

Reducing inequities in cesarean delivery: From awareness to action

Guidelines, disparities, and strategies for improvement

Prepared for Blue Shield of California by Kelly O. Elmore, MD, MBA April 2025



Learning objectives

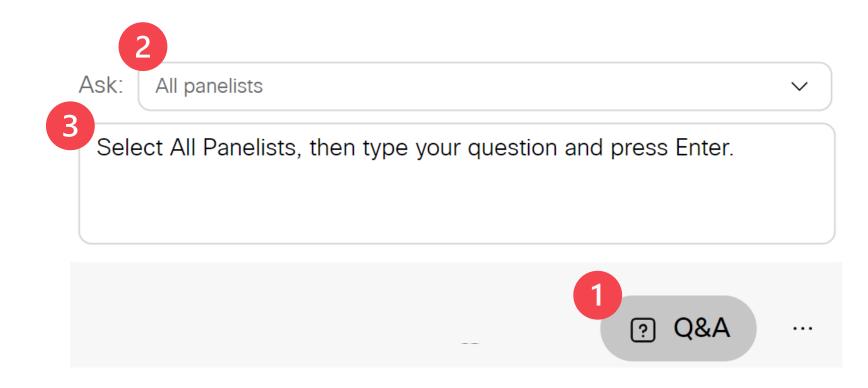


How to:

- 1) Recognize ethnic disparities in cesarean delivery rates.
- 2) Identify implicit bias and variability in clinical decision-making.
- 3) Discuss standardized data tracking and quality improvement measures.
- 4) Acknowledge limited access to supportive labor practices (midwifery and doula care).
- 5) Describe adequate prenatal education and shared decision-making.

How to ask a question

- 1. Click the Q&A button.
- 2. Select All Panelists.
- 3. Type your question.
- 4. Press Enter on your keyboard.



- > To see live captions: Click CC on the bottom left of your Webex screen.
- > You will receive an email with this presentation and a link to the recording within five (5) business days.



Kelly O. Elmore, MD

Motto: High quality, safe, equitable, and evidencebased care - anytime, anywhere, always Native Chicago/Southern California Lived: Puerto Rico, Guam, Japan, Jamaica, DC

US Navy Veteran, 26 years Board Certified OBGYN since 2010

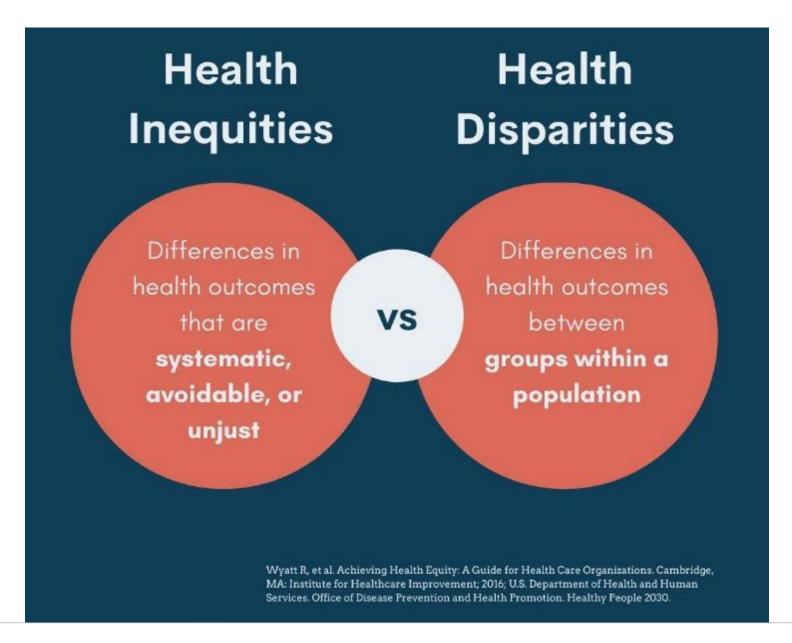
Graduate of: Xavier University of Louisiana U of Chicago, Pritzker School of Medicine Naval Postgraduate School

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Board Advisor, San Diego Perinatal Health

Why focus on cesarean delivery rate reduction?

Definitions



Source: CME Outfitters

NSTV

Definition	Why focus on NSTV	But my patients are high risk
 Nulliparous (patient has never given birth before) 	 Standardized population that can be compared 	Already risk stratified
		 Black birthing patients still
 Term (at least 37 weeks of gestation) 	 Risk stratified 	have higher NTSV cesarean rates than white patients
	 Most favorable conditions for 	
 Singleton pregnancy (not multiple) 	vaginal birth AND the most difficult labor management	 Age and BMI data show that over 2/3 of hospitals change less than 2%
 Vertex fetus (head facing 	 Largest contributor to the 	
down in the birth canal)	recent rise in cesarean rates	 Age and BMI effects may be provider-dependent (patience
	 Greatest variation for all sub- populations of cesarean births 	for an obese patient's labor)

Jolles DR. Unwarranted Variation in Utilization of Cesarean Birth Among Low-Risk Childbearing people. *Journal of Midwifery & people's Health*. 2017;62(1):49-57; MacDorman MF, Menacker F, Declerca E. Cesarean birth in the United States: epidemiology, trends, and outcomes. *Clin Perinatol*. 2008;35(2):293-307 Pacific Business Group on Health. Report: variation in NTSV c-section rates among California hospitals. 2015. http://www.pbgh.org/storage/documents/PBGH_C-Section_NTSV Variation. Peoport Oct 2015, pdf. Accessed February 7, 2016 Calculation of Nulliparious Term Singleton Vertex Rate (NTSV CS Rate) – TJC PC-02, ACOG, LeapFrog, CMS, Healthy People 2020 D: all first-birth moms who are Term, with Singleton baby, Vertex presentation; N: Denom. Cases with a cesarean

Why is it important to focus on cesarean delivery rate reduction?

Cesarean delivery can be the safest option for certain clinical conditions, including:

- Failure of labor to progress
- Fetal intolerance of labor
- Multiple pregnancy
- Placental abnormality, placenta previa
- Uterine rupture
- Macrosomia (large baby)
- Breech presentation
- Medical condition that makes vaginal birth risky (active genital herpes infection during labor, heart conditions or brain problems, such as an aneurysm)



However, for most NTSV pregnancies, cesareans pose a greater risk of maternal morbidity and mortality.

[•] https://www.leapfroggroup.org/news-events/leapfrog-group%E2%80%99s-2023-maternity-care-report-finds-increased-cesarean-delivery-rates#:~:text=From%202015%2C%20when%20Leapfrog%

 ²⁰first, only%2042.3%25%20meet%20the%20standard.

https://www.acog.org/peoples-health/faqs/cesarean-birth

Potential impacts of cesarean delivery on maternal health

Cesarean deliveries carry serious risks of longer recovery and:

- Infection: Uterus, nearby pelvic organs, or skin
- Hemorrhage: Excessive blood loss, blood transfusion, rarely hysterectomy, death
- **Embolism:** Blood clots in the legs, pelvic organs, or lungs
- Organ injury: Bowel or bladder
- **Future pregnancy risk:** Placenta problems, rupture of the uterus, and hysterectomy.
- Maternal mental health: Anxiety, depression, PTSD



Doctors perform over 160,000 cesarean deliveries every year in California.

https://www.leapfroggroup.org/news-events/leapfrog-group%E2%80%99s-2023-maternity-care-report-finds-increased-cesarean-delivery-rates#:~:text=From%202015%2C%20when%20Leapfrog%

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[•] https://www.acog.org/peoples-health/faqs/cesarean-birth

Cesarean: Neonatal risks

- Increased neonatal morbidity
- Impaired neonatal respiratory function
- Increased NICU admissions
- Affects maternal-newborn interactions including breastfeeding
- No reduction in cerebral palsy rates



The California Pregnancy Mortality Surveillance System (CA-PMSS)

CA-PMSS provides timely statewide pregnancy-associated death counts and rates, including data and statistics in these <u>fact sheets</u>.

Disparities by Race and Ethnicity Trends in 2019-2021

Racial and ethnic disparities in the rate of pregnancy-related deaths decreased in 2019-2021 but persist. The rate for Black birthing people was 49.7 deaths per 100,000 live births in 2019-2021:

 2.8 to 3.6 times higher than the rates for White (14.0), Asian (14.4), and Hispanic/Latino birthing people (17.7)

In 2016-2018, the rate of pregnancy-related deaths was 3.4 to 4.3 times higher for Black birthing people.

Disparities by Health Insurance Medi-Cal & Trends in 2019-2021

The disparity in the rates of pregnancy-related deaths for birthing people with Medi-Cal health coverage and those with private health insurance remained wide in 2019–2021.

The rate for birthing people with Medi-Cal health coverage was 26.0 deaths per 100,000 live births in 2019–2021:

 2.7 times higher than the rate of 9.6 deaths per 100,000 live births for birthing people with private insurance

In 2016–2018, the rate of pregnancy-related deaths was 1.6 times higher for birthing people with Medi-Cal health coverage.

Disparities by Community Conditions Social Determinants & Trends in 2019–2021

The disparity in the rates of pregnancy-related deaths for birthing people living in the least healthy communities* and those living in the healthiest communities widened in 2019–2021.

The rate for those living in the least healthy communities was 27.3 deaths per 100,000 live births in 2019–2021:

 3.7 times higher than the rate of 7.4 deaths per 100,000 live births for those living in the healthiest communities

In 2016–2018, the rate of pregnancy-related deaths was 1.7 times higher for birthing people living in the least healthy communities.

*Community conditions were measured using the Healthy Places Index www.healthyplacesindex.org.

For more information please visit go.cdph.ca.gov/pregnancy-related-mortality-dashboard and go.cdph.ca.gov/PMSS.

CA-PMSS Fact Sheet | go.odph.ca.gov/MCAH

By the Numbers

2.8-3.6x

Higher rate of pregnancy-related deaths for Black birthing people



rate of pregnancy-related deaths for those with Medi-Cal health coverage



Higher
rate of pregnancy-related
deaths for those living
in the least healthy
communities

Jan 2025

mcan

DISPARITIES BY RACE/ETHNICITY TRENDS IN 2018-2020

Racial and ethnic disparities in pregnancy-related deaths decreased in 2018-2020 but persist.

The rate for Black birthing people was 45.8 deaths per 100,000 live births in 2018-2020:

 3.1 to 3.6 times higher than the rates for Asian (15.0), Hispanic/Latino (14.8), and White birthing people (12.6)

In 2015-2017, the rate of pregnancy-related deaths for Black birthing people was 4.5 to 6.0 times higher.

DISPARITIES BY HEALTH INSURANCE MEDI-CAL & TRENDS IN 2018-2020

The disparity in the rate of pregnancy-related deaths for birthing people with Medi-Cal health coverage and those with private health insurance widened in 2018-2020.

The rate for birthing people with Medi-Cal health coverage was 21.5 deaths per 100,000 live births in 2018-2020:

 2.7 times higher than the rate of 7.8 deaths per 100,000 live births for birthing people with private insurance

In 2015-2017, the rate of pregnancy-related deaths was 1.7 times higher for birthing people with Medi-Cal health coverage.

DISPARITIES BY COMMUNITY CONDITIONS SOCIAL DETERMINANTS & TRENDS IN 2018-2020

Disparities in the rate of pregnancy-related deaths persisted based on community conditions. Community conditions were measured using the Healthy Places Index.*

The rate for birthing people living in the least healthy community conditions was 18.9 deaths per 100,000 live births in 2018-2020:

 2.1 times higher than the rate of 9.2 deaths per 100,000 live births for birthing people living in the healthiest communities

In 2015-2017, the rate of pregnancy-related deaths was 1.7 times higher for birthing people living in the least healthy communities.

*Source: www.healthyplacesindex.org

For more information please visit ao.cdph.ca.aov/PMSS and ao.cdph.ca.aov/Maternal-Mortalitv.

By the Numbers

3.1 - 3.6x

rate of pregnancy-related deaths for Black birthing people



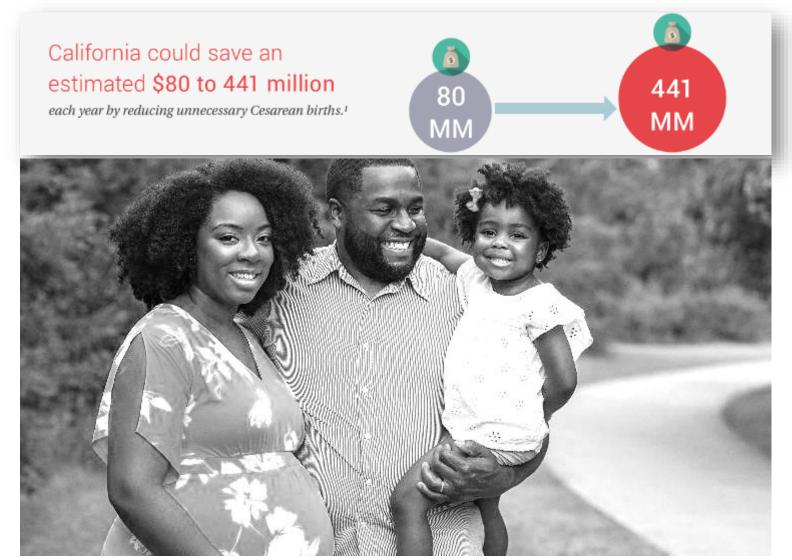
rate of pregnancy-related deaths with Medi-Cal health coverage



rate of pregnancy-related deaths when living in the least healthy community conditions

Source: The Maternal, Child and Adolescent Health (MCAH) Division of the California Department of Public Health (CDPH)

The cost... Another important reason to reduce unnecessary cesarean delivery rates



Pacific Business Group on Health. Report: variation in NTSV c-section rates among California hospitals. 2015. http://www.pbgh.org/storage/documents/PBGH_C-Section_NTSV_Variation_Report_Oct_2015.pdf.

Cesarean delivery rate goals to improve maternal/neonatal outcomes

World Health Organization: Cesarean delivery rates up to 10 - 15% are optimal for maternal and newborn outcomes¹.

The U.S. Department of Health and Human Service (Healthy People 2030 initiative): Reduce cesarean delivery rate from 26.2% to **23.6%** for low-risk, full-term, first-time births².

American College of Obstetricians and Gynecologists (ACOG): Emphasizes shared decision-making, proper labor progression, and reducing primary cesarean deliveries.

Meeting these goals can improve outcomes and reduce risks of:

- Maternal morbidity and mortality vs. vaginal birth³, for most pregnancies.
- Serious maternal mental and physical health complications, future pregnancy complications, and neonatal morbidity.

1 World Health Organization. (2015). WHO Statement on caesarean section rates. Reproductive Health Matters, 23(45), 149–150. https://doi.org/10.1016/j.rhm.2015.07.007

2 Office of Disease Prevention and Health Promotion. (n.d.). Reduce cesarean births among low-risk people with no prior births — MICH-06. Healthy People 2030. U.S. Department of Health and Human Services. https://health.gov/healthypeople/objectives-and-data/browse-objectives/health-care-access-and-quality
3 First and Second Stage Labor Management: ACOG Clinical Practice Guideline No. 8. (2024). Obstetrics and gynecology, 143(1), 144–162. https://doi.org/10.1097/AOG.0000000000000447

Risks and disparities drive cesarean-reduction goals

Black birthing patients are at greatest risk of cesarean-related complications due to:

- The highest cesarean rates for low-risk pregnancies in the U.S. (30.8%) and California (31.2%).
- Cesarean delivery rate 74% higher than that of white patients, which may account for ~15.8% higher maternal morbidity related to low-risk births (most often due to infection).
- Cesarean delivery rates continuing to rise globally and in California.

Blue Shield of California's goal to reduce cesarean risks and disparities for Black members:

Decrease the cesarean delivery rate differential between Black and white birthing patients by 50% by the end of 2028.

- https://www.cdc.gov/nchs/data/nvsr/nvsr74/nvsr74-1.pdf P. 6, 32, 71
- National Center for Health Statistics, final natality data. Retrieved March 14, 2025, from www.marchofdimes.org/peristats.
- Debbink, Michelle P. MD, PhD, et al. for the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) Maternal-Fetal Medicine Units (MFMU) Network. Racial and Ethnic Inequities in Cesarean Birth and Maternal Morbidity in a Low-Risk, Nulliparous Cohort. Obstetrics & Gynecology 139(1):p 73-82, January 2022. DOI: 10.1097/AOG.000000000004620

The key question

How can we safely reduce cesarean deliveries among Black birthing patients to improve maternal and neonatal outcomes?



Key strategies to achieve safe cesarean rate reduction for Black patients

Collaborate to improve Black maternal and neonatal outcomes through:

- 1. Recognizing ethnic disparities in cesarean delivery rates
- 2. Identifying implicit bias and variability in clinical decision-making
- 3. Discussing standardized data tracking and quality-improvement measures
- 4. Acknowledging the benefits of increased access to supportive labor practices (midwife and doula care)
- 5. Describing adequate prenatal education and shared decision-making

Recognize ethnic disparities in cesarean delivery rates

Cesarean delivery rate comparisons by race/ethnicity

Of 16,587 NTSV pregnancies (2016-2017), higher odds of cesarean deliveries compared to white birthing patients:

Black: 73% higher

Asian: 59% higher

Hispanic: 43% higher

Multiple race/other: 45% higher



Okwandu, I. C. et al., (2022). Racial and Ethnic Disparities in Cesarean Delivery and Indications Among Nulliparous, Term, Singleton, Vertex people. *Journal of racial and ethnic health disparities*, 9(4), 1161–1171. https://doi.org/10.1007/s40615-021-01057-w

Reasons for cesarean delivery by race/ethnicity

Failure to progress:

Higher odds in Asian (46% higher) and Hispanic (25% higher) compared to white birthing patients

Fetal intolerance:

Black birthing patients had 51% higher odds compared to white birthing patients.

Among patients with fetal intolerance of labor: No significant differences by race/ethnicity for

APGAR score or NICU admission.



Okwandu, I. C., et al., (2022). Racial and Ethnic Disparities in Cesarean Delivery and Indications Among Nulliparous, Term, Singleton, Vertex people. *Journal of racial and ethnic health disparities*, 9(4), 1161–1171. https://doi.org/10.1007/s40615-021-01057-w

U.S. cesarean delivery stats

- About 1 in 3 babies is delivered by cesarean in the U.S.
- The average rate of NTSV cesarean deliveries nationwide:

o 2018: 25.8%

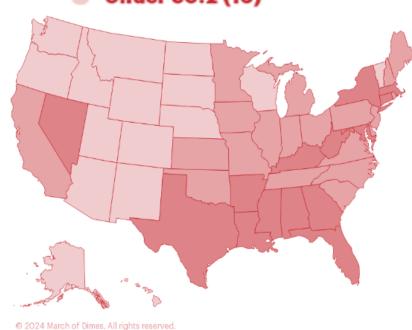
2022: 26.3%

 2023: 26.6% (Black birthing people had the highest NTSV cesarean rate at 30.8%)

Healthy People 2030 Goal: 23.6%

2023: Percent of total cesarean births by state

- Over 33.2 (15)
- 30.2-33.2 (20)
- Under 30.2 (16)



National Center for Health Statistics, final natality data. Retrieved December 8, 2024, from www.marchofdimes.org/peristats.

[•] https://www.leapfroggroup.org/news-events/leapfrog-group%E2%80%99s-2023-maternity-care-report-finds-increased-cesarean-delivery-rates#:~:text=From%202015%2C%20when%20Leapfrog%20first,only%2042.3%25%20meet%20the%20standard

https://www.cdc.gov/nchs/data/nvsr/nvsr74/nvsr74-1.pdf P. 6, 32

California cesarean delivery stats

In 2023:

- 31.5% of all live births were cesarean deliveries.
 - Black birthing people had the highest rate at 36.8%.
- 25.9% of NTSV births were cesarean deliveries.
 - Black birthing people had the highest NTSV cesarean rate at 31.2%

- The rate of primary cesarean deliveries was 21.2 per 100 live births.
- The rate of vaginal births after a cesarean (VBAC) was 13.6 per 100 live births.

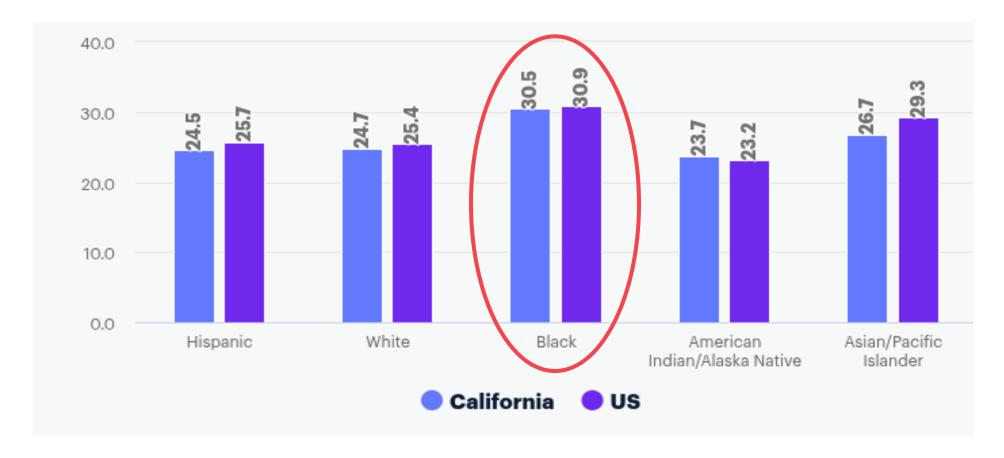


[•] https://www.marchofdimes.org/peristats/data?top=8&lev=1&stop=645&ftop=648®=99&sreg=06&obj=1&slev=4&cmp=99



U.S. and California NTSV cesarean delivery stats by race/ethnicity

2021 - 2023 averages for NTSV cesarean deliveries:



Identify implicit bias and variability in clinical decision-making

Contributing factors to inequity

- Weathering (Geronimus, 1992)
- Systemic racism
- Organizational racism
- Professional racism, prejudice, bias
- Internalized racism, prejudice, bias
- Variations in hospital and provider practices



- Leading to inadequate access to quality care and providers
- Poor outcomes short and long term

Implicit bias and variability in clinical decision making contribute to inequity

Many cesarean decisions are influenced by:

- Provider bias rather than medical necessity
- Underestimation of Black patients' preferences for vaginal birth
- Assumptions about pain tolerance
- Limited training on racial disparities
- Variability in cesarean thresholds

Methods to identify and reduce inequity in labor management

- Require annual implicit bias and cultural competency training for all labor and delivery staff.
- Integrate shared decision-making models.
- Develop real-life case simulations of counseling Black patients on L&D options without bias.
- Create a real-time feedback mechanism on cesarean delivery rates by race/ethnicity.
- Implement peer-review discussions for high-risk cases.

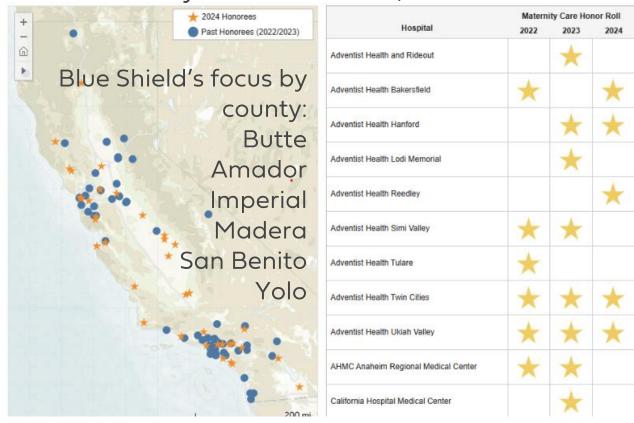


Discuss standardized data tracking and quality-improvement measures

Who is monitoring and reporting cesarean delivery data?

- Blue Distinction Centers for Maternity Care
- California Department of Health Care
 Access and Information (HCAI)
- California Maternal Quality Care
 Collaborative (CMQCC)
- March of Dimes
- The Joint CommissionTM
- The Leapfrog Group

HCAI Maternity Care Honor Roll, 2024



https://hcai.ca.gov/visualizations/maternity-care-honor-roll/

Recommended actions to track data and implement QI measures

- Develop real-time dashboards tracking cesarean rates by race, hospital unit, provider.
- Set department-wide goals to safely reduce cesarean rates.
- Conduct quarterly case reviews of cesarean deliveries in Black patients.



- Provide performance-based feedback to obstetricians.
- Integrate patient-reported feedback on their birth experiences.
- Adopt and enforce evidence-based labor progression guidelines.
- Mandatory second-opinion process before nonemergent primary cesareans in Black patients.
- Train obstetric providers in updated labor dystocia definitions.
- Increase use of non-medical interventions.
- Implement a checklist-based review process.

Acknowledge the benefits of increased access to supportive labor practices (midwife and doula care)

National Birth Center Study II

Study of 22,403 people planning to give birth at 79 U.S. birth centers (2007-2010)

15,574 participants were eligible for birth center birth

- 11.9% transferred to the hospital during labor, most for non-emergency reasons.
- Very few emergency transfers occurred during labor (0.9%) and after birth (0.4%).
- 94% vaginal birth rate. Cesarean rate of 6%, significantly lower than the U.S. low-risk rate of 26.6%.



Benefits of midwifery and doula care

Benefits of midwives	Benefit of certified doulas
 Increased Breastfeeding initiation Patient confidence and control Patient-centered care Spontaneous vaginal birth rate Trial of labor after cesarean (TOLAC) Vaginal birth after cesarean (VBAC) Reduced Continuous fetal monitoring Cost Episiotomies Inductions of labor Need for epidural/pain medication NICU admissions Operative vaginal deliveries 	 Increased Breastfeeding initiation Higher APGAR scores Improved outcomes Patient-centered care Positive birth experience Spontaneous vaginal birth rate Reduced Cesarean birth rates Cost Duration of labor Inductions by oxytocin Need for epidural/pain medication Operative vaginal deliveries

Despite these benefits, certified nurse-midwives are vastly underutilized, delivering only 9% of babies nationally.

- Purchaser Business Group on Health

[•] Smith, Holly, et al. "The next step in California's quality improvement journey: Integrating midwives, doulas, & community-based birth care." CMQCC, California Maternal Quality Care Collaborative, 2022, www.cmqcc.org/resources-tool-kits/webinars.

[•] Using Nurse-Midwives enhances maternal health and decreases costs. (2021, March 30). PBGH. https://www.pbgh.org/initiative/expand-use-of-nurse-midwives/

Recommended actions to increase access to midwife and doula care

- Establish hospital-based midwifery programs in Black communities.
- Medicaid and insurance reimbursement for doula support services to expand accessibility.
- Train nurses and providers on integrating midwifery-led care models.
- Develop collaborative care pathways where OB-GYNs, midwives, and doulas work together.
- Track midwifery and doula service utilization rates and impact on cesarean reduction among Black patients.



Describe adequate prenatal education and shared decision-making

Optimize prenatal education and labor preparation for Black patients

- Develop culturally appropriate prenatal education materials on labor progression, pain management, and VBAC options.
- Offer **prenatal classes** in Black communities, focusing on advocacy skills and informed decision-making during labor.
- Implement **group prenatal care models** (e.g., Centering PregnancyTM) to increase patient engagement and birth preparedness.
- Utilize digital health tools (e.g., mobile apps, remote patient monitoring, telehealth coaching) to provide on-demand education and support.
- Conduct prenatal birth preference discussions between patients and providers, ensuring alignment with evidence-based recommendations.



Three pilot quality improvement (QI) projects - Impressive results after 6 months

- Hoag Hospital Newport Beach, CA
- Miller Children's and people's Hospital Long Beach, CA
- Saddleback Memorial Medical Center Laguna Hills, CA



2025: Bite-sized next steps

- Add morbidity/mortality to data reporting with details on race/ethnicity. (QI Team)
- Use data-driven approaches to identify gaps and monitor progress. (Perinatal team, Community Orgs)
- Identify best of the best and the low performing hospitals/providers/care teams. (Hospital Admin)
- Align efforts with evidence-based guidelines and best practices of CMQCC, ACOG, SMFM, AWOHNN, WHO, CDC. (QI & Perinatal Team)
- Strengthen partnerships across health care systems and provider networks, and non-healthcare organizations (the bump, moms4kira). (All levels)



Top 9 actions by 2026 for reducing racial and ethnic inequities in health care

(Recommended by ACOG's Committee on Advancing Equity in Obstetric and Gynecologic Health Care)

- 1. Commit to lifelong learning.
- 2. Standardize race and ethnicity data collection.
- 3. Engage marginalized communities.
- 4. Provide culturally-humble, historically-informed care.
- 5. Foster an anti-racist culture.
- 6. Acknowledge and address harm.
- Support the recruitment and advancement of underrepresented racial and ethnic health care professionals.
- 8. Promote research on structural barriers to care and develop effective, community-informed solutions.
- Advocate for policy changes addressing systemic racism, social drivers of health, and reproductive justice.



Survey on provider perspectives

Obstetric practitioners in California are invited to complete a short, anonymous survey to share your perspectives.

Please type this link into your browser: TINYURL.COM/CESAREANSURVEY

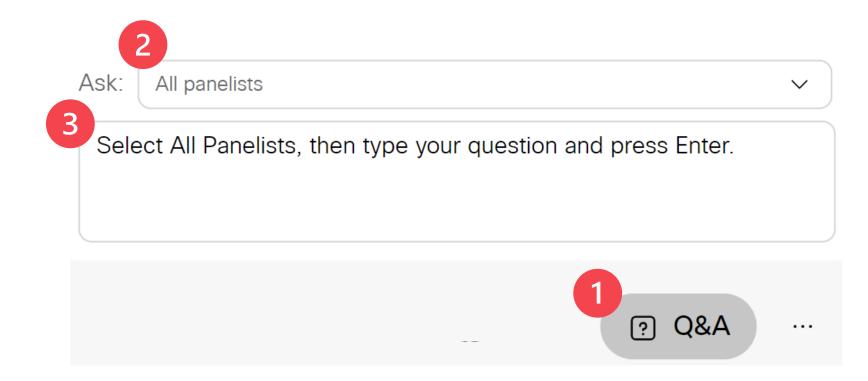
or use your phone to scan this QR code:



Questions

How to ask a question

- 1. Click the Q&A button.
- 2. Select All Panelists.
- 3. Type your question.
- 4. Press Enter on your keyboard.



You will receive an email with this presentation and a link to the recording within five (5) business days.

Thank you



Appendix

Alignment and partnership are necessary to reach cesarean rate reduction goals



Case study: Virginia Hospital Center (VHC)

"Cesarean delivery measurement galvanizes improvement"

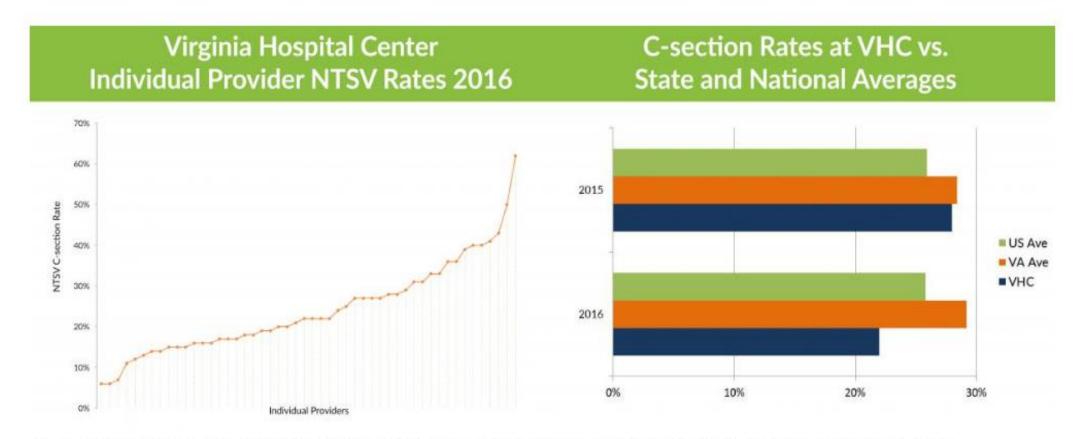
- Identified a problem: VHC's NTSV cesarean delivery rate was 33%, exceeding the 23.9% target set by the Leapfrog Group.
- Leadership commitment: Senior leaders recognized the issue, emphasizing patient-first care and the need for immediate action.
- Prioritized change: VHC committed to improving maternal outcomes by making cesarean reduction a hospital-wide priority.

https://www.leapfroggroup.org/vhc-case-study

Case Study: VHC takes action

- Adopted evidence-based practices: Implemented ACOG & Society for Maternal-Fetal Medicine guidelines to reduce unnecessary interventions.
- Enhanced accountability and education: Formed a multidisciplinary team, conducted chart audits, and provided educational support.
- Promoted transparency and improvement: Publicly posted cesarean rates and worked closely with providers needing corrective measures.

Case Study: VHC sees results



To encourage transparency, VHC posts C-section rates at department, group and individual levels, as pictured above. The graph to the right compares VHC's NTSV C-section rate to the state and national averages.

Case Study: How VHC achieves success

2014	2015	2016	2017
 Define goal: Safely reduce the NTSV cesarean rate. Collect and verify data. Use literature to demonstrate rationale for lowering rate. Leadership review of goals and recommendations. 	 Designate Medical Director of Obstetrics; form multidisciplinary working group. Conduct chart audits and educational activities based on ACOG resources. Post rates at dept/group/individual level and address outliers. 	 Share successes with the community, professional organizations, colleagues. Enact corrective measures for persistent outliers. Examine other metrics; determine opportunities for improvement. 	 Continue leadership and camaraderie among administration, physician, and nursing champions for more maternity care goals. Ongoing to be transparent internally and externally about collective and individual provider cesarean rates.
Reported to Leapfrog Hospital Survey.			