



CHCF

INNOVATION LANDSCAPE SERIES

## Maternity Care in Medi-Cal

**A**lmost 500,000 babies are born every year in California — about one-eighth of all babies born nationwide — and the state’s Medicaid program, Medi-Cal, plays an outsized role in covering those births. Although Medi-Cal covers one in three Californians, it pays for nearly one in two of the state’s births. This paper examines the opportunities for technology-enabled innovations to improve the value and quality of the maternity care that Medi-Cal delivers.

While most babies in the US are born healthy, and maternal mortality and morbidity are rare, adverse outcomes are more common among people covered by Medi-Cal — especially those who are Black. Too often pregnant people covered by Medi-Cal receive care that is fragmented, insufficient, or discriminatory at worst. Outside of the health care delivery system, they are also more likely to face barriers to accessing social needs, such as food and housing. Together, these factors result in higher health risks, poorer outcomes, poorer patient experiences, and avoidable costs for pregnant people. These disparities offer opportunity for improvement and, in turn, innovation for those entrepreneurs that can work within Medi-Cal’s unique approach to delivering and reimbursing care.

### Opportunities for Innovation

**Pregnant people covered by Medi-Cal bring greater complexity but receive less care.** Pregnant people with Medi-Cal coverage are more likely to have or develop comorbidities that complicate pregnancy, such as elevated body mass index, diabetes, or preeclampsia. Notably, they are almost twice as likely as privately insured pregnant people to experience prenatal depression. However, compared to people covered by private insurance, those covered by Medi-Cal are much less likely to receive early prenatal care (78% compared to 93%)<sup>1</sup> or robust postpartum care (12% of Medi-Cal recipients

had no postpartum care relative to 6% of those privately insured).<sup>2</sup> They are also more than twice as likely (18% compared to 8%) to report feeling that they never have anyone to turn to for emotional or practical support.<sup>3</sup>

**Pregnant people covered by Medi-Cal have worse experiences and outcomes.** Almost 10% of people covered by Medi-Cal also report feeling that their source of insurance made them more vulnerable to unequal treatment during their hospital stay, compared to 1% of privately insured pregnant people.<sup>4</sup> In addition, pregnant people covered by Medi-Cal are slightly more likely to deliver via c-section, due almost entirely to higher c-section rates among Black pregnant people,<sup>5</sup> who are also the most likely to feel strongly that childbirth should not be interfered with unless medically necessary.<sup>6</sup>

Those covered by Medi-Cal — and especially those who are Black — are also more likely to deliver babies with higher needs or experience severe maternal morbidity or mortality. These disparities cannot be explained away by patient-level factors such as age, income, education level, insurance status, cesarean birth, or higher prevalence of comorbidities.<sup>7</sup> Instead, the evidence points to multiple factors at different levels, including health system quality<sup>8</sup> and the impact of racism and chronic stress,<sup>9</sup> including that coming from the health system<sup>10</sup> and the individual provider.<sup>11</sup>

#### About the Author

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## INNOVATION IN ACTION

*These brief profiles focus on technology and workforce innovations piloted recently in Medi-Cal. While these examples are not exclusively mediated by managed care plans, it is important to note that many of them are, and that pregnant people covered by Medi-Cal fee-for-service are less likely to have access to these innovations.*

### Navigating Pregnant People to Better Outcomes

In 2017, patient engagement and navigation company Docent Health partnered with Dignity Health, a health care delivery system now part of CommonSpirit Health, to provide extra support to pregnant people, with the goal of avoiding poor maternal outcomes.

**Innovation.** Following an interaction with the health system, Docent Health connects members with lay “docents” or navigators that help triage members’ needs and connect them with appropriate services and information.

**Scope.** Over the course of the pilot, which started in 2017 and is now being rolled out across the CommonSpirit system, more than 20,000 pregnant people and their families across three unique markets and all payer types used Docent’s services. Two-thirds of participants actively engaged with Docent’s offerings, most often to find relevant resources, prepare for their inpatient experience, or to follow up after returning home with key questions or concerns.

**Impact.** Patients with Medi-Cal coverage engaged by Docent had a statistically significant lower average length of stay and NICU days, and had higher rates of full-term deliveries and healthy birthweight infants, relative to Medi-Cal patients not engaged by Docent. CommonSpirit reported that Docent “provided additional touches with patients efficiently while optimizing tasks that were previously assigned to care teams.”

**Lessons learned.** The accessibility of Docent’s navigators created a new pathway for patients to have issues addressed and escalated as appropriate. Digital communication methods, like texting, proved critical for engaging members. One challenge was evaluating the impact of Docent on measures related to patient satisfaction and return on investment. Impact related to clinical outcomes and workflow were easier to discern. Even though Docent was a new tech-enabled service, CommonSpirit staff reported that it reduced the workload of frontline team members rather than adding to it. Overall, the pilot affirmed for the CommonSpirit team that a robust supporting platform is a vital piece of any effort to close disparities related to social risk factors.

### Engaging Members in Educational Maternity Content

In 2018, Wildflower, a maternity-focused digital health company, partnered with two Medi-Cal plans, Blue Shield Promise and Inland Empire Health Plan (IEHP), to fill a need for accessible, evidence-based educational information for pregnant members.

**Innovation.** Wildflower offered both plans a patient-facing educational app available in English and Spanish. IEHP chose to offer members a more tailored version, which customized the information displayed based on the member’s population-specific risk factors and locally available resources.

**Scope.** Blue Shield Promise offered the app to members in San Diego County, while IEHP offered the app to all pregnant members in Riverside and San Bernardino Counties. Over the course of a formal pilot, 47 Blue Shield members used the app, representing about 1% of births at the participating clinics. IEHP continues to offer the app, and it has been downloaded by 1,864 members to date, representing just under 10% of births in the same time period.

**Impact.** Across both plans, Wildflower found that less than one-third of those who downloaded the app did so in their first trimester. For IEHP, 95% used the English version (though Spanish was also available) and two-thirds of members completed a risk factor survey, which enabled the plan to offer care management and/or behavioral health resources. Using a case-control study, IEHP found that members who used the app had an increased likelihood of completing a postpartum visit within eight weeks of birth, but were no more likely to promptly connect to prenatal care.

**Lessons learned.** Relatively low uptake in both situations reaffirmed the importance of dedicating resources to promoting any new tool available for members and the challenges of plans as an engagement partner, as they often do not know about a pregnancy until the second trimester. As a result, clinic partners, especially FQHCs, were critical to outreach — as was the use of digital communication methods, such as texting. One notable challenge was finding a balance between wanting to frequently update the app’s content and needing to have content approved by plans and regulators. Opportunities for future improvement identified including engaging members earlier in their pregnancies and more closely linking the app’s content to clinical care.

# Structure of Maternity Care in Medi-Cal

The structures and policies that determine where maternity care happens and what providers get paid for it drive access and outcomes. Understanding how those policies differ within the Medi-Cal system is the key to identifying and operationalizing successful innovations.

## Payment

When it comes to maternity care, Medi-Cal's approach to paying providers differs from other payers in key ways:

- ▶ **The 40/60 split.** Despite Medi-Cal largely shifting toward managed care overall, 40% of births paid for by Medi-Cal are still covered by the fee-for-service (FFS) system. The rest are covered by managed care. The majority of FFS births are to two groups of people that become newly eligible for Medi-Cal on the basis of their pregnancy: those unable to verify satisfactory immigration status and those with incomes 139% to 213% above the federal poverty line. These 40% of pregnant people covered by the FFS system do not benefit from the access, coordination, innovation, and quality-improvement activities typical of Medi-Cal managed care plans.
- ▶ **Lower reimbursement.** For nearly all maternity care services, Medi-Cal reimbursement rates are significantly lower than commercial reimbursement rates. In Sacramento, for example, commercial rates can be 4 times as high for hospitals, and 10 times as high for anesthesiologists, when compared to Medi-Cal FFS rates. According to leaders interviewed for this paper, managed care plans often pay more than Medi-Cal FFS but still significantly less than commercial plans. These reimbursement disparities also exist in other types of care such as oncology and orthopedics, but maternity providers see a much larger portion of Medi-Cal patients than do providers in most other specialties.
- ▶ **Relatively low priority for plans.** Delivery is a high-cost service, with median spending of about \$7,000 per live birth, compared to about \$2,100 in average annual spending per year per beneficiary for children and \$4,700 for childless adults. However, it is significantly lower than the \$19,600 average annual spending per year per beneficiary for people with disabilities. An estimate using median spending per live birth and the number of live births covered by Medi-Cal suggests that pregnant people make up 1.4% of Medi-Cal enrollees and account for 1.8% of spending. In other words, although Medi-Cal is a very important player in maternity care in California, maternity care is a relatively small piece of all that Medi-Cal covers.
- ▶ **Fragmented risk.** All Medi-Cal managed care plans are partially insulated from the risk of costly births requiring the neonatal intensive care unit (NICU), and some have almost no risk. In 37 of California's 58 counties, Medi-Cal carves out the most intensive newborn care from managed care plans and covers it under the FFS system through the California Children's Services (CCS) program.<sup>12</sup> As of July 2019, incentives are more aligned in the other 21 counties, where the Whole Child Model integrates coordination and financing for all required newborn care and the care of children with special health care needs.<sup>13</sup> However, even in these counties, plans receive an enhanced capitation rate for children enrolled in the CCS program. As a result of the payment policies — which were designed to improve access and coordination for this population — plans are not incentivized to invest in the prenatal care and wrap-around services critical to prevent the kinds of poor neonatal outcomes that require NICU care.

## Provision

Other differences in maternity care covered by Medi-Cal have to do with the people and places that deliver this care. Appendix B details the different professions involved in maternity care and their reimbursement by Medi-Cal. Importance differences here include:

- ▶ **Lack of continuity across the perinatal episode.** For privately insured patients, the same clinician (or at least a clinician from the same medical group), typically provides prenatal and postpartum care and is the birth attendant. This is less likely to be true for pregnant people covered by Medi-Cal. Only half of those who received prenatal care from a Federally Qualified Health Center (FQHC) or Look-Alike<sup>14</sup> had an FQHC provider as their birth attendant.<sup>15</sup> Many FQHC providers do not serve as birth attendants due to the unique financing of FQHCs,<sup>16</sup> resulting in a lack of continuity of care at a particularly vulnerable time. Instead, deliveries are typically handled by an on-call physician, contracted by the hospital, and often unknown to the pregnant person. Indeed, a national survey reported that 25% of Black and 23% of Latinx pregnant people had never met their birth attendant.<sup>17</sup>
- ▶ **Smaller role for midwives despite greater demand.** Midwives attended just 6.8% of Medi-Cal births compared to 16% of privately insured births in California in 2018.<sup>18</sup> However, three times more people with Medi-Cal coverage want a midwife than actually use them.<sup>19</sup>
- ▶ **Small role for freestanding birth centers despite evidence of effectiveness.** More than 99% of all births, including Medi-Cal births, currently take place in hospitals, and hospitalization for pregnancy and childbirth is the number one reason for hospitalization in California.<sup>20</sup> Use of freestanding birth centers is a covered benefit and has been shown to have a positive impact on birth outcomes among people covered by Medicaid.<sup>21</sup> However, less than 4 in 1,000 Medi-Cal births currently take place outside the hospital<sup>22</sup> despite 100 in every 1,000 pregnant people with Medi-Cal coverage saying they would like to give birth in a freestanding birth center.<sup>23</sup>

- ▶ **Greater role for allied health professionals.** Health education, nutritional support, and psychosocial services are covered benefits in Medi-Cal through a unique program called the Comprehensive Perinatal Services Program (CPSP).<sup>24</sup> These services, which are integrated into prenatal and postpartum care, can be delivered by licensed staff or by lay community health workers, and in multiple settings, including individually or in groups, and in the home. In addition, doulas<sup>25</sup> are slightly more likely to support pregnant people covered by Medi-Cal than those with commercial insurance, in spite of the fact that labor support provided by doulas is not a covered benefit.<sup>26</sup> This may be because some safety-net hospitals offer free hospital-based doula services.

## Implications for Innovators

**More than 7 of 10 of California's pregnant people are people of color.** That number rises to more than 8 in 10 for those covered by Medi-Cal. Improving the outcomes and experiences of California's pregnant people requires providing care that is culturally and linguistically concordant, that integrates medical and psychosocial needs, and that addresses potential sources of bias and discrimination within the health care system. Innovators alone cannot solve all these problems, but they do have the power to help address them.

**Plans have limited business incentives to reduce the total cost of care, but are eager to improve performance on measures of timely prenatal and postpartum care, including mental health.** Though Medi-Cal pays for many births, maternity spending is not significant relative to spending on other conditions. In addition, the carve-out of most NICU costs from Medicaid managed care plans means that much of the potential cost savings from investment in upstream interventions will not be recouped by the plans. When plans do realize savings, the heavy weighting given to historical costs in the state's rate-setting process<sup>27</sup> can result in lower future rates, which discourages investments that reduce costs significantly.<sup>28</sup> As a result, the business case for partnering with health plans to improve outcomes and reduce costly preterm births is not as strong in Medi-Cal as in other markets. Plans are, however, motivated to improve

quality (i.e., HEDIS) scores around timely prenatal and postpartum care.<sup>29</sup> They also articulated, in interviews for this paper, an interest in improving access and coordination for maternal mental health.

**Hospitals seek to reduce overall length of stay for Medi-Cal-covered pregnancies, but have limited business incentives to reduce NICU use in particular.** Given low rates of reimbursement under Medi-Cal, hospitals generally lose money on Medi-Cal patients, and pregnant people are no exception. As a result, hospitals are seeking solutions that reduce length of stay, ED visits, and readmissions for pregnant people with Medi-Cal coverage. In addition, California hospitals are also under pressure from purchasers and the press<sup>30</sup> to reduce low-risk c-section rates, even though in some cases, a c-section may be more profitable than a vaginal birth for the institution. In contrast, they have limited business interest in reducing NICU admissions because NICU stays receive enhanced Medi-Cal reimbursement and are highly profitable for hospitals.

**The quality and financial incentives of FQHCs are based on the volume of encounters.** As a result, they seek solutions that encourage robust engagement with prenatal and postpartum care and that count toward their per-visit rate. Many enroll in CPSP, tapping into incremental reimbursement for wraparound psychosocial, educational, and nutritional services. For the most part, FQHCs reported that they are seeking tech-enabled software platforms, rather than service solutions, as they prefer to hire their own staff. In interviews for this paper, FQHCs articulated pain points around specialty access, care coordination for patients with complex needs, and re-engagement in postpartum care after delivery.

## INNOVATION TO WATCH

### Improving Outcomes Through Community-Based Doulas

Not all innovation is through technology. In the last few years, several Medi-Cal plans, including Anthem, HealthNet, and IEHP, and a few counties and cities in California, have partnered with community-based doulas, running pilots that pay for doula services for pregnant members to reduce maternal morbidity and maternal and infant mortality. Many of these pilots have focused on Black pregnant people as disparities in outcomes are most pronounced for this population. These pilots are too recent to show results, but important lessons have been learned about the need, when launching these programs, for strong partnership with and leadership by the community the pilots are aiming to serve. While doula care is not a technology innovation, it meets an important need expressed by patients that is associated with improved outcomes. In addition, there are opportunities for technology to expand the reach of doulas.

## Solutions Landscape

Across our stakeholder interviews and market research, four categories of companies rose to the surface as being most common and most capable of having an impact on maternity care outcomes for people covered by Medi-Cal. See Figure 1 for examples of companies in these categories:

- ▶ **Behavioral health.** Improving access to in-person or virtual behavioral health services tailored to the unique needs of new and expecting parents
- ▶ **Inpatient birth.** Supporting providers in improving the quality and/or efficiency of the birth episode
- ▶ **Outpatient care coordination.** Addressing fragmentation across the perinatal episode through a combination of education, screening, services and/or referrals
- ▶ **Parent education and engagement.** Delivering basic information about prenatal care and birth directly to consumers

Among those categories, outpatient care coordination stood out as having the most potential to address the unique challenges plaguing maternity care within Medi-Cal — especially fragmentation. As a result, Table 1 dives deeper into companies with both outpatient

solutions and demonstrated experience working in Medi-Cal (see page 7). Appendix A follows with an additional list of maternity care start-ups working across all four categories that are led by founders identifying as women and/or people of color.

Figure 1. Maternity Care Company Landscape\*



\*This landscape is not exhaustive and it is not an endorsement of the companies included in it.

**Table 1. Outpatient Care Companies with Medicaid Experience**

	SERVICES OFFERED	TARGET CUSTOMERS / EXAMPLE CLIENTS IN CALIFORNIA SAFETY NET	LANGUAGES
<b>BabyScripts</b>	App and platform for clinic staff aiming to reduce need for in-person care; remote monitoring solutions for higher-risk pregnancies, including round-the-clock nurse triage line	Integrated delivery systems, FQHCs <i>Borrego Health</i>	English and Spanish
<b>Docent Health</b>	Services of lay docents on a tech platform to support patient experience, connection, and triage needs	Health systems <i>CommonSpirit, Sutter Health</i>	Staffing and scripting aligned with local needs
<b>Mahmee</b>	Telehealth and care management platform for allied health professionals	Allied health professionals, delivery systems <i>CHLA/AltaMed, L.A. Dept. of Health</i>	English and Spanish
<b>Maven Clinic</b>	Patient-facing app and network of telehealth providers to augment in-person care	Employers / health plans <i>No current safety-net clients in California</i>	English and Spanish
<b>Ovia Health</b>	Patient-facing engagement app plus nurse health coaches	Employers / health plans <i>No current safety-net clients in California</i>	English and Spanish
<b>Wildflower Health</b>	Patient-facing engagement app with robust, evidence-based content and ability to tailor	Health plans, employers, delivery systems <i>Blue Shield Promise, CommonSpirit, IEHP</i>	English and Spanish

## Appendix A. Companies to Watch — Solutions with Founders Identifying as Women and/or People of Color

The chart below identifies companies at all stages surfaced through our research and scanning that have founders identifying as women and/or people of color. It is not exhaustive, nor an endorsement. These companies are included because the CHCF Health Innovation Fund is committed to using its platforms to help draw attention and mobilize solutions to the disparities that exist in the entrepreneurial sector as a whole, and in the health tech space in particular, as relatively few ventures are led by women or people of color.

	IN THEIR OWN WORDS: WEBSITE DESCRIPTION	FOUNDER(S)
<b>BabyLiveAdvice</b>	A virtual care team to support you from pregnancy to parenthood.	Sigi Marmorstein
<b>Culture Care</b>	A telemedicine start-up for Black women. Connecting women to physicians, culturally and digitally.	Monique Smith Joy Cooper
<b>Mahmee</b>	Mahmee is a HIPAA-secure care management platform that makes it easy for payers, providers, and patients to coordinate comprehensive prenatal and postpartum health care from anywhere.	Melissa Hanna Linda Hanna
<b>Maven Clinic</b>	On-demand access to virtual care and services built specifically for you — all in one app.	Katherine Ryder
<b>Momswell</b>	MomsWell supports the clinical decision-making providers need to identify, educate and support patients with maternal mental health complications, like postpartum depression.	Maureen Fura Melissa Guevara
<b>Motherboard Birth</b>	[M]otherboard is where education meets collaboration and informed decisionmaking. Our interactive software helps you create your personalized “[M]otherboard” (aka visual “birth plan”).	Amy Haderer
<b>Oula Health</b>	We’re a multidisciplinary team of obstetricians, midwives, and doulas powered by technology to deliver exceptional care that extends from our clinics into your home.	Elaine Purcell Adrienne Nickerson
<b>Ovia Health</b>	Ovia Health’s comprehensive maternity and family benefits solution is transforming the way women and families are supported throughout the parenthood journey.	Gina Nebesar
<b>Quilted Health</b>	Quilted Health is better maternity care: evidence-based, community centered, and designed for you.	Christine Henningsgaard
<b>Radical Health</b>	Radical Health uses indigenous restorative circle practice to create space for a new kind of dialogue between clinicians / health care providers, researchers, service providers, and community members.	Ivelyse Andino
<b>SoShe</b>	SoShe is the only birth class and customizable birth plan that is app-based, evidence-based, and expert-approved.	Shannon Field
<b>Wildflower Health</b>	Wildflower is reinventing how women connect to care by integrating our personalized digital solution with the provider, the payer, and best-in-class partners.	Leah Sparks
<b>Wolomi</b>	Wolomi is the only digital community that offers support to women of color to improve maternal health outcomes.	Layo George

## Appendix B. Maternity Workforce — Professions and Reimbursement by Medi-Cal

	EDUCATION REQUIRED	DIRECT MEDI-CAL BILLING
<b>Support Providers</b>		
<p><b>Doula</b> Provide physical, emotional, and informational labor support to mother before, during, and after birth.</p>	No special requirements; certification available	No
<p><b>Lactation Consultant/Counselor</b> International Board Certified Lactation Consultant, Certified Lactation Counselor Provide education and counseling to support breastfeeding.</p>	Certification	No
<b>Medical Providers</b>		
<p><b>Labor and Delivery Nurse</b> Registered nurse providing direct patient care in obstetrics and labor, and/or delivery and reproductive care.</p>	Associate's, bachelor's, or master's degree in nursing	No, paid by hospitals
<p><b>Midwife</b> Certified Nurse-Midwife (CNM), Licensed or Certified Professional Midwife (LM) Provide midwifery care, including perinatal, well-woman, and newborn care. May attend births in or outside of hospitals. CNMs require physician supervision.</p>	<p>CNM: Master's degree in nursing</p> <p>LM: Accredited midwifery program certificate</p>	Yes, but physician supervision time is not reimbursed
<p><b>Physician</b> Obstetrician/Gynecologist, Family Physician, OB/GYN Hospitalist Provide medical and surgical care to women, including providing pregnancy care. OB Hospitalist specializes in inpatient care, including obstetric emergencies.</p>	M.D. or D.O. plus residency	Yes
<b>Behavioral Health Providers</b>		
<p><b>Clinical Psychologist</b> Diagnose and treat a range of mental health disorders, and provide psychotherapy.</p>	Ph.D. or Psy.D. in psychology	Yes
<p><b>Psychiatrist</b> Provide psychiatric care to adults using medications and/or psychotherapy.</p>	M.D. or D.O. plus residency	Yes
<p><b>Therapist</b> Licensed Marriage Family Therapist, Professional Clinical Counselor, Clinical Social Worker Provide counseling or therapy services to groups or individuals to address wellness, personal growth, and pathology.</p>	Master's degree	Yes

Notes: This list is based on CHCF correspondence with 2020 Mom, Maternal Mental Health NOW, and Emily C. Dossett, M.D. (Keck School of Medicine, LAC+USC), June 2016. It captures only the most common maternal mental health providers.

Sources: Medical Board of California; California Board of Registered Nurses; DONA International; International Board of Lactation Consultant Examiners; The Academy of Lactation Policy and Practice.

## About the Foundation

The California Health Care Foundation is dedicated to advancing meaningful, measurable improvements in the way the health care delivery system provides care to the people of California, particularly those with low incomes and those whose needs are not well served by the status quo. We work to ensure that people have access to the care they need, when they need it, at a price they can afford.

CHCF informs policymakers and industry leaders, invests in ideas and innovations, and connects with changemakers to create a more responsive, patient-centered health care system.

For more information, visit [www.chcf.org](http://www.chcf.org).

### About the Innovation Landscape Series

As part of its efforts to help promising products and services succeed and scale in California's safety net, the CHCF Health Innovation Fund conducts high-level landscape analyses of issue areas especially ripe for tech-enabled innovation. The Fund publicizes the findings of these landscape analyses to inform other funders and customers seeking scalable solutions to challenges in the safety net.

Readers should note that these reports are not intended to be exhaustive, nor are they endorsements of the companies included in them. Finally, because solutions landscapes can evolve quickly, these reports may not fully reflect the current market.

[www.chcf.org/innovationfund](http://www.chcf.org/innovationfund)

## Endnotes

1. Natality public-use data 2016–2018 (expanded), [CDC WONDER Database](#), September 2019.
2. Carol Sakala et al., *Listening to Mothers in California: A Population-Based Survey of Women's Childbearing Experiences*, National Partnership for Women & Families, September 2018.
3. Sakala et al., *Listening to Mothers*.
4. Sakala et al., *Listening to Mothers*.
5. Natality public-use data 2016–2018 (expanded), [CDC WONDER Database](#), September 2019.
6. Sakala et al., *Listening to Mothers*.
7. Elizabeth A. Howell, "Reducing Disparities in Severe Maternal Morbidity and Mortality," *Clinical Obstetrics and Gynecology* 61, no. 2 (June 2018): 387–99, doi:10.1097/GRF.0000000000000349.
8. Elizabeth A. Howell et al., "Black-White Differences in Severe Maternal Morbidity and Site of Care," *American Journal of Obstetrics and Gynecology* 214, no. 1 (Jan. 1, 2016): p122.e1–7, doi:10.1016/j.ajog.2015.08.019.
9. Stephanie A. Leonard et al., "Racial and Ethnic Disparities in Severe Maternal Morbidity Prevalence and Trends," *Annals of Epidemiology* 33 (May 2019): 30–36, doi:10.1016/j.annepidem.2019.02.007.
10. Rachel R. Hardeman, Eduardo M. Medina, and Katy B. Kozhimannil, "Structural Racism and Supporting Black Lives — the Role of Health Professionals," *New England Journal of Medicine* 375 (Dec. 1, 2016): 2113–15, doi:10.1056/NEJMp1609535.
11. Brian D. Smedley, Adrienne Y. Stith, and Alan R. Nelson, eds., *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*, National Academies Press (US), 2003, doi:10.17226/12875.
12. California Children's Services (CCS) covers approximately 200,000 children annually, including 25,000 under age 1, according to the Stanford Center for Policy, Outcomes, and Prevention analysis of 2014 CCS claims data. It provides diagnostic and treatment services, including medical case management to children under 21 with CCS-eligible medical conditions as well as all neonates who require supplemental oxygen, ventilator assistance, or a peripheral line, catheter, or tube if they are receiving care in a CCS-eligible NICU. Examples of [CCS-eligible conditions](#) include chronic medical conditions such as cystic fibrosis, hemophilia, cerebral palsy, heart disease, cancer, traumatic injuries, and infectious diseases producing major sequelae, as well as others.
13. The Whole Child Model grew out of a comprehensive stakeholder process to redesign CCS initiated in late 2014. It was designed to meet six goals: implement patient- and family-centered approach, improve care coordination through an organized delivery system, maintain quality, streamline care delivery, build on lessons learned, be cost effective.

14. An FQHC Look-Alike is a health center that meets all requirements and is part of the Health Center Program but does not receive federal award funding. Approximately one-third of Medi-Cal deliveries in 2018 received prenatal care from an FQHC or FQHC Look-Alike, assuming all pregnant patients receiving prenatal care at FQHCs and FQHC Look-Alikes are covered by Medi-Cal.
15. Author analysis of [Health Center Program Awardee Data from the Uniform Data System, California State Report, Table 7](#), reporting from the Bureau of Primary Health Care, Healthcare Resources and Services Administration, 2018.
16. FQHCs are paid based on a system that was historically tied to their costs. As a result, each FQHC has its own per-visit rate that is significantly higher than the FFS fee schedule reimbursement for many services. Medi-Cal managed care plans can set their own rates for FQHCs (and are required to pay them similarly to non-FQHC providers), and the Department of Health Care Services directly reimburses FQHCs for any difference between the managed care rate and their per-visit rate based on a “wraparound” payment. In an important exception to the rule that Medi-Cal pays less than commercial insurance, the average FQHC rate provides a higher level of reimbursement for prenatal and postpartum care than many commercial insurers. However, deliveries are reimbursed separately and are not subject to this per-visit rate.
17. Eugene Declercq et al., [Listening to Mothers II](#) (PDF), National Partnership for Women & Families, August 2008.
18. Author analysis of custom data request from the California Maternal Quality Care Collaborative, received December 17, 2019.
19. Sakala et al., *Listening to Mothers*.
20. Author analysis of Natality public-use data 2016–2018 (expanded), [CDC WONDER Database](#), September 2019.
21. Lisa Dubay et al., “Improving Birth Outcomes and Lowering Costs for Women on Medicaid: Impacts of ‘Strong Start for Mothers and Newborns,’” *Health Affairs* 39, no. 6 (June 2020): 1042–50, doi:10.1377/hlthaff.2019.01042.
22. Author analysis of Natality public-use data 2016–2018 (expanded), [CDC WONDER Database](#), September 2019.
23. Sakala et al., *Listening to Mothers*.
24. CPSP grew out of a perinatal demonstration project called the Obstetrical Access Project that operated from 1979–1982 in 13 California counties. Comprehensive services were shown to reduce the low-birthweight rate by one-third and to save approximately two dollars in short-term NICU costs for every dollar spent. CPSP services became a Medi-Cal benefit in 1987, and it covers up to 21.5 hours of individual support services and up to 27 hours of group classes. Additional services are available but require authorization from managed care plans or DHCS.
25. Doulas are nonmedical professionals who provide emotional, physical, and informational support and guidance in different aspects of reproductive health. Doulas are not covered by Medi-Cal in California, but are in some other states. More detail is available at [healthlaw.org](#) (PDF).
26. Sakala et al., *Listening to Mothers*.
27. Managed Medi-Cal plans’ capitation rates are set by the state Medicaid agency using a number of factors, the most important of which is the “experience” over the last year — another way of saying the amount and cost of services used. As a result, if the plan uses fewer costly services, it results in lower payments from the state in the future, a phenomenon known as “premium slide.”
28. [Intended Consequences: Modernizing Medi-Cal Rate Setting to Improve Health and Manage Costs](#), CHCF, March 2018.
29. Managed Medi-Cal plans are held accountable for their performance on specific measures, including those related to timely prenatal care. Plans performing below the threshold set by the state are required to undertake performance improvement projects. In addition, high-performing plans on these accountability measures receive a greater share of so-called “auto-assignment” members that do not select a plan when they enroll in Medi-Cal.
30. April Dembosky, [“Times Up’: Covered California Takes Aim at Hospital C-Section Rates,”](#) Kaiser Health News, May 24, 2018.