NEVADA ALLIANCE FOR INNOVATION IN MATERNAL HEALTH KICKOFF MEETING

JUNE 24, 2021

DEPARTMENT OF
HEALTH AND HUMAN SERVICES
DIVISION OF PUBLIC AND BEHAVIORAL HEALTH
Helping people. It's who we are and what we do.

1

AGENDA

Our agenda for today--

Please see the agenda in the chat or in the body of the email that included your zoom link

DEPARTMENT OF HEALTH AND HUMAN SERVICES
DIVISION OF PUBLIC AND BEHAVIORAL HEALTH

AGENDA
Alliance for Innovation on Maternal Health (AIM) Kick-off Meeting
June 24th from 9am-11am PST

9:00am – 9:10am	Welcome Remarks Brian Iriye, MD Managing Partner, High Risk Pregnancy Center
9:10am – 9:15am	AIM Core Team Introduction Vickie Ives, MA, Maternal, Child and Adolescent Health (MCAH) Section Manager, Division of Public and Behavioral Health (DPBH)
9:15am -9:30am	AIM Overview Emily Greenwood, Program Manager, AIM
9:30am – 10:15am	*Improving Maternity Outcomes at Scale: Perinatal Quality Collaboratives and Hypertensive Disorders of Pregnancy* Elliott Main, MD, Clinical Professor, Obstetrics and Gynecology - Maternal Fetal Medicine Stanford University Medical Director, California Maternal Quality Care Collaborative
10:15am – 10:30am	*Disparity in Maternal Mortality/Severe Maternal Morbidity* Garsy Presumey-LaBlanc, MS, Respectful Care Project Coordinator, AIM
10:30am – 10:45am	Data overview and REDCap data collection system Kagan Griffin, MPH, RD, MCAH Epidemiologist, DPBH
10:45am – 10:50am	Next Steps Tami Corn, State Systems Development Initiative Manager, MCAH, DPBH
10:50am – 11:00am	Questions and Closing Remarks Vickie Ives, MA, MCAH Section Manager, DPBH

Page 1 of 1

2

HOUSEKEEPING

Technical Support: If you need any support during this meeting, please feel free to reach out to **Peter Marschall** via the **chat** or via **email:** pmarschall@socialent.com

Questions? If you have any questions, please put those in the **Q&A** box.

3

WELCOME REMARKS

BRIAN IRIYE, MD

MANAGING PARTNER,

HIGH RISK PREGNANCY CENTER

4


NEVADA ALLIANCE FOR
INNOVATION IN MATERNAL HEALTH
KICKOFF

5

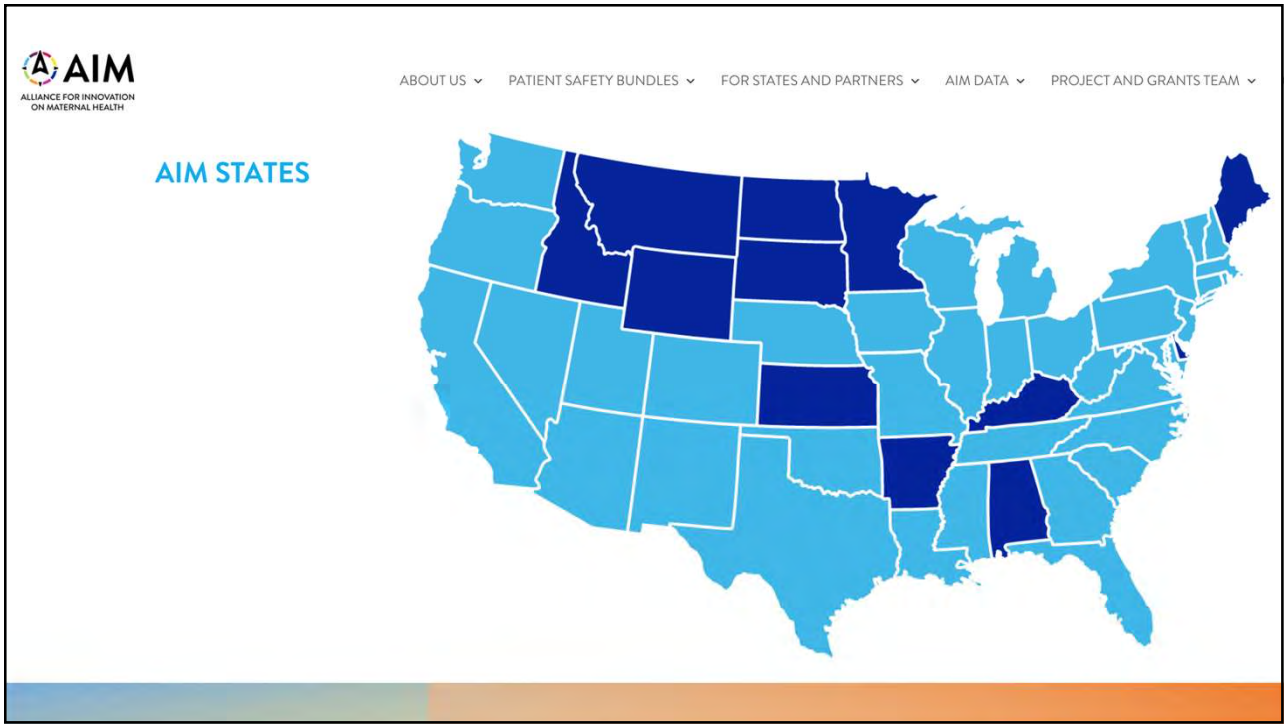

NEVADA ALLIANCE FOR INNOVATION
IN MATERNAL HEALTH
KICKOFF VS BLASTOFF

6

AIM

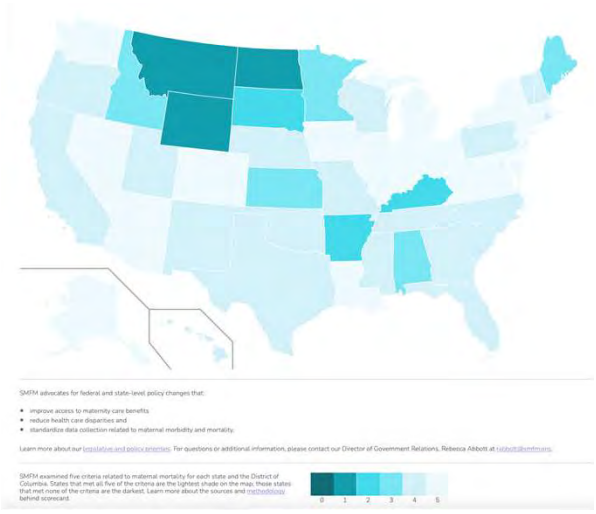
- A national data-driven maternal safety and quality improvement initiative
- Works to reduce preventable maternal mortality and severe maternal morbidity
- Utilizes state and community based teams to align national, state and hospital level QI efforts

7


AIM
ALLIANCE FOR INNOVATION ON MATERNAL HEALTH
ABOUT US
PATIENT SAFETY BUNDLES
FOR STATES AND PARTNERS
AIM DATA
PROJECT AND GRANTS TEAM
AIM STATES

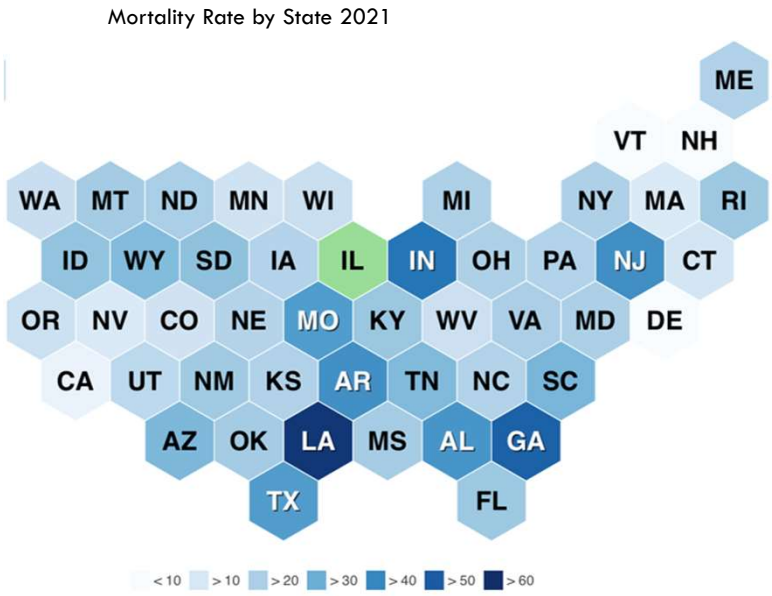
8

SMFM MM SCORECARD- NEVADA EFFORTS



1) Maternal Mortality Review Committee-2020
2) Expansion of Medicaid
3) Reporting of data stratified by race and ethnicity
4) Establishment of a PQC
5) Participation in the Alliance for Innovation in Maternal Health Program

9

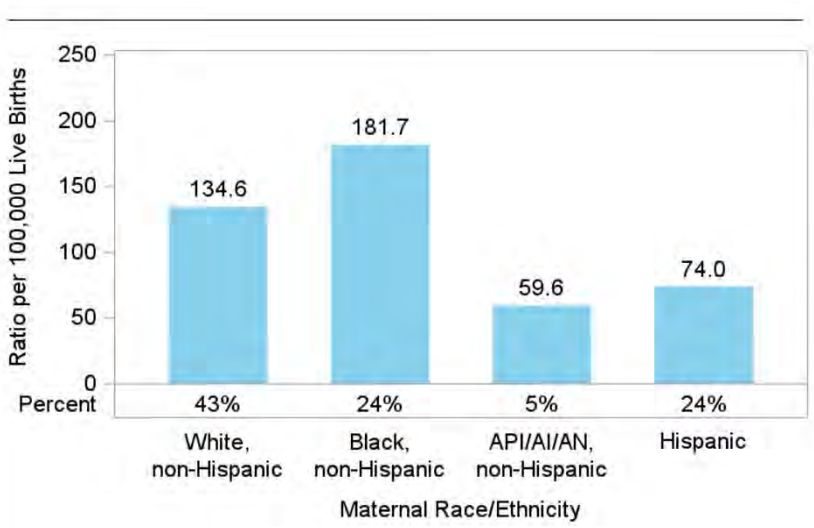


NEVADA MATERNAL DEATH RATE

- 2nd lowest rate in the country at 8.4 deaths per 100,000 births
- California lowest at 4.0

10

PREGNANCY ASSOCIATED MATERNAL MORTALITY PER 100,000 LIVE BIRTHS



11

IMPLEMENTATION OF QUALITY IS EXTRAORDINARILY SLOW

Even worse, only 50% of EBPs make it into practice

12

EVIDENCE –PRACTICE GAP

Consistent failure to translate evidence into routing practice

- 50% of patients do not receive recommended care
- 30% of medical spending is on unnecessary care

- Optimization of patient care demands closing of the evidence-practice gap
- Optimal introduction of new interventions and technology ensure access, delivery and usage

13

WILL THIS WORK?

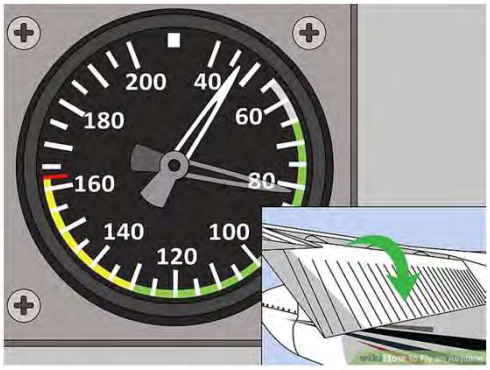
- Protocols standardize care
  - The more way of doing things the more
    - Confusion in care initiation
    - Delay
    - Possible implicit bias
  - Protocols
    - Improve care quality
    - Bolster medico-legal arguments for care
    - Reduce time on EMR documentation
    - Improve staff communication of services
    - Reduce costs
    - Work towards elimination of racial bias

14

Part 4 **Landing the Plane**

1 **Get clearance to land using the communication radio.** An essential part of flight is staying in touch with ATC (Air Traffic Control), Approach Control, or Tower, during approach and landing procedures. You can find the correct frequencies on your sectional chart.

- When changing frequencies on the communication radio it is courteous to listen for the better part of a minute to make sure no stations are in the middle of an exchange. Only when you are sure there are no "conversations" going on should you make your initial broadcast. This helps to avoid the "stepped on" situation which occurs when multiple stations are broadcasting on the same frequency at the same time.



2 **Reduce the airspeed.** To do this, reduce power and lower the flaps to the appropriate level. Do not deploy flaps at excessively high speeds (only when airspeed is within the white arch on the airspeed instrument). Stabilize the airspeed and rate of descent by applying back pressure on the control wheel. Knowing if you're right just takes practice.[18]

- Pick your aiming point and begin your descent.

15

3 **Get the right angle of descent and airspeed.** This is controlled by a mixture of throttle and yoke. Once you've found a runway, you need to have the combination exactly right to land. When it comes to flying an airplane, this is the hardest part.

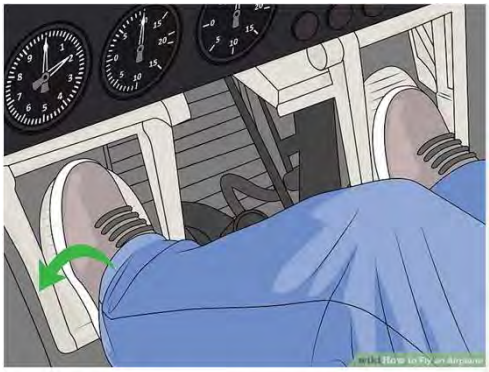
- A general rule is that the best approach speed is 1.3 multiplied by the stalling speed of the aircraft.[19] This should be indicated on the ASI. However, always take into account wind speed, too.

4 **Lower the nose and watch the numbers on the runway.** Those are there for a reason: They tell the pilot whether he or she is going to overshoot or land short. Lower the nose, keeping the numbers right on your horizon.

- If the numbers start to disappear under the aircraft nose, you are landing long.
- If the number distance themselves from the aircraft nose, you are landing short.
- As you get closer to the ground, you will experience the "ground-effect." This will be explained by your instructor in detail, but basically the ground effect causes the plane to float a bit because of reduced drag near the ground.

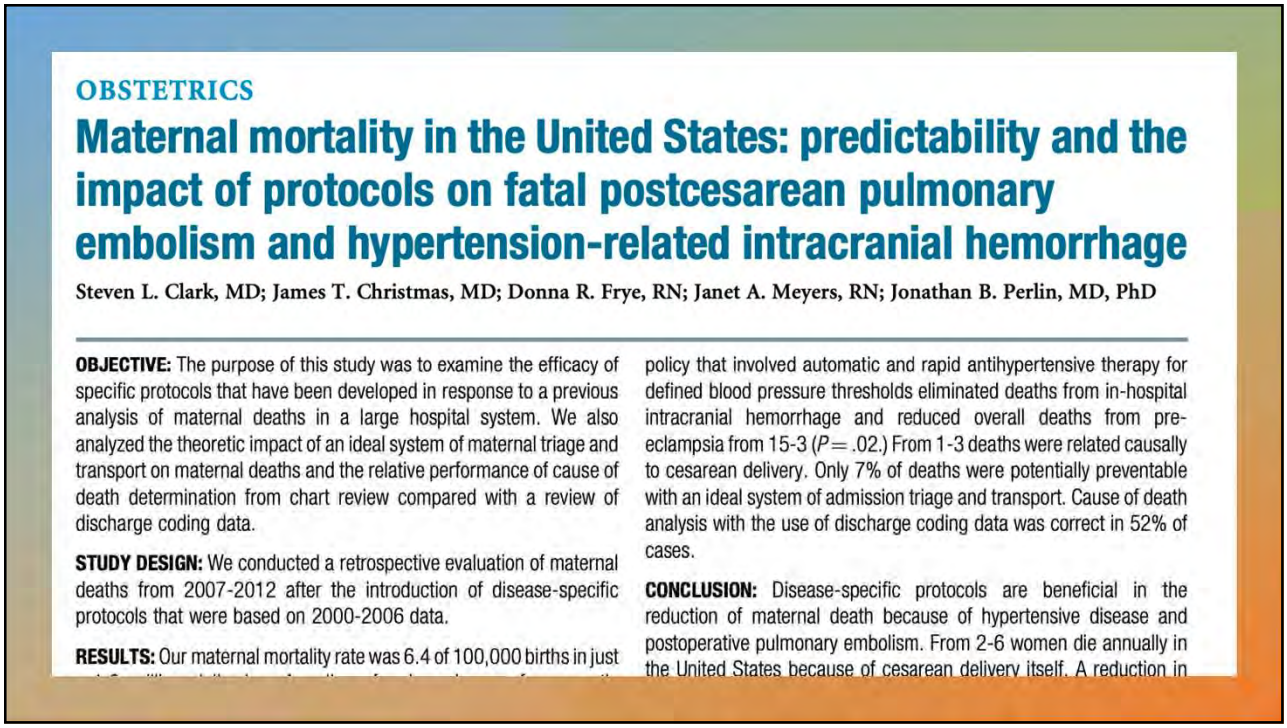
16

5 **Reduce the throttle to idle.** Raise the nose slowly by pulling back on the yoke, until the two main wheels touch down. Continue holding the nose wheel off the ground; it will settle to the ground by itself.



6 **Come to a stop.** Once the nose wheel has touched down, you can apply brakes to slow for exiting the runway. Exit as soon as possible on the off ramp specified by the tower. *Never* stop on a runway.

17



OBSTETRICS

Maternal mortality in the United States: predictability and the impact of protocols on fatal postcesarean pulmonary embolism and hypertension-related intracranial hemorrhage

Steven L. Clark, MD; James T. Christmas, MD; Donna R. Frye, RN; Janet A. Meyers, RN; Jonathan B. Perlin, MD, PhD

OBJECTIVE: The purpose of this study was to examine the efficacy of specific protocols that have been developed in response to a previous analysis of maternal deaths in a large hospital system. We also analyzed the theoretic impact of an ideal system of maternal triage and transport on maternal deaths and the relative performance of cause of death determination from chart review compared with a review of discharge coding data.

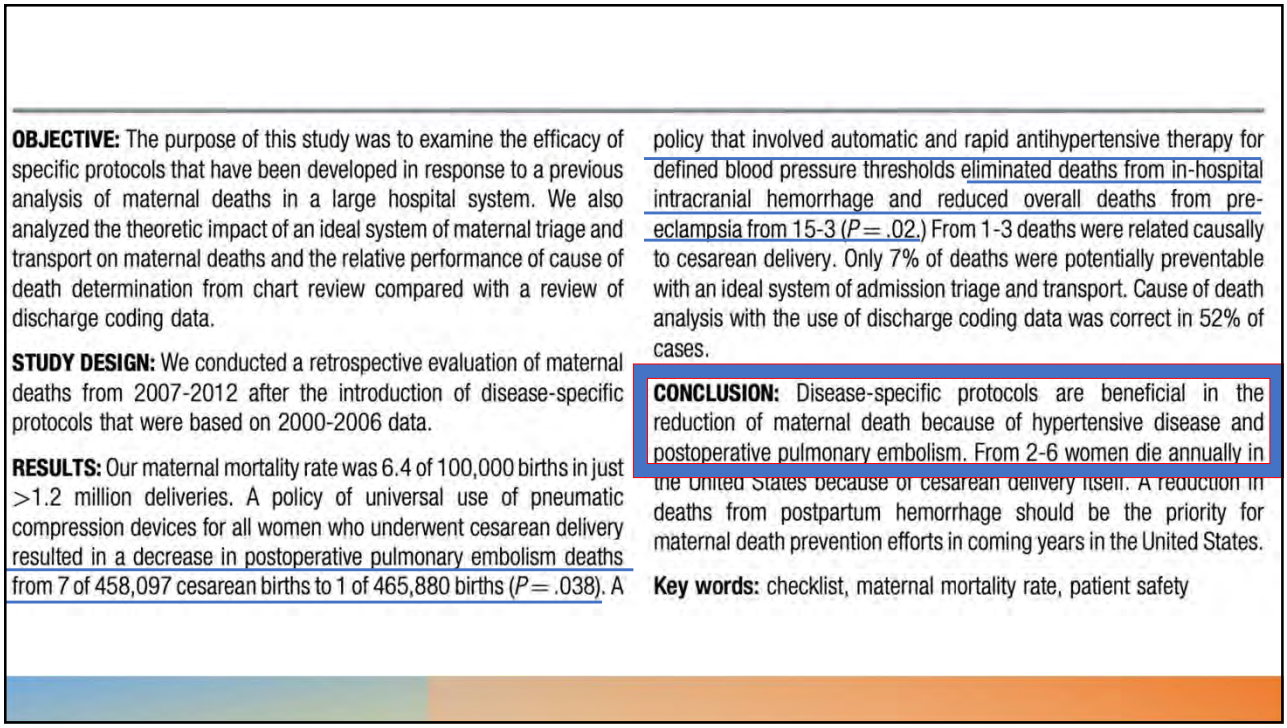
STUDY DESIGN: We conducted a retrospective evaluation of maternal deaths from 2007-2012 after the introduction of disease-specific protocols that were based on 2000-2006 data.

RESULTS: Our maternal mortality rate was 6.4 of 100,000 births in just

policy that involved automatic and rapid antihypertensive therapy for defined blood pressure thresholds eliminated deaths from in-hospital intracranial hemorrhage and reduced overall deaths from pre-eclampsia from 15-3 ($P = .02$.) From 1-3 deaths were related causally to cesarean delivery. Only 7% of deaths were potentially preventable with an ideal system of admission triage and transport. Cause of death analysis with the use of discharge coding data was correct in 52% of cases.

CONCLUSION: Disease-specific protocols are beneficial in the reduction of maternal death because of hypertensive disease and postoperative pulmonary embolism. From 2-6 women die annually in the United States because of cesarean delivery itself. A reduction in

18



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STUDY DESIGN: We conducted a retrospective evaluation of maternal deaths from 2007-2012 after the introduction of disease-specific protocols that were based on 2000-2006 data.

RESULTS: Our maternal mortality rate was 6.4 of 100,000 births in just >1.2 million deliveries. A policy of universal use of pneumatic compression devices for all women who underwent cesarean delivery resulted in a decrease in postoperative pulmonary embolism deaths from 7 of 458,097 cesarean births to 1 of 465,880 births ($P = .038$). A policy that involved automatic and rapid antihypertensive therapy for defined blood pressure thresholds eliminated deaths from in-hospital intracranial hemorrhage and reduced overall deaths from pre-eclampsia from 15-3 ($P = .02$.) From 1-3 deaths were related causally to cesarean delivery. Only 7% of deaths were potentially preventable with an ideal system of admission triage and transport. Cause of death analysis with the use of discharge coding data was correct in 52% of cases.

CONCLUSION: Disease-specific protocols are beneficial in the reduction of maternal death because of hypertensive disease and postoperative pulmonary embolism. From 2-6 women die annually in the United States because of cesarean delivery itself. A reduction in deaths from postpartum hemorrhage should be the priority for maternal death prevention efforts in coming years in the United States.

Key words: checklist, maternal mortality rate, patient safety

19

WHAT IS DIFFERENT?

My hospital has a anti-HTN protocol

- Many times they are not initiated
- BPs measured incorrectly
- Delays in ordering the protocol and treatment based on the protocol
- Different education on PP and L and D
- Who gets labetalol and who gets hydralazine?
- Also nifedipine is not an option at many centers

This is going to be different

- Education
- Standardization
- All current up to date options
- Safety, reduction of bias, improvement in patient care

20

NOT WILL IT WORK, IT HAS TO WORK

- Improve patient safety
- Lower cost without sacrificing quality
- Equally distribute services
- Reduce huge variations in care and costs

- Its not that we don't have solutions, its just that we cannot implement those solutions in health care organizations

21

AIM CORE TEAM INTRODUCTIONS

VICKIE IVES, MA

MATERNAL, CHILD AND ADOLESCENT HEALTH

SECTION MANAGER,

DIVISION OF PUBLIC AND BEHAVIORAL HEALTH

22

NEVADA AIM CORE TEAM

Ihsan Azzam, PhD, MD | Chief Medical Officer, DPBH

Suzanne Bierman, JD, MPH| NV Medicaid Administrator, DHCFP

Marissa Brown, MHA, BSN, RN| NV Hospital Association

Brian Iriye, MD| Maternal Fetal Medicine Specialist, SMFM

Sandra Koch, MD| Obstetrician-Gynecologist, ACOG

Noah Kohn, MD| Pediatrician

Natalie Nicholson, DNP, MBA, RN, CENP| AWHONN, NPWH

Jennifer Vanderlaan, PhD, MPH, CNM, FNP| ACNM, UNLV

23

AIM OVERVIEW

EMILY GREENWOOD

PROGRAM MANAGER, AIM

24


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HRSA
Maternal & Child Health
ACOG
The American College of Obstetricians and Gynecologists

25

AIM's Primary Objective

Reduce preventable maternal deaths and severe maternal morbidity (SMM) in the United States.

By:

- Promoting safe care for every U.S. birth
- Engaging multidisciplinary partners at the national, state and hospital levels
- Developing and providing tools for implementation of evidence-based patient safety bundles
- Utilizing data-driven quality improvement strategies
- Aligning existing efforts and disseminating evidence-based resources

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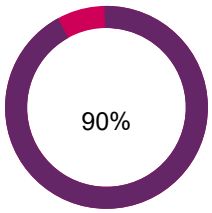
26

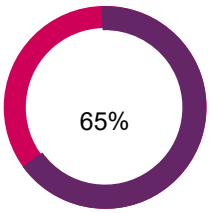

AIM Partners
AMERICAN ACADEMY OF FAMILY PHYSICIANS
STRONG MEDICINE FOR AMERICA
AMERICAN COLLEGE of NURSE-MIDWIVES
ACOG
The American College of Obstetricians and Gynecologists
American Hospital Association
ASHRM
AMERICAN SOCIETY FOR HEALTHCARE RISK MANAGEMENT
ASAM American Society of Addiction Medicine
AMCHP
astho
AWHONN
BMMA
BLACK MAMAS MATTER ALLIANCE
citymatch
EMERGENCY NURSES ASSOCIATION
EVERY MOTHER COUNTS
Genetic Alliance
Institute for Healthcare Improvement
MARCH OF DIMES
NBEC
NATIONAL BIRTH EQUITY COLLABORATIVE
NATIONAL HEALTHY START ASSOCIATION
National WIC Association
Nurse-Family Partnership
NICHQ
National Institute for Children's Health Quality
NPIC
National Perinatal Information Center
NPWH
NURSE PRACTITIONERS IN WOMEN'S HEALTH
PREECLAMPSIA foundation
Preconception Health+Health Care Initiative
PREMIER
Society for Maternal-Fetal Medicine
SOAP
Society for Obstetric Anesthesia and Perinatology

27

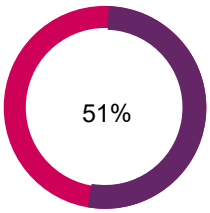
AIM By the Numbers



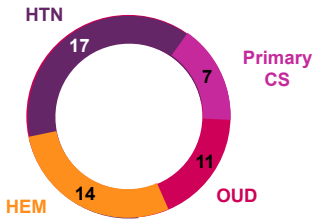
% U.S. States Engaged in AIM



% U.S. States Enrolled in AIM



% U.S. States Implementing a Bundle with AIM



AIM Bundle Implementation

***Multiple states are implementing more than one*

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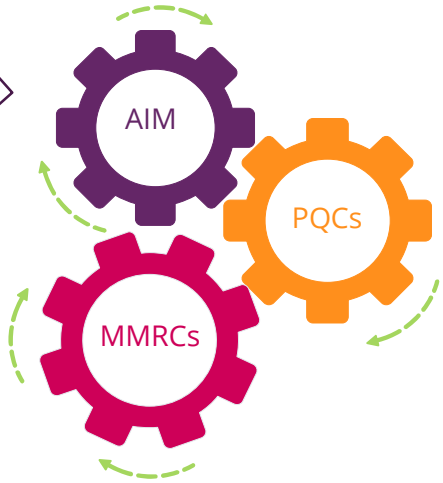
N=51 (50 states and Washington, DC)

28

Critical Collaborations

Alliance for Innovation on Maternal Health moves established guidelines into practice with a standard approach to improve safety in care

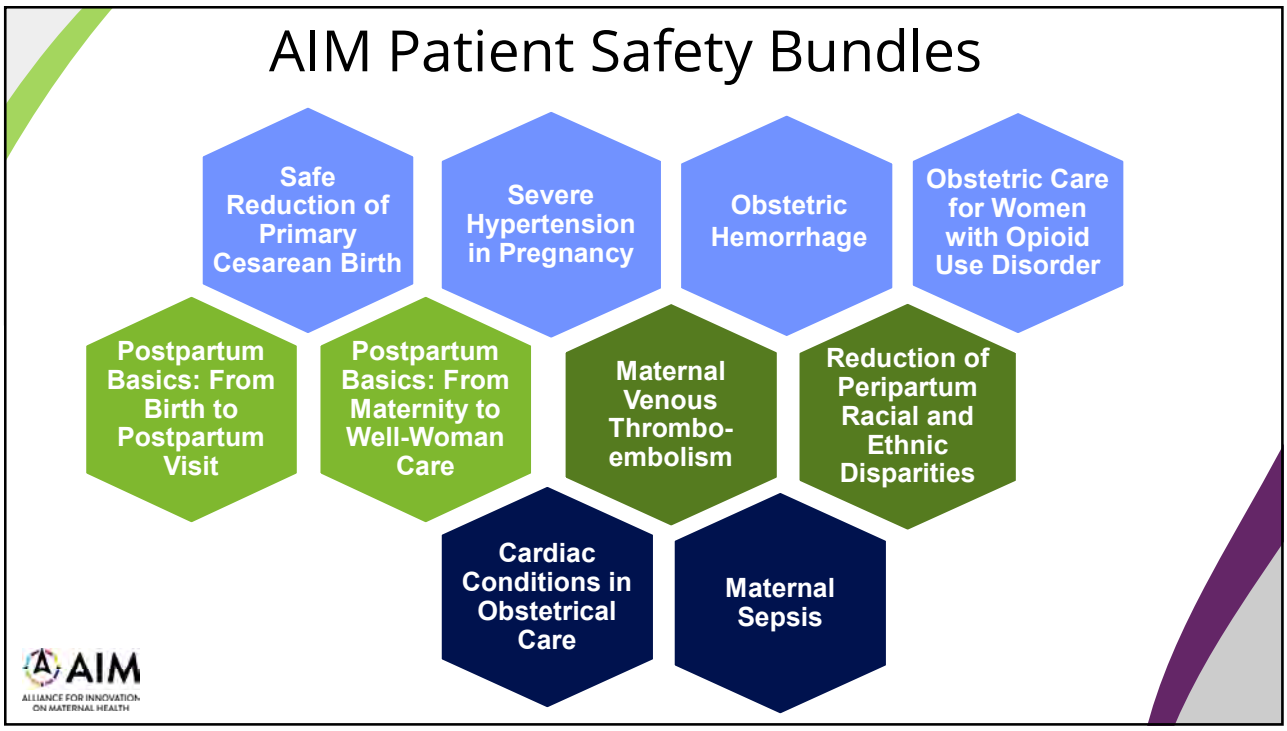


Perinatal Quality Collaboratives mobilize state or multi-state networks to implement clinical quality improvement efforts and improve care for mothers and babies

Maternal Mortality Review Committees conduct detailed reviews for complete and comprehensive data on maternal deaths to prioritize statewide prevention efforts

Created from a Centers for Disease Control, Division of Reproductive Health source

29


AIM Patient Safety Bundles
Safe Reduction of Primary Cesarean Birth
Severe Hypertension in Pregnancy
Obstetric Hemorrhage
Obstetric Care for Women with Opioid Use Disorder
Postpartum Basics: From Birth to Postpartum Visit
Postpartum Basics: From Maternity to Well-Woman Care
Maternal Venous Thrombo-embolism
Reduction of Peripartum Racial and Ethnic Disparities
Cardiac Conditions in Obstetrical Care
Maternal Sepsis
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30

Why an AIM Data Center?

- Supports data-driven quality improvement
- Benchmark metrics against “like” hospitals and stratifies outcomes by patient demographics
- Allows for comparison across state collaboratives
- Tracks bundle implementation and SMM rates overtime

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31

What is in the AIM Data Portal?

Outcome Measures

- Calculated and submitted on behalf of hospitals by collaborative administrators
- Data primarily sourced from hospital discharge and birth certificate data

Structure and Process Measures

- Data collected by participating facilities and submitted by hospital administrators
- Based on AIM Data Collection Plan

Data from other AIM state teams

- Provides collaborative-wide data for all metrics provided by all states
- Allowing for improved benchmarking

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32

Thank you!

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This program is supported by a cooperative agreement with the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under grant number UC4MC28042, Alliance for Innovation on Maternal Health. This information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS or the U.S. Government.

33

IMPROVING MATERNITY OUTCOMES AT SCALE: PERINATAL QUALITY COLLABORATIVES AND HYPERTENSIVE DISORDERS OF PREGNANCY

ELLIOTT MAIN, MD

CLINICAL PROFESSOR, OBSTETRICS AND GYNECOLOGY – MATERNAL FETAL MEDICINE, STANFORD UNIVERSITY

MEDICAL DIRECTOR, CALIFORNIA MATERNAL QUALITY CARE COLLABORATIVE

34

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CMQCC
California Maternal Quality Care Collaborative

Improving Maternity Outcomes at Scale: Perinatal Quality Collaboratives and Hypertensive Disorders of Pregnancy

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

35

AIM CMQCC

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
- Understand the background for the AIM HTN Bundle elements

Disclosures

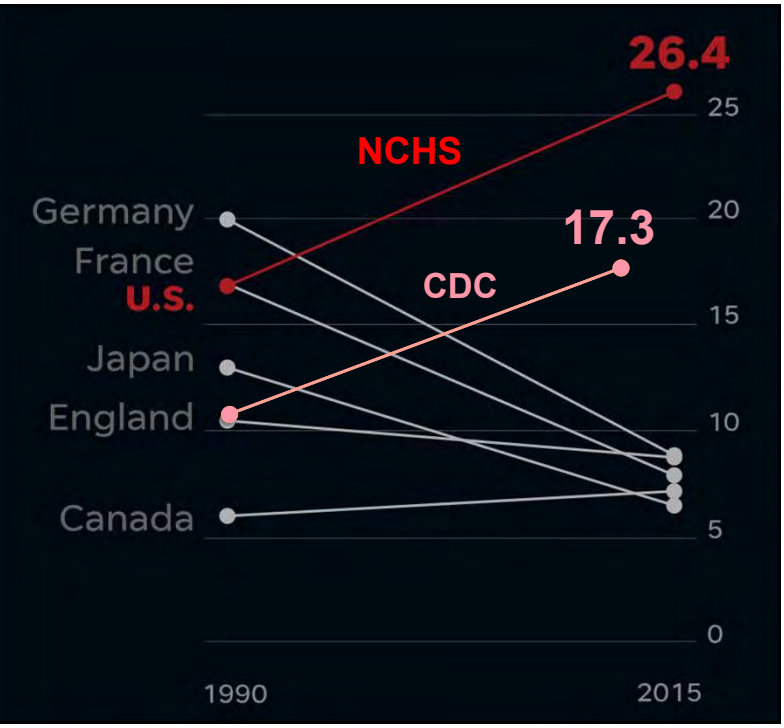
- Dr. Main has no conflicts or disclosures to report

36

36

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

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



37

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The Last Person You'd Expect to Die in Childbirth

ProPublica, May 16, 2017

Like 33

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)

38

38

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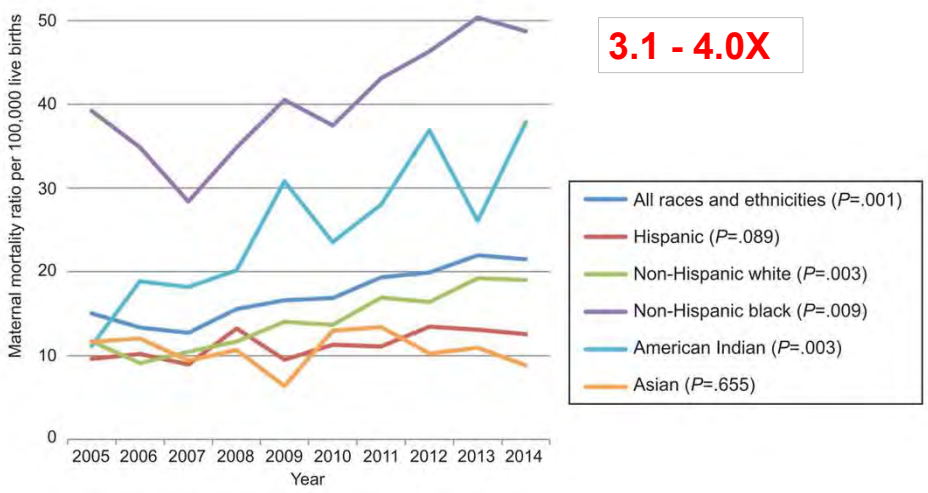
Trends in US Maternal Mortality by Race



3.1 - 4.0X

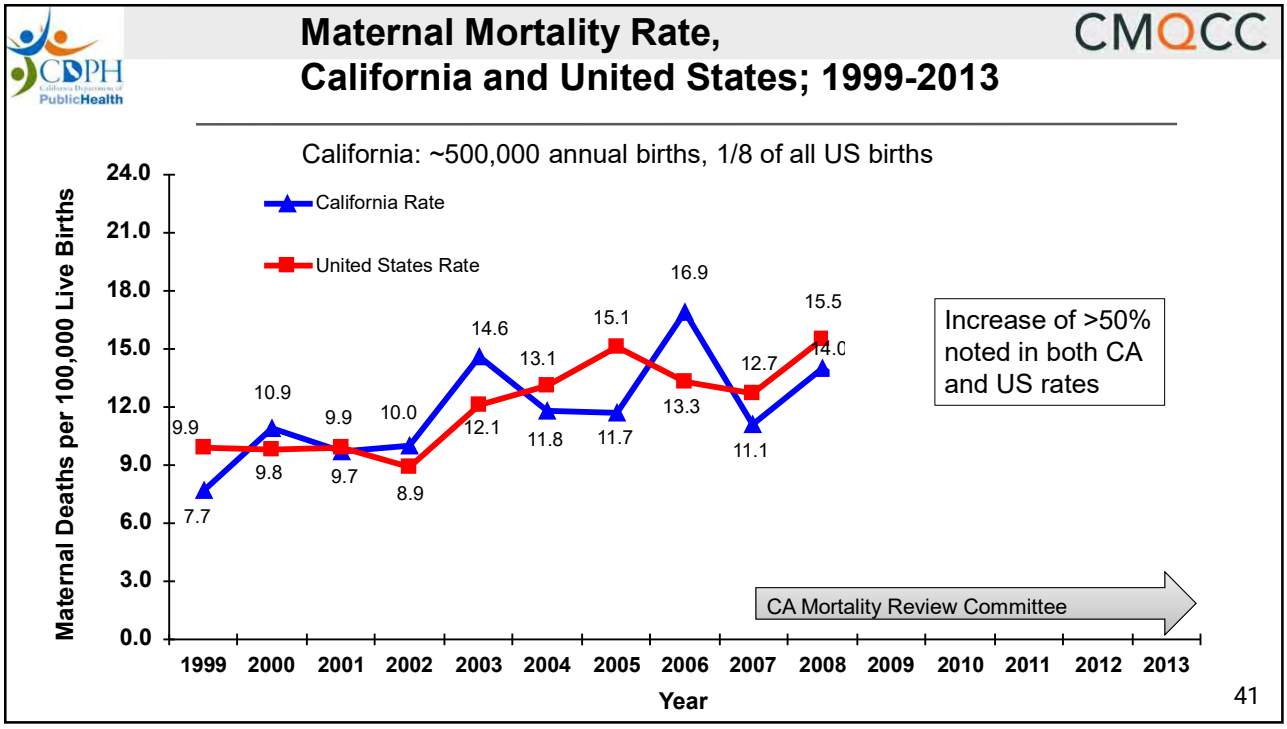
Moaddab A, etal. Health Care Disparity and Pregnancy-Related Mortality in the United States, 2005-2014. Obstet Gynecol. 2018 04;131(4):707-712.

39

39


USA TODAY
MORE IN THIS SERIES
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

40


Maternal Mortality Rate,
California and United States; 1999-2013
CMQCC
California: ~500,000 annual births, 1/8 of all US births
California Rate
United States Rate
Maternal Deaths per 100,000 Live Births
24.0
21.0
18.0
15.0
12.0
9.0
6.0
3.0
0.0
9.9
7.7
10.9
9.8
9.9
9.7
10.0
8.9
14.6
12.1
13.1
11.8
15.1
11.7
16.9
13.3
12.7
11.1
15.5
14.0
Increase of >50% noted in both CA and US rates
CA Mortality Review Committee
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
Year
41

41

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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%

42

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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.

AIM CMQCC

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  - Incomplete or i

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.

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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%

45

45

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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"

46

46

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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:

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47

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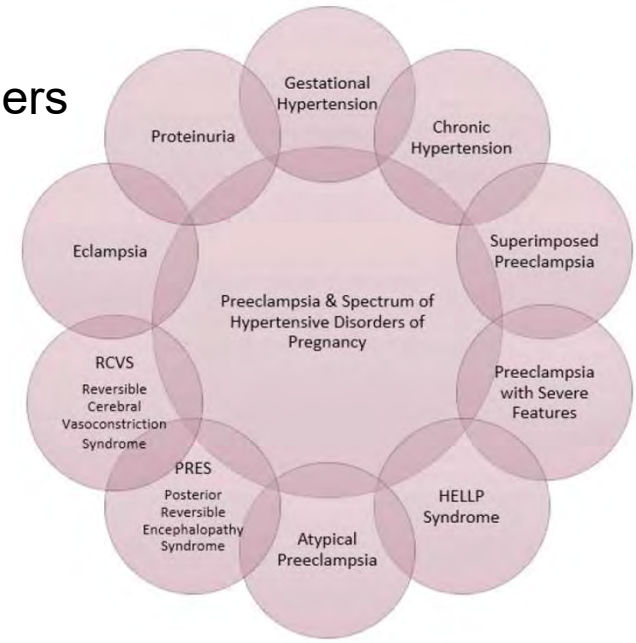
Spectrum of Hypertensive Disorders in Pregnancy



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USA TODAY
MORE IN THIS SERIES
Hospitals know how to protect mothers. They just aren't doing it.
Alison Young, USA TODAY
1:54 p.m. PDT July 27, 2018

49

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Maternal Safety Bundles

What are they?

- "Checklist" of i[illegible]

resource links) at:
safehealthcareforeverywoman.org

50

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"Toolkits" Provide Background Detail and Implementation Guidance for the Safety Bundles


CMQCC CALIFORNIA MATERNAL QUALITY CARE COLLABORATIVE
PublicHealth
CMQCC PREECLAMPSIA TOOLKIT
PREECLAMPSIA CARE GUIDELINES
CDPH-MCAH Approved: 12/20/13

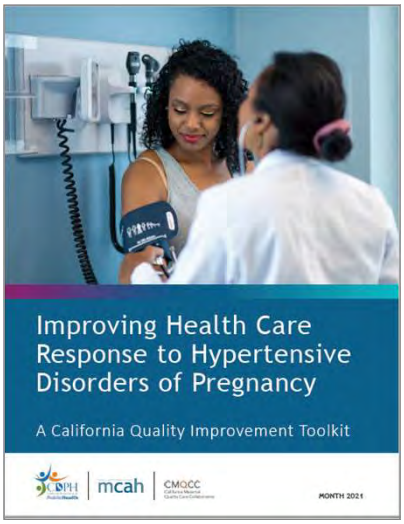
Improving Health Care Response to Preeclampsia: A California Quality Improvement Toolkit

Maurice L. Druzin [a] MD, Laurence E. Shields [b] MD, Nancy L. Peterson [a,c] RNC, PNNP, MSN, Valerie Cape [a,c] (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: summer 2021 release



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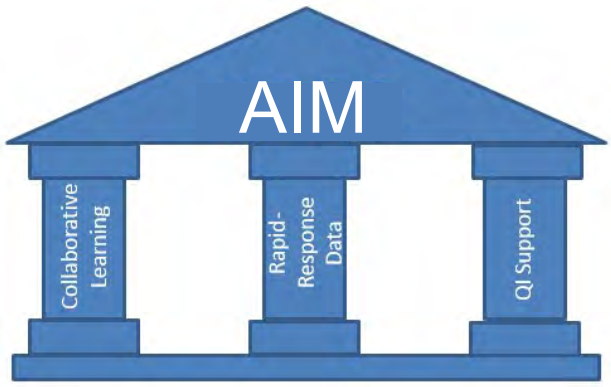
How does a state Perinatal Quality Collaborative (PQC) Improve Care and Outcomes?

- 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

52

52

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What is the Cause of Death for Women with Preeclampsia?

53

53

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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%	

54

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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)	**96%!**
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)	**13%!**
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.

55

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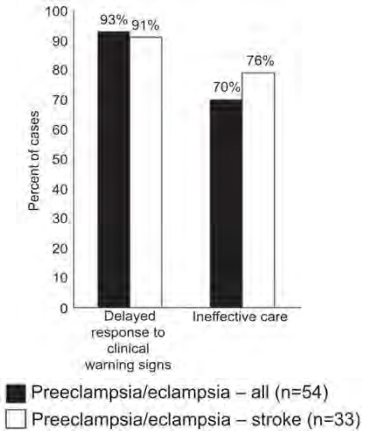
June 2019

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



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"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.

57

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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

58

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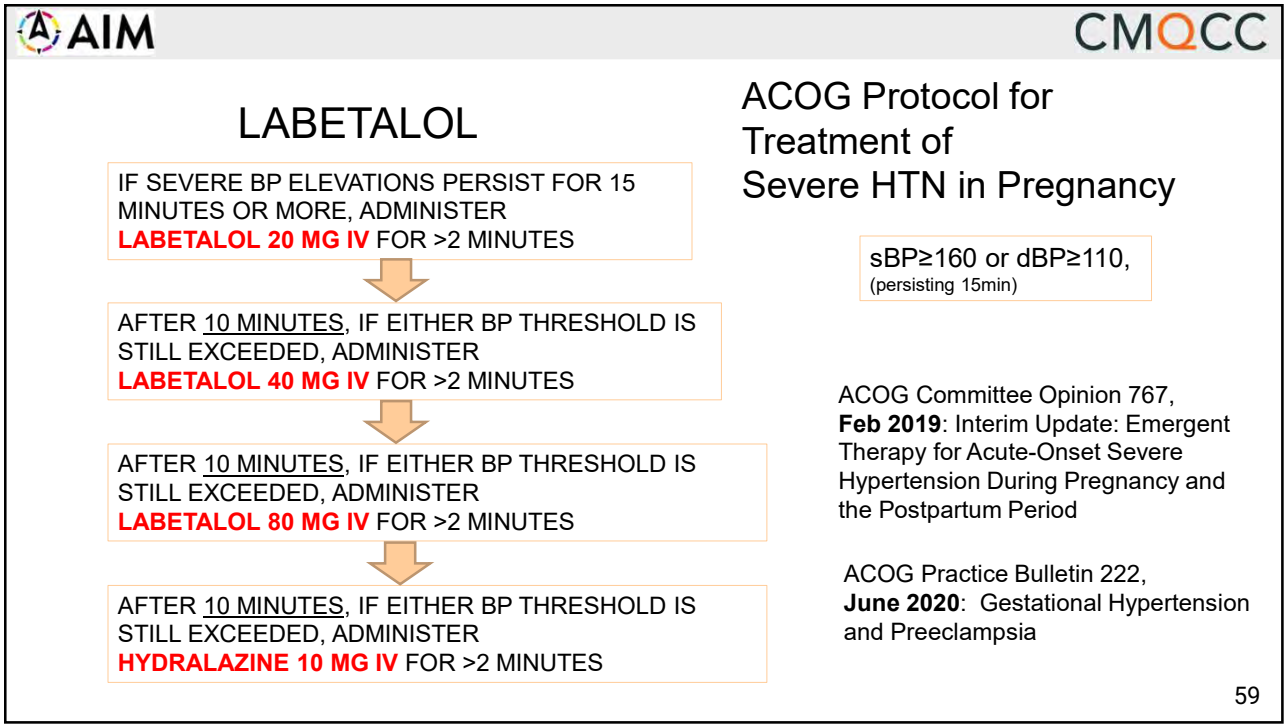
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LABETALOL
IF SEVERE BP ELEVATIONS PERSIST FOR 15 MINUTES OR MORE, ADMINISTER
LABETALOL 20 MG IV FOR >2 MINUTES
AFTER 10 MINUTES, IF EITHER BP THRESHOLD IS STILL EXCEEDED, ADMINISTER
LABETALOL 40 MG IV FOR >2 MINUTES
AFTER 10 MINUTES, IF EITHER BP THRESHOLD 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
ACOG Practice Bulletin 222, June 2020: Gestational Hypertension and Preeclampsia
59

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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

Why was the severe BP not treated ?

60

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Kantorowska etal (NYU)

AJOG 2020 223:250

52% Delayed RX (>60min)

RR for Delayed Treatment:

- 3.2x Initial BP not in severe range
- 2.7x W/o preeclamptic symptoms
- 2.7x 10pm—6am
- 2.2x Labor symptoms
- 1.8x White race

Term >> Preterm

Deshmukh etal (Yale)

AJOG 2021 in press

73% Delayed (>60min) or no RX

More likely if… (aOR)

- 1.85x Black
- 1.77x Hispanic
- 6.65x Preterm

Less likely if… (aOR)

- 0.79x 7pm—6am
- 0.66x Postpartum

61

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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.

62

62

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Need to change the collective mindset
from reluctance to treat severe HTN
to embracing treatment for everyone

63

63

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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.

64

64

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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.

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.

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

65

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"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.

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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 (ACOG, USPSTF)
  - Should be initiated between 12-28 weeks gestation (optimally before 16 weeks)
  - Should be continued daily until delivery
- Controversies remain:
  - Dosage? Who to treat? How to message?

Used with permission from the Preeclampsia Foundation

67

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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

Joint Commission Requirement

New Standards for Perinatal Safety

• 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…

68

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

69

69

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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%	$P < .01$

70

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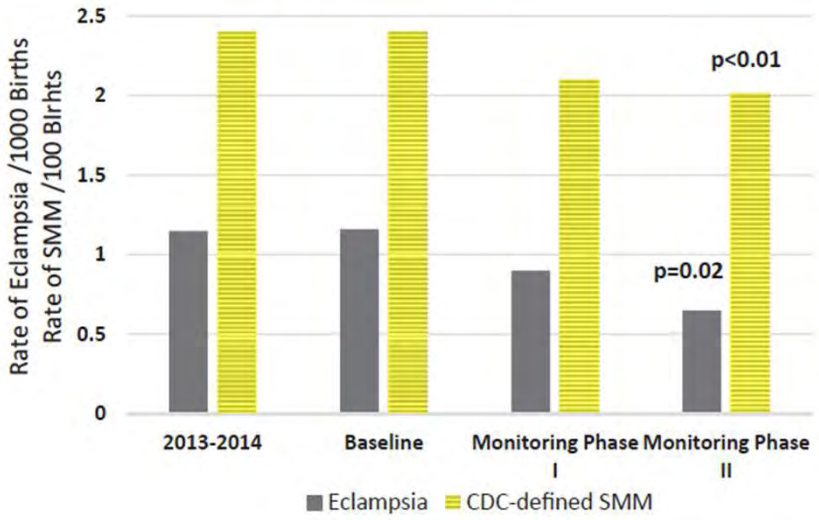
FIGURE
Rate of eclampsia and severe maternal morbidity **Among ALL gravidas**



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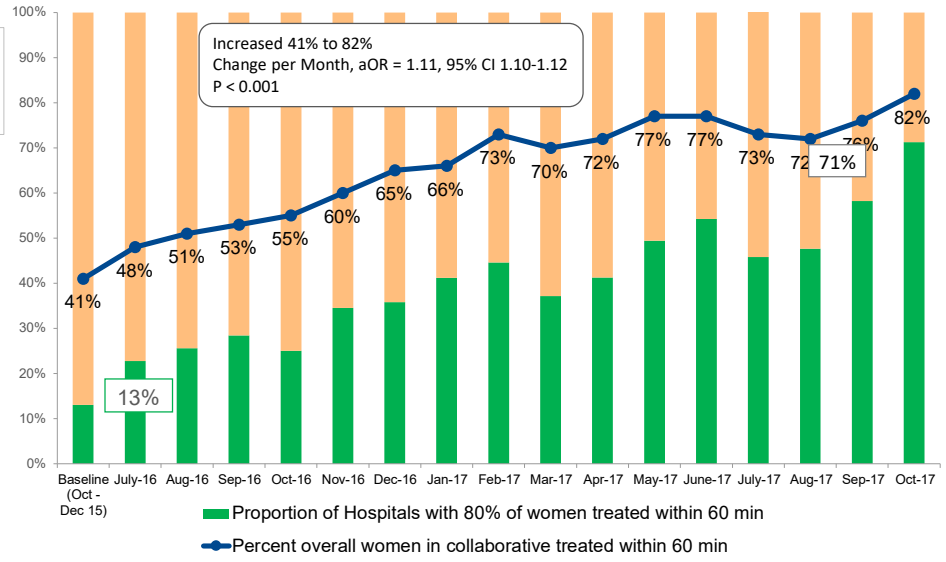
Severe Maternal Hypertension Treated Within 60 Minutes

Goal: 80% of women treated <60 min



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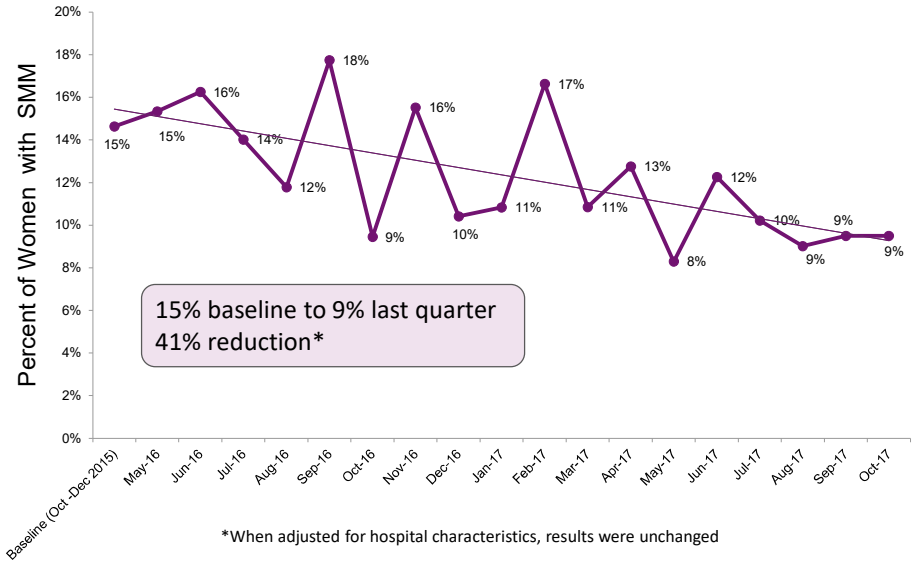
Severe Maternal Hypertension with Severe Maternal Morbidity Reported



*When adjusted for hospital characteristics, results were unchanged

73

73

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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)

74

74

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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.

75

75

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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

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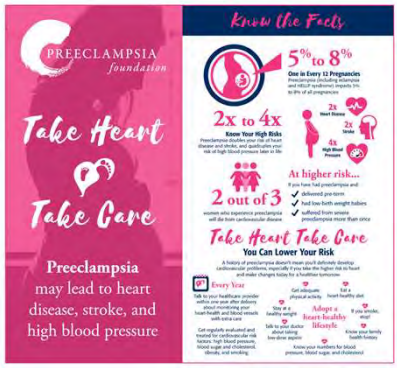
Patient Education Materials

www.preeclampsia.org



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Used with permission from the Preeclampsia Foundation

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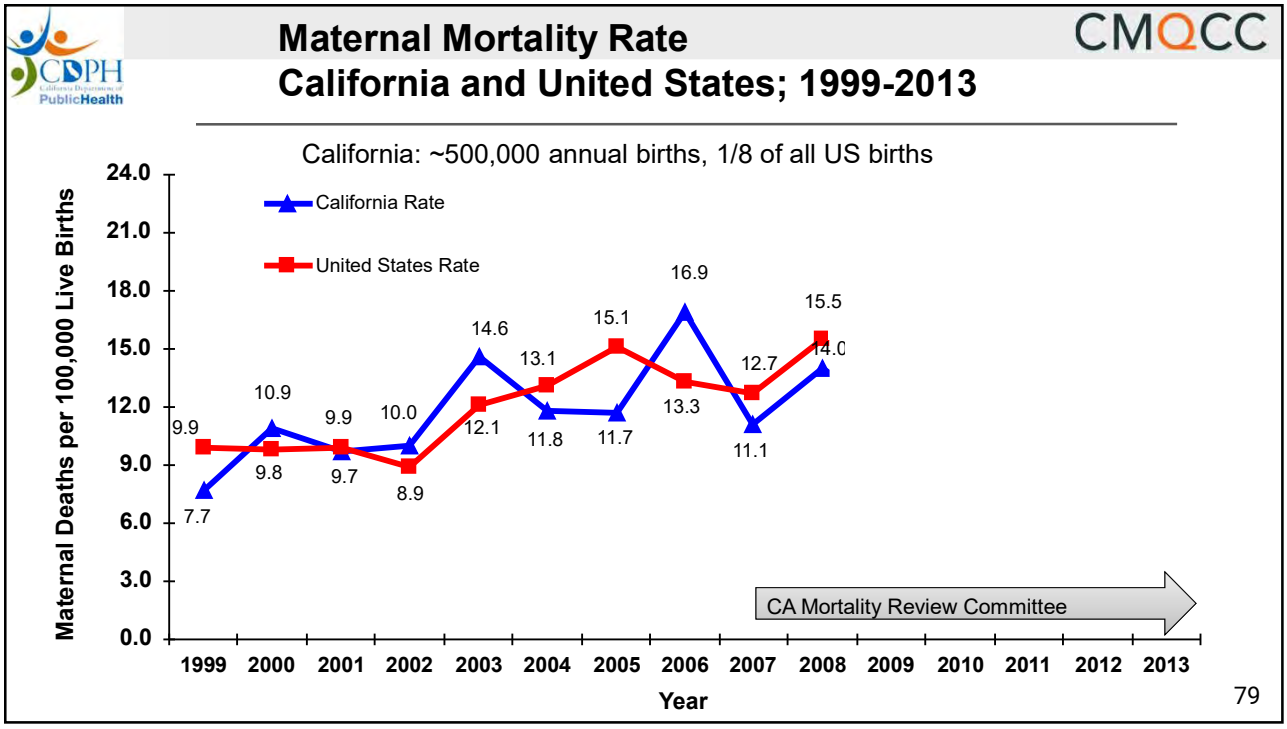
Maternal Mortality Rate
California and United States; 1999-2013
CMQCC
California: ~500,000 annual births, 1/8 of all US births
California Rate
United States Rate
Maternal Deaths per 100,000 Live Births
24.0
21.0
18.0
15.0
12.0
9.0
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CA Mortality Review Committee
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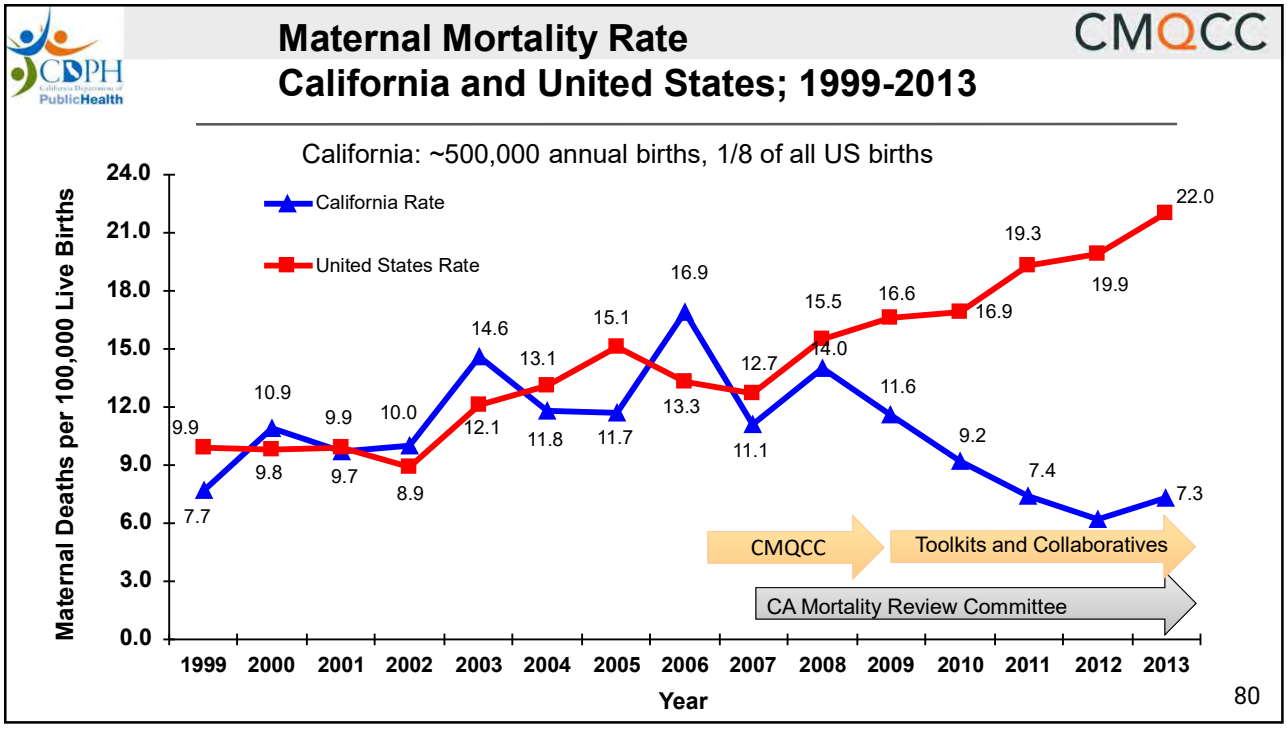
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Year
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7.7 10.9 9.9 10.0 14.6 11.8 11.7 16.9 11.1 15.5 11.6 9.2 7.4 7.3
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Toolkits and Collaboratives
CA Mortality Review Committee
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80

Change at Scale Require Multiple Strategies

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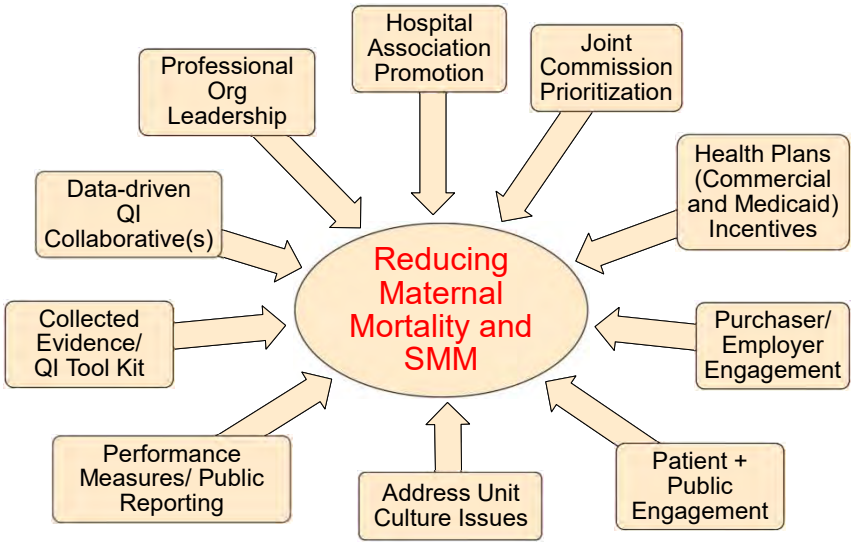

Pull As Many Levers as Possible: Collective Impact

81

81

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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, Pharmacy co-leads
- Celebrate!
  - "We cared for a patient with a Severe HTN today and the team did great!"
- Case reviews--share among the team

82

82

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Outcome Measures have Challenges

- Maternal Mortality: very rare (1 per 10,000), many different causes, half not related to delivery, often delayed in reporting
- Severe Maternal Morbidity: >50% are "transfusion alone"
  - Transfusion is variable coded—HRSA/ AHRQ/ CDC will be jointly promoting SMM w/o transfusion as the key measure (and annually releasing rates for every state)
  - We have analyzed CA data for the underlying causes of SMM and have found that Hypertensive disorders account for about 35% of SMM w/o transfusion
  - Hospital level SMM is driven by case-mix, but a recent risk-adjustment algorithm* does allow for accurate hospital comparisons
  - Additional choices: SMM among women with HTN; B-W disparity for SMM

*Leonard SA, Kennedy CJ, Carmichael SL, Lyell DJ, Main EK. An Expanded Obstetric Comorbidity Scoring System for Predicting Severe Maternal Morbidity. Obstet Gynecol 2020 Sep;136(3):440-449.

83

83

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Maternal Mortality by Race/Ethnicity

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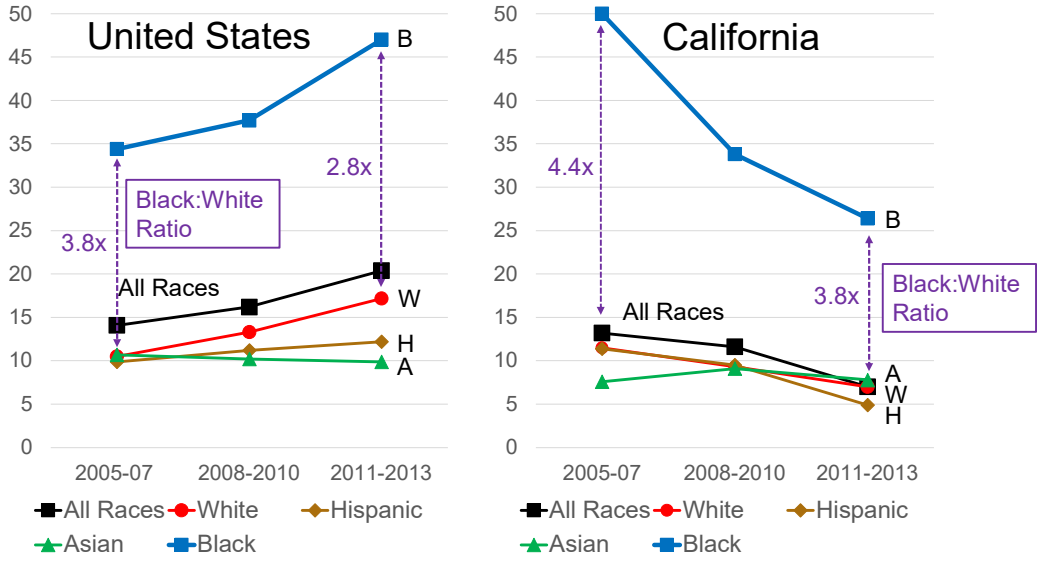
How did we do in California?



84

84

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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

85

85

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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…

86

86

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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…

87

87

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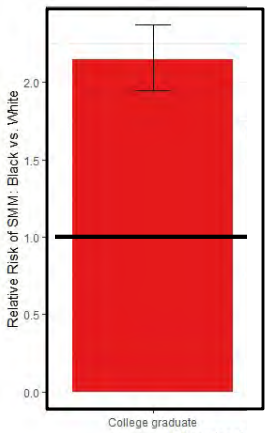
What If We Looked At B:W Disparity In SMM Only Among College Graduates?

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**)



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88

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

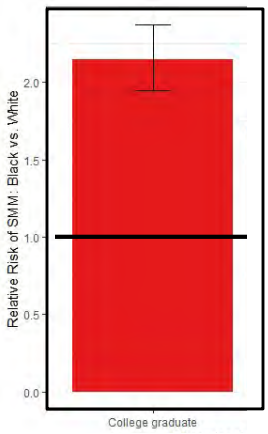
And adjusted for age, BMI and other clinical and demographic risk factors…

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

89

89

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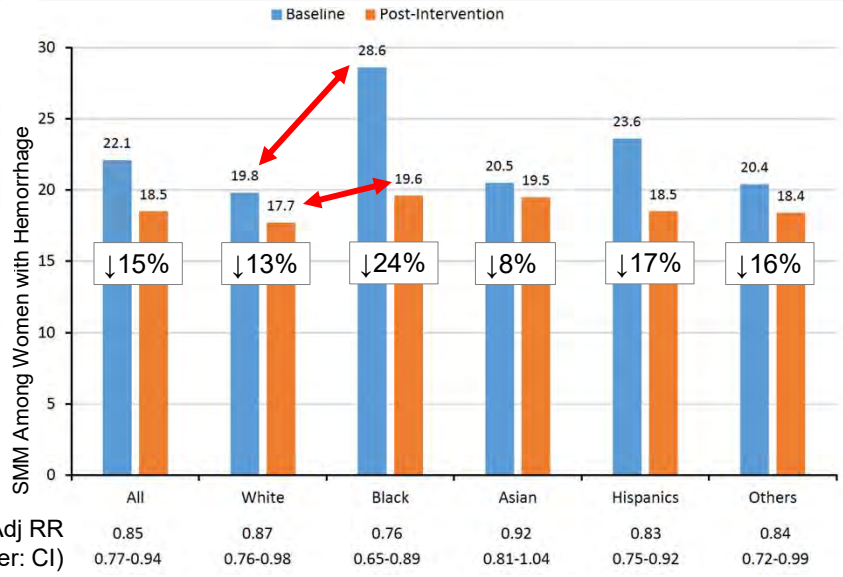
CMQCC Hemorrhage Safety Collaborative: Effects on Severe Maternal Morbidity

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

90

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The ALLY Model

A: Avoid Assumptions

L: Learn about the whole patient by asking open ended questions

L: Listen more than you talk

Y: Yield to the patient by involving them in their care

https://guidetoallyship.com

91

91

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The New York Times

By Erica Chidi and Erica P. Cahill, M.D.
Oct. 22, 2020

Protecting Your Birth: A Guide For Black Mothers

How racism can impact your pre- and postnatal care — and advice for speaking to your Ob-Gyn about it.

For Pregnant Black Women--
For Care Providers--

92

92

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Advancing Equity / Reducing Inequities

- Combine clinical 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
- Actions to promote unit culture change
  - Addressing microaggressions, Allyship, Respectful care principles
- Personal feedback, particularly from higher risk groups
  - Formal PREM surveys, open comments, support persons

93

93

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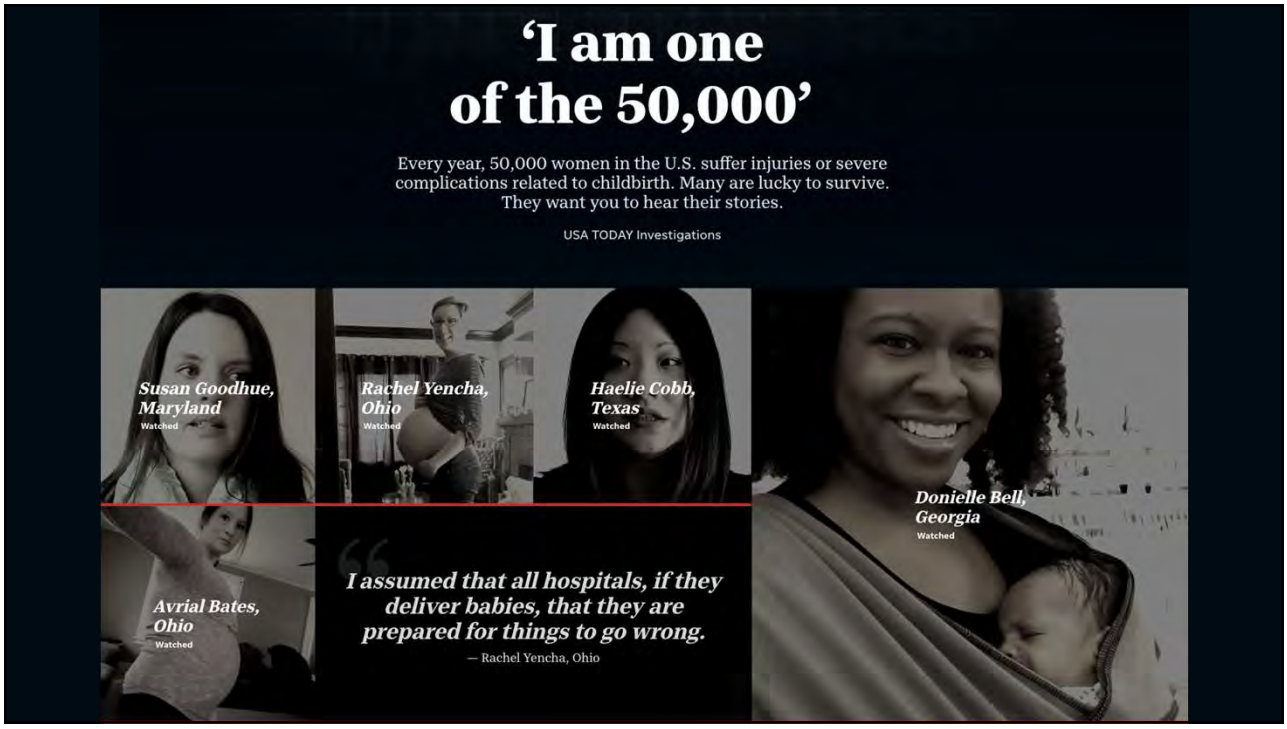
Final Thoughts

- 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

94

94


‘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
Susan Goodhue, Maryland
Watched
Rachel Yencha, Ohio
Watched
Haelie Cobb, Texas
Watched
Donielle Bell, Georgia
Watched
Avrial Bates, Ohio
Watched
I assumed that all hospitals, if they deliver babies, that they are prepared for things to go wrong.
— Rachel Yencha, Ohio

95

AIM CMQCC

Thanks to the CMQCC Staff

Visit:
CMQCC.org

96

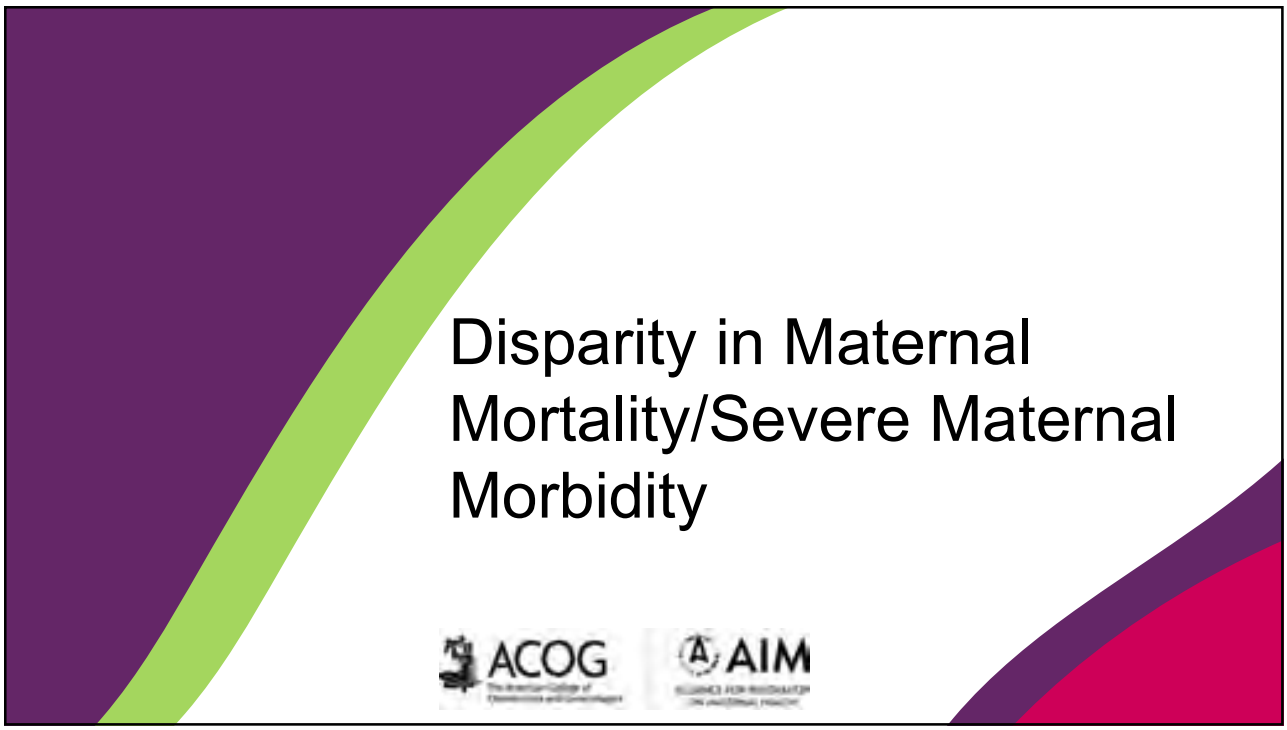
96

DISPARITY IN MATERNAL MORTALITY/SEVERE MATERNAL MORBIDITY

GARSY PRESUMEY-LEBLANC, MS

RESPECTFUL CARE PROJECT COORDINATOR, AIM

97


Disparity in Maternal Mortality/Severe Maternal Morbidity
ACOG
AIM

98

Maternal Mortality

- According the World Health Organization, maternal mortality or maternal death can be defined as “the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes”

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Severe Maternal Morbidity

- According to the Center for Disease Control, severe maternal morbidity (SMM) includes unexpected outcomes of labor and delivery that result in significant short- or long-term consequences to a woman's health

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Disparities

- Pregnant women in the United States are **more than twice as likely** to die from complications related to pregnancy or childbirth than those in most other high-income countries in the world
- Women in majority Black communities have a **63% higher rate** of SMM than women in majority white communities
- Women in majority Hispanic communities have a **32% higher rate** of SMM than women in majority white communities
- Black and Hispanic women have **a substantially higher prevalence** than white women of the most common risk factors that put women at risk of SMM
- Disparities in pregnancy-related deaths for Black and American Indian and Alaska Native (AIAN) women **increase by maternal age and persist across education levels**

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Factors Driving Disparities in Maternal Health

- The factors driving disparities in maternal and infant health are complex and multifactorial
  - Health insurance coverage
  - Access to care
  - Social and economic factors
  - Structural and systemic racism and discrimination

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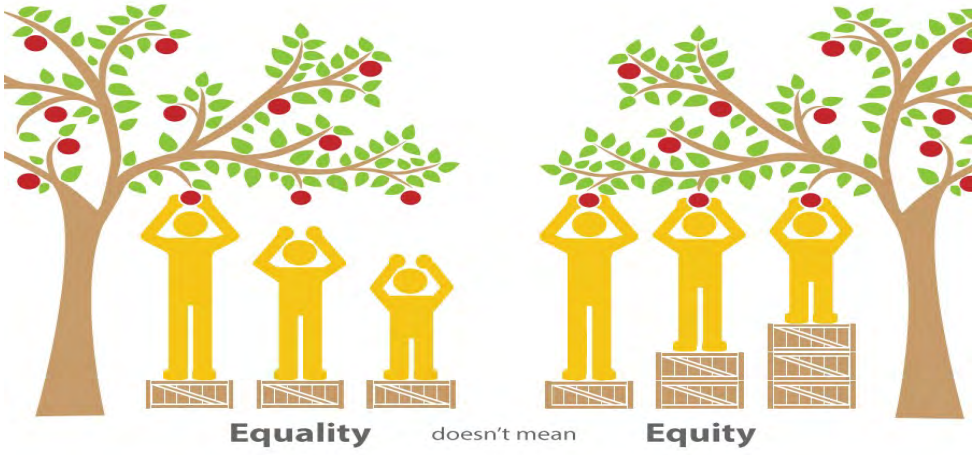
AIM Equity Work



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103

Respectful Care

- At AIM, respectful care seeks to **acknowledge the entire reproductive lifespan and understand and address all aspects of medical history** that includes outcomes like mortality, morbidity and historical travesties that include, but are not limited coerced contraception, forced sterilization, and medical experimentation

104

Respectful Care Goals

- At AIM, the goal is to build a culture of –
  - Equity
  - Teamwork
  - Open communication
- To ensure an equitable dynamic of power in healing and whole person, patient-centered, trauma-informed care **for every patient, in every clinical encounter**.

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AIM Patient Safety Bundles

- A bundle is **a structured way of improving the processes of care and patient outcomes:**
  - Small
  - Straightforward
  - Evidence-based
- The power of a bundle comes from the body of science behind it and the method of execution: with **complete consistency**.
  - Performed uniformly
- **A bundle ties the changes together into a package of interventions that people know must be followed for every patient, every single time.**

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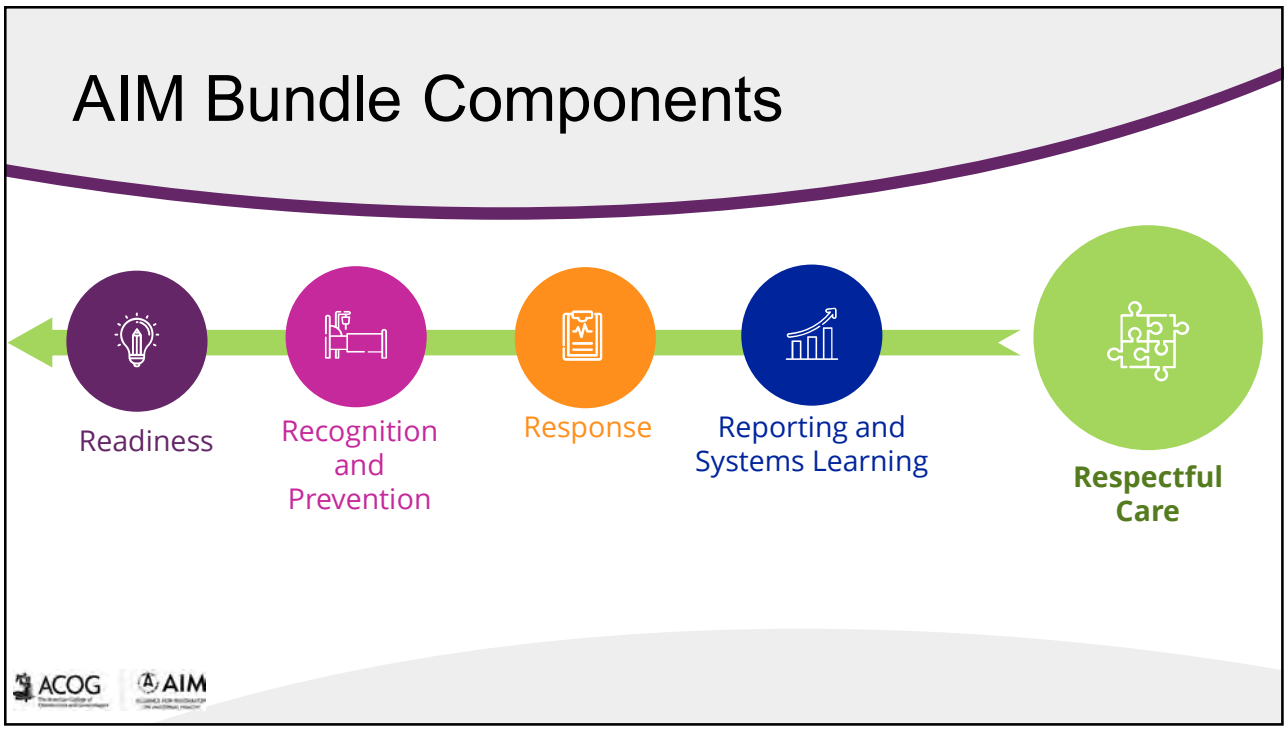
AIM Bundle Components
Readiness
Recognition and Prevention
Response
Reporting and Systems Learning
Respectful Care
ACOG
AIM

107

DATA OVERVIEW AND REDCAP DATA COLLECTION SYSTEM

KAGAN GRIFFIN, MPH, RD

MATERNAL CHILD AND ADOLESCENT HEALTH EPIDEMIOLOGIST

DIVISION OF PUBLIC AND BEHAVIORAL HEALTH

108

Steve Sisolak
Governor

Richard Whitley
Director

State of Nevada

Department of Health and Human Services

Alliance for Innovation on Maternal Health (AIM) Data Overview

Kagan Griffin, MPH, RD
MCH Epidemiologist

7/7/2021

Helping people. It's who we are and what we do.

109

Agenda

- Data Overview of Nevada Maternal Mortality and Severe Maternal Morbidity
- AIM Data Requirements
- AIM Data Submission Process

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DHHS

110

110

Maternal Mortality and Severe Maternal Morbidity

Maternal Mortality and Severe Maternal Morbidity
Nevada, 2020
March 2021

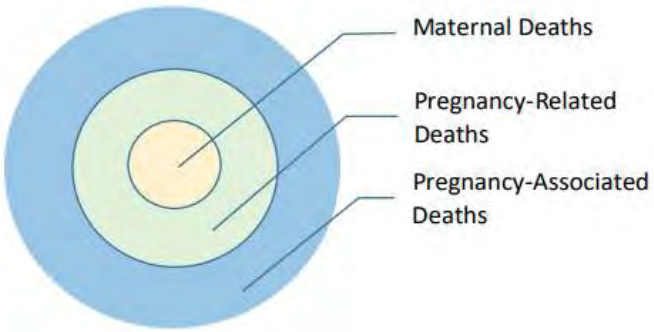
Office of Analytics
Department of Health and Human Services

https://dhhs.nv.gov/uploadedFiles/dhhsnvgov/content/Programs/Office_of_Analytics/Maternal%20Mortality%20and%20Severe%20Maternal%20Morbidity%20Report%202020.pdf

111

111

Maternal Mortality

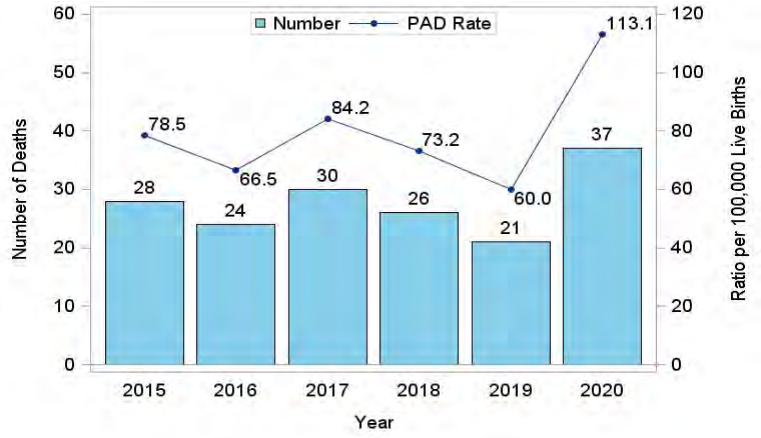


112

112

Maternal Mortality: Pregnancy-Associated Deaths (PAD)

PAD Ratio per 100,000 Live Births and Number of Deaths, Nevada, 2015-2020

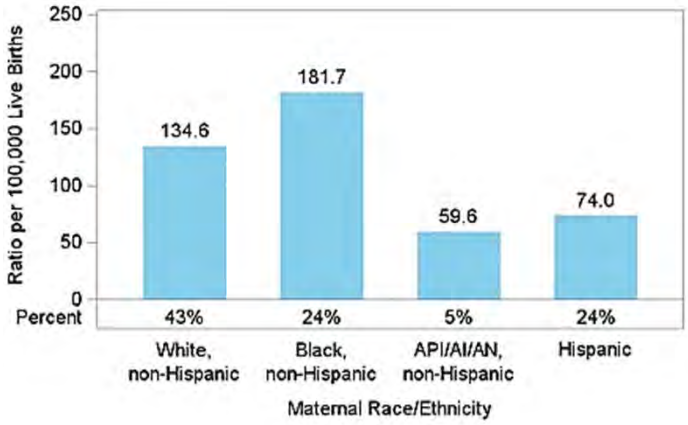


Data Source: Office of Analytics Report: *Maternal Mortality and Severe Maternal Morbidity Nevada, 2020*

113

Maternal Mortality: PAD

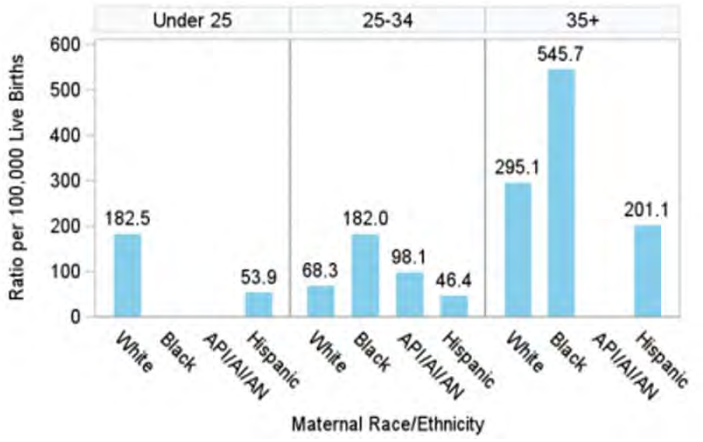
PAD Ratio and Percent by Race/Ethnicity, Nevada, 2020



Data Source: Office of Analytics Report: *Maternal Mortality and Severe Maternal Morbidity Nevada, 2020*

Maternal Mortality: PAD

PAD Ratio and Percent by Maternal Age and Race/Ethnicity, Nevada, 2020



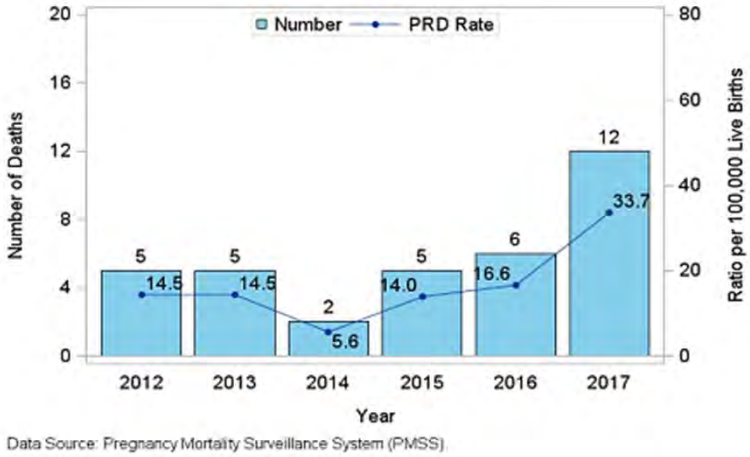
Data Source: Office of Analytics Report: *Maternal Mortality and Severe Maternal Morbidity Nevada, 2020*

115

115

Maternal Mortality: Pregnancy-Related Deaths (PRD)

PRD Ratio per 100,000 Live Births and Number of Deaths, Nevada, 2012-2017



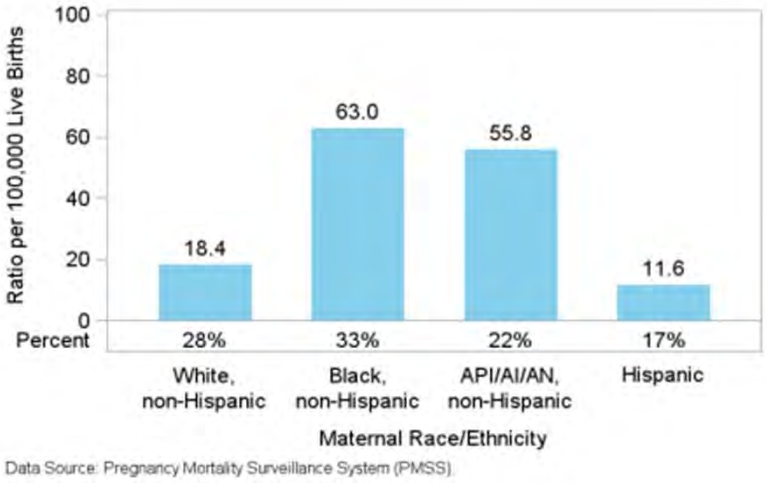
Data Source: Pregnancy Mortality Surveillance System (PMSS)

116

116

Maternal Mortality: PRD

PRD Ratio and Percent by Race/Ethnicity Nevada, 2016-2017



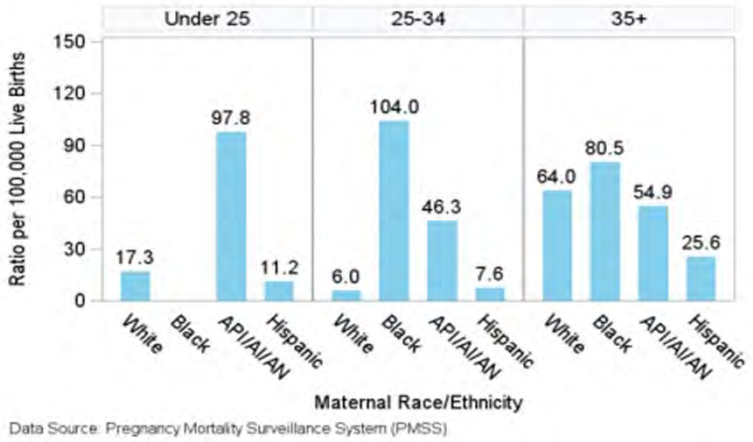
Data Source: Pregnancy Mortality Surveillance System (PMSS)

117

117

Maternal Mortality: PRD

PRD Ratio by Maternal Age and Race/Ethnicity, Nevada, 2016-2017

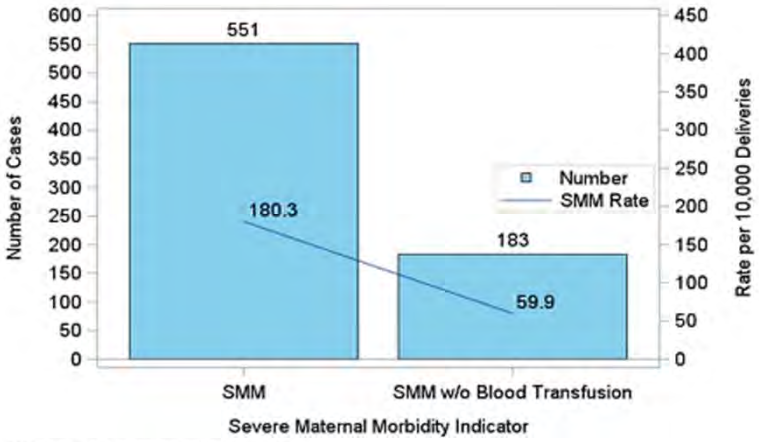


Data Source: Pregnancy Mortality Surveillance System (PMSS)

118

Severe Maternal Morbidity (SMM)

SMM Rate per 10,000 Deliveries and Number of Cases, Nevada, 2020



2020 data are preliminary and subject to changes.

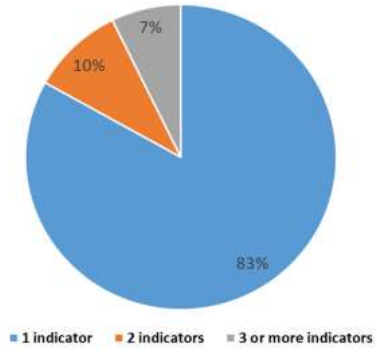
Data Source: Office of Analytics Report: *Maternal Mortality and Severe Maternal Morbidity Nevada, 2020*

119

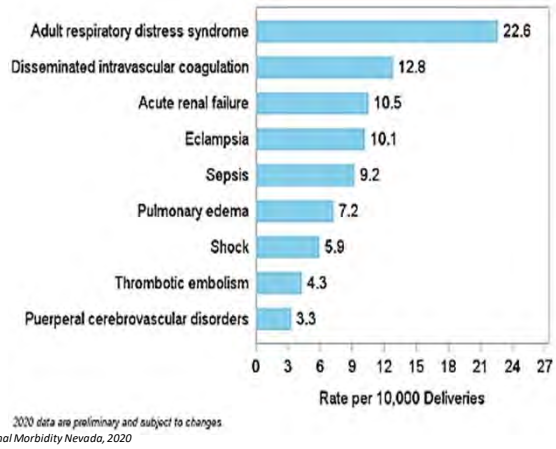
119

Severe Maternal Morbidity

Distribution of SMM Indicators, Nevada, 2020



Leading Diagnosis-Based Indicators of SMM, Nevada, 2020



2020 data are preliminary and subject to changes

Data Source: Office of Analytics Report: *Maternal Mortality and Severe Maternal Morbidity Nevada, 2020*

120

120

Severe Maternal Morbidity

SMM by Maternal Demographics, Nevada, 2020

Demographic	SMM Cases	Rate per 10,000 Deliveries	Total Deliveries	Percent of Total Deliveries	Percent of SMM Cases
Maternal Age					
<=19	25	174.8	1,430	4.7%	4.5%
20-24	92	153.4	5,999	19.6%	16.7%
25-29	150	166.4	9,017	29.5%	27.2%
30-34	148	174.8	8,467	27.7%	26.9%
35-39	104	229.2	4,538	14.9%	18.9%
>=40	32	289.3	1,106	3.6%	5.8%
Unknown	0	0.0	0	0.0%	0.0%
Race/Ethnicity					
White non-Hispanic	160	148.1	10,801	35.3%	29.0%
Black non-Hispanic	129	276.4	4,667	15.3%	23.4%
AI/AN non-Hispanic	5	211.9	236	0.8%	0.9%
API non-Hispanic	55	186.8	2,945	9.6%	10.0%
Hispanic	195	168.4	11,581	37.9%	35.4%
Other	0	0.0	67	0.2%	0.0%
Unknown	7	269.2	260	0.9%	1.3%

Data Source: Office of Analytics Report: *Maternal Mortality and Severe Maternal Morbidity Nevada, 2020*

121

121

AIM Data Requirements

AIM Data Measures Overview

Data Measure	Data Source	Frequency	Data Coordinating Body
Outcome based on Hospital Discharge Data (HDD) File Key Measure: Severe Maternal Morbidity (SMM)	HDD File (ICD-9/ICD-10)	●Baseline: 2011-Current Year (CY) ●Quarterly	●Office of Analytics, DPBH
Outcome based on Race/Ethnicity Key Measure: Severe Maternal Morbidity (SMM)	●HDD File (ICD-9/ICD-10) ●Vital Records/BC	● Annual	●Office of Analytics, DPBH
Outcome based on Vital Records/Birth Certificate (BC) Key Measure: First birth CS Rate (NTSV)	Vital Records/BC	●Baseline: 2011-Current Year (CY) ●Quarterly	●Office of Analytics, DPBH
Process Measures	Hospital generated data	Quarterly	Hospital
Structure Measures	Hospital generated data	Quarterly | Once per measure	Hospital

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122

122

AIM Data Requirements

Severe Hypertension/Preeclampsia Bundle

Outcome Measures (O)	Description	Frequency
O1: Severe Maternal Morbidity	Denominator: All mothers during their birth admission, excluding ectopics and miscarriages Numerator: Among the denominator, all cases with any SMM code	Quarterly (if available), otherwise annual
O2: Severe Maternal Morbidity (excluding transfusion codes)	Denominator: All mothers during their birth admission, excluding ectopics and miscarriages Numerator: Among the denominator, all cases with any non-transfusion SMM code	Quarterly (if available), otherwise annual
O3: Severe Maternal Morbidity among Preeclampsia Cases	Denominator: All mothers during their birth admission, excluding ectopics and miscarriages, with one of the following diagnosis codes: -Severe Preeclampsia -Eclampsia -Preeclampsia superimposed on pre-existing hypertension Numerator: Among the denominator, cases with any SMM code	Quarterly
O4: Severe Maternal Morbidity (excluding transfusion codes) among Preeclampsia Cases	Denominator: All mothers during their birth admission, excluding ectopics and miscarriages, with one of the following diagnosis codes: ●Severe Preeclampsia ●Eclampsia ●Preeclampsia superimposed on pre-existing hypertension Numerator: Among the denominator, all cases with any non-transfusion SMM code	Quarterly

123

123

AIM Data Requirements

All Process Measures are collected by **hospitals** on a **quarterly basis**

Severe Hypertension/Preeclampsia Bundle

Process Measures (P)	Description	Data Coordinator Options
P1: Unit Drills	- In this quarter, **how many OB drills** (In Situ and/or Sim Lab) were performed on your unit for any maternal safety topic? - In this quarter, **what topics were covered** in the OB drills?	●Perinatal Nurse Manager ●Designated QI Leader
P2: Provider Education	At the end of this reporting period, what **cumulative proportion of delivering physicians and midwives has completed** within the last two years **an education program** on Severe Hypertension/Preeclampsia that includes the unit-standard protocols and measures?	
P3: Nursing Education	At the end of this reporting period, what **cumulative proportion of OB nurses (including L&D and postpartum) has completed** within the last two years **an education program** on Severe Hypertension/Preeclampsia that includes the unit-standard protocols and measures?	
P4: Treatment of Severe HTN	Among the birthing patients with acute-onset severe hypertension that persists for 15 minutes or more, **the number who were treated within 1 hour with IV Labetalol, IV Hydralazine, or PO Nifedipine.** Of birthing patients with severe hypertension, number who **received appropriate discharge education and follow-up appointments within 7-10 days post-discharge.**	
P5: Treatment with Magnesium Sulfate	Among birthing patients with severe preeclampsia or preeclampsia with severe features, how many **were treated with magnesium sulfate?**	

124

124

AIM Data Requirements

All Structure Measures are collected by **hospitals** only **once**

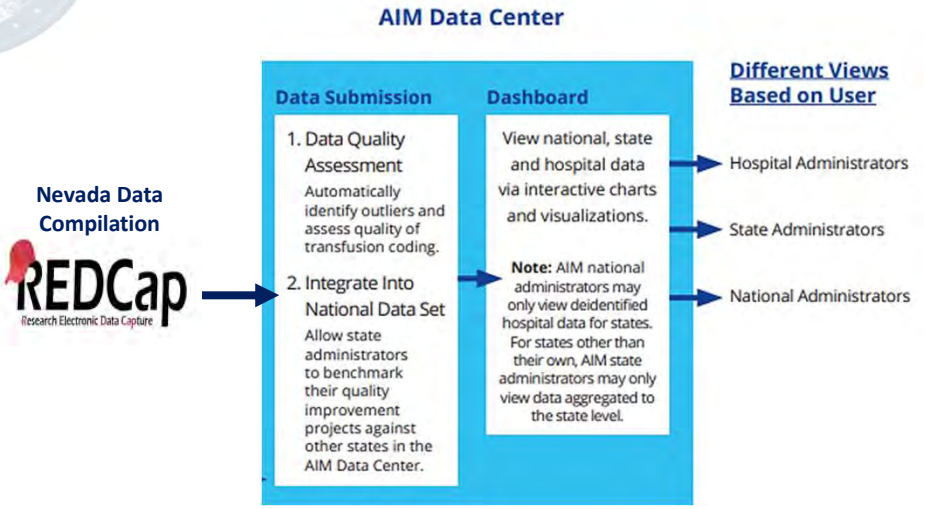
Severe Hypertension/Preeclampsia Bundle

Structure Measures (S)	Description	Data Coordinator Options
S1: Patient, Family & Staff Support	Report Completion Date Has your hospital developed OB specific resources and protocols to support patients, family and staff through major OB complications?	●Perinatal Nurse Manager ●Designated QI Leader
S2: Debriefs	Report Start Date Has your hospital established a system in your hospital to perform regular formal debriefs after cases with major complications?	
S3: Multidisciplinary Case Reviews	Report Start Date Has your hospital established a process to perform multidisciplinary systems-level reviews on cases of severe maternal morbidity (including, at a minimum, birthing patients admitted to the ICU or receiving ≥ 4 units RBC transfusions?	
S4: Unit Policy and Procedure	Report Completion Date 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?	
S5: EHR Integration	Report Completion Date 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?	

125

125

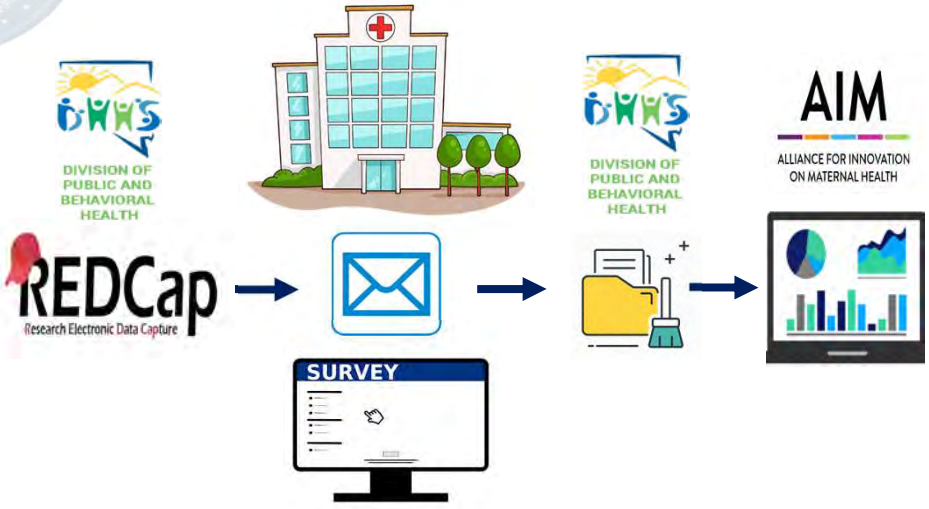
AIM Data Submission Process



126

126

AIM Data Submission Process



127

127

Questions?

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ALLIANCE FOR INNOVATION ON MATERNAL HEALTH

128

128

Contact Information

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129

129

Acronyms

- AIM (Alliance for Innovation on Maternal Health)
- SMM (Severe Maternal Morbidity)
- PAD (Pregnancy-Associated Deaths)
- PRD (Pregnancy-Related Deaths)
- HDD (Hospital Discharge Data)
- (NTSV) Nulliparous, Term, Singleton, Vertex Cesarean Birth Rate
- CS (Cesarean Section)
- OB (Obstetric)
- RBC (Red Blood Cells)
- API (Asian Pacific Islander)
- AI (American Indian)
- AN (Alaska Native)

130

130

NEXT STEPS

TAMI CONN

STATE SYSTEMS DEVELOPMENT INITIATIVE MANAGER

MATERNAL, CHILD AND ADOLESCENT HEALTH,
DIVISION OF PUBLIC AND BEHAVIORAL HEALTH

131

Nevada Alliance for Innovation on Maternal Health: Next steps

AIM

July 2021

- Sign participation agreement
- Complete hospital demographics information
- Complete the Facility Readiness Assessment Tool (FRAT): https://acog.az1.qualtrics.com/jfe/form/SV_8pIDiVlQooFP8c6 (FRAT is open now)

August-September 2021

- Complete Data Sharing Agreement
- Attend data reporting training with state staff
  - Present baseline hospital level data
- Attend first the Office of Continuing Medical Education at the University of Nevada, Reno School of Medicine training (late September)
  - The Joint Commission Speaker

October-November 2021

- Begin bundle implementation
- Attend UNR-MED CME training
- Applying for Multi-Specialty Portfolio Program to allow physicians and physician assistants to earn Part IV credit for AIM participation

December 2021

- First data reporting due – Q4 2021

QUESTIONS AND CLOSING REMARKS

VICKIE IVES, MA

MATERNAL, CHILD AND ADOLESCENT HEALTH SECTION MANAGER

DIVISION OF PUBLIC AND BEHAVIORAL HEALTH

133

THANK YOU

PLEASE EVALUATE THIS WEBINAR AND LET US KNOW IF YOU WOULD LIKE TO JOIN THIS IMPORTANT WORK

134