Expanding Access to Outcomes-Driven Maternity Care through Value-Based Payment

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Background

The rates of pregnancy-related mortality[i] and maternal mortality[ii] have more than doubled in the U.S. in the past three decades. The U.S. stands out as an anomaly compared to other high-income countries as international trends move in the opposite direction.[1] Among the four million women giving birth each year in U.S., the racial disparities are stark: mortality rates for Black women are three to four times higher than for non-Hispanic white women,[2] and Black women have a higher likelihood of experiencing severe maternal morbidity[3] and complications including preeclampsia[4] and postpartum hemorrhage.[5]

While these trends are not new, there has recently been a renewed focus on maternal health outcomes in the U.S. both within the medical and public health communities as well as coverage in major media outlets.[6] For example, a recent collaborative series by National Public Radio and ProPublica entitled "Lost Mothers: Maternal Mortality in the U.S." examined why the U.S. experiences the highest rates of death from pregnancy and childbirth in the developed world.[7] The series explored topics such as postpartum nurses' knowledge of possible postpartum complications,[8] examined cases of severe "near death" maternal morbidity,[iii] and also compiled the names and stories for 134 of the estimated 700 to 900 mothers who died in childbirth in 2016.[9,10]

According to the CDC, which began conducting national surveillance of pregnancy-related deaths in 1986, the explanation for the overall increase in pregnancy-related mortality is unclear.[11] Yet local maternal mortality review committees have estimated that over 60% of pregnancy-related deaths are preventable,[12] and over 50% of pregnancy-related deaths occur postpartum.[13] Myriad complex and intertwining factors contribute to growing disparities and poor maternal health outcomes for women in the U.S., including:

- Large variations in labor and delivery unit practice management[14];
- Surgical complications from cesarean deliveries (*i.e.*, C-section) without indication[15];
- The rising rate of delivery by C-section, from 20.7% in 1996 to almost one-third of all births by 2017[16];
- Increasing prevalence of pre-existing chronic diseases among pregnant woman such as cardiovascular and heart disease which together account for over a quarter of pregnancy-related deaths[17,18];
- The dramatic increase in the number of pregnant women with opioid use disorder, which quadrupled between 1999-2014[19];
- Ongoing lack of access to prenatal care[20] and increases in patient cost-sharing that adversely impact care plan adherence, more so for low-income patients[21]; and
- Underutilization and lack of access to postpartum care, with approximately 10% of women not attending a postpartum visit and lower attendance rates among socially and economically vulnerable women. [22,23]

[i] The CDC defines pregnancy-related deaths as the death of a woman while pregnant or within 1 year of the end of a pregnancy – regardless of the outcome, duration or site of the pregnancy – from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes. The rate is defined as the number of pregnancy-related deaths per 100,000 live births.

[iii] The WHO defines maternal mortality as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes. The rate is defined as the number of maternal deaths per 100,000 live births.

[iii] Estimated cases of severe maternal mortality range from 50,000 (CDC surveillance data) to 80,000 annually (Alliance for Innovation on Maternal Health analysis of hospital data).

The troubling morbidity and mortality rates are exacerbated by increasing health care costs for maternity care that result in rising premiums and out-of-pocket costs for patients and employers and also crowd out budgets for other government programs. Medicaid programs – which are financed by state governments with matching dollars from the federal government – provide health care coverage for low-income women and pay for about 50% of all births nationwide.[24] Nearly two-thirds (64.8%) of women of reproductive age (15-44) were covered by private insurance in 2017.[25] Patient cost-sharing provisions can constrain women's ability to access evidence-based care before, during, and after childbirth; one study found that employees of self-insured employers in the lowest-wage group used half as much preventive care as the top-wage-group earners.[26]

The costs can also vary widely depending on site of care and type of delivery. Analyses of total maternity care costs, inclusive of maternal and newborn care, have found that both commercial payers and Medicaid plans pay 50% more for C-sections than vaginal births.[27] On the other hand, there is wide variation in reimbursement for evidence-based prenatal and postpartum services that support safe and healthy transitions to motherhood for new moms and babies, such as group prenatal care, lactation support, and doulas.[28,29,30,31] The current financial incentives for providers are therefore misaligned with evidence about effective maternity care.

Purpose & Methods

The growing attention to the severity of poor maternal health outcomes and the rising costs of care in the U.S. indicates a ripe opportunity for action. Against this backdrop, the question remains why reforms to maternity care reimbursement have not received higher priority in the transition to value-based payment.

The National Partnership for Women and Families – an advocacy organization with a long-standing mission to improve the lives of women and families – identified six priority areas and specific recommendations comprising a *Blueprint for Advancing High-Value Maternity Care* with high-level recommendations and specific action points[32]:

1. Improve maternity care through innovative care delivery and payment systems and quality improvement initiatives;
2. Advance performance measurement for high-value maternity care;
3. Meaningfully engage all childbearing women and families;
4. Transition to interprofessional education that supports team-based care for maternity care professionals;
5. Foster an optimal maternity care workforce composition and distribution; and,
6. Conduct priority research to advance the science of physiologic childbearing and its impact on maternal and child health outcomes.

The Health Care Transformation Task Force (HCTTF) identified specific initiatives, organizations, and subject matter experts that have made the most progress in developing and/or implementing innovative payment models that support improvements in maternity care and outcomes in line with the *Blueprint's* first strategy to implement payment reforms that offer the greatest potential for value-based care transformation. Some quality improvement initiatives were identified that were not clearly tied to a payment strategy; only initiatives including a payment reform component were prioritized for outreach. HCTTF staff then pursued

informational phone interviews with representatives from priority initiatives, including representatives from group health purchasers (employers), state government, health insurers (payers), health care providers, and multi-sector/multi-stakeholder groups (**Table 1**), and academic researchers and subject matter experts.

Table 1: *Active initiatives to improve maternity care through innovative care delivery and payment systems (identified as of April 2019)*

Category	Lead entity	Value-based payment initiative
Purchaser (government)	Idaho Medicaid	1. *Healthy Connections Episodes of Care*
	New York State Medicaid	2. *Delivery System Reform Inventive Payment Program: Maternity Care Value-Based Payment Arrangement*
	North Carolina Medicaid	3. *Pregnancy Medical Home*
	Ohio Department of Medicaid	4. *Episode-Based Payment Model*
	TennCare (Tennessee Medicaid)	5. *Perinatal Episode of Care*
	Washington Health Care Authority (Medicaid and state employees)	6. *Maternity episodes of care*
	Wisconsin BadgerCare (Medicaid)	7. *Obstetric Medical Home for high-risk pregnant women*
Purchaser (private employer)	Pacific Business Group on Health	8. *Transform Maternity Care*
	GE	9. *Maternity Care Select Program*
Commercial Payers	Horizon Blue Cross Blue Shield of New Jersey	10. *Pregnancy Episode of Care*
	Humana	11. *Maternity Episode-Based Model*
	Cigna	12. *Collaborative Care Arrangements*
	Community Health Choice (Medicaid MCO)	13. *Maternity care bundled payment*
	Texas Children's Health Plan (Medicaid and CHIP MCO)	14. *The Center for Children and Women (Pregnancy Medical Home)*
Multi-payer	Arkansas Health Care Payment Improvement Initiative	15. *Episode-based payment arrangements for perinatal care*
	South Carolina Medicaid/Blue Cross Blue Shield of South Carolina	16. *South Carolina Birth Outcomes Initiative*
Provider	U.S. Women's Health Alliance	17. *Episode of care arrangements with Cigna, Horizon BCBS, and UnitedHealthcare*
	Minnesota Birth Center	18. *BirthBundle™*
Multi-sector	Health Care Payment Learning & Action Network	19. *Maternity Multi-Stakeholder Action Collaborative*
	Bree Collaborative (Washington)	20. *Maternity Care Bundled Payment Model Workgroup*

Initiative website or public reference
1. http://healthandwelfare.idaho.gov/Portals/0/Medical/MedicaidCHIP/Healthy%20Connections/HCValueCareWhitePaper.pdf
2. https://www.health.ny.gov/health_care/medicaid/redesign/dsrip/vbp_library/2018/docs/2018-02-09_maternity.pdf
3. https://medicaid.ncdhhs.gov/providers/programs-services/family-planning-and-maternity/pregnancy-medical-home
4. https://www.ohiohospitals.org/OHA/media/Images/Finance%20and%20Policy/Episode-webinar-9-21-17.pdf
5. https://nashp.org/wp-content/uploads/2017/10/Tennessee-Case-Study-Final.pdf
6. https://www.hca.wa.gov/assets/program/vbp-roadmap-2017.pdf
7. https://www.forwardhealth.wi.gov/WIPortal/content/Managed%20Care%20Organization/OBMH/OBMHome.htm.spage
8. http://www.pbgh.org/maternity
9. https://gefwc.trihealth.com/ge-maternity-care-select-program/
10. https://www.horizonblue.com/members/plans-services/patient-centered-programs/episodes-of-care
11. https://press.humana.com/press-release/current-releases/humana-launches-national-value-based-model-maternity-care
12. https://healthpayerintelligence.com/news/private-payers-follow-cms-lead-adopt-value-based-care-payment
13. https://catalyst.nejm.org/bundled-payments-maternity-care/
14. https://hhs.texas.gov/sites/default/files/documents/laws-regulations/reports-presentations/2017/pregnancy-medical-home-pilot-final-eval-sept-6-2017.pdf
15. https://achi.net/wp-content/uploads/2018/10/Arkansas-Health-Care-Payment-Improvement-Initiative-State-Tracking-Report-Year-3-Full-Report.pdf
16. https://www.scdhhs.gov/press-release/south-carolina-birth-outcomes-initiative-dramatically-improves-infant-health-saves
17. https://www.prweb.com/releases/2018/06/prweb15540573.htm
18. https://theminnesotabirthcenter.com/
19. https://hcp-lan.org/mac/
20. http://www.breecollaborative.org/topic-areas/current-topics/maternity-bundle/

Staff successfully made contact and completed phone interviews with representatives from 8 of the 20 targeted initiatives and 5 of 7 identified subject matter experts and reviewed findings from the literature on the remaining initiatives to inform the following research questions:

- Where/how has the program seen success in improving maternity outcomes?
- What are perceived barriers to sustainability at the local level, or to more widespread adoption of the program/model?
- How could the Task Force, as a multi-stakeholder organization representing payers, providers, purchasers, patient groups, help to address those barriers and promote uptake of effective maternity care models?

Staff also reviewed current peer-reviewed articles discussing maternal and infant health outcomes; efficacy of quality improvement efforts, care delivery models and payment reform; racial/ethnic and sociodemographic disparities in care delivery and outcomes; policy analyses and evaluations from existing payment reforms to improve maternity care; and surveys of women's childbearing experiences.

Findings and analysis

The literature review and interviewed subject matter experts represented a wide array of stakeholders, geographies, markets, patient populations, and level of model maturity. Yet, common best practices and examples of what works in terms of care delivery emerged. There was also a recurring explanation for why evidence-based care is not yet ubiquitous: fee-for-service payment models and existing business case concerns present barriers that must be addressed and rectified in order to scale high-value maternity care models in the U.S.

A. Elements of a Comprehensive Care Model

Among subject matter experts, there was agreement that the standard model of maternity care is inadequate and in need of transformation to yield better outcomes and lower costs. A significant research base validates the success of certain maternity care interventions for various groups of women. The literature review and subject matter interviews validated two elements necessary for a successful comprehensive care model: (1) evidence-based perinatal care delivered by an expanded care team, and (2) appropriate labor and delivery model based on patient-specific indicators.

1. *Evidence-based perinatal care delivered by an expanded care team*

Perinatal care includes care of the mother and newborn before, during, and after delivery. Prenatal care that is tailored to the specific and individual needs of women during pregnancy has shown promise in improving maternal outcomes. Considering a patients' needs beyond what can be delivered in a typical prenatal care visit is also crucial in reducing disparities, particularly for low-income women and women of color. One such intervention among Medicaid recipients in Wisconsin – a prenatal care coordination (PNCC) benefit – delivers services based on a mutually created care plan and makes referrals to community resources including the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), support for job-training or continued education, and help reducing the barriers to prenatal care attendance. Research showed that women who received the PNCC services had better birth outcomes than women without access to PNCC benefits. These improved outcomes included reductions in the rates of low-birth-weight infants, very-low-birth-weight infants, infants transferred to the neonatal intensive care units, and preterm infants.[33]

The option of group prenatal care visits is another powerful lever to drive improvements in maternal health and outcomes. One provider expert discussed the magnified impact of group prenatal care for certain populations of women including low-income populations, women of color, and women in the military. A group prenatal care intervention for medically underserved populations at Greenville Health System in South Carolina reduced pre-term birth for low-risk women in group care by 47% compared to women in traditional care.[34] Additionally, a review of perinatal outcomes research examining individual prenatal care versus group prenatal care between 1998 and 2009 found that most studies showed higher birth weights and longer gestation periods for babies born to mothers who participated in group prenatal care.[35]

Patient-centered postpartum care can improve health outcomes for both the mother and baby.[36] Though optimal timing of care delivery remains a question in the literature, there is clearer consensus on evidence-based postpartum care elements, including postpartum depression screening, screening for chronic diseases, reproductive health planning to encourage healthy birth spacing, providing appropriate vaccinations, and promoting smoking cessation.[37] According to the American College of Obstetricians and Gynecologists (ACOG), postpartum care should include a comprehensive care team including the maternity provider, infant health care provider, community supports, and the woman's family and friends. ACOG also suggests that obstetric providers should begin counseling their patients on postpartum care during pregnancy to formulate a care plan and clearly identify the professionals who will make up that care team.[38] Research indicates that while access to prenatal care is universally covered by health insurance plans and best practice guidelines for prenatal care delivery are more commonly followed, there is

much more variation in the coverage and delivery of postpartum care.[39] Furthermore, Medicaid is currently only required to cover women for 60 days postpartum. Noting that pregnancy-related health issues persist throughout the year following birth and over 50 percent of pregnancy-related deaths occur postpartum, various organizations including the American Medical Association and ACOG have advocated for extending Medicaid coverage to 12 months postpartum.[40,41]

In terms of the maternity care team, the positive impact of a nurse midwifery care model on maternity care outcomes is well-documented.[42] Research shows that greater integration of certified nurse midwives and improved access to midwives in all settings are associated with substantially higher rates of vaginal delivery, breastfeeding at birth and at six months, vaginal birth after cesarean delivery, as well as significantly lower rates of preterm births, low weight birth infants, and cesarean deliveries.[43] Midwives can attend to births in multiple settings: at home, in a birth center, or in the hospital, and are therefore well-positioned to help women identify their labor preferences and the appropriate site of delivery, which is a significant component of a comprehensive care model as discussed below.[44]

Research also shows that doula support can result in improved maternity outcomes. Doulas are trained maternal support professionals who provide care in the psycho-social, emotional, and educational aspects of pregnancy, childbirth, and the postpartum period, and their support has been shown to have particularly strong effects for women who are low-income, socially disadvantaged, or experience a language or cultural barrier to care access.[45] Recent data shows that women with trained doula support were 39% less likely to have a cesarean delivery and 35% less likely to report their childbirth experience negatively.[46] Other promising perinatal support services including nurse home visits have been shown to improve infant immunization and breastfeeding rates while decreasing pre-term deliveries.[47]

Pregnancy medical home models drive high-value care by providing team-based and coordinated care through an expanded care team. Literature from a pregnancy medical home (PMH) model in Texas for women enrolled in Medicaid and CHIP Perinate (a CHIP plan providing prenatal care for low-income women who do not qualify for Medicaid) demonstrates the impact of an expanded care team and evidence-based perinatal care. The Texas model's expanded care team includes physicians and midwives who are integrated with pediatrics, behavioral health, optometry, dental, laboratory, and pharmacy. In addition to an expanded care team, the model provides walk-in care at a clinic and 24-hour nurse availability for triage. Women prospectively assigned to the PMH had lower utilization rates for hospital admissions and emergency care, generating $330,161 in annual emergency department savings and $494,313 in annual savings related to inpatient days relative to the control group.[48] Additionally, pregnancy medical homes have been shown to increase utilization of evidence-based postpartum care visits. Medicaid external quality review reports found that Wisconsin's Obstetric Medical Home led to an increase in postpartum care visits from 61.4% in 2013 to 85.5% in 2015 as well as an increase in the receipt of timely postpartum care and behavioral health care compared to women not enrolled in the model.[49]

A critically important yet often missing element of comprehensive perinatal models is mental health care. Recent analysis shows that one in seven women are affected by perinatal mood and anxiety disorders (PMADs), which include prenatal and postpartum anxiety and

depression.[50] The *Listening to Mothers in California* project recently found that only one in five women who reported symptoms of prenatal anxiety or depression received treatment or counseling, a troubling statistic given that a lack of proper treatment for these conditions can lead to adverse health outcomes for both the mother and baby.[51] Beyond the potential health consequences of inadequate mental health care across the perinatal episode, untreated PMADs in the United States are costly: a 2019 Mathematic study found that the estimated cost of untreated PMADs on average is $32,000 per each mother-child pair, totaling $14.2 billion per year.[52]

One identified care delivery strategy to drive greater postpartum depression (PPD) screening is to incorporate the screening into pediatric well-child visits. Pediatric providers are well-positioned to screen for PPD symptoms in new mothers given the higher frequency of recommended well-child visits and contact with the newborn's mother. The American Academy of Pediatrics recommends routine PPD screening for mothers during well-child visits at 1, 2, 4, and 6 months of age.[53] Research shows that primary-care based PPD screening, diagnosis, and management improved depression outcomes at 12 months,[54] but more research is needed to determine effectiveness of PPD screening interventions in pediatric primary care settings.[55] The documented gaps in mental health care during and after pregnancy suggest that there is a significant opportunity and need for continued development of best practices to screen women for PMADs and connect them with the resources and treatment they need to ensure positive health outcomes for themselves and their babies.

In addition to screening for PPD, it is essential to screen for behavioral health issues including opioid use disorders. As substance use disorders affect women across urban, suburban, and rural geographies and all socioeconomic, racial, and ethnic groups, ACOG recommends universal screening at the first prenatal care visit. Routine substance use screening should inform necessary modifications to prenatal care and postpartum access to essential resources including psychosocial support services, relapse prevention programs, and substance use disorder treatment.[56]

2. *Appropriate labor and delivery model based on patient-specific indicators*

Subject matter experts spoke to the importance of patient-centered maternity care that ensures the provision of the right care to the right patient at the right time. In determining the appropriate care model for labor and delivery, the full range of patient needs, patient-specific indicators, and preferences must be considered. As noted above, the labor and delivery care team may include OBGYNs, midwives, doulas, and other medical staff. The primary birth sites include hospital obstetrics (*i.e.*, labor and delivery) units, birth centers, and home births. Birth centers are separate, midwifery-led units – either hospital-affiliated or freestanding centers – with no routine involvement of medical staff such as anesthesiologists, obstetricians, and pediatricians.[57]

A team-based, low intervention approach with continuous support during the childbirth produces the best outcomes for low-risk pregnancies. While cesarean delivery is appropriate for women with certain patient indicators (*e.g.* placenta previa, uterine rupture) and can be life-saving for both the mother and baby, research suggests that the procedure is overused, and the steep rise in cesarean rates since the mid-1990s has not produced clear evidence of consequent reductions in maternal or neonatal mortality or morbidity.[58] For low-risk pregnancies, cesarean delivery actually carries a higher risk of maternal mortality and morbidity.[59] However, women

with high-risk pregnancies and deliveries anticipating medical intervention need access to high-quality hospital labor & delivery and neonatal intensive care units (NICU).

The freestanding birth center model has been shown to reduce the number of interventions needed in labor and delivery.[60] An evaluation of the Strong Start for Mothers and Newborn initiative, funded by the Center for Medicare and Medicaid Innovation with the aim of improving outcomes for women and children enrolled in Medicaid and the Children's Health Insurance Program (CHIP), found that women served by birth centers had even lower risk levels and significantly lower levels of preterm births (4.5%) compared to women receiving care in maternity care homes (12.9%) or group prenatal care (12%).[61] The Minnesota Birth Center (MBC) located in Minneapolis and St. Paul has been successful in delivering high-value maternity care since 2012. Between 2012-2016, MBC delivered 1,096 babies with a 92% vaginal birth rate, and a 70% vaginal birth after cesarean delivery (VBAC) rate, far higher than the national average. [62,63] MBC has also achieved substantial cost reductions relative to local hospitals with an average combined savings of $11,954 for a vaginal delivery without complications and normal newborn charges.[64]

Hospital-affiliated birth centers are another alternative to standard hospital labor & delivery units. Outside the U.S., hospital birth centers have been shown to reduce rates of medical intervention during labor and birth and increase levels of satisfaction for care received without increasing risk[65]; however, there is little research on this model within a U.S. context. Currently, the Commission for the Accreditation of Birth Centers has accredited only two "alongside maternity centers" in the U.S.; notably, these centers bill the same facility fees as a hospital labor & delivery admission.[66,67] Researchers with the Clinical Excellence Research Center at Stanford University have advocated for uptake of a hospital-affiliated outpatient birth center model – akin to an ambulatory surgery center – to care for low-risk deliveries at a lower cost.[68] This model would also support timely transfer to a hospital in cases of emergency.

Subject matter experts spoke to the importance of continually sharing and refining innovative models and best practices in care delivery. The care delivery elements listed above have been shown to improve maternal outcomes for various populations of women. The needs of individual women should guide which elements of care are incorporated into the care plan, as well as when and where that care is received. While encouraging fewer interventions for low-risk pregnancies is a critical strategy to improve maternity care outcomes, it also important to protect a woman's right to informed choice when it comes to selecting her provider and site of care. Providers should ensure that women have the resources needed, including an informed choice among care options, access to high-quality information about care options and support for their informed choices, and support to make the best decision for themselves and their child as to where and how they deliver.

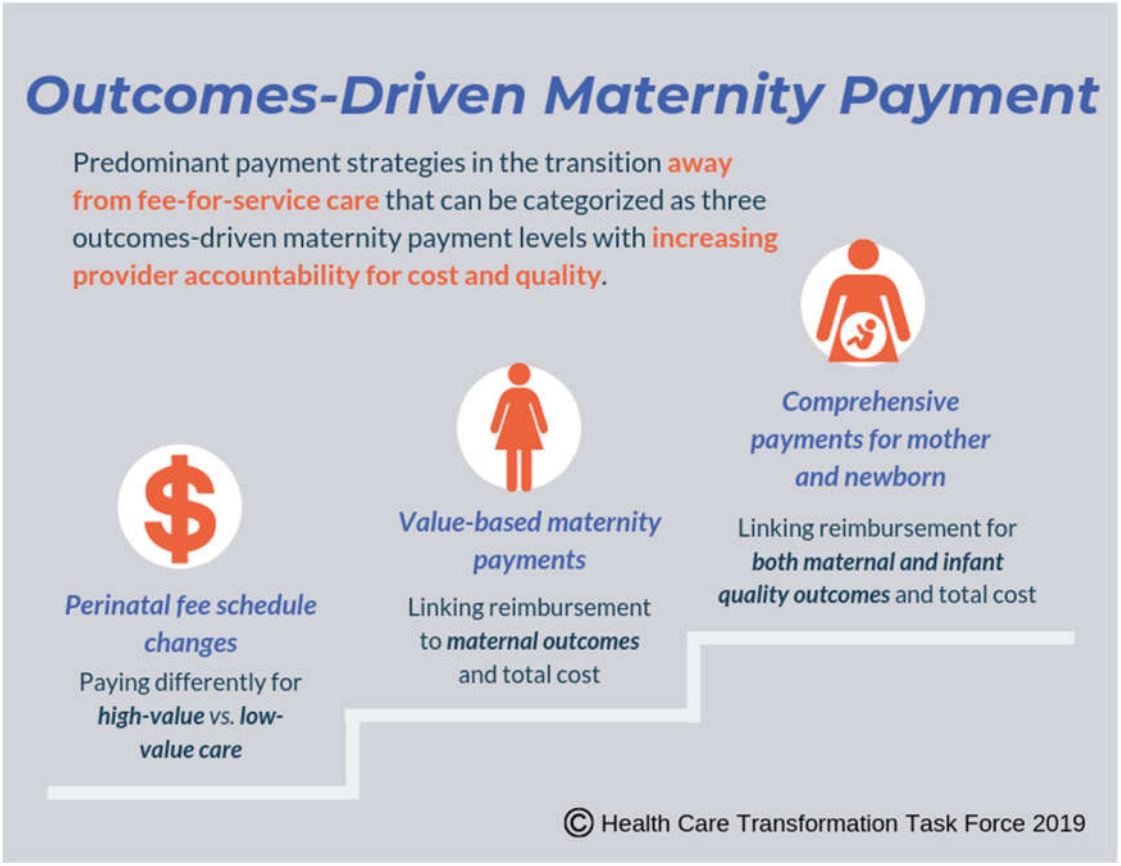
B. Promising outcomes-driven maternity payment models

As the industry continues to examine the elements and models of care delivery that are most impactful in driving better maternal outcomes, it is also necessary to examine the payment models that support or hinder comprehensive care delivery to ensure greater adoption and sustainability of evidence-based maternity care. Significant barriers exist to implementing the payment and reimbursement structures needed to allow ideal care models to flourish. The predominant fee-for-service model of reimbursement creates misaligned incentives based on

volume and acuity of services, regardless of whether those services are medically necessary and high-quality, while reimbursing less for (or in some cases, not even covering) high-value care such as doula services, birth center facility fees, and screening for social needs. By not reimbursing or inadequately reimbursing these services, providers lack the proper incentives needed to shift towards a more comprehensive maternity care model.

Our research revealed three predominant payment strategies in the transition away from fee-for-service care that can be categorized as **outcomes-driven maternity payment levels**[iv] with increasing provider accountability for cost and quality:

- ***Perinatal fee schedule changes***: Paying differently for high-value vs. low-value care.
- ***Value-based maternity payments***: Linking reimbursement to maternal outcomes and total cost.
- ***Comprehensive payments for mother and newborn***: Linking reimbursement for both maternal and infant quality outcomes and total cost.



[iv] The three outcomes-driven maternity payment levels align with categories 2-4 of the Health Care Payment Learning & Action Network's (HCP-LAN) Alternative Payment Model (APM) framework which specifies four categories of payments: 1) Fee-for service — No link to quality & value; 2) Fee-for service — Link to quality & value; 3) APMs built on fee-for-service architecture; 4) Population-based payment. Perinatal fee schedule changes align with category 2 of the APM framework, while value-based maternity payments align with category 3 and comprehensive payments for mother and newborn align with category 4. The majority of existing efforts interviewed and researched for this project fell into the first two outcomes-driven maternity payment levels: perinatal fee schedule changes and value-based maternity payments. The APM framework is available here: https://hcp-lan.org/tag/apm-framework/

1. ***Perinatal fee Schedule changes:*** Paying differently for high-value vs. low-value care

Targeted fee-schedule changes can be a powerful incentive to drive better outcomes and lower costs. Paying differently for high-value vs. low-value care can also be less controversial and easier to gain buy-in from stakeholders as a way to address "low hanging fruit" by simply not paying for recognized low-value care like early elective deliveries. In South Carolina, the Medicaid program and Blue Cross Blue Shield of South Carolina achieved a reduction in early elective deliveries from nearly 10% of births, to less than 3% of births in the four years after they both stopped reimbursing elective C-sections and inductions before 39 weeks gestation.[69]

Similarly, payers can move the needle by increasing reimbursement for high-value providers and sites of care. Inadequate reimbursement for certified nurse midwives and doulas and lack of a federally mandated birth center facility fee remain key barriers to uptake of these care models, and for greater access to their services more broadly.[70,71] A birth center subject matter expert noted that – in cases where a woman first attempts to deliver with a midwife in a birth center but is transferred to a hospital for medical necessity – the professional services payment may be attributed only to the delivering provider. This payment disparity is exacerbated in the Medicaid program with comparatively low reimbursement rates and delays in provider payment due to lengthy Medicaid eligibility determinations. Payment disparity for midwives and administrative hassles within Medicaid often result in birth centers limiting the number of Medicaid beneficiaries they are able to serve.[72]

Paying for doula care is another mechanism to promote evidence-based, high-value care. As of May 2019, Minnesota, Oregon, Indiana, and New Jersey have passed legislation that allows Medicaid reimbursement for doula care.[73,74] As one piece of a larger initiative to reduce racial disparities in health outcomes and maternal mortality, New York State announced in March 2019 the launch of a pilot expansion allowing the State's Medicaid program to reimburse for doula care for both Medicaid fee-for-service and Medicaid Managed Care enrollees.[75] Other states are pursuing legislation to increase access to doula support in Medicaid including Vermont, Connecticut, Massachusetts, Rhode Island, Texas, and Washington.[76]

Another payment strategy to drive quality care is increasing payment rates for long-acting reversible contraception (LARC) and, in the context of a bundled payment model, unbundling LARC payments from the larger episode. The Center for Medicaid and CHIP Services (CMCS) has cited these strategies as effective ways to increase access to and effective use of contraception.[77] TennCare, Tennessee's Medicaid program, issued a billing policy to its Medicaid MCOs to allow for reimbursement for LARC devices and practitioner fees in addition to the maternity episode payment for enrollees who choose this option immediately following delivery. The TennCare billing policy change was intended to drive improved access to these devices for women that want them and allow women to voluntarily space pregnancies.[78]

Blended case rates (*i.e.*, paying a single fee for facility and/or professional services regardless of vaginal or C-section birth) are another effective payment tool to incentivize the reduction of medically unnecessary cesarean deliveries. In a pilot with three hospitals, the Pacific Business Group on Health (PBGH) implemented a blended case rate for all facility and professional fees associated with labor and delivery for both C-section and vaginal births and technical support for changing care practices. The program achieved a 20% decrease in C-section rates at a time when national rates plateaued, without evidence of maternal-newborn harm.[79,80]

While a multitude of existing efforts utilize blended case rates, subject matter experts noted that blended case rates set at existing reimbursement levels do not create strong enough incentives for practice change and cesarean reduction, and therefore a bundled payment inclusive of professional and facility fees is preferable. However, one purchaser organization noted the difficulty of getting payers to agree to a single blended rate for facility and professional fees due to the heterogeneity of pricing across markets.

Experts also noted a significant barrier to implementing the fee-schedule changes described above is that for hospitals, labor & delivery admissions and interventions are a significant source of revenue. Childbirth is ranked first among principal diagnoses for U.S. national inpatient stays, at a rate of 1,195 per 100,000 people, or 11.7% of all hospital stays, and C-section is the most common surgery [81,82] However, fee-schedule changes can be the first step towards rewarding providers for delivering care of a higher quality.

2. ***Value-based payment:*** Linking reimbursement to maternity outcomes and total cost

The second level of outcomes-driven maternity payment is linking reimbursement to accountability for outcomes and costs through approaches including bundled payments for the maternity episode of care and pregnancy medical home models.

Bundled payments for maternity episodes of care – which set a target price for the entire maternity episode including all professional and facility fees and adjust provider payment based on whether overall cost targets and quality metrics are met – have also produced improvements. In 2013, the state of Arkansas implemented the Arkansas Health Care Payment Improvement Initiative (APII), which included a state-wide mandatory episode-based payment model for perinatal care. The perinatal episode is triggered by a live birth and is inclusive of services 40 weeks prior to birth and postpartum care 60 days after birth. In the first year of implementation the model saved 3.8% (or $396 per person) in total perinatal spending and 6.6% on intrapartum facility services relative to control states.[83]

The experience of Medicaid programs revealed challenges related to designing and implementing episode payment models for maternity care, including defining the episode window and assigning an accountable provider. For example, the Arkansas, Ohio and Tennessee Medicaid maternity episode models designate the delivering provider as the "principal accountable provider" for the entire perinatal episode, which can include up to 40 weeks before pregnancy and 60 days postpartum.[84] The episode payments are also reconciled retrospectively (*i.e.*, after the episode window ends) and triggered by the birth, rather than prospectively assigned during the pregnancy. This structure places greater emphasis on the delivering provider rather than the prenatal care team, which may be different. There is also a forced constraint on ability to manage a longer window of postpartum care for many Medicaid beneficiaries because women who become eligible for Medicaid due to their pregnancy will lose that eligibility at the end of the month that includes the 60th day after giving birth. Another major methodological challenge has been a lack of needed resources to identify the gaps in evidence-based perinatal quality measures that drive improvements and reduce disparities.[85]

For payers, linking reimbursement to outcomes and cost can present a variety of challenges related to prioritizing investments Administrative platform limitations were identified as a key barrier; payers seek predicted return on investment to justify upfront capital investments to modify existing claims infrastructure. Multiple subject matter experts commented that there is

reticence amongst payers to implement a maternity bundled payment program in the absence of a broader episodes of care strategy because it is too large an infrastructure investment to make for only one clinical area.

Purchasers also noted that payers can be reluctant to respond to the demand for bundles from employers as even the largest employers may not represent enough service volume to justify the perceived cost of implementing the maternity bundle. Furthermore, enrollment gaps and coverage churn can be destabilizing for a bundle. Lastly, as noted by one multi-stakeholder effort leader, while bundles offer promise as an intervention, there is no one-size-fits all value model that will meet the needs of every market. The need to adapt these models to local market characteristics adds another layer of complexity for payers deciding whether to implement a value-based payment model for maternity care.

Despite these challenges, promising results have emerged from local value-based payment adoption for both Medicaid and commercially-insured populations. Episode payment models in Tennessee have reduced perinatal episode of care costs for Medicaid by 3.4% and improved screening rates for HIV and Group B streptococcus.[86] Horizon Blue Cross Blue Shield of New Jersey reported a 32% reduction in unnecessary C-sections in the first year of its pregnancy episode of care program, and in the third year reported 27% reduction in emergency room visits for pregnancy.[87,88] And bundled payments are not the only value-based care model showing promise: Texas Children's Health Plan saw significant reductions in the number of inpatient hospital days per 1000 members among pregnant women with at least one visit to a pregnancy medical home.[89] Research has also found that Medicaid ACOs were associated with a moderate reduction in hospital costs per birth and decreased C-section rates.[90]

Perhaps the most significant barrier to greater adoption of these payment arrangements is that – in the prevailing payment model – the provider that delivers the baby is the provider attributed to the payment and any shared savings. This savings mechanism does not necessarily reimburse other care team members who may have contributed to lower episode costs and higher quality outcomes through comprehensive perinatal care. Not attributing savings to the upstream care providers that avoid hospital expenditures not only fails to acknowledge the work of those providers, it misses a critical opportunity to reinvest in prevention efforts. One interviewed provider noted the challenge of piecing together funding every year to continue to offer comprehensive group prenatal care and care coordination without a regular reimbursement mechanism. More equitably distributing shared savings opportunities across the care team could help to invest in critical elements of the high-value care model.

3. ***Comprehensive payments for mothers and newborns*:** Linking reimbursement for both mother and infant quality outcomes and total cost

Subject matter experts noted that comprehensive payment that links payment for both mother and infant quality outcomes and total cost has great potential for meaningfully impacting maternity outcomes and improving the likelihood of healthy childbirth recovery. Research and interviews suggest that few interventions have been able to successfully overcome methodological challenges associated with this payment level, such as establishing the appropriate episode window and determining how to account for outlier NICU costs and high-risk pregnancies.

For example, a bundled payment pilot in Texas led by the Health Care Incentives Improvement Institute and Community Health Choice demonstrated how comprehensive payment can drive improvements in maternal outcomes and highlights some of the challenges associated with implementation. The maternity care episode was triggered by the delivery and included the following three components: pregnancy (270 days pre-delivery), delivery (3 days before birth until 60 days after discharge), and the newborn (birth until 30 days post-discharge). The pilot found an inverse relationship with the birthweight of the baby and costs of maternity and delivery, such that lower costs were associated with an important neonatal outcome. A key finding of the pilot was that even a few high-need, high-cost infants could strongly impact the overall costs and potential for shared savings in a bundled payment model. Specifically, model participants learned that the Level 4 nursery designation for cost exclusion was not an effective stop-loss for severity and cost. Some high-cost infants with birth defects did not require the Level 4 designation and were therefore not excluded. This prompted the implementation of a stop-loss cap between $30,000-$60,000 in Year 2 of the pilot.[91]

As part of their Section 1115 "Delivery System Reform Incentive Payment" Medicaid waiver, New York state set a goal to move 80% of Medicaid managed care into value-based payment and created a roadmap with different models, including a maternity bundled payment, to achieve this goal. New York's model mirrored the Health Care Payment Learning and Action Network: Maternity Action Collaborative's model and includes the costs associated with the infant's pediatric and NICU care. While this model has been available for the last three years, currently no plans have adopted it. Though the model allows plans to set a stop-loss for outlier and NICU costs, experts commented that both plans and providers have been reticent to establish what that figure should be.

More pilots and additional research on how to effectively implement comprehensive payment for maternal and infant outcomes are needed in order to share learnings and help organizations address the barriers to creating and sustaining these models. While subject matter experts expressed the need for and/or desire to adopt comprehensive maternity payments, there was recognition that more complex challenges exist to designing payment models that bundle care for both mothers and newborns.

C. Driving widescale adoption

The interview process illuminated two strategies to overcome the barriers to greater adoption of high-value maternity care models: (1) leveraging aligned purchaser power at the local level to pilot value-based maternity care models, and (2) removing both state and federal policy barriers to greater adoption of high-value maternity care.

Purchasers are in a powerful position to drive change and could use their leverage in the market to put pressure on payers in communities that are ripe for adopting outcomes-driven maternity care models. Experts interviewed provided examples of how purchasers could exert influence in following ways:

1. Work collaboratively with health plans to incentivize provider groups that have midwives and doula care incorporated into them;
2. Multiple purchasers could band together and agree to pay a certain percentage of the average local hospital fee to a birth center for low-risk births; and,
3. Pilot bundled payments and other alternative payment models.

It is important to note that while larger employers or purchaser coalitions may have a desire to implement sweeping changes on a national scale, individual payers, providers, state Medicaid agencies, and markets are in different stages of readiness and willingness to successfully adopt high-value maternity models. Across the interview pool, subject matter experts repeatedly noted the necessity of intervening at the local level and to concentrate efforts on regions that already have stakeholders aligned and committed to transforming maternity care. Subject matter experts also suggested that maternity care transformation has stalled in part due to the ambitious scale of multiple national efforts that haven't adequately accounted for variation in local markets. By targeting particular regions that are ripe for change, purchasers can test proof of concept models, and ideally share learnings that will be helpful for scaling interventions in other markets.

Simultaneously, policy barriers at the state and federal level need to be removed in order to make meaningful progress in improving maternity outcomes and supporting healthy and safe transitions to motherhood. At the state level, restrictive supervision/licensing laws may prevent midwives from practicing at the top of their license and prevent the full integration of midwives into hospital and perinatal care teams. At the federal level, there is an opportunity to expand on the successes of the Family and Medical Leave Act (FMLA) and create a more comprehensive and equitable family leave policy that includes maternity leave. Implemented in 1993, FMLA provides unpaid family and medical leave to eligible workers and has led to improvements in birth outcomes for college-educated and married mothers, a demographic more likely to be able to afford unpaid family leave; however, low-income working mothers that could have benefited most from family leave policies are not currently reached by FMLA.[92] In order to reduce disparities associated with birth outcomes, it is essential to revisit family leave policies to provide paid leave and ensure that all mothers have equitable access to the best outcomes for their families.

Conclusion

The U.S. has yet to reach an inflection point to reverse the upward trends in maternal mortality and morbidity; existing improvement efforts are insufficient, both in scale and in scope. More change is needed to address where the underlying care delivery system is producing less-than-optimal outcomes for the 4 million Americans that give birth and the children they bring into this world every year. Yet, an effective catalyst to override the status quo has remained elusive. The primary conclusion from this research is that – unlike other models of value-based payment and care delivery such as ACOs and patient-centered medical homes, which have been more uniformly designed and ubiquitously adopted nationwide – maternity-focused reforms require local solutions to address local market characteristics, unique patient needs, policies, and barriers to high-value maternity care.

National efforts to design and test value-based payment models that would qualify as value-based maternity payments or comprehensive payments for mothers and newborns (levels 2 and 3 of outcomes-driven maternity payment, respectively) have resulted in slow uptake at the local level. There has also been less federal leadership driving adoption of comprehensive value-based maternity payment models, given the targeted population falls outside the primarily Medicare-focused purview of the Center for Medicare and Medicaid Innovation (CMMI). As of March 2018, CMMI had implemented 37 models that test new approaches for delivering and paying for health care with the goal of reducing spending and improving quality of care, and only

one of those models[v] was categorized as "Initiatives Focused on the Medicaid and Children's Health Insurance Program Population" with an explicit focus on paying for maternal and infant health outcomes.[93] The Strong Start for Mothers and Newborns: Enhanced Prenatal Care Model tested three care delivery approaches for enhanced prenatal care at centering/group visits, at birth centers, and at maternity care homes; however, the underlying payment model did not change to support sustainability of the model.[94]

The most prohibitive barrier, according to the experts interviewed, has been diluted demand for change from large health care purchasers and therefore limited incentive for payers to update provider contracts and reimbursement infrastructure. Even large self-insured employers represent a relatively small portion of total members for third-party payers, and employers operating in multiple regions are interacting with different configurations of payers in each state, further diluting demand in any given market for an individual payer to change provider payment arrangements. Greater adoption of alternative payment models for maternity is happening at the state level where state governments have taken the lead and typically represent the largest purchaser of maternity care for both Medicaid and state employees.

Reflecting on these findings, the next step is for stakeholders to address these barriers and promote widescale implementation of value-based maternity care models. We call on the health care industry to act on the following recommendations:

- ***Listen to women:*** Health care providers and payers should engage women and mothers in the development of new payment models and consider health disparities and the social and cultural needs of pregnant women during design, implementation, and evaluation. Patient experience surveys and other instruments such as the *Listening to Mothers* series of surveys that ask women about their childbearing experiences and preferences should inform the delivery of high-value maternity care.[95] It is important to engage patients and their families throughout the process of implementing new models to receive feedback on the care experience and facilitate continuous improvements.

- ***Align health purchaser demand:*** State government and private purchasers of insurance coverage for employees should work in collaboration with local health care industry stakeholders to design multi-payer, value-based maternity payment and care delivery models. Regional and national purchaser organizations should make implementing value-based maternity care payment models with aligned quality of care metrics a high priority for action and support convening and collaboration efforts.

- ***Change public policy:*** National and state policy barriers to provider's and payer's ability to implement high-value maternity care models need to be addressed, particularly related to clinician licensing and practice requirements that limit the full integration and consumer choice of using certified nurse midwives, doulas, and birth centers. Recognizing that

[v] CMMI announced funding for an Maternal Opioid Misuse model in February 2019 with an anticipated program start date of January 1, 2020. Some Health Care Innovation Awards and State Innovation Model Initiative cooperative agreements participants addressed high-risk pregnancies and infant health outcomes, but it was not an explicit objective of either model.

pregnancy-related health challenges persist and deaths occur throughout the full postpartum year, it is essential for women to have insurance coverage for 12 months following birth.

- ***Share learning:*** As value-based payment models for maternity care are still in an infancy stage (pun intended), forums for early implementers to share best practices and dialogue about challenges will support wider adoption and continuous improvement. The Health Care Payment Learning and Action Network's Maternity Episode Payment Model online resource bank,[96] the CMS Center for Medicaid and CHIP Services' Maternal & Infant Health Initiative Value-Based Payment Technical Support resources,[97] and the Alliance for Innovation on Maternal Health[98] are examples of multi-stakeholder forums that support shared learning.

- ***Conduct additional research:*** Evaluation of value-based payment models should assess impact on things that matter for women, not solely a focus on cost reduction but also performance measures that translate the impact of childbirth on women's lives in a more holistic way. Interviews with group health purchasers revealed that employers are not always interested in the lowest cost option for their employees; instead, purchasers are willing to pay more for health plans that improve employee retention and improve employee satisfaction with their benefits. Additionally, value-based payment model evaluations and outcomes measure sets should assess impact on racial disparities.

Effective change management depends on first creating a sense of urgency that something needs to change, and then using that sense of urgency to form a coalition that will help to define the strategic pathway for change. In addition to the existing data on maternity outcomes, the Preventing Maternal Deaths Act of 2018 provides additional impetus for change by establishing a formal pathway to review and publicly disclose information on pregnancy-associated deaths. Additionally, the proposed Maximizing Outcomes for Moms through Medicaid Improvement and Enhancement of Services (MOMMIES) Act, reintroduced in the House and Senate in May 2019, provides legislators a powerful opportunity to drive some of the best practices and codify some of the suggested policy changes mentioned throughout this paper including the provision of greater access to comprehensive perinatal services and postpartum coverage.

The need to improve is clear, and for hundreds of women each year, their lives quite literally depend on changing the status quo. The time is now for the health care industry to start on the path to transforming maternity care.

Background

The Health Care Transformation Task Force (HCTTF) – a consortium of providers, payers, purchasers, and patient groups committed to accelerating the adoption of value-based payment and care delivery models – regularly develops and disseminates strategic, operational and policy recommendations to transform the U.S. health care system. In 2018, the HCTTF Board of Directors considered the relative lack of value-based payment adoption for maternity care. Patient groups were concerned about the growing inequities for vulnerable populations, overall trends in maternal and newborn outcomes, widespread overuse of unneeded care and underuse of beneficial care, unwarranted practice variation and widespread lack of accountability in maternal-newborn care. Employer groups voiced frustration about rising costs related to maternity care, which contribute to rising employer-sponsored insurance premiums without associated improvements in outcomes, patient experience, and employee satisfaction.

HCTTF members agreed that the variations in care delivery and outcomes indicate a clinical area that could be positively impacted by a value-based payment paradigm. Many members reported participation in collaborative maternity care improvement efforts but reported minimal uptake of transformative payment models, despite widespread agreement that current fee-for-service reimbursement structures do not facilitate the most effective delivery of maternity care. The HCTTF Board directed the Implementing Value Models Work Group to research and disseminate best practices and results from successful models for public- and private-payers, and to develop policies and strategies to advance value-based payment adoption for maternity care, which culminated in this report.

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