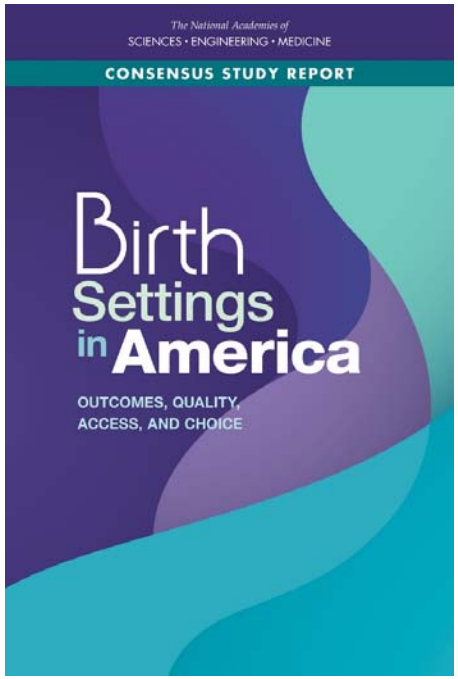


# Birth Settings in America: Opportunities for Home and Birth Center Settings

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Melissa Cheyney, PhD, CPM, LDM, Oregon State University

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# Study Sponsor

- *Eunice Kennedy Shriver* National Institute of Child Health and Human Development (NICHD)

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

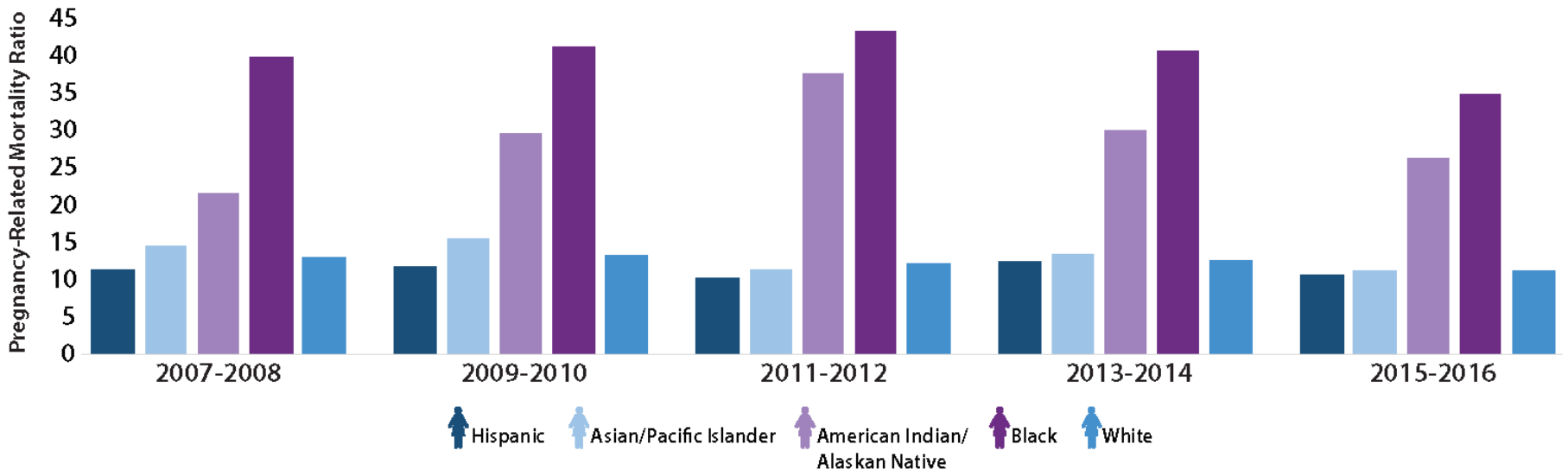
- There is also growing recognition of a **mismatch between the expectations of the care and support pregnant people deserve and what they actually receive**.

- To improve maternal and infant outcomes in the United States, 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?

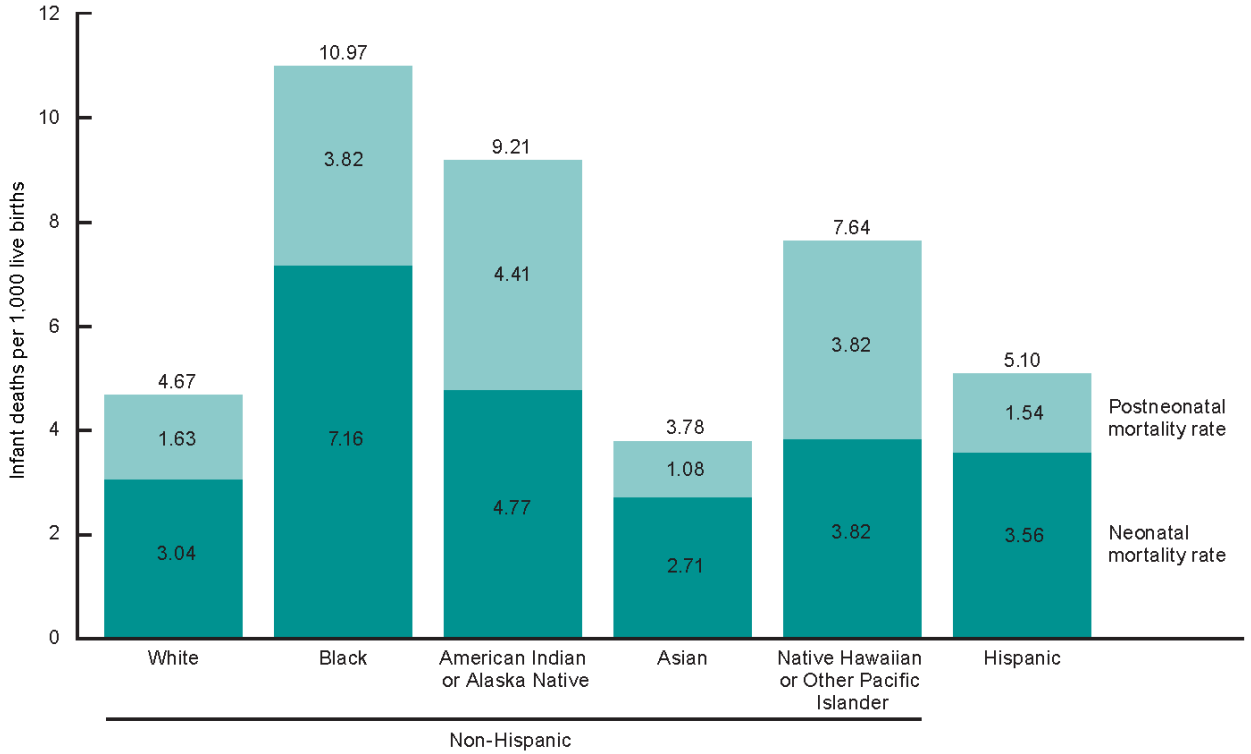
- The United States has among the highest rates of maternal and neonatal mortality and morbidity of any high-resource country, particularly among Black and Native American pregnant individuals
- Structural racism, implicit and explicit bias, and discrimination underlie large and persistent racial and ethnic disparities in the quality of care received by childbearing individuals and infants
- Disparities also exist in maternal and infant mortality rates by geographic location.

# 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?

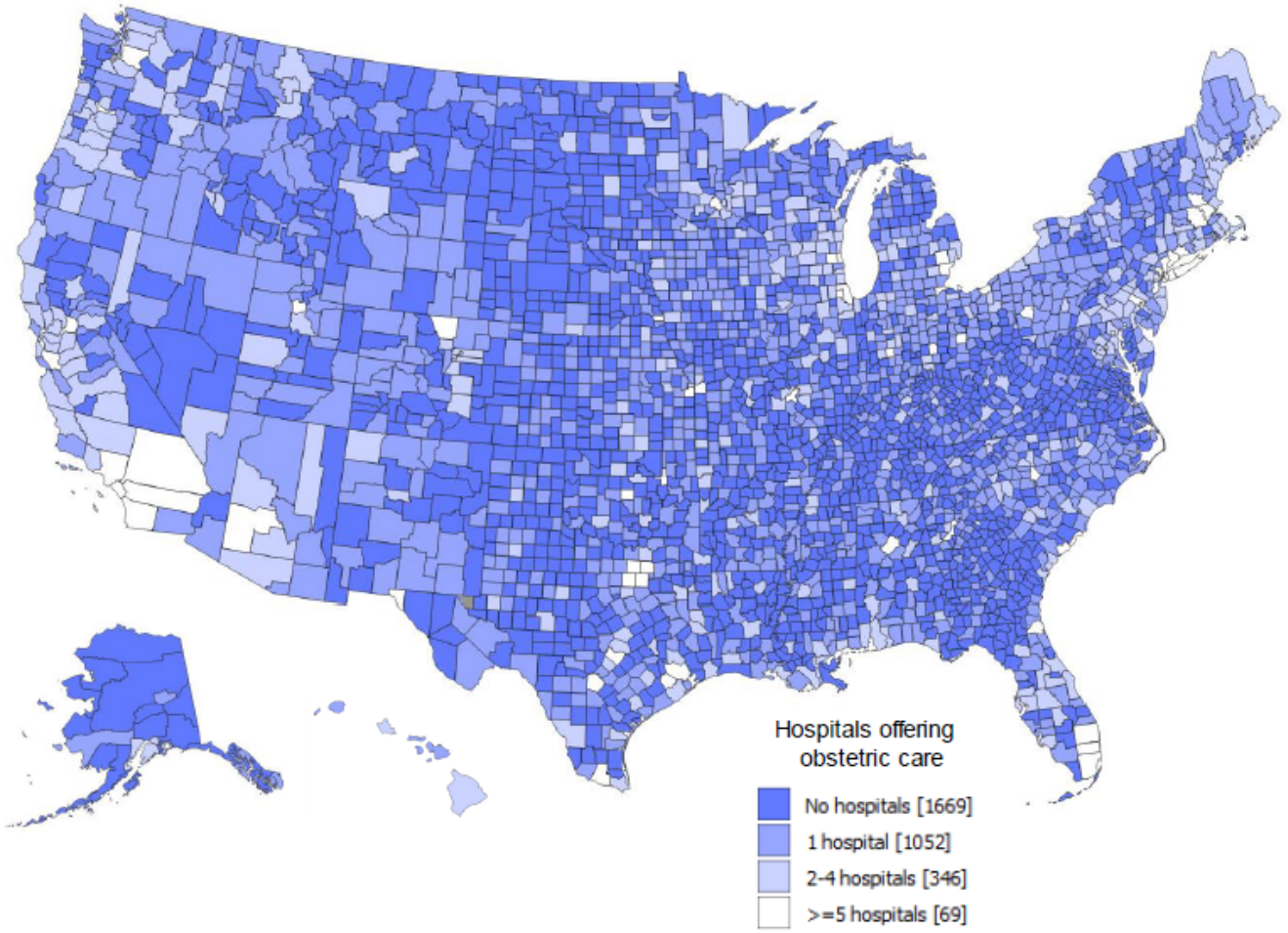
- Safe, evidence-based, and appropriate healthcare not universally available to all.
- U.S. maternity care characterized by broad variations in practice, with considerable overuse of non–medically indicated care, underuse of beneficial care, and gaps between practice and evidence.
- U.S. continues to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

# Why Study Birth Settings?

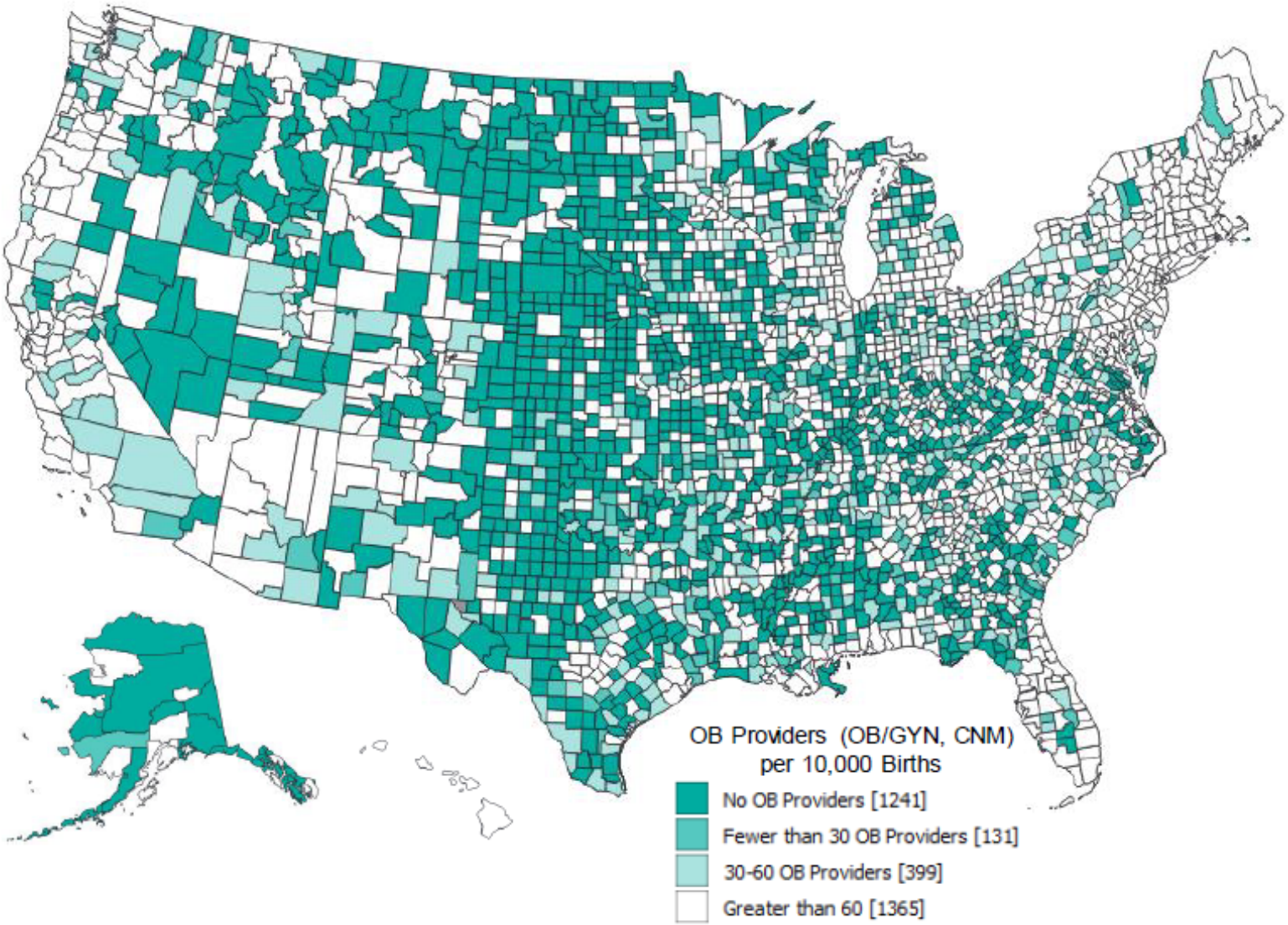
Disparities by geographic location:

- **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 home and birth center 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

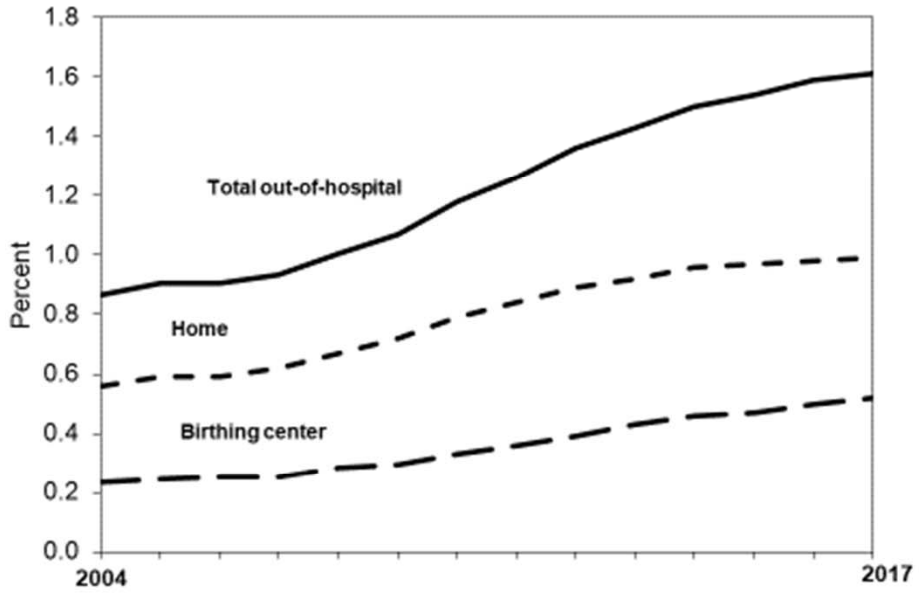
**Hospital Birth:** those births occurring in a hospital, whether a Level 1 community hospital or a Level 4 maternity unit.

# Understanding Birth Settings

Settings and Providers

- In the United States, the vast majority (98.4%) of pregnant individuals give birth in hospitals, with 0.99% giving birth at home and 0.52% giving birth in freestanding birth centers
- The United States 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 and 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 only 6 states

# Risk in Pregnancy and Childbirth

- Risk is defined by the committee as 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 at large.

- The majority of U.S. pregnancies are low-risk.

# Epidemiology of Clinical Risks

- At the individual level, a variety of medical and obstetric factors can contribute to elevated risk during pregnancy and birth. Many of these risk factors are increasing in prevalence in the U.S.
  - Hypertensive disorders were the cause of 6.8% of maternal deaths from 2011 – 2015
  - Between 6 – 9% of pregnant individuals develop gestational diabetes during pregnancy
  - Rates of first births to pregnant individuals ages 35 and above increased by 23% between 2000 – 2013
- These individual risk factors can influence a pregnant individual's choices in maternity care. Appropriate risk assessment by qualified providers is needed to match pregnant people with the most appropriate setting and provider for their care during pregnancy and birth.

# Choice, Risk, and Decision Making

- Ongoing **risk assessment** is needed to determine if maternal or fetal risk factors are present that would place a pregnant individual at increased risk of requiring care accessible to her or her newborn only in the inpatient setting.
- Pregnant individuals with decisional capacity have the right to refuse medically recommended care, and may do so for any number of reasons. Maternity care providers have a responsibility to ensure that these are **informed refusals**, offering resources and information to support informed choice and mitigate bias and misinformation where possible.
- Providers have a responsibility to accurately and transparently inform pregnant individuals about the risks and benefits of their options, and do so in a way that is culturally concordant, easily understandable, and respectful—a process known as **risk communication.**

# Systems-Level Risk Factors

**Structural inequalities and biases that are historically rooted and deeply embedded in policies, laws, governance, and culture. They include inequitable treatment in the health care system, the health effects of racism, and inequitable distribution of resources in society.**

The social determinants of health, which are mutable upstream factors that influence health, such as housing instability, transportation, and employment.

Policy and financing aspects of the health system, including the distribution of maternity care services across the country, financing for maternity care, and access to prenatal and birth care.

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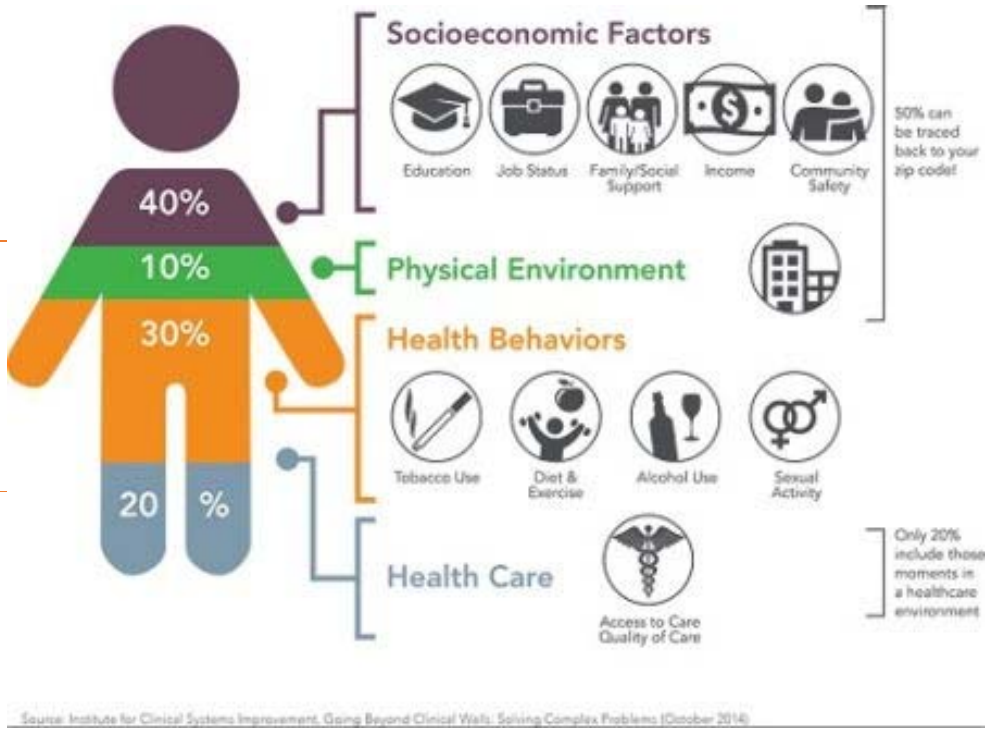


Source: Institute for Clinical Systems Improvement, Going Beyond Clinical Walls: Solving Complex Problems (October 2014)

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# Challenges Studying Outcomes by Birth Settings

- Data and methodological limitations
  - *Finding 5-1*: Vital statistics and birth registry data each have limitations for evaluating birth outcomes by setting, provider types, and intentionality
- Differing definitions, terminology, and reports of outcomes
- Small number of pregnant individuals giving birth in home and birth center settings

  A lack of data and the relatively small number of home and birth center births prevent an exploration of the relationship of maternal mortality and severe maternal morbidity to birth settings. (Conclusion 6-2).
- 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 models indicating intended setting of birth, including planned attended and planned unassisted home births in the United States and intended birth attendants, and development of best practices for use of these expanded data in birth settings research are needed to better understand and assess outcomes by birth settings. (Conclusions 5-1)

# Maternal and Newborn Outcomes by Birth Setting

*Finding 6-1:*

- Statistically significant increases in the relative risk of neonatal death in the home compared with the hospital setting have been reported in most U.S. studies of low-risk births using vital statistics data. However, the precise magnitude of the difference is difficult to assess given flaws in the underlying data. Regarding serious neonatal morbidity, studies report a wide range of risk in low-risk home versus hospital birth and by provider type. Given the importance of understanding these severe morbidities, the differing results among studies are of concern and require further study.

# 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 pregnant individuals choosing home or birth center birth compared with individuals 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*:

- Some pregnant individuals experience a gap between the care they expect and want and the care they receive.
- Pregnant individuals want safety, freedom of choice in birth setting and provider, choice among care practices, and respectful treatment.
- Individual expectations, the amount of support received from caregivers, the quality of the caregiver–patient relationship, and involvement in decision making appear to be the greatest influences on pregnant individual's satisfaction with the experience of childbirth.

# International Perspective

*Finding 6-5:*

- International studies suggest that home and birth center births may be as safe as hospital births for low-risk pregnant individuals and infants when:

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

  (2) multiple provider options across the 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 and coordination and unreliable collaboration across birth settings and maternity care providers is associated with poor birth outcomes for pregnant individuals and infants in the United States.

# Framework for Maternal and Newborn Care in the US

## 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 US

"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 individual and their fetus/infant
- Individual 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 US

## Respectful Treatment:

Need for respectful care for all pregnant individuals 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 pregnant individuals

# 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 individuals and newborns in hospital settings
  - Such initiatives take a variety of forms, and can be implemented at the regional or state level, in a particular health care system, or by an individual hospital or group of hospitals

# Improving Hospital Settings

## Conclusion 7-2:

- Providing currently underutilized nonsurgical maternity care services that some pregnant individuals have difficulty obtaining…according to the best evidence available, can help hospitals and hospital systems ensure that every pregnant person 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.

# Improving Home and Birth Center 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

# 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:

- The availability of mechanisms for all freestanding birth centers to access licensure at the state level and requirements for obtaining and maintaining accreditation could improve access to and quality of care in these settings. Additional research is needed to understand variation in outcomes for birth centers that follow accreditation standards and those that do not.

# Improving Home and Birth Center Settings

## Conclusion 7-6:

- The inability of all certified nurse midwives, certified midwives, and certified professional midwives whose education meets International Confederation of Midwives (ICM) Global Standards, who have completed an accredited midwifery education program, and who are nationally certified to access licensure and practice to the full extent of their scope and areas of competence in all jurisdictions in the United States is an impediment to access across all birth settings.

# Improving Informed Choice and Risk Selection

## Conclusion 7-7:

- Ongoing risk assessment to ensure that a pregnant individual 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 pregnant individuals, 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 a pregnant person's ability to pay.
- Models for increasing access to birth settings for low-risk women that have been implemented at the state level…
- Additional research, demonstration, and evaluation to determine the potential impact of state-level models is needed to inform consideration of nation-wide expansion, particularly with regard to effects on reduction of racial/ethnic disparities in access, quality, and outcomes of care.

# Improving Access to Care and Birth Settings

## 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
  - Such research could explore options for using a variety of maternity care professional 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 pregnant people, 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

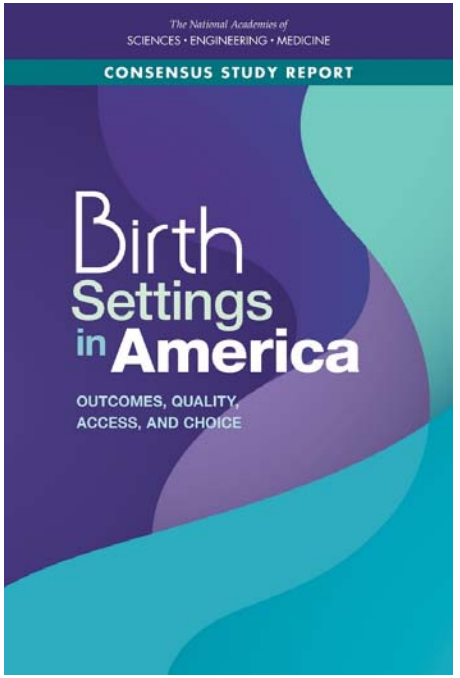
# Final Thoughts

- 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 all pregnant people, 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




For more information about the study or dissemination activities, please contact:

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