AIM Hypertension Bundle On-Boarding

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Why Hypertension Bundle?

- Cardiomyopathy was found to be the leading cause of death and Cardiovascular/Coronary Conditions were found to be one of the second leading causes of death for three years of reviewed cases

Why Hypertension Bundle?

- Hypertensive disorder emergencies constitute one of the leading causes of maternal and perinatal mortality worldwide
- *"the rate of CHTN has increased by 67% from 2000 -2009 with the largest increase (87%) among African American women"*
- Women with a hx of preeclampsia have a significant increased risk of long-term cardiovascular disease

Ref: ACOG practice bulletin #203 Chronic Hypertension in Pregnancy. 2019
ACOG PB #202 Gestational Hypertension and Preeclampsia. 2019

MMRC Findings

FIGURE 10 Leading Causes of Death Among Pregnancy-Related Cases, Georgia, 2012-2014

Number of Deaths

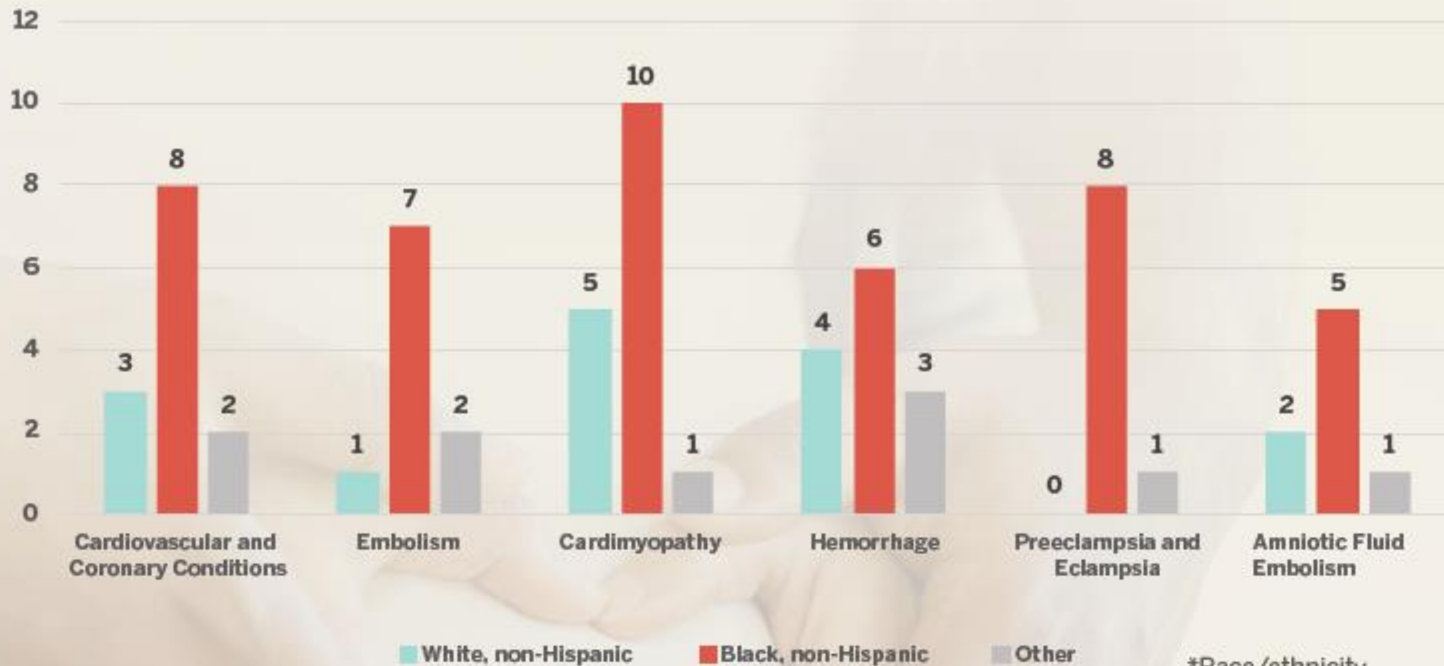
18
16
14
12
10
8
6
4
2
0

13
10
16
13
9
8

Cardiovascular and Coronary Conditions
Embolism
Cardiomyopathy
Hemorrhage
Preeclampsia and Eclampsia
Amniotic Fluid Embolism

Cause of Death

MMRC Findings



*Race/ethnicity is unknown for one pregnancy-related death.

Other races include: Bi-Racial, Asian Indian, Asian, Vietnamese Filipino, and American Indian

Initiative Focus

- Reduction of short and long-term morbidity and mortality related to pregnancy hypertension.
- Proper screening, diagnosis and management of hypertensive disorders.
- Timely recognition and quick, organized response to preeclampsia.
- Proper discharge screening and planning, including patient education.

GaPQC Hypertension Initiative Goals

- Timely triage and evaluation of pregnant and postpartum women
- Increase timely access to medications
- System for escalating, consultation and transport as indicated
- Standards for assessment of vital signs and labs

PATIENT SAFETY BUNDLE

Hypertension

READINESS

Every Unit

- Standards for early warning signs, diagnostic criteria, monitoring and treatment of severe preeclampsia/eclampsia (include order sets and algorithms)
- Unit education on protocols, unit-based drills (with post-drill debriefs)
- Process for timely triage and evaluation of pregnant and postpartum women with hypertension including ED and outpatient areas
- Rapid access to medications used for severe hypertension/eclampsia: Medications should be stocked and immediately available on L&D and in other areas where patients may be treated. Include brief guide for administration and dosage.
- System plan for escalation, obtaining appropriate consultation, and maternal transport, as needed

RECOGNITION & PREVENTION

Every Patient

- Standard protocol for measurement and assessment of BP and urine protein for all pregnant and postpartum women
- Standard response to maternal early warning signs including listening to and investigating patient symptoms and assessment of labs (e.g. CBC with platelets, AST and ALT)
- Facility-wide standards for educating prenatal and postpartum women on signs and symptoms of hypertension and preeclampsia

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COUNCIL ON PATIENT SAFETY
IN WOMEN'S HEALTH CARE
safe health care for every woman

PATIENT SAFETY BUNDLE

Hypertension

RESPONSE

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 magnesium over-dosage
  - Postpartum presentation of severe hypertension/preeclampsia
- Minimum requirements for protocol:
  - Notification of physician or primary care provider if systolic BP =/> 160 or diastolic BP =/> 110 for two measurements within 15 minutes
  - After the second elevated reading, treatment should be initiated ASAP (preferably within 60 minutes of verification)
  - Includes onset and duration of magnesium sulfate therapy
  - Includes escalation measures for those unresponsive to standard treatment
  - Describes manner and verification of follow-up within 7 to 14 days postpartum
  - Describe postpartum patient education for women with preeclampsia
- Support plan for patients, families, and staff for ICU admissions and serious complications of severe hypertension

REPORTING/SYSTEMS LEARNING

Every unit

- Establish a culture of huddles for high risk patients and post-event debriefs to identify successes and opportunities
- Multidisciplinary review of all severe hypertension/eclampsia cases admitted to ICU for systems issues
- Monitor outcomes and process metrics

Note: "Facility-wide" indicates all areas where pregnant or postpartum women receive care. (E.g. L&D, postpartum critical care, emergency department, and others depending on the facility).

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Standardization of health care processes and reduced variation has been shown to improve outcomes and quality of care. The Council on Patient Safety in Women's Health Care disseminates patient safety bundles to help facilitate the standardization process. This bundle reflects emerging clinical, scientific, and patient safety advances as of the date issued and is subject to change. The information should not be construed as dictating an exclusive course of treatment or procedure to be followed. Although the components of a particular bundle may be adapted to local resources, standardization within an institution is strongly encouraged.

The Council on Patient Safety in Women's Health Care is a broad consortium of organizations across the spectrum of women's health for the promotion of safe health care for every woman.

May 2015

For more information visit the Council's website at www.safehealthcareforeverywoman.org

Hypertensive Disorder	*Diagnostic Criteria*
Preeclampsia	• New-onset hypertension after 20 weeks' gestation[a], plus • Proteinuria[b], or • *In the absence of proteinuria:* – Thrombocytopenia (platelets <100,000 per microliter) – Impaired liver function (increased serum transaminases twice their normal value) – New-onset renal insufficiency (serum creatinine >1.1 mg/dL or doubling of serum creatinine) – Pulmonary edema – New-onset cerebral or visual disturbance
Gestational hypertension	• New onset of hypertension after 20 weeks' gestation, and • Absence of proteinuria, and • Absence of multisystem disturbances consistent with preeclampsia
Chronic hypertension	• Pre-existing hypertension (prior to pregnancy) • Onset of hypertension prior to 20 weeks' gestation • Hypertension that persists after postpartum period
Chronic hypertension with superimposed preeclampsia	• Fulfills the diagnostic criteria for chronic hypertension, and • Preeclampsia

[a]Hypertension is defined as an elevation in either the systolic blood pressure to 140 mmHg or higher or diastolic blood pressure to 90 mmHg or higher on at least 2 occasions, 4 hours part.

[b]Proteinuria is defined as 300 mg of protein or higher in a 24-hour urine specimen, or protein to creatinine ratio of 0.3 mg/dL or higher. In the absence of quantitative measurement, urine dipstick of 1+ (30 mg/dL) proteinuria fulfills the criteria.

Adapted from Task Force on Hypertension in Pregnancy. (2013). *Hypertension in pregnancy* (pp. 1–89). Washington, DC: American College of Obstetricians and Gynecologists.

Witcher, P., Shah, S. (2019). *AWHONN's High-Risk & Critical Care Obstetrics*. [VitalSource]. Retrieved from https://online.vitalsource.com/#/books/9781975108496/

Readiness

Every Unit:

- Standards for early warning signs, diagnostic criteria, monitoring and treatment of sever preeclampsia/eclampsia
- Unit education on protocols, unit based drills
- Process for timely triage and evaluation of pregnant and postpartum women with hypertension including ED and outpatient
- Rapid access to medications
- System plan for escalation, obtaining appropriate consultation, and maternal transport as needed

Recognition and Prevention

Every patient:

- Standard protocol for measurement and assessment of BP and urine protein
- Standard response to maternal early warning signs including listening to and investigating patient symptoms and assessment of labs
- Facility-wide standards for educating prenatal and postpartum women on signs and symptoms of hypertension and preeclampsia

Response

Every case of severe HTN/preeclampsia:

- Facility-wide standard protocols with checklists and escalation polices for management and treatment of:
  - Severe hypertension
  - Eclampsia, seizure prophylaxis and magnesium over dosage
  - Postpartum presentation of severe hypertension/preeclampsia

Response

Minimum protocol requirements:

- Notification of MD provider for elevated BPs
- Treatment initiation after 2nd elevated BP reading (preferable within 60 minutes of verification)
- Onset and duration of Magnesium Sulfate
- Escalation measures for unresponsiveness
- Process for follow-up postpartum
- Postpartum education
- Support plan for patients, families and staff for severe hypertension complications

Support from Other States Working on HTN

- CMQCC (California Collaborative) Preeclampsia Initiative
  - Referenced their measures, process and education plan resources
- FPQC – (Florida Collaborative) Hypertension in Pregnancy Project (HIP)
  - Calls and planned ongoing work to use lessons learned from their initiative and to use components of their quality improvement processes
- ILPQC – Illinois Collaborative
  - Maternal Clinical Team meetings with ILPQC to leverage their measures, data form, and process, and to learn from their experience (they have over 200 hospitals)

Three Types of Measures

Outcome Measures

- Identify whether changes are leading to improvement and achieving aims
- How is the system performing?
- What is the result?

Process Measures

- identify changes to processes of care that can affect outcome measures. Measuring the results of these process changes will tell you if the changes are leading to an improved, safer system

Structure measures

- a sense of a health care provider's capacity, systems, and processes to provide high-quality care

Process Measures

- Establish a culture of huddles for high risk patients and post-event debriefs to identify successes and opportunities
- Multidisciplinary review of all severe hypertension/eclampsia cases admitted to ICU for system issues
- Monitor outcomes and process metrics

Process Measures

- Appropriate Treatment of Severe Hypertension
  - Measurement of time to treatment for new onset severe hypertension (≥160 systolic OR ≥110 diastolic)
- Acute antihypertensive therapy:
  - Medications
    - I.V. Labetalol, I.V. Hydralazine, P.O Nifedipine

Structure Measures

- Staff Education for OB physicians, midwives, nurse practitioners and nurses on:
  - Severe HTN/Preeclampsia
  - Severe HTN/Preeclampsia bundle elements
  - Unit-standard protocol for severe HTN/Preeclampsia

Structure Measures

- Discharge Management
  - Discharge Education: Education materials about preeclampsia given to patient
  - Follow-up appt scheduled within 10 days (for all women with any severe range hypertension/preeclampsia)

Structure Measures

- Seizure prophylaxis management (use of magnesium sulfate)
- Development of a Severe HTN/Preeclampsia policy and procedure that provides a unit-standard approach to measuring blood pressure, treatment of Severe HTN/Preeclampsia, administration of Magnesium Sulfate, and treatment of Magnesium Sulfate overdose

Structure Measures

- Integration of recommended Severe HTN/Preeclampsia bundle processes (i.e. order sets, tracking tools) into hospital's Electronic Health Record system
- Establish a system in your hospital to perform regular formal debriefs after cases with major complications

AIM – Hypertension Measures

- Provider education- % completed
- Nursing education - % completed
- Preeclampsia protocol – yes/no
- Preeclampsia EHR integration – yes/no
- Unit drill protocols – yes/no
- Patient/family support protocols – yes/no
- Debrief and multi-disciplinary case review protocols – yes/no

Next Steps

- Baseline survey of participating hospitals
- Completion of enrollment forms
- Finalizing data elements
- Webinar schedule
- Technical support

Questions????