# Alliance for Innovation on Maternal Health (AIM) Hypertension Learning Session

BROUGHT TO YOU BY

THE ALASKA PERINATAL QUALITY COLLABORATIVE

AUGUST 5, 2019

# Welcome to the Alliance for Innovation on Maternal Health (AIM) Hypertension Learning Session

ALASKA NATIVE TRIBAL HEALTH CONSORTIUM

**Approved Provider Statements:**

Alaska Native Tribal Health Consortium (ANTHC) is accredited by the Washington State Medical Association to provide continuing medical education for physicians.

ANTHC is approved as a provider of continuing nursing education by the Montana Nurses Association, an accredited approver by the American Nurses Credentialing Center's Commission on Accreditation.

**Contact Hours:**

ANTHC designates this provider-directed activity for a maximum of 1 *AMA PRA Category 1 Credit(s)* ™*.* Physicians should claim only the credit commensurate with the extent of their participation in the activity.

ANTHC designates this activity as meeting the criteria for one nursing contact hour credit for each hour of participation up to a maximum of 1 hour(s).

**Conflict of Interest Disclosures:**

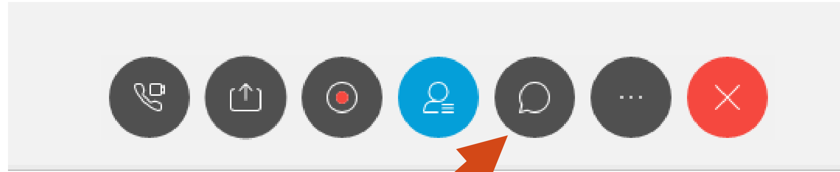
All Presenters and Conference Planners for this activity do not have any relevant relationships or conflict of interests to disclose.

**Requirements for Successful Completion:**

To receive CE credit please make sure you have claimed credit commensurate with your participation in this activity and completed the course evaluation survey online as directed.

For more information contact us at learning@anthc.org or (907) 729-1387

# Introductions



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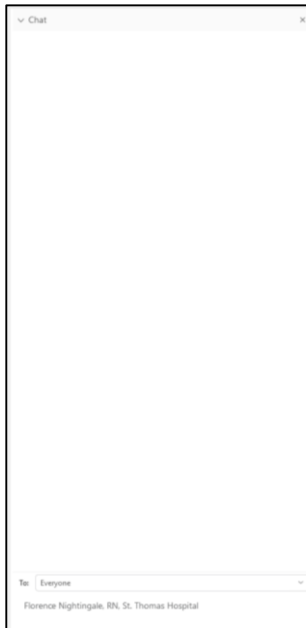



Choose “everyone”

Type here

Please type your **name, credentials, and organization** in the chat box and send to everyone

Example: Florence Nightingale, RN, St. Thomas Hospital

# Agenda

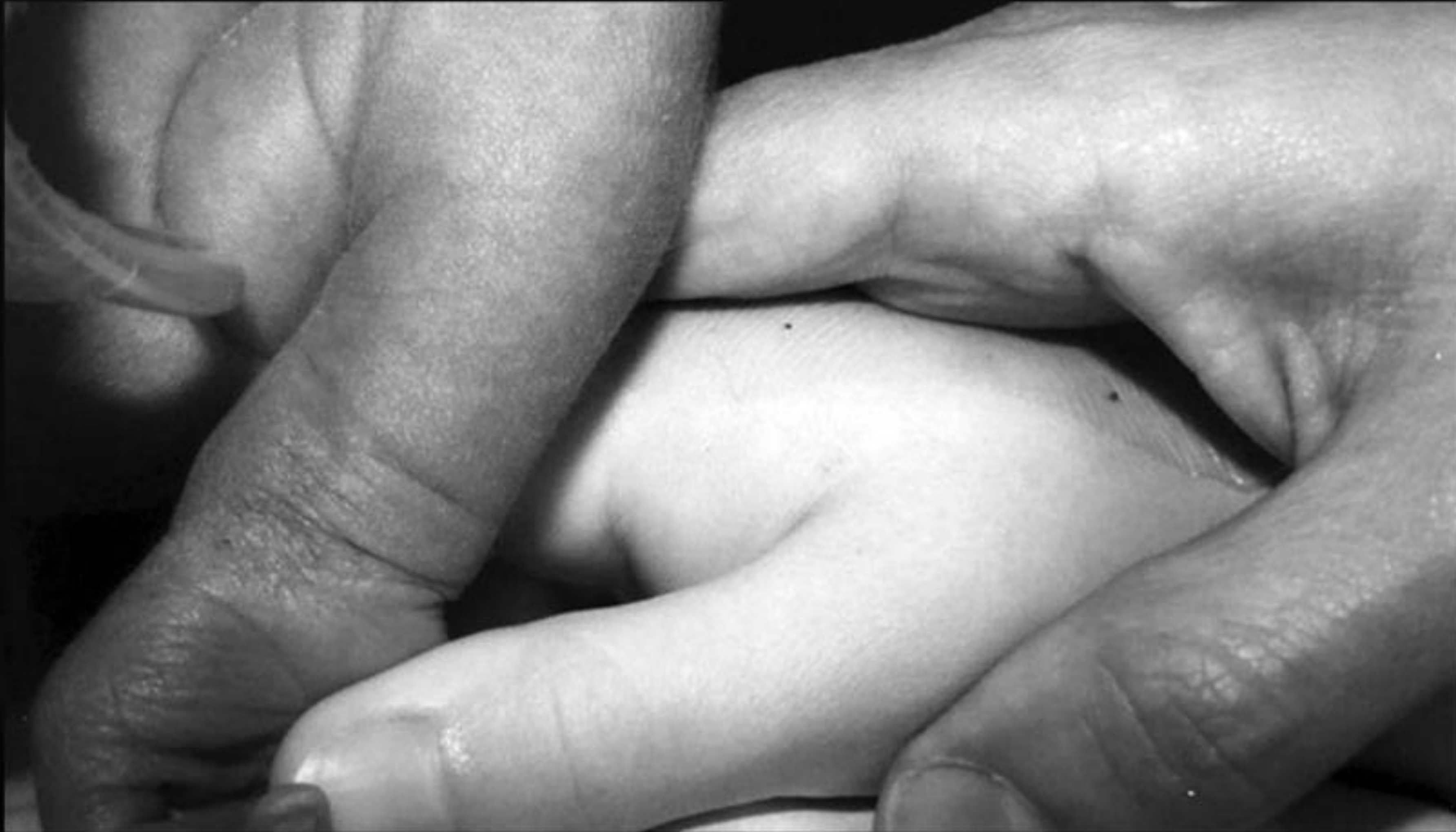
- AKPQC and AIM Updates
- Facility Story: Delayed Treatment of Severe Hypertension
- AIM Hypertension Safety Bundle: Readiness Domain
- Process Measure 4: Treatment of Severe Hypertension
- Open discussion and Q&A

# Presenters

- **Chrissy Rodriguez, MD, FACOG—**Alaska AIM Physician Clinical Lead and Maternal Fetal Medicine Physician, Alaska Native Medical Center
- **Danette Schloeder, MSN, RNC-OB, C-EFM—**Alaska AIM Nurse Clinical Lead and Perinatal Clinical Specialist-Advanced, The Children's Hospital at Providence
- **Katy Krings, MPH, RN**—Alaska AIM Coordinator and Perinatal/Reproductive Health Nurse Consultant, Women's, Children's, Family Health
- **Margaret Young, MPH**—Alaska AIM Data Lead and Unit Manager, Maternal Child Health Epidemiology

# Alaska PQC and AIM Updates

- **Save the Date—AKPQC Annual Meeting January 24-25, 2020**
- **AK AIM Enrollment Update—9 facilities, 76% AK births**
- **AK AIM Community Births Project**
- **AIM Website Transition**
  - **Current website: safehealthcareforeverywoman.org**
  - **New website: aimformaternalsafety.org**



New Kentucky father Jordan Hall documented the sudden decline and eventual death of his wife hours after she became a new mom. Many responded on Hall's Facebook page throughout the ordeal and after Morgan Hall was lost. In this photo, Morgan was able to visit with her new infant Noah.
JORDAN HALL'S FACEBOOK PAGE

**Full story available at The Peducah Sun: www.paducahsun.com**

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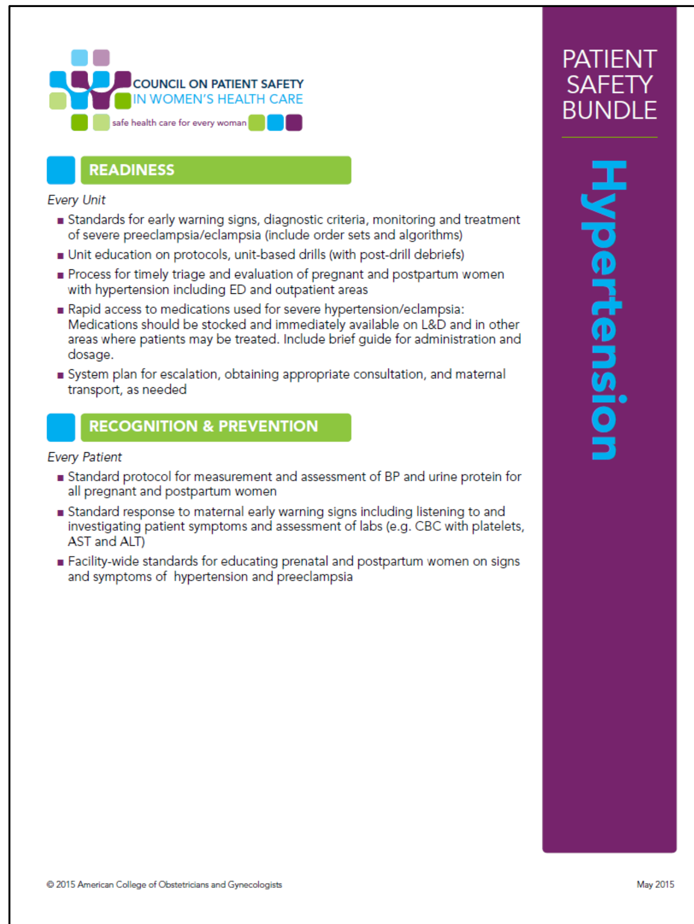
# Hypertension Safety Bundle



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

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

© 2015 American College of Obstetricians and Gynecologists

May 2015

- Checklist of evidence-based practices
- Content modified based on local resources and needs
  - Readiness
  - Recognition and Prevention
  - Response
  - Reporting/Systems Learning

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# Polling Question

**Is your unit ready for a hypertensive emergency?**

A. Yes

B. Somewhat

C. No

D. Not applicable to me

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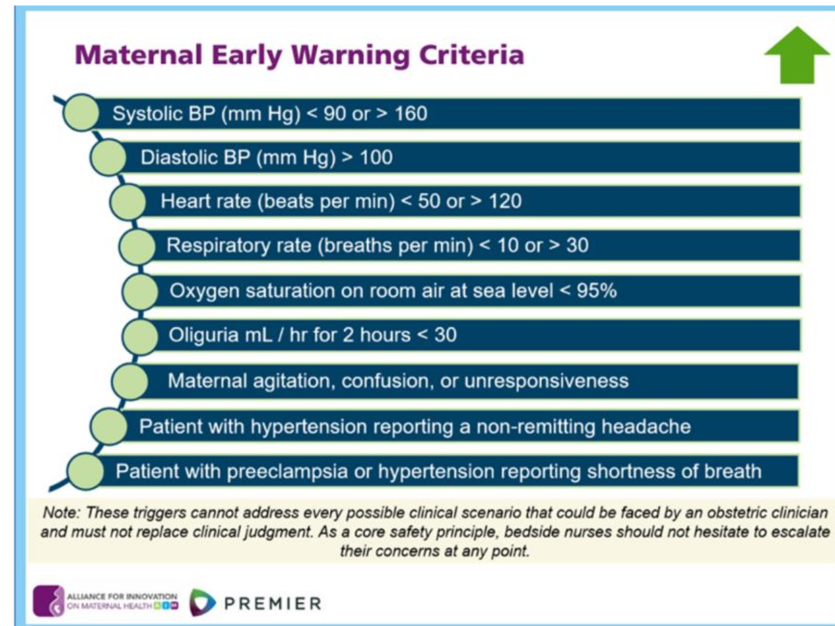
# Readiness—5 Key Elements

## #1 Standards for early warning signs, diagnostic criteria, monitoring, and treatment



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EXAMPLE

# **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 up

☐ Ensure medications appropriate given patient history

☐ 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

† "Active asthma" is defined as:
Ⓐ symptoms at least once a week, or
Ⓑ use of an inhaler, corticosteroids for asthma during the pregnancy, or
Ⓒ any history of intubation or hospitalization for asthma.

## Magnesium Sulfate

Contraindications: Myasthenia gravis; avoid with pulmonary edema, use caution with renal failure

**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
*(See SMI algorithms for complete management when necessary to move to another agent after 2 doses.)*

☐ **Labetalol** (initial dose: 20mg); Avoid parenteral labetalol with active asthma, heart disease, or congestive heart failure; use with caution with history of asthma

☐ **Hydralazine** (5-10 mg IV* over 2 min); May increase risk of maternal hypotension

☐ **Oral Nifedipine** (10 mg capsules); 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 (Valium)**: 5-10 mg IV q 5-10 min to maximum dose 30 mg

Safe Motherhood Initiative

Revised January 2019

EXAMPLE

EMERGENCY DEPARTMENT

# **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

☐ Ensure medications appropriate given patient history

☐ 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

† "Active asthma" is defined as:
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Safe Motherhood Initiative

Revised January 2019

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# Polling Question

**Does your facility currently conduct drills for maternal hypertensive emergencies?**

A. Yes

B. No

C. I'm not sure

D. Not applicable to me

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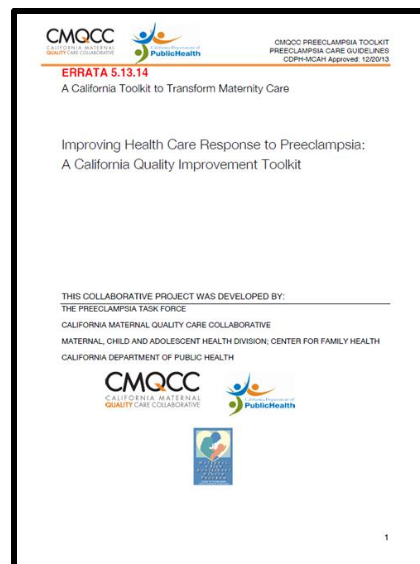
# Readiness—5 Key Elements

## #2 Unit education on protocols: regular unit-based drills with debriefs



CMQCC CALIFORNIA MATERNAL QUALITY CARE COLLABORATIVE PublicHealth

CMQCC PREECLAMPSIA TOOLKIT
PREECLAMPSIA CARE GUIDELINES
CDPH-MCAH Approved: 12/20/13

ERRATA 5.13.14
A California Toolkit to Transform Maternity Care

Improving Health Care Response to Preeclampsia:
A California Quality Improvement Toolkit

THIS COLLABORATIVE PROJECT WAS DEVELOPED BY:
THE PREECLAMPSIA TASK FORCE
CALIFORNIA MATERNAL QUALITY CARE COLLABORATIVE
MATERNAL, CHILD AND ADOLESCENT HEALTH DIVISION; CENTER FOR FAMILY HEALTH
CALIFORNIA DEPARTMENT OF PUBLIC HEALTH

CMQCC CALIFORNIA MATERNAL QUALITY CARE COLLABORATIVE PublicHealth

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# Readiness—5 Key Elements

## #3 Process for timely triage and evaluation of pregnant and postpartum women

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# Readiness—5 Key Elements

## Accurate BP measurement

## Common language/definitions of hypertension

Hypertensive emergency:

- Systolic **160** or greater

*or*

- Diastolic **110** or greater

https://www.cmqcc.org/resource/accurate-blood-pressure-measurement-toolkit-pdf

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# Readiness—5 Key Elements

## #4 Rapid access to medications for severe hypertension, preeclampsia, and eclampsia

**Box 1. Sample Order Set for Severe Intrapartum or Postpartum Hypertension Initial First-line Management With Immediate-Release Oral Nifedipine*†**

- Notify physician if systolic blood pressure (BP) is greater than or equal to 160 mm Hg or if diastolic BP is greater than or equal to 110 mm Hg.
- Institute fetal surveillance if undelivered and fetus is viable.
- If severe BP elevations persist for 15 minutes or more, administer immediate-release nifedipine capsules‡ (10 mg orally).
- Repeat BP measurement in 20 minutes and record results.
- If either BP threshold is still exceeded, administer immediate-release nifedipine capsules (20 mg orally). If BP is below threshold, continue to monitor BP closely.
- Repeat BP measurement in 20 minutes and record results.
- If either BP threshold is still exceeded, administer immediate-release nifedipine capsules (20 mg orally). If BP is below threshold, continue to monitor BP closely.
- Repeat BP measurement in 20 minutes and record results.
- If either BP threshold is still exceeded, administer labetalol (20 mg intravenously for more than 2 minutes) and obtain emergency consultation from maternal–fetal medicine, internal medicine, anesthesia, or critical care subspecialists.
- Give additional antihypertensive medication per specific order.
- Once the aforementioned BP thresholds are achieved, repeat BP measurement every 10 minutes for 1 hour, then every 15 minutes for 1 hour, then every 30 minutes for 1 hour, and then every hour for 4 hours.
- Institute additional BP timing per specific order.

*Please note there may be adverse effects and contraindications.
†When used with magnesium sulfate, facilities should monitor maternal vital signs as described above in reference to blood pressure, with attention to normal heart rate and blood pressure.
‡Capsules should be administered orally and not punctured or otherwise administered sublingually.
Data from National Heart, Lung, and Blood Institute. The seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. NIH Publication No. 04-5230. Bethesda (MD): NHLBI; 2004. Available at: https://www.nhlbi.nih.gov/files/docs/guidelines/jnc7full.pdf. Retrieved December 5, 2016; Vermillion ST, Scardo JA, Newman RB, Chauhan SP. A randomized, double-blind trial of oral nifedipine and intravenous labetalol in hypertensive emergencies of pregnancy. Am J Obstet Gynecol 1999;181:858–61; Raheem IA, Saaid R, Omar SZ, Tan PC. Oral nifedipine versus intravenous labetalol for acute blood pressure control in hypertensive emergencies of pregnancy: a randomised trial. BJOG 2012;119:78–85; Shekhar S, Sharma C, Thakur S, Verma S. Oral nifedipine or intravenous labetalol for hypertensive emergency in pregnancy: a randomized controlled trial. Obstet Gynecol 2013;122:1057–63; and Duley L, Meher S, Jones L. Drugs for treatment of very high blood pressure during pregnancy. Cochrane Database of Systematic Reviews 2013, Issue 7. Art. No.: CD001449. DOI: 10.1002/14651858.CD001449.pub3.

ACOG (2017). Oral Nifedipine Sample Order Set.

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# Readiness—5 Key Elements

**#5 System plan for escalation, obtaining appropriate consultation, and maternal transport**

# AIM Data Center

- Enter quarterly data
  - <30 days after end of quarter for process and structure measures
  - <3 months after end of quarter for outcome measures
- Compare hospital-specific rates with similar facilities and statewide data
- Download graphs and charts to share
- Track success on improving maternal outcomes

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# Hypertension Outcomes Measure Results

Alaska Statewide

| Preeclampsia Measures | 2016 | 2017 | 2018 |
|---|---|---|---|
| Severe Maternal Morbidity among All Delivering Women | 1.8% | 2.2% | 1.8% |
| Severe Maternal Morbidity (excluding transfusion codes) among All Delivering Women | 0.9% | 1.0% | 0.8% |
| Severe Maternal Morbidity among Preeclampsia Cases | 13.3% | 12.6% | 9.7% |
| Severe Maternal Morbidity (excluding transfusion codes) among Preeclampsia Cases | 7.7% | 8.4% | 7.1% |

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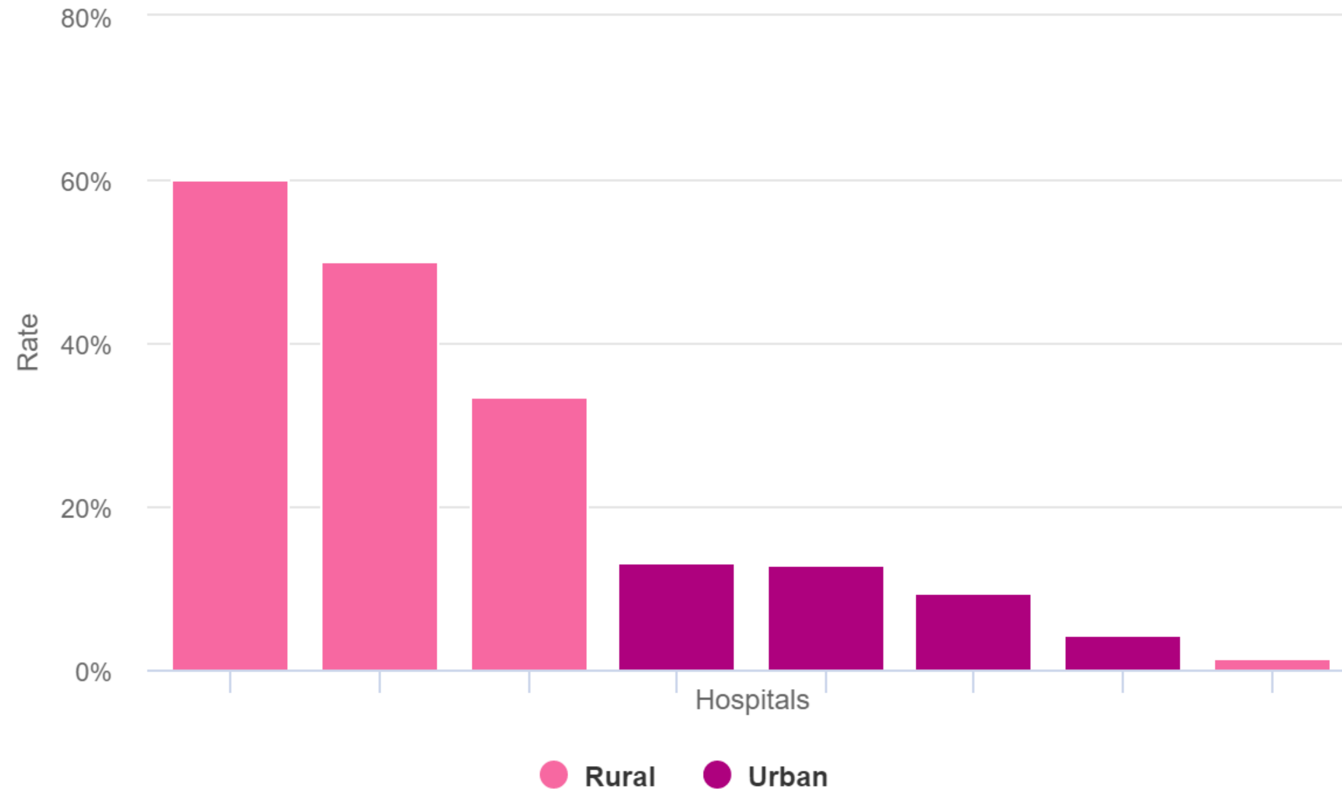
# Comparisons by Urbanization Level



# Structure Measures

AIM Data Center | Compare | Dashboards | Admin | Support | Hi, Margaret | Sign Out

Home / Alaska / Hospital AK003

## Hospital AK003

Structure Measures Data Entry (0 of 5) | Process Measures Data Entry | Measure Results | Download Reports | Contacts

For the structure measures below, enter the approximate date completed or click the *Not In Place* button. Your responses will be automatically saved

*ALL S1.* Has your hospital developed OB specific resources and protocols to support patients, family and staff through major OB complications? MM/DD/YYYY or Not In Place

*ALL S2.* Has your hospital established a system in your hospital to perform regular formal debriefs after cases with major complications? (Major complications will be defined by each facility based on volume, with a minimum being The Joint Commission Severe Maternal Morbidity Criteria) MM/DD/YYYY or Not In Place

*ALL S3.* Has your hospital established a process to perform multidisciplinary systems-level reviews on all cases of severe maternal morbidity (including women admitted to the ICU, receiving ≥4 units RBC transfusions, or diagnosed with a VTE)? MM/DD/YYYY or Not In Place

*HTN S4.* Does your hospital have a Severe HTN/Preeclampsia policy and procedure (reviewed and updated in the last 2-3 years) 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? MM/DD/YYYY or Not In Place

*HTN S5.* Were some of the recommended Severe HTN/Preeclampsia bundle processes (i.e. order sets, tracking tools) integrated into your hospital's Electronic Health Record system? MM/DD/YYYY or Not In Place

# Process Measures

AIM Data Center | Compare | Dashboards | Admin | Support | Hi, Margaret | Sign Out

## Hospital AK003 (01/01/19 - 03/31/19)

Save

P1A. In this quarter, how many OB drills (In Situ and/or Sim Lab) were performed on your unit for any maternal safety topic?

P1B. In this quarter, what topics were covered in the OB drills?

| Topic | Yes | No |
|---|---|---|
| Hemorrhage | ○ | ○ |
| Severe Hypertension | ○ | ○ |
| Other | ○ | ○ |

P2A. At the end of this quarter, what cumulative proportion of OB physicians and midwives has completed (within the last 2 years) an education program on Severe HTN/Preeclampsia?

P2B. At the end of this quarter, what cumulative proportion of OB physicians and midwives has completed (within the last 2 years) an education program on the Severe HTN/Preeclampsia bundle elements and the unit-standard protocol?

P3A. At the end of this quarter, what cumulative proportion of OB nurses has completed (within the last 2 years) an education program on Severe HTN/Preeclampsia?

P3B. At the end of this quarter, what cumulative proportion of OB nurses has completed (within the last 2 years) an education program on the Severe HTN/Preeclampsia bundle elements and the unit-standard protocol?

P4. Denominator: Women with persistent (twice within 15 minutes) new-onset Severe HTN (Systolic: >160 or Diastolic: >110), excludes women with an exacerbation of chronic HTN

P4. Numerator: Among women with persistent new-onset severe HTN, number treated within 1 hour with IV Labetalol, IV Hydralazine, or PO Nifedipine

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# Process Measure #4

**Percentage of women with severe hypertension treated with first-line medication within 60 minutes**

**Severe hypertension=**

**≥160 systolic OR ≥110 diastolic**

**Visit https://safehealthcareforeverywoman.org/aim-data/ for full FAQ**

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# Polling Question

**Can your EHR extract data for process measure #4 (time to treatment)?**

A. Yes

B. No

C. I’m not sure

D. Not applicable to me

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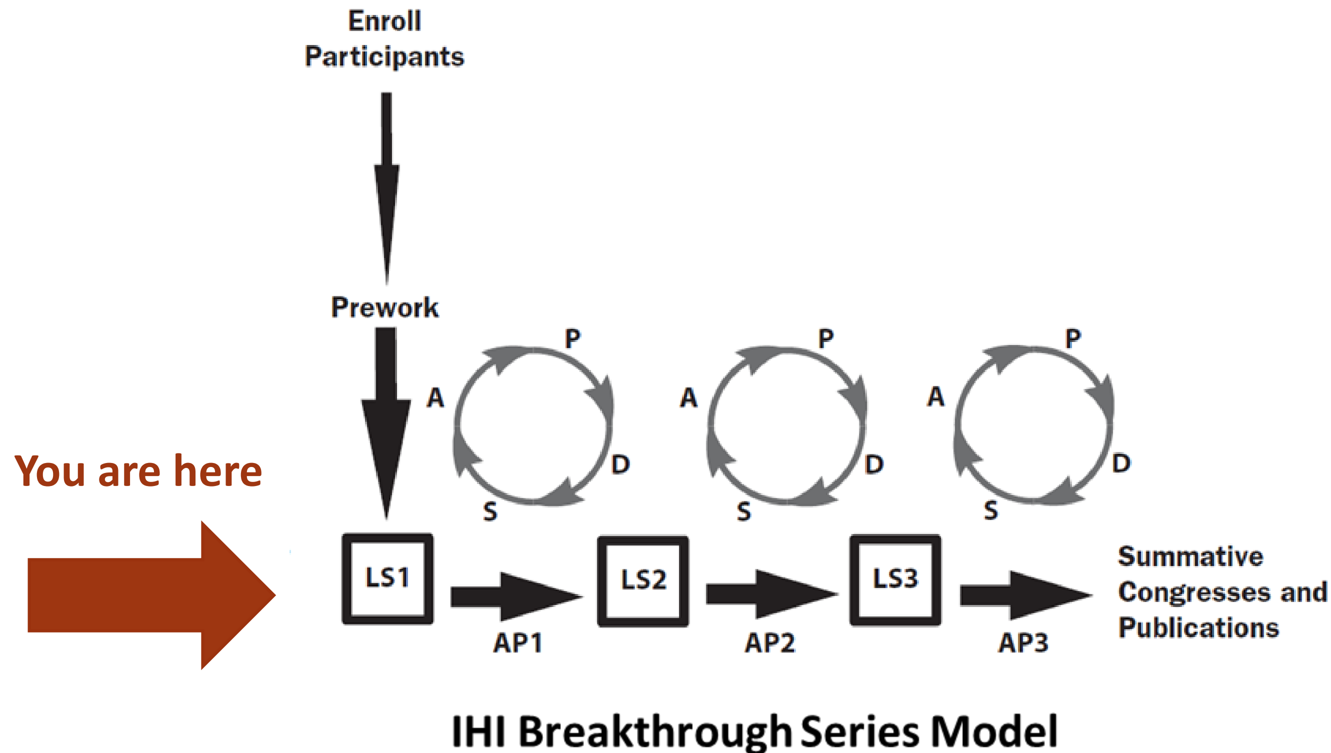
# Collaborative QI Process




- Multidisciplinary QI teams
- Set goals/aim
- Timeline
- PDSA cycles

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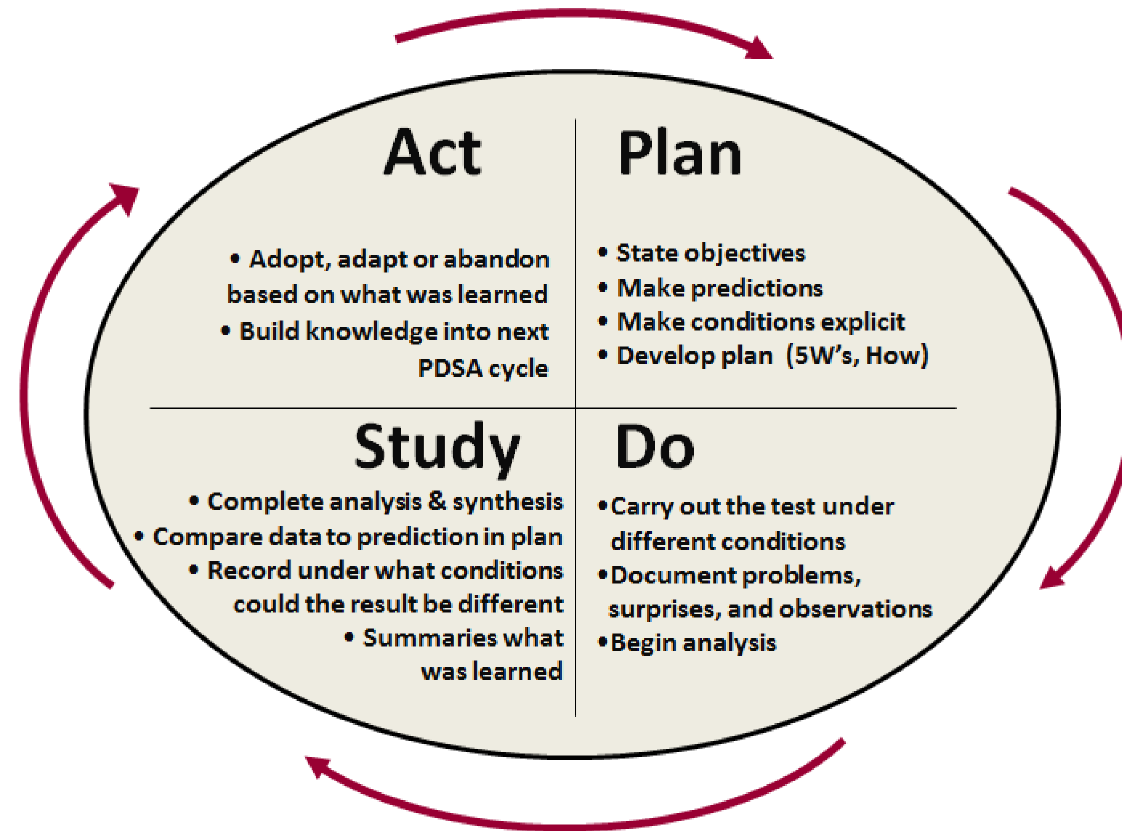
# PDSA Cycles



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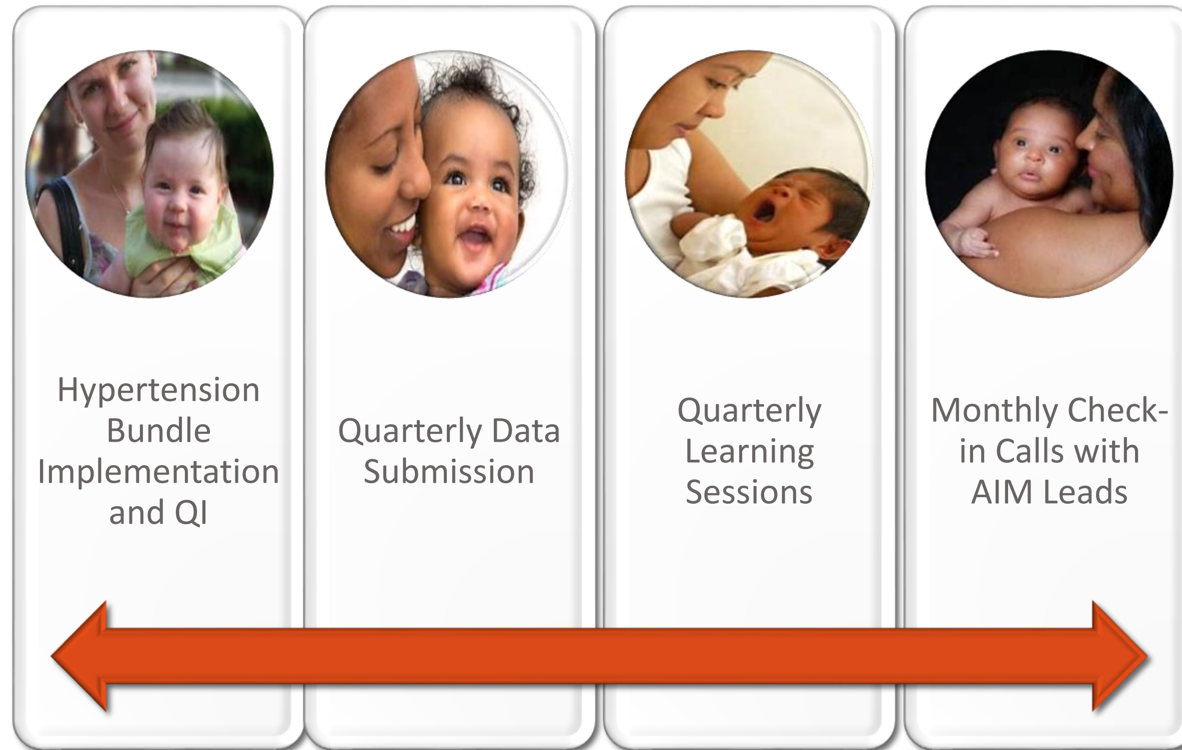
# Participate in AIM




**Eliminate preventable hypertension-related severe maternal morbidity**

# How to receive CNE/CME

- Complete the online evaluation survey: https://www.surveymonkey.com/r/AIMSession1
- Certificate will be sent to the email address provided in the survey

ALASKA NATIVE TRIBAL HEALTH CONSORTIUM

Certificate of Completion

This certificate is awarded to

______________________________

For successfully completing 1 Contact Hours for participation in

Alliance for Innovation on Maternal Health (AIM) Hypertension Learning Session

August 5, 2019

Anchorage, Alaska

Jennifer Fielder, MSN, RN
Continuing Education Nurse Educator

Alaska Native Tribal Health Consortium (ANTHC) is approved as a provider of continuing nursing education by the Montana Nurses Association, an accredited approver by the American Nurses Credentialing Center's Commission on Accreditation.
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# Questions?

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