



Maternal Health: Improving Cardiovascular Health Issue Brief

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Executive Summary

Despite being the leading cause of death for both men and women in the U.S.¹, heart disease remains an overlooked cause of pregnancy associated deaths. This oversight has devastating consequences, particularly for Black and American Indian/Alaska Native women, who experience higher maternal mortality rates than their White counterparts².

California has the lowest maternal mortality rate in the United States because it has taken significant steps to reduce pregnancy associated deaths: the first state to extend Medi-Cal coverage 12 months postpartum, implementing the California Birthing Care Pathway initiative, and adding doula support as a covered Medi-Cal benefit. More work is needed to eliminate disparities in perinatal health outcomes, expand community-based solutions, and leverage technology for early risk detection.

In February 2025 during American Heart Month, the Office of the California Surgeon General convened leaders from healthcare, technology, and community organizations to drive new and innovative solutions. Discussions emphasized the need for culturally responsive care, improved coordination, and innovative tools to reduce preventable maternal deaths.

This issue brief highlights key insights and opportunities for stakeholders to collaborate, innovate, and implement scalable solutions that save lives.

Pregnancy and Heart Health: A Life-Threatening Connection

Cardiovascular disease is the leading cause of pregnancy-related deaths in California³. Over 80% of these deaths are preventable⁴. Cardiovascular conditions such as hypertension, cardiomyopathy, and coronary artery disease don't just pose immediate pregnancy risks, they increase lifelong health concerns.

- In California, 23% of pregnancy-related deaths are due to cardiovascular conditions³.
- Women with high blood pressure during pregnancy face a 63% increased risk of heart disease later in life⁵.

Despite these risks, maternal cardiovascular disease remains undiagnosed and untreated⁶. The danger doesn't end in the delivery room, making early detection and ongoing care essential. Cardiac conditions linger before, during, and long after childbirth.

Maternal Health and the Urgency for Action

Maternal health outcomes vary dramatically by race, ethnicity, and socioeconomic status. Social determinants of health, such as access to care, economic stability, and systemic bias, contribute to these disparities⁷.

In California:

- Black women are up to four times more likely to die from pregnancy-related causes than White women⁸.
- American Indian/Alaska Native women also experience disproportionately high mortality, though data is often underreported⁹.
- Hispanic maternal mortality has doubled since 2013⁸.
- Women in low-resource communities face twice the death rate of those in wealthier areas¹⁰.

Each data point is more than just a statistic. It represents a human life, mother, sister, wife, and more.

When we prioritize maternal cardiovascular health, we're not just protecting mothers—we're strengthening families and communities. Addressing this crisis takes more than good intentions—it demands urgent, systemic action; innovative changes, culturally competent care, and community-driven interventions.

California's Visionary Solutions to Address Maternal Mortality and Improve Cardiovascular Health

Some bold policies and statewide programs include:

- **Medi-Cal Extension:** Provides 12 months of postpartum care, ensuring continued healthcare.
- **California Birthing Care Pathways:** Expands access to whole person and culturally competent care.
- **Transforming Maternal & Adolescent Health Program:** (A Center for Medicare & Medicaid Services Funded Initiative): Strengthens care coordination and early intervention efforts in the Central Valley.
- **Added Doula Services as a Medi-Cal Benefit:** Enhances maternal support, shown to improve birth outcomes.
- **Community Health Workers & Promotoras:** Provides peer-based, culturally and linguistic tailored maternal health support.
- **California Department of Public Health Programs:** Focus on maternal health equity and reducing preventable deaths.

While California leads the nation in maternal health policy, continued activities in prevention, community-based interventions, and technology-driven solutions are crucial to achieving our goal of reducing maternal mortality 50% by December 2026. Scaling up prevention is key to ensuring every mother gets the care she deserves.



Summit Insights and Stakeholder Contributions

On February 20, 2025, the Office of the California Surgeon General convened [The Maternal Health Summit: Improving Cardiovascular Health](#), bringing together leaders from healthcare, community organizations, and technology sectors to tackle the rising crisis of pregnancy-related cardiovascular deaths. The discussions focused on scalable, innovative solutions that can be replicated to improve maternal health outcomes in California and beyond.

Participants explored ways to blend grassroots efforts with private-public partnerships, ensuring that solutions remain both community-centered and sustainable.

Key Insights and Innovative Strategies Derived from Breakout Sessions

Bridging Grassroots and System-Level Efforts

The success of maternal health programs depends on a balanced approach—pairing community-driven solutions with policy-level support to ensure sustainable impact. Key recommendations from the Breakout encouraged leaders to design initiatives that are locally relevant, scalable, and keeping community well-being at the core of their efforts.

Leveraging Precision Medicine for Equitable Outcomes

Advancements in precision medicine and predictive analytics can help ensure that health outcomes are not determined by a person's zip code. By improving collaboration and resource-sharing, these technologies can be integrated into community healthcare efforts, helping to identify high-risk individuals early and provide targeted support where it is needed most. Technology and precision medicine also play a crucial role in ensuring equitable access to high-quality maternal care, with Artificial Intelligence (AI)-driven risk assessments, telehealth, and predictive analytics helping to identify and support high-risk individuals early.

An example of precision medicine is Mirvie analyzing the cell-free RNA found in a pregnant person's blood to predict those at risk for preeclampsia and Cathworks using AI to inform treatment decisions. Utilizing the Trust.Care app and Delfina app to be the bridges between health education and access to community resources.

Key Insights and Innovative Strategies Derived from Breakout Sessions (Continued)

Expanding Early Detection and Health Education

Increasing access to early screening programs was recognized as a critical strategy in reducing maternal cardiovascular risks. However, screening alone is not enough—educational initiatives must be integrated to engage communities and encourage participation. Making screenings more accessible, understandable, and appealing can lead to higher adoption rates and better health outcomes.

Heartfelt, a community-based, patient-initiated risk assessment, exemplifies the opportunity to detect those at highest risk for cardiovascular disease.

Utilizing Trusted Local Resources for Community-Based Care

Trusted community networks play a key role in expanding maternal health outreach. Head Start programs, YMCAs, libraries, and faith-based organizations can serve as access points for screenings, health education, and resources. National health organizations provide ready-to-use tools and support that communities can adapt and implement to strengthen local efforts.

Embedding Data Sharing between Emergency Medical Services and Electronic Medical Records

Seamless integration of emergency medical services (i.e. paramedics) data into the receiving hospital electronic medical record can improve communication, quality of care and patient outcomes. This is especially important in maternal health, where accurate information to a person's pregnancy and postpartum history can determine the life-saving care needed.

Maximizing Wearable Technology for Real Time Data

Wearable health technology provides the opportunity to monitor maternal and cardiovascular health in real time. Immediate integration of data from wearable devices into a patient's electronic medical record can alert providers for the need of early intervention.

"The insights from this summit aren't just ideas—they will fuel real change." - participant at the summit

By closing care gaps through partnership with California Department of Health Care Services, California Department of Public Health and private/public partnerships the Office of the California Surgeon General is committed to the work already started to improve perinatal health outcomes. Community-based healthcare initiatives and technology for early detection are adjuncts to ongoing efforts for equitable maternal care statewide.

The goal is simple but urgent: ensure every mother gets the support she needs—before, during, and after pregnancy.

Call to Action

Addressing maternal cardiovascular health requires a coordinated, multi-sector approach—healthcare providers, community organizations, and technology innovators must all work together to drive meaningful change.

California has set an ambitious goal: reduce maternal mortality 50 percent by December 2026. The path forward is clear—scale community-driven solutions, provide healthcare access, and facilitate innovative strategies that prioritize prevention and equity. This is about saving lives. By working together, we can build a future where no woman loses her life to a preventable heart condition. The time to act is now.

Conclusion

The urgency to tackle maternal cardiovascular health is evident. Heart disease is the leading cause of pregnancy-related deaths³, and over 80% of these deaths are preventable⁴.

California has already taken bold steps, but there's more work to do. Working together—healthcare providers, technology leaders, and communities—we can make maternal deaths from heart disease a thing of the past. This isn't just a vision. It's an achievable reality. Together, we will turn the tide on this crisis and ensure that every mother gets the care she needs before, during, and after pregnancy.



Citations

1. [National Center for Health Statistics. Multiple Cause of Death 2018–2022 on CDC WONDER Database. Accessed March 27, 2025.](#)
2. NCHS, National Vital Statistics System. Mortality estimates for 2019-2023 are based on final data and estimates for 2024 are based on provisional data. Natality estimates for 2019-2023 are based on final data and estimates for 2024 are based on provisional data (available from: <http://wonder.cdc.gov/>).
3. Pregnancy-related deaths include deaths within a year of pregnancy from causes related to or aggravated by the pregnancy or its management, as determined by expert committee review. Abbreviations: CVD = cardiovascular disease; Hem = Hemorrhage; Inf = Sepsis or infection; HDP = Hypertensive disorders of pregnancy; AFE = Amniotic fluid embolism; TPE = Thrombotic pulmonary embolism; CVA = Cerebrovascular accident; Anes = Anesthesia complications; Other = Other medical condition(s). Note: Deaths with undetermined cause were excluded from analysis (n=2).
4. [CDC Press Release: Four in 5 pregnancy-related deaths in the U.S. are preventable](#)
5. Cardiovascular Risk Factors Mediate the Long-Term Maternal Risk Associated With Hypertensive Disorders of Pregnancy: Jennifer J. Stuart, ScD Lauren J. Tanz, ScD Eric B. Rimm, ScD Donna Spiegelman, ScD Stacey A. Missmer, ScD Kenneth J. Mukamal, MD, MPH Kathryn M. Rexrode, MD, MPH Janet W. Rich-Edwards, ScD
6. Consensus Statement, Alliance for Innovation on Maternal Health, Consensus Bundle on Cardiac Conditions in Obstetric Care: Afshan B. Hameed, MD, Alison Haddock, MD, et.al
7. Chelak K, Chakole S. The Role of Social Determinants of Health in Promoting Health Equality: A Narrative Review. Cureus. 2023 Jan 5;15(1):e33425. doi: 10.7759/cureus.33425. PMID: 36751221; PMCID: PMC9899154.
8. Pregnancy-related mortality ratio (PRMR) = Number of pregnancy-related deaths per 100,000 live births. Pregnancy-related deaths include deaths within a year of pregnancy from causes related to or aggravated by the pregnancy or its management, as determined by expert committee review. PRMRs for American Indian/Alaska Native(n=0,0,1 for 2013-2015, 2016-2018, and 2017-2019, respectively), Native Hawaiian/Pacific Islander (n=0,1,3 for 2013-2015, 2016-2018, and 2017-2019, respectively), Multiple-race (n=8,4,10 for 2013-2015, 2016-2018, and 2017-2019, respectively), and other races (n=0,1,0 for 2013-2015, 2016-2018, and 2017-2019, respectively) are not shown due to small counts.
9. Heck JL, Jones EJ, Bohn D, McCage S, Parker JG, Parker M, Pierce SL, Campbell J. Maternal Mortality Among American Indian/Alaska Native Women: A Scoping Review. J Womens Health (Larchmt). 2021 Feb;30(2):220-229. doi: 10.1089/jwh.2020.8890. Epub 2020 Nov 18. PMID: 33211616.
10. www.healthyplacesindex.org

Appendix

Maternal Health Summit: Improving Cardiovascular Health

February 20, 2025

Opening Remarks

- **Diana E. Ramos, MD** California Surgeon General
- **Rosie Bulatin**, Patient Story
- **Afshan Hameed, MD** UC Irvine

Track 1: Healthcare Delivery

Objective: Highlight perinatal cardiovascular programs, best practices and innovation within their healthcare setting.

Moderator: Diana Ramos, MD California Surgeon General

- Speaker: **Joelle Donofrio Odmann, MD** Emergency Services, Eagles
- Speaker: **Sarah Vaillancourt DNP, WHNP-BC, RN** California Maternal Quality Care Collaborative
- Speaker: **Brittany Mbong, CNM/WHNP**, BLACK Wellness and Prosperity Center
- Speaker: **Karen Mark, MD** California Department of Health Care Services

Track 2: Community Setting

Objective: Highlight perinatal cardiovascular programs, best practices and innovation within the community setting.

Moderator: Colette Cobb, CA Surgeon General Office

- Speaker: **Holly Morrell**, Heartfelt Cardiac Connections (Cardio prescreening)
- Speaker: **Monica Alleje**, American Heart Association (Libraries with Heart Initiative)
- Speaker: **Martin Cadeiras, MD** (UC Davis Promotora Program)
- Speaker: **Ryan Natividad**, California Department of Public Health, Chronic Disease Control Branch (Million Hearts and Wisewomen)

Track 3: Technology

Objective: Highlight perinatal cardiovascular programs, best practices and innovation within the technology setting.

Moderator: Stephen Bruso, Morningside Technology Advisory

- Speaker: **Maneesh Jain, MD** Mirvie (At Home, Predictive and Preventive Blood Test)
- Speaker: **Jesus Saucedo, MD** Trust.Care (App, Community Services Navigator)
- Speaker: **Bonnie Zell, MD** Delfina (App, Automation of Routine and Proactive Care)
- Speaker: **Ramin Mousavi**, Cathworks (Provider Tool using AI for faster analysis)

Closing Remarks



Office Hours

Episode 1: Intersection of Cardiovascular Health and Maternal Health



Dr. Diana E. Ramos
California Surgeon General



Dr. Afshan Hameed
Professor and Director, Division of Maternal
Fetal Medicine & Cardio-Obstetrics Program

Step into **Office Hours with Dr. Diana Ramos**, an audio series where health meets real talk. Hosted by the California Surgeon General, these conversations tackle health issues that truly impact everyday life—from reproductive and maternal health to Adverse Childhood Experiences and game-changing medical innovations in public health—we will dive deep into the topics that matter most to Californians and their community. Informative, empowering, and thought-provoking, whether a health professional, advocate or simply curious about improving well-being, these conversations are a trusted source for insight and guidance.

In this episode, explore the intersection of cardiovascular health and maternal health with Dr. Afshan Hameed, a board-certified cardiologist and obstetrician who specializes in maternal-fetal medicine and high-risk pregnancies.

