Five Big Ideas on Reversing the U.S. Maternal Mortality Crisis

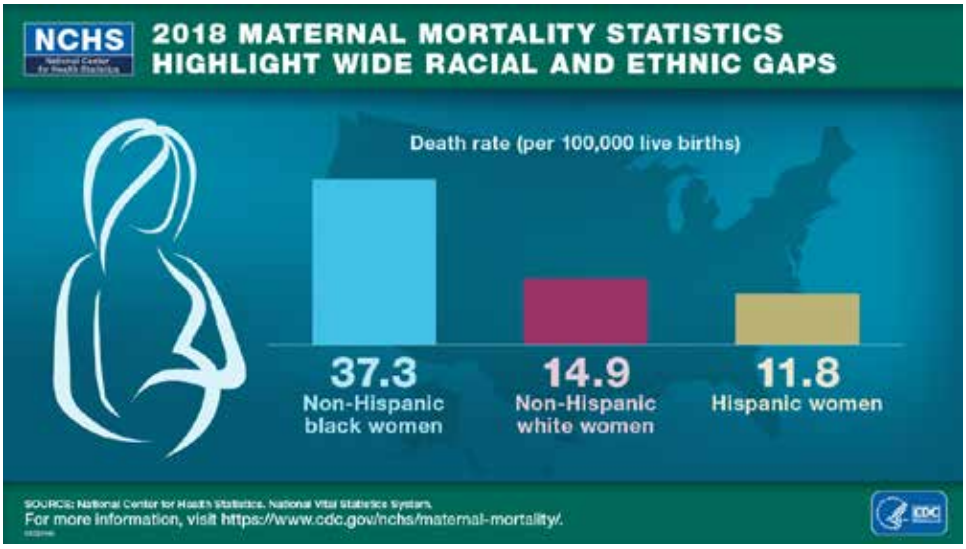
Introduction

The United States has the highest maternal mortality rate of any high-income nation in the world. According to the World Health Organization (WHO), in 2017 there were 17.4 maternal deaths for every 100,000 births in the United States (World Health Organization, 2019). The high-income country with the next highest rate was South Korea, with 11 maternal deaths per 100,000 births. While rates are declining in other high-income countries, the U.S. maternal mortality rate has risen steadily since 1987, when it was 7.2 per 100,000 births (Centers for Disease Control and Prevention, 2020a).

Maternal mortality, defined by the Centers for Disease Control and Prevention (CDC) as the death of a woman while pregnant or within one year of the end of pregnancy from any cause related to or aggravated by the pregnancy, is a key measure of health system performance. For every maternal death in the United States, there are almost 100 instances of severe maternal morbidity, defined as unexpected outcomes of labor and delivery that result in significant short- or long-term consequences to a woman's health. The U.S. infant mortality rate of 5.8 deaths in the first year of life per 1,000 live births in 2017 places the nation worst among 10 comparison countries. Poor U.S. performance in maternal mortality, severe maternal morbidity, and infant mortality all provide evidence of a system failing to meet the needs of pregnant and birthing people.[1]

Maternal mortality in the United States disproportionately affects Black and American Indian / Alaskan Native birthing people. The CDC reports that, based on 2018 data, Black women die from pregnancy-related complications at three to four times the rate of non-Hispanic White women (37.3 deaths per 100,000 births compared to 14.9 deaths per 100,000 births; Centers for Disease Control and Prevention, 2020a). The 2014–2017 rates were 28.3 for American Indian / Alaskan Native women, 11.6 for

1 We acknowledge that language regarding gender is in flux, especially as it relates to women's health and maternal health. Pregnancy and childbirth occur among people who are biologically female whose gender identity may or may not be that of a woman. Terms such as "birthing person" are more inclusive than "pregnant woman," yet most data continue to be collected and reported with traditional terms. This report uses a combination of gendered and gender-neutral terms.



Hispanic women of any race, and 13.8 for Asian or Pacific Islander women (Centers for Disease Control and Prevention, 2020b).

The Aspen Health Strategy Group selected maternal mortality as its topic for 2020, its fifth year of work. Due to the COVID-19 pandemic, the multisectoral group of leaders met virtually this year, discussing the topic with the assistance of subject-matter experts who prepared background papers to inform the discussion. The group emerged with five big ideas to tackle maternal mortality.

The Aspen Health Strategy Group's goal is to promote improvements in health policy and practice by providing leadership, ideas, and direction on important and complex health issues. Co-chaired by Kathleen Sebelius and Tommy Thompson, both former governors and former U.S. secretaries of health and human services, the group is composed of 23 senior leaders across sectors including health, business, media, and technology. More information about the Aspen Health Strategy Group can be found on the Aspen Institute website (www.aspeninstitute/aspen-health-strategy-group.org). This report captures the conversations of the group, but no specific section or statement in the report should be considered to represent the opinion of any individual group member.

Background

Our work builds upon four papers prepared by subject-matter experts in advance of our meeting. These papers are published in conjunction with our report. Data and conclusions that appear in our report without citation are drawn from these papers.

"Reducing maternal mortality is a national emergency in the United States," writes Andreea Creanga of Johns Hopkins University in "Understanding Maternal Mortality in the United States" (2020). In addition to its high maternal mortality rate, of the 44 countries included in the United Nations Population Division (UNPD) "more developed" regions, only the United States had a sizeable increase in the rate of maternal mortality from 2000 to 2017. Creanga notes, "Maternal mortality is used around the world as a marker of population health, health inequalities, and health system functioning."

The United States has significant gaps in data related to maternal mortality. Until recently, there has been no federal mandate for hospitals to report maternal deaths to any federal agency or central repository, and hospitals were not required to investigate maternal deaths. Only two-thirds of U.S. states have multidisciplinary maternal mortality review committees (MMRCs) recognized by the CDC that review each maternal death (Kozhimannil et al., 2019). Information collected on the death certificate varies by state, is often incomplete, and has changed over time. Given these limitations, it is difficult to know with confidence whether reported increases in maternal mortality reflect real changes or more complete reporting.

What do women die of? "Cardiovascular conditions, hemorrhage, infection, embolism, preeclampsia/eclampsia, and mental health conditions accounted for nearly 75% of pregnancy-related deaths," says Creanga, with causes varying by race and ethnicity. The risk of maternal death increases with age; significant risk factors are low income, low education level, and unmarried status for non-Hispanic Black women.

Many, but not all, maternal deaths are preventable. Based on data from MMRCs, of the 78% of pregnancy-related deaths where a preventability determination was possible, 65.8% were judged to be preventable.

Eugene Declercq of Boston University points out that "the rise in maternal mortality in the United States from the 1990s to 2010s was not the result of any single factor, but rather a predictable result of wider failures in medicine, public health, and social services." His paper, "The U.S. Maternity Care System and Maternal Mortality" (2020), describes where and from whom women receive care.

The vast majority of women in the United States give birth in a hospital where care by obstetricians predominates. There are only one-third as many midwives per capita in the United States as in other high-income countries. The medical model of maternity care is one factor in the 60% growth rate in cesarean births between 1996 and 2009 to a rate currently in excess of 30%, despite a WHO recommendation of a rate between 10% and 15% (World Health Organization, 2015). Small but growing numbers of women using freestanding birth centers offer just one reflection of dissatisfaction with the dominant systems of care.

To improve maternal mortality, we need to reconceptualize maternal health as part of the broader continuum of women's health, Declercq argues. Investing in community-based maternity care, group prenatal care, and community health centers will help support birthing people before and after birth, where "one-third [of deaths] occur during pregnancy and one-third between a week and a year after birth."

Joia Crear-Perry and coauthors at the National Birth Equity Collaborative elaborate on the widespread racial disparities in the maternal health system, arguing, "We cannot separate maternal mortality and morbidity from the inequitable systems from which they arise." Their paper, "Roots of Inequity in Maternal Mortality" (2020),

presents a "Reproductive Justice" framework to address the systemic racism embedded within the U.S. maternity care system. Acknowledging that maternal mortality rates are also very high for American Indian / Alaskan Native birthing people, Crear-Perry and coauthors focus their analysis on Black women and anti-Black racism.

The legacy of using Black women's bodies for their reproductive capacity to produce more "property" for their owners lingered after the abolition of slavery, with forced sterilization campaigns, medical experimentation, and medical mistreatment. Black midwives played a key role in birth practices in the early years of the United States. However, as birth became medicalized and medicine became professionalized in the 1900s, midwives were driven from practice, with consequences that persist today.

Racism manifests in myriad ways. According to Crear-Perry, "Black women report having their concerns about their health care dismissed, their experiences of perceived racism challenged, and feeling punished when attempting to confront power structures within health care systems." Racism not only affects the quality of care received, but also elicits a stress response within women's bodies that can put women at higher risk of infection, early onset of labor, preterm birth, or low birth weight.

Crear-Perry describes what the Reproductive Justice framework would look like in practice. In order to achieve birth equity, health leaders and organizations must critically analyze "methods, funding, programming, and internal and external facing policies." Some of the principles include: listening to Black women, disentangling care practices from the racist beliefs in modern medicine, empowering and investing in paraprofessionals, and recognizing that access does not equal quality care.

Jennifer Moore of the Institute for Medicaid Innovation and Karen Dale of AmeriHealth Caritas describe the key role that Medicaid plays in the maternal health system in their paper, "Medicaid and Maternal Health: A National Crisis at the Intersection of Health Systems and Structural Racism" (2020). Medicaid covers nearly half of all births in the United States, with the share by state ranging between 20% and 71%. Medicaid-covered deliveries have a 1.4 times higher rate of severe maternal

morbidity than those covered by commercial insurance. Yet, among deliveries to Black women, the rate of severe morbidity is the same for those covered by Medicaid and commercial insurance.

Moore and Dale explain the intersection of risk factors that women enrolled in Medicaid face, including unstable insurance coverage, unmet social needs, and poorly designed care models. Depending upon the eligibility policies of the state where she lives, even the poorest woman may be ineligible for Medicaid, gain coverage only when she becomes pregnant, and have that coverage end 60 days postpartum. While Medicaid covers maternity care services, payment rates and the network of providers are set by the states or contracted managed care organizations.

According to Moore and Dale, Black and Hispanic women are more likely to be uninsured or enrolled in Medicaid, "have limited or no access to midwifery-led care, lack community-based support such as doulas, deliver at a hospital with worse quality of care, face individual-level stressors such as racism in the clinical setting, or be affected by the accumulation of such discrimination, racism, and stressors over their lifetimes."

Midwifery-led care and freestanding birth centers are two models with significant evidence, as outlined by Moore and Dale, demonstrating that they can reduce maternal mortality and morbidity, providing high-quality, patient-centered, accessible care for the vast majority of pregnancies, which are low risk. Yet significant barriers within the Medicaid program and related state laws and regulations limit the adoption of these models. In order for Medicaid to reach its potential in addressing the maternal mortality crisis, it must emerge from historical policies, many of which have racist origins, and be reimagined around women's health needs.

Framing the Issue

Five themes emerged in the group's discussion that helped guide the development of this year's big ideas. The themes are as follows:

- **Better outcomes are within reach**

  The data regarding maternal mortality and morbidity in the United States are devastating. As Creanga (2020) sets forth in detail, we are an international outlier among high-income countries, with mortality and morbidity rates that far exceed those of other nations. We are the only high-income country experiencing growing rates of mortality and severe morbidity. The best estimates are that about two-thirds of U.S. maternal deaths are preventable.

  The burden of the crisis falls on families, shattered by a maternal death, while loved ones and communities are left to pick up the pieces after a tragedy. The sustained level of excess deaths among Black people reflects and adds to the accumulated burdens of racism, creating yet another form of stress during pregnancy and birth.

  Lower rates of maternal mortality in other countries provide strong evidence that this crisis can be addressed. Countries that have built their maternity care systems around women's needs have shown what is possible. Countries that provide stable health insurance, have a strong social safety net, and embrace midwifery-led models as the standard of maternity care are able to reduce the risk factors associated with maternal mortality.

  The experience in California, where maternal mortality rates declined by more than half between 2006 and 2013, demonstrates that a collaborative and comprehensive response to the crisis can yield positive results. California's efforts focused on creation of and adherence to evidence-based clinical care pathways. Maternal mortality rates in California are now comparable to rates in other high-income countries (California Maternal Quality Care Collaborative, n.d.). However, the gap between maternal mortality rates for non-Hispanic Blacks and non-Hispanic Whites remains unchanged (Main, Markow, and Gould, 2018).

  Declercq (2020) notes that our hospital-centric maternity care system has invested in quality improvement efforts within the hospital, with positive results for maternal outcomes in that setting. The challenge is to make the same type of effort and invest similar resources in other sites of care and in the community.

  As a nation, we can, and we must, do better.

- **The medical model of birth does not meet women's needs**

  Pregnancy and birth are natural events, but in the United States we treat them as if they are medical problems to be solved. We bring the entire medical armamentarium to each pregnancy. We overdiagnose and overtreat. As in the rest of American medicine, we readily pay for high-cost acute services while we undertreat the chronic medical and social conditions that are the source of most harm.

  Even though only a very small share of births are high risk, we treat every birth as if it were. As Declercq points out, this drives us to a system reliant upon highly trained physicians and technology-laden hospitals. Our technology-based medical care system pays insufficient attention to aspects of care that are necessary for achieving good maternal outcomes. Missing elements include engagement with the birthing person's family and social supports, education regarding when to seek care and poor responses when care is sought, poor coordination across care providers, and language and cultural discordance between providers and patients.

  We know from other countries that midwifery-led models of care have as good or better outcomes, reduce overall costs of care, and better meet the needs and preferences of most women. Licensed and certified midwives can be trained in much less time than physician specialists, typically between two and four years, depending on the level of certification. Yet we have almost eliminated this model in the United States. As Declercq (2020) argues, the United States has seen a recent resurgence in the use of freestanding birth centers and midwifery care as a reaction to the mismatch between what the dominant models of care offer and what most women want. However, use of these services remains limited, and they are often available only to higher-income women who can afford to pay for them outside of the insurance system.

- **Racism and racist policies are at the root of the maternal mortality crisis**

  The burden of the U.S. maternal care system falls most heavily on Black and Indigenous people, families, and communities. While racial disparities exist in much of health care, the scale of those disparities is particularly dramatic, and damning, when it comes to maternal mortality. As demonstrated in the CDC and

WHO data, Black women die at a rate three to four times that of White women or Hispanic women of any race, and Indigenous women die at a rate two to three times that of White women or Hispanic women of any race. While the maternal mortality rate of White women in the United States is worse than the rate in most other high-income countries, the crisis is far deeper for Black and Indigenous women than for others.

Racial disparities are rooted in policies dating back to before the founding of our nation. Science and medicine defined racial differences as biologically based, justifying all manner of mistreatment, neglect, and harm. Legally sanctioned racial segregation of medical providers was common until the middle of the 20th century, and although outlawed today, racial segregation persists due to continuity in residential patterns and lower rates of payment for providers serving disproportionate numbers of Black and Hispanic patients.

Maternity care has been directly affected by racism-based policies. As Crear-Perry et al. outline (2020), Black midwives, the primary source of maternity care for Black women, were regulated out of existence due to racist assumptions regarding their quality and competence. From the inception of the Medicaid program in 1965 through welfare reform in 1996, eligibility was tied to receipt of cash assistance. Eligibility was determined by the states, resulting in very low income-eligibility thresholds designed to keep primarily Black domestic workers as a cheap source of labor. The Supreme Court's *NFIB v. Sebelius* decision (2012), which upheld the Affordable Care Act (ACA), made Medicaid expansion a state decision, with the result that states with large Black populations disproportionately chose to leave poor people without coverage.

The primary barriers to health, including healthy birth, relate to social disadvantage: poverty, inflexible jobs, limited access to prenatal care, unhealthy diets, and the like. The higher rates of these risk factors among Black women are the direct result of centuries of racist policies limiting access to jobs, housing, education, and more.

Yet the data show that, even after controlling for age, income, and other risk factors, Black women have higher maternal mortality rates than White women.

This points to the role of present-day racism as a primary cause of maternal mortality. Racism in the medical system can manifest in myriad ways. Doctors who dismiss Black women's symptoms, health systems that tolerate racist behaviors and assumptions that lead to Black women not receiving needed care, and the funneling of Black women into lower-quality health systems all contribute to the current racial disparities we experience in maternal mortality.

Understanding poor outcomes for Black pregnant women also requires understanding the concept of intersectionality (Crenshaw, 1989). The burdens of racism intersect with other forms of discrimination, such as those based on immigration status, preferred language, gender identity, and education levels. Each of these forms of discrimination yields harm, and they combine to exacerbate their individual effects.

- **Payment and regulatory structures overemphasize the medical model**

  In maternity care, what we pay for and don't pay for shapes the types of care that women receive.

The financing system begins with insurance. While almost all women have insurance at the time they give birth, many women are uninsured at the time of conception and only gain coverage when they arrive at a clinician's office seeking prenatal services. This leaves women with untreated medical conditions when they conceive and may cause them to delay obtaining prenatal care due to misplaced financial concerns. Prior to the ACA, many individual insurance policies excluded pregnancy-related services, so women were only covered if they obtained Medicaid coverage when becoming pregnant (Lee et al., 2020).

After they give birth, women covered by Medicaid lose their coverage in 60 days unless they are eligible for other reasons. The ACA's Medicaid coverage expansion provides continuity for people with incomes below 133% of the federal poverty level before and after giving birth, but this coverage does not exist in states that declined to expand Medicaid. Those with incomes above that threshold may be eligible for ACA subsidies, but that does not guarantee that they will obtain coverage. With approximately 12% of maternal deaths occurring 42 days or

more after giving birth, this loss of coverage likely contributes to the maternal mortality crisis.

Having health insurance provides financial protection for pregnant women but can also shape the type of care they receive in ways that are not optimal for their health. Financial incentives consistently favor the use of more intense and complex medical services. Hospitals are paid more for a c-section than a vaginal birth. Premature births that result in a neonatal intensive care unit stay for the baby are a significant source of income for hospitals (Lantos, 2010). Payment that flows to a hospital or physician may or may not make its way to the nurse-midwife who provides prenatal and postpartum care in addition to supporting the birth and care of the woman. At the time the patient receives care, these financial incentives may not be on the clinician's mind, but in the aggregate, they shape organizational policies, investments, and usual patterns of care.

The highly resourced medical sector obtains payment for maternity care services, but there is no payment model for social interventions that can dramatically reduce the risk associated with pregnancy and birth. The health care system has no formal place for doulas and perinatal community health workers. Health insurance does not cover stable housing, nutrition, time off from work to attend to one's health, or other supports. Some innovative payment models for maternity care create flexibility and modest incentives for health systems to redirect resources to social needs, but these are the exception, not the rule.

- **High rates of maternal mortality reflect our limited investment in women's health**

  High rates of maternal mortality and severe morbidity in the United States are a symptom of a larger problem: lack of investment in or attention to women's health as a whole. We cannot reduce maternal mortality rates without improving women's health and health care throughout their lives.

  The lack of investment is demonstrated in myriad ways. We fail to provide health insurance to low-income women leading up to pregnancy, we tolerate discontinuities in coverage during pregnancy, and we terminate coverage shortly after a

woman gives birth. Pregnancy qualifies low-income women for Medicaid coverage, but there is no continuity across their lifespan. Prior to enactment of the ACA we allowed the sale of insurance policies that excluded maternity coverage; we also allowed insurers to charge higher premiums to women than to men (Lee et al., 2020)

We underinvest in research regarding the primary disease burdens affecting women; we often exclude women, and certainly pregnant women, from clinical trials. While caution is warranted, it limits the evidence we have regarding safe and effective treatments during a critical period of many women's lives. We have diverted our attention from the ongoing opioid epidemic because of the COVID-19 pandemic, even as substance use disorders remain a leading cause of maternal mortality.

The United States stands alone among high-income countries in having no national policy regarding paid maternity leave, with this benefit available primarily to higher-income women. The United States also stands alone in placing the financial and logistical burden of finding child care, particularly for infants, almost entirely on the family. Our nation has historically had no policy regarding home visits for postpartum women and newborns, with the ACA modestly expanding these programs. The United States has no guaranteed income or stipend for families with newborns. This combination of policies, or absence of policies, places great financial and social strain on families, and women in particular.

Ultimately, the nation's high maternal mortality rate is a subset of a broader phenomenon: the increasing death rate for U.S. women ages 25 to 34 in the period from 2010 to 2018 due to a variety of causes (Declercq, 2020, August 7). Maternal health is women's health, and the United States performs poorly on both.

Five Big Ideas to Reverse U.S. Maternal Mortality

It is past time to tackle the maternal mortality crisis. The Aspen Health Strategy Group offers five big ideas to reverse our current negative trends.

1. Make a national commitment to improvement

The nation's rates of maternal mortality and morbidity far exceed what is achievable in a country with our resources. Maternal mortality is a national crisis that warrants a national response, yet each birth occurs in a specific place with women receiving care from individual providers. An effective approach to addressing this crisis must bring together the public sector at all levels of government and the private sector within and outside of health care.

A national commitment begins with ambitious national goals. The U.S. Department of Health and Human Services should reexamine the Healthy People 2030 Goal of reducing the maternal mortality rate to 15.7 deaths per 100,000 live births. The new goal should be more ambitious, intended to bring our rate down to the level of other high-income countries and to close the glaring gap in maternal mortality rates between Black and Indigenous women and White, Hispanic, and Asian women.

The federal government should commit to annual reporting of maternal mortality rates using consistent methods to measure progress against these goals.

In support of these goals, the Center for Medicare and Medicaid Innovation (CMMI) should establish challenge grants for states that adopt a suite of policies related to insurance coverage, payment models, licensing, data collection, and quality reporting associated with better maternity care and outcomes.

Drawing from the best practices of state-level quality improvement initiatives, professional societies, and maternal mortality review committees, the Agency for Healthcare Research and Quality should convene a steering group composed of public sector and private sector leaders to review the evidence regarding maternal mortality and the recommendations of various groups (including the Aspen Health Strategy Group) to establish and publicize an action plan that engages all sectors to address the maternal mortality crisis.

2. Build and support community care models

Childbirth is the most frequent cause of hospitalization in the United States, with 3.7 million hospital stays per year representing more than 10% of all hospital admissions (Health Care Cost and Utilization Project et al., n.d.). The hospital bill accounts

for more than half of total spending on childbirth. While a small share of high-risk pregnancies and complex births must take place in the hospital, and those births require significant spending on clinical care, a successful strategy to reduce maternal mortality must shift resources out of the hospital and into the community.

Community-based models of care rely upon the expertise of midwives, doulas, and perinatal community health workers, who meet the medical and social needs of pregnant women in a respectful and culturally appropriate manner. Freestanding birth centers provide a cost-effective alternative to hospital deliveries for low-risk births, with a strong evidence base for better outcomes and higher rates of satisfaction.

The voices and needs of birthing people must form the cornerstone of the birthing experience, and systems of care should be built by and for birthing people and particularly Black and Indigenous women who currently experience the worst outcomes.

Support for community-based care models requires action in the areas of training, financing, and organization, as follows:

- The federal government should make a major financial investment in midwifery recruitment and training to increase the number of licensed and certified midwives to levels comparable to other high-income countries.
- Given the disproportionate burden of maternal mortality on Black and Indigenous women, training should emphasize expansion of the number of Black and Indigenous ob/gyns, perinatal nurses, midwives, perinatal community health workers, and doulas.
- States should review and, if necessary, revise their midwifery professional licensing and scope of practice laws to maximize midwives' ability to provide services commensurate with their training.
- States should develop standardized credentials for perinatal community-based providers.
- States should publicize their licensing and certification requirements for midwives to ensure that patients are aware of professionals' training and payers are able to include midwives in their provider networks.

- State insurance regulators should establish network adequacy standards for maternity coverage that include community-based models of care.
- Employers, insurers, and Medicaid programs should assure that group prenatal care and community-based models of care—including midwives, freestanding birth centers, doulas, and perinatal community health workers—are available to their enrollees.

- Hospital boards of directors should examine maternity care through a quality and equity lens in addition to a financial lens, enabling freestanding birth centers and midwifery-led care to become a part of their systems despite possible negative financial consequences associated with lower labor and delivery or neonatal intensive care unit revenues.
- Employers and insurers should examine and, if necessary, redesign the payment models they use for maternity care to assure access to services that meet women's needs while avoiding incentives for inappropriate or unnecessary hospital or physician specialist care.
- Employers should participate in and lead efforts to align public and private payment methods that support midwifery-led care models and community-based maternity care.
- As evidence accumulates regarding how new payment models work, those that are successful should be adopted consistently across public and private payers to solidify needed changes in maternity care delivery systems.
- States and local governments should collect and analyze data on maternity care capacity to identify care gaps and direct resources to closing those gaps.
- The federal government should support states in their development of regional systems of care that ensure access to appropriate services for high-risk pregnancies.
- States and local governments should develop regional maternity care systems that ensure that women with high-risk pregnancies are able to obtain needed care while avoiding overmedicalization of care for the vast majority of women who have low-risk pregnancies.

3. Redesign insurance around women's needs

Insurance coverage for pregnant and birthing women, whether private or public, is structured largely around the needs of the ob/gyns and hospitals that provide medical care. State insurance regulators, employers providing coverage to their employees, Medicaid agencies, and other relevant parties should examine the structure of insurance for maternity care and ensure that it aligns with the following elements:

- Congress should modify the Medicaid statute to make continuous coverage for one year after childbirth a mandatory eligibility category.
- All states should adopt the Affordable Care Act's Medicaid expansion to assure that low-income women have a source of insurance coverage prior to pregnancy and postpartum. Until such time, the federal government should develop a program that provides comparable continuous coverage.
- Insurance should be continuous for women of childbearing age. Medicaid eligibility should be extended to all low-income women who do not have coverage through their employer so that they are insured before they become pregnant and consistently after they give birth.
- State and federal insurance regulators, employers, and insurers should experiment with policies that reduce insurance losses and changes for pregnant women. Such policies could include extending the original source of coverage as women's employment or income changes, waiving new deductibles if there is a change in coverage, or prohibiting one payer from terminating coverage during pregnancy without proof of a new source of coverage.
- Coverage for mental health and substance use disorders must be an integral part of insurance for birthing people.
- Employers should provide their employees with paid maternity leave and examine their existing policies to increase uptake among lower-wage workers, and Congress should consider adopting a national paid maternity leave program.

Insurance must give birthing women access to the full continuum of care options without incentives that reinforce aspects of the current system that do not meet

women's needs. Insurance coverage should recognize midwifery-led care in payment and benefit policies as a standard of care with appropriate access to physician specialty care as needed.

We should continue to develop payment models that support health systems in addressing patients' nonmedical needs. In particular:

- Patient cost sharing for prenatal and postnatal care should be kept to an absolute minimum and should favor lower-cost community-based care options over more expensive institutional and physician-led care.
- Midwives should be paid equitably for their services and should be able to bill directly, rather than being required to bill under the services provided by a physician.
- Capitation and bundled payment models should continue to be developed that enable health systems to use resources to address social needs that can yield improved birth outcomes.
- Bundled payments should be structured to make access to community-based care available on par with access to hospital-based care.
- Health systems should continue and expand their efforts to document and address unmet social needs among their maternity care patients.
- Payment levels should be tied to quality as defined in part by patient-reported outcomes, measures of respectful care, and improvements in care coordination.

4. Tackle the racism that undermines women-centered maternity care

Policies that lead to poor birth outcomes must be changed, but lasting change depends on directly addressing the racism that led to those policies. While a broader antiracist agenda is beyond the scope of this report, important opportunities within the health care system must be embraced. They include:

- Quality and accrediting organizations should develop and promote the use of measures that incorporate aspects of care such as respect and responsiveness that reflect a system without bias.
- Health care organizations should achieve racial and ethnic diversity among their leadership and at all levels of staffing.
- Health care organizations should bring a diverse group of patients into decision-making roles such as boards and oversight committees.

- Health systems should embrace a variety of patient experience reporting mechanisms, ranging from formal methods such as CAHPS (Consumer Assessment of Healthcare Providers & Systems) and net promoter scores to informal methods such as Yelp reviews that allow patients to provide immediate feedback on their experiences.

- Health systems and employers should extend training beyond implicit bias to include the historical and current manifestations of structural racism, its effects, and how it can be dismantled.
- Public and private funders should increase their support for organizations led by women of color that are working and developing ideas to tackle the disproportionate burden of maternal mortality in their communities.
- All actors within the health system should review their policies and practices for elements of structural racism, dismantle those policies and practices, and undertake corrective action to reverse the harms those policies and practices have caused.

5. Invest in research, data, and analysis

For a crisis of this scale and scope, the data we have to understand and address it are shockingly limited. We must take the following steps to improve our understanding of and response to the crisis:

- The U.S. Centers for Disease Control and Prevention should establish clear and consistent standards for data reporting on maternal deaths in state vital statistics systems and should provide regular state-level and national reports on our progress toward national goals.
- The CDC should establish best practices for state-level maternal mortality review committees to increase our knowledge of the factors contributing to maternal deaths.
- All states should adopt best practices regarding collecting information through their vital statistics systems on maternal mortality. Variable methods should be used to conduct experiments regarding data quality, but ultimately, uniform methods must be employed to ensure the availability of comparable national data.

- All states should have robust maternal mortality review committees with broad data collection authority to improve our understanding of the root causes of every maternal death in the country. Summary results from these reviews should be made public on a regular schedule.

- Data on quality and outcomes should be collected and reported, at a minimum, at the level of the health system; hospital, group, or practice site; and payer.

- The federal government should collect comprehensive data on the availability of clinicians who provide maternity care and make these data publicly available. These data will enable better analysis of provider shortages, maternity care "deserts," and the relationship between provider supply and patient outcomes.

- All states should support perinatal quality collaboratives, which bring together hospital associations, departments of health, universities, payers, community-based organizations, and others, to analyze data and create action plans focused on priority activities designed to reduce the rate of maternal mortality.

- Congress should significantly expand research funding for the Agency for Healthcare Research and Quality (AHRQ) in the areas of maternal mortality and severe morbidity. Such funding should focus on evaluating opportunities associated with midwifery-led and community-based care models, with particular emphasis on improving outcomes for Black and Indigenous people, rural populations, and those covered by Medicaid, who currently experience the highest rates of maternal mortality.

- The federal government should develop a public/private research consortium that enables analysis using public data sources such as vital statistics combined with privately collected data such as insurance claims, internet search data, smartphone application use, and the like. Insurers, providers, patients, and electronic health record vendors should work together to develop and utilize the robust data that already exist and that can be used to identify opportunities for improvements in maternity care.

- The National Institutes of Health should devote funding to research the causes of maternal mortality and morbidity.

Moving Forward

There is growing understanding of and attention to the national crisis of maternal mortality (U.S. Department of Health and Human Services, 2020). Public awareness has been heightened by a steady stream of news articles on the subject. Academic and research organizations are increasing their focus on the topic. There is now a Black Maternal Health Coalition within the U.S. Congress, which has developed a package of legislative proposals referred to as the "Momnibus" (H.R. 6142) (Black Maternal Health Momnibus Act of 2020). Subsequent to our meeting, the Trump administration released an action plan to improve maternal health (U.S. Department of Health and Human Services, 2020).

As a new Biden administration is formed, it will face many competing priorities within health care and beyond. We believe addressing maternal mortality should be a high priority. In addition to the direct effects on women, their families, and their communities, failures related to maternal mortality are an indictment of the broader health care system. Or to take a more positive view, tackling the maternal mortality crisis will unleash changes that are positive for the overall health system.

The Aspen Health Strategy Group, with its multisector membership, has developed these ideas to catalyze improvements in policy and practice. We will share the report with members of the new administration and Congress, and we will promote its ideas in the private sector as well. We look forward to working with others committed to addressing the maternal mortality crisis.

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