# A Single Bundled Payment for Comprehensive Low-Risk Maternity and Newborn Care Provided by Independent Midwife-Led Birth Center Practices that Are Clinically Integrated with Physician and Hospital Services.

**Submitted by:**

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# Abstract:

Pregnancy and birth are usually normal when allowed to proceed with support and careful observation, but since there is potential for complications, an obstetrical safety net is required. More than 70% of pregnancies are low-risk. For these mothers the current maternity care model is fragmented and incents more care. Fee for service payment is at the core of this problem. It lowers the quality of care provided and incurs more expense to the payers. Improvement requires a transition to comprehensive bundled payment for the perinatal care episode.

The Minnesota Birth Center has provided excellent clinical outcomes for more than 1000 mother/baby pairs in a comprehensive collaborative model of care since 2012. Care is provided in certified nurse-midwife(CNM)-led independent birth centers located in Minneapolis and St. Paul, Minnesota. If clinically necessary, care is provided in nearby hospitals by the primary midwife and collaborating physicians. Patient satisfaction is very high and the cost of providing care is less than the current system. However, unsustainable payer reimbursement and regulation have created barriers that prevent further expansion of this model.

This proposal advocates for a single payment for maternity and newborn care provided to low-risk mother/baby pairs. Our hospital clinical partners have agreed to serve as subcontractors by giving us guaranteed public program case rates for mothers and babies who need hospital care for birth. This model meets the criteria for the most advanced APM model #7. The single payment for the perinatal care episode will drive collaboration. Opportunities for benefit include: improved clinical outcomes, more satisfied mothers, and lower cost.

This model will care for cohorts of 250-300 low-risk pregnant mothers per year. The 4-5 member CNM teams will collaborate with consulting obstetrics, pediatric and neonatal physicians. In addition, prenatal education, doulas, and lactation support services are included. The package of care will be available to all payers. This includes Medicare, which annually pays for the care of 15,000 mothers -- 300 per year in Minnesota. We hope that regulations will ultimately be revised to permit this model, and others like it, to serve the nearly 2,000,000 mothers per year whose care is covered by Medicaid.

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## I. Background and Model Overview

Bundled payments for episodes of care can increase value by improving outcomes at a lower cost. While initial efforts were directed at joint replacement attention is now turning to other episodes of care. Because it is a crucial clinical episode for the mother and child, the maternity and newborn care period is an ideal episode for bundled payment. This life event can most succinctly be referred to as the "perinatal episode."

*The HCP-LAN White Paper on the Clinical Episode Payment model for Maternity Care* was released in 2016.[1] It provides comprehensive background information and makes a compelling argument for what we refer to as the perinatal episode. Minnesota Birth Center's model of care was included and referenced as one of the maternity care initiatives in the draft report. The final paper is a powerful argument for implementing new models of payment for perinatal care.

All of those who provide perinatal care intend to deliver high-quality services that benefit the (at least) two individuals under their care. There is no question that the fundamental goal of all providers is for healthy mothers to safely give birth to healthy babies. There are many ways to achieve this goal, but a change in the payment model is essential.

There are four reasons to pursue a single bundled payment for the perinatal episode: 1) Pregnancy is time-limited and usually normal. 2) Perinatal care is a major spending area for commercial insurance and for Medicaid. 3) Perinatal care quality and cost vary widely within and between states, and 4) Rising perinatal care costs do not correlate with improved outcomes.

1. Perinatal care is a well-defined clinical episode based on a momentous life event.
For the purposes of this proposal the episode encompasses 9 months of pregnancy plus 8 weeks postpartum for the mother. Initial newborn care occurs during the first 24 hours of life.

The majority (70%) of mothers do not have complications that require intensive intervention. Many mothers desire support and assistance for what is known as "physiologic birth". These mothers want to avoid unnecessary interventions, and they have high expectations for their experience of care, but they also want to have a medical safety net if complications develop.

The maternal preference for low intervention birth is highlighted in the 2013 Listening to Mothers Survey III results.[2] Nearly 60% of mothers believe that birth is a normal process that should not be interfered with unless medically necessary. Mothers desire and deserve agency, personal security, connectedness, respect and access to accurate information during their perinatal care experience.

Many mothers with low-risk pregnancies desire the choice of primary maternity care directed by a midwife in a setting other than a hospital. Two major studies, *The Birthplace Study* in England, which involved more than 64,000 women[3], and the recent *Outcomes of Care in Birth Centers* study[4], which included more than 15,000 U.S. women, have demonstrated that low-risk women


who have midwife-directed care in a freestanding birth center receive excellent care at a lower cost. Additionally, these studies documented that care provided in this way reduced cesarean sections and operative vaginal births without increasing adverse perinatal outcomes.

Unfortunately, the fee-for-service payment system often impedes access to birth center care. But more importantly it fragments the perinatal episode. Prenatal care, labor and birth, and postpartum care are viewed (and care is delivered) as three distinct treatment periods. When professional and facility fees are included there are at least four bills – a professional and facility fee for both mother and baby.

The use of a single perinatal care payment will require integration of the three treatment periods into one episode. This will incentivize collaborative care teams, care coordination and new types of clinical delivery models resulting in lower cost, higher quality outcomes and more satisfied mothers.

2. The perinatal care episode is expensive and accounts for nearly a quarter of all hospitalizations in the US each year. Seven of the 20 most expensive hospital conditions are related to pregnancy, labor and birth and these costs account for 27% of all Medicaid spending. Perinatal care is the most costly condition for employers who provide health insurance benefits, and accounts for 15% of costs for commercial insurers.

Though charges don't reflect what is actually paid, hospital-billed charges for maternal and newborn stays increased by 90% over the decade from 2003 to 2013. However, the most useful and important information is what is actually spent for care. Fortunately, reliable information is available.

A commissioned 2013 Truven study used nationally representative commercial and Medicaid paid claims data to reveal actual spending numbers.[5] Even though the raw data was from 2010-11, the study showed that total mother and baby perinatal care payment for commercially insured mothers was $27,866 for cesarean section and $18,329 for vaginal births. For the 44% of mothers and babies nationally who received care through Medicaid the average total payments were $13,590 for cesarean birth and $9,131 for vaginal births. Costs have certainly risen since the report was published.

Some things stand out when reviewing the study results. The most important is that facility fee payments exceed 50% of the entire cost of the perinatal episodes for both Medicaid and commercial insurance. This demonstrates that perinatal episode payment reform requires a focus on facility costs. Professional fee payments for mother and baby care accounted for less than 25%. The remaining expenditures were for ultrasound imaging, laboratory tests, medications and anesthesia professional fees.

Another important observation is that commercially insured expenditures for perinatal care are twice the amount spent for Medicaid – making it clear why many hospitals, physicians and midwives who provide perinatal care worry when their euphemistically named "payer mix"

includes fewer commercially insured mothers. This worry limits access to care for mothers on Medicaid in many states.

In addition, paid amounts for cesarean section are 50% higher than those for vaginal birth. However, with the advent of blended facility and professional fee rates for births, whether they are vaginal or by cesarean section, any financial incentive to perform a cesarean section has been removed.

High perinatal care costs are hitting commercially insured mothers hard. They currently pay 10-15% of the total cost out of pocket to meet deductible limits. The high deductible financial burden for commercially insured mothers is increasing and it can affect the decision of whether and when to have a child. The increasing cost of perinatal care is unsustainable no matter who pays.

3. There are significant variations in the quality and cost of perinatal care throughout the US and within states. Varying cesarean section rates and costs are the major factor. This is well documented in a recent *Consumer Reports* article.[6] Underlying the variation is an astounding national cesarean section rate increase from 5% in 1970 to 32% in 2015.

These issues are being addressed by professional organizations. The American Congress of Obstetricians and Gynecologists (ACOG) recently made recommendations designed to safely decrease the need for primary cesarean section and to promote normal birth.[7] Changing ingrained physician, nurse and hospital practice patterns is a challenge but progress is being made. The high-touch low-tech options of CNM-led care, birth centers, and doula services are having a positive impact.

4. Episode-based payment addresses the disconcerting lack of perinatal outcome benefits associated with the increasing use of costly obstetrical interventions over the last twenty years. For example, the steep increase in cesarean rates has not been accompanied by discernable improvements in maternal and infant health outcomes.

Patients often receive unwarranted variation in the content and quality of their care despite the existence of reliable evidence-based care recommendations for low-risk pregnant women.[8] This is also true for lower risk pregnant women who have pre-existing chronic conditions or who develop pregnancy complications.

Besides addressing unnecessary care there are enormous opportunities during the delivery of perinatal care to engage women and their families in ways that support person-centered care and that positively affect long term outcomes for mothers and babies.

But there are barriers within the current system. Fee for service payment is a major barrier. A single episode-based payment is ideal for perinatal care because it can decrease the costs of maternity care by limiting incentives to provide clinically inappropriate services, including unnecessary cesarean births. Reducing unnecessary cesarean births for first-time mothers


leads to an overall reduction of cesarean births since those women are less likely to have a cesarean for subsequent births than women who had a cesarean birth for their first child.

Episode-based payment will also help to reduce complications and improve maternal and newborn outcomes as providers will be incentivized – via the use of outcome-level maternity quality measures – to provide "high-touch" evidence-based interventions, such as enhanced prenatal care, more meaningful care coordination, and doula services.

For the reasons listed above the current US perinatal care system falls short of providing high value care. For most mothers and providers the system is complicated and unsatisfying. For employers, payers, patients and taxpayers the system is too expensive. The pathway to higher value in this system will be paved by instituting bundled payment for comprehensive services provided during the perinatal episode.

In 2012 this conclusion led an OB/GYN specialist in Maternal-Fetal Medicine (MFM) to advocate for a new model of care,[9] and to partner with Certified Nurse Midwives (CNMs) to open the Minnesota Birth Center (MBC) in the Twin Cities of Minneapolis and St. Paul. The practice is built around midwife-led primary maternity and newborn care in two accredited birth centers that are independent but clinically integrated with nearby hospital and physician services– a model that fits national maternal level of care standards.[10]

Since CNMs are the primary providers, our model is most accurately described as a "Provider Focused Payment Model" with integral physician involvement. The model would also work with OB and Family Practice groups – but without some of the benefits of a CNM-directed group.

The MBC care model provides safe, satisfying and seamless care.[11] The CNM team has hospital privileges, so when mothers or babies require more than the birth center level of care there is continuity of care in the hospital. If physician services are required, these are available 24/7 in the hospital. Our collaborating OB/GYN physicians, family practitioners, pediatricians and neonatologists strongly support our model.

In the five years since opening, more than 1000 low risk mothers and their babies have received care with superb results. The clinical outcomes include an overall cesarean section rate of 8%, and a primary cesarean section rate of 13.5%. This latter rate is 44% lower than the national goal of 24%. When birth center to hospital transfer is required it is nearly always non-emergent. The level of satisfaction is very high, and the practice has essentially grown by word of mouth.

Since the medical director is an OB/GYN-MFM physician, the practice can blend the high touch skills of the CNM team with high tech expertise when necessary. In-house ultrasound imaging and obstetrical/MFM consultations provide for continuity of care. For more than 70% of mothers and babies the entire care episode occurs at the MBC. This comprehensive perinatal episode is served through our BirthBundle®.

The BirthBundle® is a comprehensive package of perinatal care services that is provided for a single price. It is currently available for MBC self-pay patients and efforts continue to make it


available to mothers with commercial and Medicaid coverage. An exciting extension of the BirthBundle® includes some professional and facility fees when hospitalization is required.

When the MBC opened, birth centers had only been licensed in Minnesota since 2011 and the nearby hospital system was wary of this new model of care. However, good outcomes and a mutually satisfactory experience over the last 5 years have proven the benefit of collaboration. Our collaborating hospital system has now agreed to serve as a subcontractor for the BirthBundle® by providing public program case rates for uncomplicated care for mother and baby at the hospital, included are facility fees as well as obstetrician professional fees.

Our PFPM proposal requests that CMS approve and encourage expansion of the BirthBundle® and similar comprehensive perinatal care and bundled payment models throughout the country. We recognize that PFPM models were initially focused on Medicare. Though less than 30,000 women per year receive perinatal care through Medicare, a surprising 44% of the 4 million US births per year are paid through the Medicaid program.

We believe that bundled payment for independent but integrated midwifery care in accredited birth centers will provide very high value care. It is also likely that bundled payments will function to improve care in hospital based physician-only practices – though likely with somewhat less cost savings.

The ultimate goal is to provide higher value perinatal care for a lower price for mothers covered by Medicaid. When this is achieved it will encourage bundled payment for mothers covered by commercial insurance.

Over the last 5 years we have tried to implement this PFPM on the state level in Minnesota. As a new model that challenges institutional and bureaucratic inertia, progress has been slow. A frequent response to our efforts has been that “the Feds” will not allow bundled payment for the perinatal episode. We are very encouraged to find the opposite in our background reading about the purpose of this committee.

In the following sections we will show how our proposal positively and constructively addresses the focus areas outlined by the PTAC committee – particularly the three high priority areas; Scope of Proposed PFPM, Quality/Cost and Payment Methodology.

## II. Scope of Proposed PFPM (Physician Focused Payment Model)

The time-limited nature of pregnancy, birth and the immediate newborn period make it an ideal framework for provision of comprehensive perinatal care as well as the perfect episode for testing a single bundled payment.

Although the current perinatal care system focuses on mothers and babies with complications, the majority of pregnant women and babies are low-risk. The definition of low-risk is largely based on the absence of high risk factors. These factors can exist prior to pregnancy and they


can also develop for the mother and/or baby during pregnancy and birth. The percentage of low-risk pregnancies is above 70%, but many of those mothers receive too many intensive obstetrics services, and too few high value supportive services.

Our PFPM is designed to maximize the number of mothers and babies cared for within the bundled clinical care and payment model. A list of our Exclusionary Risk Criteria is included in the Supplementary Information Section. Mothers with preexisting complications are referred to physician care, and if a mother or baby develops complications during pregnancy that require care outside the bundled price the clinical care is seamless.

To illustrate the clinical scope of our PFPM three brief scenarios are helpful:

1. A 30 year-old second time mother began care at 10 weeks and received all of her prenatal visits at the birth center. Care included an early dating ultrasound and a complete anatomy scan at 20 weeks. She went into labor at 39 weeks and gave birth to a daughter after 4 hours of labor at the birth center, attended by a CNM and an RN birth assistant. She managed labor discomfort with a warm bath. After 4 hours at the birth center she returned home with her baby. An RN made a home visit within 36 hours to check on the mother and to perform newborn screening tests.
2. A 28 year-old first time mother had her prenatal care at the birth center. She went into labor at 40 weeks and was admitted to the birth center. She progressed slowly in labor and had significant unrelieved discomfort with contractions. Transfer to the hospital was arranged for an epidural block. With better pain control she progressed to have a normal birth of a son with her CNM in attendance. Mother and child were discharged home within 24 hours.
3. A 39 year-old first time mother had prenatal care at the birth center. She was admitted to the birth center in active labor at 40 weeks. When her membranes ruptured, thick meconium was present in the amniotic fluid. Per protocol she was non-emergently transferred to the hospital for continuous fetal heart rate monitoring. Six hours after transfer the fetal heart tracing showed persistent decelerations of the fetal heart rate. A cesarean section was done by the collaborating OB/GYN physician delivering a healthy baby with 3 loops of cord around the neck. Mother and baby went home 48 hours after birth.

Nearly 75% of the mothers in our model are represented by scenario 1. Scenario 2 is experienced by 15% and scenario 3 by 10% of mothers. Care is individualized for each mother. This is facilitated by the fact that every member of our CNM team has privileges at the collaborating hospital system. The supportive collaborating physician relationships are crucial.

Sometimes it is difficult to get agreement on what constitutes the bundle of perinatal care services. 2009 health care reform efforts in Minnesota empowered a committee tasked with defining a pregnancy “basket of care”. Unfortunately, the committee only managed to define a prenatal basket of care.


Our PFPM covers the entire low-risk maternity and newborn care episode from initiation of prenatal care through 8 weeks post partum for the mother as well as the immediate newborn period for the baby (24 hours). This includes all professional and facility fees during labor and birth – the most expensive time of the episode. The list of CPT codes and services within the BirthBundle® are included in appendix A.

Our PFPM will care for cohorts of 250-300 low-risk pregnant mothers per year lead by 5 member CNM teams collaborating with consulting obstetrics, pediatric and neonatal physicians. In addition, prenatal education, doulas and lactation support services are included in the package of care. The package of care will be available to all payers. This includes Medicare, which pays annually for the care of 15,000 mothers--300 per year in Minnesota.

## III. Quality and Cost

Our BirthBundle® model has the ultimate goal of providing comprehensive perinatal care that maximizes the chances for the mother and baby to have healthy and satisfying outcomes while minimizing the use of unnecessary interventions – all for a price that is less than current fee for service amounts.

Comparing cesarean section rates is reasonable, but it is important to assess comparable groups of mothers. The most useful rate is assessed in first time mothers (Nulliparas), at 37-42 weeks (Term), with one baby (a Singleton) that is headfirst (Vertex). This is the NTSV cesarean rate.

Our 2016 MBC NTSV cesarean section rate was 13.5%, which compares favorably with the U.S. NTSV cesarean section rate goal of 23.9%. The recent review in *Consumer Reports* shows that this rate varies widely around the country and even between hospitals in the same community.[6] The lowest rate was 7% and the highest was 64.6% among 1300 hospitals.

The cumulative MBC statistics through 2016 are in the table on the next page.


**Clinical Outcome Statistics**
**(2012-2016)**

| *CLINICAL OUTCOMES* | *QUANTITY* | *%* |
|---|---|---|
| **TOTAL BIRTHS** | **1069** | **100%** |
| VAGINAL BIRTHS | 983 | 92% |
| CESAREAN BIRTHS | 85 | 8% |
| **BIRTH LOCATION** | | |
| BIRTH CENTER | 757 | 71% |
| HOSPITAL | 312 | 29% |
| *INTRAPARTUM TRANSFER* | *133* | *12%* |
| *DIRECT ADMISSION* | *179* | *17%* |

The overall MBC cesarean section rate over 4+ years is 8%. Seven of ten mothers who begin care at the MBC give birth at the birth center. Of the 29% who need hospital care, 12% transfer during or after birth and another 17% of mothers are transferred to hospital care prior to labor (for breech presentation or labor <37 or > 42 weeks gestation). These agree with the transfer rates reported in large birth center studies.

40% of births each year are to first time mothers. As a new practice, the MBC attracts more first time mothers who are not already attached to another practice from a previous birth. 53% of our mothers are having their first baby.

This higher percentage of first time mothers increases the workload impact because of the greater amount of time and effort spent by midwives in attending these births. The labors of nulliparous mothers are longer than those of mothers who have had a prior birth, and the need for cesarean section is increased. Nevertheless, midwife-directed primary maternity care in birth centers minimizes the NTSV C/S rate.

In summary, cost savings are realized through a lower-intervention model of maternity care that is highly-coordinated and leverages the use of a birth center, a lower-cost facility.

## IV. Payment Methodology

The adage that “you get what you pay for” is true for medical care. When perinatal care providers are paid for each procedure, each imaging study and each patient encounter they are working in a perverse productivity model. This is a model that is virtually certain to increase the output of procedures, imaging studies and patient visits – without generating a product that promotes health or heals disease.


The alternative is to define and design a valuable product and to set up a system to deliver that product in the most cost effective manner.[12] That is our goal with this proposal. We have designed the BirthBundle® as a valuable clinical service product imbedded in a new payment model.

Some incremental progress has been made recently with the advent of blended facility and professional fees that are the same for vaginal births and cesarean sections. This initial limited perinatal payment innovation led to a decrease in intrapartum costs and possible decreases in C/S rates. The important next step is to widen the scope of the episode, and to implement comprehensive bundled perinatal episode payments.

Some initial payer resistance to bundled payment was due to concerns about billing infrastructure that only supported fee for service payments. This is surmountable by continuing to use the fee for service billing infrastructure to construct the bundled payment. This allows accurate analysis of the number and types of services provided. The difference is that care is ultimately provided for a single bundled payment.

Some states have provided retrospective bundled payment for perinatal care identified by attribution models based on who attends the birth of the baby. This is problematic since the person or team attending the birth may have never seen the mother prenatally.

The MBC is the convener and payment manager of our PFPM bundle with hospitals and others serving as subcontractors. We can assess our actual costs of providing care within the BirthBundle®. We can count on case rates for mother and baby at our collaborating hospitals. We can also build in a reasonable margin to provide sustainability and growth for this model of care.

But what is a fair perinatal bundled payment amount? The *HCP-LAN Maternity White Paper* recommends using historical rates as a benchmark. But in Minnesota, as in many other states, historical Medicaid payments are very low and are a major barrier to the implementation of bundled payments. The justification for the low public program rates in MN is unclear. The Minnesota Department of Human Services (DHS) contracts with a small number of nonprofit Managed Care Organizations (MCOs) to administer Medicaid funds – referred to as Medical Assistance (MA) in Minnesota.

For perinatal care the MCOs receive funds from the DHS as negotiated monthly prepaid medical assistance (PMAP) payments. For each of the 30,000 mother/baby pairs that receive care each year the total amount given to the MCOs is nearly $21,000. If non-perinatal care PMAP rates are subtracted out, the “pregnancy premium” is still more than $16,000. The Minnesota (DHS) and the (MCOs) have not been inclined to consider bundled payment or to increase fee for service MA payments despite the overall population savings we have projected.

There was one exception. In 2015 one MCO agreed to a BirthBundle® pilot program with 100 mothers for a sustainable bundled payment amount that was 60-65% of the “perinatal premium”. When the MCO lost the its statewide MA contract that pilot program was abandoned.


The perinatal PMAP payments are designated for maternity care for mothers for an average of 9 months and for the care of newborns for the first year of life. Since providers receive only a small portion of the designated PMAP payment to provide care, it is clear that the MCOs are withholding a substantial portion of the state and federal funds they specifically receive for perinatal care. This needs to change. Directing the adequate, already allocated public funds to perinatal providers in the form of bundled payments is much more likely to lead to higher value care.

We would appreciate PTAC assistance in further design of the payment methodology for this PFPM. This would include help in determining the appropriate amount of the bundled payment as well as the timing of its distribution. In addition, we would like to explore the possibility of having providers take on additional risk beyond the single bundled payment. Finally, stop loss insurance or risk pools will be needed for the rare expensive outlier perinatal cases.

Providers should not have to carry the costs of care for many months after performing the service. A solution would be an upfront partial payment at 20 weeks gestation followed by a final retrospective bundled payment shortly after completion of the episode. Providers could also take on additional risk by taking cost responsibility for some multiple of the agreed upon bundled price. It would be very helpful to have PTAC assistance in addressing these questions.

The most effective “managed” care is that which is closest to the patient and the provider. Large clinical and temporal distances between the payer, the provider and the patient present major problems. The aim of the BirthBundle® is not to “manage” care as much as it is to empower mothers to collaborate in the provision of their care within an improved system.

## V. Value over Volume

Investment in perinatal care has the longest time frame and the largest return of any type of medical care. The challenge is to maximize the value of the care provided to mothers and babies. That is the goal of the BirthBundle®.

The primary volume problem in perinatal care is the overuse of cesarean section. This proposal clearly addresses that issue. Another major driver of perinatal care cost is the overuse of ultrasound imaging. Pregnancy ultrasound is a useful tool that has provided many benefits over the three decades since it came into wide use. However, for low-risk mothers, ACOG recommends no more than two ultrasound scans during pregnancy – usually an early dating scan followed by a fetal anatomy scan at 20 weeks.

Unfortunately many more scans are being done on low-risk mothers. In a recent national survey 70% of mothers had 3 or more scans, and 23% had more than 7 scans. This is a major cost driver since these scans can cost upwards of $200 each. In addition, many of the scans done late in pregnancy drive inappropriate clinical decisions such as induction of labor for presumed large babies. Our PFPM addresses this issue.

If payers offered a single bundled payment to cover both facility and provider fees for pregnancy, birth and postpartum care, incentives would shift from encouraging the use of technology-intensive care to encouraging the use of low-technology, high-value approaches. Midwife-led birth center care can provide that alternative.

The savings derived from fewer cesarean sections and lower facility fees for the majority of women would offset the costs associated with the small number of complicated births that would require hospital care. A specific pregnancy insurance component could provide outlier payment adjustments if the costs for a patient or her baby exceeded a certain amount. This would reduce the financial risk to providers and facilities participating in the bundled payment program.

Physicians and midwives who provide pregnancy and newborn care all intend to provide the highest quality of care to mothers and babies. They know that collaboration of an entire team of providers is required. Unfortunately, traditional clinical system silos and the fee for service payment system discourage collaboration by paying for pieces of the perinatal care episode provided by disconnected entities.

At present, the system focuses on the most complicated and expensive pieces of the episode. Too often many high value supportive and educational components are not reimbursed. These services will be more readily available in this PFPM.

## VI. Flexibility

Bundled perinatal care payment is not a “one size fits all” approach. By paying a single amount for the entire perinatal episode providers will have the flexibility to be creative and to use proven high value supportive services to improve outcomes and patient satisfaction. By removing the need to maintain individual provider and group RVU “production”, mothers will also be less likely to receive unwarranted interventions.

We also need to rethink how we define birth facilities. Currently 98% of births occur in hospitals. But not all hospitals are high volume/high tech centers. More than half of all US births occur in hospitals with less than 1000 births per year. With a daily volume of only 2-4 births per day it is a clinical and financial challenge to staff for obstetrics and newborn services.

In addition, one third of mothers deliver in hospitals with less than 500 births per year – a volume equivalent to our own birth center practice. Some of these hospitals are in rural communities with relatively few pregnancies, but some lower volume hospitals are in or near major metropolitan areas.

Another major question is, “who will provide maternity care in the future?” Many of the 33,000 OB/GYN MDs in the U.S. are retiring earlier from obstetrical practice than previous generations, and there are only 13,000 CNMs in the U.S. Nationwide CNMs attend only 10% of births. Internationally, the midwife attended birth percentage is more than 50%, with excellent outcomes. A rapid expansion of CNM training in the U.S. will be required to meet the need.


Fortunately there is a pathway for the training of additional midwives. Many labor and delivery nurses could transition to midwifery – new pathways for this transition should be developed. An additional option to consider is the expansion of the number of Certified Professional Midwives (CPMs). Though not trained through the nursing profession, CPMs already play a significant role attending mothers in birth centers.

An increased role for advanced practice nurses is inevitable in the new health care system. In states like Minnesota, CNMs are independent practitioners who practice at the top of their license and training. This is not the case in every state. CNM scope of practice, licensing and birth center permit laws vary widely. These are often driven by anticompetitive motives – not backed by evidence.

For years Family Practice physicians have also been an important part of obstetrical care in the U.S. Although the Family Practice MD role in urban obstetrical practice has decreased significantly, it remains very important in rural areas. These realities will need to be kept in mind as the payment system is altered.

Bundles can work to improve value in all settings. Supportive federal and state licensing policies and practice environments can facilitate expansion of this model.

## VII. Ability to be Evaluated

Comprehensive and reliable information on outcomes is important for internal quality control and system improvement. It is also required for maintaining accountability to those who pay for and those who receive perinatal care. Value cannot be demonstrated without this information.

We collect our data in the American Association of Birth Centers Perinatal Data Registry™ (PDR). It is an online registry for ongoing collection of perinatal data in all settings and by all providers. It is designed to collect comprehensive data on both the process and outcomes of the midwifery model of care. Eventually we would like to facilitate direct PDR data collection from within our current electronic health record (Athenahealth).

We also currently assess maternal experience by way of a printed post partum survey. The feedback is helpful but is not cataloged. Patient reported outcomes and self-reported functional status deserve attention throughout pregnancy -- especially post partum. We plan to expand the scope and timing of collecting this information.

## VIII. Integration and Care Coordination

This care model is based on integrated CNM-led multispecialty teams caring for cohorts of 250-300 mother/baby pairs each year. Having 4 or 5 CMN FTEs on each team maximizes continuity of care for the mothers with avoidance of burnout for the CNM providers.

Care coordination is crucial. We utilize the unique and the overlapping skills of CNMs, RNs, LPNs, perinatal educators, doulas and administrative personnel to provide a caring and


consistent care path for mothers. This works well for mothers without complications, but it also works well when complications develop.

In tragic situations when lethal fetal abnormalities are detected, many mothers choose perinatal hospice care. This involves providing clinical and emotional support for a mother and family as they await the natural birth and death of their child. Our model has provided support for families in this situation, as well as those with other complications.

## IX. Patient Choice

Nearly half of mothers who have had one child and plan another would appreciate the option of receiving midwifery care in a birth center. Satisfaction with one's birth experience is clearly related to personal expectations, support from caregivers, quality of the patient-caregiver relationship, and the patient's involvement in decision-making. All of these are positively addressed in our model.

The important patient choice issue of vaginal birth after cesarean section (VBAC) should also be addressed. In our practice we offer the option of VBAC in the hospital setting. These births are attended by CNMs with physician availability if necessary. Many mothers with a prior cesarean section are good candidates for VBAC. There are maternal and newborn benefits and the success rate is greater than 70%. Access to VBAC is very limited in the U.S. with less than 20% of candidates being able to choose this option. Expansion of bundled perinatal payment and its realigned incentives will likely improve VBAC access.

## X. Patient Safety

In contemplating this model the question of safety is important and understandable.

The chance of a mother or baby surviving pregnancy, birth, and the first year of life has improved by a factor of 20 in the last century. A walk through most cemeteries in the United States shows a disturbing number of one hundred year old tombstones with names of young mothers and infants—sometimes buried side by side. There are thousands of sad stories behind those names.

In 1916 the risk of maternal death was about one in every 125 pregnancies. In 2016 the risk of maternal death has decreased to one in every 3,500 pregnancies. The risk of infant death in the first year of life in 1916 was one in 10. It is now about one in 200.

Until the middle of the 20$^{th}$ century home births were common in the US. The transition to hospital births happened very rapidly. The advent of obstetrical interventions after WWII drove the transition to hospital birth. The availability of analgesia and anesthesia as well as the increased use of cesarean section can be lifesaving. The focus on maternal safety was understandable.


The decision to do a cesarean section is necessarily individualized, but there is understandable concern about high cesarean section rates. Though done too frequently on a population basis, this can be a life-saving procedure for the baby and/or the mother. There is debate regarding what is a reasonable cesarean section rate. Some reference the WHO ideal rate as 15%, while a more recent study makes the argument for a 19% rate.[13] International data showed that optimal maternal and fetal outcomes occur at that rate.

The challenge is to balance accessibility of perinatal services with the understandable desire to provide the highest possible level of care in local hospitals. Achieving balance can be expensive if access to high-level care is the only goal, and the balance can also be politically costly if consolidation of services is chosen.

The improvements in outcome have come with the availability of better-trained birth attendants, safe cesarean section, anesthesia, blood transfusions and antibiotics, as well as improved public health and sanitation. But the understandable desire to minimize maternal and newborn risk has an iatrogenic dark side. When obstetrical interventions are routinely imposed on low risk mothers, harmful side effects can occur.

After the dramatic decrease in maternal deaths, attention was then turned to the fetus as the "second patient". The desire to minimize newborn death and disability led to the development of fetal monitoring technologies. In high-risk situations these technologies can be lifesaving, but when routinely used on low-risk mothers they lead to unnecessary intervention.

One example is continuous fetal heart rate monitoring for low-risk mothers. Using this with low-risk mothers only leads to increased rates of cesarean section without demonstrable benefit. In our PFPM, the fetal heart rate is assessed by periodic listening in the birth center, and if there are concerns, mothers are transferred to the hospital for continuous fetal heart rate monitoring.

In some ways the BirthBundle® model of care is nothing new. It is actually a healthy blend of time tested labor support and the judicious safety net use of remarkable life-preserving technology.

To assure high quality standards accreditation is important. Birth center licensure in Minnesota requires accreditation by the Commission for Accreditation of Birth Centers (CABC).[14] CABC accreditation has been achieved by 105 birth centers in the U.S. We believe that CABC accreditation should be mandatory for participation in bundled perinatal payments.

With the goal of minimizing risk, some countries have chosen to err on the side of consolidating perinatal care services into a small number of high volume high tech centers. Sweden has adopted this approach and it is gaining some traction in the U.S., but consolidation can lead to unintended consequences. With low population density and long distances between centers, the majority of out of hospital births in Sweden are due to birth in an ambulance on the way to a distant regional center.


Many in Sweden are now considering a return to more local midwifery units for low risk mothers to avoid these ambulance births. The best balance is achieved by integrating lower intensity units within a system that feeds into higher level care centers only when necessary – either prior to birth or in the rare instances when emergent transfer is needed at birth. Finding this balance is important for the critical access rural hospitals in the U.S. as perinatal episode bundled payments are implemented.

## XI. Health Information Technology

There are many ways to engage and empower mothers to have a healthy pregnancy, a safe birth and a good start with a newborn baby. Health information technology tools can help mothers wisely choose their preferred care model and to access care through that model. The integrative nature of our perinatal care PFPM provides an excellent foundation for the development of these tools.

Health information technology can also be applied to the vast amount of coding and billing data that is crucial for the analysis and definition of bundled payments. Our model necessarily started at a grassroots level, but other tools have been developed. These include the PROMETHEUS model of the Health Care Incentives Improvement Institute (HCI3).[15] The combination of these complex tools with grassroots clinical bundle initiatives such as ours can assist with perinatal care improvement.

## XII. Supplemental Information

Exclusionary Risk Criteria:

- Preterm labor and birth
- Preterm rupture of membranes
- Heart disease
- Preeclampsia
- History of embolus or clotting disorders with pregnancy
- Symptomatic congenital heart defects
- Renal disease
- Current drug or alcohol addiction or abuse
- Diabetes mellitus or gestational diabetes
- Hyperthyroidism
- Essential hypertension (BP > 140/90)
- Bleeding disorder
- Declining gestational diabetes screen
- Declining or refusing Rhogam (if Rh negative)
- Active tuberculosis
- VBAC (vaginal birth after cesarean)
- Twins
- Nonvertex presentation
- History of preterm birth < 34 weeks
- History of lupus
- Grandmultipara (6 or more babies)
- Gestation of more than 22 weeks with no prenatal care
- Gastric by-pass or lap bands
- Active autoimmune disorders
- Primip (first time mom) pre-pregnancy


- Sickle cell anemia
- HIV
- Hepatitis
- Marfan's syndrome (including family history of first degree relative)
- Epilepsy
- Hemoglobin less than 10gm
- Previous Rh sensitization
- BMI 36 and higher
- Multip (mom with at least one child) pre-pregnancy BMI 40 and higher
- Active anorexia or bulimia within the last year

[1] http://hcp-lan.org/workproducts/maternity-whitepaper-final.pdf

[2] http://transform.childbirthconnection.org/wp-content/uploads/2013/06/LTM-III_Pregnancy-and-Birth.pdf

[3] https://www.npeu.ox.ac.uk/birthplace

[4] http://www.birthcenters.org/?page=nbcsii

[5] http://transform.childbirthconnection.org/wp-content/uploads/2013/01/Cost-of-Having-a-Baby1.pdf

[6] http://www.consumerreports.org/c-section/your-biggest-c-section-risk-may-be-your-hospital/

[7] http://www.acog.org/Resources-And-Publications/Obstetric-Care-Consensus-Series/Safe-Prevention-of-the-Primary-Cesarean-Delivery

[8] www.acog.org/Resources-And-Publications/Committee-Opinions/Committee-on-Obstetric-Practice/Approaches-to-Limit-Intervention-During-Labor-and-Birth

[9] http://www.mnmed.org/MMA/media/Minnesota-Medicine-Magazine/Payingforanddeliveringpregnancycare1304.pdf

[10] https://www.smfm.org/publications/184-levels-of-maternal-care

[11] www.theminnesotabirthcenter.com

[12] http://content.healthaffairs.org/content/33/6/1076.full.pdf+html

[13] http://jamanetwork.com/journals/jama/article-abstract/2473490

[14] https://www.birthcenteraccreditation.org/

[15] http://www.hci3.org/ecr_descriptions/ecr_description.php?version=5.4.005&name=PREGN

Appendix A: CPT Codes and Services Included in Bundle:

| MOTHER PROFESSIONAL FEES | |
|---|---|
| 59400 | Global Maternity Care |
| 59409 | Vaginal Delivery Only (OB) |
| 59514 | Cesarean Section Only (OB) |
| 59414 | Delivery of Placenta |
| 59430 | Postpartum Care Only |
| 59425 | Antepartum 4-6 visits |
| 59426 | Antepartum 7+ visits |
| 99241 | Perinatal Consult 15 Min |
| 76811 | Detailed Ultrasound Professional |
| 76811 | Detailed Ultrasound Technical |
| J2790 | Rhogam 300MCG |
| J0561 | IV Penicillin |
| 76817 | US Vag |
| 76816 | US followup-growth |
| 76801 | US, 14wks ab |
| 76805 | OB US> 14wk |
| 99205 | New Pt CMPR (60min) |
| 59025 | NST |
| 99214 | Est. Pt visit prob 25min |
| 99213 | Est. Pt visit prob 15min |
| 99212 | Est. Pt visit prob 5min |
| | Doula |
| | Lactation Support |
| | Childbirth Education |

| NEWBORN PROFESSIONAL FEES |
|---|

| | |
|---|---|
| S3620 | Newborn Metabolic Screen |
| 99464 | Attendance at Delivery, stabilization of NB |
| 99463 | Mgmt Care, Discharge Birth |
| 92558 | Evoked Otoacoustic |
| J7050 | Erythromycin |
| J3430 | Vit K per 1MG IM |
| 36416 | Heel Stick |

| PRENATAL LABS | |
|---|---|
| 99000 | Specimen Handling |
| 87591 | GCCT Probe (Ghon & Chlam) |
| 87340 | HEP B (HBS AG) |
| 87210 | Wet Prep |
| 87086 | Urine Culture |
| 81003 | Urine Analysis |
| 86901 | Blood Typing RH (D) |
| 86803 | HCV Antibody |
| 86703 | HIV 1/2 |
| 85018 | Hemoglobin |
| 84702 | HCG Beta Quant Pregnancy |
| 86787 | Varicella |
| 87621 | HPV |
| G0145 | Papsmear |
| 86850 | Antibody |
| 85025 | CBC |
| 87680 | Treponema |
| 84450 | Liver Fun AST |
| 84443 | TSH |
| 82950 | Gestational Glucose Screen |
| 82947 | Glucose Fasting |
| 36415 | Venipuncture |

| Facility Codes | |
|---|---|
| 724 | Mom Facility MBC |
| 171 | Baby Facility MBC |
| 775 | Mom Facility Fee (Vaginal Delivery) |
| 766 | Mom Facility Fee (C/S) |
| 795 | Newborn Facility Fee |
| 724 | Mom Facility/Transfer MBC |