
<b>Annual</b>	AIM Report 5 items Y/N	EHR Family Support Debriefs Reviews	December 2016 December 2017
	Discharge data with IDPH	SMM Rates	

Launch Today!

# AIM Quarterly Data



- New form has been added to all REDCap users with access to Severe HTN Data Form
  - New form labeled “ILPQC AIM Quarterly Measures”
- Only one submission per hospital required!
- Please complete by **July 15<sup>th</sup>** for Q2 2016 (Apr-Jun 2016)
  - Due the 15th of the month after the quarter has ended (e.g. Apr-Jun 2016 due July 15<sup>th</sup>)
- Complete once per quarter through December 2017
  - ILPQC will remind you each quarter to submit AIM Quarterly Measures!



## Next Steps

- Submit AIM Baseline Survey if you have not completed one for your hospital
- Submit baseline data by July 31<sup>st</sup>
- Submit “ILPQC AIM Quarterly Measures” in REDCap by July 15<sup>th</sup>
- Continue/begin submitting monthly maternal hypertension data
- Next call is Monday, July 25<sup>th</sup> from 12:30 – 1:30 pm
- Email [info@ilpqc.org](mailto:info@ilpqc.org) with any questions!

**REPORTING/SYSTEMS LEARNING  
RESOURCES: DRILLS,  
SIMULATIONS, AND DEBRIEFS**

# Simulation and Drills

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MELISSA CLAUDIO

DR. SHERRY JONES

SAMANTHA SCHOENFELDER

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# What is Simulation

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“Simulation is a ‘technique,’ not a technology, used to replace or amplify real experiences with guided experiences that evoke or replicate substantial aspects of the real world in a fully interactive manner”.



Gaba DM. The future vision of simulation in health care. *Quality and Safe Health Care*. 2004;13(1):12-20.

# What are Drills?

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A real-time exercise that involves actual mobilization and use of personnel and material resources

Providers practice applying their skills and knowledge in the same setting they would manage a real situation

Often used to practice emergencies

\*\*The terms simulation and drills are often used interchangeably and the tools share similarities\*\*

# Benefits of Simulation/Drills

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Studies demonstrate that simulation-based obstetric team training improves team's performance and may improve perinatal outcomes

Improve team communication

Opportunity to experience a critical event without risk to a patient

Opportunity to explore environmental threats

Promotes teamwork

Promotes clinical confidence

Truijens, S., Banga, F., Fransen, A., Pop, V., Heimel, P., & Oei, S. (2015). The effect of multiprofessional simulation-based obstetric team training on patient-reported quality of care, *Simulation in Healthcare*, 10, 210-216.

# WHY should we use Drills and Simulation?

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To familiarize every team member with a protocol/policy and management plan

Allows team members to review (and remember) unit protocols

Helps identify correctable systems issues

Allows staff to practice important team-related skills

Allows team members to practice effective crisis communication

**Training using drills may allow for faster and improved response to emergent situations, thereby potentially maximizing patient outcomes**

# Simulation/Drill Methodology

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IN SITU (DRILLS ARE ALWAYS IN SITU)

Your unit

Your usual work areas

Where the events usually occur

NOT INSITU

Simulation lab

Off-site institutions





# Getting Started

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Identify your resources

- Educators
- Committed nursing and physician staff members
- Equipment

Identify your learning objectives

Identify your goals

Ensure your scenarios will meet your objectives and goals

Create or identify a scenario for your simulations

Test your scenario

Implement

Evaluate (ex. Staff surveys, Outcomes data, pre- and post- data, etc.)

# Simulation/Drill Guidance Tool

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Create a simulation/drill guide for the team trainers

Your guide can include key teaching points for the simulation/drill

Keeps education uniform

Maintains the same message for all staff

Do not make changes during the simulations/drills

Adjustments can be made after the simulations/drills are completed

Communicate changes to staff

# Scenarios for the Hypertension Initiative

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Hypertensive emergency

Preeclampsia

Eclampsia

Stroke

\*\*May be simple or complex\*\*



Resources for sample scenarios are provided at the end of this presentation and in your ILPQC Team Binder

# Common Errors in Managing HTN to focus Simulation/Drill Scenarios

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Failure to initiate antihypertensive medication

Failure to give adequate type/amount of anti-HTN medication

Failure to initiate magnesium sulfate

Failure to transfer woman to higher level of care

Failure to recognize severity of disorder

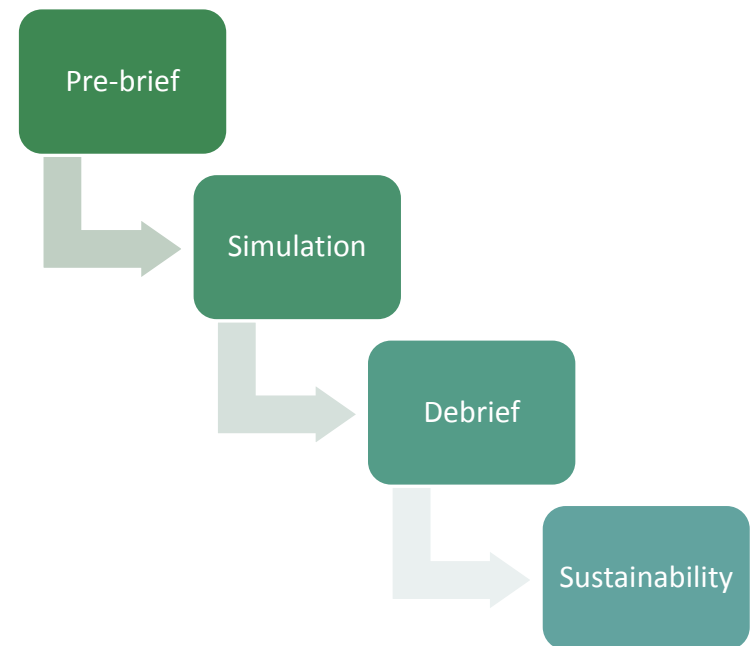
Moving to delivery without adequate maternal stabilization

# Simulation Structure

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## Components of a simulation

- Planning
- Pre-brief
  - Begins prior to simulation
- Simulation
  - Chosen process
  - Identify supplies and equipment needed
- Debrief
  - Occurs shortly after simulation
- Evaluation
- Build a sustainability plan
  - Prior to getting started



# Planning your Simulation/Drill

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What simulator are you going to use?

- Patient actress
- Task trainer
- Hybrid
- Mannequin

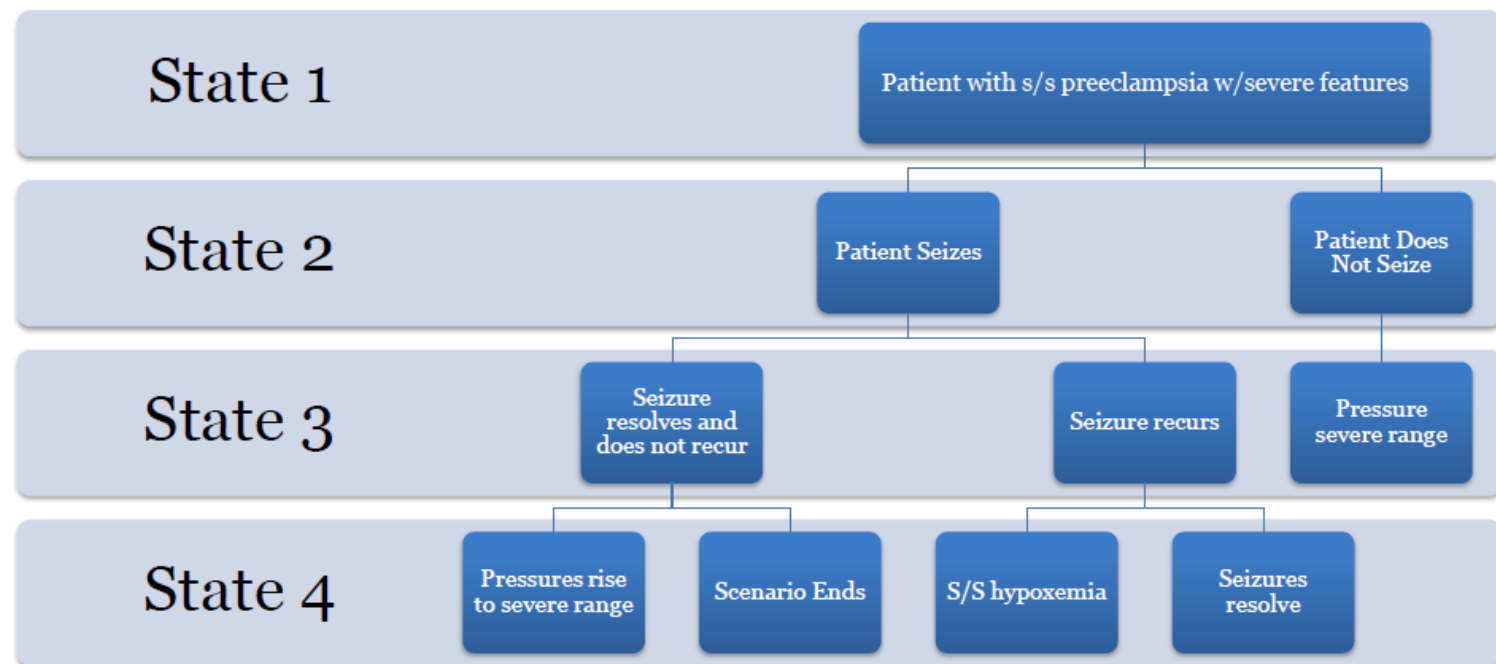
How are you going to provide data and simulate equipment? (ie. VS, lab results, emergency response systems, etc.)

What participants and roles do you need?

What equipment and supplies do you need?

# Planning your Scenario: Example

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# Planning: Examples of Goals

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Teams will improve their response to hypertensive events

Teams will communicate better during hypertensive events

Teams will respond in a timely fashion to signs of preeclampsia

Teams will be able to efficiently evaluate a patient presenting with seizures

Teams will effectively manage a patient who is actively seizing



# Planning: Examples of Objectives

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Team will be able to elicit and recognize the signs of preeclampsia with severe features

Participants will be able to initiate magnesium sulfate prior to the onset of eclamptic seizures

Participants will be able to administer anti-HTN medications to control severe range blood pressure within 30 minutes of diagnosis

When ordering anti-HTN medications, providers will use closed-loop communication

# The Pre-Brief (Simulation only)

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“Table-top” exercise, provides an opportunity to review

Lay out goals to be met during the simulation

Conduct behaviors as if the event is real

Introduction of the scenario

- Become familiar with the environment
- Introduce to confederates and their role in the scenario

Opportunity for Q&A prior to getting started

Remind staff this is not a test, no one will be graded

Opportunity for a walk thru of any new expectations of the work-flow

# Simulation/Drill: Go Live

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Have observers and annotators present for the simulation

Announce when your simulation begins

No interference from anyone outside of the scenario

The simulation should continue from start to finish regardless of performance

May want to record the simulation and use this for feedback during the debrief

Announce when the simulation ends



# Debriefing

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Invaluable opportunity to learn from the experience

Reinforce areas of the drill that went well

Discuss areas needing improvement

Share lessons learned

Highlight systems issues to allow for concrete planning for potential solutions



# Sustainability Plan

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Develop a plan during your planning stage

Easy to get lost and forgotten

Create a schedule for drills/simulations

Schedule meetings/emails for check-in

Keep communication of the team ongoing

Assign who will be responsible for running the simulations

# Potential Challenges

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Scheduling/Timing

Difficulty in addressing identified systems issues

Discomfort with debriefing

Incorporating additional services (ie. Lab, Anesthesia, consultants, etc.)

# Wrap-Up

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Simulation is all about learning

It can be a fun learning and teaching experience!

Its about an open experience – Remember! No one is being tested

Have resources

Plan ahead

Develop your simulation/drill

Develop a sustainability plan

Roll out!

# Remember....

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# Simulation Resources

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## Objectives and Goals

Council on Patient Safety in  
Women's Health Care

[http://www.safehealthcareforever  
ywoman.org/safety-action-  
series.php](http://www.safehealthcareforever<br/>ywoman.org/safety-action-<br/>series.php)

## Simulation Content

Using Simulation: Team STEPPS  
Training

[http://www.ahrq.gov/professional  
s/education/curriculum-  
tools/teamstepps/simulation/simu  
lationslides/simslides.html](http://www.ahrq.gov/professional<br/>s/education/curriculum-<br/>tools/teamstepps/simulation/simu<br/>lationslides/simslides.html)

# Scenarios Resources

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You can create your own scenarios, but why re-create the wheel?

## Scenario resources

- CMQCC Preeclampsia Toolkit:

<https://www.cmqcc.org/resources-toolkits/toolkits/preeclampsia-toolkit>

- ACOG simulation – Eclampsia:

<http://www.acog.org/About-ACOG/ACOG-Departments/Simulations-Consortium/OB-GYN-Simulations-Curricula>

- Journal of the Society for Simulation in Healthcare

[http://journals.lww.com/simulationinhealthcare/Fulltext/2013/06000/Preeclampsia\\_in\\_the\\_Delivery\\_Suite\\_A\\_Simulation.9.aspx#](http://journals.lww.com/simulationinhealthcare/Fulltext/2013/06000/Preeclampsia_in_the_Delivery_Suite_A_Simulation.9.aspx#)

# Debriefing

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# Definition

## □ de·brief

- To question someone, typically a soldier or spy
- Details about a completed mission or undertaking
- Synonyms: cross-examine, interview, interrogate, question, probe, examine, grill or pump



# Why Debrief?

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1. Staff identify ways to improve patient care and outcomes.
  - a. **Crew Resource Management: Blend technical and human skills to support safe and efficient patient care.**
2. Learning is relevant and timely, focused on actual patient care events.
3. Debriefing elicits learner-centered feedback.
  - a. Self-reflection and discovery.
  - b. Enhanced retention of learned ideas.

# Four Es

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- Debriefers encourage conversation about patterns of behavior by asking learners to describe the **events** that happened, the **emotions** around these events, potential alternative viewpoints to **empathize** and **explanations** for actions and emotions.

Mayville 2011

# ILPQC Process Measure

IL Measure	Type	Goal
Severe Maternal Morbidity No. of women with severe maternal morbidities (e.g. Acute renal failure, ARDS, Pulmonary Edema, Puerperal CNS Disorder such as Seizure, DIC, Ventilation, Abruption) / No. pregnant & postpartum women with new onset severe range HTN	Outcome	20% reduction
Appropriate Medical Management in under 60 minutes No. of women treated at different time points (30,60,90, >90 min) after elevated BP is identified / No. of women with new onset severe range HTN	Process	100%
<b>Debriefs on all new onset severe range HTN cases</b>	<b>Process</b>	<b>100%</b>
Discharge education and follow-up within 10 days for all women with severe range HTN, 72 hours with all women with severe range HTN on medications	Process	100%

## SEVERE HYPERTENSION DATA FORM

**Topic:** Maternity service team review and document sequence of events, successes with and barriers to swift and coordinated response to preeclampsia with severe features.

**Goal:** Reduce time to treatment (< 60 minutes) for new onset severe hypertension ( $\geq 160$  systolic OR  $\geq 110$  diastolic) with preeclampsia or eclampsia or chronic/gestational hypertension with superimposed preeclampsia (include patients from triage, L&D, Antepartum, PP, ED) in order to reduce preeclampsia morbidity in Illinois.

**Instructions:** Complete within 24 hrs. after all cases of new onset severe hypertension ( $\geq 160$  systolic or  $\geq 110$  diastolic) event in pregnancy up to 6 wks postpartum. Debrief should include primary RN and primary MD to identify opportunities for improvement in identification and time to treatment of HTN.

**Date:** \_\_\_\_\_ **GA at Event (weeks & days) OR # Days PP:** \_\_\_\_\_

**Patient Location (check all that apply)**  Triage  L&D  Postpartum  
 Antepartum  ED

**Maternal Age:** \_\_\_\_\_ **Height:** \_\_\_\_\_ **Current Weight:** \_\_\_\_\_

**Diagnosis:**  Chronic HTN  Gestational HTN  Preeclampsia  
 Superimposed Preeclampsia  Postpartum Preeclampsia  Other \_\_\_\_\_

**PROCESS MEASURE (P1): Medical Management**

Time: hh:mm	Measure
	BP reached $\geq 160$ or diastolic $\geq 110$ (sustained >15 min)
	First BP med given
	BP reached <160 and diastolic BP <110

**Medications (check all given)**

Medications	Dosage(s) given	Reason not given
<input type="checkbox"/> Labetalol		
<input type="checkbox"/> Hydralazine		
<input type="checkbox"/> Nifedipine		
<b>Magnesium Sulfate Bolus</b>	<input type="checkbox"/> 4gm <input type="checkbox"/> 6gm <input type="checkbox"/> Other	
Magnesium Sulfate	<input type="checkbox"/> 1gm/hr <input type="checkbox"/> 2gm/hr	
<b>Maintenance</b>	<input type="checkbox"/> 3gm/hr <input type="checkbox"/> Other	
Any ANS (if <34 wks)?	<input type="checkbox"/> Partial Course <input type="checkbox"/> Complete Course <input type="checkbox"/> Not Given	

**BALANCING MEASURE (B1,B2): Monitor Medical Management**

**B1.** Did diastolic pressure fall to <80 within one hour after meds given?

YES  NO

**B2.** If yes, was there corresponding deterioration in FH rate (Category 3)?

YES  NO  NA (for postpartum patients)

**GA at Delivery (weeks & days):** \_\_\_\_\_

**OB Complications (check all that apply)**

Transport In?  YES  NO Date: \_\_\_\_\_

**Adverse Maternal Outcome:** \_\_\_\_\_ Date: \_\_\_\_\_  
Transport Out?  YES  NO Date: \_\_\_\_\_

OB Hemorrhage with transfusion of  $\geq 4$  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

**Adverse Neonatal Outcome:** \_\_\_\_\_ Date: \_\_\_\_\_

NICU/SCN admission  IUFD  Other \_\_\_\_\_  None

**Maternal Race/Ethnicity (check all that apply):**

White  Black  Hispanic  Asian  Other

**PROCESS MEASURE (P2) Discharge Management**

**A. Discharge Education:** Education materials about preeclampsia given?

YES  NO

**B. Discharge Management:** Follow-up appt scheduled within 10 days

(for all women with any severe range hypertension/preeclampsia)

YES  NO

Was patient discharged on meds?

YES  NO

**If YES:** Was follow up appointment scheduled in <72 hours?

YES  NO

**COMMENTS about Medical Management, Monitoring, Discharge**

**Opportunities for improvement to reduce time to treatment (identification severe HTN to treatment goal <60 minutes): De-brief**

**Debrief Participants:** Primary MD:  YES  NO Primary RN:  YES  NO

TEAM ISSUES	Went well	Needs improvement	Comment
Communication			
Recognition of severe HTN			
Assessing situation			
Decision making			
Teamwork			
Leadership			

SYSTEM ISSUES	Went well	Needs improvement	Comment
HTN medication timeliness			
Transportation (intra-, inter-hospital transport)			
Support (in-unit, other areas)			
Med availability			
Any other issues:			



# Essential Elements of the ILPQC HTN De-brief

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## Who?

- 1-on-1 nurse and physician de-brief

## What?

- Identify issues and barriers with treatment of HTN

## When?

- As close to the event of severe range HTN as possible

## How?

- In person or over the phone

## Why?

- To make improvements in the treatment of severe range HTN

# Potential Challenges

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Availability of the physician or nurse

- Will it be more difficult to de-brief at night? During the day?

Time

Discomfort with a new process

# Feedback

Giving information or input to an individual or team with the intention of modifying future behavior

**INSTRUCTOR,  
SUPERVISOR, etc.**



**STAFF**

# Debriefing

Facilitating a structured form of feedback that allows individual and team reflection to understand issues and discuss areas for improvement



## Debrief - Acute Obstetrical Emergencies

- Root causes analyses link poor organizational culture and communication to poor obstetrical outcomes such as perinatal death and injury (Birnbach & Salas, 2008).
- Debriefing after acute clinical events is a highly regarded tool used for team building that has a positive impact on teamwork (Provonost & Sexton, 2005).
- Physician Partners support and participation : Anesthesia, OB, MFM and Neonatology/Pedi


# Many additional benefits

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- Clearer understanding for all
- Identification of future pitfalls
- Reinforces lessons learned through experience
- May decrease anxiety of experience
- Improves group dynamic and functioning
- Eases transition back into normal work duties

# All day, every day

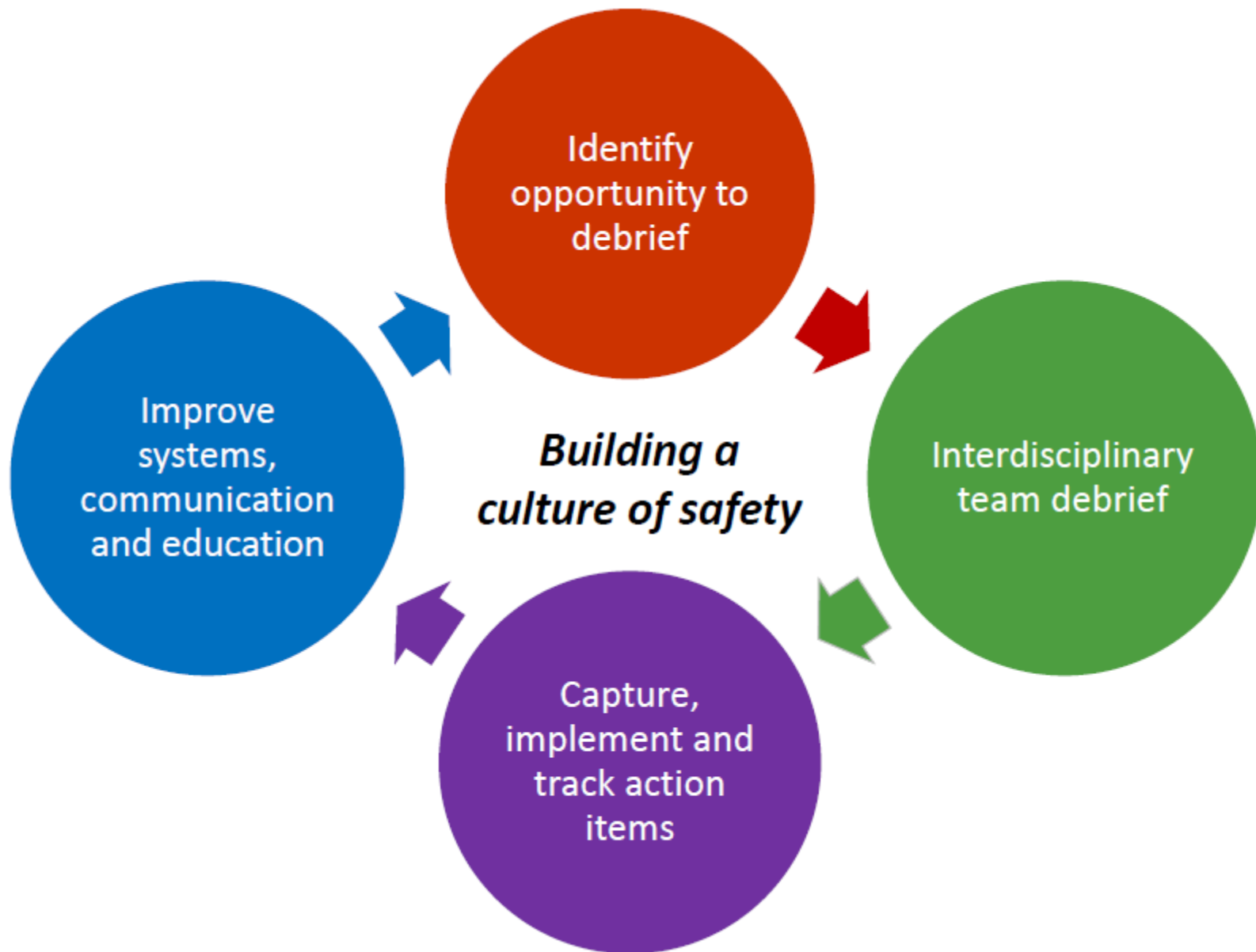


- Every resuscitation
  - Every code
  - Every family conflict
  - Every difficult encounter
  - Maybe even some of the easy ones
- 

## In fact....

---

- ❑ Debriefing is a critical component to continuous quality assessment and improvement
- ❑ Necessary for new staff
- ❑ Equally necessary for seasoned staff
- ❑ Useful in long term retention
- ❑ Necessary for long term job satisfaction
- ❑ Should be employed every day





# Elements of Debriefing

---

## Emotions

- How did staff feel about the patient event?

## Analysis

- What was done well?
- What are some areas for improvement?

## Application

- How can patient care be improved next time?

## Summary

- What are the main take away points?

# Debrief Checklist ( example)

## **Identify what went well** (*Check if yes, describe*)

- Communication went well
- Teamwork went well
- Leadership went well
- Decision-making went well
- Assessing the situation went well
- Other

## *Briefly Describe:*

## **Identify opportunities for improvement: “human factors”** (*Check if yes, describe*)

- Communication needed improvement
- Teamwork needed improvement
- Leadership needed improvement
- Decision-making needed improvement
- Assessing needed improvement
- Other

## *Briefly Describe:*

## **Identify opportunities for improvement: “non-human factors”** (*Check if yes, describe*)

- Equipment issues
- Supply issues
- Medications issues
- Inadequate support (with in-unit or other areas of the hospital)
- Delay in blood products availability
- Delays in transporting the patient
- Other

## *Briefly Describe:*

# Debrief Tool Example – Page 1

## Obstetric Team Debriefing Form

Remember: Debriefing is meant to be a learning experience and a way to address both human factors and systems issues to improve the response for next time. There is to be no blaming/finger-pointing.

Type of event: \_\_\_\_\_ Date of event: \_\_\_\_\_

Location of event: \_\_\_\_\_

Members of team present: (check all that apply)

- |   |  |                                     |   |
|---|--|-------------------------------------|---|
| <input type="checkbox"/> Primary RN           | <input type="checkbox"/> Primary MD            | <input type="checkbox"/> Charge RN  | <input type="checkbox"/> Resident(s)            |
| <input type="checkbox"/> Anesthesia personnel | <input type="checkbox"/> Neonatology personnel | <input type="checkbox"/> MFM leader | <input type="checkbox"/> Patient Safety Officer |
| <input type="checkbox"/> Nurse Manager        | <input type="checkbox"/> OB/Surgical tech      | <input type="checkbox"/> Unit Clerk | <input type="checkbox"/> Other RNs              |

Thinking about how the obstetric emergency was managed,

Identify what went well:  
(Check if yes)

- Communication
- Role clarity (leader/supporting roles identified and assigned)
- Teamwork
- Situational awareness
- Decision-making
- Other: \_\_\_\_\_

\_\_\_\_\_

Identify opportunities for improvement:  
"human factors" (Check if yes)

- Communication
- Role clarity (leader/supporting roles identified and assigned)
- Teamwork
- Situational awareness
- Decision-making
- Other: \_\_\_\_\_

\_\_\_\_\_

Identify opportunities for improvement:  
"systems issue" (Check if yes)

- Equipment
- Medication
- Blood product availability
- Inadequate support (in unit or other areas of the hospital)
- Delays in transporting the patient (within hospital or to another facility)
- Other: \_\_\_\_\_

\_\_\_\_\_

# Debrief Tool Example – Page 2

## Obstetric Team Debriefing Form

FOR IDENTIFIED ISSUES, FILL IN TABLE BELOW

ISSUE	ACTIONS TO BE TAKEN	PERSON RESPONSIBLE
	①	
	②	
	③	
	④	

# Debriefing Resources

---

[http://www.ahrq.gov/professionals/education/curriculum-tools/teamstepps/instructor/videos/ts\\_debrief\\_landd/debrief\\_landd.html](http://www.ahrq.gov/professionals/education/curriculum-tools/teamstepps/instructor/videos/ts_debrief_landd/debrief_landd.html)

Introduction to debriefing. Seminars in Perinatology. [June 2013](#) Volume 37, Issue 3, Pages 166–174

<https://www.acog.org/-/media/Districts/District-II/Public/SMI/v2/PST-zs-02-AF-140513-DebriefingForm.pdf?dmc=1&ts=20160603T1628206883>

<http://contemporaryobgyn.modernmedicine.com/contemporary-obgyn/news/debriefing-after-adverse-outcomes-opportunity-improve-quality-and-patient-safety?page=0>

# IMPLEMENTING DRILLS, SIMULATIONS, AND DEBRIFS

# Debriefs

## Barriers:

- Buy-in
- Time constraints
- Staffing issues
- Physician is absent
- Fear of blame

## Opportunities

- Engage physician in the value of a debrief after ever severe range hypertension case
  - Maternal morbidity and mortality statistics
  - Reference use of debriefing in for other clinical situations
- Use checklists as tools

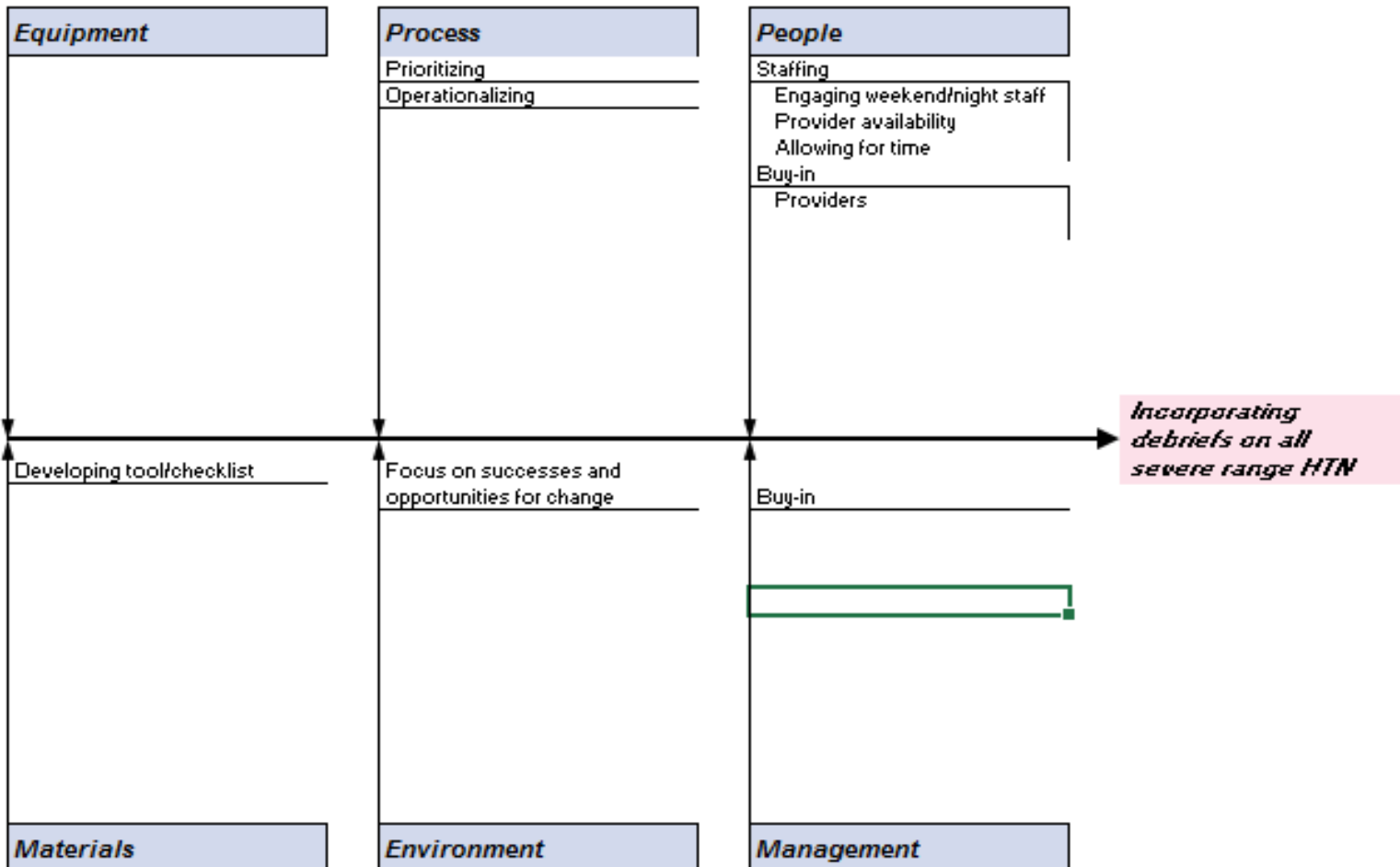
# Debriefs

## Cause and Effect Diagram

Maternal Hypertension Initiative  
Date: May 23, 2016 Face to Face Meeting

**Cause**

**Effect**





# Drills and Simulations

## Barriers:

- Financial constraints
- No educator available
- No buy-in from providers or other departments
- Incorporating weekend/night staff
- Scheduling
- Keeping it real time

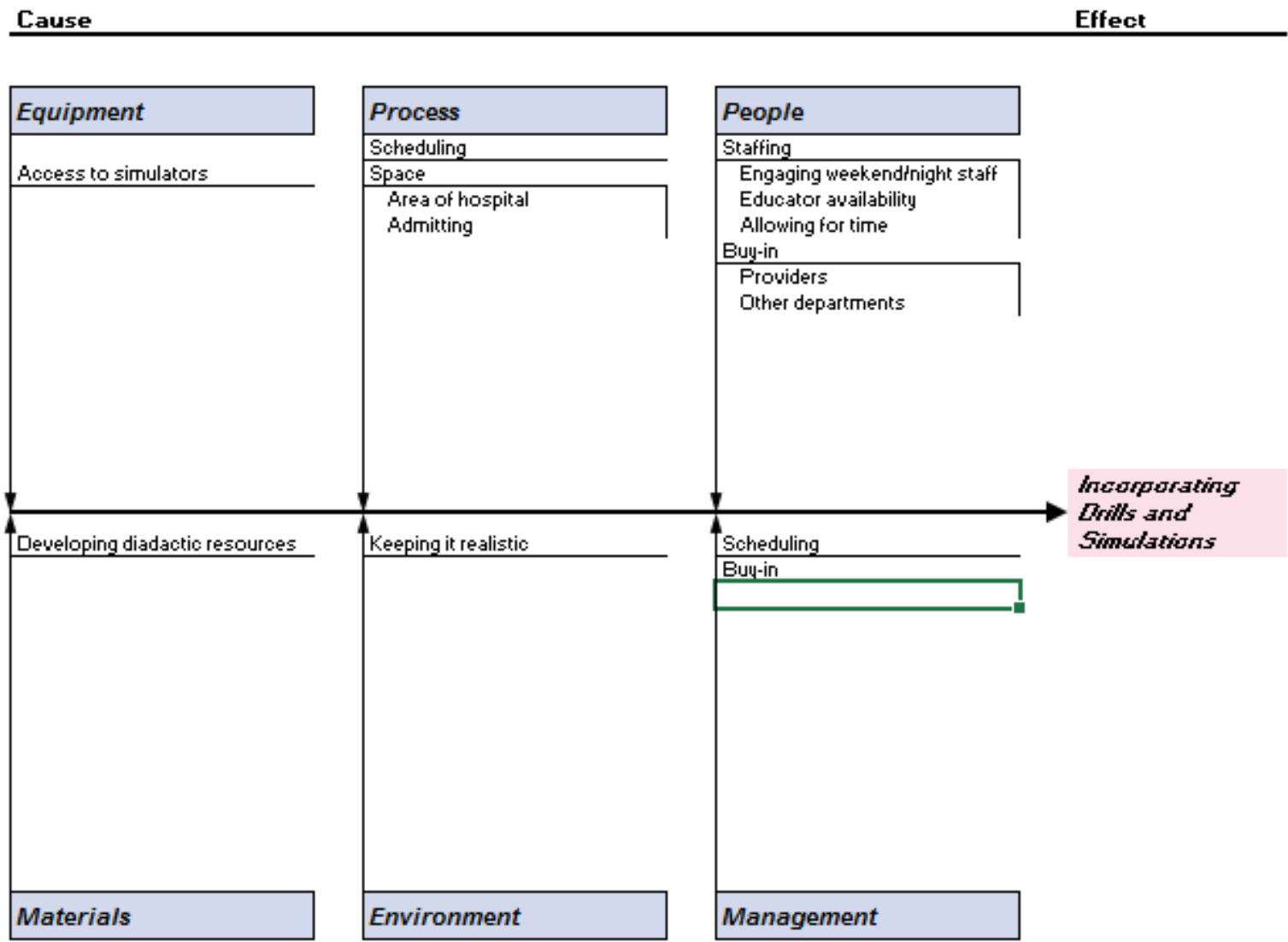
## Opportunities

- Overhead call system to check response time
- Engage administrator for support
- Create a realistic scenario
- Create a simulation team to include a didactic component
- Use experience to implement change in practice

# Drills & Simulations

## Cause and Effect Diagram

Maternal Hypertension Initiative  
Date: May 23, 2016 Face to Face Meeting



# Notes from the field - CMQCC



Nancy Peterson, MSN, RNC-OB, PNNP, IBCLC  
Director of Perinatal Outreach  
Clinical Program Manager of CMQCC  
Stanford University

# READINESS RESOURCES: CHECKLISTS

Komal Bajaj, MD MS-HPed

Associate Professor of Clinical Obstetrics & Gynecology and Women's Health

[Department of Obstetrics & Gynecology and Women's Health](#)

Albert Einstein College of Medicine

Montefiore Medical Center



# SMI Checklist Experience

Komal Bajaj, MD, MS-HPed  
Peter S. Bernstein, MD, MPH



## CONFLICT OF INTEREST DISCLOSURE STATEMENT

We do not have any financial interests or other relationships with the industry relative to the topics being discussed.



# Situation

- ▶ Checklists developed for use during emergencies
- ▶ Being used (or not used) to varying degrees
- ▶ We want to know more about them
  - Are people using them?
  - If so, how are they using them?
  - Are they helpful?



# Background

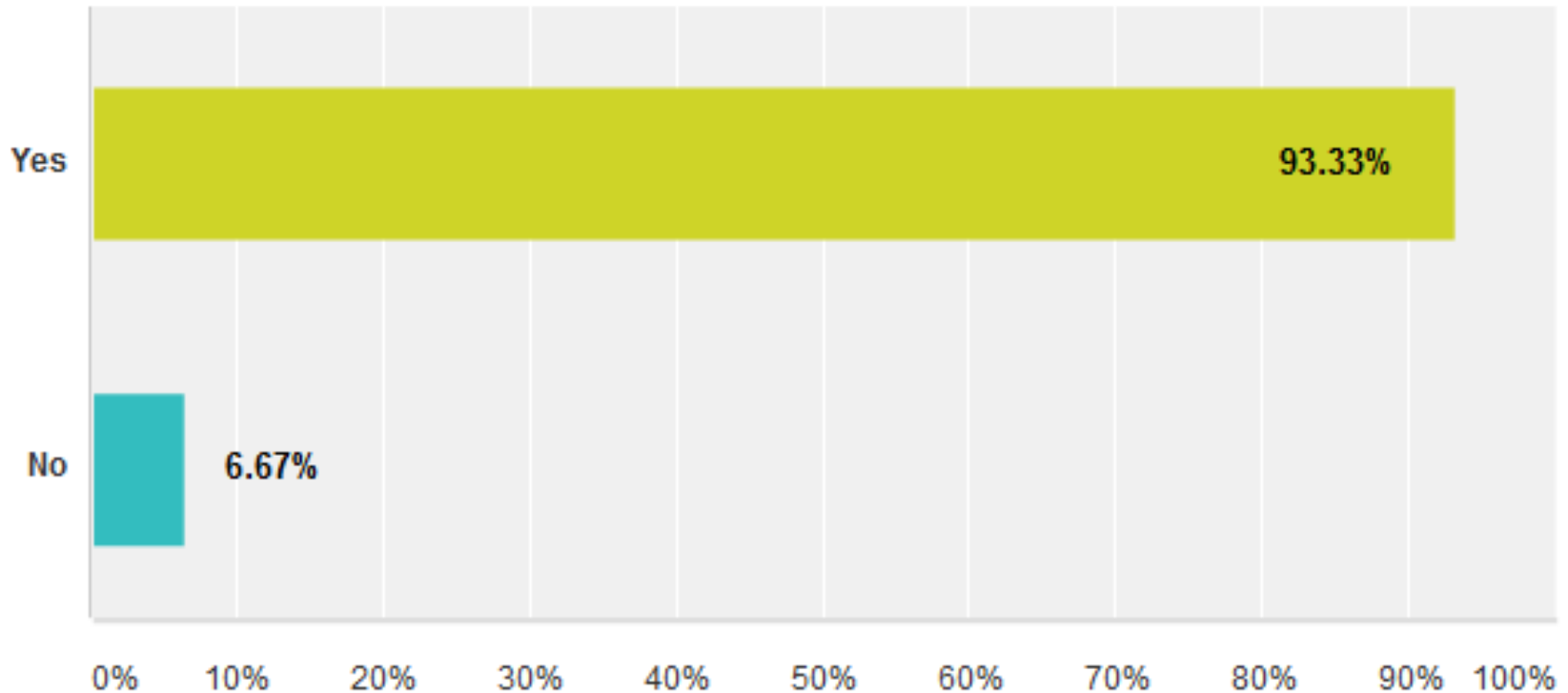
- ▶ In Spring, 2015 queried statewide to see how hospitals are using the SMI Bundle checklists
- ▶ And the results are...



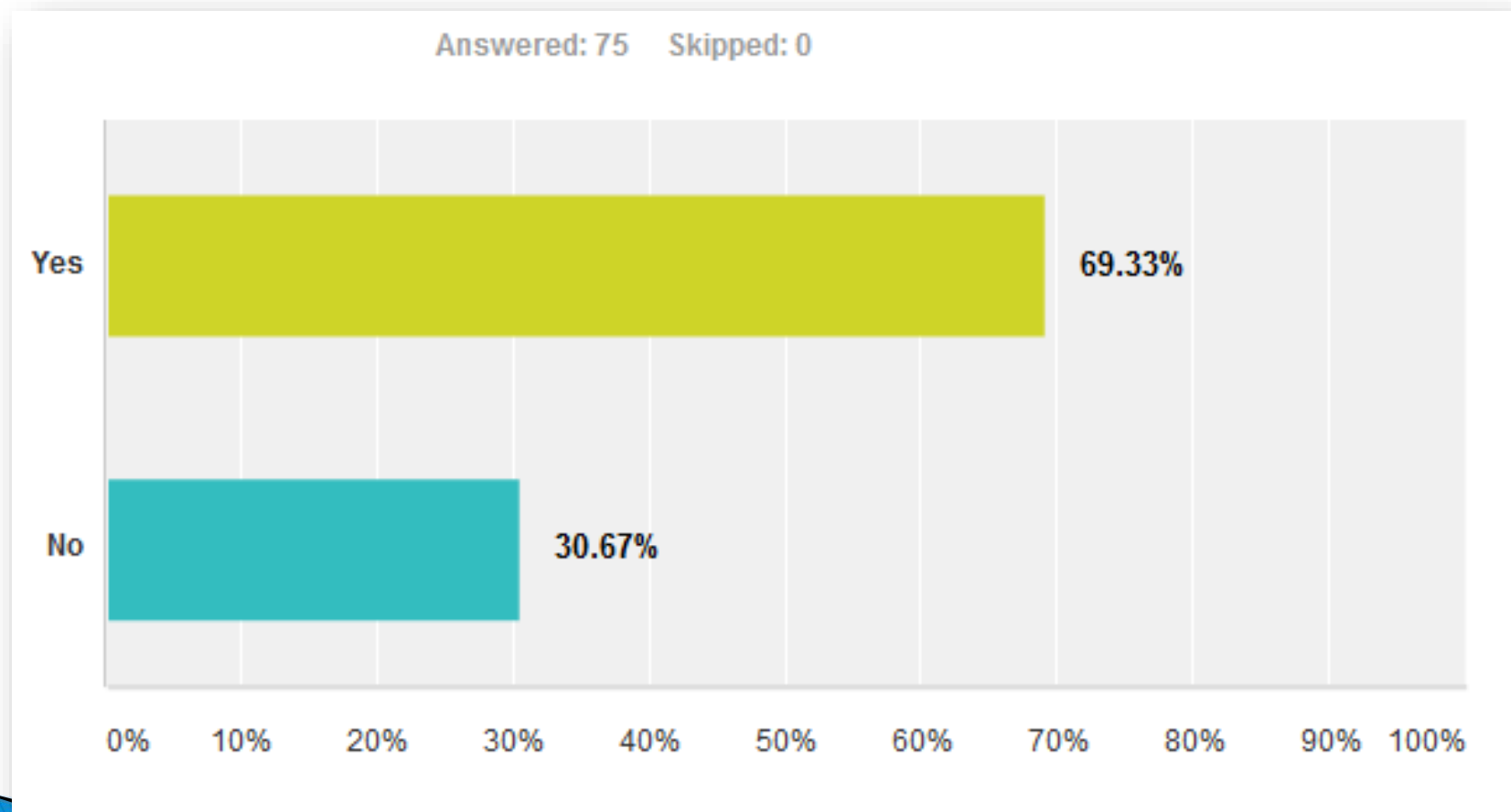


# Are you aware of the checklists provided within the SMI bundles?

Answered: 75 Skipped: 0

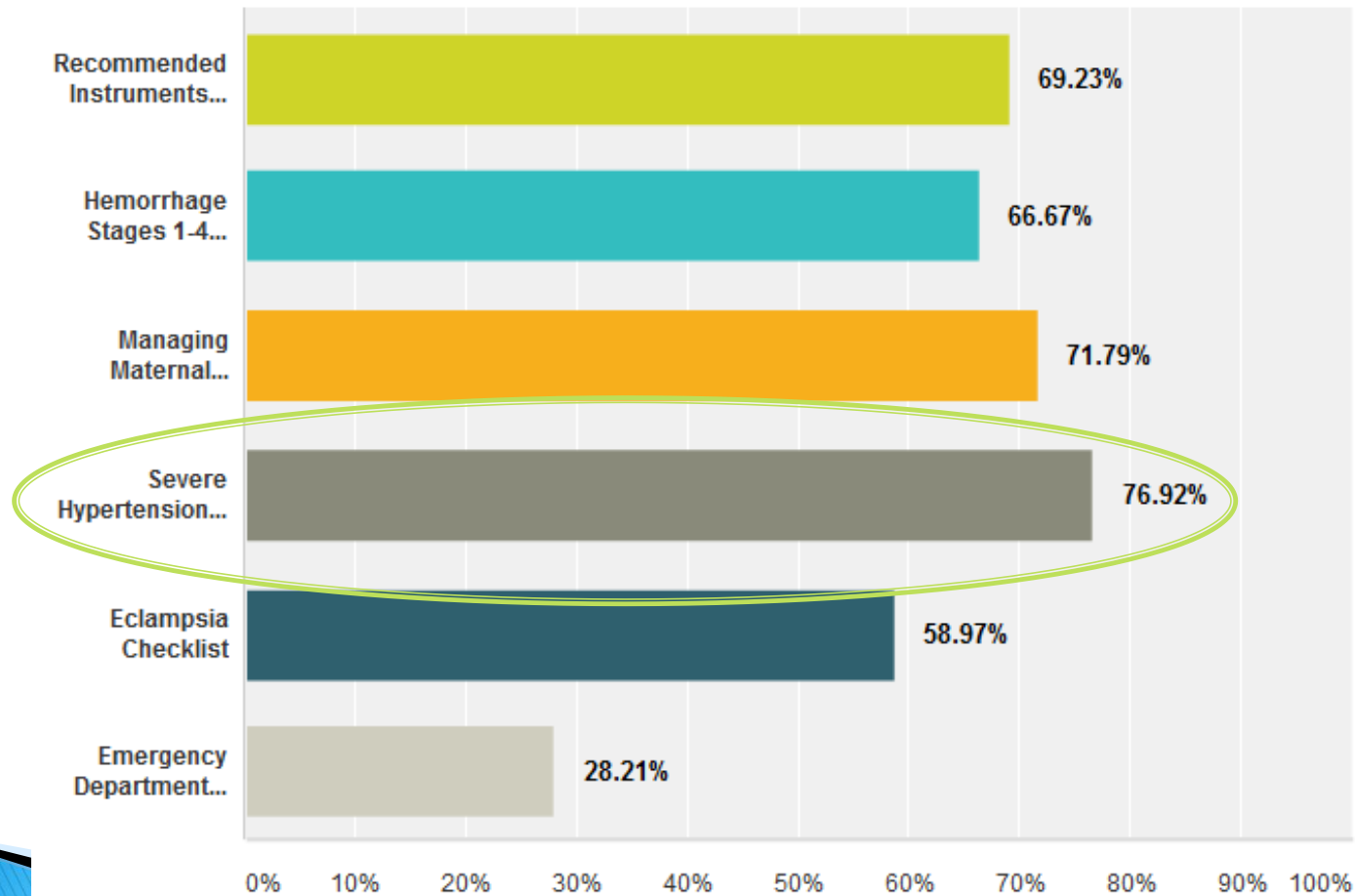


# Has a decision been made to implement the checklists in your hospital?

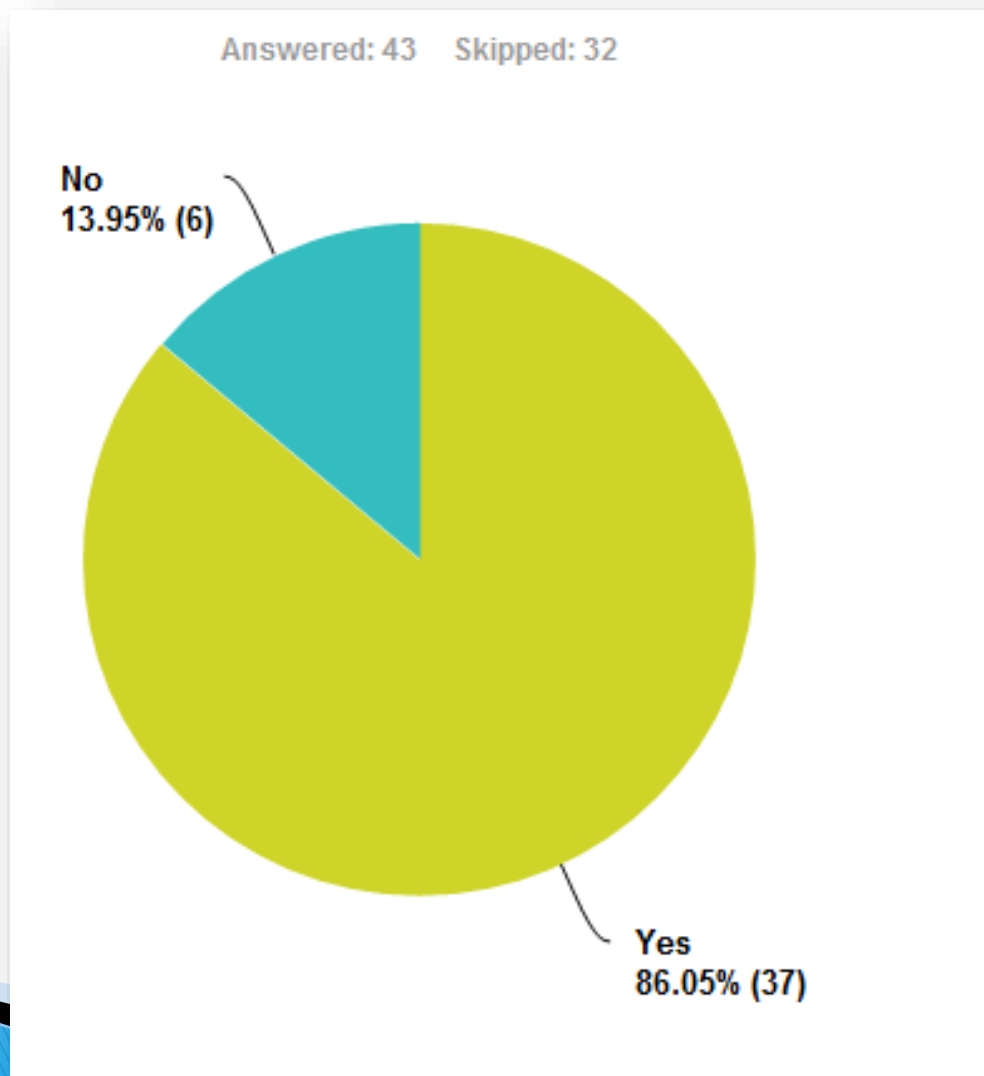


# If yes, which checklists have been implemented:

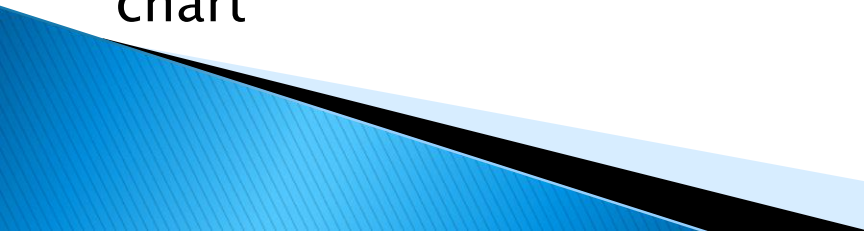
Answered: 39 Skipped: 36



# Was your hospital SUCCESSFUL with checklist implementation?




# If checklists are not being implemented, explain why not:

- Policy/Protocol revision
    - bundles are in review, pending provider approval
    - need to reconcile hospital policy with SMI checklists
  - Lack of time and manpower
  - Checklist/Paperwork fatigue
    - burden of forms/mandatory checklists is high
    - possibility of checklists becoming just another box to check rather than a genuine tool
    - fear of taking providers away from time with patient to focus on checklist
  - Navigating risk management and what role this tool plays in the chart
- 

# What barriers (if any) has your hospital encountered?

## Most common responses included:

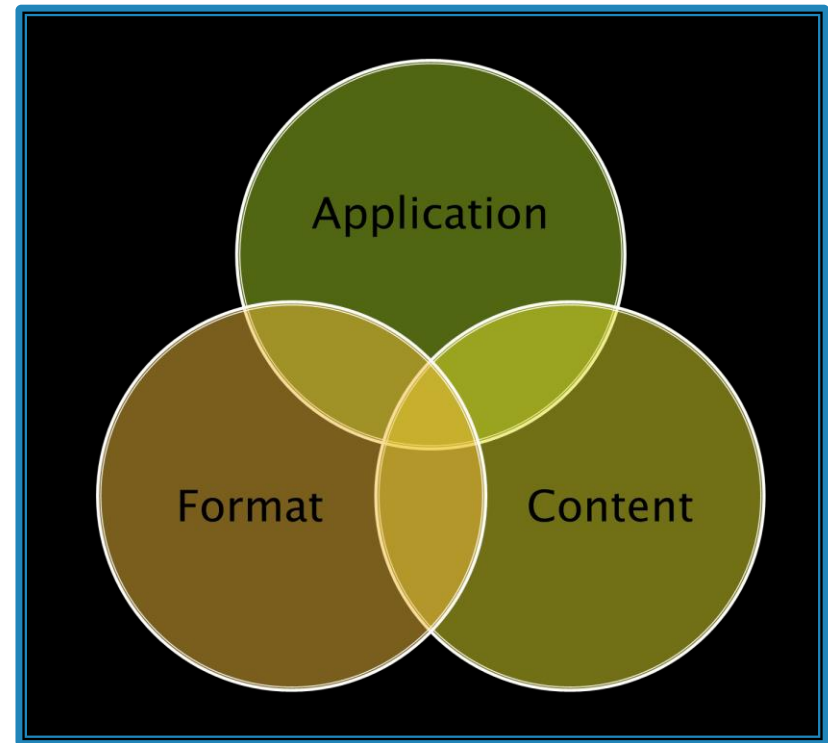
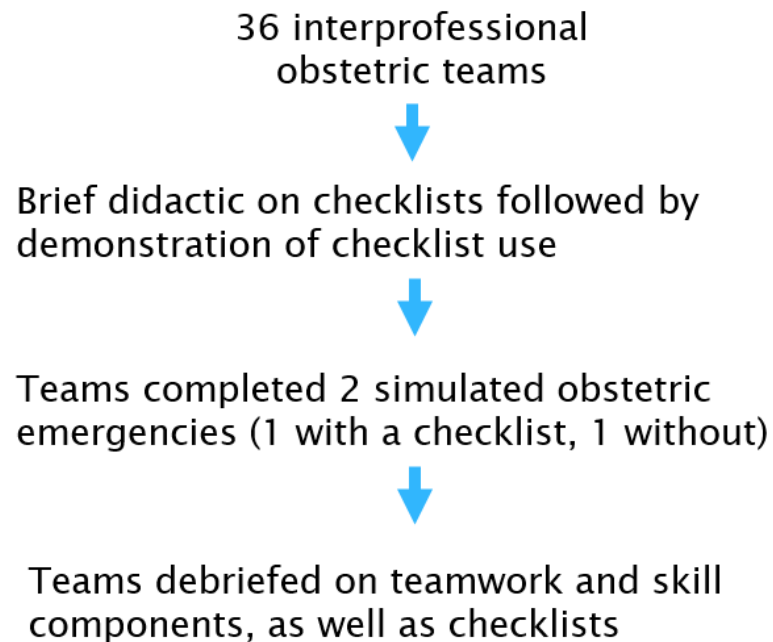
- ▶ Resistance to standardization
  - ▶ Getting OB consensus
  - ▶ Mass education/collaboration of the staff
  - ▶ Time and competing priorities/initiatives
  - ▶ Need to modify current workflows and practices
  - ▶ EMR infrastructure, capabilities & workflow challenges
- 

# Assessment


- ▶ Some barriers and confusion seem to exist about checklist implementation
- ▶ Decided to study
  - Several large academic institutions in the Bronx
  - Opportunity to have large numbers of providers and staff pilot the checklists
  - Collaboration between New York City Health + Hospitals and Einstein–Montefiore



# Validating obstetrical emergency checklists using simulation: a randomized controlled trial





- ▶ “I really like the idea of an emergency checklist”
  - ▶ Can this serve as a documentation tool?
  - ▶ This will aid in “speaking up”
  - ▶ I feel like I’m not “doing anything” when serving as the checklist reader
- 

# Eclampsia Checklist

- Call for assistance (Hospital should identify a Rapid Response Team) to location of the event
- Check in:
  - OB Attendings/ Fellows/Residents
  - Three RNS
  - Anesthesia
  - Neonatology (if indicated)
- Appoint a leader
- Appoint a recorder
- Appoint a primary RN and secondary personnel
- Protect airway
- Secure patient in bed, rails up on bed, padding
- Lateral decubitus position
- Maternal pulse oximetry
- IV access/PEC labs
- Supplement oxygen (100% non-rebreather)
- Bag-mask ventilation on the unit
- Suction available
- Continuous fetal monitoring (if appropriate)

## INITIAL MEDICATIONS

- Load 4-6 grams 10% magnesium sulfate in 100 mL solution IV over 20 minutes
- Magnesium sulfate on infusion pump
- Magnesium sulfate and pump labeled
- Magnesium sulfate 10 grams of 50% solution IM (5 grams in each buttock) if no IV access
- Magnesium sulfate maintenance 1-2 grams/hour continuous infusion

Contraindications: pulmonary edema, renal failure, myasthenia gravis

## ANTICONVULSANT MEDICATIONS

(for recurrent seizures or when magnesium sulfate is contraindicated):

- Lorazepam (2-4 mg IV x 1, may repeat x 1 after 10-15 minutes)
- Diazepam (5-10 mg IV every 5-10 minutes to maximum dose 30 mg)
- Phenytoin (15-20 mg/kg IV x 1, may repeat 10 mg/kg IV after 20 minutes if no response); avoid with hypotension, may cause cardiac arrhythmias
- Keppra (500 mg IV or orally, may repeat in 12 hours); dose adjustment needed if renal impairment

## PERSISTENT SEIZURE

- Neuromuscular block and intubate
- Obtain radiographic imaging
- ICU admission

Antihypertensive medications SBP  $\geq$  160 or DBP  $\geq$  110

- Labetalol (20, 40, 80, 80 mg IV\* over 2 minutes, escalating doses, repeat every 10 minutes or 200 mg orally if no IV access); avoid in asthma or heart failure, can cause neonatal bradycardia
- Hydralazine (5-10 mg IV\* over 2 minutes, repeat in 20 minutes until target blood pressure is reached)
- Repeat BP every 10 minutes during administration

\* Maximum cumulative IV administered doses should not exceed 25 mg hydralazine; 220 mg labetalol in 24 hours.

## AFTER SEIZURE

- Assess neurologic status every 15 minutes
  - PEC labs: CBC, Chem 7, LFT, Uric Acid, LDH, T&S, PT/PTT, Fibrinogen, Magnesium
  - Foley catheter (Hourly I&O. Report output < 30 mL/hour)
- Strict I&O (no less than every 2 hours). Report urine output to the clinician if < 30 mL/hr. Foley catheter should be placed if urine output is borderline or strict I&O cannot be maintained. Urometer should be utilized if the urine output is borderline or < 30 mL/hr.

## DELIVERY PLAN

- Ensure that there is an appropriate plan for delivery

## MAGNESIUM TOXICITY

- Stop magnesium maintenance
- Calcium gluconate 1 gram (10 mL of 10% solution) IV over 1-2 minutes

## POSTPARTUM

- Oral antihypertensive medication postpartum if  $>$  150/100.
- Blood pressure monitoring is recommended 72 hours after delivery and/or outpatient surveillance (e.g., visiting nurse evaluation) within 3 days and again 7-10 days after delivery or earlier if persistent symptoms.

## DEBRIEF

- Debrief with the whole obstetric care team and document following the debrief

# Eclampsia CHECKLIST

EXAMPLE

- 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 (prepare OR if appropriate)
- Debrief patient/family and obstetric team

## MAGNESIUM SULFATE

Contraindications: pulmonary edema, renal failure, myasthenia gravis

If IV:

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

If no IV:

- 10 grams of 50% solution IM (5 g in each buttock)

## ANTIHYPERTENSIVE MEDICATIONS

For SBP  $\geq$  160 or DBP  $\geq$  110  
Repeat BP q 10 minutes during administration

- Labetalol (20mg, 40, 80 IV\* over 2 minutes, escalating doses, repeat q 10 minutes); avoid in asthma or heart failure; can cause neonatal bradycardia
- Hydralazine (5-10 mg IV\* over 2 minutes, repeat q 20 minutes until target blood pressure is reached)

\*Note:

- Maximum cumulative IV administered doses should not exceed 25 mg hydralazine; 220 mg labetalol in 24 hours
- If persistent seizures, consider anticonvulsant medications and additional workup

## ANTICONVULSANT MEDICATIONS

Recurrent seizures or magnesium sulfate contraindicated

- Lorazepam (Ativan): 2-4 mg IV x 1, may repeat once after 10-15 minutes
- Diazepam (Valium): 5-10 mg IV q 5-10 minutes to maximum dose 30 mg

## TREATMENT & WORK-UP FOR PERSISTENT SEIZURES

- Neuromuscular block and intubate
- Obtain radiographic imaging
- ICU admission
- Consider anticonvulsant medications

When creating or modifying\*\*\*\* a checklist, consider:



- Does the creation/modification team have representation from all members of the team?
- Is the objective for the checklist clear and concise?
- Does it address critical safety steps that are at risk of being missed?

## Structure and Flow

- Consider inclusion of items to improve communication or situation awareness
  - Ie: Announce Estimated Blood Loss
- Simple sentence structure and formatting
- Pick your font type, size, and colors carefully

# Serif vs. Sans-Serif



# Checklist Implementation

- ▶ Mode of administration: Paper or Plastic?
  - I-Pad or Touch Monitor
  - Google Glass, etc.
- ▶ Pilot with few teams and make additional changes/create super users
- ▶ Roll-out requires a mixed methods approach
  - Grand-Rounds
  - In-Service/Demonstration
  - Practice!
- ▶ After implementation, the steering interprofessional team should continue observe use and make changes as needed
- ▶ Reinforce through practice



# A CHECKLIST FOR CHECKLISTS

## Development



## Drafting



## Validation

- Do you have clear, concise objectives for your checklist?

### Is each item:

- A critical safety step and in great danger of being missed?
- Not adequately checked by other mechanisms?
- Actionable, with a specific response required for each item?
- Designed to be read aloud as a verbal check?
- One that can be affected by the use of a checklist?

### Have you considered:

- Adding items that will improve communication among team members?
- Involving all members of the team in the checklist creation process?

### Does the Checklist:

- Utilize natural breaks in workflow (pause points)?
- Use simple sentence structure and basic language?
- Have a title that reflects its objectives?
- Have a simple, uncluttered, and logical format?
- Fit on one page?
- Minimize the use of color?

### Is the font:

- Sans serif?
- Upper and lower case text?
- Large enough to be read easily?
- Dark on a light background?

- Are there fewer than 10 items per pause point?

- Is the date of creation (or revision) clearly marked?

### Have you:

- Tried the checklist with front line users (either in a real or simulated situation)?
- Modified the checklist in response to repeated trials?

### Does the checklist:

- Fit the flow of work?
- Detect errors at a time when they can still be corrected?
- Can the checklist be completed in a reasonably brief period of time?
- Have you made plans for future review and revision of the checklist?

Please note: A checklist is NOT a teaching tool or an algorithm

# Emergency Manuals Implementation Collaborative

Emergency Manuals Implementation Collaborative (EMIC)



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EMIC - Join the Collaborative



The Emergency Manuals Implementation Collaborative (EMIC) fosters adoption and effective use of emergency manuals to enhance our patients' safety. Our initial focus is perioperative care, while sharing our lessons with other fields of healthcare.

Our goals are to:

1. Provide a framework for clinicians and teams to train for, manage, debrief, and report critical events.
2. Embed the effective clinical use of emergency manuals into patient care.

Join The Collaborative

## Upcoming Events

**American Society of Anesthesiologists (ASA) Annual Meeting**

**October 24-28, 2015  
San Diego, California**

The following sessions will be dedicated to emergency manuals at this year's meeting:

**Title:** Safety Innovations for the L and D Unit: Creating a Vision for Leadership in Peripartum Medicine

**Date/Time:** Monday, Oct 26, 2015, 1:10 - 3:10 PM

**Session Number:** Panel PN 311

**Session Track:** OB

**Title:** Using Emergency Manuals in the OR: What is the Evidence and





# Team Talks

- Dina Kapogiannis, RNC-OB, RN lead –  
NorthShore Evanston

# *NorthShore University HealthSystem*

## *Evanston Hospital*

- Ann Newkirk, Director of Women's Services
- Anita Little, Nurse Manager (High Risk Antepartum/Postpartum, Gynecology)
- Rachel Cordts, Nurse Manager (Labor and Delivery)
- Kimberly Spivey, Nurse Manager (Mother-Baby)
- Constandina Kapogiannis, RNC-OB, RN lead (High Risk Antepartum/Postpartum, Gynecology)
- Jackie Mortillaro, RN (Mother-Baby)
- Missy Raedle, RN (Labor and Delivery)
- Meira Gottesman, RN (Emergency Room)
  
- Dr. Mark Neerhof OB/GYN , MFM (Physician lead)
- Dr. Patrick Schneider OB/GYN, MFM fellow
- Dr. Morris Kharasch, Emergency Room
  
- Karen Kelly, PharmD
- Ann Wild, HIT



# *NorthShore University HealthSystem Evanston Hospital*

- Level III
- 3400 births per year
- 550 NICU admissions
- 44 bed NICU
- 52 bed OB/Postpartum/Antepartum/  
Gynecological surgery



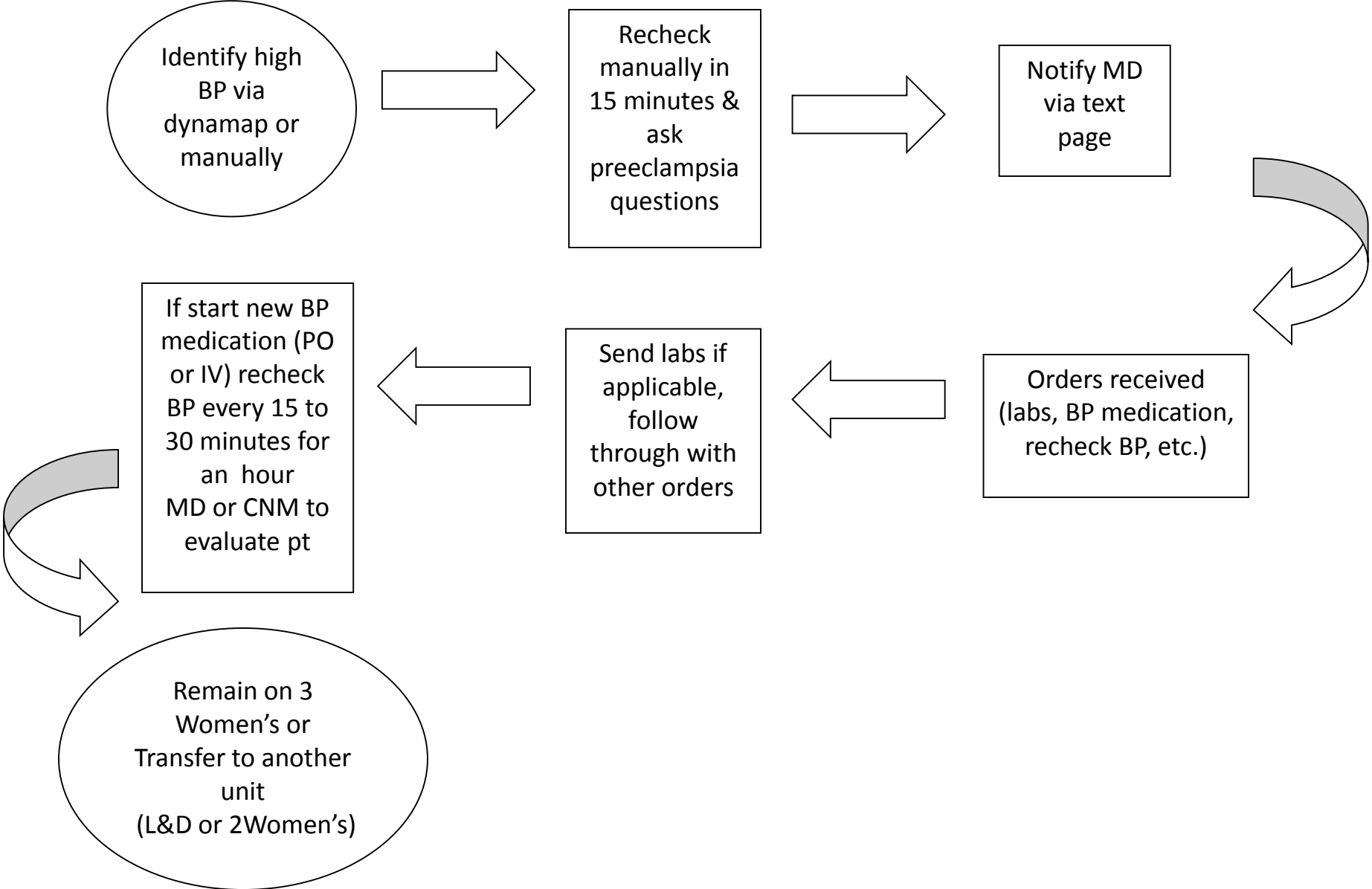
- Our team consists of Staff nurses, Nurse managers, Physicians, Pharmacy, and HIT
- Team Leader Constandina Kapogiannis, RNC-OB  
847-570-2813, ckapogiannis@northshore.org

- Started retrospective chart audits in February 2016 using ICD 10 codes and a pharmacy report
- Team members meet monthly before the scheduled team call
- Staff training began the week of March 14<sup>th</sup>
  - Bedside data form GO LIVE was March 17<sup>th</sup>
  - If unable to attend a training session self study done by the nurse using power point presentation
  - Unit champions to assist with training their own staff

- Weekly rounding on all units (Labor & Delivery, Mother-Baby, Emergency Department) to collect completed data forms and answer staff questions
- Each unit has either a clip board or a binder at the concierge desk to house the completed forms
- Blank forms are available in either the binder on the unit or a folder at the concierge desk based on unit preference

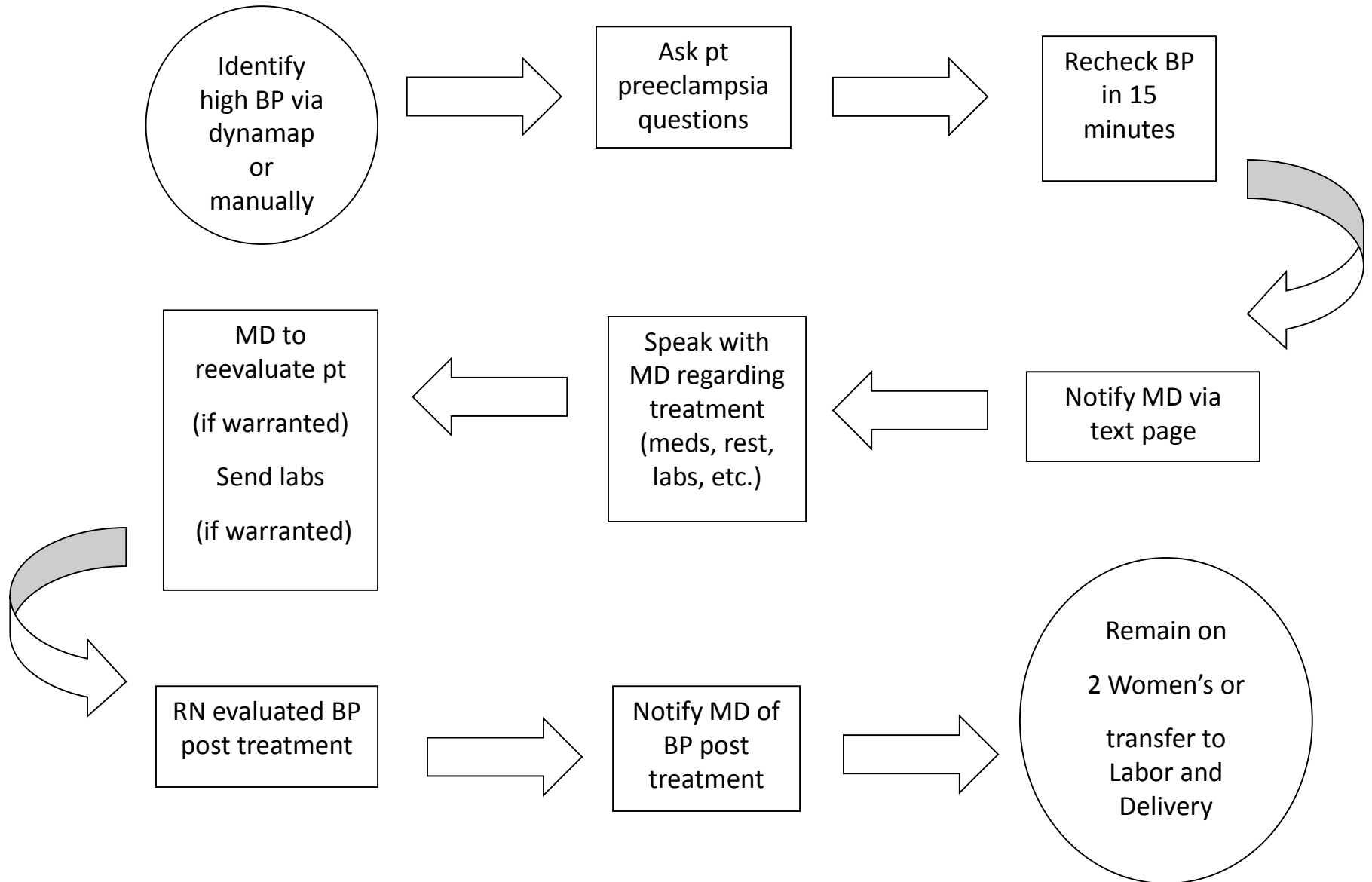
- Since February 2016
  - 54 records have been entered into REDCAP
    - (as of 6/13/16)
  - Combination of chart review and real time bedside data collection
- Baseline data from October, November, December 2015 entered as well
  - 16 records total

# HTN Algorithm Mother Baby and Emergency Department

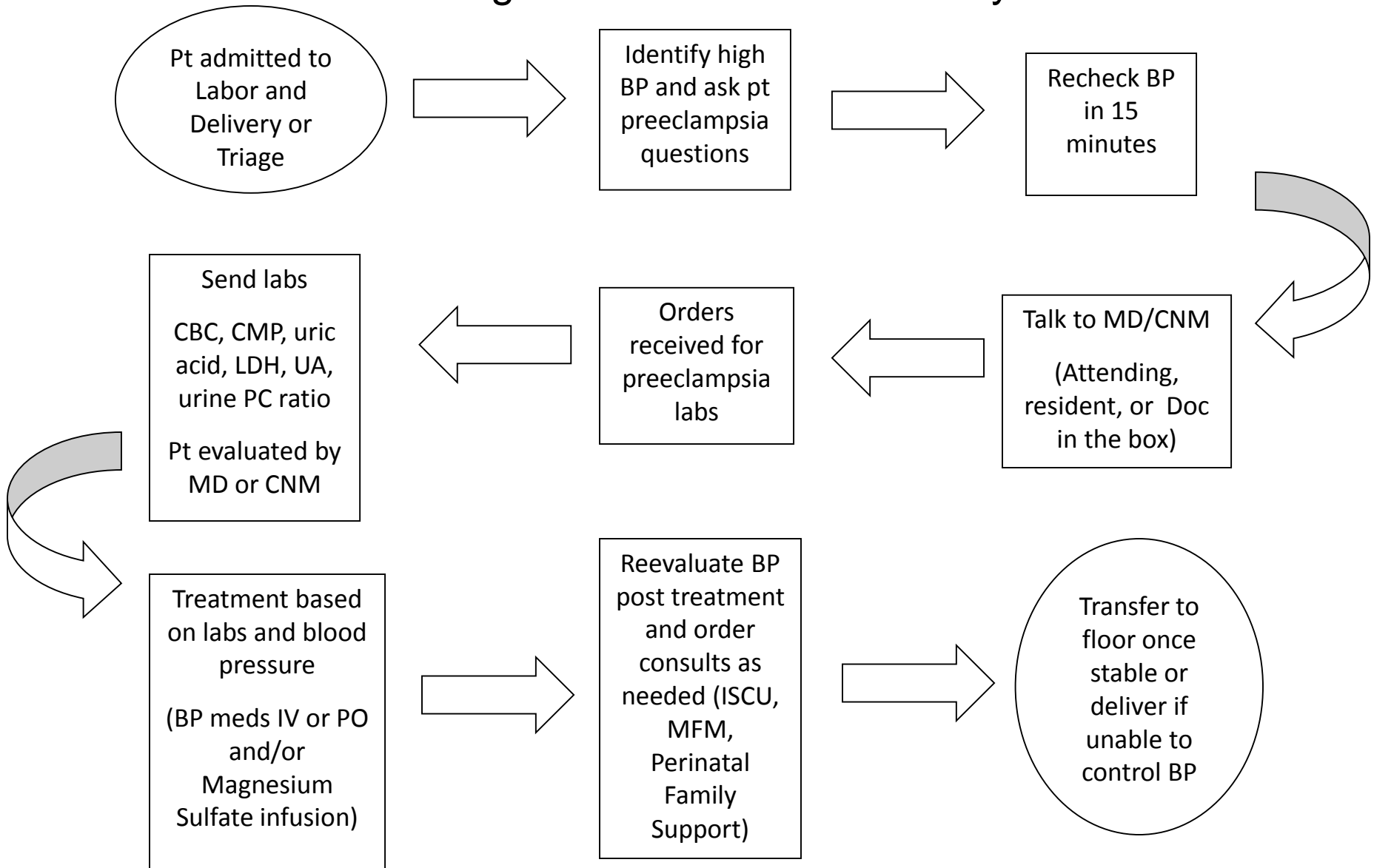




# HTN Algorithm High Risk Antepartum/Postpartum, Gynecology



# HTN Algorithm Labor and Delivery



## In progress

- 30 day goal
  - Accurate BP measurement for all pts
  - Creation of a standard BP protocol for the entire hospital
  - Work with pharmacy to change wording on MAR regarding anti hypertensive medication
- 60 day goal
  - Discharge workflow
    - RN to attempt to ensure follow up in 7 days if not on medication or within 3 days if on medication
  - Postpartum education
    - Tear off sheets

- How were you able to engage the pharmacy to assist in this initiative???
  - No pyxis report available to us
- Thank you to all of the ILPQC staff for their support and encouragement
- Questions???
- Suggestions for improvement???

# Team Talks – HTN Initiative



- Teams assigned an OB Teams Call – look for email from Kate
  - July
    - Northwest Community
    - Memorial Hospital of Carbondale
  - August
    - St. Anthony Hospital
    - HSHS St. Elizabeth
  - 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 4<sup>th</sup> Annual Conference



- Save the Date – Thursday, November 3, 2016!
- Westin in Lombard, 8 am – 5 pm
- Speakers
  - Mary Dalton, ACOG NY Safe Motherhood Initiative
  - Mike Marcotte, OPQC – 17OHP, NAS, ANS
  - Bill Sappenfield, FPQC – HTN, Hemorrhage, Mother's Own Milk, results of the Golden Hour work
  - Munish Gupta, NeoQIC of Massachusetts – NAS, Human Milk, Maternal Morbidity, Prematurity Prevention, data for QI work
  - Julie Vasher, CMQCC – Reduce Primary Cesarean, HTN, Hemorrhage
  - Eleni Tsigas, Preeclampsia Foundation - Patient & Family Engagement

# Communications

- campusCatalyst student group from Northwestern worked with ILPQC to develop contact management system with:
  - Master OB Teams database
  - MailChimp implementation
- Launch to OB Teams in June – no opt-in necessary, begin receiving email immediately!
  - Please add [info@ilpqc.org](mailto:info@ilpqc.org) to address book to avoid bounce backs!
- Teams can still email [info@ilpqc.org](mailto:info@ilpqc.org) – MailChimp used for mass communication from ILPQC to you



Use this area to offer a short preview of your email's content.

[View this email in your browser](#)

ive



Hi all,

The ILPQC Maternal Hypertension Initiative Kick-off call is this coming Monday, May 2nd! Call in details are below:

Time: 12:30-2:30 pm

Conference Line: [1 877 860 1058](tel:18778601058)

Host Code: 143 516 5688

Participant Code: [850 207 6711](tel:8502076711) (Use this code when requested by system!)

Adobe Connect: <http://northwesternuniversity.adobeconnect.com/obteamshtm/>

Please also remember that you are able to register up to 3 participants for the Face-to-Face Collaborative Learning Session held in Springfield on May 23rd. There is a small fee (\$25 per participant + \$2.37 for processing). Please click [here](#) to register!

Please let us know if you have any questions!

Katelynne Finnegan, MPH  
ILPQC Project Coordinator  
[kfinnegan@northshore.org](mailto:kfinnegan@northshore.org)  
847-570-2686

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Institute for Public Health and Medicine

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Chicago, IL 60611-5099

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## 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



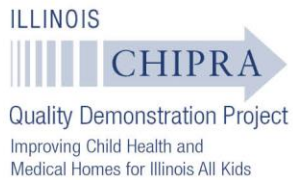


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- Visit us at [www.ilpqc.org](http://www.ilpqc.org)

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