ALLIANCE FOR INNOVATION ON MATERNAL HEALTH

CMQCC
California Maternal Quality Care Collaborative

Implementing the AIM Severe Hypertension in Pregnancy Bundle: The Why and the How

Elliott K. Main, MD

Director of Quality Assurance and Implementation for AIM

Medical Director, CMQCC

Clinical Professor of Obstetrics and Gynecology, Stanford University School of Medicine

Objectives and Disclosures

Objectives:

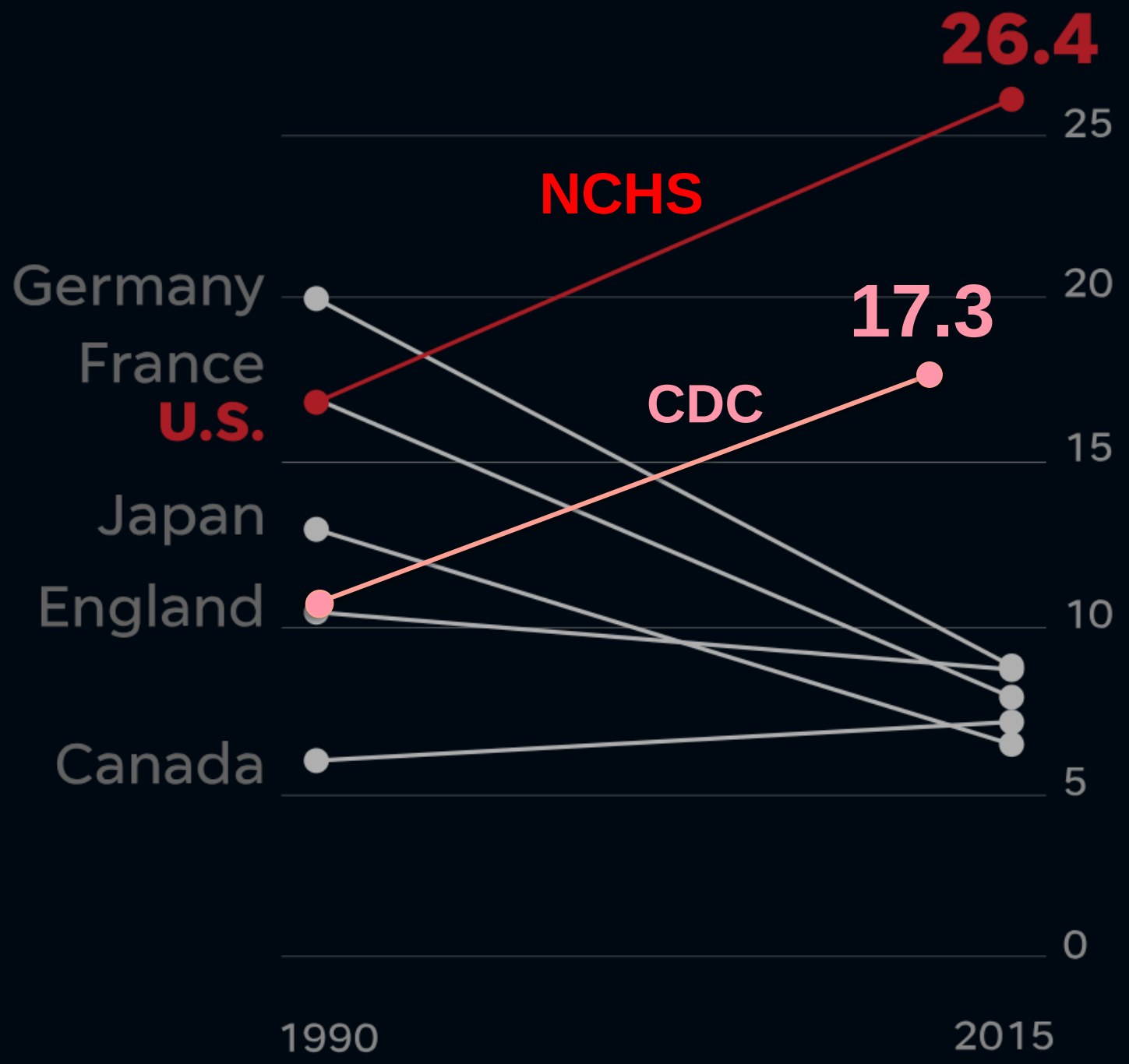
- Identify key elements that make a State Perinatal Quality Collaborative successful
- List the barriers for rapid treatment of severe range hypertension
- Describe actions to take to reduce racial disparities in hypertensive disorders

Disclosures

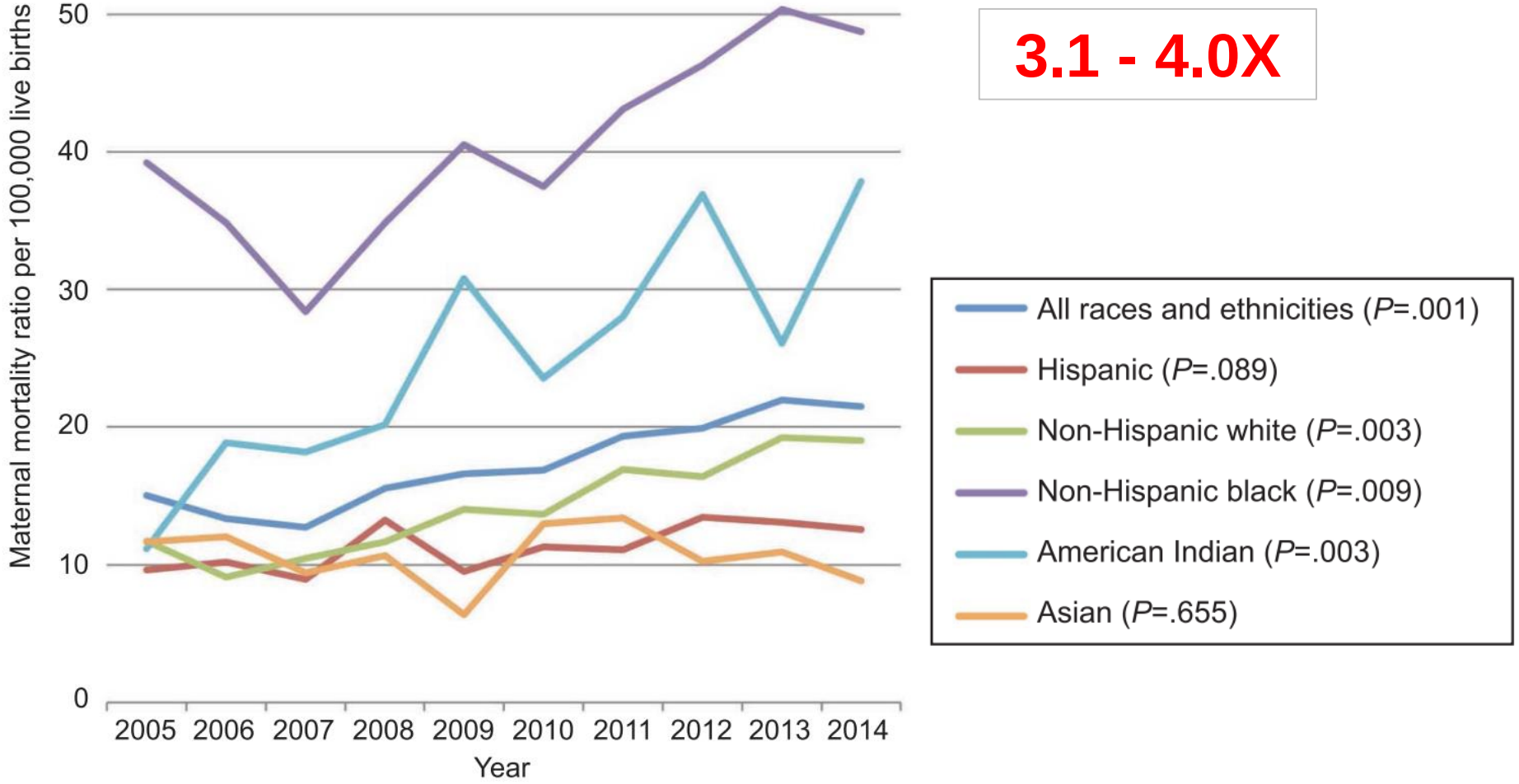
- Dr. Main has no conflicts or disclosures to report

In the last 15 years,
US has seen rises in:

Maternal Mortality:
Up 50-70%
Severe Maternal Morbidity:
Up 100 %
Cesarean Births:
Up 50%



Trends in US Maternal Mortality by Race



3.1 - 4.0X

Moaddab A, etal. Health Care Disparity and Pregnancy-Related Mortality in the United States, 2005-2014. Obstet Gynecol. 2018 04;131(4):707-712.

The Last Person You'd Expect to Die in Childbirth

ProPublica, May 16, 2017

The death of a neonatal nurse in the hospital where she worked illustrates a profound disparity: The healthcare system focuses on babies but often ignores their mothers.

Lost Mothers Series

Rene Martin, ProPublica
Renee Montagne, NPR News

Winner of the **George Polk Award** in Journalism (2018)

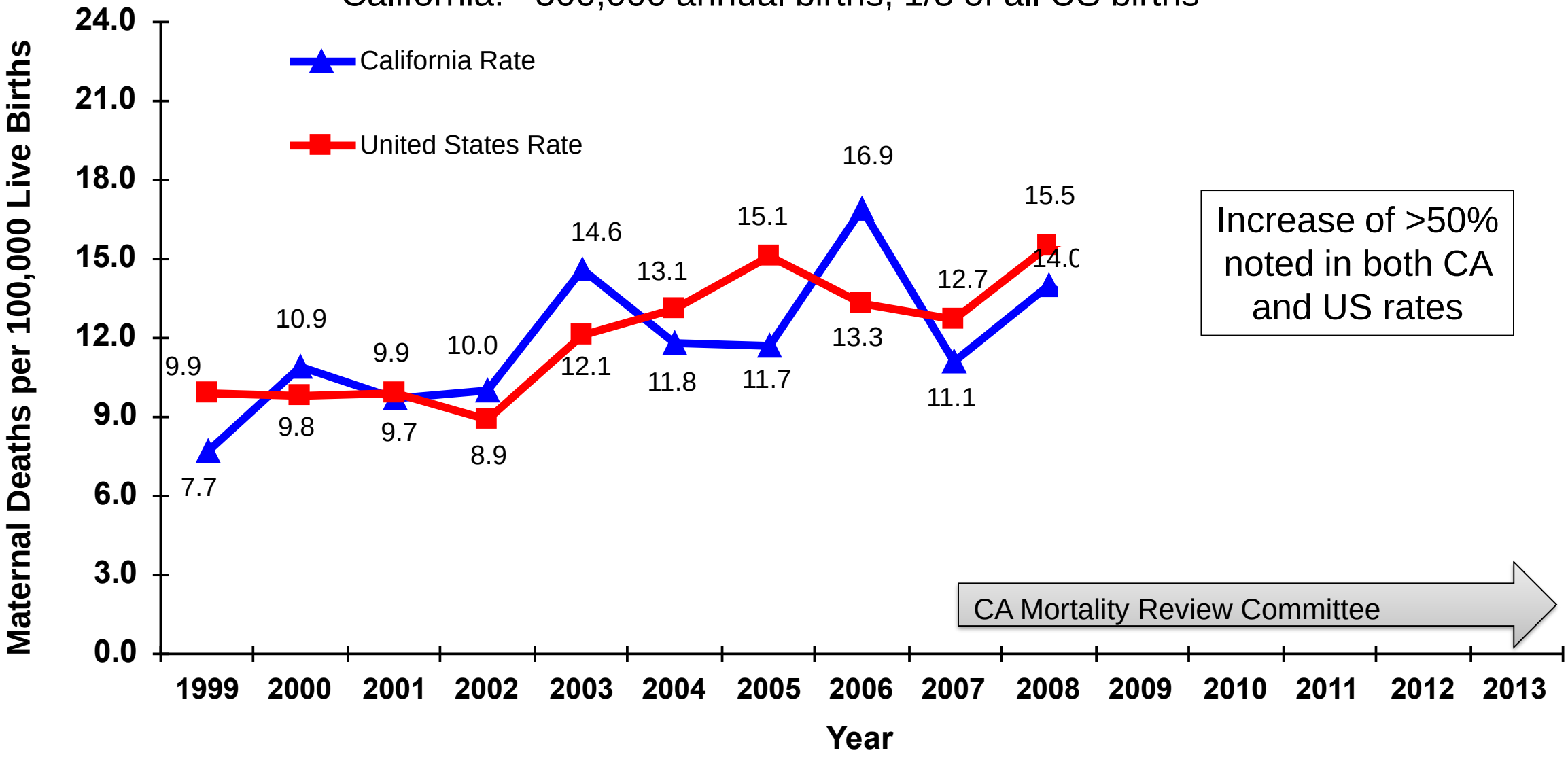
What states aren't doing to save new mothers' lives

The U.S. maternal death rate is among the highest in the developed world. Eighteen states haven't studied these deaths and others tend to blame moms.

Laura Ungar, USA TODAY
2:19 p.m. PDT Sep. 20, 2018

Maternal Mortality Rate, California and United States; 1999-2013

California: ~500,000 annual births, 1/8 of all US births



Assessments of Preventability

Cause of Death	North Carolina "Preventable"	California "Good or strong chance to alter the outcome"	United Kingdom "Substandard care that had a major contribution"
Hemorrhage	93%	70%	44%
Preeclampsia	60%	60%	64%
Sepsis / Infection	43%	50%	46%
DVT / VTE	17%	50%	33%
Cardiomyopathy	22%	29%	25%
AFE	0%	0%	15%

Key Provider QI Opportunities: Hemorrhage and Preeclampsia

- California Pregnancy Associated Mortality Reviews
  - Missed triggers/risk factors: abnormal vital signs, pain, altered mental status/lack of planning for at risk patients
  - Underutilization of key medications and treatments—did not have a plan!
  - Difficulties getting physician to the bedside
  - "Location of care" issues involving Postpartum, ED and PACU
- University of Illinois Regional Perinatal Network
  - Failure to identify high-risk status
  - Incomplete or inappropriate management

CDPH/CMQCC/PHI. The California Pregnancy-Associated Mortality Review (CA-PAMR): Report from 2002 and 2003 Maternal Death Reviews. 2011 (available at: CMQCC.org)
Geller SE etal. The continuum of maternal morbidity and mortality: Factors associated with severity. Am J Obstet Gynecol 2004; 191: 939-44.

10

Key Provider QI Opportunities: Hemorrhage and Preeclampsia

- California Pregnancy Associated Mortality Reviews
  - Missed triggers/risk factors: abnormal vital signs, pain, altered mental [illegible] patients
  - Underutilizatio[illegible]nts—did not have a plan!
  - Difficulties getting physician to the bedside
  - "Location of care" issues involving Postpartum, ED and PACU
- University of Illinois Regional Perinatal Network
  - Failure to ident[illegible]
  - Incomplete or i[illegible]

Present in >95% of cases

Present in >90% of cases

CDPH/CMQCC/PHI. The California Pregnancy-Associated Mortality Review (CA-PAMR): Report from 2002 and 2003 Maternal Death Reviews. 2011 (available at: CMQCC.org)
Geller SE etal. The continuum of maternal morbidity and mortality: Factors associated with severity. Am J Obstet Gynecol 2004; 191: 939-44.

Maternal Mortality and Severe Morbidity

Approximate distributions, compiled from multiple studies

Cause	Mortality (1-2 per 10,000)	ICU Admit (1-2 per 1,000)	Severe Morbid (1-2 per 100)
Thromboembolism	10-15%	5%	2%
Infection	10-15%	5%	5%
Hemorrhage	10-15%	30%	45%
Preeclampsia	10-15%	30%	30%
Cardiac Disease	25-30%	20%	10%

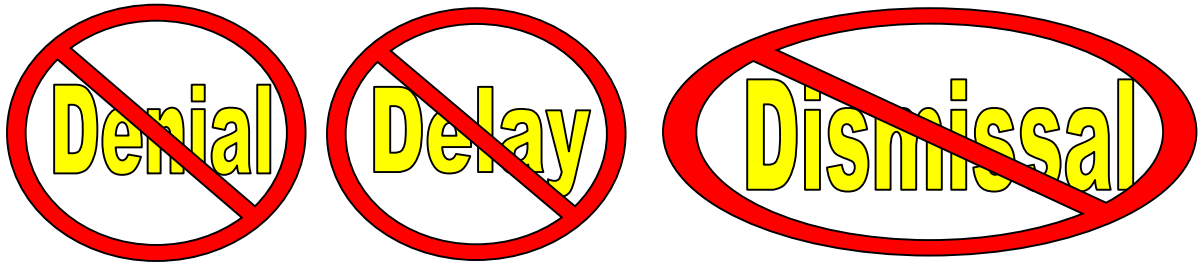
Obstetric Hemorrhage and Preeclampsia: Summary

- Most common **preventable** causes of maternal mortality
- Far and away the most common causes of Severe Maternal Morbidity
- High rates of provider "quality improvement opportunities"

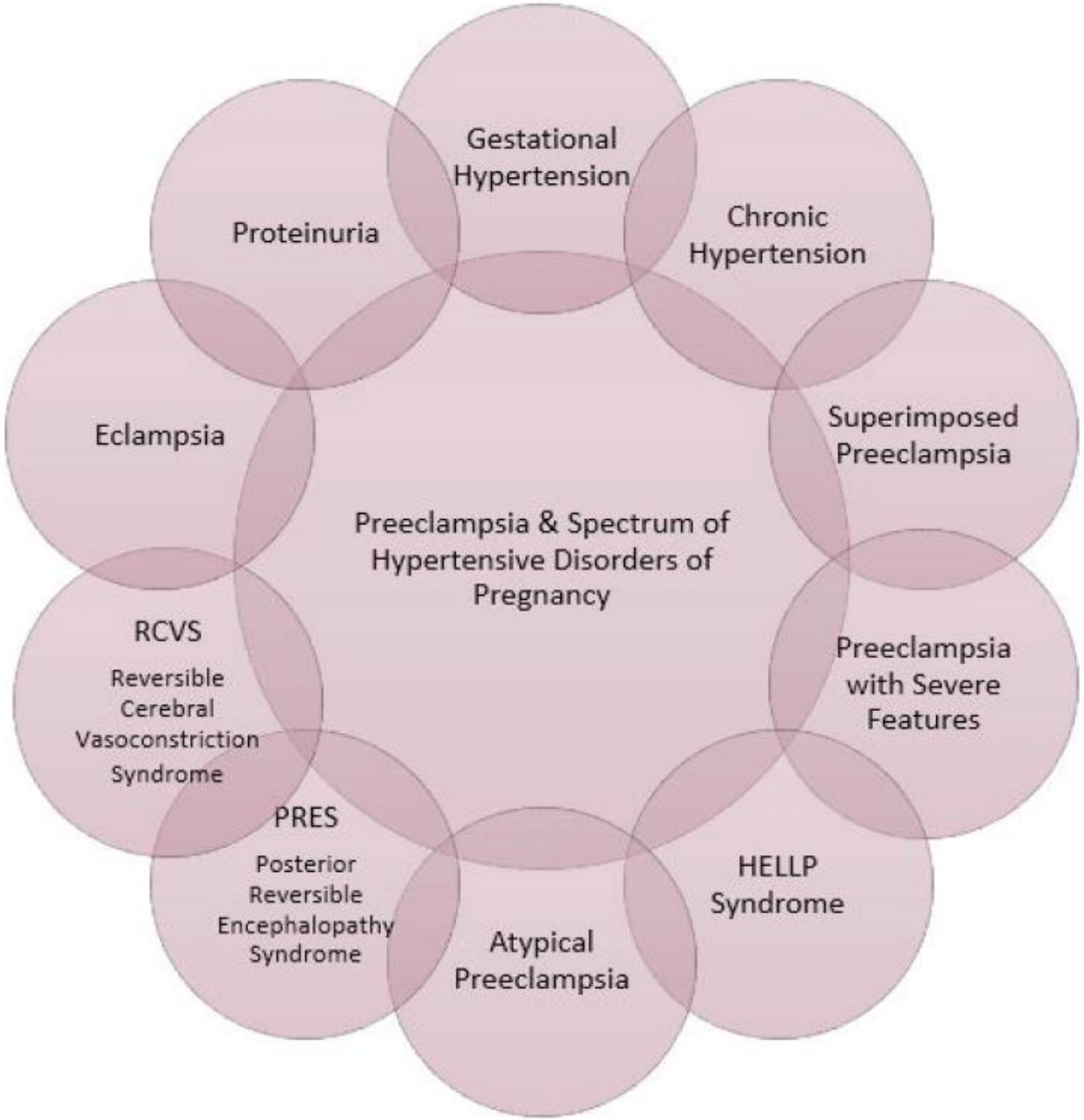
Obstetric Hemorrhage and Preeclampsia: Summary

- Most common **preventable** causes of maternal mortality
- Far and away the most common causes of Severe Maternal Morbidity
- High rates of provider "quality improvement opportunities"

3 Deadly D's:



Spectrum of Hypertensive Disorders in Pregnancy



What is the Cause of Death for Women with Preeclampsia?

CA-PAMR Final Cause of Death Among Preeclampsia Cases, 2002-2004 (n=25)

Final Cause of Death	Number	%	Rate/100,000
Stroke	16	64.0%	1.0
Hemorrhagic	*14*	*(87.5%)*	
Thrombotic	*2*	*(12.5%)*	
Hepatic (liver) Failure	4	16.0%	0.25
Cardiac Failure	2	8.0%	
Hemorrhage/DIC	1	4.0%	
Multi-organ failure	1	4.0%	
ARDS	1	4.0%	

Preventing Stroke from Preeclampsia

Blood Pressure Comparisons: Baseline and Pre-stroke

Measure	Pregnancy Baseline (mm Hg)	Pre-stroke (mm Hg)
Mean systolic BP	110.9 ± 10.7 (n=25)	175.4 ± 9.7 (n=24)
Systolic BP range	90-136	159-198
Systolic BP % ≥ 160	0	95.8 (n=27/28)
Mean diastolic BP	67.4 ± 6.5 (n=25)	98.0 ± 9.0 (n=24)
Diastolic BP range	58-80	81-113
Diastolic BP % ≥ 110	0	12.5 (n=3)
Diastolic BP 5 ≥ 105	0	20.8 (n=5)

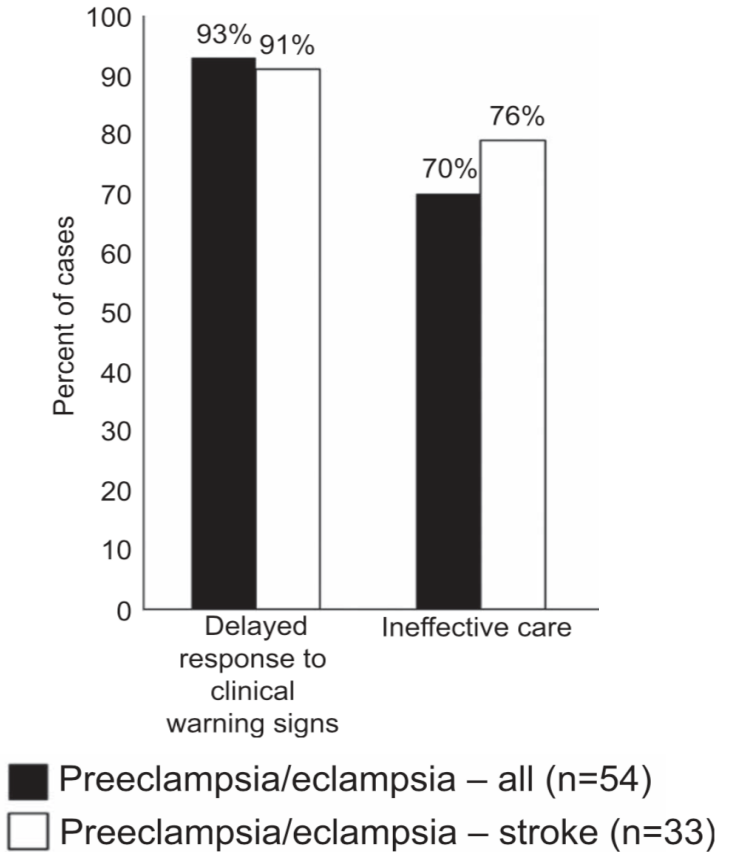
Adapted from Martin JN, Thigpen BD, Moore RC, Rose CH, Cushman J, May. Stroke and Severe Preeclampsia and Eclampsia: A Paradigm Shift Focusing on Systolic Blood Pressure, OG 2005;105-246.

June 2019

Systolic Hypertension, Preeclampsia-Related Mortality, and Stroke in California

Amy E. Judy, MD, MPH, Christy L. McCain, MPH, Elizabeth S. Lawton, MHS, Christine H. Morton, PhD, Elliott K. Main, MD, and Maurice L. Druzin, MD

- CA PAMR: 333 P-R maternal deaths 2002-2007
- 61% of 54 Preeclampsia/Eclampsia deaths were stroke
- 96% had Sys BP>160; only 65% had Dias BP >110
- Only 48% received any antihypertensive meds
- Only 29% received ACOG Standard Treatment



Hospitals know how to protect mothers. They just aren't doing it.

Alison Young, USA TODAY
1:54 p.m. PDT July 27, 2018

Maternal Safety Bundles

What are they?

- "Checklist" of items and

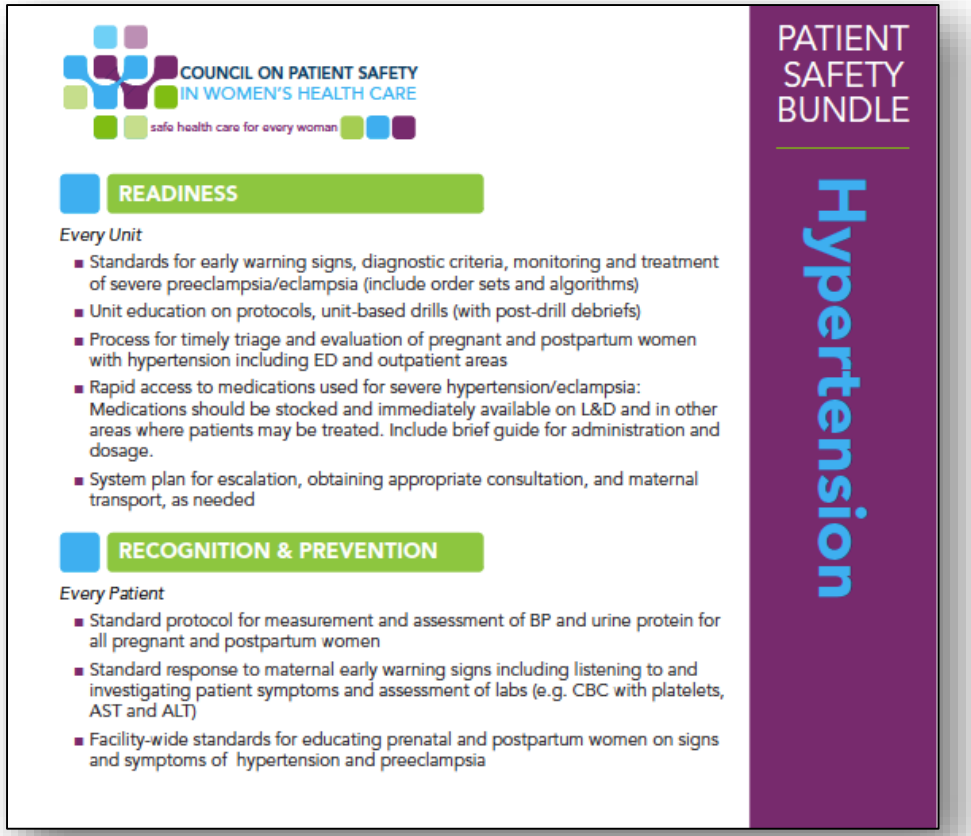
resource links) at:

safehealthcareforeverywoman.org

AIM Safety Bundle for Hypertension

Key Points

- Use standard language and definitions for preeclampsia (e.g. with severe features)
- Standardize the measurement of blood pressure!
- Use ACOG protocols for treatment of severe range BP within 60 min
- Standard protocols for the use of MagSO4
- Early Postpartum follow-up



May 2015

“Toolkits” Provide Background Detail and Implementation Guidance for the Safety Bundles


CMQCC
CALIFORNIA MATERNAL QUALITY CARE COLLABORATIVE

California Department of PublicHealth

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

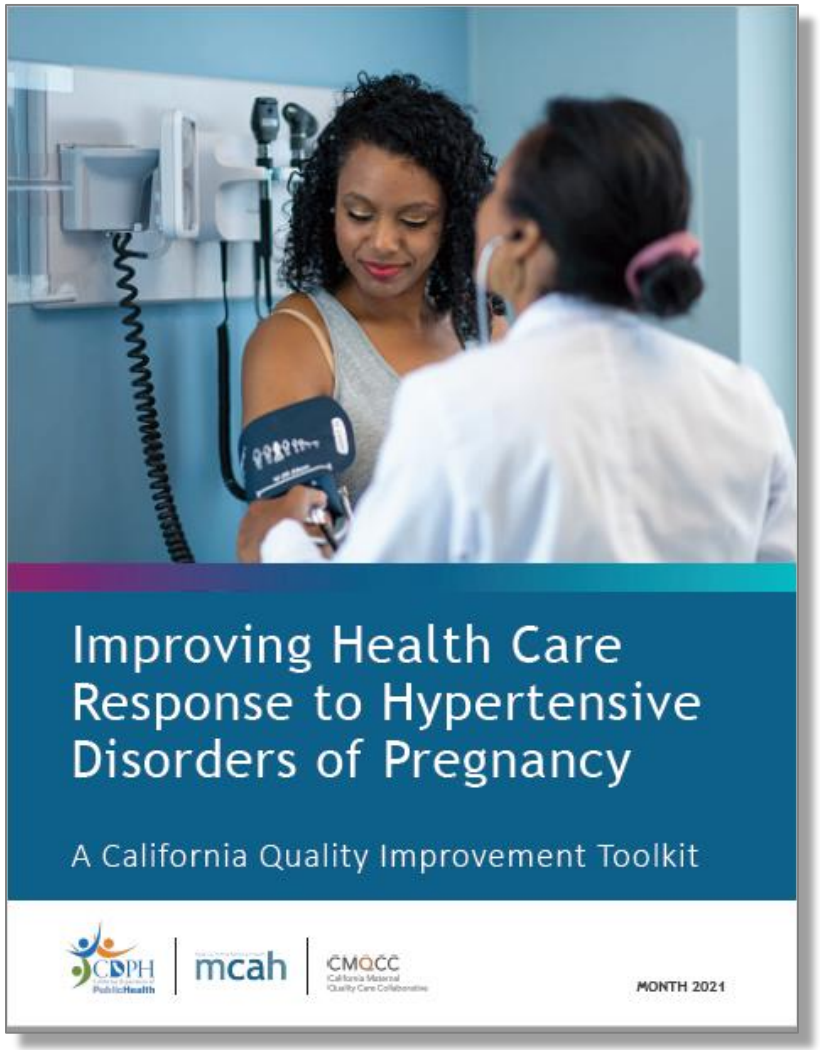
Improving Health Care Response to Preeclampsia: A California Quality Improvement Toolkit

Maurice L. Druzin [a] MD, Laurence E. Shields[b] MD, Nancy L. Peterson[ac] RNC, PNNP, MSN, Valerie Cape [ac] (Eds).

Stanford University School of Medicine,[a] Dignity Health,[b] California Maternal Quality Care Collaborative[c]

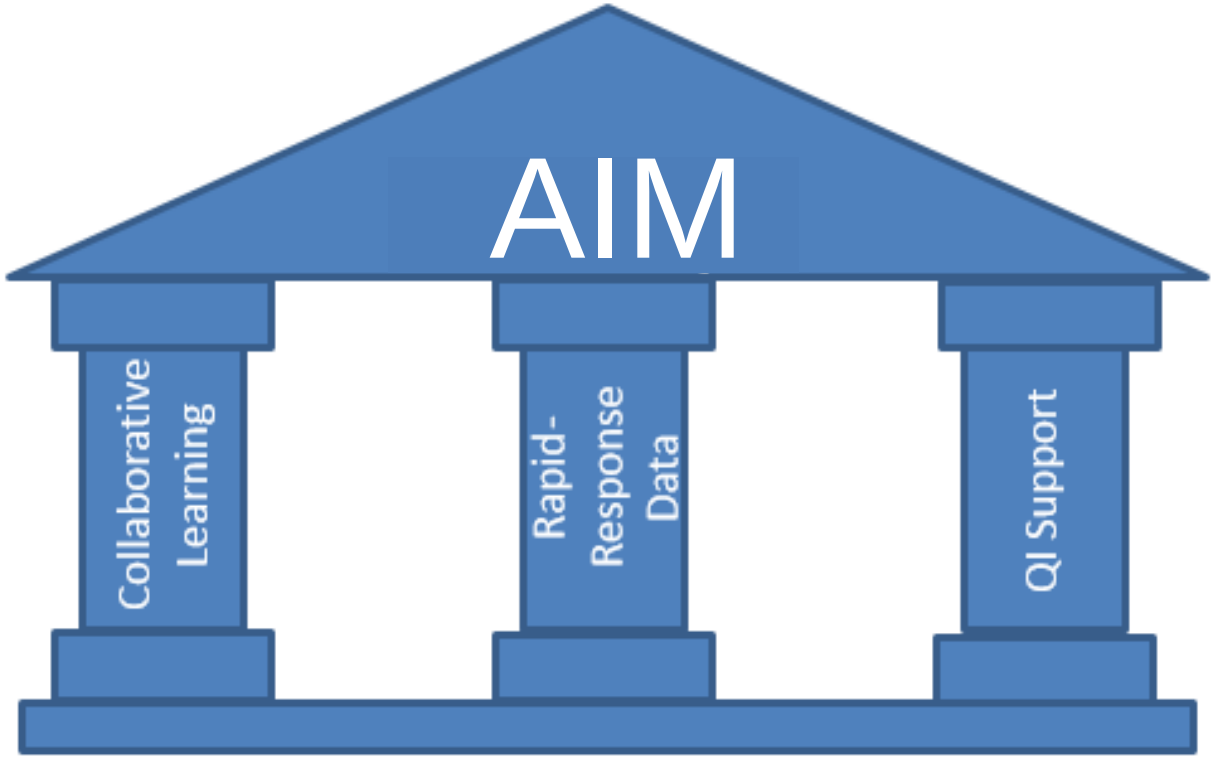
Released 2014
>12,000 downloads

Available at www.CMQCC.org
Updated version under review:
early 2021 release



How does a state Perinatal Quality Collaborative (PQC) Improve Care and Outcomes?

- Not just by convening a group of interested stakeholders
- Not just by establishing a system of outreach education



Success for AIM:

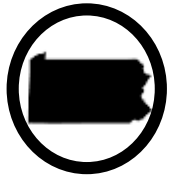
- Focus on Building State Capacity to Drive Systems & Culture Change
- Focus on building bridges with Public Health and Communities

Courtesy: Dr. Ann Borders, Medical Director, Illinois Perinatal Quality Collaborative

AIM Works at National, State, Facility and Community Levels for Implementation

National Pub Health Community, and <u>Prof Organizations</u>

- Engage/coordinate national partners
- Develop and share resources
- Promote Inter-state relations/sharing
- Support multi-state data platform



Perinatal Collaborative: State DPH, Prof Groups <u>Hospital Associations</u>

- Support/coordinate/ share hospital QI efforts
- Mobilize state-level resources and partners
- Use state data for outcome metrics

Hospitals, Providers, Nurses, Offices, <u>and Patients</u>

- Create QI Team to implement safety bundles
- Engage wide-range of partners
- Review progress through AIM Data Portal

Community Maternal Health Service Providers <u>and MCH Organizations</u>

- Engagement of public health community programs
- Increase access to care through promotion of collaborative care
- Engage public voices

"Treat the Damn Blood Pressure!"

Controlling blood pressure
is the key intervention
to prevent deaths due to stroke
in women with preeclampsia.

Over the last decade, the UK has focused QI efforts on aggressive treatment of both systolic and diastolic blood pressure and has demonstrated a reduction in deaths.

Medication Protocols: First Line Agents in Preeclampsia

Medication Agents	Labetalol IV	Hydralazine IV	Nifedipine (Immediate release)
Route	IV	IV	PO
Initial therapy	20 mg	5-10 mg	10 mg
Onset	2-5 minutes	5-20 minutes	5-20 minutes
Peak	5 minutes	15-30 minutes	30-60 minutes
Max dose (Before switching agents)	140 mg	20 mg	50 mg
Mechanism of action	• Combined α and β-blocking agent • Arteriolar dilator • Decreases heart rate	• Arteriolar dilator	• Calcium channel blocker • Arterial smooth muscle dilator
Side effects	• Use with caution in patients with known asthma. • Flushing, light headedness, palpitations and scalp tingling • Safe for use after cocaine and amphetamine use (including methamphetamine)[6]	• Tachycardia, headache • Upper abdominal pain (rare) • Flushing • Nausea	• Reflex tachycardia • Headache • Flushing • Nausea • Vomiting

LABETALOL

IF SEVERE BP ELEVATIONS PERSIST FOR 15 MINUTES OR MORE, ADMINISTER
LABETALOL 20 MG IV FOR >2 MINUTES

AFTER 10 MINUTES, IF EITHER BP THRESHOLD IS STILL EXCEEDED, ADMINISTER
LABETALOL 40 MG IV FOR >2 MINUTES

AFTER 10 MINUTES, IF EITHER BP THRESHOLD IS STILL EXCEEDED, ADMINISTER
LABETALOL 80 MG IV FOR >2 MINUTES

AFTER 10 MINUTES, IF EITHER BP THRESHOLD IS STILL EXCEEDED, ADMINISTER
HYDRALAZINE 10 MG IV FOR >2 MINUTES

ACOG Protocol for Treatment of Severe HTN in Pregnancy

sBP≥160 or dBP≥110,
(persisting 15min)

ACOG Committee Opinion 767, **Feb 2019**: Interim Update: Emergent Therapy for Acute-Onset Severe Hypertension During Pregnancy and the Postpartum Period

AIM Structure Measures: Hypertension

- Hypertension/Preeclampsia Policy/Protocol that covers measurement of BP, treatment of severe HTN, administration of Magnesium and treatment of Mag overdose
- Drills at least annually
- Multidisciplinary case reviews
- Debriefs after case with complications
- Staff Education

New Standards for Perinatal Safety

Joint Commission Requirement

- Issued August 21, 2019

PC.06.03.01

Reduce the likelihood of harm related to maternal severe hypertension/preeclampsia.

Element(s) of Performance for PC.06.03.01

1. Develop written evidence-based procedures for measuring and remeasuring blood pressure. These procedures include criteria that identify patients with severely elevated blood pressure.

2. Develop written evidenced-based procedures for managing pregnant and postpartum patients with severe hypertension/preeclampsia that includes the following:
   - The use of an evidence-based set of emergency response medications that are stocked and immediately available on the obstetric unit
   - The use of seizure prophylaxis
   - Guidance on when to consult additional experts and consider transfer to a higher level of care
   - Guidance on when to use continuous fetal monitoring
   - Guidance on when to consider emergent delivery
   - Criteria for when a team debrief is required

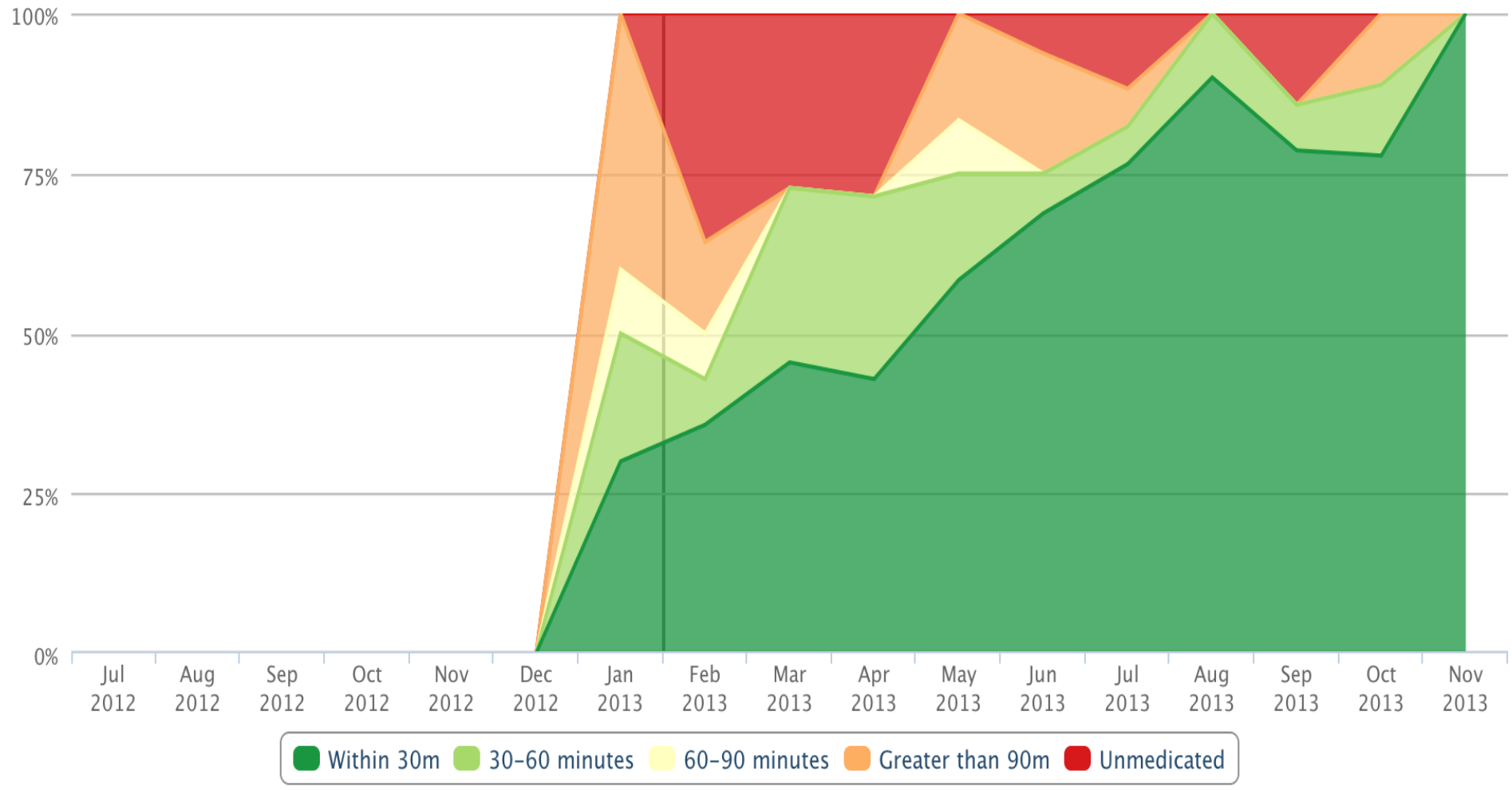
   Note: The written procedures should be developed by a multidisciplinary team that includes representation from obstetrics, emergency department, anesthesiology, nursing, laboratory, and pharmacy.

3. Provide role-specific education to all staff and providers who treat pregnant/postpartum patients about the hospital's evidence-based severe hypertension/preeclampsia procedure. At a minimum, education occurs at orientation, whenever changes to the procedure occur, or every two years.
   Note: The emergency department is often where patients with symptoms or signs of severe hypertension present for care after delivery. For this reason, education should be provided to staff and providers in emergency departments regardless of the hospital's ability to provide labor and delivery services.

4. Conduct drills at least annually to determine system issues as part of ongoing quality improvement efforts. Severe hypertension/preeclampsia drills include a team debrief.

Continued…

Timing for Treatment of Gravidas with sBP≥160 or dBP≥110



Sample hospital from CMQCC Preeclampsia Collaborative

Barrier Analysis for Delays in Treating Severe Hypertension

- BP stabilized before meds given
- No knowledge of BP parameters
- Competing priorities
- Unable to rapidly access meds
- RN reluctant to give IV push
- Magnesium SO4 given instead
- MD not available
- Fear of hypotension

Conquering “Fear of Hypotension”

As part of the CMQCC Maternal Hypertension collaborative:

- Hypotension defined as ≥30% reduction in Systolic BP
- IV Labetalol: 69 women—10% hypotension
- IV Hydralazine: 31 women—11% hypotension
- No change in fetal heart rate category
- No women required emergent delivery for fetal indication

Sharma KJ, Rodriguez M, Kilpatrick SJ, etal. Risks of parenteral antihypertensive therapy for the treatment of severe maternal hypertension are low. Hypertens Pregnancy. 2016;35(1):123-8.

Original Research Am J Obstet Gynecol 2017;216:415.e1-5.

OBSTETRICS

Early standardized treatment of critical blood pressure elevations is associated with a reduction in eclampsia and severe maternal morbidity

Laurence E. Shields, MD; Suzanne Wiesner, RN, MBA; Catherine Klein, RN, CNM; Barbara Pelletreau, RN, MPH; Herman L. Hedriana, MD

- 23 Community hospitals in Dignity Health (CA, NV, AZ)
- Introduction of standardized approach for HTN disorders (CMQCC)
- Comparison of 3 time periods:
  - Baseline: initial 6 months (Jan-Jun 2015)
  - Monitoring 1: next 6 months
  - Monitoring 2: next 6 months

HTN Bundle elements and criteria:

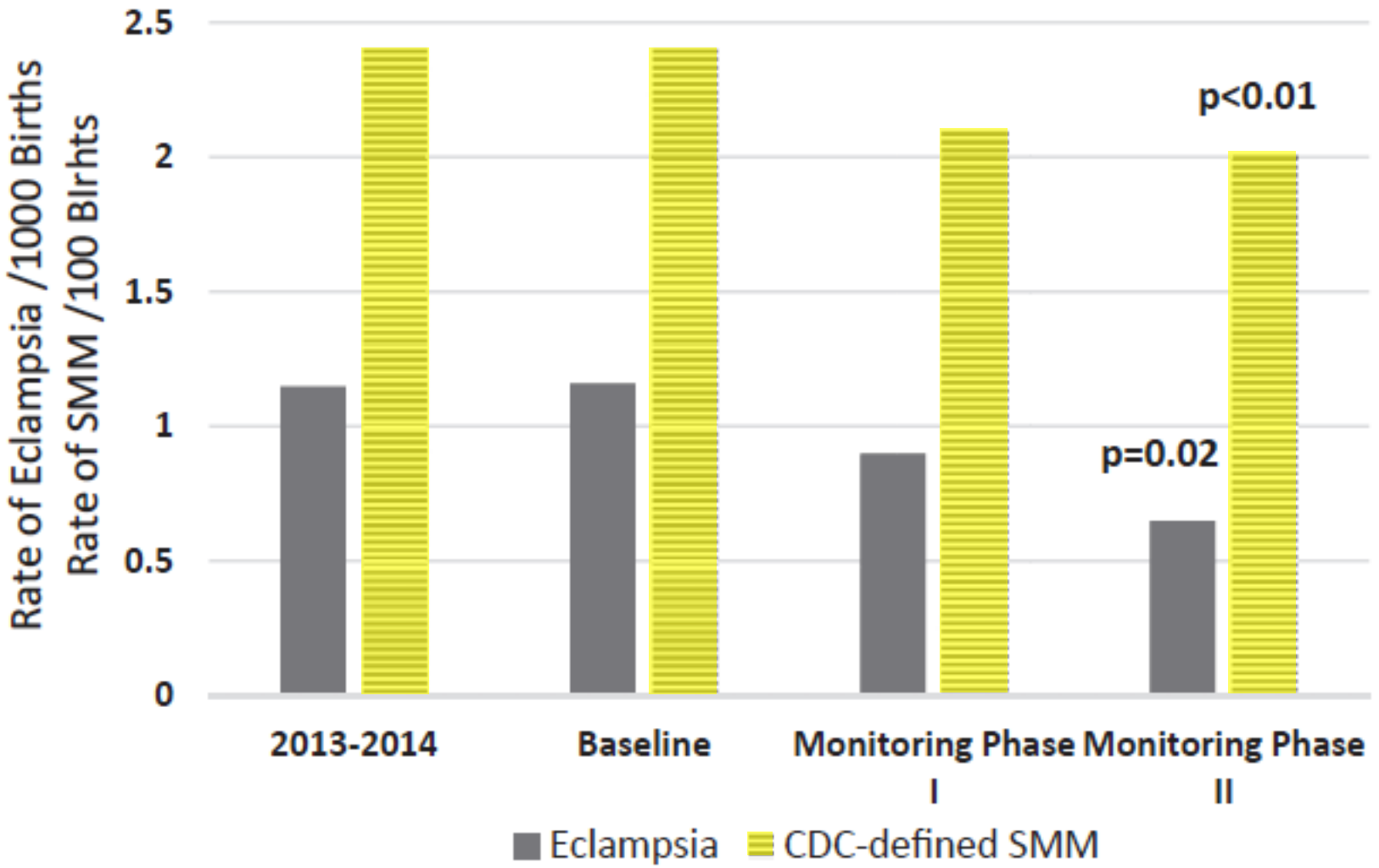
1. **Magnesium SO4:** all women with preeclampsia with severe features, and all women with BP≥160 sys or ≥110 dias (regardless of HTN type)
2. **Acute BP Treatment:** all women with BP≥160 sys or ≥110 dias had successful reduction of BP within 1 hour
3. **Early PP follow-up:** ≤2wks for all HTN disorders; ≤1 week if received HTN medication during admission

TABLE
Population characteristics and outcome data

	Baseline	Monitoring phase I	Monitoring phase II	N
Deliveries	22,506	24,409	22,534	69,449
Met criteria for treatment with magnesium sulfate	589 (2.6%)	646 (2.6%)	799 (3.5%)	2034 (2.9%)
Appropriately treated with magnesium sulfate	503 (85.4%)	597 (92.0%)	769 (96.2%)	$P < .01$
Met criteria for acute blood pressure treatment	504 (2.2%)	490 (2.0%)	526 (2.3%)	$P = .5$
Appropriately treated with hypertensive medication	287 (56.9%)	388 (79.2%)	474 (90.1%)	$P < .01$
Overall 3-element bundle compliance	50.5%		88.5%	$P < .01$

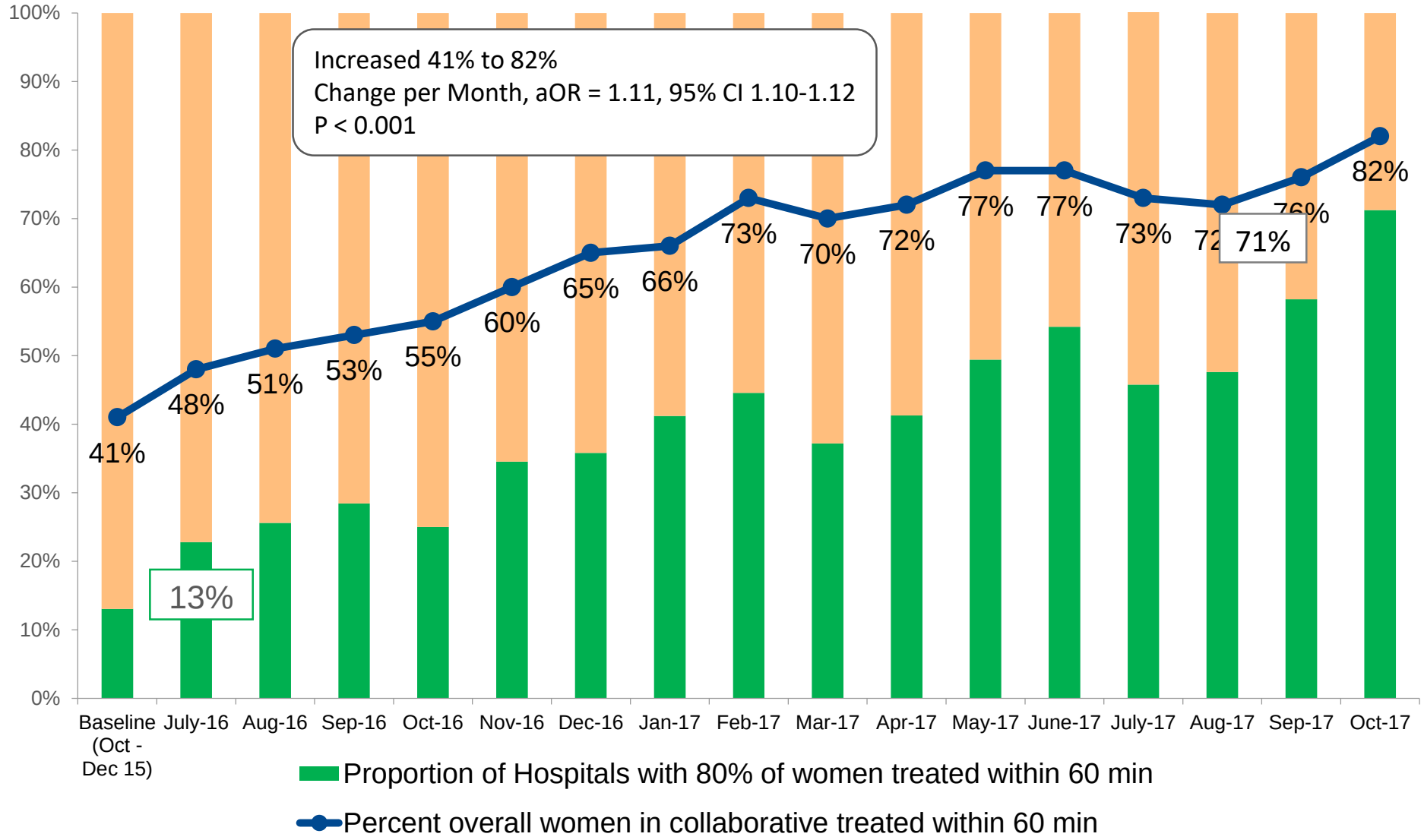
FIGURE

Rate of eclampsia and severe maternal morbidity **Among ALL gravidas**

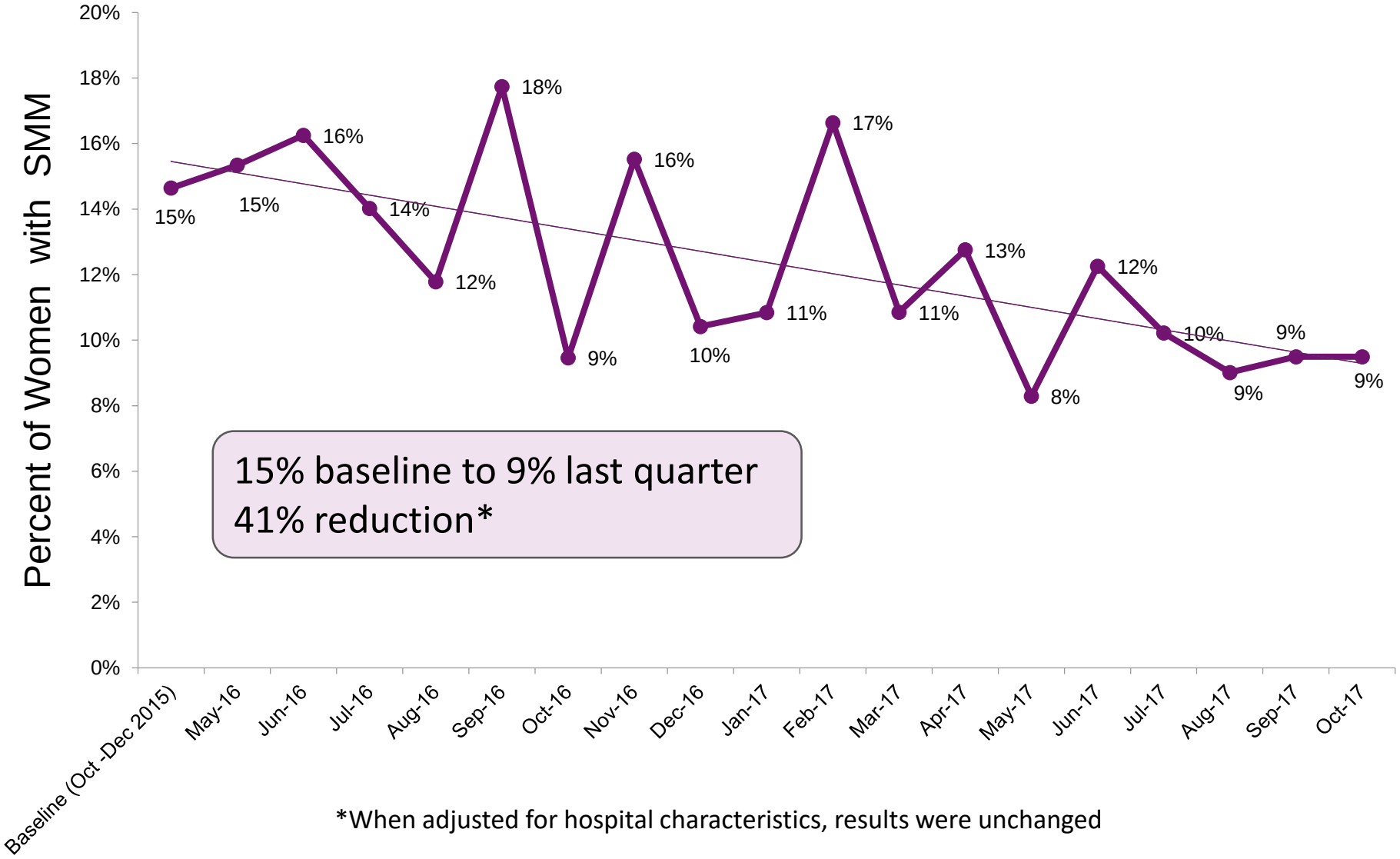


Severe Maternal Hypertension Treated Within 60 Minutes

Goal: 80% of women treated <60 min



Severe Maternal Hypertension with Severe Maternal Morbidity Reported



*When adjusted for hospital characteristics, results were unchanged

Key Postpartum Follow-up is Critical

- Early post-discharge follow-up recommended for **all patients** diagnosed with preeclampsia/eclampsia
- Recommend post-discharge follow-up:
  - within 3-7 days if medication was used during labor and delivery OR postpartum
  - within 7-14 days if no medication was used
- **Postpartum** patients presenting to the ED with hypertension, preeclampsia or eclampsia should either be **assessed by or admitted to an obstetrical service**
- **Watch for:** Worsening preeclampsia and heart failure (cardiomyopathy)

New Postpartum Approaches for Hypertension

- In a prospective study using BP self-monitoring after discharge
  - Over half required extra treatment for exacerbations in BP, of which 16% were severe. Women who were Black or BMI>35 experienced longer time to HTN resolution
- In a RCT that compared office-based follow-up with text-based remote monitoring for management of PP hypertension
  - No hospital readmissions were noted, and 85% had BP's obtained at least twice in the first 7 days. Furthermore, racial disparities in postpartum BP monitoring and outcomes were eliminated

Hirshberg A, Downes K, Srinivas S. Comparing standard office-based follow-up with text-based remote monitoring in the management of postpartum hypertension: a randomized clinical trial. British Medical Journal of Quality and Safety. 2018;27(11):871-877.
Hirshberg A, Sammel MD, Srinivas SK Text message remote monitoring reduced racial disparities in postpartum blood pressure ascertainment. Am J Obstet Gynecol 2019; **221**(3): 283-285.

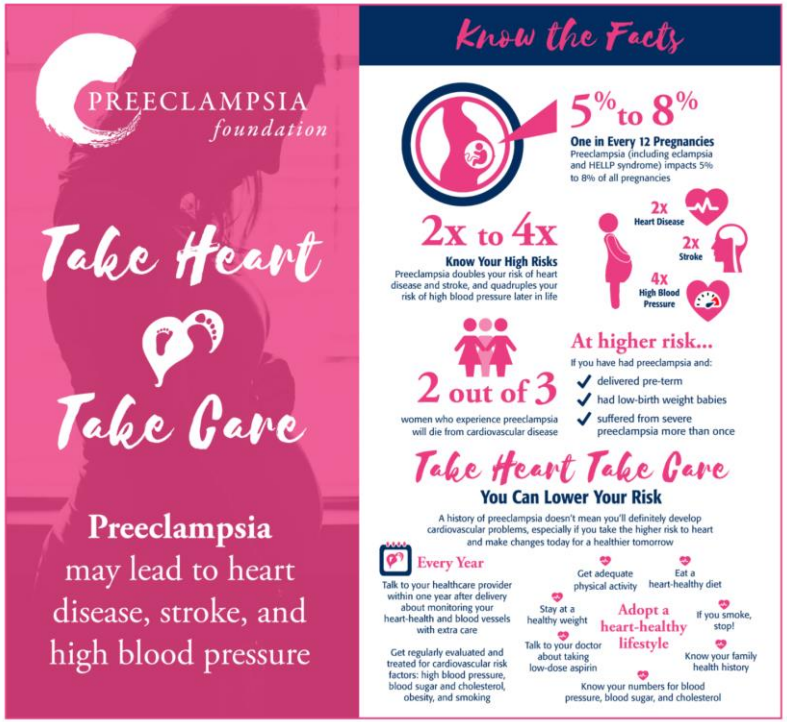
Preeclampsia in the Emergency Department

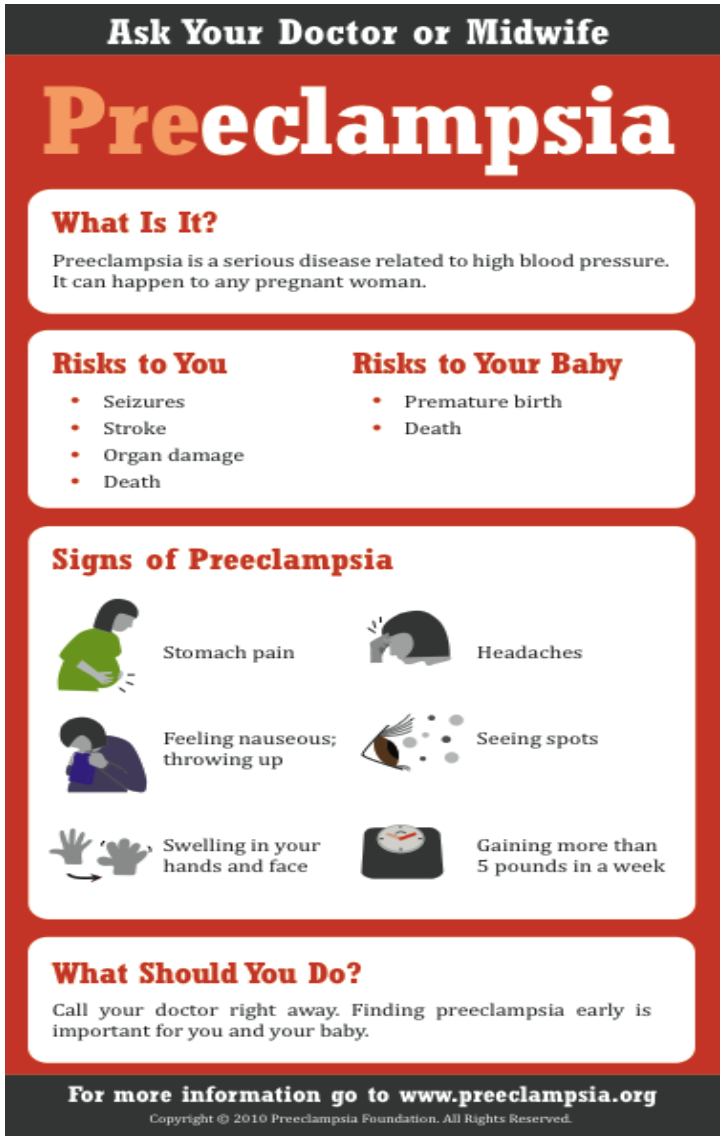
- Most important first step is to identify whether they are or have been pregnant in the last year
  - If yes → assess immediately
- Emergency and OB clinicians should be notified of the patient's arrival immediately to expedite evaluation and treatment
- The "trigger" BP in pregnancy and postpartum (160/110) is lower than values for hypertensive emergencies in non-OB patients

Specific S/S that Require Urgent Triage:	
Persistent Headache	Weakness
Visual change (floaters, spots)	Severe abdominal pain
History of preeclampsia	Confusion
Shortness of breath	Seizures
History of high blood pressure	Seizures
Chest pain	Fevers or chills
Heavy bleeding	Swelling in hands or face

Patient Education Materials

www.preeclampsia.org





Hypertension Structure Measures

Why These Measures?

- Have a recently reviewed and updated severe **hypertension policy or procedure** that provides a standard approach to measuring BP, treating severe HTN and safe use of Magnesium SO4.
- Develop OB-specific resources and protocols to **support patients, families, and staff** through major OB complications.
- Establish a system to perform regular formal **debriefing** discussions after cases with major complications.
- Establish a process to perform **multidisciplinary system-level review** of all severe HTN cases.
- Integrate at least some of the recommended Hypertension bundle processes into the hospital's **electronic health record** system.

WHY? For emergency care, it is critical to have standard approach for all staff that can be taught, drilled, debriefed so that everyone can function as a team.

WHY? Emergent events during childbirth can be traumatizing to women and their families (and providers). The events can often lead to depression, anxiety and PTSD.

WHY? Debriefs are the first step to identify improvement opportunities for complicated cases. They also reinforce a culture of safety on the unit.

WHY? Each case provides multiple learning and improvement opportunities that mostly involve system changes.

WHY? Integration of bundle elements into order sets and on-line resources is one of the most effective steps to reinforce and sustain change.

Hypertension Process Measures

Why These Measures?

- Estimated cumulative proportion of OB **physicians and providers** who have completed an education program on **obstetric hemorrhage and bundle elements** and unit-standard protocol in the past 2 years.
- Estimated cumulative proportion of OB **nurses** who have completed an **education program on obstetric hemorrhage and bundle elements** and unit-standard protocol in the past 2 years.
- Number of **OB drills** conducted during the current quarter on any maternal safety topic and topics covered.
- Proportion of patients with persistent new onset **severe hypertension who were treated within 1 hour**.

WHY? Best practices for hemorrhage continue to change; for a successful team response to hemorrhage, all nurses and providers need to be on the same page in the same playbook. DEPT AND NURSING LOG BOOKS

WHY? It is not enough to have a great protocol and equipment; one has to train the team and practice using the protocol and equipment on a regular basis. LOG BOOK

WHY? The single most important step for prevention of maternal deaths from hypertensive disorders is to treat systolic hypertension in an emergent time frame.

“Failure to Rescue”

- Everything we have talked about toady can fall into the category of rapid and appropriate response to problems
- Outcome: “Among women with hypertensive disorders, how many have Severe Maternal Morbidity”
- Secondary prevention: Induction of labor of women with HTN at 37 weeks
- Very little about primary prevention…

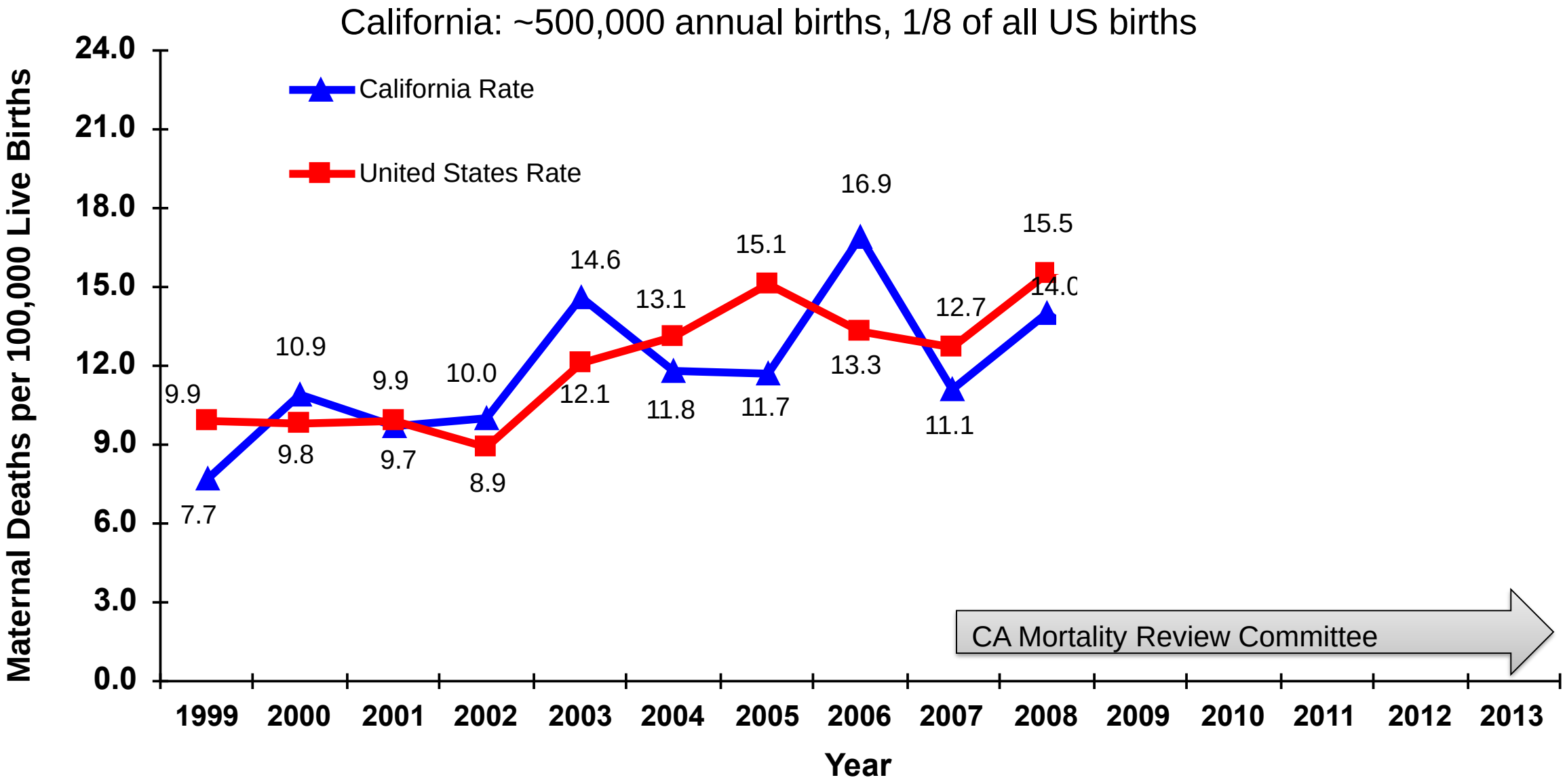
Koopmans CM, etal. HYPITAT study group. Induction of labour versus expectant monitoring for gestational hypertension or mild pre-eclampsia after 36 weeks' gestation (HYPITAT): a multicentre, open-label randomised controlled trial. Lancet 2009; 374: 979-988.

Prevention: Low-Dose Aspirin

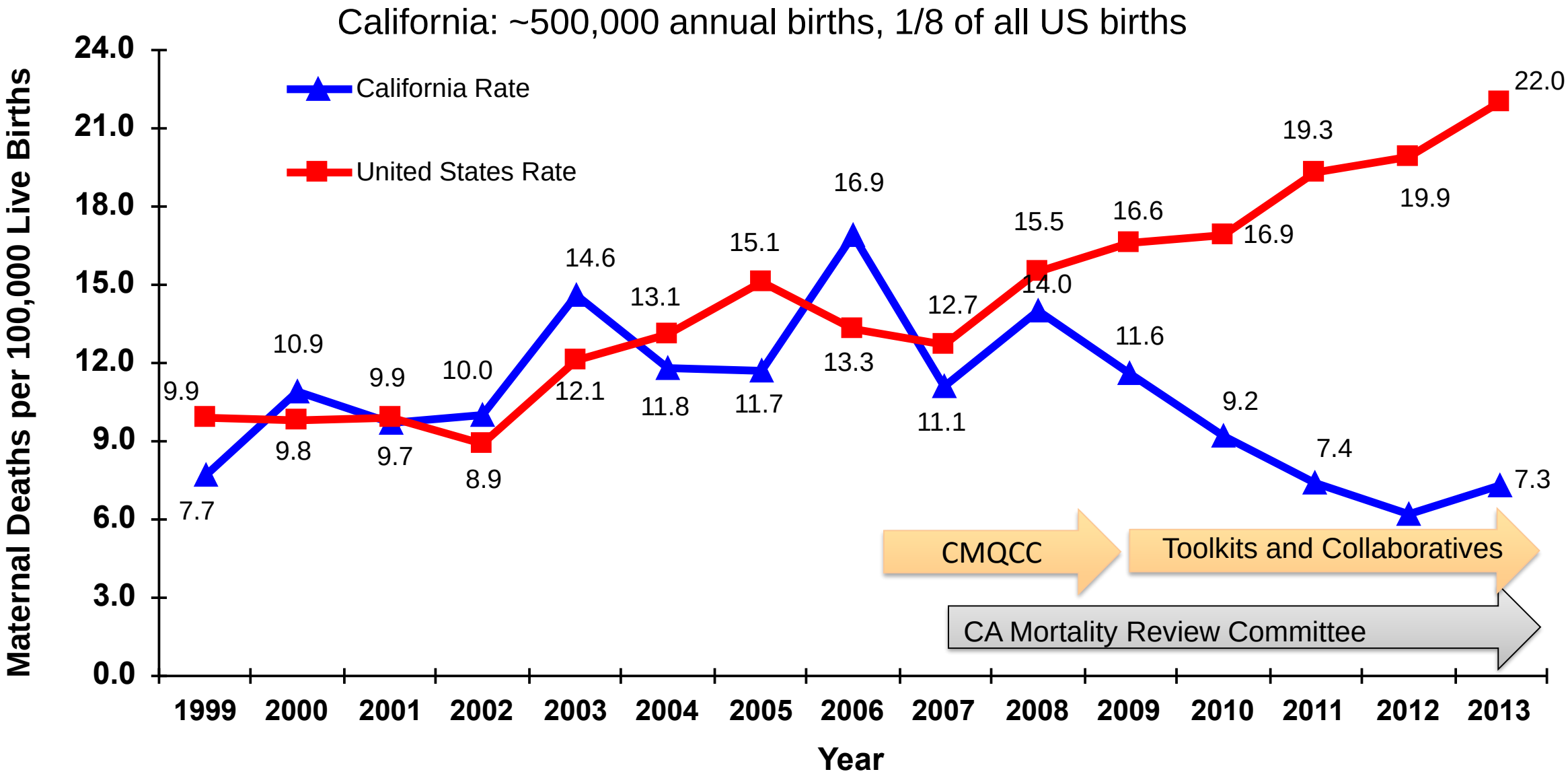
- Effective mechanism for prevention of preeclampsia in high-risk patients (mainly those with a history of preeclampsia)
- LDA: anti-inflammatory, anti-angiogenesis, anti-platelet
- 81 mg/day prophylaxis recommended for women at high risk of preeclampsia
  - Should be initiated between 12-28 weeks gestation (optimally before 16 weeks)
  - Should be continued daily until delivery

Used with permission from the Preeclampsia Foundation

Maternal Mortality Rate
California and United States; 1999-2013

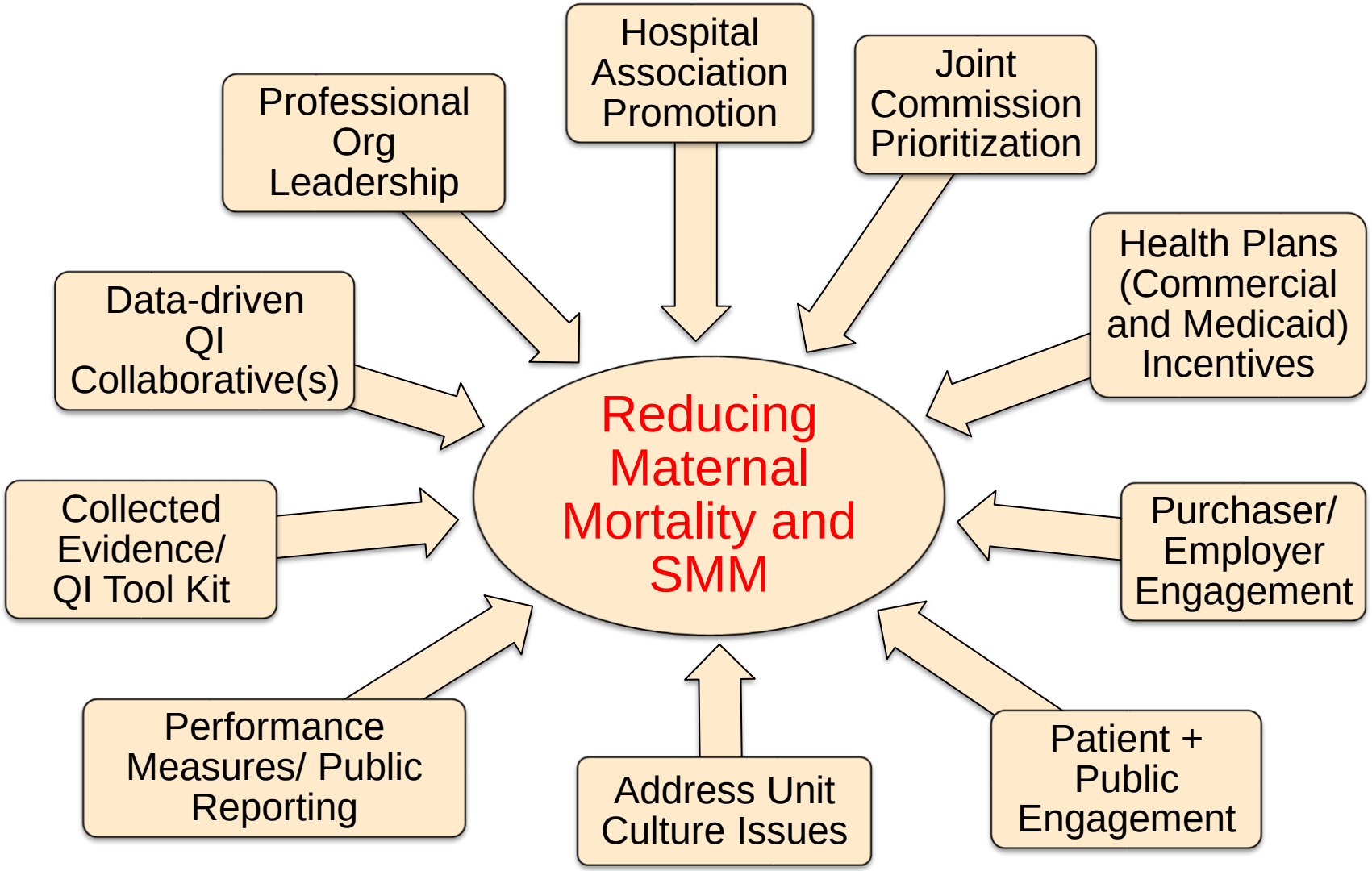


Maternal Mortality Rate
California and United States; 1999-2013



Change at Scale Require Multiple Strategies

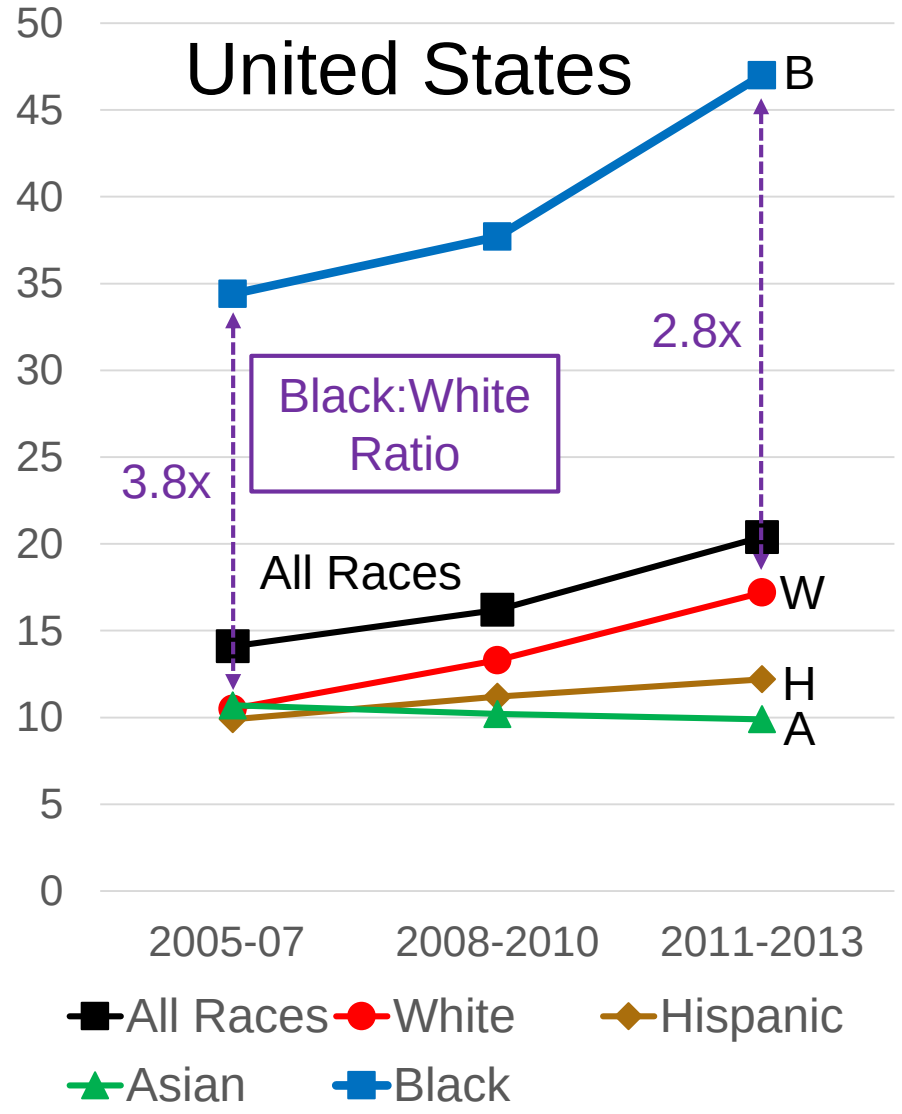
CMQCC

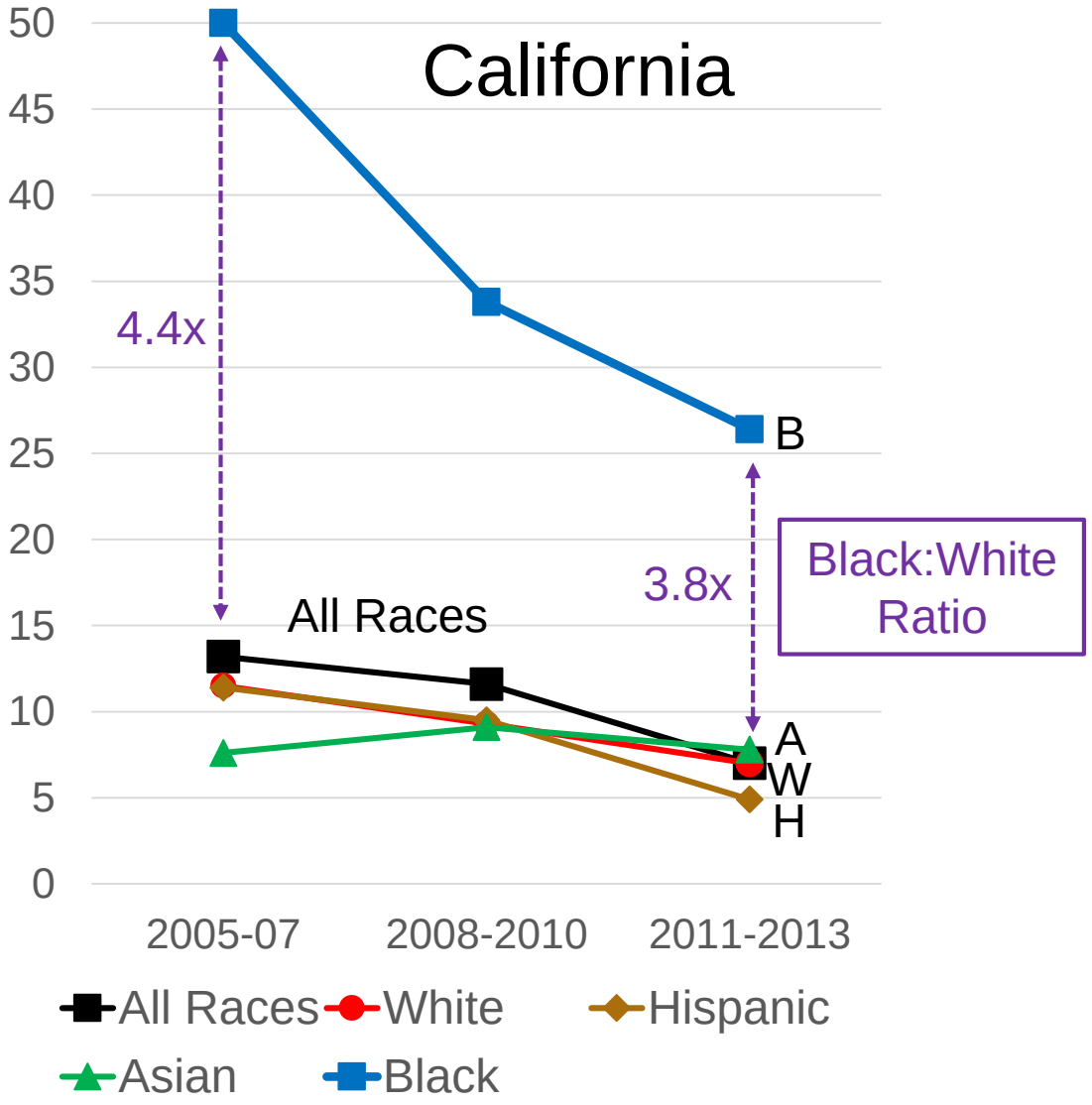


Pull As Many Levers as Possible: Collective Impact

Maternal Mortality by Race/Ethnicity

How did we do in California?





LOST MOTHERS

Nothing Protects Black Women From Dying in Pregnancy and Childbirth

Not education. Not income. Not even being an expert on racial disparities in health care.

by **Nina Martin**, ProPublica, and **Renee Montagne**, NPR News, Dec. 7, 2017, 8 a.m. EST

Soleil Irving "just lights up a room when she smiles," Wanda Irving, her grandmother, says. (Sheila Pree Bright for ProPublica)

Lt. Comdr. Shalon Irving PhD

Why do Black Women do so much worse?

Usual explanation by doctors and nurses is that black women have more obesity, more hypertension, more diabetes, and more social disadvantages…

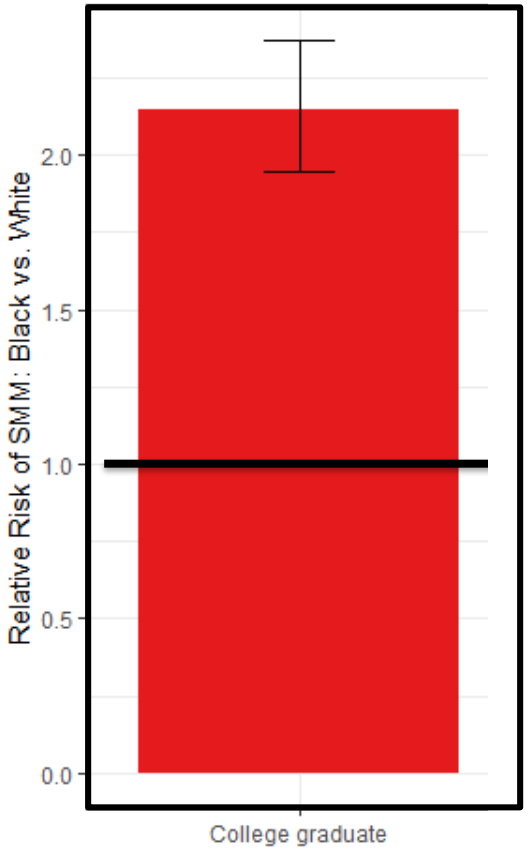
What If We Looked At B:W Disparity In SMM <u>Only</u> Among College Graduates?

And adjusted for age, BMI and other clinical and demographic risk factors…

What If We Looked At B:W Disparity In SMM <u>Only</u> Among College Graduates?

And adjusted for age, BMI and other clinical and demographic risk factors…

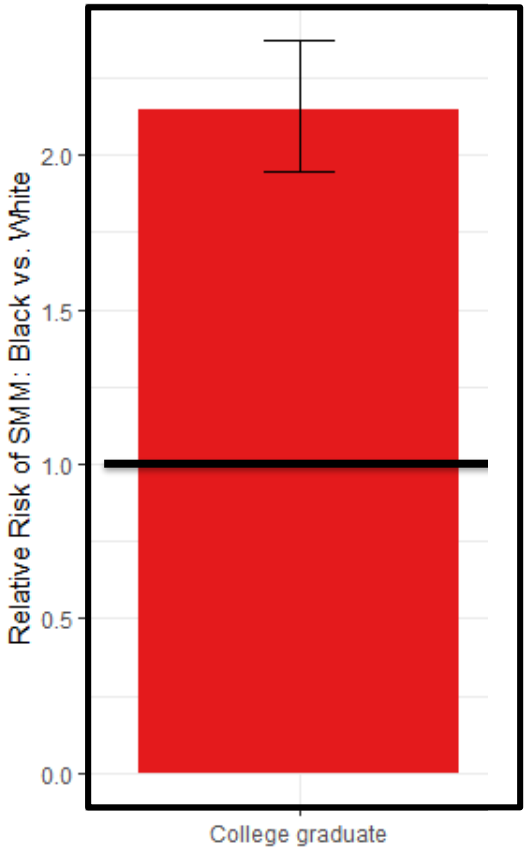
Black-White disparity in SMM is highest among college graduates (**2.2x higher than whites**)



What If We Looked At B:W Disparity In SMM Only Among College Graduates?

And adjusted for age, BMI and other clinical and demographic risk factors…

Black-White disparity in SMM is highest among college graduates (**2.2x higher than whites**)



Looking At Absolute Rates:

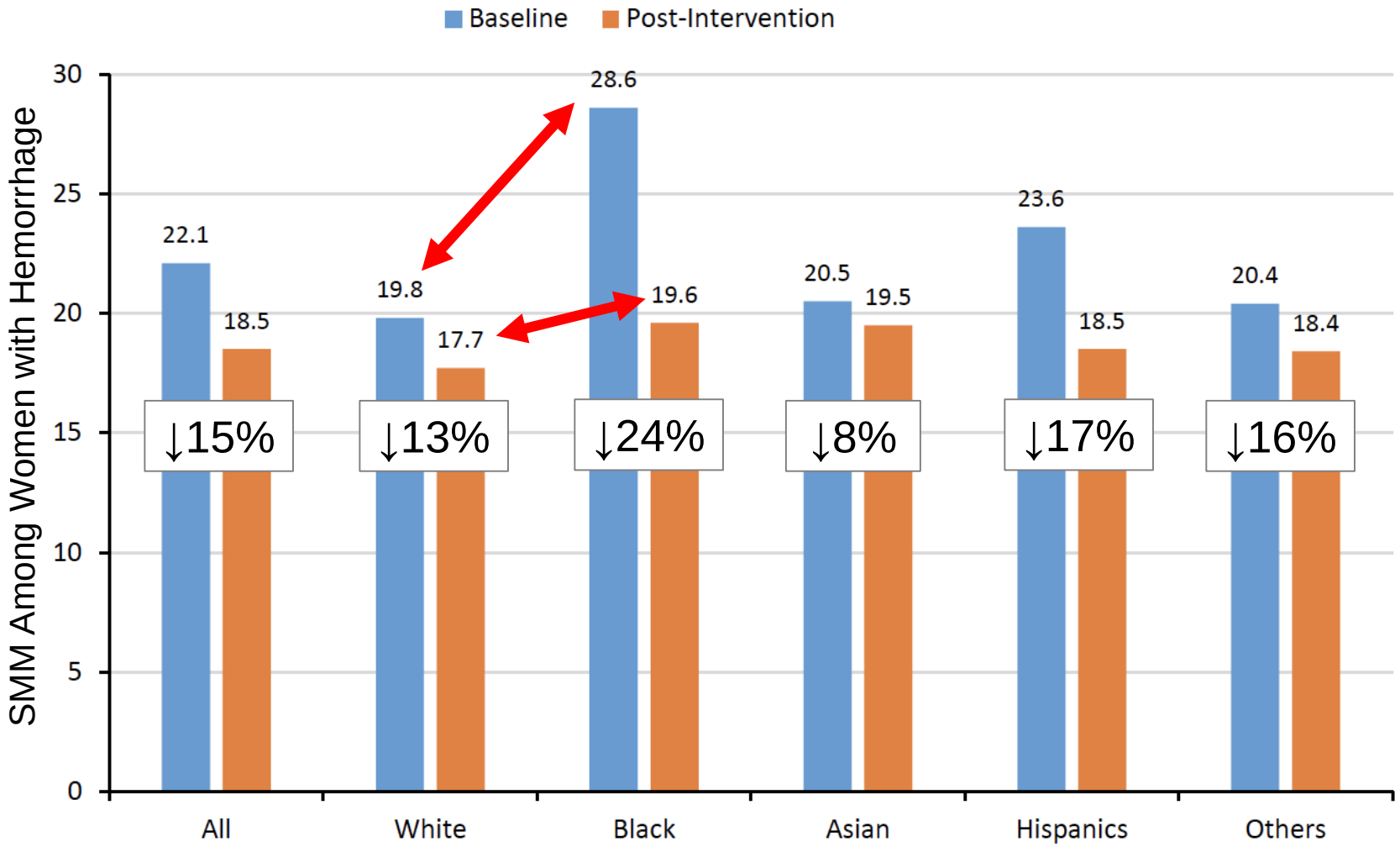
- SMM rate in Black women with college degrees: **2.4%**
- SMM rate in White women without high school diplomas: **1.6%**

California linked data: 2010-2015 Q3

Educational Attainment

CMQCC Hemorrhage Safety Collaborative: Effects on Severe Maternal Morbidity

Do Black women get the greatest benefit from having standardized emergency care?



	All	White	Black	Asian	Hispanics	Others
Adj RR (Before-After: CI)	0.85 (0.77-0.94)	0.87 (0.76-0.98)	0.76 (0.65-0.89)	0.92 (0.81-1.04)	0.83 (0.75-0.92)	0.84 (0.72-0.99)

Main EK, Chang SC, Dhurjati R, etal. Reduction in Racial Disparities in Severe Maternal Morbidity from Hemorrhage in a Large-scale Quality Improvement Collaborative. Am J Obstet Gynecol 2020; Jul;223(1):123.e1-123.e14

Advancing Equity / Reducing Inequities

- Combine cause-specific bundles WITH equity work
- Be humble, still lots to learn, be inclusive of many voices
- Disaggregate process and outcome measures by R/E
- Bias training, while important, is only the beginning
  - Web tools: Diversity Science; OMH; MOD; 21-day Challenge
- Actions to promote unit culture change
  - Responding to microaggressions, unit champions, respectful care
- Continuous feedback, particularly from higher risk groups
  - Formal PREM surveys, open comments, support persons

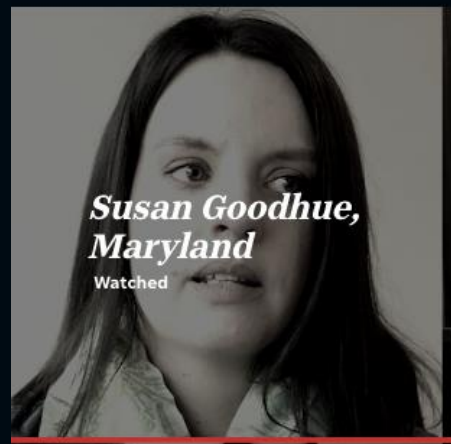
Final Thoughts

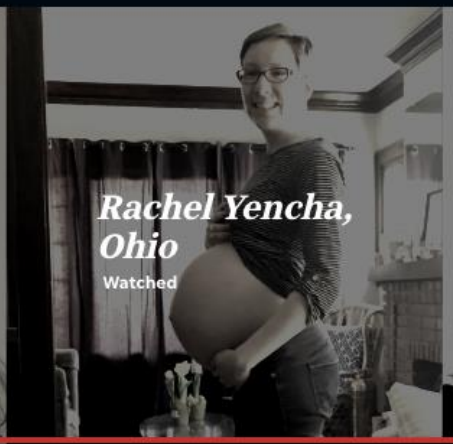
- No Data without Stories / No Stories without Data
- Remember the 3 Deadly D's: Denial, Delay, and Dismissal
- Build everything into daily workflows (harness the EHR!)
- Be acutely aware of equity needs for different populations
- Implementation is hard: share the creative ideas from hospital teams themselves
- If you are going to effect change, there has to be measures
- The HTN Safety Bundles can fit ALL size hospitals

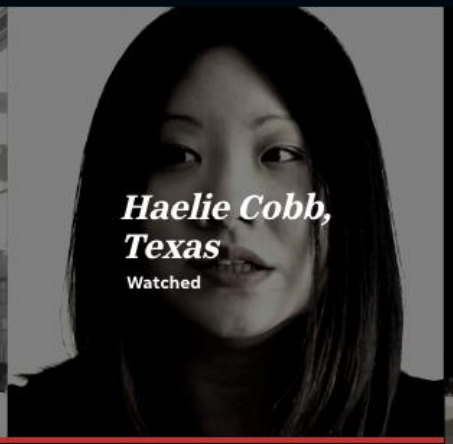
‘I am one of the 50,000’

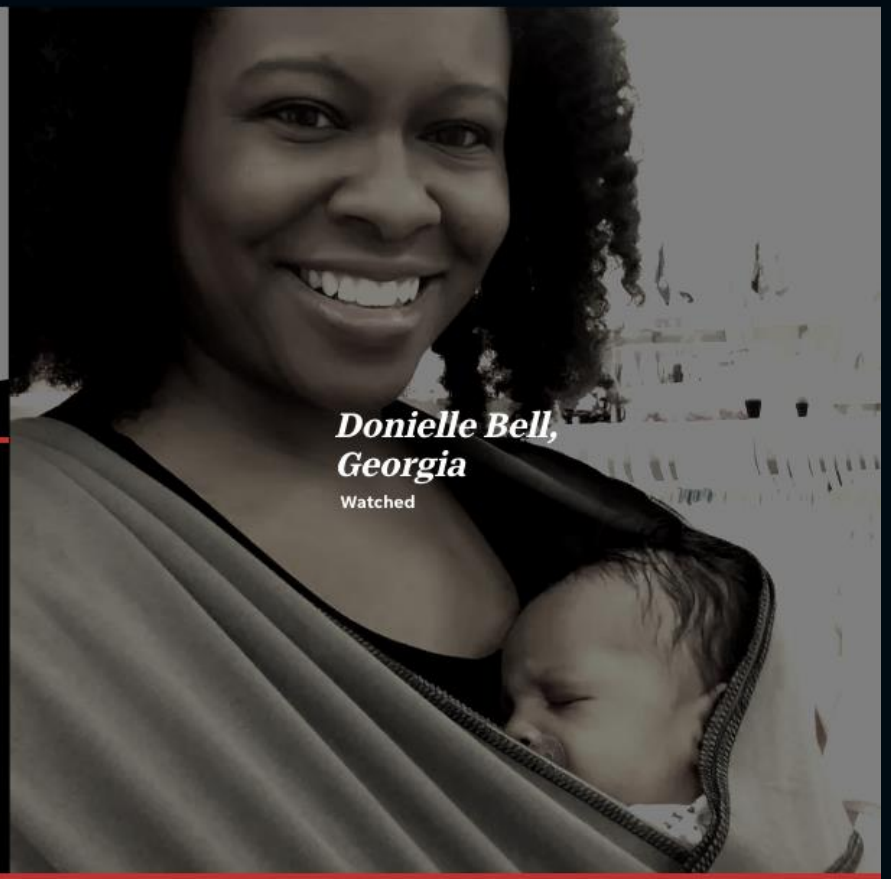
Every year, 50,000 women in the U.S. suffer injuries or severe complications related to childbirth. Many are lucky to survive. They want you to hear their stories.

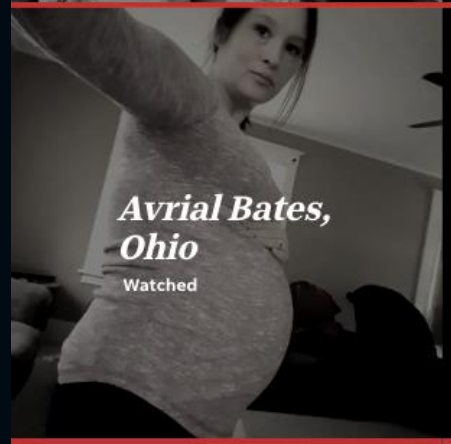
USA TODAY Investigations











> *I assumed that all hospitals, if they deliver babies, that they are prepared for things to go wrong.*
>
> — Rachel Yencha, Ohio

Thanks to the CMQCC Staff

Visit:
CMQCC.org

Bundle Implementation Pearls

- Engagement: Patient Stories
- Early Wins:
  - Carts, medication availability
  - Icons for high risk, Buttons, Be Creative and fun
- Multi-disciplinary team:
  - OB, Anesthesia, Nursing, Blood Bank co-leads
- Celebrate!
  - “We had a hemorrhage today and the team did great”
- Case reviews-share among the team