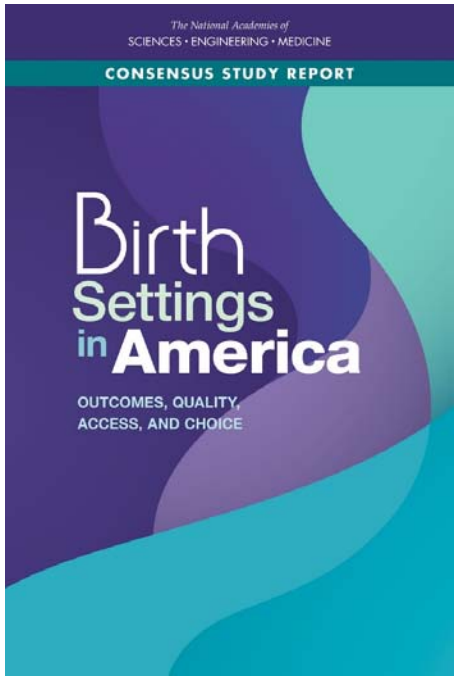

Birth Settings in America: Opportunities for Hospital Settings

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Statement of Task

- An ad hoc committee will provide an evidence-based analysis of the complex findings in the research on birth settings, focusing particularly on health outcomes experienced by subpopulations of women. It will bring together key stakeholders in a public workshop to further inform this analysis, including representatives from government, academia, healthcare provider organizations, third party payers, and women's health organizations.

- The ad hoc committee will explore and analyze the current state of science on the following topics, identifying those questions that cannot be answered given available findings.
  - I. Risk factors that affect maternal mortality and morbidity
  - II. Access to and choice in birth settings
  - III. Social determinants that influence risk and outcomes in varying birth settings
  - IV. Financing models for childbirth across settings
  - V. Licensing, training, and accreditation issues pertaining to professionals providing maternity care across all settings
  - VI. Learning from international experiences

Main Messages

- The maternity system in the U.S. is fraught with **uneven access and quality**, **stark inequities**, and **exorbitant costs**.

- There is growing recognition of a **mismatch between the expectations of the care and support pregnant people deserve and what they actually receive**.

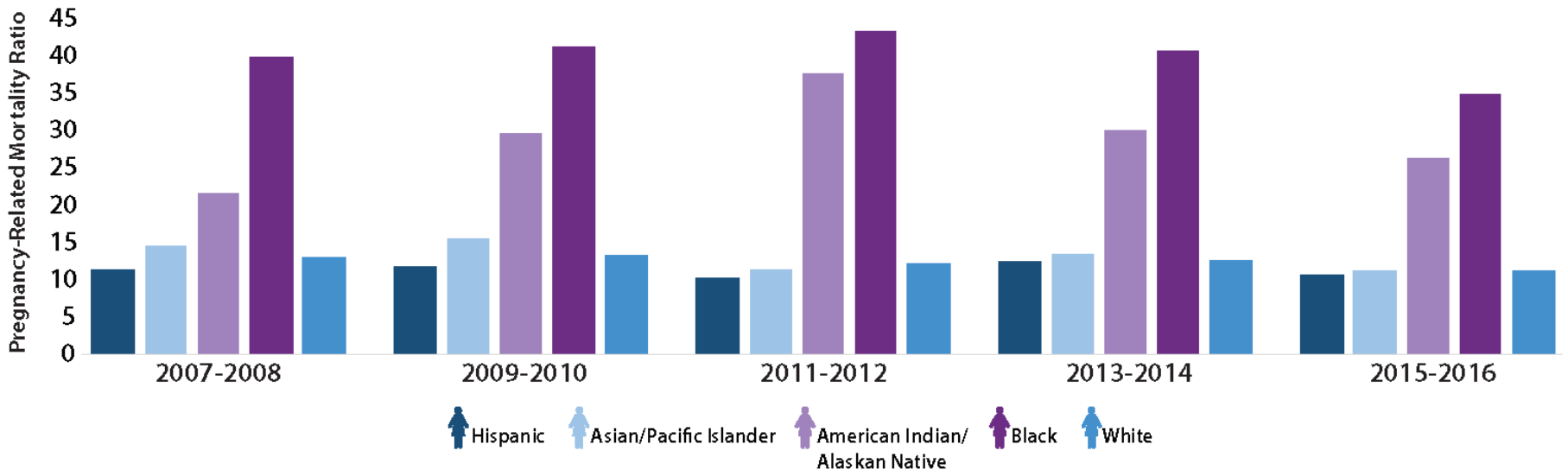
- To improve maternal and infant outcomes in the U.S., we need:
  - to increase **economic and geographic access** to maternity care in all settings;
  - to provide high-quality and **respectful treatment**;
  - to ensure **informed choices** about medical interventions when appropriate for risk status in all birth settings; and
  - to facilitate **integrated and coordinated care** across all maternity care providers and all birth settings.

Why Study Birth Settings?

- The U.S. has among the highest rates of maternal/ neonatal mortality and morbidity of any high-resource country, particularly among Black and Native American pregnant individuals.

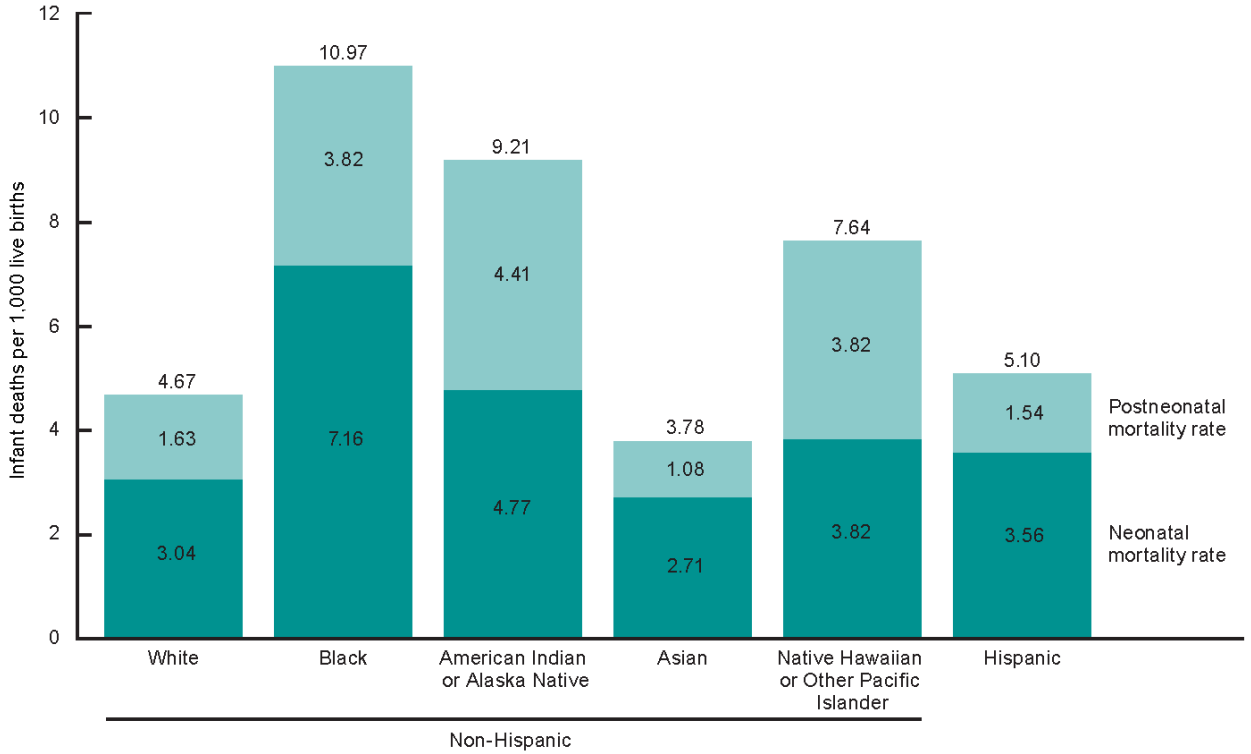
- Role of structural racism, implicit /explicit bias, and discrimination.

Why Study Birth Settings?



Trends in pregnancy-related mortality ratio: United States, 2005-2016

Why Study Birth Settings?



Infant, neonatal, and postneonatal mortality rates, by race and Hispanic origin: United States, 2017

Why Study Birth Settings?

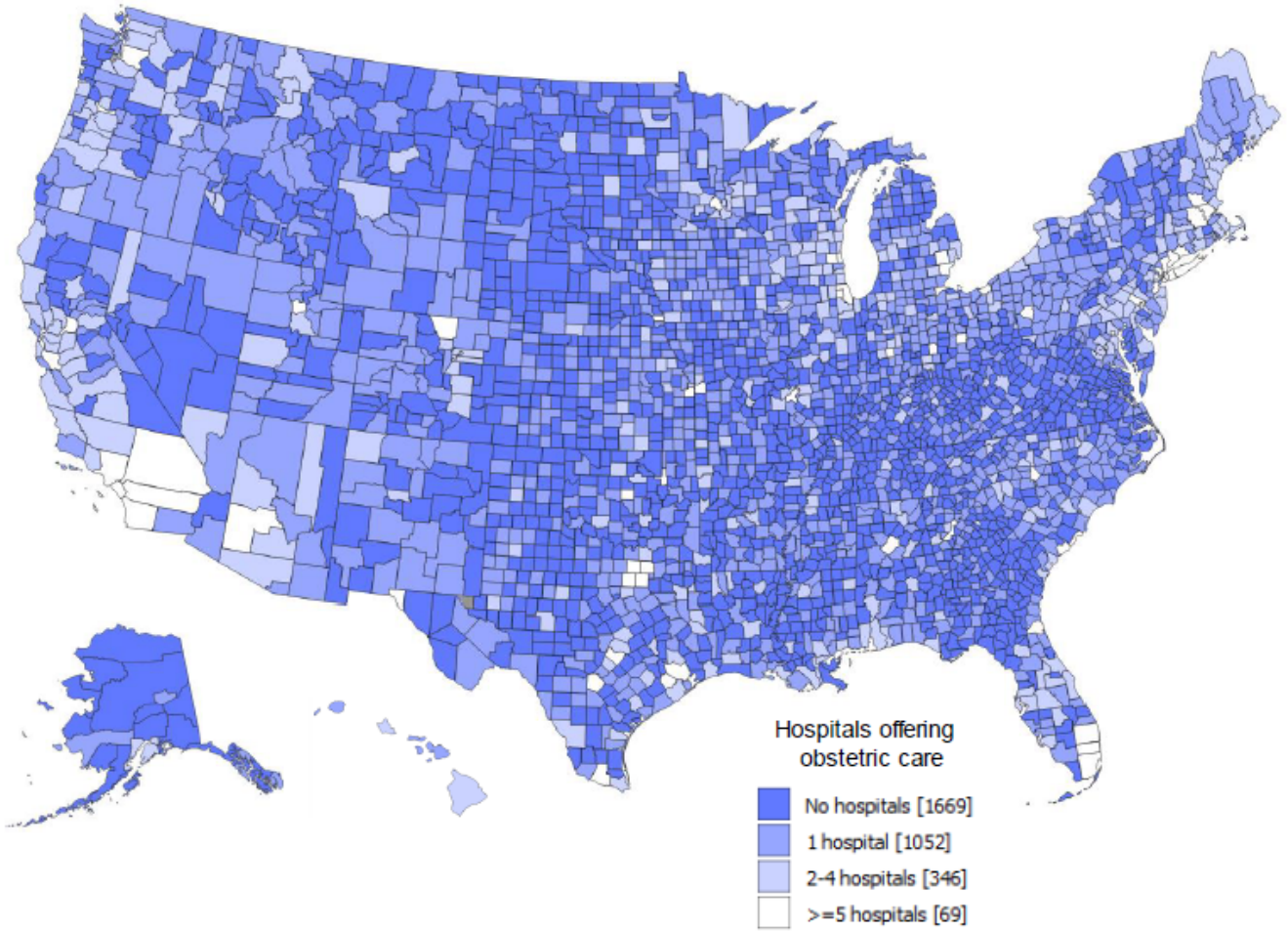
- Safe, evidence-based, and appropriate healthcare not universally available to all.
- U.S. maternity care characterized by broad variations in practice, with considerable overuse of non–medically indicated care, underuse of beneficial care, and gaps between practice and evidence.
- U.S. continues to outpace its peer countries in costs of maternity care.

Why Study Birth Settings?

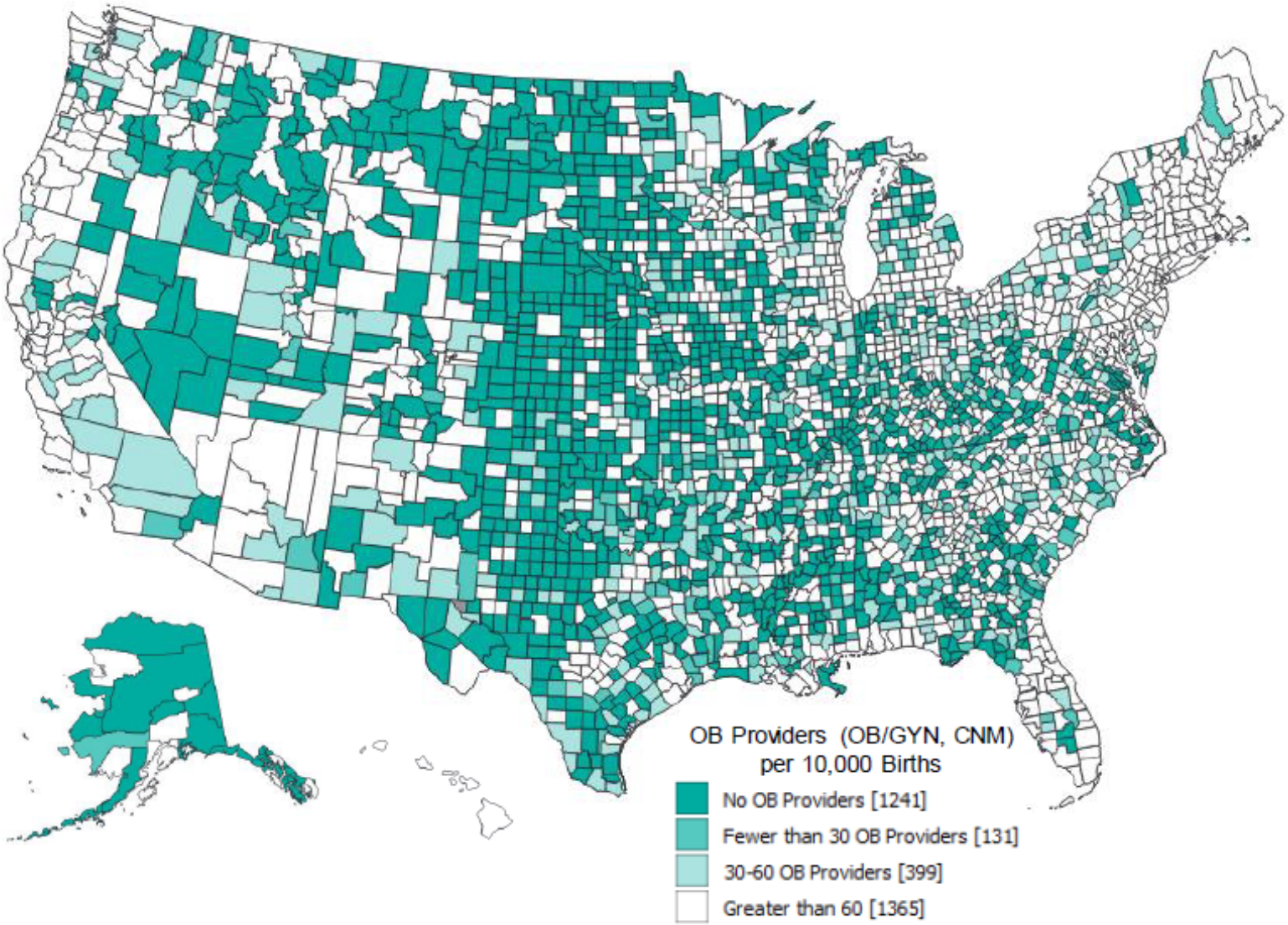
Disparities by geographic location:

- **Maternal** mortality rate in large metropolitan areas was 18.2/100,000 live births, 29.4/100,000 in the most rural areas (2015).
- **Infant** mortality in rural counties was 6.55 deaths/1,000 births, 20% higher than in large urban counties (2014).
- Mortality for infants of non-Hispanic White mothers in rural counties (5.95/ 1,000) **41%** higher than in large urban counties, **13%** higher than in small/ medium urban counties. For infants of non-Hispanic Black mothers, mortality was **16%** higher in rural counties (12.08/1,000) and **15%** higher in small and medium urban counties than in large urban counties.

Map 2. Access to hospitals offering obstetric care by county, United States



Map 3. Distribution of Obstetric Providers by U.S. County



Why Study Birth Settings?

Two urgent questions for childbearing individuals, families, policy makers, and researchers:

1) How can we design a maternity care system that allows multiple safe and supportive options for childbearing families?

2) How can we improve birth outcomes in the hospital setting?

Understanding Birth Settings

Definitions

Birth Center Birth: occur in a freestanding health facility not attached to or inside a hospital

Home Birth: occur at a person's residence and can be either planned or unplanned

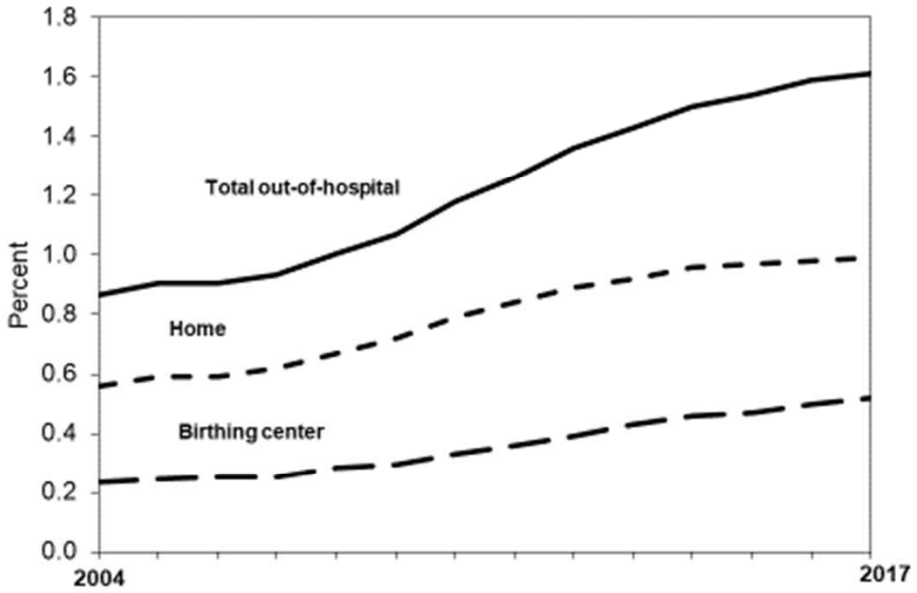
Hospital Birth: those births occurring in a hospital, whether a Level 1 community hospital or a Level 4 maternity unit.

Understanding Birth Settings

Settings and Providers

- In the U.S., the vast majority (98.4%) of women give birth in hospitals, with 0.99% giving birth at home and 0.52% giving birth in freestanding birth centers.
- Nurses, physicians, and midwives provide the majority of maternal and newborn care across birth settings.
- The U.S. is unique among nations in that it has three types of midwives with nationally recognized credentials: certified nurse-midwives (CNMs), certified midwives (CMs), and certified professional midwives (CPMs).

Trends in home and birth center births in the United States, 2004–2017



Understanding Birth Settings

Policy and Financing

- Federal/state laws and regulations help determine which settings and providers are legally able to provide maternity care, and set rules about Medicaid eligibility.

- Insurance coverage for home and birth center births varies by state and coverage type.

- States are responsible for licensing health care professionals and for dictating where they can practice, what services they can provide, and whether they are required to be supervised.
  - Currently, CNMs are licensed in all 50 states, CPMs are licensed in 33 states, and CMs are licensed in 6 states.

Risk in Pregnancy and Childbirth

- Risk (as defined by committee) = the **increased likelihood of an adverse maternal, fetal, or neonatal outcome**.
- Risk is conferred by four main sources:
  1) individual medical and obstetrical factors;
  2) health system related factors, such as policy and financing decisions;
  3) the social determinants of health;
  4) and structural inequities and biases in the health system and in society.
- "High-risk pregnancy" terminology
- The majority of U.S. pregnancies are low-risk.

Epidemiology of Clinical Risks

- Many medical and obstetric risk factors are increasing in prevalence in the U.S.
  - Hypertensive disorders: cause of 6.8% of maternal deaths from 2011 – 2015
  - Between 6 – 9% of women develop gestational diabetes during pregnancy
  - Rates of first births to women ages 35 and above increased by 23% between 2000 – 2013
- Individual risk factors influence on women's choices
- Appropriate risk assessment

Choice, Risk, and Decision Making

- Risk assessment and selection
- Ongoing risk assessment.
- Right to informed refusals
- Risk communication

Systems-Level Risk Factors

- Systems-level factors include:
  - Structural inequalities and biases
  - The social determinants of health
  - Policy and financing aspects of the health system

Challenges Studying Outcomes by Birth Settings

- Data and methodological limitations
- Differing definitions, terminology, and reports of outcomes
- Small number of women giving birth in home and birth center settings
- Lack of data on differences by race/ethnicity or other subpopulations in comparisons across birth settings
- Modifications to the birth certificate that allow inquiry into birth settings based on intended birth setting, including planned attended and planned unassisted home births and intended birth attendants, and development of best practices for use of these expanded data in birth settings research are needed to better assess outcomes by birth settings. (Conclusion 5-1).

Maternal and Newborn Outcomes by Birth Setting

Finding 6-1:

Significant increase in relative risk of neonatal death/home setting vs hospital setting. Relative and absolute risks of neonatal adverse outcomes of births in the home are twice that of hospital births (absolute risks of about 1.2/1,000 versus 0.6/1,000 for home and hospital, respectively).However, the precise magnitude of the difference is difficult to assess given flaws in the underlying data.

Maternal and Newborn Outcomes by Birth Setting

Finding 6-2:

Vital statistics studies of low-risk births in freestanding birth centers: increased risk of poor neonatal outcomes;

U.S. studies using models indicating *intended* place of birth: low-risk births in birth centers and hospitals have similar to elevated rates of neonatal mortality.

Studies of the comparative risk of neonatal morbidity between low-risk birth center and hospital births: mixed results, with variation across studies by outcome and provider type.

Maternal and Newborn Outcomes by Birth Setting

Finding 6-3:

U.S., low-risk women choosing home or birth center birth compared with women choosing hospital birth: lower rates of intervention, including cesarean birth, operative vaginal birth, induction of labor, augmentation of labor, and episiotomy, and lower rates of intervention-related maternal morbidity, such as infection, postpartum hemorrhage, and genital tract tearing.

These findings are consistent across studies.

Maternal and Newborn Outcomes by Birth Setting

Finding 6-4:

Gap between care expected and desired and care received.

Safety, freedom of choice in birth setting and provider, choice among care practices, and respectful treatment.

International Perspective

Finding 6-5:

International studies: home and birth center births *may be as safe* as hospital births for low-risk women and infants when:

(1) they are part of an integrated, regulated system;

(2) multiple provider options across continuum of care are covered;

(3) providers are well-qualified and have the knowledge and training to manage first-line complications;

(4) transfer is seamless across settings;

(5) appropriate risk assessment and risk selection occur across settings and throughout pregnancy

International Perspective

Finding 6-6:

Lack of integration, coordination and unreliable collaboration associated with poor birth outcomes for U.S. women and infants.

Framework for Maternal and Newborn Care in the U.S.

Culture of Health Equity:

System-level factors and social determinants of health such as

- structural racism
- lack of financial resources
- availability of transportation
- housing instability
- lack of social support
- stress
- limited availability of healthy and nutritious foods,
- lower level of education
- lack of access to health care, including mental health care

Associated with higher risk for poor pregnancy outcomes/inequity in care

Framework for Maternal and Newborn Care in the U.S.

"Right Amount of Care at the Right Time":

- "Too little, too late" and "too much, too soon" patterns in provision of maternity care contribute to excesses of morbidity and mortality
- Available care is matched to preferences, needs, and life circumstances of the woman and her fetus/infant
- Woman and infant are matched to risk appropriate level of care
- Rigorous attention to best available evidence limits overuse of unneeded care and underuse of beneficial care

Framework for Maternal and Newborn Care in the U.S.

Respectful Treatment:

Need for respectful care for all women by

- listening to them and responding appropriately
- providing risk information in understandable terminology
- providing culturally and linguistically appropriate care
- providing informed choices around care and interventions
- providing clear and supportive communication for women

Improving Hospital Settings

Conclusion 7-1:

- Quality improvement initiatives…and adoption of national standards and guidelines for care in hospital settings have been shown to improve outcomes for pregnant women and newborns in hospital settings
  - These initiatives can take a variety of forms, and can be implemented at the regional or state level, in a health care system, or by an individual hospital or group of hospitals

Quality Improvement Initiatives

- Perinatal Quality Collaboratives (PQC)
  - State and regional networks
  - Improvements in care and outcomes for childbearing women and infants
  - Cost savings for hospitals and systems
- Example: National Network of Perinatal Quality Collaboratives sponsored by the CDC
- Example: The California Maternal Quality Care Collaborative has several successful implementation projects that have seen a reduction in low-risk first-birth cesarean rates and the maternal mortality rate decreased by half

Alliance for Innovation on Maternal Health (AIM)

National improvement initiative that produces patient safety bundles and provides implementation/data support for states or health systems

Part of the Council on Patient Safety in Women's Health Care, a coalition that has partnered with most of the leading professional organizations for maternal health in the U.S. including AWHONN, ACNM, ACOG, SMFM, the American Academy of Family Physicians, and HRSA and Maternal and Child Health Bureau of the U.S. DHHS

AIM Patient Safety Bundles and Tools

Maternal Mental Health: Depression and Anxiety
Maternal Venous Thromboembolism (+AIM)
Obstetric Care for Women with Opioid Use Disorder (+AIM)
Obstetric Hemorrhage (+AIM)
Postpartum Care Basics for Maternal Safety
- From Birth to the Comprehensive Postpartum Visit (+AIM)
- Transition from Maternity to Well-Woman Care (+AIM)

Reduction of Peripartum Racial/Ethnic Disparities (+AIM)
Safe Reduction of Primary Cesarean Birth (+AIM)
Severe Hypertension in Pregnancy (+AIM)
Severe Maternal Morbidity Review (+AIM)
Support After a Severe Maternal Event (+AIM)

National Standards and Guidelines

Safe Prevention of the Primary Cesarean Birth (Obstetric Care Consensus No.1, ACOG & SMFM, 2014)

Levels of Maternal Care (Obstetric Care Consensus No. 9: ACOG & SMFM, 2019)

Levels of Neonatal Care (Policy Statement, AAP, 2012)

Safe Sleep and Skin-to-Skin Care in the Neonatal Period for Healthy Term Newborns (Clinical Report, AAP, 2016)

Guidelines for professional registered nurse staffing for perinatal units (AWHONN, 2010)

Guidelines for Perinatal Care (AAP & ACOG, 2017)

Healthy Birth Initiatives and BirthTools (ACNM, 2016)

Improving Hospital Settings

Conclusion 7-2:

- Providing currently underused nonsurgical maternity care services that some women have difficulty obtaining…according to best evidence available, can help hospitals and hospital systems ensure that everyone who is pregnant receives care that is respectful, appropriate for their condition, timely, and responsive to individual choices.
  - Developing in-hospital low-risk midwifery-led units or adopting these practices within existing maternity units,
  - Enabling greater collaboration among maternity care providers
  - Ensuring cultivation of skills in obstetrical residency and Maternal Fetal Medicine fellowship programs can help support such care.

Example Mercy Birthing Center Saint Louis

- Midwifery care with 7 midwives / ~550 births per year
- 1st floor hospital (L&D units on 6th and 7th floors)/dedicated elevator
- 4 homelike LDRPs
- Living room, kitchen, classroom, prenatal/postpartum care rooms
- ~12% transfer to L&D rate (usually for epidural or EFM) midwife comes along and continues care
- Average LOS 13 hours
- Rates: Cesarean 9.5%; VBAC success 84% Epidural 6.4%; Episiotomy 0.4%; Induction of labor 8.7%
- High patient satisfaction at 97th percentile

Example Mercy Birthing Center Saint Louis

Improving Hospital Settings

Conclusion 7-3:

- Efforts needed to pilot and evaluate high value payment models in maternity care and identify and develop effective strategies for value-based care

Maternity Care Home

- Maternity care homes address social determinants of health
- Coordinate care across the episode
- Meets the individual needs of the pregnant individual and newborn

Episode Payment

- An episode payment program provides a single payment for all services across the episode
- Encourages members of the team to work together toward shared goals
- Includes meaningful performance indicators that impact a large segment of the population and targets for each measure that progressively raise the bar over time as systems develop ways to improve

Improving Home and Birth Center Settings

Conclusion 7-4:

- Integrating home and birth centers into regulated maternal-newborn care system
- Shared care and access to safe and timely consultation
- Written plans for discussion, consultation, and referral
- Seamless transfer across settings
- Appropriate risk assessment and risk selection
- Well-qualified maternity care providers with knowledge, skill, and training to manage first-line complications

Improving Home and Birth Center Settings

Conclusion 7-5:

- Availability of mechanisms for all freestanding birth centers to access licensure at the state level and requirements for obtaining and maintaining accreditation

Conclusion 7-6:

- Variation in preparation and education of CNMs/CMs, and CPMs

Improving Informed Choice and Risk Selection

Conclusion 7-7:

- Ongoing risk assessment to ensure that a pregnant woman is an appropriate candidate for home or birth center birth is integral to safety and optimal outcomes

- Mechanisms for monitoring adherence to best-practice guidelines for risk assessment and associated birth outcomes by provider type and settings

Improving Informed Choice and Risk Selection

Conclusion 7-8:

- High-quality, evidence-based online decision aids and risk-assessment tools that incorporate medical, obstetrical, and social factors that influence birth outcomes are needed

- Effective tools incorporate clinical risk assessment and culturally appropriate assessment of risk preferences and tolerance and enable women, with their providers, to make decisions on risk, settings, providers, and specific care practices

Improving Access to Care and Birth Settings

Conclusion 7-9:

- Access to choice in birth settings is curtailed by ability to pay

Conclusion 7-10:

- Ensuring that levels of payment for maternity and newborn care across birth settings are adequate to support maternity care options across the nation is critical to improving access

Improving Access to Care and Birth Settings

Conclusion 7-11:

- Research on sustainable models for safe, effective, and adequately resourced maternity care in underserved rural and urban areas, including establishment of sustainably financed demonstration model birth centers and hospital services
  - Could explore options for using a variety of maternity care professionals including nurse practitioners, certified nurse midwives, certified professional midwives, certified midwives, public health nurses, home visiting nurses, and community health workers
  - These programs would need to be adequately funded for evaluation, particularly with regard to effects on reduction of racial/ethnic and geographic disparities in access, quality, and outcomes of care.

Improving Access to Care and Birth Settings

Conclusion 7-12:

- To improve access and reduce racial/ethnic disparities in quality of care and treatment, investments are needed to increase the pipeline for the maternity and newborn care workforce…with the goal of increasing its diversity, distribution, and size

- Greater opportunities for interprofessional education, collaboration, and research across all birth settings are also critical to improving quality of care

Final Thoughts

- System-wide improvements for the betterment of all those who are pregnant, newborns, and families are possible with coordination and collaboration from multiple actors: professional organizations, third-party payers, governments at all levels, educators, and accreditation bodies, among others.

- Key areas for improving the knowledge base around birth settings and levers for improving policy and practice across settings include:
  - providing economic and geographic access to maternity care options in all settings;
  - providing high-quality and respectful treatment;
  - ensuring informed choices about medical interventions when appropriate for risk status in all birth settings; and
  - facilitating integrated and coordinated care across all maternity care providers and all birth settings.

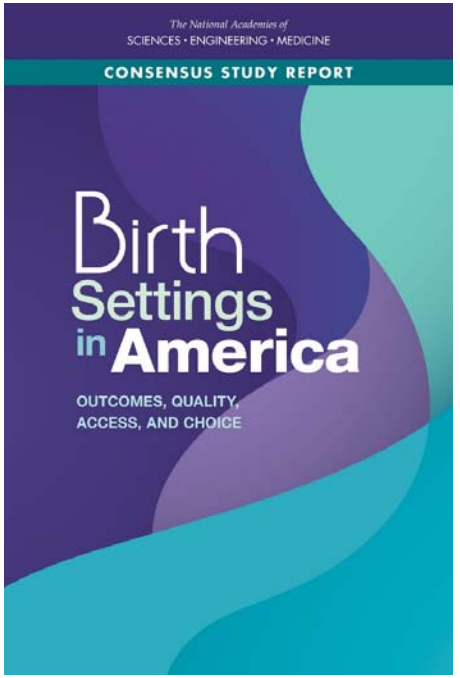
Final Thoughts

- While change will take time, there is an urgent need for all to come together to improve maternity care and build a high-functioning, integrated, regulated, and collaborative maternity care system, a system that fosters respect for everyone who is pregnant and gives birth, newborns, and families, regardless of their circumstances or birth or health choices.

Thank you!

To read or download a copy of the report, please visit:

www.nationalacademies.org/birthsettings



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