IMPROVING MATERNITY CARE:
A MODEL APPROACH FOR REGIONAL STAKEHOLDERS

(Issue Brief #3)

Leif Wellington Haase, 2018

If the cost of giving birth in America were a separate budget line—including the hospitalization of mother and child, plus complications arising from those births-- it would account for a full 0.6 percent of GDP, or around $100 billion annually. Almost one in three mothers undergoes a Caesarean section, a major surgery, to deliver her baby.

As the Leapfrog Group, an organization that seeks to improve the quality and safety of medical care, points out, among privately insured women aged 19-44, childbirth accounts for the majority of all U.S. hospitalizations.[1] Pregnancy and delivery is the single largest category of diagnoses, by cost, for employers that offer health benefits.

To bring down health care costs and improve the value of spending, improving maternity care—and reducing unneeded and elective C-sections in particular—should rank high on the list:

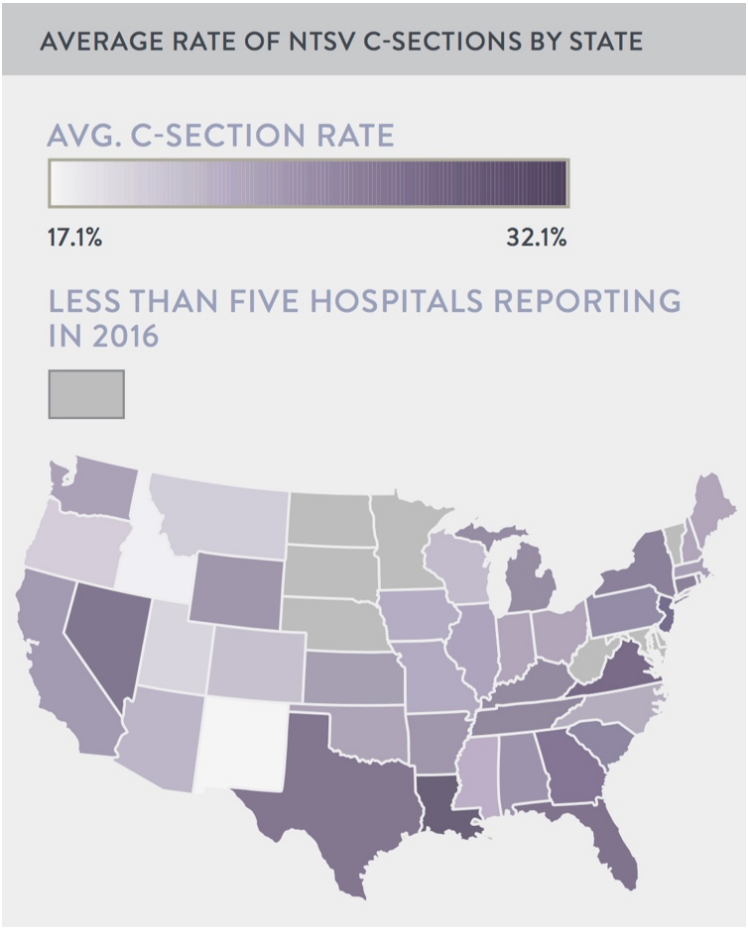
- Other developed countries deliver babies in different settings, pay less to do so, and experience better outcomes in terms of maternal and child mortality rates;
- The number of C-sections is high and rates vary without an apparent difference in underlying need. Consequently, the amount of wasted and harmful care is large;
- The evidence of waste is widely known and shared by physicians and researchers;
- Promising strategies for paying for better maternity care—such as bundled or episode-based payments—have been implemented or are being tested in many states, medical systems, and hospitals.
- Expectant mothers and their families are motivated to be strong partners during pregnancy and in the first months of a child's life.

BACKGROUND

Other developed countries deliver babies in different settings, pay less to do so, and experience better outcomes in terms of maternal and child mortality rates and fewer unnecessary C-sections and other procedures.[2] The countries nearest the U.S. in birth-related spending, Switzerland and France, spend less than half the amount per birth.

The reason is that in addition to higher prices for services and a fee-for-service payment model in the U.S. other countries deliver babies in different settings and frequently without doctors attending.

While there is no "ideal" rate for C-sections, the prevailing rate of 32 percent in the United States is far above the World Health Organization estimate that just 10 percent of such procedures may be scientifically justified. Healthy People 2020's goal, backed by the Leapfrog Group and most other advocates for quality of care, is 23.9 percent for first-time mothers with a low-risk pregnancy.[3] As Figure 1 shows, a number of US states, mostly in the Northeast and South, substantially exceed this average. The overall U.S. C-section rate rose from 21 percent of births in 1996 to almost 33 percent in 2009. This rate has dipped slightly, to 32 percent in 2016, in the face of a concerted public health campaign to slow the rate of growth.



Source: Castlight Health and The Leapfrog Group, "Maternity Care: Data By Hospital on Nationally Standardized Metrics," 2017.

"We Have a $17 Trillion GDP and We Spend 0.6 of GDP Just On Hospitalizing Moms and Babies at Childbirth"

- Neal Shah, M.D., Harvard Medical School

MATERNITY CARE HOSPITAL QUALITY STANDARDS

	WHAT IS IT	ASSOCIATED COMPLICATIONS	LEAPFROG'S TARGET RATE
NTSV C-SECTION	C-Section delivery for a first-time mother of a single baby at term (at least 37 weeks gestation) in the head-down position	**Mothers:** Increased risk of infection and blood clots, longer recoveries, difficulty with future pregnancies, and chronic pelvic pain **Babies:** Breathing difficulties, increased risk of developing chronic childhood diseases (e.g. asthma, diabetes)	23.9% or lower
EARLY ELECTIVE DELIVERY	Scheduled C-Sections or medical inductions performed prior to 39 completed weeks gestation without medical necessity	**Babies:** Risk of respiratory diseases, pneumonia, or even, in rare cases, death	5.0% or lower
EPISIOTOMY	An incision made in the perineum to widen the birth canal during childbirth	**Mothers:** Linked to worse perineal tears, loss of bladder or bowel control, and pelvic floor defects	5.0% or lower

Source: Castlight Health and The Leapfrog Group, "Maternity Care: Data By Hospital on Nationally Standardized Metrics," 2017.

On average, the cost of a C-section is around 50 percent greater than a vaginal birth, not including the greater likelihood that the mother will be more likely to have C-sections for future births, a higher chance of complications, and a greater risk of readmission to the hospital. (Figure 2)

More than half of all births in the US are paid for by Medicaid. An increasing number of those births are covered through Medicaid managed care programs. In the absence of uniform federal rules there has been a great deal of experimentation in payment policies, described below in more detail, and a strong opportunity for bottom-up reform. Many of the strategies for bringing down the rates of C-sections, elective or otherwise, have been bottom-up approaches undertaken by hospitals, integrated delivery systems, and regional stakeholder groups. Employers have a special interest because roughly forty percent of all births are covered through employer-based coverage.

The rate of elective induction of C-sections before 39 weeks, scheduled by the physician and expectant mother, and usually for scheduling convenience or the patient's fear of pain, have plummeted from roughly 17 percent in 2010 to just 1.9 percent today, largely because of public health efforts to measure these rates and to educate doctors, patients, midwives, and others involved in the birthing process about their potential harms.[4] Choosing Wisely, the initiative launched by the American Board of Internal Medicine Foundation to identify areas of medical overuse, has made the reduction of induced labor and elective C-sections a priority.[5]

Likewise, the rate of episiotomies or perineotomies, in which a surgical incision is made at the opening of the vagina to aid difficult deliveries, has dropped substantially from 13 percent to 9.6 percent in 2016. This rate remains considerably higher than the very limited number of cases in which the procedure is medically necessary.[6]

For patients, most medical procedures are unexpected and unwanted "grudge purchases." By contrast, expectant mothers and their partners pay greater attention to pregnancy-related findings than to other health care information, making education easier and best practices easier to implement in practice.[7]

REDUCING LOW-VALUE MATERNITY CARE THROUGH PAYMENT REFORM

One promising strategy to improve the quality and lower the cost of maternity care has been to introduce bundled or episode-based payments. Like all forms of alternative payment in medicine (or packaged services of any kind, such as travel or entertainment), bundled payments are a way to encourage suppliers to coordinate services and to discourage the incentives to do more, sometimes needlessly, that fee-for-service reimbursement promotes.[8]

Hospital DRG payments by Medicare are a form of bundled payment. Such episode-based payment schemes that pay for a set of services rather than per unit of care have been developed and tried for dozens of medical procedures, with mixed but generally improving results.

As one policy analyst describes it, "A bundled payment is a single payment to providers or health care facilities (or jointly to both) for all services to treat a given condition or provide a given treatment. It asks providers to assume financial risk for the cost of services for a particular treatment or condition, as well as costs associated with preventable complications. … When designed to improve value, bundled payment should include clear quality metrics focused on desired clinical outcomes that providers must achieve to maximize their payment."[9]

Designing a bundled payment is a labor-intensive process. It demands a lot of upfront work, involving providers, administrators, payers, and consumers, to determine what the bundle will cover and what an appropriate payment will be, based on actual costs and the improvements in value that are sought. It is also high-maintenance: adjusting the payment requires a great deal of attention to outcomes, expected and unexpected costs during a process, and how to handle especially expensive cases. The payments are a compromise between FFS and full capitation (per-person payment), in which the provider or medical group assumes full risk for the costs of care.

Design Recommendations for Maternity Care Episodes

1. Episode Definition	2. Episode Timing	3. Patient Population	4. Services	5. Patient Engagement
Episode includes maternity and newborn care for the majority of pregnancies that are lower risk, as well as for women with elevated risk conditions for which there are defined and predictable care trajectories.	Episode begins 40 weeks before the birth and ends 60 days postpartum for the woman, and 30 days post-birth for the baby.	The population is women and newborns who are lower-risk, as well as women who may be at elevated risk due to conditions with defined and predictable care trajectories.	All services provided during pregnancy, labor and birth, and the postpartum period (for women); and newborn care for the baby. Pediatric services are not included. Other exclusions should be limited.	Engage women and their families in all three phases of the episode (prenatal, labor and birth, and postpartum/newborn).
6. Accountable Entity	**7. Payment Flow**	**8. Episode Price**	**9. Type and Level of Risk**	**10. Quality Metrics**
Accountable entity chosen based on readiness to both re-engineer change in the way care is delivered to the patient, and to accept risk. Shared accountability may be required, given that a patient may be cared for by multiple practitioners across multiple settings.	Payment flow – either retrospective reconciliation or prospective payment – depends on the unique characteristics of the model's players.	The episode price should balance single and multiple providers and regional utilization history. It should reflect the cost of services needed to achieve the goals of the episode payment model.	Ultimate goal is both upside reward and downside risk, with strategies in place to mitigate risk, encourage provider participation, and support inclusion of a broad patient population..	Prioritize use of metrics that support the episode goals, including measures of clinical outcomes and patient reported outcomes, for use in payment, accountability, quality scorecards, and other tools to communicate with and engage patients and other stakeholders.

Accelerating and Aligning Clinical Episode Payment Models, August 1, 2016, HCP-LAN; https://hcp-lan.org/groups/cep/clinical-episode-payment/

Despite these challenges, maternity care, like orthopedic joint replacement, is a very good candidate for bundled payment. Giving birth involves a standard timeline, a definitive outcome and endpoint, a generally-agreed upon set of best practices, and a limited number of providers. In addition, the process of pregnancy and delivery exhibits the wide range of price and quality metrics that such a payment scheme can address. The Health Care Payment Learning and Action Network (HCP-LAN) summary of the design principles behind a maternity bundle, reproduces these key elements (Figure 3). Much like the authors of model legislation, this federally-affiliated group of private and public payers has generated a useful blueprint that is guiding bundled payment programs throughout the country.

Though each new bundled payment program reflects local circumstances, all of them have been building on a common knowledge base derived from a set of closely-watched experiments launched over the past decade.

- ***As part of its ProvenCare program, hospitals in Pennsylvania's Geisinger Health System have been receiving bundled payments for maternity care since 2010.***[10] This bundle includes only the mother's care for low-risk pregnancies. According to Geisinger, it has saved money and fewer babies have gone to the ICU.
- ***Community Health Choice, a 350,000 member Medicaid managed-care organization in Houston, Texas, piloted a bundled care program focused on low-income children and pregnant women served by the University of Texas and the University of Texas Medical Branch System.*** One system went substantially over the budget reflected in the bundled care payments, mainly because more infants than expected were born prematurely and incurred high costs. The program showed, however, that by properly setting relative rates for C-Sections and vaginal-births an explicit incentive to reduce unnecessary C-Sections was created and fulfilled.[11]

- Closely following the HCP-LAN guidelines, ***the state Medicaid agencies of Ohio and Tennessee began to plan similar maternity bundled payment models in 2013 and launched them the following year.*** In Ohio, maternity claims were the single most frequent type. Both states worked very closely with providers and paid close attention to claims history, choosing to make retrospective payments and to establish target thresholds rather than putting providers at risk.[12]
- ***Horizon Blue Cross Blue Shield of New Jersey launched an episode-based payment plan at around 300 sites in the state, commencing in 2013.*** Horizon has found a drop of one-third in unnecessary C-sections in the practices that have chosen to receive bundled payments.
- ***Cigna, in late 2017, became the first national insurer to launch a maternity care bundled payment model.*** It intends to partner with the U.S. Women's Health Alliance, a coalition of 34 large OB-GYN practices nationwide.[13]

Several lessons stand out from the experience of these pioneering maternity bundled payment programs. First, the reach of these payment reforms is growing. Bundled payments have gained more traction in integrated systems that accept risk more readily, but it is expanding outward to commercial insurers for which this concept is more novel. Second, the trend is toward expanding the scope of payment toward including not only the mother's care but that of the baby's as well, usually for a month after delivery. This makes good sense from the standpoint of continuity of care but makes the payment more complicated to design and administer.

Third, and perhaps most important, those designing the payments are striving to keep the patient's perspective in mind. In Ohio, for instance, the Medicaid program wrestled with a target for epidural use which balanced medical necessity and costs with patients' desire for comfort and a less painful delivery. Physicians and their patients are deeply wary of efforts to change styles of practices that seem driven by costs rather than benefit to the patient, so this approach must be embedded both in the design itself and in the way it is presented.[14]

A COMPREHENSIVE MATERNITY CARE STRATEGY: CALIFORNIA STEPS UP

Medicaid programs and integrated delivery systems around the country have launched initiatives to lower the rate of C-sections and to promote high-quality maternity care.

California has coordinated a statewide effort whose elements have reduced the harms associated with low-quality maternity care while lowering costs, based on the cycle of pregnancy, birth, and early childhood care. This initiative has relied upon close

cooperation between purchasers, hospitals, major foundations, and regional stakeholder groups such as the Pacific Business Group on Health.

Its origins lie in efforts to reduce the alarming spike in maternal death rates that occurred in California in the early 2000s. From just over 10 deaths per 100,000 births in 2000, California's rate rose rapidly to over 17 deaths in 2006.

In response, with financial support from a division of the California Department of Public Health, the Stanford University School of Medicine launched the California Maternal Quality Care Collaborative, which partnered with 200 California hospitals and over 40 other partners including state agencies, professional groups, consumer organizations, and purchasers. It currently receives funding from hospitals as well as the California HealthCare Foundation and the CDC.[15]

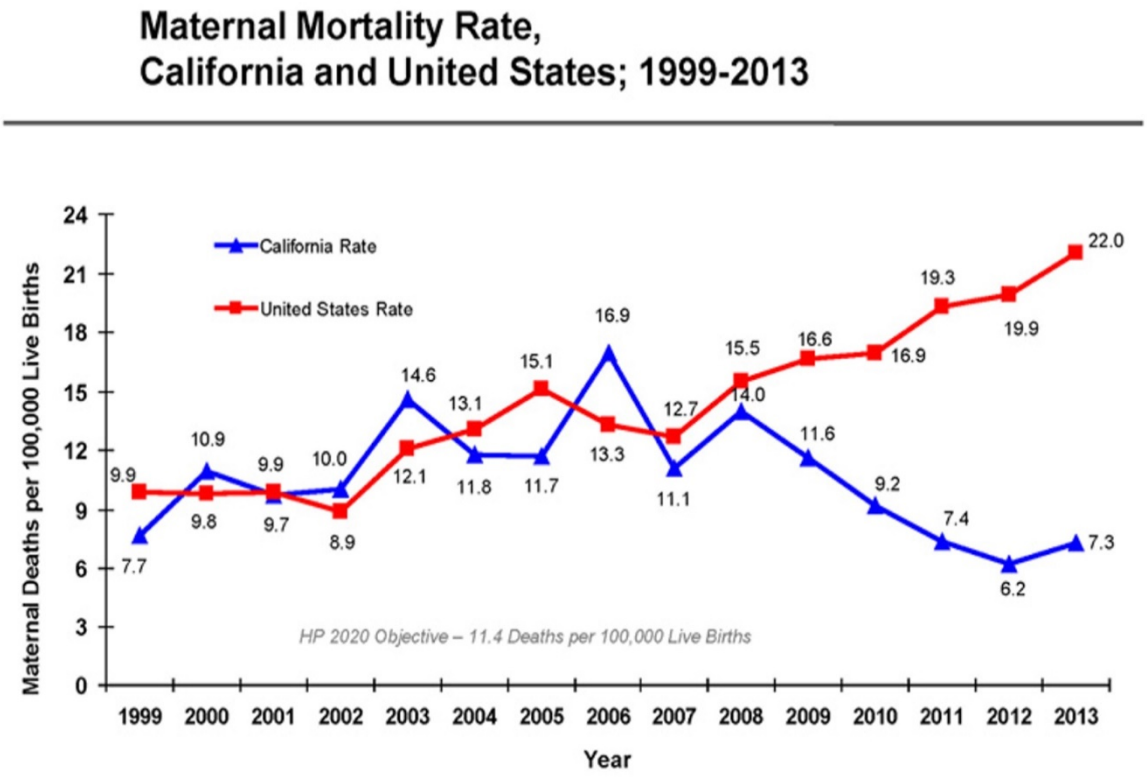
The Collaborative's Stanford-based medical director began by establishing a maternal "death review committee" composed of leading physicians, health department officials, and hospital administrators. A statewide committee of this kind had been disbanded years earlier because the maternal death rate had dipped so low. This committee undertook the time-consuming effort to track deaths. This involved, among other research, linking birth and death certificates and sifting through hospital records and media stories.[16]

The committee found that mothers were dying from a variety of causes—among them heart attacks, hypertension, and hemorrhaging. Their response was to put together a comprehensive quality-improvement "toolkit" containing best practices for responding to emergency situations, and sharing this with California's hospitals, health plans, and community health centers.[17]

They also found that many of these complications were the result of C-sections. This prompted further interventions to reduce the numbers of C-sections, especially those performed on first-time mothers without complications in pregnancy.

At this stage, the California HealthCare Foundation, a "conversion" foundation formed in 1996 as nonprofit Blue Cross of California became for-profit health plan WellPoint, stepped up to fund a database that linked hospital discharge data with birth certificates, allowing both hospitals and the public to learn the rates of C-sections, episiotomies, and elective delivery rates. This, in turn, prompted hospitals and doctors to learn their rates and relative rankings, many for the first time, and to take steps to improve these rates.

With this framework in place, California has been able to radically reverse its infant mortality rates and to reduce drastically unneeded C-section deliveries. The mortality rate has dropped to just over 7 per 100,000, one-third the national average, and a fraction of the poorest performing state, Texas, which hovers around 32 per 100,000.



SOURCE: State of California, Department of Public Health, California Birth and Death Statistical Master Files, 1999-2013.

In 2015, Smart Care California, a coalition of purchasers that cover around 40 percent of Californians, or about 16 million people, established the goal of meeting or exceeding the federal Healthy People 2020 target of 23.9 percent for low-risk, first-time births (meaning a single baby, with its head down, borne by a healthy mother).[18] In early 2018, the coalition recognized 111 hospitals for meeting or exceeding this target, or around 45 percent of the 242 hospitals in the state that offer maternity care.[19]

At the same time, Covered California, the marketplace established by the Affordable Care Act, which serves about 1.4 million people in the state, took the unprecedented step of announcing that it would not contract with plans that include hospitals in their networks which exceed the 23.9 percent C-section target.

While most hospitals will meet this goal, a handful of hospitals that serve poorer, often uninsured patients may have difficulty: these hospitals can apply for exemptions and will avail themselves of coaching and consulting offered by the Smart Care collaborative.[20]

> "Covered California's Action is Probably the Boldest Move We've Seen In Maternity Care Ever."
>
> - Leah Binder—CEO, Leapfrog Group

Not every state has the same well-developed infrastructure of foundations, health plans, associations, and regional stakeholders as California. But few states have as diverse a population or initially wider variations in care. In most states, collaboration of a similar kind would reduce maternal deaths, eliminate unneeded C-sections, and give better value for medical spending.

WHO DELIVERS BABIES AND WHERE?

About three-quarters of births in Scandinavia and in France involve a midwife, a non-physician professional trained to assist women in childbirth. In Great Britain, midwives assist in around half of all births. In the U.S., the rate is lower than 10 percent. Over half of all counties in the U.S. have no midwives. Studies suggest that for uncomplicated births, births in which midwives take the lead have outcomes similar to other methods, including hospital births overseen by physicians.[21] Scope of practice rules in many states limit the participation of midwives, and many of these may either be misplaced or obsolete. After generations of skepticism and hostility directed toward midwives, the American College of Obstetricians and Gynecologists is poised for a rapprochement with this profession, opening the way to a new and potentially much less costly set of norms for births.

Far more planned births take place outside the hospital in other countries. In the United States, such births account for less than one percent of the annual total, although the rate is over three percent in the Pacific Northwest and in Pennsylvania.[22] In most European countries the rate is closer to 2 percent though in the Netherlands, which has the most established tradition of home births in the developed world, the figure is around 30 percent. In the U.S., freestanding birth centers (FBCs), which account for less than half of one percent of all births, have outcomes similar to hospitals at substantially lower prices. A group of OB-GYN researchers at the University of California, San Francisco estimate that if even five percent of expectant mothers each year delivered their babies at FBCs it would result in $200 million in savings.[23]

To be sure, suggesting a change in who assists at birth and where mothers give birth depends on a shift in how the entire organization of the birthing process takes place. At present, giving birth at home in the U.S. may be far more dangerous to mother and child than in other countries because the system is less integrated and the midwives less well-trained.[24] But given the discrepancies in costs and outcomes between the U.S. and other similar nations, exploring ways to adopt such approaches should not be controversial.

Individual and group coaching strategies aimed at the expectant mother can also pay dividends in terms of reducing pregnancy and birth-related complications, as well as improving the health of the baby into early childhood. Some studies have shown that expectant mothers who have participated in these groups experience greater satisfaction and better outcomes, and that participation also reduces disparities by race. For instance, a 2017 Cochrane review found that pregnant women who engaged doulas—companions who assist pregnant women during labor and after birth, providing practical and emotional support—were more likely to have spontaneous vaginal births and less likely to need pain medication.[25] Group prenatal care, of which the best-known

example is Centering Pregnancy, a program founded by a registered nurse-midwife, aims to reduce lack of education, cultural barriers and feelings of isolation that can contribute to poor birth outcomes: it has received positive reviews but limited evidence-based evaluation to date.[26]

HOW REGIONAL STAKEHOLDERS CAN TAKE THE LEAD

As this brief has shown, improving maternity care is a true team effort. It closely fits the existing "skill sets" of regional businesses, employers, trade associations, foundations, health advocates, health professionals, and other participants in RHICs. Areas in which the consortium could take a leading role include:

- Convening stakeholders to understand new ways to pay for maternity care and new ways to deliver it;
- Justifying and disseminating the performance standards related to non-essential C-sections and elective inductions;
- Conducting demonstrations of bundled and blended (a single payment regardless of procedure used) payment programs;
- Funding data collection of the kind that proved so effective in California, and served both to lower maternal death rates and rates of unnecessary C-sections;
- Investigating whether changes in staffing or choosing different settings for giving birth can save money without harming, and perhaps enhancing the satisfaction of newborns and parents;
- Investing in training of nurse-midwives and other related medical personnel;
- Producing toolkits and educational materials related to maternity care for medical professionals;
- Community education, outreach, and media blitz aimed at expectant mothers and their families.

MATERNITY CARE AS A GATEWAY TO COOPERATION

Reinvesting dollars saved in health care doesn't happen automatically, but there are few areas other than maternity care in which spending money in different ways—both upstream on better education, nutrition, and housing—and within health care, by changing how and where babies are delivered, that would do more to improve the value of care and help lower the unacceptably high rates of maternal and infant mortality.

Despite the challenge of developing new payment models and educating providers and patients, the relatively near-term payoff from these changes could offer a model for cooperation in other areas where value in medical spending is sought, but in which the parameters are less clear and the path forward somewhat murkier.

As Lilli Brillstein, the medical director of Horizon BCBS of New Jersey, puts it, "This is a big movement that is catching fire. If we can get this right, I think this will basically filter into every single specialty and every area of health care."[27]

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[1] The Leapfrog Group and Castlight Health, "Maternity Care: Data by Hospital on Nationally Standardized Metrics, 2018.
[2] Sy Mukherjee, "Giving Birth in The U.S. Costs More Than Anywhere Else in The World," *ThinkProgress*, July 1, 2013.
[3] https://www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health/objectives
[4] Leapfrog Group, "Maternity Care…"
[5] Choosing Wisely, www.choosingwisely.org/topic-area/obstetrics/page/2/
[6] Leapfrog Group, "Maternity Care"; Jennifer Margulis, "What You Don't Know About Episiotomies Can Hurt You," *The New York Times*, January 27, 2013.
[7] For example, see Susan L. Perez, Desiree Backman, and Marge Ginsburg, "Assessing Social Values for California's Efforts to Reduce the Overuse of Unnecessary Medical Care," John Wiley, Learning Health Systems, November 16, 2017.
[8] Hoangmai Pham et.al., "Episode-Based Payments: Charting a Course for Health Care Payment Reform," National Institute for Health Care Reform, January 30, 2010.
[9] Suzanne Delbanco, "The Payment Reform Landscape: Bundled Payment," July 2nd, 2014.
[10] Jess White, "Bundled Payments May Be Coming for Maternity Care," *Healthcare News & Insights*, January 5, 2017; Sarah Lally (Integrated Healthcare Association), "Transforming Maternity Care: A Bundled Payment Approach," Issue Brief No.10, September 2013.
[11] Francois de Brantes & Karen Love, "A Process for Structuring Bundled Payments in Maternity Care," *NEJM Catalyst*, Case Study, October 24, 2016; Elizabeth Whitman, "Bundles of Joy? How New Payment Models for Maternal Care Could Deliver Low Costs," *Healthcare Economics*, August 13, 2016.
[12] Health Care Payment Learning and Action Network, "Establishing Maternity Episode Payment Models: Experiences from Ohio and Tennesse," 2018. Also link directly to their episode-based payment criteria. Arkansas was the first state to implement bundled payments for maternity care statewide, though its experience did not show any statistically significant drop in C-sections.
[13] Lola Butcher, "Bundled Payment for Bundles of Joy," *Managed Care*, January 30, 2018.
[14] Susan L.Perez, Desiree Backman, and Marge Ginsburg, "Assessing Social Values for California's Effort to Reduce the Overuse of Unnecessary Medical Care," November 16, 2017, https://www.onlinelibrary.wiley.com/doi/full/10.1111/hex.12644#references-section
[15] https://www.cmqcc.org/who-we-are
[16] Ashley Lopez, "Like Texas, California Once Had a Maternal Mortality Crisis. Here's How The State Solved It," KUT 90.5, February 20, 2018.
[17] Lopez, op.cit.
[18] This consortium includes Medi-Cal, CalPERS, the retirement program for state employees, and the Pacific Business Group on Health, which serves self-insured employers.
[19] State of California, Health and Human Services Agency, "Smart Care California Recognizes 111 Hospitals For Reducing C-Sections," January 18, 2018.
[20] "A New Message for California Hospitals: Shape Up, or Get Kicked Out of Obamacare Networks," tk, 2018. Covered California, though not its partners in the collaborative, is making similarly targeted quality demands with respect to hospitals and opiod prescriptions and the use of imaging to diagnose and treat back pain.

[21] J. Sandall, et.al., "Midwife-led Continuity Models of Care Compared With Other Models of Care For Women During Pregnancy, Birth, and Early Parenting," *Cochrane Database of Systematic Reviews 2016,* Issue 4.
[22] https://www.cdc.gov/nchs/products/databriefs/db144.htm
[23]Malini Nijigal et.al., "Could Freestanding Birth Centers and Bundled Payments Slow Spiraling Costs for Maternal Care—and Lower C-sections? *Becker's Hospital Review*, March 27, 2018.
[24] For example, see Kat Eschner, "U.S. Home Births Aren't As Safe As Many Abroad," *Smithsonian.com*, May 5, 2017.
[25] https://evidencebasedbirth.com/the-evidence-for-doulas/
[26] See Kathleen Thielen, "Exploring the Group Prenatal Care Model," *Journal of Perinatal Education*, 2012.
[27] Butcher, op.cit.