

CA MEDICAL BOARD PRESENTATION

November 19, 2026

California Maternal Quality Care Collaborative

CMQCC

AGENDA

CA MEDICAL BOARD 11/19/2026

- Brief introductions
- Overview of the organizational partners and programs:
  - CDPH MCAH, CA-Pregnancy Associated Review Committee (CA-PARC)
  - California Maternal Quality Care Collaborative (CMQCC)
- California Severe Maternal Morbidity Surveillance
- California Maternal Mortality Surveillance
- OB Hemorrhage Morbidity, Mortality and CMQCC OB Hemorrhage Toolkit

SPEAKERS



Kimberly Gregory, MD, MPH

Professor of Obstetrics and Gynecology, Director of the Division of Maternal-Fetal Medicine and of the Maternal-Fetal Medicine Fellowship, and Vice Chair for Women's Health Quality and Performance in the Department of Obstetrics and Gynecology at Cedars-Sinai, where she holds the Helping Hand of Los Angeles–Miriam Jacobs Chair in Maternal-Fetal Medicine. She also serves as Professor-in-Residence in the Departments of Obstetrics and Gynecology and Community Health Sciences at UCLA.

In 2026, Dr. Gregory was appointed to serve as the Senior Associate Medical Director, CA-Perinatal Quality Collaborative. Dr. Gregory currently chairs the California Pregnancy-Associated Review Committee, which conducts in-depth investigations of deaths during and up to one year after pregnancy to develop evidence-based prevention recommendations and is leading an initiative to advise CDPH on statewide deliberations of severe maternal morbidity.



Christine Morton, PhD

Senior research sociologist in the CMQCC and CPQCC programs (California Maternal Quality Care Collaborative / Perinatal Quality Care Collaborative) at Stanford Medicine. Dr. Morton’s work has focused on maternal mortality and morbidity. She has co-led statewide taskforces, collaborating with clinical and public health leaders, to translate research findings into maternal quality toolkits on hypertensive disorders of pregnancy, obstetric hemorrhage, cardiovascular disease and more, with a special focus on including the patient experience and supporting everyone after a severe maternal event.

California Perinatal Quality Collaborative (CA-PQC)

Formally launched November 13, 2026



CA-PQC Medical Director:
David K Stevenson, MD



CA-PQC Associate Medical Director:
Kimberly D Gregory, MD, MPH

Executive Steering Committee – comprised of CA-PQC & CDPH/DHCS/OSG Leadership



CA-PQC Executive Director:
Leslie Kowalewski

Advisory Council – diverse leaders to provide strategic guidance to CA-PQC Executive Steering Committee

CALIFORNIA PERINATAL QUALITY COLLABORATIVE

CMQCC California Maternal Quality Care Collaborative

CPQCC California Perinatal Quality Care Collaborative

HRIF HIGH RISK INFANT FOLLOW-UP



CMQCC Medical Director:
Bryan Oshiro, MD

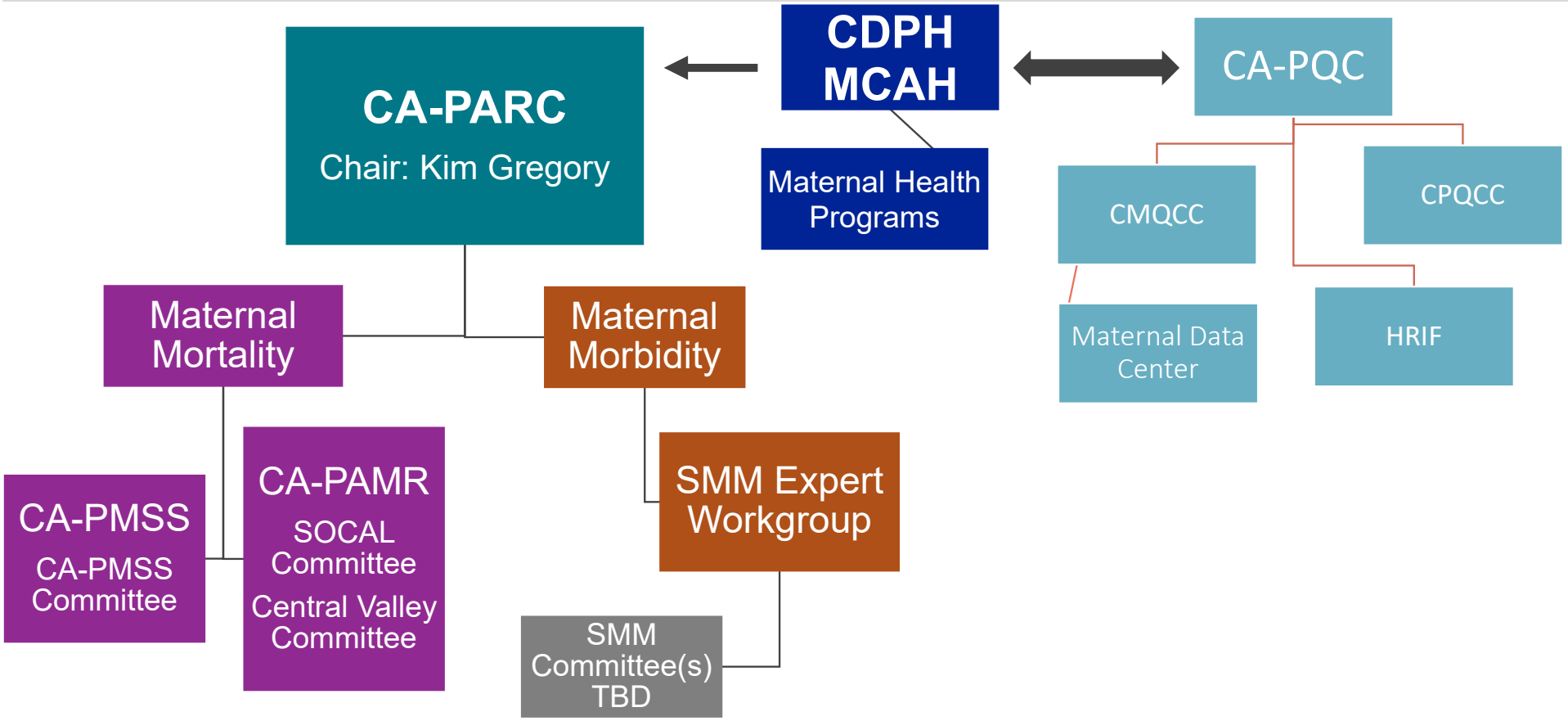


CPQCC Medical Director:
Kurlen Payton, MD



HRIF Medical Director:
Susan R Hintz, MD, MS

CDPH / CA-PARC & CA-PQC Organizational Chart



Mandated by **SB 65 California Momnibus Act** legislation (enacted in 2022)

CA-PARC
California Pregnancy-Associated Review Committee

Encompasses all programs for tracking and investigating maternal deaths

https://go.cdph.ca.gov/PARC

CA-PMSS
California Pregnancy Mortality Surveillance System

Timely and accurate statewide counts and rates of pregnancy-related deaths

CA - SMM
Severe Maternal Morbidity Deliberations

Implementing

CA - SMM
Severe Maternal Morbidity Dashboards

Timely and accurate statewide counts of severe maternal

PAMR
Pregnancy-Associated Mortality Reviews (multiple committees)

In-depth reviews for quality improvement
Southern CA; Central Valley

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Maternal Death Review Regions:

Counties included in each committee review



- CA-PMSS only
- CA-PAMR, Central Valley
- CA-PAMR, Southern California

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Meet *our Maternal Mortality* Team

CA-PARC



Kimberly D. Gregory, MD, MPH
Appointed Chair

CDPH MCAH Division



Paula Krakowiak, PhD, MS
Program Director



Harman Chauhan, PhD, MS, MPH
Research Scientist III



Deepika Mathur, MD
Research Scientist III



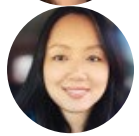
Kristie Nguyen, MPH, RN
Research Scientist II



Stephanie Nunes, MPH
Research Scientist I



Tina Rylee, PhD
Research Scientist III



Dan (Susan) Sun, MA
Data Specialist

California Maternal Quality Care Collaborative

Christine H. Morton, PhD
Research Sociologist



Christa Walczak, MSN, RN,
C-ONQS, C-EFM, CLE *Clinical Lead*



Patrisha Cherry, MPH
Program Manager



Public Health Institute

Christy McCain, MPH
Research Scientist



Delphina Alvarez, AA
Administrative Assistant



Karene Matterson, MA, BSN
Abstractor



Kristienne McFarland, PhD, MS, CNM *Abstractor*



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Meet our Maternal Morbidity Team

CA-PARC / CA-PQC



Kimberly D. Gregory, MD, MPH
Appointed Chair

CDPH MCAH Division



David Reynen, DrPH, MA, MPPA, MPH, CPH
MCAH Epidemiology Section Chief



Nichole Watmore, MPH
Maternal Morbidity Epidemiologist



Natalie de Guzman, PhD
Maternal Morbidity Epidemiologist



Jennifer Troyan, MPH
Maternal and Perinatal Epidemiologist



Gevrey Valldeperas, MA
Maternal Mortality and Morbidity Prevention Specialist

CA-PQC - California Maternal Quality Care Collaborative

Christine H. Morton, PhD
Senior Research Sociologist



Patrisha Cherry, MPH
Program Manager



Britney Pheng, MPH
Data Analyst, MDC



Melinda Kent, MSN-Ed, RNC-OB, C-EFM, C-ONQS
Associate Director, MDC



Cedars-Sinai Medical Center

Samia Saeb, MPH, CCRP
Program Manager



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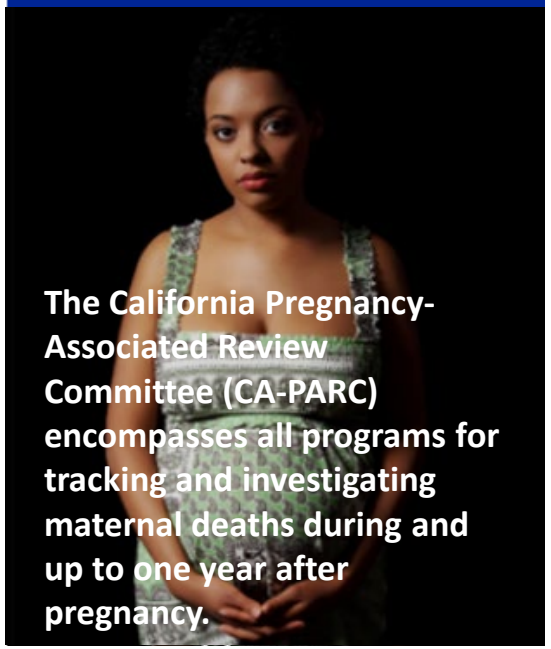
CA-PARC
California Pregnancy-Associated Review Committee

Mandated by **SB 65 California Momnibus Act** legislation (enacted in 2022)

http://go.cdph.ca.gov/PARC

CA-PARC



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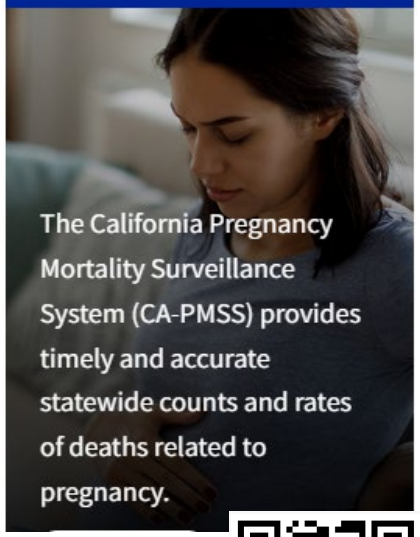
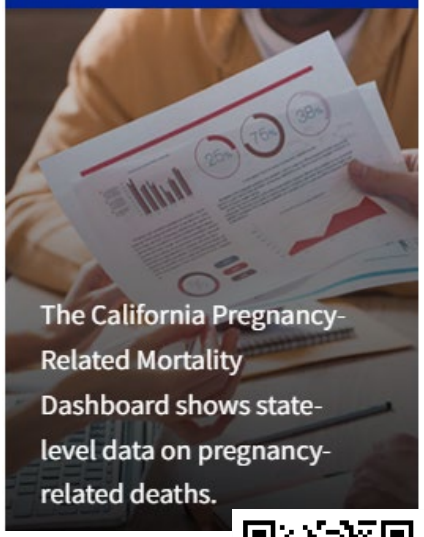
CA-PMSS



CA-PAMR



Dashboards



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In honor of the women who died while pregnant or giving birth.

We vow to work to end preventable maternal mortality and increase racial equity in maternal quality of care.

CDPH | mcah

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California Department of Public Health

Severe Maternal Morbidity (SMM) in CA

What is Severe Maternal Morbidity (SMM)?

- SMM includes unexpected and potentially life-threatening complications from labor and delivery that result in significant short- or long-term health consequences. (CDC Definition)

- SMM is about 60 times more common than maternal mortality; ~4300 cases of SMM per year in CA

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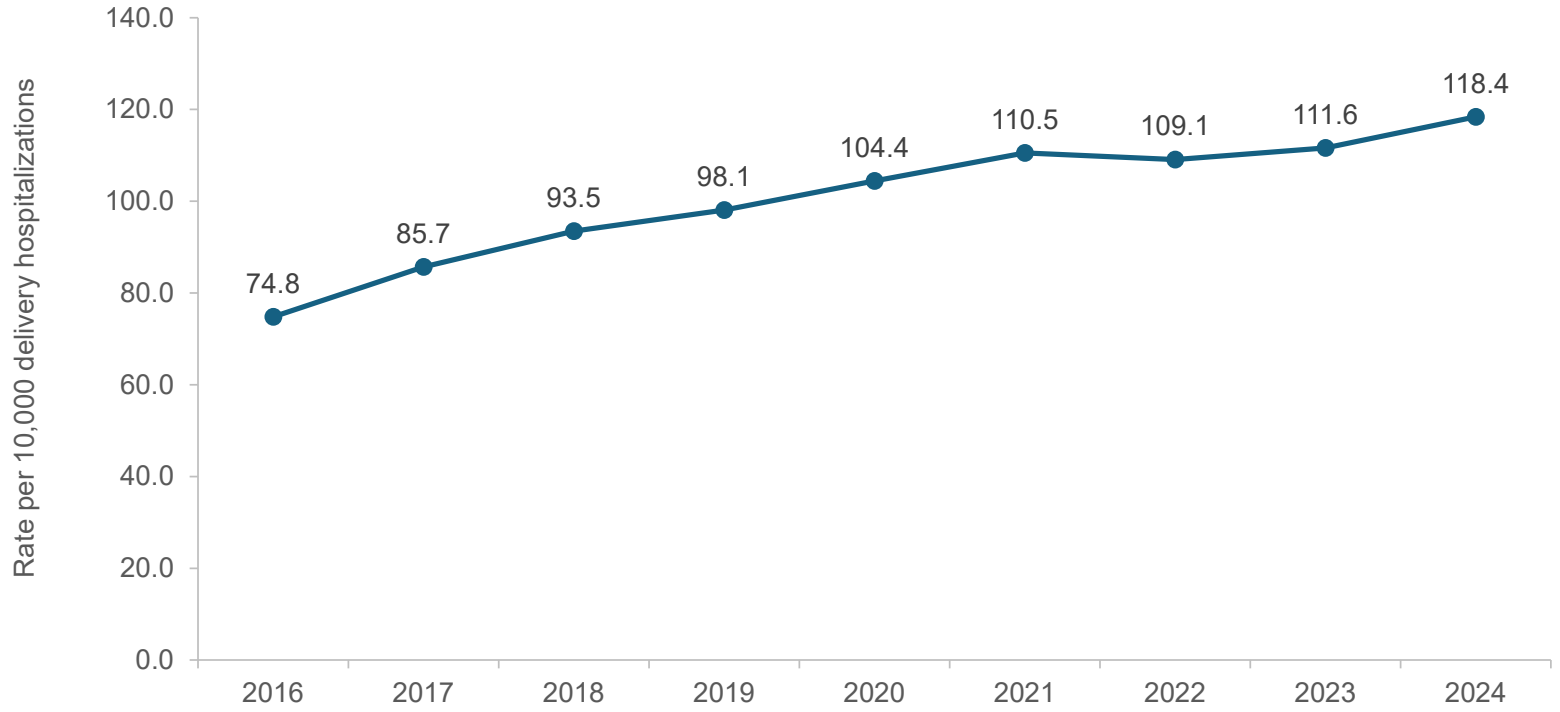
How is SMM defined in population-based surveillance?

- Definition developed by the Centers of Disease Control and Prevention (CDC) and refined by the Health Resources and Services Administration (HRSA).

- SMM is a composite measure of 20 indicators identified by a combination of ICD-10 CM diagnostic and procedural codes (e.g., acute MI, amniotic fluid embolism, sepsis, hysterectomy)
  - *Numerator= Delivery hospitalizations w/ an indication of SMM from diagnosis or procedure codes*
  - *Denominator= Delivery hospitalizations among patients (ages 12-55) w/ stillbirth or live birth*

- Data Source: Patient Discharge Data from the CA Dept. of Health Care Access and Information (HCAI)

SMM Rates in CA, 2016-2024



California Department of Public Health, Center for Family Health, Maternal, Child and Adolescent Health Division, Severe Maternal Morbidity Dashboard, Last Modified May 2026. https://www.cdph.ca.gov/Programs/CFH/DMCAH/surveillance/Pages/Severe-Maternal-Morbidity.aspx

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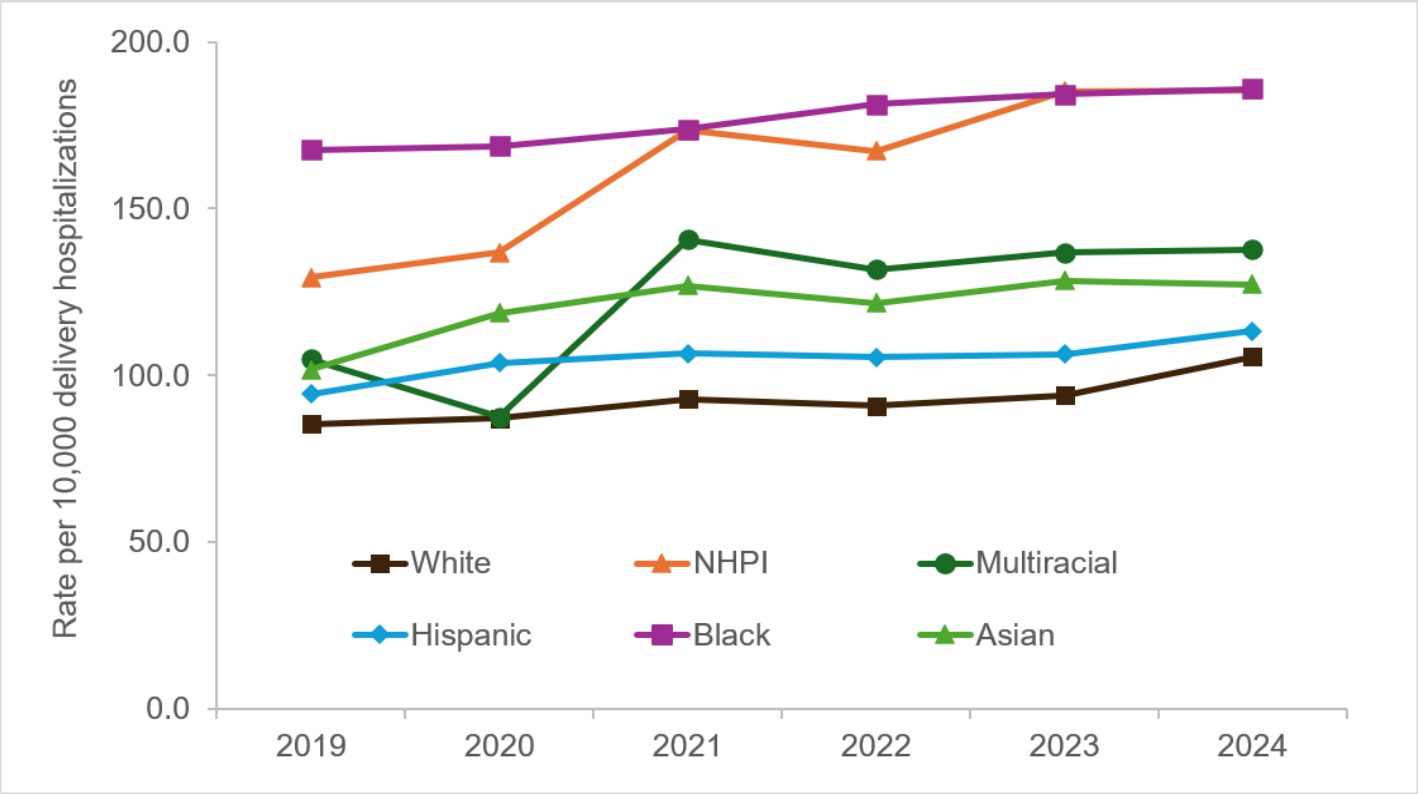
SMM Rates by Race/Ethnicity in CA, 2019-2024



Note: AIAN not shown due to small counts, therefore, rates are unstable and are not shown. NHPI=Native Hawaiian or Pacific Islander.

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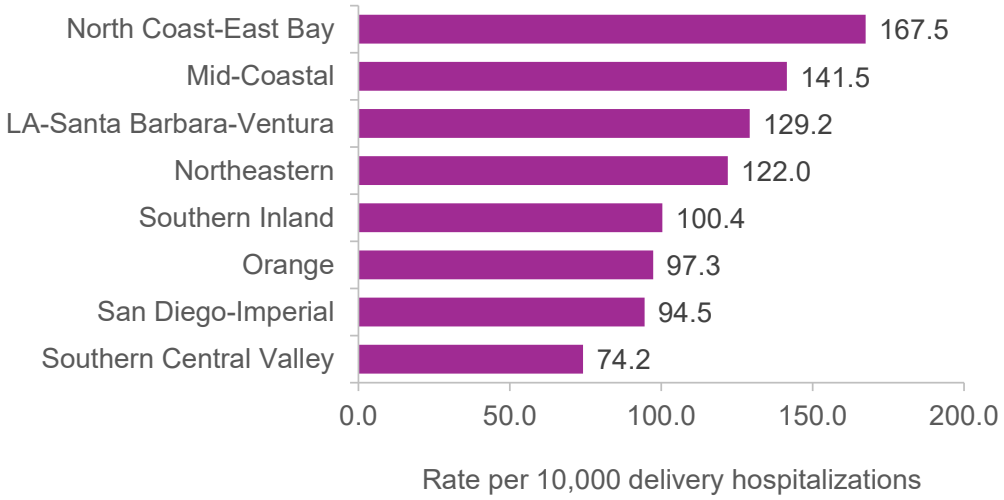
California Department of Public Health, Center for Family Health, Maternal, Child and Adolescent Health Division, Severe Maternal Morbidity Dashboard, Last Modified May 2026. https://www.cdph.ca.gov/Programs/CFH/DMCAH/surveillance/Pages/Severe-Maternal-Morbidity.aspx

SMM in CA by Hospital Region, 2024





LA-Santa Barbara-Ventura Region: Los Angeles, Santa Barbara and Ventura counties. **Mid-Coastal Region**: Monterey, San Benito, San Luis Obispo, San Mateo, Santa Clara and Santa Cruz counties. **North Coast-East Bay Region**: Alameda, Contra Costa, Del Norte, Humboldt, Lake, Marin, Mendocino, Napa, San Francisco and Sonoma counties. **Northwestern Region**: Alpine, Amador, Butte, Calaveras, Colusa, El Dorado, Glenn, Lassen, Modoc, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Sierra, Siskiyou, Solano, Sutter, Tehama, Trinity, Yolo and Yuba counties. **Orange Region:** Orange County. **San Diego-Imperial Region:** Imperial and San Diego counties. **South Central Valley Region:** Fresno, Kern, Kings, Madera, Mariposa, Merced, Stanislaus, Tulare and Tuolumne counties. **South Inland Region**: Inyo, Mono, Riverside and San Bernadino counties.

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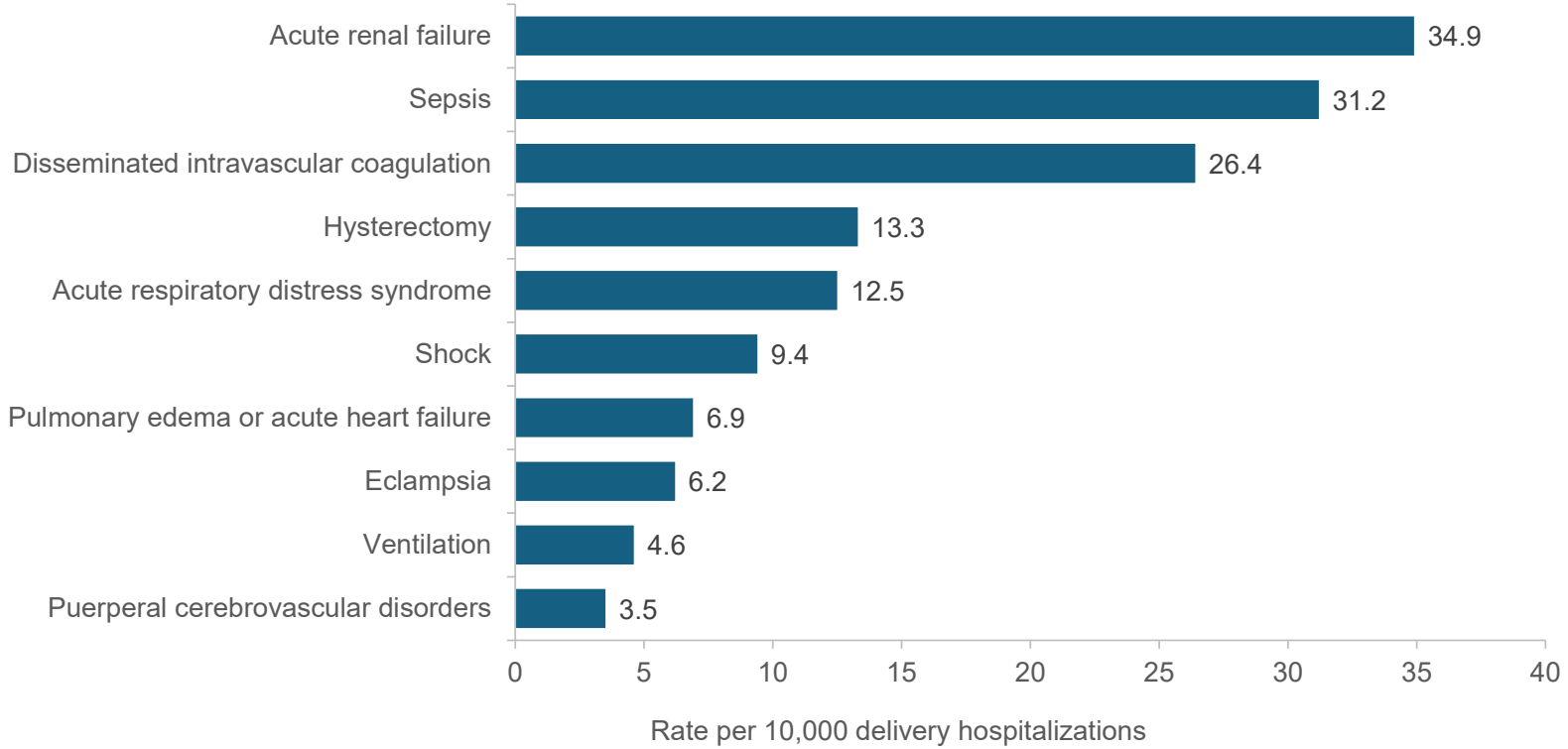
California Department of Public Health, Center for Family Health, Maternal, Child and Adolescent Health Division, Severe Maternal Morbidity Dashboard, Last Modified May 2026. https://www.cdph.ca.gov/Programs/CFH/DMCAH/surveillance/Pages/Severe-Maternal-Morbidity.aspx

Common Indicators of SMM in CA, 2024



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California Department of Public Health, Center for Family Health, Maternal, Child and Adolescent Health Division, Severe Maternal Morbidity Dashboard, Last Modified May 2026. https://www.cdph.ca.gov/Programs/CFH/DMCAH/surveillance/Pages/Severe-Maternal-Morbidity.aspx

Pregnancy-related Mortality in CA

(Maternal Mortality)

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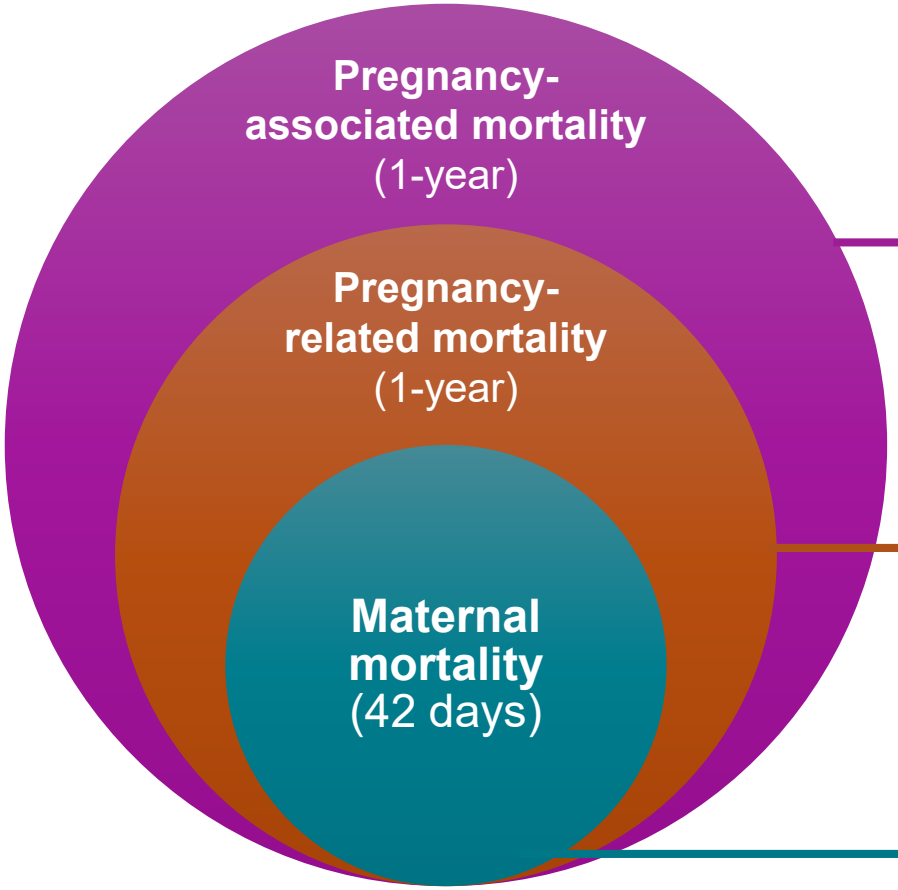
Definitions: Maternal Mortality vs. Pregnancy-related Mortality



Pregnancy-associated mortality:
Deaths due to any cause during pregnancy and up to one year after pregnancy (includes deaths **not related** to pregnancy)

Pregnancy-related mortality (CDC-PMSS):
Deaths during pregnancy and up to one year after pregnancy that are related to pregnancy

Maternal mortality (WHO / CDC-NCHS):
Deaths during pregnancy and up to 42 days after pregnancy that are related to pregnancy or its management

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Source: Eugene Declercq and Laurie Zephyrin, *Maternal Mortality in the United States: A Primer* (Commonwealth Fund, Dec. 2020).

CDC = Centers for Disease Control and Prevention
NCHS = National Center for Health Statistics
WHO = World Health Organization

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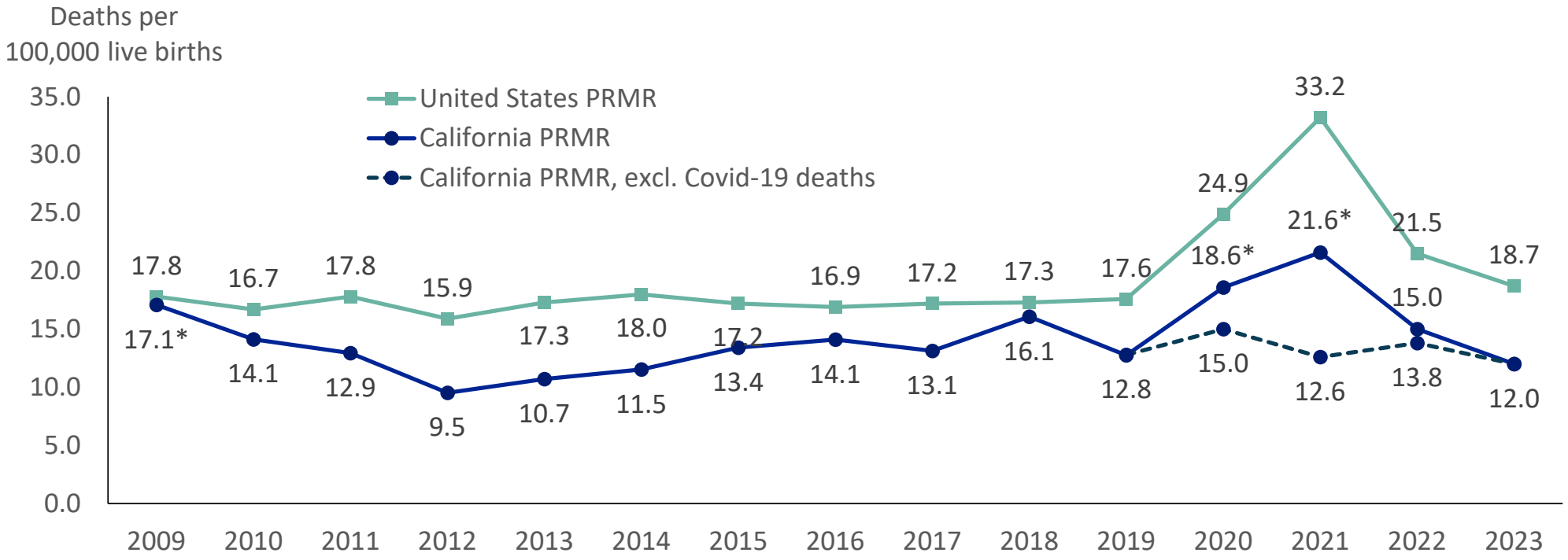
Pregnancy-Related Mortality Ratio (PRMR)

United States and California 2009-2023



Data from the Pregnancy Mortality Surveillance System | Maternal Mortality Prevention | CDC on April 15, 2026).

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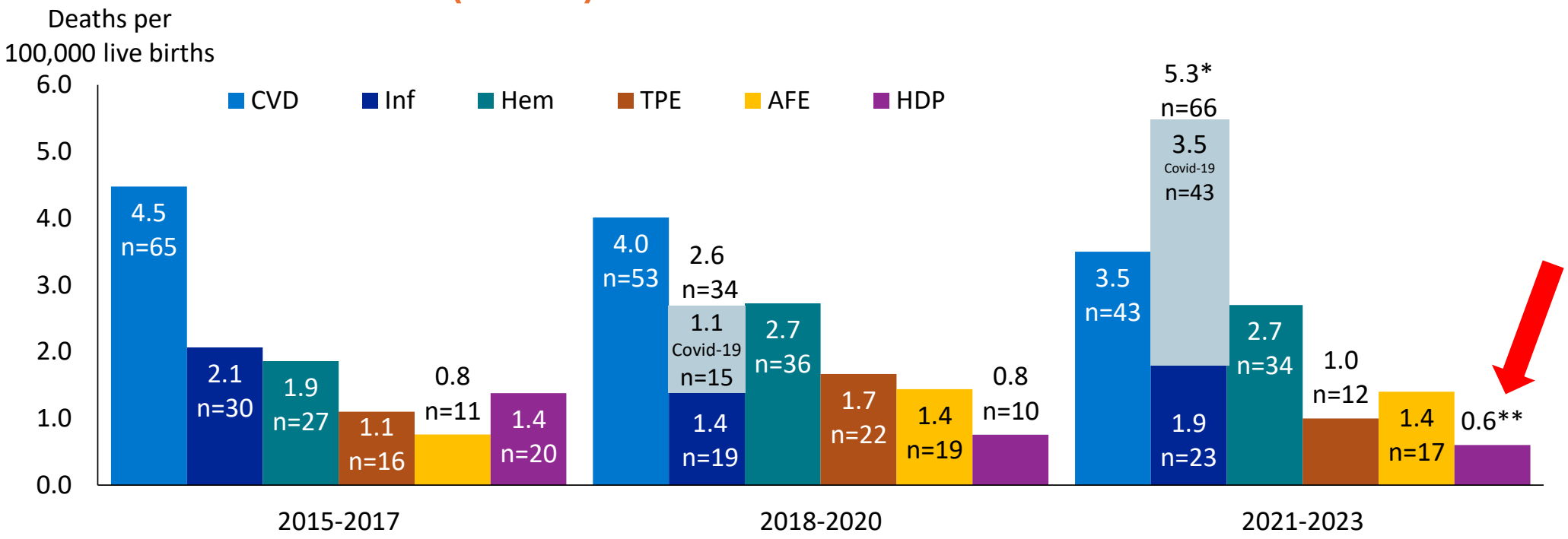
Pregnancy-Related Mortality Ratio by Leading Causes

California 2015-2023 (N=607)



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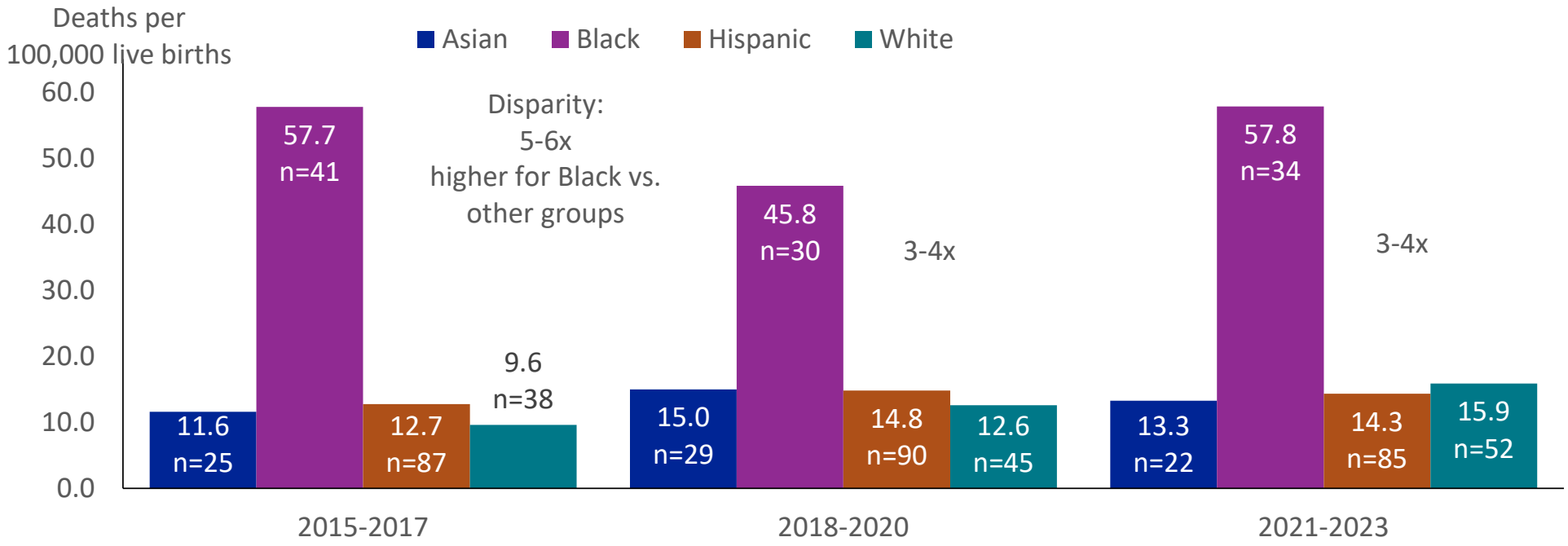
Pregnancy-Related Mortality Ratio by Race/Ethnicity

California 2015-2023 (N=607)



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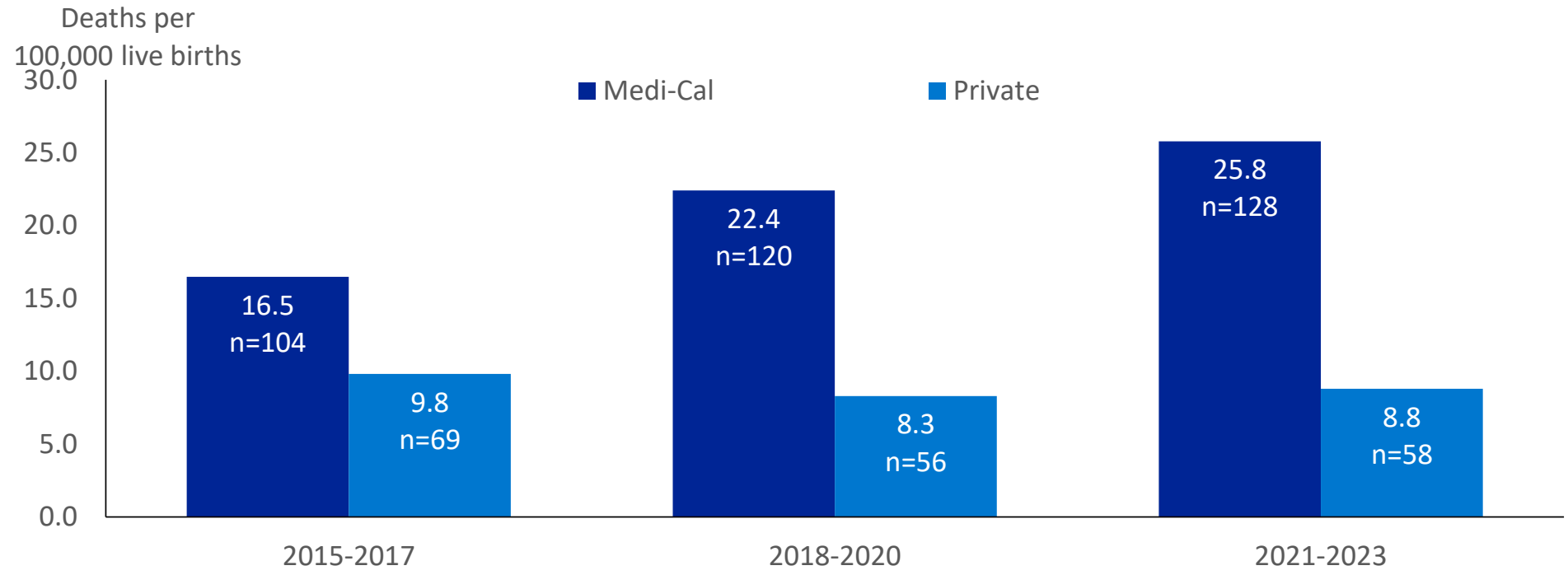
Pregnancy-Related Mortality Ratio by Payer Type

California 2015-2023 (N=607)



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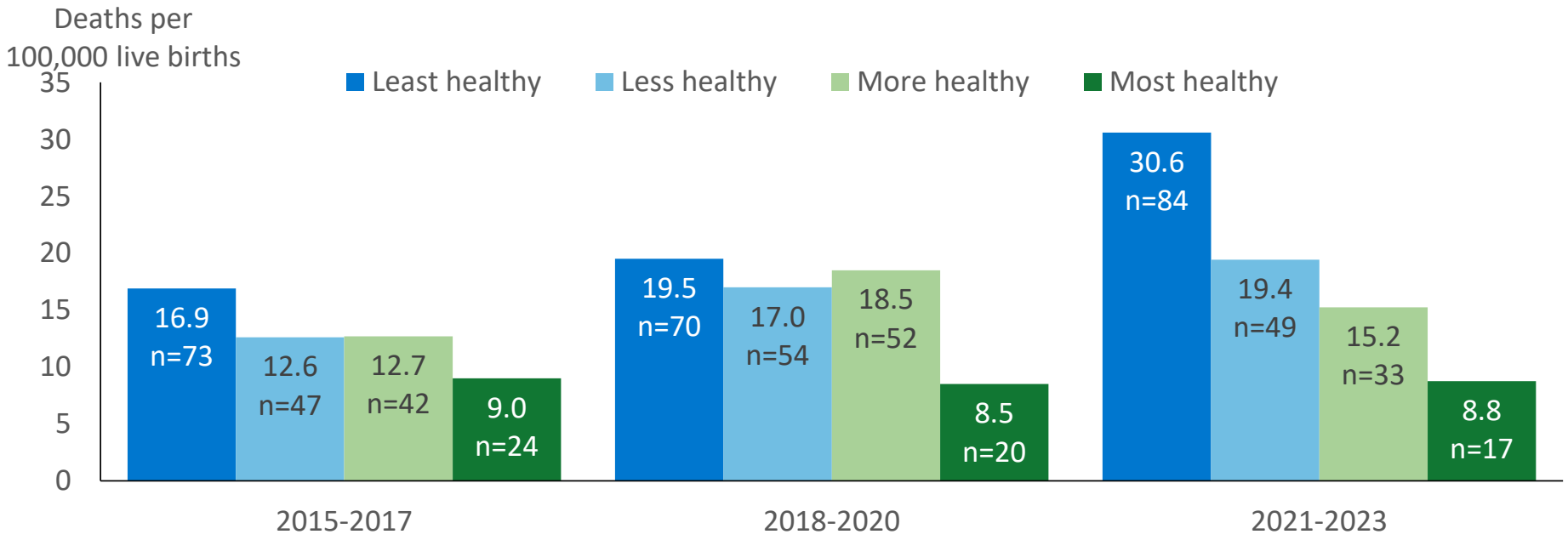
Pregnancy-Related Mortality Ratio by Community Conditions

California 2015-2023 (N=607)



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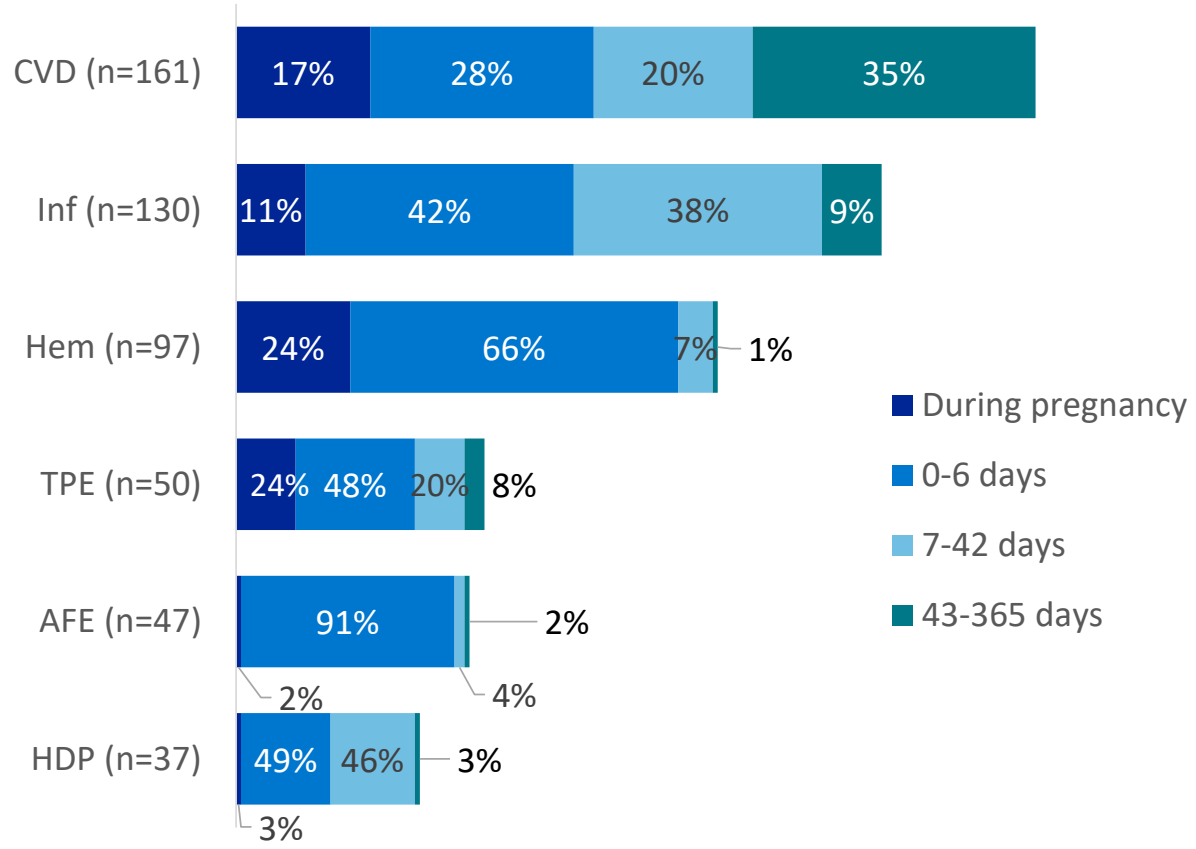
Pregnancy-Related Deaths by Cause and Timing to Death

California 2015-2023 (N=607)

CDPH



Understanding maternal mortality & morbidity

- Pregnancy-related mortality (death) is a RARE outcome
- Maternal complications (morbidity) are more common – it's important to know maternal warning signs, why they're happening and what to do
  - Changes in pregnancy/postpartum physiology that increase risk
- Postpartum is critical time for health!



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About the California Pregnancy-Associated Mortality Review

CA-PAMR

Pregnancy-related Mortality Investigations: CA-PAMR

Multidisciplinary Committees

Clinicians

Public Health Professionals

Community Advocates

Patient/Family
An individual (and family) before, during and after a pregnancy

Clinician
An individual who provides care, treatment, and/or advice



Facility
A physical location where direct care is provided

Community
A grouping based on a shared sense of place or identity

System
Entities supporting services across the pregnancy continuum

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CA-PAMR Approach



Diverse, equity-centered committee reviews maternal deaths.



Multidisciplinary Expertise: OBs, MFMs, ED physicians, cardiologists, nurses, midwives, behavioral health specialists, doulas, and public health professionals.



Confidential reviews identify contributing factors, systemic failures, and prevention opportunities.



Findings lead to actionable recommendations at patient, clinician, facility, community and system levels.

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Our guiding philosophy



- Health care teams do the best they can
- Maternal deaths reveal how **systems** do not support quality care for every patient, every time
- Our goal is to identify opportunities to improve care and prevent maternal deaths

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Common Themes in Maternal Deaths



Disconnected systems of care (ED, OB, Cardiology, Behavioral Health); Missed opportunities for diagnosis and referrals



Serious chronic disease and limited knowledge among patient and family regarding impact of pregnancy



Postpartum discharge without clear information, plan or contacts



Lack of respect for patient-reported symptoms, possible biases (weight, SUD, race/ethnicity, pregnancy – wellness bias)



Social determinants not addressed (housing, access to healthy foods, transportation, insurance gaps)

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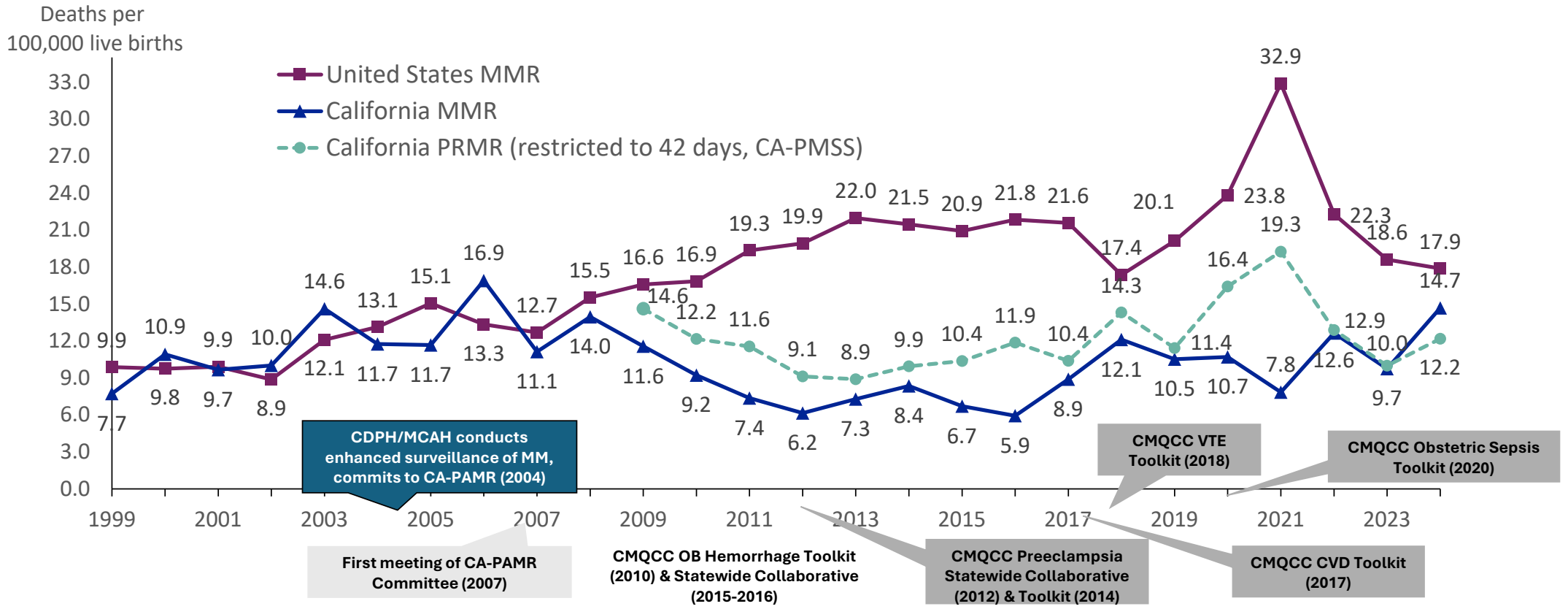
Maternal Mortality Ratio (MMR) in the U.S. and California (1999–2024) with CMQCC Toolkit Launch Dates



Maternal mortality ratio (MMR) = Number of maternal deaths per 100,000 live births, up to 42 days after the end of pregnancy. Maternal deaths in California were identified using ICD-10 cause of death classification for obstetric deaths (codes A34, O00-O95, O98-O99) from the California death certificate data (1999-2013), the California pregnancy status errata file (2014-2021), and the California Comprehensive Mater Death file (2022-2024). Data on U.S. maternal deaths are published by the National Center for Health Statistics and found in the CDC WONDER Database for years 1999 or later (accessed at http://wonder.cdc.gov on September 17, 2026).

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CMQCC Maternal
Quality Improvement
Toolkits

CMQCC Maternal Quality Improvement Toolkits

11 Toolkits

- Community Birth Partnership Initiative *(2026)*
- 
- Postpartum Discharge Landing Pages *(2026)*
- Low-Dose Aspirin Implementation Guide (with March of Dimes *(2026)*
- Support Vaginal Birth and Reduce Primary Cesareans *(2017, rev. 2022)*
- Hypertensive Disorders of Pregnancy *(2014, rev. 2021, 2024)*
- Obstetric Hemorrhage *(2010, rev. 2015, 2022)*
- Venous Thromboembolism *(2018, rev. 2025)*
- Cardiovascular Disease in Pregnancy *(2017)*
- Obstetric Sepsis *(2020, rev. 2025)*
- Early Elective Deliveries *(2010)*
- Mother & Baby Substance Exposure Initiative *(DHCS Leads)*

CMQCC Toolkit Dissemination

Hosting on our websites *(No cost to download)*

- Appendices available as standalone PDFs to encourage uptake

Public webinars *(No cost to attend)*

- Co-authors and community representatives as speakers
- Content includes overview of rationale, clinical considerations, patient resources, implementation resources, and Q&A
- Archived recording and slides

Publicity through email marketing, social media channels, and our websites

CMQCC

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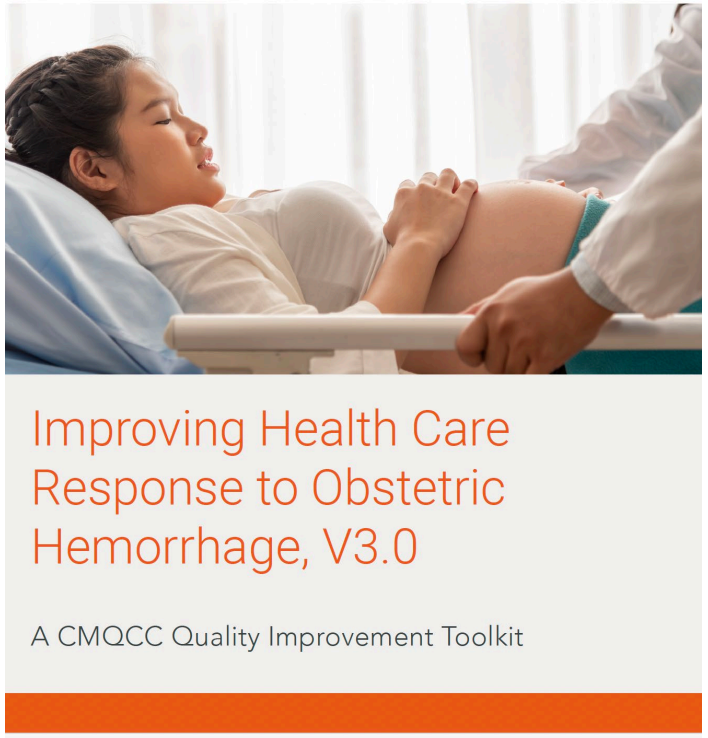
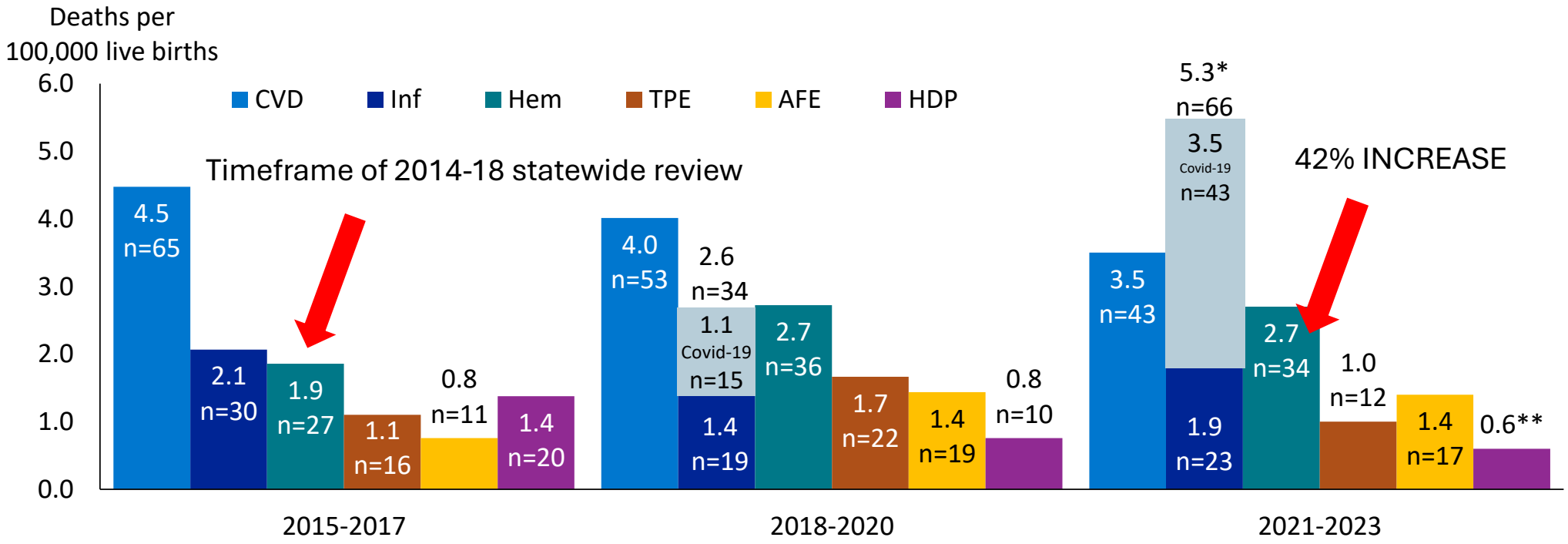


OB HEM TOOLKIT



Pregnancy-Related Mortality Ratio by Leading Causes

California 2015-2023 (N=607)



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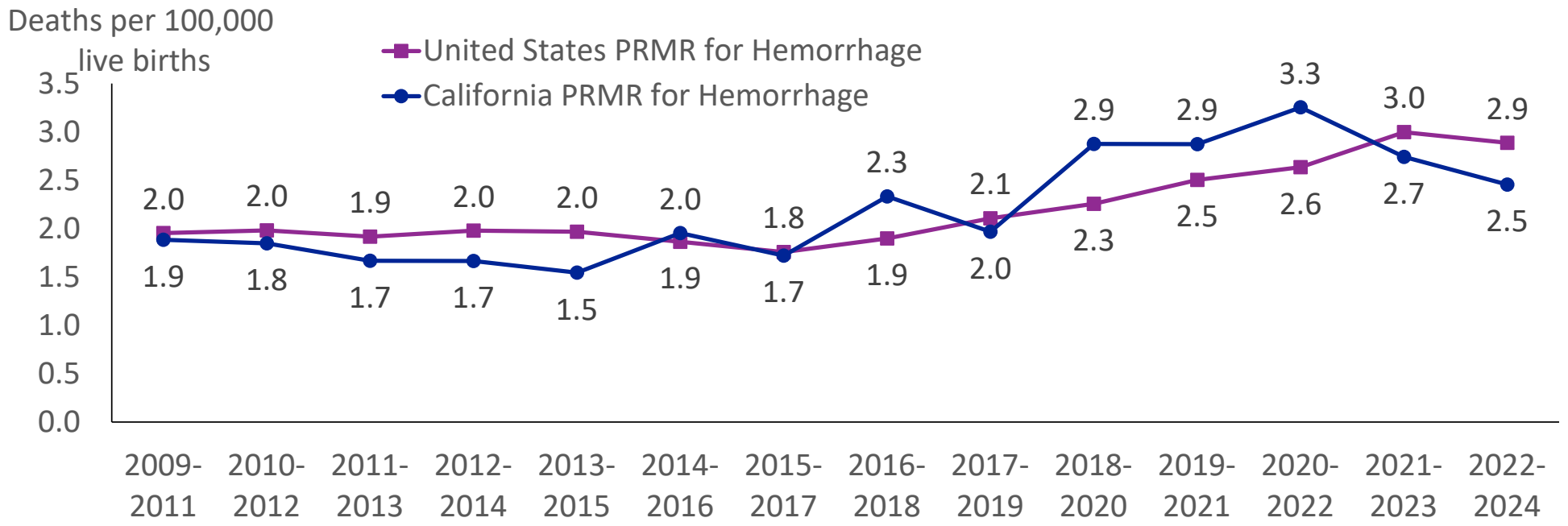
Pregnancy-Related Mortality Ratio (PRMR) for Hemorrhage (up to 1 year)

United States and California 2009-2024



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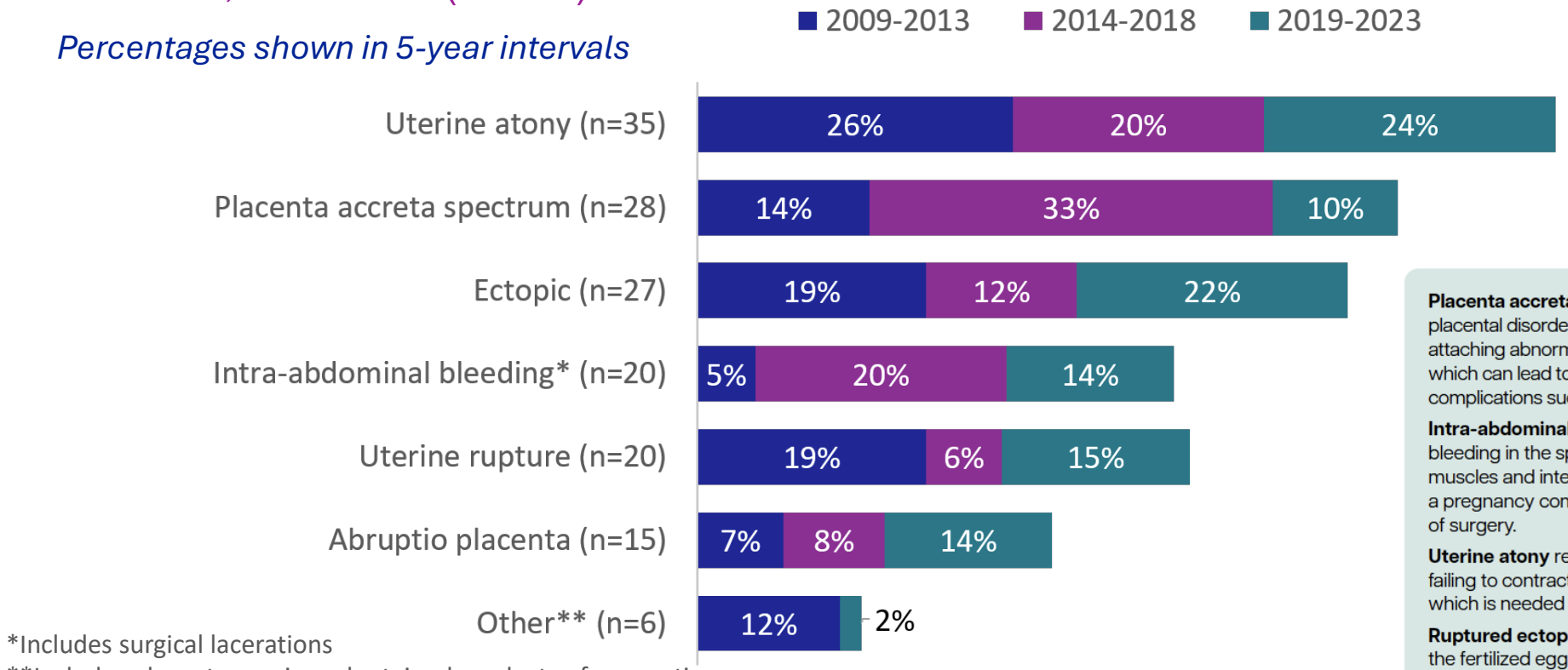
https://wonder.cdc.gov/) and CDC Vital Statistics Online Data Portal (https://www.cdc.gov/nchs/data_access/vitalstatsonline.htm#Births). Assessed August 31, 2026.

Trends in Causes of Obstetric Hemorrhage Deaths

California, 2009-2023 (N=151)

Percentages shown in 5-year intervals



*Includes surgical lacerations
**Includes placenta previa and retained products of conception

Placenta accreta spectrum is a group of placental disorders caused by the placenta attaching abnormally to the uterus (womb) which can lead to serious pregnancy complications such as severe hemorrhage.

Intra-abdominal bleeding/laceration is bleeding in the space between abdominal muscles and internal organs as a result of a pregnancy complication or complications of surgery.

Uterine atony refers to uterus muscles failing to contract (tighten) after childbirth, which is needed to close off blood vessels.

Ruptured ectopic pregnancy is when the fertilized egg attaches and grows outside the uterus and bursts causing life-threatening bleeding.

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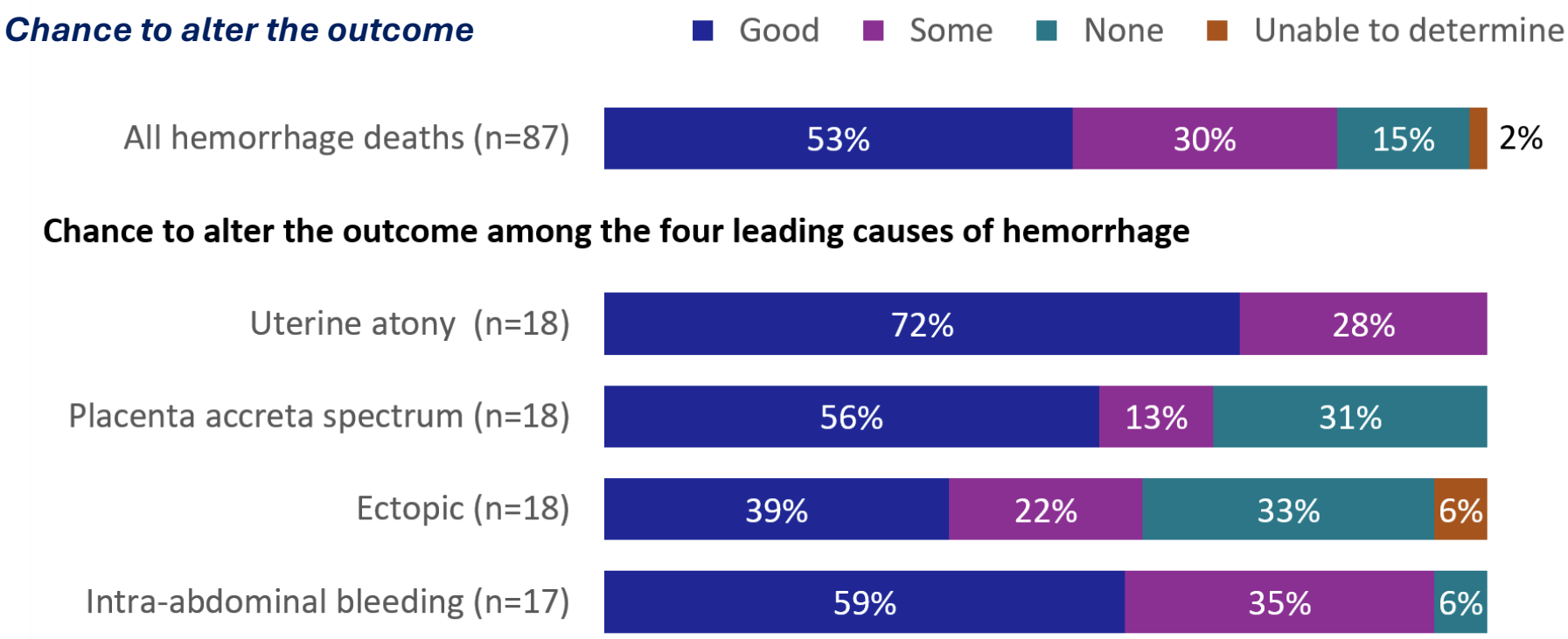
Causes of pregnancy-related hemorrhage deaths were determined through case review by the CA-PMSS committee (2009-2013, 2019-2023), the Hemorrhage committee (2014-2018), the Southern California PAMR committee (2019-2023, Southern California cases only), and the Central Valley PAMR committee (2023), Central Valley cases only).

Preventability of Obstetric Hemorrhage Deaths

California, 2014-2024 (N=87*)



*Includes data from in-depth reviews only: Hemorrhage committee (2014-2018), the Southern California PAMR committee (2019-2024, Southern California cases only), and the Central Valley PAMR committee (2023-2024, Central Valley cases only).

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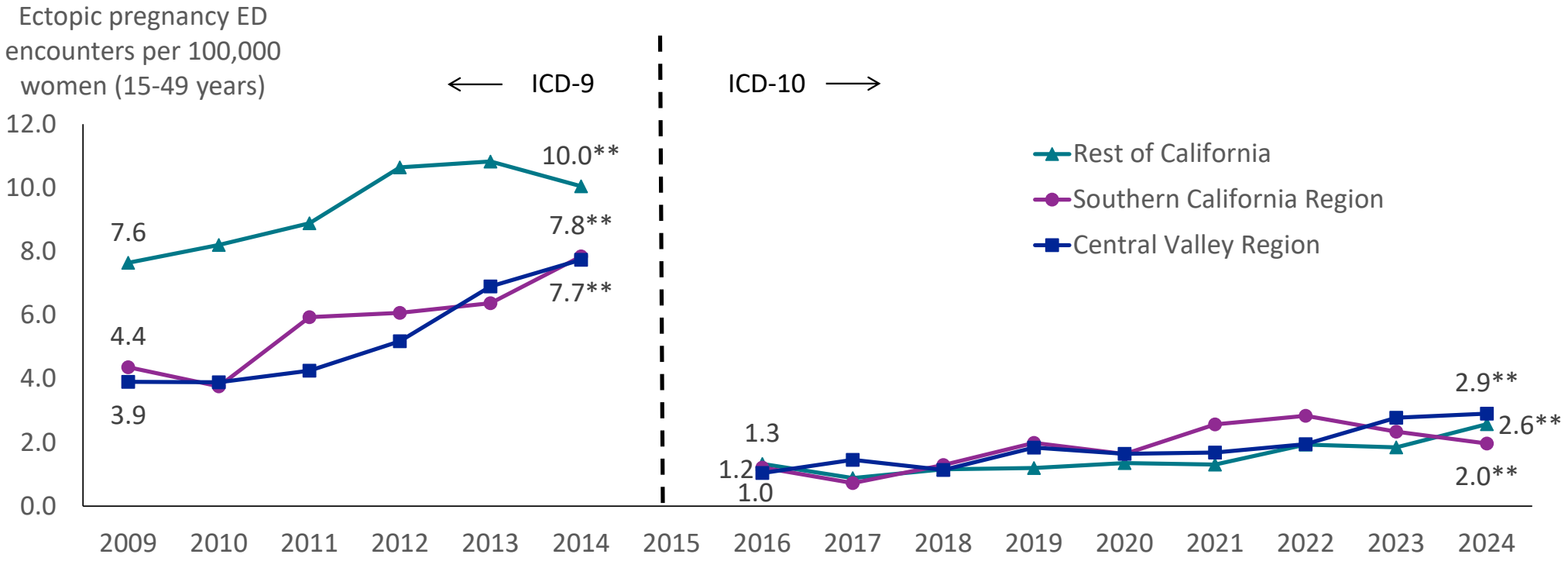
ED Encounter Ratio for Ectopic Pregnancy (per 100,000 women aged 15-49)

California 2009-2024*



https://epicenter.cdph.ca.gov/ReportMenus/PopulationTable.aspx. Assessed September 10, 2026. The Southern California Region includes Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Imperial counties; the Central Valley Region includes Butte, Colusa, Glenn, Fresno, Kern, Kings, Madera, Merced, Placer, San Joaquin, Sacramento, Shasta, Stanislaus, Sutter, Tehama, Tulare, Yolo, and Yuba counties; and the rest of California consists of all remaining counties.

CDPH

4 Rs: Components of Quality Improvement*

Readiness

Every Facility

- Preparations/supplies
- Medication access
- MTP and emergency blood release
- Education/Simulations

Recognition & Prevention

Every Patient

- Assessment, diagnosis and classification
- Measurement of quantitative, cumulative blood loss
- Active management 3rd stage

Response

Every Hemorrhage

- Unit-standard, stage-based emergency management plans with checklists
- Support for patients, families and staff

Reporting and Systems Learning

Every Unit

- Established huddle culture including debriefs
- Multidisciplinary reviews
- QI measures
- Outcome monitoring and process metrics
- Documentation and coding

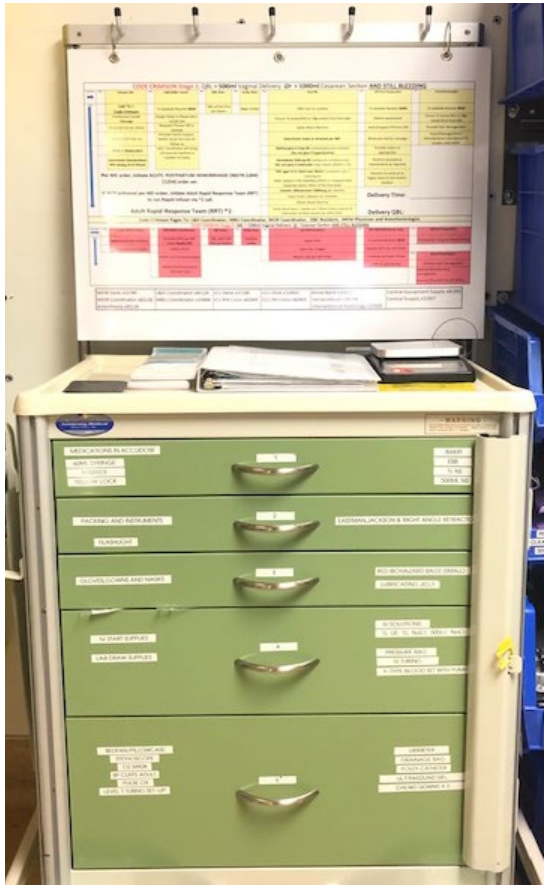
*There is now a 5th R: **Respectful Care,** underscoring the importance of patient experience

ACOG. Obstetric hemorrhage patient safety bundle. https://safehealthcareforeverywoman.org/aim/patient-safety-bundles/maternal-safety-bundles/obstetric-hemorrahage-patient-safety-bundle-2/. Published 2015.

Readiness



Photos used with permission of
Jennifer McNulty, MD

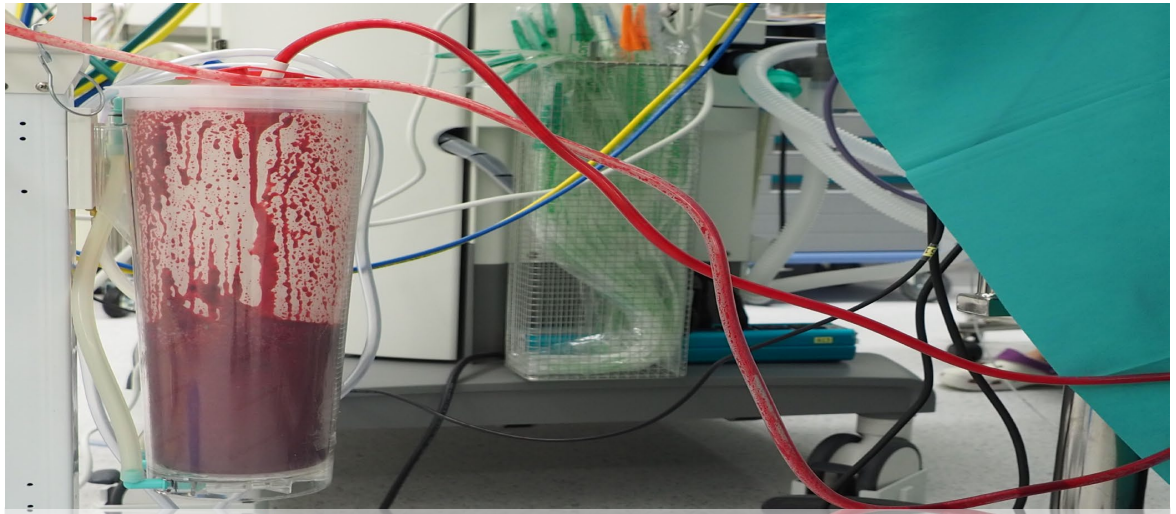


- Implementation
- Risk Factor Assessment
- Iron Deficiency Anemia
- Placenta Accreta Spectrum
- Inherited Bleeding Disorders
- Declining of Blood Products
- Hemorrhage Carts, Kits
- Simulation and Drills
- EHR Integration
- Low-resource Considerations

Quality Improvement Opportunities to Improve Readiness to Address Obstetric Hemorrhage

Readiness: Place, Provider and Patient		
Hospital Readiness: Standardized Policies	**Provider Readiness: Improve Knowledge**	**Patient Readiness**
Implement standardized policies to guide practice • Hemorrhage policy • Massive transfusion policy • Quantification of blood loss policy • 911 transport policy	Plan for high-risk pregnant woman that may include • Transfer to appropriate maternal level of care or specialist • Increase hematocrit before labor or surgery in women who refuse blood transfusions • Investigate and train in all surgical techniques to address blood loss • Education for all maternity care clinicians	Providers should ensure that women with known risk factors give birth at facilities prepared to perform higher-level procedures and are well prepared with information and social support before, during and after the birth.
Hospital Best Practices	**Provider Education**	**Patient Education**
• Simulation drills • Triage algorithm for emergency department • Immediate physician availability • Reduce overall cesarean rates • Standardized discharge teaching	• Educate emergency medicine clinicians about risk factor and signs and symptoms of uterine rupture • High-risk woman with history of previa with no plan for birth at inappropriate level of care	• Clinicians educate women with prior uterine surgery re warning signs of bleeding, uterine rupture • Prenatal and discharge education, including effective communication with women and families regarding risk, risk reduction, presence of symptoms, when to seek immediate care, and mental health needs

Seacrist M, et al. JOGNN, 48, 288–299; 2019. https://doi.org/10.1016/j.jogn.2019.03.002



Recognition

- Stage 3 Labor Management
- Definition, Early Response
- Best Practices to Assess Quantitative Cumulative Blood Loss

Quality Improvement Opportunities to Improve Recognition of Obstetric Hemorrhage (1)

Recognition: Missed Symptoms or Misdiagnosed	
Assess Risk Factors Throughout Stay	**Anticipatory Preparation**
• Grand multiparity • Previous cesarean • Obesity • Low-lying placenta • Known previa • Known accreta • Refuses blood transfusions • History of postpartum hemorrhage • Risk assessment before and after childbirth • Augmentation or induction • Prolonged labor • Elevated temperature • Magnesium sulfate	• Type and crossmatch blood • Hemorrhage cart and medications readily available • Second large-bore intravenous line • Review laboratory values • Review hemorrhage policy

Seacrist M, et al. JOGNN, 48, 288–299; 2019. https://doi.org/10.1016/j.jogn.2019.03.002

Quality Improvement Opportunities to Improve Recognition of Obstetric Hemorrhage (2)

Recognition: Missed Symptoms or Misdiagnosed	
Missed Symptoms:	**Recommendations:**
• **Pain** • **Tachycardia** • **Hypotension** • **Cold, clammy, pale** • **Shortness of breath** • **Abdominal distension** • **Low urine output** • **Decreased oxygen saturation**	• Cumulative and quantitative assessment of blood loss • Assess and report abnormal warning signs or symptoms
Missed Diagnosis:	**Recommendations:**
• **Did not recognize uterine rupture** • **Pulmonary embolism**	• Implement standardized policies and protocols • Clinician education

Seacrist M, et al. JOGNN, 48, 288–299; 2019. https://doi.org/10.1016/j.jogn.2019.03.002



Response

- Medications
- Blood Product Replacement
- Procedures
- Women's Experience
- Secondary Hemorrhage

Quality Improvement Opportunities to Improve Response to Obstetric Hemorrhage

Response: Delays and Lack of Coordination of Care	
Delay in Treatments	**Coordination of Care**

• Type and crossmatch blood when risk factors are present
• If first-line treatment doesn't work, go to next treatment
• Treat aggressively: give medications and blood as soon as blood loss is evident; no need to wait for laboratory results
	• Implement emergency management plan with immediate response, which may include
	  • Transfer level of care
	  • Coordination of care
	  • Seeking consultations when needed
	  • Chain-of-command policy for nurse–physician communication
	  • Staff empowerment to report concerns
	  • Transfusing blood and blood products in a timely manner

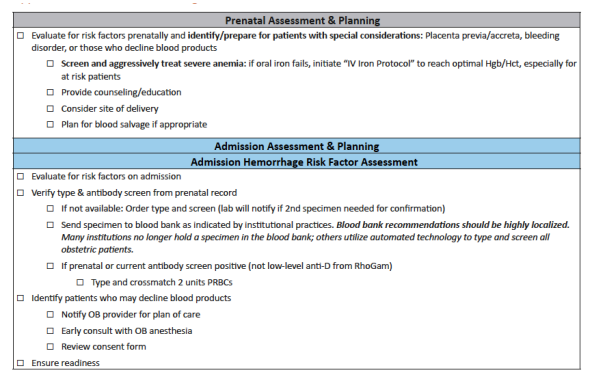
Seacrist M, et al. JOGNN, 48, 288–299; 2019. https://doi.org/10.1016/j.jogn.2019.03.002

OB Hemorrhage Toolkit Resources

- Care guidelines
- Checklists
- Maternal warning signs

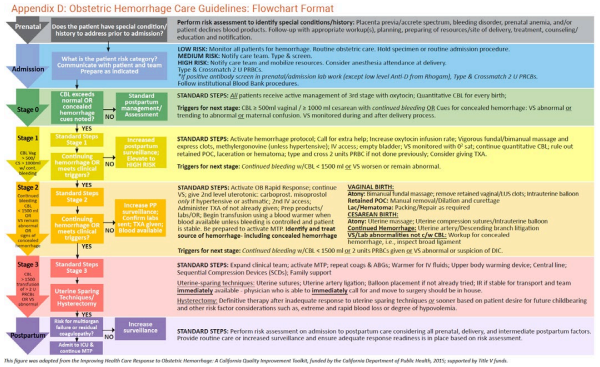
Appendix C: Obstetric Hemorrhage Care Guidelines: Table Format

	Assessments	Meds/Procedures	Blood Bank
Stage 0	**All births**		
• Risk assessment • Active management of 3rd stage	• Prepare for every patient according to hemorrhage risk factors • Measure quantitative cumulative blood loss for every birth	• **Active Management of 3rd Stage** • **Oxytocin** IV infusion or 10u IM	• **Medium Risk:** T&S • **High Risk:** T&C 2 U • **Positive Antibody Screen** (prenatal or current, exclude low level anti-D from RhoGam): T&C 2 U
Stage 1	**Triggers: CBL ≥ 500mL vaginal / ≥ 1000 mL cesarean with *continued bleeding* or Signs of concealed hemorrhage: VS abnormal or trending (HR ≥ 110, BP ≤ 85/45, O2 sat < 95%, shock index 0.9) or Confusion**		
• Activate hemorrhage protocol • Administer methyler-gonovine • Rule out hemorrhage causes besides atony	• Activate OB hemorrhage protocol and checklist • Notify charge nurse, OB/CNM, anesthesiologist • VS, O2 Sat q5 min • Record quantitative cumulative blood loss q5-15 min • Careful inspection with good exposure of vaginal walls, cervix, uterine cavity, placenta. If intra-op, inspect broad ligament, posterior uterus and placenta.	• **IV Access: Minimum 18 gauge** • Increase IV fluid (LR) and **oxytocin** rate • **Fundal/bimanual massage** **MOVE ON** to 2nd level uterotonic if no response (see Stage 2 meds below) • Empty bladder: Straight cath or Foley with urometer	• **Convert to High Risk and take appropriate precautions** Consider T&C 2 Units PRBCs *where clinically appropriate if not already done*



Prenatal Assessment & Planning
☐ Evaluate for risk factors prenatally and **identify/prepare for patients with special considerations:** Placenta previa/accreta, bleeding disorder, or those who decline blood products
☐ **Screen and aggressively treat severe anemia:** if oral iron fails, initiate "IV Iron Protocol" to reach optimal Hgb/Hct, especially for at risk patients
☐ Provide counseling/education
☐ Consider site of delivery
☐ Plan for blood salvage if appropriate
Admission Assessment & Planning
Admission Hemorrhage Risk Factor Assessment
☐ Evaluate for risk factors on admission
☐ Verify type & antibody screen from prenatal record
☐ If not available: Order type and screen (lab will notify if 2nd specimen needed for confirmation)
☐ Send specimen to blood bank as indicated by institutional practices. ***Blood bank recommendations should be highly localized. Many institutions no longer hold a specimen in the blood bank; others utilize automated technology to type and screen all obstetric patients.***
☐ If prenatal or current antibody screen positive (not low-level anti-D from RhoGam)
☐ Type and crossmatch 2 units PRBCs
☐ Identify patients who may decline blood products
☐ Notify OB provider for plan of care
☐ Early consult with OB anesthesia
☐ Review consent form
☐ Ensure readiness

Appendix D: Obstetric Hemorrhage Care Guidelines: Flowchart Format





Maternal Quality Toolkit Resources for Patients and Advocates



ADVOCACY
FOR PATIENTS

EXAMPLES OF ADVOCACY LANGUAGE

- I am very concerned and do not feel like I am being heard. What are my next steps or alternative options?
- This is really different for me. I have never felt this way in my life. For my benefit and my family's benefit I should be seen.
- I understand that some of these symptoms may be normal for pregnancy or postpartum, but I am very concerned and need to be evaluated.
- I have called a number of times and tried suggestions that have been provided, but I am not getting better.
- Can you please refer me to someone who can help me? I'm really worried.
- My doctor told me to call if I am experiencing X, Y, or Z. I am having X, Y, or Z. I would like to be seen.
- I want to speak to someone else to make sure that I do not have a serious condition. Can you please refer me to someone who will help me? I am really worried.
- I do not feel right, I am concerned that something bad is happening to me.

ADVOCACY ACTION TIPS

- Your concerns and feelings are valid, be persistent in getting the answers or care you need.
- If you have a medical emergency, please dial 911 or go to the nearest emergency room.
- Ask to speak to the charge nurse or patient relations if you are not being heard
- If you are not getting the response you need, you can go to triage or the emergency room. You do not need permission from anyone to do so.
- You can also go to a different hospital or urgent care facility if you are not receiving the care you need.
- Consider having another person to accompany you to help advocate for you (support person, family member, doula, etc.)
- Bring a list of your concerns you would like to be addressed.
- Start your concern with the effect that it is having such as the following: "I am so tired I am unable to get out of bed"; "I am having so much pain I cannot sleep"; etc.

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WARNING SIGNS FOLLOW-UP GUIDE
FOR HEALTH CARE PROFESSIONALS

BACKGROUND

These questions, tips, and red flags were created based on near-miss cases of patients who suffered severe maternal morbidity.

Many patients called in with symptoms but were met with reassurance that symptoms were typical of pregnancy or postpartum rather than follow up questions that would have identified severe illness to allow prompt treatment.

FOLLOW UP QUESTIONS

These follow up questions are suggested to evaluate when patients call with symptoms of concern.

- Please tell me in your own words what is wrong.
- Is this your first time calling about this?
- How long has this been going on?
- Is it getting better, staying the same, or getting worse?
- On a scale of 1 to 10 (worst) how bad is _____? (pain/tiredness/symptoms of concern)
- Are you able to perform your normal day-to-day activities and take care of yourself?
- Are you able to eat, drink, urinate, pass gas, have bowel movements?
- Can you explain how this is limiting you?
- What prompted you to call?
- Have you had this before?
- Can you explain how you are feeling and how this is different from your baseline?
- Are there any barriers to coming in today?

ACTION ITEMS

- If the patient does not need assessment now, explain red flag warning signs when the patient should call back or come in for evaluation.
- Express empathy and concern. Many patients reported feeling like a burden and not feeling heard and subsequently delayed calling and seeking care when symptoms worsened.
- Keep track of a list of patients to reach back out to follow up on and encourage them to call back if not improving or getting worse.

RED FLAGS (should prompt in-person evaluation)

- Patient reaching out multiple times with concerns.
- A support person calling on behalf of the patient with concerns.
- Patient requests to be seen.
- Symptoms that are worsening over time.
- Patient unable to perform activities of daily living (climbing stairs, showering, brushing teeth, holding baby, etc.)
- Signs of severe dehydration: inability to urinate, inability to make tears, abrupt stopping of milk production.
- Severe pain.

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*Disclaimer: The information provided on the MI AIM site is for educational purposes only, and does not substitute for professional medical advice.

CDPH

Secondary PPH - 24 hours to 12 weeks Postpartum

- Common causes - retained products of conception, infection, and subinvolution of the placental bed
- Often present to the emergency department (ED) after discharge
- Important to identify whether patients that present to the ED **have been pregnant in the last 6 weeks**
- ED personnel should be familiar with the risk factors and signs and symptoms of PPH, including evaluation of PP bleeding/assessment of clots



Patel NR, J of Emerg Med 2018;55(3):408-410. Debost-Legrand A, et al. *Birth*. 2015;42(3):235-241. ACOG. Practice Bulletin No. 183. *Obstetrics and Gynecology*. 2017;130(4):e168-e186. Clapp MA, et al. *American Journal of Obstetrics and Gynecology*. 2016;215(1):113 e111-113 e110. Fein A, et al. *Journal of Maternal-Fetal and Neonatal Medicine*. 2021;34(2):187-194.



Reporting

- Debriefs & Case Reviews
- Outcome Metrics

Debriefs and Case Reviews

- Debriefs and multidisciplinary reviews are foundational learning improvement activities for creating a highly-reliable clinical team and maintaining a culture of safety

Debriefs

- Allows the team to reflect on performance and problem-solve in real time
- Should become a routine part of activities on the unit

Case Reviews

- Thorough and structured evaluation of patient care
- Identified deficits are used to inform and guide system-level improvements to prevent similar morbidities in the future

A multi-faceted communication plan is needed to share meaningful learnings and subsequent process improvement work to the clinical team

Hemorrhage Quality Improvement (QI) Tools

Maternal Data Center (MDC)

1. **Data Quality Measures**
   Hemorrhage Validation

2. **Outcome Measures**
   Hemorrhage Frequency, Anemia on Admission, SMM (3 analysis variations), Massive Transfusions

3. **Process Measures**
   Hemorrhage Risk assessment, QBL (Cumulative Value & Cumulative Performed), Patient Support After Hemorrhage, Provider & Nurse Education

4. **Structure Measures**

5. **Measure Analysis: Postpartum Hemorrhage**
   CS vs Vaginal, Primary vs Repeat CS, Labor vs No Labor, Induced vs Spontaneous Labor, Chorio vs. Non-Chorio

6. **Severe Maternal Morbidity (SMM) Case Reviews**

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California Maternal
Quality Care Collaborative

Using Data to Sustain Patient Safety Bundle Implementation

Christa Sakowski, MSN, RN, C-ONQS, C-EFM
Jenny Skelton, DHSc, MBA, CPHQ

Contact Us



Info@CPQCC.org
(or your email/Helpdesk)

www.CPQCC.org

@California Perinatal Quality Care Collaborative (CPQCC)

@CPQCCORG

@CaliforniaPQC

Info@CMQCC.org
(or your email/Helpdesk)

www.CMQCC.org

@California Maternal Quality Care Collaborative (CMQCC)

@CMQCC

For more information about Maternal Mortality Review efforts in CA and the US, visit…



- **California Department of Public Health:** http://go.cdph.ca.gov/Maternal-Mortality
- **California Maternal Quality Care Collaborative:** https://www.cmqcc.org/research/ca-pamr-maternal-mortality-review

CDC ERASE MM (Enhancing Reviews and Surveillance to Eliminate Maternal Mortality):
https://www.cdc.gov/maternal-mortality/php/erase-mm/index.html



CDC *HEAR HER* Campaign:
https://www.cdc.gov/hearher/index.html

CDPH