Evidence suggests CenteringPregnancy reduces costs, improves outcomes and leads to high satisfaction. This holistic model can be sustainably financed along the continuum of value-based payment using a variety of approaches. Policy makers, payers and providers can work together to integrate group prenatal care and value based-payment within maternity care. In Medicaid, the largest payer for maternity care, States have the opportunity to offer the CenteringPregnancy model of care to more women as part of their emerging payment and delivery system reforms.

Aligning Value-Based Payment with the CenteringPregnancy Group Prenatal Care Model

Strategies to Sustain a Successful Model of Prenatal Care

Independently prepared by
Health Management Associates for the
Centering Healthcare Institute

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Aligning Value-Based Payment with the CenteringPregnancy Group Prenatal Care Model: Strategies to Sustain a Successful Model of Prenatal Care

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Executive Summary

CenteringPregnancy (CP) is a promising group prenatal care model that a growing body of evidence suggests can improve birth outcomes, as well as increase women's satisfaction with their prenatal care. In CP, facilitators lead a cohort of eight to ten women of similar gestational age through a curriculum of ten 90- to 120-minute interactive group discussion sessions that cover medical and non-medical aspects of pregnancy, including nutrition, common discomforts, stress management, labor and delivery, breastfeeding, and infant care. Traditional fee-for-service payment models do not typically reward the added value that CP can achieve. Aligning emerging value-based payment models that reward providers for better outcomes with group prenatal care is an opportunity to make group prenatal care financially sustainable. In Medicaid, the largest payer for maternity care, states have an opportunity to offer this model to more women as part of their emerging payment and delivery system reforms.

The American health care system continues to shift from fee-for-service (FFS) payment—in which providers are paid for individual services and more services result in more revenue—toward value-based payment through alternative payment models (APMs), in which payment is structured to incentivize outcomes and control costs, including efforts to hold providers accountable for both. Value-based payment strategies encompass a continuum of financial risk and accountability, as well as degrees of involvement of quality measures, from pay-for-reporting or pay-for-performance to full population-based payment. States and other payers are adopting a multitude of value-based payment strategies in an effort to control costs in their Medicaid programs, improve health outcomes in specific areas, and respond to federal priorities. Most Medicaid enrollees (81%) now receive their coverage under managed care arrangements, and states are increasingly using their contracts with Medicaid health plans to encourage shifting toward value-based payment. Alternative payment models are beginning to emerge in Medicaid maternity care, including a wide variety of outcomes-related incentive payments, as well as bundled payment programs, and with them come payment and implementation challenges which states, and providers will need to address.

CP is a holistic model of mutual support that creates an environment where social and economic factors that affect health can be identified and addressed, with the potential to improve outcomes and women's satisfaction with their maternity care. It involves a significant shift in the model and schedule of prenatal care because it replaces traditional individual appointments, rather than being overlaid on it like care management visits or some other prenatal care enhancements—presenting opportunities for alignment with alternative payment models. It can be sustainably financed along the continuum of value-based payment, from enhanced payments per visit, to bonuses for improvement in outcomes, to use of a bundled maternity payment with CP as one of the care delivery options. Ideally, providers and payers can assess their readiness to implement value-based payment for maternity care models like CP together. Because of the growing evidence that CP reduces costs and leads to high satisfaction with care, policy-makers, payers, and providers should work to integrate CP and VBP within maternity care.

Introduction

As the United States continues to grapple with increasing costs and suboptimal outcomes, payers and providers are pushing towards greater use of health care payment models that reward value rather than volume of care. These can range from incentive payments for achieving specific quality or cost measures, to bundled payments for defined episodes of care for a specific condition, to capitation or global budgets in which providers bear financial risk for managing all aspects of care. Because maternity care involves a defined timeline and typical set of services, payers may view it as lending itself to value-based payment, holding both promise for potential cost savings and innovation in care delivery to support better outcomes.

In Medicaid, states are becoming more actively involved in shaping the value-based payment (VBP) strategies used by Medicaid managed care plans, often as part of their overarching delivery system and payment reform efforts. Medicaid is also the largest payer for maternity care in the country, accounting for 45% of all births in 2010, and more than 50% of births in half of states in 2016.[1] States have the opportunity to lead in supporting women to have healthier pregnancies and better birth outcomes, efforts which are urgently needed to address high rates of preterm birth and maternal and infant mortality in the United States, as well as racial and income disparities in birth outcomes.[2]

CP is a group prenatal care model in which facilitators lead a cohort of eight to ten women of similar gestational age through a curriculum of ten 90- to 120-minute interactive group discussion sessions that cover medical and non-medical aspects of pregnancy, including nutrition, common discomforts, stress management, labor and delivery, breastfeeding, and infant care. It is a promising prenatal care model that a growing body of evidence suggests can improve birth outcomes, as well as increase women's satisfaction with their prenatal care.

Aligning payment models that reward providers for better outcomes with an innovative model of prenatal care that can provide better outcomes is an opportunity to make group prenatal care financially sustainable. Moreover, CP yields high patient satisfaction, helping to alleviate concerns that alternative payment models may lead to fewer choices or services. This paper explores new opportunities to promote improved outcomes and lower costs in maternity care through value-based payment strategies, and more specifically, how CP can be an effective model of maternity care within value-based payment contracts.

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[1] Markus, AR et al. Medicaid Covered Births, 2008 Through 2010, in the Context of the Implementation of Health Reform. *Women's Health Issues*, Volume 23, Issue 5, e273 - e280; and Vernon K. Smith, Kathleen Gifford, Eileen Ellis, and Barbara Edwards, Health Management Associates; and Robin Rudowitz, Elizabeth Hinton, Larisa Antonisse and Allison Valentine, Kaiser Commission on Medicaid and the Uninsured. Implementing Coverage and Payment Initiatives: Results from a 50-State Medicaid Budget Survey for State Fiscal Years 2016 and 2017, The Henry J. Kaiser Family Foundation, October 2016.

[2] See Martin JA, Osterman MJK. Describing the increase in preterm births in the United States, 2014–2016. NCHS Data Brief, no 312. Hyattsville, MD: National Center for Health Statistics. 2018; Chen A, Oster E, Williams H. Why Is Infant Mortality Higher in the United States Than in Europe?. *Am Econ J Econ Policy*. 2016;8(2):89-124; and MacDorman MF, Declercq E, Cabral H, Morton C. Recent Increases in the U.S. Maternal Mortality Rate: Disentangling Trends from Measurement Issues. Obstet Gynecol. 2016;128(3):447-55.

Value-Based Payment Models

In recent years, the American health care system has begun to shift from fee-for-service (FFS) payment—in which providers are paid for individual services, and more services result in more revenue—toward value-based payment through alternative payment models (APMs), in which payment is structured to incentivize outcomes and control costs, including efforts to hold providers accountable for both. By 2018, 34% of total U.S. health care payments were tied to alternative payment models, an increase from 23% two years before, representing progress toward the federal government's goal of 50% for 2018.[3] The Medicare Access and CHIP Reauthorization Act of 2015 (MACRA) created the federal Quality Payment Program, which changed how Medicare rewards clinicians for value over volume, established the Merit Based Incentive Payments System (MIPS), and created bonus payments for providers that participate in eligible alternative payment models, such as accountable care organizations (ACOs) and bundled payments. Medicare is a powerful driver of health policy changes, and commercial payers, purchasers, and consumers are also all invested in value-based payments as a way to control costs and improve outcomes. Two physician leaders of the Seattle-based Virginia Mason Health System recently wrote, "rationalizations for fee-for-service-driven inappropriate care should no longer be offered by physicians and physician organizations and should no longer be accepted by patients, payers, and society. Fundamentally, we, as physicians, cannot put our pecuniary interests ahead of the well-being of patients by irrationally defending fee-for-service medicine. Rather than straddling the two-payment model 'canoes,' it is time for physicians to help sink fee-for-service and fully commit to aligning payment around value."[4]

States and other payers are adopting a multitude of value-based payment strategies in an effort to control costs in their Medicaid programs, improve health outcomes in specific areas, and respond to federal priorities. Most states have at least one value-based payment initiative, and many have multiple efforts, including a variety of multi-payer collaborations.[5]

Value-based payment strategies encompass a continuum of financial risk and accountability, as well as degrees of involvement of quality measures, as shown in Figure 1 below.

[3] APM Measurement: Progress Toward Alternative Payment Models, LAN Insights into APM Adoption, 2018. Health Care Payment Learning & Action Network, October 2018.

[4] Kaplan CS and Blackmore CC. "Time to Sink the Two-Canoe Argument," NEJM Catalyst, March 28, 2018. https://catalyst.nejm.org/sink-two-canoe-payment-models/

[5] For a recent survey of state value-based payment programs with a focus on Medicaid, see "Change Healthcare Research Finds States Remain Committed to Value-Based Payment Models," November 13, 2017. https://viewpoints.changehealthcare.com/wp-content/uploads/Change-Healthcare-State-by-State-VBR-Study-2017-infographic.pdf

Figure 1. Value-Based Payment and Alternative Payment Models Framework

Source: Health Care Payment Learning and Action Network, Alternative Payment Model (APM) Framework White Paper, January 2016.

At one end of the value-based payment spectrum, fee-for-service payments reimburse providers on a volume basis with no link to quality or value of services. As an initial step linking payment and value, enhanced care management payments and pay-for-performance arrangements provide enhanced reimbursement for a variety of steps to measure and improve the quality of care, including funding infrastructure and operations, payment for reporting quality measures, and rewards for meeting process and outcome metrics. For example, these arrangements can be layered onto a patient-centered medical home to better align payment with the values and outcomes providers are pursuing. This initial stage can also involve financial penalties. Moving further along the continuum, providers can take on financial risk for a defined population whose care is still paid for under a fee-for-service model, for example, by sharing with payers in any excess costs or savings accrued as part of an accountable care organization. Payments can also be bundled for types or episodes of care (for example, a specific set of cardiac services, or global maternity care payments). Global budgeting for a population is the most comprehensive stage of value-based payment, assigning providers full responsibility for managing the health of a defined group of patients under a set budget, with the financial risk and potential reward that entails. In 2017, payments to providers from both public and private payers broke down as follows:

- 41% of health care dollars in Category 1 (fee-for-service not linked to quality/value)
- 25% of health care dollars in Category 2 (fee-for service with link to quality/value)

- 34% of health care dollars in Categories 3 (alternative payment models built on fee-for-service architecture) and 4 (population-based payment)[6,7]

Though the transition to value-based payment continues, a number of challenges have emerged for both payers and providers. This discussion focuses on providers.

Potential Barriers to Value-Based Payment

Providers face several common challenges to implementing value-based payment. Maintaining ongoing fee-for-service payment while at the same time adopting new APMs creates conflicting incentives ("one foot in each canoe") that can reduce the financial viability of both models. Similarly, when not all payers are participating in a given value-based payment arrangement or alternative payment model, and reimbursement changes for only a subset of patients, it can be challenging for providers to implement or sustain changes.

Information Technology Needs

To succeed in value-based payment models, providers need information technology infrastructure, including electronic health records equipped for quality metric and population health monitoring, as well as staff who are well-trained to use them effectively. Electronic health record content, interoperability, and participation in Health Information Exchanges also become issues in managing population health when social factors, non-health care services, and health services received by patients across multiple health and social services providers need to be tracked. Predictive analytics and other sophisticated digital tools can be critical to population health management. These tools require up-front investment and commitment to implementation, training, and enhancement over time, all of which can be challenging, particularly for smaller providers.

Partnerships

APMs require providers to assume accountability for a broad scope of services. This requires providers to develop much closer cooperative models across the continuum of care. The care models need to be supported by robust data sharing. Additionally, because health outcomes reflect social determinants of health, providers must develop non-traditional partnerships with social services organizations that may have no equivalent of an electronic health record. In addition, a greater focus on identifying and referring to services to address non-medical needs may highlight gaps in those services (for example, waiting lists for housing or lack of behavioral health providers) that require creative solutions and better tracking of follow-up to ensure that participants get the support they need.

Risk Mitigation

APMs require providers to assume some degree of financial risk. Even with optimal care, some patients will still require high-cost interventions. Managing risk requires appropriate data and analytics as well as a stop-loss strategy. Providers that are taking on financial responsibility for the cost of care for patients and ultimately populations may seek stop-loss reinsurance to limit their financial responsibility when

[6] Health Care Payment Learning & Action Network, October 2018.

[7] For a more detailed breakdown of payment models by payer, see http://hcp-lan.org/workproducts/apm-infographic-2018.pdf.

individual patients unexpectedly incur large costs, and they may want to consider pooling their reinsurance coverage with other providers under a single policy.

Ensuring Quality as Incentives Change

Importantly, because global payments can incent reduced services and measurement and payment incentives can sometimes have unintended consequences, payers and providers must remain focused on ensuring that incentives do not lead to under-utilization or inappropriate denials of care.

Value-Based Payment in Medicaid

Most Medicaid enrollees (81%),[8] now receive their coverage under managed care arrangements, and states are increasingly using their contracts with Medicaid health plans to encourage shifting toward value-based payment. By 2017, most states were engaged in, and often exploring additional, value-based payment arrangements, with patient-centered medical homes or health homes being the most common (40 states), followed by accountable care organizations (15), pay-for-performance (12), and episode of care payments (12 states considering or implementing).[9] Just over a dozen states had multi-payer efforts underway.

Medicaid's unique structure and vulnerable population create specific issues relevant to pursuing value-based payment. Medicaid's low reimbursement rates relative to commercial payers and Medicare mean there is less money for enhanced payments, shared savings, and lower total payments for bundled payments and global budgets than for other populations, potentially disincentivizing providers from participating. Medicaid populations include many individuals with higher medical and social risks, which have health and cost implications, and these patients require screening, care management, and other support that is tailored to them.

Value-Based Payment in Medicaid maternity care (or commercial maternity care)

Medicaid is the largest single payer for maternity care in the United States, covering just under half of perinatal care—in some states more—making the role of value-based payment for this eligibility group a key consideration for states. Medicaid covers many women who are likely to experience health complications as well as socioeconomic risks and needs. Evidence suggests that women who get their prenatal care in Medicaid have higher odds of experiencing multiple stressors during pregnancy, of showing symptoms of postpartum depression, of experiencing physical abuse, and of smoking.[10] In many states, particularly those that have not yet adopted the Affordable Care Act Medicaid expansion, low-

[8] 2016 data from Medicaid Managed Care Enrollment Reports, Centers for Medicare and Medicaid Services, U.S. Department of Health and Human Services, via the Henry J. Kaiser Family Foundation, 2018.

[9] Change Healthcare. Value-Based Reimbursement State-by-State: A 50-State Matrix Review of Value-Based Payment Innovation, 2017. https://viewpoints.changehealthcare.com/wp-content/uploads/Change-Healthcare-State-by-State-VBR-Study-2017-infographic.pdf

[10] D'Angelo, D. V., Williams, L., Harrison, L., & Ahluwalia, I. B. (2012). Health status and health insurance coverage of women with live-born infants: an opportunity for preventive services after pregnancy. Maternal and child health journal, 16 Suppl 2(0 2), 222-30.

income women often cannot qualify for Medicaid until they become pregnant, and as a result many enter prenatal care with unmet health needs.[11]

Alternative payment models are beginning to emerge in Medicaid maternity care, including a wide variety of outcomes-related incentive payments, as well as bundled payment programs. In a recent survey[12] of 20 states, most reported programs and payment incentives intended to support better, more timely access to perinatal care and to improve birth outcomes. These included financial incentives, perinatal quality measurement and performance improvement projects, and broader multi-stakeholder efforts. Medically unnecessary cesarean sections (C-sections), early elective inductions, preterm birth, and low birthweight outcomes are the most common targets of these efforts, which included:

- Tying financial incentives to preterm birth or low birthweight rates (three states).
- Non-payment for medically unnecessary C-sections (five states), tying reimbursement to C-section rates (two states), or annual risk-adjusted costs that include a set C-section rate (one state).
- Non-payment or low payment for early elective inductions (four states).

Medicaid health plans vary in how they pay providers, and there is often little transparency regarding health plan and provider payment relationships within and across states. There are opportunities to use value-based payment – including bundled or episodic payment – to create outcomes- and cost-based incentives. As the Health Care Payment Learning and Action Network (LAN) put it, "Often prenatal care, labor and birth, and postpartum care are viewed and delivered as three distinct periods. However, by viewing them as three phases within one episode, there is a potential for incentivizing the types of interactions and care delivery that support positive outcomes."[13] Options for value-based payment in maternity care include:

- **Enhanced payments** for care management/social worker/group visits, or for improved outcomes (e.g., lower rates of elective C-sections or preterm births).
- **Bundled payments** for prenatal care, and separately bundled payments for hospital and physician delivery services, and/or infant care.
- A **blended payment** rate for cesarean and vaginal births that assumes a lower rate of elective C-sections eliminates the financial incentive for C-sections for hospitals and physicians but runs the risk of disincentivizing medically indicated C-sections too much if payments are not correctly calibrated.
- Full **episode of care** payment that treats the entire pregnancy and delivery as a single episode.

The most comprehensive bundling creates the most financial risk but also provides the most flexibility to providers to manage the care and associated costs – and the strongest incentive to limit the care provided, highlighting the need to combine cost containment incentives with quality metrics.

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[11] Access in Brief: Pregnant Women and Medicaid. Medicaid and CHIP Payment and Access Commission (MACPAC), November 2018.

[12] Hill I, Benatar S, Courtot B, et al. Strong Start for Mothers and Newborns evaluation: Year 4 annual report, 2 vols. Centers for Medicare & Medicaid Services 2018;1-110.

[13] Accelerating and Aligning Clinical Episode Payment Models. Health Care Payment Learning & Action Network, 2018.

Several states and organizations have pursued bundled payments for maternity care, including those described in Table 1 below.

Table 1. State Maternity Care Bundled Payment Programs

State	Program	Year launched	Episode Includes	VBP/bundled payment model	Outcomes
Arkansas	Health Care Payment Improvement Initiative	2012	Prenatal care, labor and delivery, and postpartum care, excluding neonatal and high-risk pregnancy	Principal accountable provider (PAP) paid on FFS basis with retrospective reconciliation (gain and risk sharing based on total 12-month period costs vs. predetermined cost threshold).	Perinatal spending decreased by 3.8% in the first year of the program; increase in rate of chlamydia screenings.
New York	Maternity Care VBP Arrangement	2018	Prenatal care, delivery and postpartum care, and newborn care	Managed Care Organizations and contractors may choose their VBP level from FFS upside-only shared savings, FFS with upside and downside risk sharing, and prospective capitation PMPM or Bundle.	Not available yet.
Ohio	Ohio Pathways Community HUB model	2000	Community care coordinators identify risk factors and coordinate care for women with high risk pregnancies including housing, food, clothing, etc. Enhanced payments are linked to the completion of each of 20 "pathways" linked to billing codes associated with specific risk factors.	Payments are risk adjusted and providers are paid only if health outcome or other measures are met.	Completed postpartum visits increased from 57% in 2007 to 80% in 2014. Cost savings for prevented low birth weight was $3.36 for the 1st year of life and $5.59 long-term for every $1 spent.

Tennessee	Health Care Innovation Initiative - Perinatal Episode of Care model	2014	Prenatal care, labor and delivery, and postpartum care with a focus on low to medium-risk pregnancies	Principal accountable provider (PAP) paid on FFS basis with retrospective reconciliation (gain and risk sharing based on total 12-month period costs vs. predetermined cost and risk-adjustment threshold).	Cost of perinatal episodes of care decreased 3.4%, a total of $4,719,519, from 2014 to 2015; increased screenings for streptococcus and HIV; decreased rate of C-sections.
Texas	Community Health Choice pilot	2014	Pregnancy, delivery, and neonatal care	Year 1 includes upside only shared savings, but year 2 will include both upside and downside risk.	Ongoing; interim results were not definitive.

Sources: 1. Carroll, C., Chernew, M., Fendrick, M., Thompson, J., & Rose, S. (2018). Effects of Episode-Based Payment on Health Care Spending and Utilization: Evidence from Perinatal Care in Arkansas. *Journal of Health Economics, 61: 47-62.* Retrieved from:https://scholar.harvard.edu/files/ccarroll/files/carroll_etal_ebp_2018.pdf.
2. Arkansas Center for Health Improvement (ACHI). (2016). Arkansas Health Care Payment Improvement Initiative: 2nd Annual Statewide Tracking Report. Retrieved from: http://www.achi.net/Docs/338/.
3. Warren J and Ruma J. (2015). Unleashing the power of Communities to Improve Health through the Pathways HUB Model [PowerPoint slides]. Retrieved from: http://www.cjaonline.net/wp-content/uploads/2015/10/Warren-and-Ruma.Ohio-HUB-CJA-Presentation-Warren-Rumafinal-100615.pdf
4. Smith D and Hanlon C. (2017). Case Study: Tennessee's Perinatal Episode of Care Payment Strategy Promotes Improved Birth Outcomes. National Academy for State Health Policy. Retrieved from: https://nashp.org/wp-content/uploads/2017/10/Tennessee-Case-Study-Final.pdf.
5. Redding, S., Conrey, E., Porter, K., Paulson, J., Hughes, K., & Redding, M. (2014). Pathways community care coordination in low birth weight prevention. *Maternal and child health journal*, 19(3), 643-50. Retrieved from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4326650/
6. De Brantes, F., & Love, K. (2016). A process for structuring bundled payments in maternity care. *NEJM Catalyst*. Retrieved from: https://catalyst.nejm.org/bundled-payments-maternity-care/

Challenges

Value-based payment for maternity care in Medicaid also poses a number of specific challenges for providers and payers. First, it requires accurate predictive analytics to ensure that global payments are sufficient to cover the cost of care, and that service enhancements and payment incentives are meaningful. The likelihood of higher costs can also reduce the chances of savings to be shared by providers and payers. For bundled maternity episodes or global capitation, care systems and data must link the prenatal care, labor and delivery care, post-partum care, and neonatal care together. These health services are often delivered by disparate providers that do not have integrated data systems.

Attribution of patients to providers is a critical part of value-based payment models, which can be a challenge for a patient population that may experience housing instability and lack of continuity in their source of care between prenatal, delivery, and postpartum care (which women and providers also often feel hurts the quality of perinatal care).

Pregnant women insured through Medicaid are more likely to experience behavioral health conditions than women with employer coverage. The traditional siloes between medical care and behavioral health care make coordination of care difficult, and the lack of access to behavioral health care services, especially for Medicaid enrollees, further exacerbates the challenges in care coordination.[14] Social determinants of health have profound effects on maternal and infant health outcomes, and many providers have limited capacity to screen for and address issues that are not directly health care service-related, such as housing instability, food insecurity, intimate partner violence, and many more. Even when they are able to identify needs and make referrals, services may not be available in the community or may not be accessible quickly enough to make a difference, leaving providers with limited ability to affect outcomes for some high-risk women—or without the systems or staff resources to do so effectively. When providers are increasingly held financially accountable for those outcomes, this poses challenges to provider buy-in and feasibility of value-based models.

CenteringPregnancy

As states and plans move towards VBP in maternity care, providers will have to develop effective models of care that can overcome challenges such as lack of access to behavioral health services and tackling social determinants of health. CenteringPregnancy is a unique model of care that aligns well with a VBP framework. Participants share their own experiences, learn from each other, and develop meaningful and supportive relationships with one another and with the group facilitators. The sessions begin with short individual health assessments with the facilitator (always a billing provider) during which participants discuss specific questions or issues, and take their own vital signs and belly measurements, which they record in a notebook they use to track their care, questions, and notes. The health assessment is followed by in-depth, interactive group discussion covering medical and non-medical aspects of pregnancy, including nutrition, common discomforts, stress management, labor and delivery, breastfeeding, and infant care. CP is one of a variety of group prenatal care models (others include Expect with Me and Supportive Pregnancy Care), but it is defined by the process framework, the number, structure, and content of sessions and certification of facilitators by the Centering Healthcare Institute.[15]

Outcomes and Evidence

A growing body of evidence supports the potential of CP to improve birth outcomes and satisfaction with prenatal care, though some of the evidence is mixed and the evidence base continues to evolve. Numerous studies have examined the impact on outcomes including preterm birth, birthweight, breastfeeding, and perinatal care costs, with many identifying positive effects. Cohort studies have repeatedly suggested that CP improves birth

> "[CenteringPregnancy is] better for mom and baby; helps streamline those needs and get better support."
>
> - Health plan executive

[14] Sherman LJ, Ali MM (2018). Diagnosis of Postpartum Depression and Timing and Types of Treatment Received Differ for Women with Private and Medicaid Coverage. Women's Health Issues 28(6):524-529.

[15] For more information on the CenteringPregnancy model see https://www.centeringhealthcare.org/what-we-do/centering-pregnancy

outcomes, including reducing preterm birth rates, low birthweight rates, and racial disparities in adverse outcomes, as well as increasing breastfeeding rates. It has also been found to reduce Medicaid costs in South Carolina while improving outcomes. However, non-randomized studies have involved self-selecting participants into CP, which introduces risk that these women may differ in undetected ways from those who do not choose the model. Some literature reviews—one by Cochrane in 2015 that examined group prenatal care more broadly and another by Carter et al in 2017 that covered both observational and randomized studies—did not find consistent evidence that CP improves birth outcomes, though they suggested that further research is needed. Additional randomized trial data will continue to shed light on the impact of CP on birth outcomes, including for people at the highest risk of preterm birth.

Research conducted so far suggests that CP holds promise especially for supporting improved birth outcomes for specific populations at highest risk for preterm birth, infant mortality and other adverse health outcomes. In particular, Pickelsimer (2012) and Ickovics (2007) found that it reduced the risk of preterm birth for African American women and their babies, supporting the value of the model as an option for this population. As Medicaid programs seek to reduce health disparities and improve birth outcomes across the country, these results suggest that states, health plans, and providers that serve Medicaid populations should consider the CP model as a critical component of maternity care delivery. The ongoing Centering and Racial Disparities (CRADLE) study is a randomized controlled trial that is likely to provide more definitive evidence on CP's potential to reduce disparities.[16] Ickovics et al (2016) also found positive effects of the model on birth outcomes for adolescents (see summary below).

In addition to the positive birth outcomes shown in many studies, women consistently express high satisfaction with the care model, supporting its broader availability as an option. Though the summary below does not represent a comprehensive review of the literature, it captures several of the key recent studies that inform our understanding of the impact of CP.

Table 2. Major Studies of CenteringPregnancy Outcomes

Study	Design	Results/Implications
Group Prenatal Care Reduces Risk of Preterm Birth and Low Birth Weight: A Matched Cohort Study Cunningham et al (2018)	Matched Cohort Study	Group prenatal care resulted in significantly lower risk (.63) of having a preterm birth and low birth weight baby (.62). The benefits were even greater for women with at least five group prenatal care visits: .32 and .34 rate ratios of preterm birth and low birth weight, respectively.

[16] See Chen L, Crockett AH, Covington-Kolb S, Heberlein E, Zhang L, Sun X, (2017). Centering and Racial Disparities (CRADLE study): rationale and design of a randomized controlled trial of centeringpregnancy and birth outcomes. BMC Pregnancy Childbirth 17(1):118.

Cluster Randomized Controlled Trial of Group Prenatal Care: Perinatal Outcomes Among Adolescents in New York City Health Centers Ickovics et al (2016)	Cluster Randomized Controlled Trial	CP "resulted in more favorable birth, neonatal, and reproductive outcomes" for adolescents served by New York City Health Centers. CP participants were significantly less likely to have infants small for gestational age (< 10th percentile; 11.0% vs 15.8%). Favorable effects increased with the number of group visits, including on: size for gestational age, gestational age, birth weight, days in neonatal intensive care unit, rapid repeat pregnancy, condom use, and rates of unprotected sex.
Group Prenatal Care Results in Medicaid Savings with Better Outcomes: A Propensity Score Analysis of CenteringPregnancy Participation in South Carolina Gareau et al (2016)	Retrospective Cohort Study	CP participation reduced the risk of premature birth by 36%. Every premature birth prevented led to average cost savings of $22,667. CP also reduced the rate of low birthweight by 44%, saving an average of $29,627, and reduced the risk of a NICU stay 28 %, with average savings of $27,249. South Carolina estimated savings of nearly $2.3 million after a state investment of $1.7 million.
The Effects of CenteringPregnancy Group Prenatal Care on Gestational Age, Birth Weight, and Fetal Demise Tanner-Smith, Steinka-Fry, and Lipsy (2014)	Retrospective Chart Review	CP participation was associated with longer pregnancies, higher birthweight, lower odds of very low birthweight, and lower odds of fetal death. The study found no evidence of differences in the odds of preterm birth or low birthweight (though the risk of very low birthweight was lower).
The Effect of CenteringPregnancy Group Prenatal Careon Preterm Birth in a Low-Income Population Picklesimer et al (2012)	Retrospective Cohort Study	Reduced very early preterm delivery at < 32 weeks: 1.3% for CP vs. 3.1% for individual care; also preterm delivery at < 37 weeks of gestation was 7.9% for CP versus 12.1% for individual care. The racial disparity in preterm birth for Black women relative to white and Hispanic women was reduced to statistical insignificance.
Group Prenatal Care and Perinatal Outcomes: A Randomized Controlled Trial Ickovics et al (2007)	Randomized Controlled Trial	Reduced rates of preterm birth from 13.8% to 9.8%, a 33% decrease. African American women experienced even more dramatic reductions in preterm birth, from 15.8% to 10%. Group care participants were less likely to have suboptimal prenatal care than women who received individual care, were more knowledgeable about perinatal topics and felt more prepared to give birth, had higher satisfaction with their care, and were more likely to breastfeed (66.5% vs. 54.6%). The study found no differences in birthweight or in costs associated with prenatal care or delivery between group and individual care.

Group Prenatal Care Compared With Traditional Prenatal Care: A Systematic Review and Meta-analysis Carter et al (2017)	Literature review (included observational studies and randomly controlled trials)	Reviewed four randomized controlled trials and ten observational studies; did not find significant effects of group prenatal care on preterm birth. Group care was associated with a statistically significant decreased rate of low birthweight overall (nine studies: pooled rate 7.5% group care compared with 9.5% traditional care), but not among randomized controlled trials (four studies: 7.9% group care compared with 8.7% traditional care). This review did identify a lower preterm birth rate for African American women in group prenatal care, but the result was not statistically significant. However, when the analysis was limited to the two highest-quality studies, African American women who participated in group care had a significantly lower rate of preterm birth.
Group Versus Conventional Antenatal Care for Pregnant Women Cochrane Review (Catling et al 2015)	Literature review	Reviewed four randomized controlled trials of group prenatal care – two in the United States, one in Sweden, and one in Iran – and found no impact of the model on birth outcomes, psychosocial, or physiological, or provider satisfaction. However, the review noted that because of the small number of studies included and the small number of women who participated, further research is necessary to assess the model.

Sustainability Challenges

CenteringPregnancy involves a significant shift in the model and schedule of prenatal care because it replaces the traditional model of individual appointments, rather than being overlaid on it, as with care management visits or some other prenatal care enhancements. This can pose challenges to provider buy-in and implementation, because the model requires changes in care delivery and administration (for example, advance scheduling of two-hour group sessions, replacing the multiple individual appointments women would typically need, dedicated time for facilitators to hold group meetings and complete follow-up work). Implementing Centering changes the workflow of a clinic even though it typically coexists with traditional prenatal care. Providers may complete fewer individual visits in a day under the model, particularly if Centering groups are not fully booked at their ideal size of eight to ten women, and multiple providers are occupied with the group. If providers are paid under FFS for each visit, decreased volume leads to decreased revenue. Many high-volume maternity clinics also function as training sites for medical students and residents. Training curricula are predicated on individual visits in four- to six- week blocks (for both maternity care training and other specialties as well). The group sessions and continuity of care over several months are often perceived as disruptive to medical education programs.

CP's start-up and potential ongoing costs have led to it typically being financed with grant funding, but standard payments for individual prenatal care have typically proven inadequate for long-term sustainability. The model requires up-front investment in facilitator training, books, and other supplies, and sessions require a space that comfortably fits and is dedicated to the group for the duration of the meetings.

Public and private payers may not be familiar with group prenatal care models nor interested in tailoring payment to them, particularly if the model is not widely adopted in a state, and providers may find start-up costs challenging. Further, any savings that result from improved outcomes would typically accrue to payers, not providers, under fee-for-service or Medicaid managed care models, which can discourage

providers from participating. As value-based payment efforts accelerate, providers and payers may not be aware of options for aligning it with CP.

Linking CenteringPregnancy to Value-Based Payment

Historically, providers offering CP have been paid using the existing FFS payment model and submitting claims for individual prenatal visits even though women are enrolled in CP. In a few instances, payers and states have provided add-on payments for group prenatal care to reward providers for the health education integrated into the CP groups. However, because of the growing evidence that CP reduces costs related to the entire maternity bundle, CP represents a value-based care model, and policy-makers, payers, and providers should work to integrate CP and VBP within maternity care. CP can be sustainably financed along the continuum of value-based payment, from enhanced payments per visit, to bonuses for improvement in outcomes, to use of a bundled maternity payment with CP as one of the care delivery options. Ideally, providers and payers can assess their readiness to implement value-based payment for maternity care models like CP together.

The costs and potential return on investment of CP differ by provider and are also influenced by the progress of implementation. Cost analysis of CP is necessary to determine potential savings (for example, from prevented preterm births) and make the case for CP feasibility, but also to set enhanced payments or bonuses for outcomes improvement, or to estimate the impact of a maternity care bundle. Table 3 below is a simple matrix that can help providers assess potential costs and revenues associated with CP.

Table 3. Typical Drivers of CP Costs and Savings

	Provider	Payer
Costs	• Implementation cost ($20,000 over first two years, including facilitator training) • Annual licensing agreement with Centering Healthcare Institute ($250 per year per practice location) • Costs related to space and supplies (e.g., room and set-up, snacks for groups, baby shower/other gifts for participants) • Potential reduced revenue as a result of improved birth outcomes (fewer C-sections, fewer NICU admissions)	• Enhanced payments (if used vs. global maternity payment) • Costs of any changes to claims processing system to enable enhanced payments • Provider education on billing practices

Savings	• Enhanced reimbursement, if available
	• More patients seen in the span of CP visit than under traditional model – if groups are full
	• Fewer ancillary staff required because 2 staff are providing CP session
	• Fewer appointment no-shows because of predictable advance scheduling and higher levels of patient engagement
	• Improved provider/staff retention because of satisfaction with the care model
		• Savings from potential reductions in:
		  ○ Preterm births
		  ○ Low birthweight
		  ○ Elective C-section births
		  ○ Infant mortality
		  ○ NICU stays
		  ○ Emergency department visits for mothers and infants
		• Longer-term better health for mothers and infants after better birth outcomes

Source: Centering Healthcare Institute

As a model of care that is linked to substantial savings, CP should be a fundamental strategy as payers and providers move along the value-based payment continuum.

State experience demonstrates promise for CP to produce savings using an enhanced payment model in an underlying fee-for-service environment. For example, in South Carolina, where the model has successfully improved birth outcomes, the state and health plans collaborated to provide enhanced reimbursement, and grant funding from the March of Dimes supported the up-front investments in training and other needs before the program's launch. The state provided a $30 additional payment per visit up to $150 during the course of prenatal care, and a health plan provided an additional $30 per visit per patient up to $300 with an additional $175 bonus for each patient attending five or more group visits.[17] CP participation reduced the risk of premature birth by 36%. Every premature birth prevented led to average cost savings of $22,667. CP also reduced the rate of low birthweight by 44%, saving an average of $29,627, and reduced the risk of a NICU stay by 28%, with average savings of $27,249. South Carolina estimated a savings of nearly $2.3 million after a state investment of $1.7 million. The additional payments were not made contingent on the model achieving improved health outcomes but doing so could produce substantial additional revenue for providers.

As noted in the previous section, VBP requires a more comprehensive approach to patient care—which is precisely aligned with the CP model. CP provides a framework that promotes provider continuity, social support, addressing social determinants of health, and providing health education, while at the same time potentially improving outcomes—exactly the model components that are necessary to succeed in the VBP paradigm. CP also creates opportunities to identify and address a wide variety of needs, supporting improved care coordination. See Table 4 below for a summary of the potential alignment of CP and VBP.

[17] Giese BZ, CenteringPregnancy: A successful model for group prenatal care. SC Birth Outcomes Initiative, June 24, 2015. https://www.scdhhs.gov/internet/pdf/CenteringPregnancy%20A%20successful%20model%20for%20group%20prenatal%20care.pdf

Table 4. CenteringPregnancy Alignment with APM Models				
Maternity Care VBP	**Category 1: Fee-for-service**	**Category 2: Fee-for-service plus pay-for-performance or care management fees**	**Category 3: Bundled maternity episodes**	**Category 4: Global capitation including maternity care**
CP Payment Model	Bill individual prenatal care visits for CP	Add-on payments for women enrolled in CP	Bundled maternity episodes with CP as a delivery system intervention to reduce risk related to PTB	CP as option for maternity care, especially directed at high-risk women as delivery system intervention to reduce risk related to PTB
Benefits	Ease of contracting and billing. Payers may not even be aware of CP. No financial risk to providers.	Easy to link bonuses to costs of delivering CP and to patient records No financial risk to providers.	Rewards providers for cost savings related to maternity bundle.	Rewards providers for cost savings related to maternity bundle
Challenges	Does not compensate providers for cost of CP or reward for improved outcomes related to CP.	Requires payers to develop process for identifying CP vs. individual care. Does not reward providers for improved outcomes related to CP.	Difficult to develop accurate risk assessment and development of bundled payment. Requires sufficient volume of deliveries.	Difficult to develop accurate risk assessment and population birth rate prediction. Requires sufficient attributed population.

Challenges

There are several likely challenges to incorporating CP into value-based payment, though each can be addressed through careful planning and multi-stakeholder collaboration. It can be difficult for providers to implement a care model if not all payers have agreed to support it (for example, if only Medicaid or only a single Medicaid health plan makes enhanced payments for CP). Buy-in from not only Medicaid health plans, but commercial payers as well, can better support financial sustainability. Though this discussion has focused on Medicaid, the CP model appeals to women with all types of coverage. CP groups typically include women with varying income levels and backgrounds as part of focusing on the shared experience of pregnancy, and all pregnant patients should have it available as an option. Multi-payer collaboration supports CP adoption.

As a practical matter, implementing CP does not eliminate the need to provide alternative models of prenatal care, since not everyone will choose CP and there is a need to provide the full spectrum of prenatal care for medically high-risk women, as well as maternal fetal medicine support for specific complications and other specialty care that may not be suited to the CP format.

Further, while there is promising evidence that CP can improve birth outcomes, because some evidence has been mixed, payers or providers may be hesitant to make the investment in training and implementation that CP requires – and may hesitate to tie payments, and especially risk, to it. However,

the evidence related to certain populations (for example, adolescents and African American women) suggests, at the very least, that providers should target CP as an option for those women. As the evidence base evolves and continues to identify success factors and examine nuances of CP implementation, additional strategies for deploying CP will be better-informed.

Technical challenges

In addition to tailoring a cost-benefit analysis to inform decisions about what payment models are feasible, payers and providers will require sophisticated risk-stratification models that assess medical, behavioral, prenatal, and social risk factors in order to fairly adjust payment models.

For episodic payments, there must be sufficient volume of patients (and revenue) to spread risk for episodes, which probably excludes small providers such as FQHCs and small midwifery practices from more advanced APMs. Enhanced payments are likely a better option for smaller providers.

Benefits

CP is a holistic model of mutual support that creates an environment where social and economic factors that affect health can be identified and addressed, with the potential to improve outcomes and women's satisfaction with their maternity care. Its goals and design are aligned with the growing population health focus of payers and providers. There is evidence that CP can improve outcomes—the goal of value-based payment—at a similar or lower cost, and this combined with its popularity with participants supports its broader adoption.

Conclusion

CP is a promising model of prenatal care and should be more widely available. Payment-related barriers can be addressed by linking value-based payment to CP, using a variety of approaches depending on what is most appropriate for a given provider and best suited to payers as they progress along the value-based payment continuum. Maternity care is likely to continue to adopt value-based payment, and support for CP as an option for women across the country can align with these changes.

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