Doula Benefit Study
Colorado Commercial Market

March 2024

Prepared by
Lewis & Ellis LLC

Michael Brown, FSA, MAAA, Vice President

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Section 1: Introduction

The Colorado Division of Insurance (Division) retained Lewis & Ellis, Inc. (L&E), an independent actuarial and consulting firm, to conduct an actuarial review of the potential health-care costs and benefits of including coverage for doula services for pregnant and postpartum persons covered by health benefit plans in accordance with §10-16-155.5, C.R.S. L&E was specifically asked to evaluate the impact of doula coverage as measured in the following areas:

- An estimate of the number of Colorado residents who will be directly affected by coverage of doula services;
- Estimates of changes in the rates of utilization of doula services that may result from the coverage by health benefit plans;
- Estimates of any changes in out-of-pocket consumer cost sharing that would result from coverage of doula services;
- Estimates of any increases or decreases in premiums charged to covered persons or employers from health benefit plans offered on the individual, small group, and large group markets that would result from the coverage of doula services;
- An estimate of the potential long-term health-care cost changes with the coverage of doula services;
- Identification of any potential health care benefits for individuals or communities that would result from the coverage of doula services: and
- To the extent practicable, evaluate the social and economic impacts of doula services coverage with a focus on the health equity impacts of adding doula services.

Lewis & Ellis retained Amy Killelea, JD, Killelea Consulting to support the analysis of the health equity impacts of covering doula services. Ms. Killelea's expertise is in public health and health care policy with a focus on plan designs for vulnerable populations. Ms. Killelea authored a document[1] referenced often in this report and attached.

[1] Amy Killelea, Summary of Health Equity and Doula Coverage Research

Section 2: Executive Summary

Doulas are defined in statute (§10-16-155.5, C.R.S.) as trained birth companions who provide personal, non-medical support to pregnant and postpartum people and their families prior to childbirth, during labor and delivery, and during the postpartum period. Evidence shows that doula services reduce cesarean sections, reduce low birth-weight, reduce birth complications, and increase breastfeeding.[2,3] In addition, pregnant people that use doula services view it positively.[3] Approximately 6% of pregnant people nationally use doulas and 27% of people who understand what doula services are want to use the service, but do not due to cost.[4]

There are well documented health disparities that Black/African American, Latino, American Indian and Alaska Native birthing people experience relative to white birthing people.[1,5] Doula services are being incorporated into several state[6,7] and national[6,8] efforts to help address and reverse growing disparities in negative birth outcomes for these communities. In particular, forty-three states and Washington DC have implemented doula coverage, are in the process of implementing doula coverage or have taken some related action in their Medicaid program.[9] Currently, Rhode Island offers doula coverage in the commercial market while six other states are considering offering doula coverage in the commercial market.[10]

Doula services are typically not covered in the commercial market in Colorado.[11] In this report we consider pregnancy to cover prenatal, labor, delivery, and postpartum care. The costs associated with these services were grouped together to analyze how pregnancy costs (or pregnancy-related claims) were impacted by doula coverage. Based on the findings of this study, it is estimated that coverage of doula

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[2] Gruber KJ, Cupito SH, Dobson CF. Impact of doulas on healthy birth outcomes. J Perinat Educ. 2013 Winter;22(1):49-58. doi: 10.1891/1058-1243.22.1.49. PMID: 24381478; PMCID: PMC3647727; Kozhimannil K. B., Hardeman R. R., Attanasio L. B., Blauer-Peterson C., & O'Brien M. (2013). Doula care, birth outcomes, and costs among Medicaid beneficiaries. American Journal of Public Health, 103(4), e113–e121; Tikkanen, R., Gunja, M. Z., Fitzgerald, M., & Zephyrin, L. (2020, November 18). Maternal mortality and maternity care in the United States compared to 10 other developed countries. The Commonwealth Fund. https://doi.org/10.26099/411v-9255; Kozhimannil K. B., Hardeman R. R., Attanasio L. B., Blauer-Peterson C., & O'Brien M. (2013). Doula care, birth outcomes, and costs among Medicaid beneficiaries. American Journal of Public Health, 103(4), e113–e121; Bohren MA, Hofmeyr GJ, Sakala C, Fukuzawa RK, Cuthbert A. Continuous support for women during childbirth. Cochrane Database of Systematic Reviews 2017, Issue 7. Art. No.: CD003766. DOI: 10.1002/14651858.CD003766.pub6.

[3] Kathleen Knocke, Andre Chappel, Sarah Sugar, Nancy De Lew, Benjamin D. Sommers, ASPE, Issue Brief: Doula Care and Maternal Health: An Evidence Review (2022), available at https://aspe.hhs.gov/sites/default/files/documents/dfcd768f1caf6fabf3d281f762e8d068/ASPE-Doula-Issue-Brief-12-13-22.pdf

[4] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5538578/

[5] [5]Tillman T., Gilmer R., & Foster A. (2012). Utilizing doulas to improve birth outcomes for underserved women in Oregon. Portland, OR: Oregon Health Authority, available at https://digital.osl.state.or.us/islandora/object/osl%3A28454/datastream/OBJ/view.

[6] Doula Medicaid Project: February 2024 State Roundup - National Health Law Program

[7] https://docs.google.com/spreadsheets/d/1vsZTIecerW5t49Gg01pya2fURuZ-L6tDimC2e3QeIeE/edit#gid=1534310451

[8]https://docs.google.com/spreadsheets/d/17YGa2LXfYicsQZDmWIL3pdmt4g3eJj4_kpFN1wgPGaQ/edit?pli=1#gid=736224563

[9] https://healthlaw.org/doula-medicaid-project-february-2024-state-roundup/

[10] https://healthlaw.org/private-insurance-coverage-of-doula-care-a-growing-movement-to-expand-access-2/

[11] Based on interviews with Colorado doulas.

services in state-regulated health benefit plans in Colorado (individual, small group, and large group) will increase the cost of pregnancy by $0.3M which represents 0.1% of pregnancy claims in year one (2025). See **Table 1** and **Table 2** below for details. During the first five years (2025-2029) the overall impact on pregnancy costs is an increase of $2.4M or 0.1% of pregnancy claims. During the first ten years the increase is $5.5M or 0.1% of pregnancy claims.

Table 1: Pregnancy Cost (in Millions), without and with Doula Coverage

Period	Individual		Small Group		Large Group		Total	
	w/out doula	with doula	w/out doula	with doula	w/out doula	with doula	w/out doula	with doula
2025	$56.6	$56.7	$98.5	$98.4	$259.9	$260.2	$415.0	$415.2
2025-2029	$309.1	$309.8	$538.0	$537.4	$1,419.9	$1,422.2	$2,267.0	$2,269.4
2025-2034	$699.5	$701.5	$1,217.3	$1,214.3	$3,212.8	$3,219.3	$5,129.5	$5,135.0

The estimated overall pregnancy claims impact of $0.3M in 2025 is due to $2M increase in the cost of doula services less the offset by a reduction in cesarean births and births with complications. (Note: these offsets are discussed in detail in Section 4 of this report. If actual reductions vary from the estimates used for this analysis, the offset may be less, and the pregnancy claims impact may be higher.)

As noted above, the total combined pregnancy claims impact of adding doula coverage is 0.1% in year one and varies between 0% and 0.1% depending on the market (individual, small group, large group) and time period. The small group experience used has higher cesarean and complication costs and therefore adding doula coverage has a bigger impact on lowering pregnancy cost in that market.

Table 2: Pregnancy Cost (in Millions): Doula Coverage Impact

Period	Individual		Small Group		Large Group		Total	
	Doula Use	Total Cost Impact	Doula Use	Total Cost Impact	Doula Use	Total Cost Impact	Doula Use	Total Cost Impact
2025	$0.3	$0.1	$0.4	$0.0	$1.3	$0.3	$2.0	$0.3
2025-2029	$3.2	$0.7	$4.4	-$0.6	$13.6	$2.3	$21.3	$2.4
2025-2034	$11.8	$2.0	$16.1	-$3.0	$49.4	$6.5	$77.2	$5.5

Pregnancy delivery and newborn costs represent approximately 6% of total healthcare cost based on 2022 Colorado APCD experience. Therefore, the cost of offering doula coverage represents a small portion of total healthcare costs. While this report requires a detailed analysis of pregnancy claims, as discussed above, the impact on the total commercial health cost is also required.

The total cost of all healthcare claims beyond pregnancy is used to develop plan designs and premiums in the commercial market. Carriers offer plans that pay for the majority of healthcare costs and the consumer pays for the remaining costs in the form of deductibles, copays, and coinsurance (member cost share). The carrier then offers the plan in exchange for a premium that pays for the carrier's paid claims and administrative costs.

The overall impact for all time periods (first year, 5 year, 10 year) to per member per month (pmpm) total claims, consumers average member cost share and consumer average premium is $0.04 or lower which

is approximately 0.0% of cost. The overall impact to per member per month (pmpm) total claims, consumers average member cost share and consumer average premium is between -$0.01 and $0.03 or approximately 0.0% of cost in the first year of implementation. See **Table 3** for details. In general, the cost of doula services is offset by the reduction in cesarean section births and births with complications, as described in Section 4 of this report. If actual reductions in the number of cesarean section births and births with complications vary from the assumptions used for this analysis, the impacts to consumer costs could be higher.

Table 3: Total Market Health Care Cost Per Member Per Month

		Individual		Small Group		Large Group		Total	
Period	Period	w/out doula	with doula	w/out doula	with doula	w/out doula	with doula	w/out doula	with doula
2025	Claims	$490.94	$490.96	$448.72	$448.71	$475.88	$475.91	$473.43	$473.45
2025	Member Cost Share	$100.52	$100.52	$87.32	$87.32	$65.30	$65.31	$77.35	$77.36
2025	Premium	$470.39	$470.41	$435.42	$435.41	$494.67	$494.70	$477.21	$477.23
2025-2029	Claims	$544.20	$544.24	$497.40	$497.37	$527.50	$527.56	$524.80	$524.83
2025-2029	Member Cost Share	$111.43	$111.43	$96.79	$96.79	$72.39	$72.39	$85.74	$85.75
2025-2029	Premium	$521.42	$521.46	$482.66	$482.63	$548.33	$548.39	$528.98	$529.01
2025-2034	Claims	$619.40	$619.46	$566.14	$566.04	$600.40	$600.47	$597.31	$597.35
2025-2034	Member Cost Share	$126.82	$126.83	$110.17	$110.15	$82.39	$82.40	$97.59	$97.60
2025-2034	Premium	$593.47	$593.53	$549.36	$549.26	$624.10	$624.18	$602.07	$602.11

Section 3: Background

Doula Services and Usage

Doulas are trained birth companions who provide personal, non-medical support to pregnant and postpartum people and their families prior to childbirth, during labor and delivery, and during the postpartum period. This support often comes in the form of pre-delivery, during delivery and post-delivery care. Pre-delivery doula care often includes providing information regarding medical procedures and what can be expected during and after labor. Doulas help the pregnant person set up a birth plan and advocate for the person's needs to clinical staff before, during, and after delivery. Doulas provide support during pregnancy including massage and focused breathing. Postpartum doulas can also assist with breastfeeding, newborn care, post birth comfort and assisting and educating the person's family to provide support.

A study performed by the National Library of Medicine found that 6% of pregnant women sampled used doula care. In addition, 59% of women sampled were aware of doula care and among these women who were aware, 27% reported wanting a doula but did not have one. White women reported wanting a doula but did not have one at a lower rate (21.6%) compared to African American (38.8%), Hispanic (29.8%) and other races (43.5%).[4]

In this study, based on qualitative interviews, we assumed doula coverage to include three pre-delivery meetings, delivery care, and two post-delivery meetings at a cost of $2,500 in Calendar year 2024. Doulas cost on average between $800 to $2,500 based on varying states and degrees of coverage.[12]

Health Benefits of Doula Services

In the United States, research on doula services has consistently shown that these services reduce cesarean sections, reduce low birth-weight, reduce birth complications, and increase breastfeeding.[1] A National Library of Medicine study found doulas lowered preterm births from 6.3% to 4.7% and cesarean births from 34.2% to 20.4%[13]. An Assistant Secretary for Planning and Evaluation (ASPE) issue brief[14] notes that the continuous presence of a doula during labor, compared to not having a doula, significantly reduces the likelihood of cesarean births and epidural analgesia; in addition, 100% of women using a doula reported a positive experience with their doula. The issue brief also noted an observational study of low-income women (41% of whom were black) that found doula-assisted mothers were four times less likely to give birth to a baby with low birthweight, two times less likely to experience a birth with complications and significantly more likely to initiate breastfeeding.[14] Colorado doulas interviewed for this analysis underscored the impact their work had on birth outcomes, particularly the avoidance of cesarean births. They emphasized the role they played in helping birthing people to navigate complex systems and the impact this work had on their clients.[1]

Section 4: Projected Cost Impact of Offering Doula Services

In order to study the impact to premiums, claims, and member cost share in the commercial individual, small group and large group market, L&E used the 2022 service date claims from the Colorado All Payer Claims Database (APCD)[15]. In 2022, Colorado had delivery rates based on **Table 4**. Member cost share represents member payments in the form of deductible, copay, and coinsurance for pregnancy claims.

Table 4: Pregnancy Cost 2022 ($ in Millions)

Delivery	Type	Member Count	Allowed Claims	Plan Paid Claims	Member Cost Share
Vaginal	Complication	3,689	$77.4	$64.6	$12.8
Vaginal	No Complication	4,873	$114.1	$95.6	$18.5
Cesarean	Complication	1,442	$61.5	$54.6	$7.0
Cesarean	No Complication	2,501	$89.2	$78.7	$10.5
All	Doula Services	0	$0.0	$0.0	$0.0
Total		12,505	$342.2	$293.5	$48.7

The impact on the total market is required in this analysis and therefore total market claims need to be analyzed. Member cost share represents 16.3% of total allowed claims. We assume that this relationship

[12] https://www.verywellhealth.com/doula-7511151
[13] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5544530/
[14] https://aspe.hhs.gov/sites/default/files/documents/dfcd768f1caf6fabf3d281f762e8d068/ASPE-Doula-Issue-Brief-12-13-22.pdf
[15] APCD administered by CIVHC, https://civhc.org/

will remain the same in future years. Total 2022 claims cost for all healthcare services in the commercial market are illustrated in **Table 5**.

Table 5: Total Commercial Healthcare Cost, 2022, ($ in Millions)

Plan Year	Average Monthly Members	Allowed Claims	Plan Paid Claims	Member Cost Share
2022	1,208,291	$5,705.M	$4,772.M	$932.M

In this study we assumed a 40% reduction in cesarean birth and a 20% reduction in pregnancies with complications rate when a doula is used. This assumption was drawn from an NIH study where cesarean births were lowered from 34.2% to 20.4% (40% decrease) and preterm births were reduced from 6.3% to 4.7% (25% decrease)[13]. We assumed there is currently no coverage for doula in the commercial market. In addition, we assumed if coverage begins in 2025, then 6% of pregnant persons will use a doula and that will grow to 33% in ten years (earlier we noted 27% of pregnant persons aware of doulas would use a doula but did not have one and an estimated 6% of pregnant persons used doulas;[13] we assume we will eventually reach the 27% plus 6% = 33% in ten years). Note that a reduction in cesarean sections and births with complications will lower the total cost of pregnancy as those pregnancies cost more. This reduction in cost will be offset by the cost of doula services. We note that actual results may vary, and the offset may be less than what is estimated here.

In addition, we assumed projected enrollment trends and total medical and pharmacy claims cost trends from national health expenditure data from CMS (Table 17)[16]. Medical claims trend has been historically 2% lower than pharmacy trends and medical claims trend is applied to projected pregnancy claims cost. We used this difference to solve for estimated medical and pharmacy trends. Medical claims trends used for pregnancy claims are slightly lower than total claims trends due to the assumption pharmacy claims trends are 2% higher than medical (for reference, in **Table 6**, note that assumed 2025 total medical and pharmacy trend is 5.5% while medical only trend is 5.1%). In addition, the total trend is a combination of utilization trend and cost of service trend. Historical utilization trend is approximately 1.5%. Therefore, we assumed the cost for doula services trend is approximately 1.5% to 1.6% lower than medical claims trend (total trend is the multiplicative combination of cost trend and utilization trend, for reference, in **Table 6**, note that assumed total medical trend is 5.1% while medical cost of service trend is 3.5%). See **Table 6** for more details. In addition, the cesarean section reduction and complication reduction represent a flat percentage applied to the portion of the population using doulas, which is increasing, and therefore the reductions increase in number.

[16] https://www.cms.gov/data-research/statistics-trends-and-reports/national-health-expenditure-data/projected

Table 6: Key Assumptions

Plan Year	Enrollment Trend	Total Claims Trend	Medical Claims Trend	Medical Claims Cost Trend	Doula Use	C Section Reduction	Complication Reduction	Cost for Doula Services
2023	0.9%	6.8%	6.4%	4.8%	0%	0%	0%	
2024	0.7%	6.8%	6.4%	4.8%	0%	0%	0%	$2,500
2025	0.3%	5.5%	5.1%	3.5%	6%	40%	20%	$2,590
2026	-1.0%	5.3%	4.9%	3.3%	9%	40%	20%	$2,678
2027	0.1%	5.2%	4.8%	3.3%	12%	40%	20%	$2,766
2028	0.2%	4.9%	4.5%	3.0%	15%	40%	20%	$2,849
2029	0.1%	5.0%	4.6%	3.1%	18%	40%	20%	$2,938
2030	0.5%	4.8%	4.4%	2.9%	21%	40%	20%	$3,023
2031	0.2%	5.0%	4.6%	3.1%	24%	40%	20%	$3,117
2032	0.2%	5.0%	4.6%	3.1%	27%	40%	20%	$3,213
2033	0.2%	5.0%	4.6%	3.1%	30%	40%	20%	$3,313
2034	0.2%	5.0%	4.6%	3.1%	33%	40%	20%	$3,416

Table 6 trends and values are applied to starting costs in **Table 4** and **Table 5**. The resulting values are illustrated in Section 2 **Table 1**, **Table 2**, and **Table 3**.

We assumed no new entrants of pregnant people into the market each year due to the doula services offered. However, there is a possibility that pregnant people may enter the market because of the doula offering. This could particularly be the case in the individual market, where lower income pregnant people may become aware of the services coupled with ACA subsidies that will reduce premiums and out of pocket expenses.

The cost impacts of doula coverage reported in **Table 1**, **Table 2** and **Table 3** include the estimated cost reductions (offsets) due to lowering the incidence of cesarean sections and births with complications. In year one, it is estimated that the number of cesarean sections decreased by 96 (for reference, 6% of 4,018 = 241 cesarean section birthing people use doulas, and 40% of 241 = 96 of those cesarean sections were avoided due to the use of a doula). In addition, in year one the number of vaginal births with complications decreased by 4, and the number of vaginal births without complications increased by 101. See **Table 7** for details.

Table 7: Pregnancy Count: Doula Impact

Period	Cesarean Births - Base	Vaginal Births with Complications - Base	Vaginal Births w/o Complications - Base	Cesarean Births - with Doula Services	Vaginal Births with Complications - with Doula Services	Vaginal Births w/o Complications - with Doula Services	Doula Use
2025	4,018	3,760	4,966	3,922	3,755	5,067	765
2025-2029	19,963	18,677	24,671	19,005	18,621	25,685	7,594
2025-2034	40,114	37,530	49,575	36,979	37,299	52,941	24,856
2025 - Change				-96	-4	101	765
2025-2029 - Change				-958	-56	1,014	7,594
2025-2034 Change				-3,135	-231	3,366	24,856

It is estimated that offering doula services will increase the cost of pregnancy and newborn care by $0.3M or 0.1% claims in year one (2025). This is made up of a reduction in cesarean births by $4.4M, a reduction in births with complications by $0.1M, an increase in vaginal births without complications of $2.8M and an increase in Doula costs by $2.0M. During the first five years (2025-2029) the overall impact is an increase of $2.4M or 0.1% of pregnancy and newborn claims. During the first ten years the increase is $5.5M or 0.1% of pregnancy and newborn claims. See **Table 8** for details. Actual reductions in cesarean section births and births with complications could vary and reductions could be less than estimated numbers.

Table 8: Pregnancy Cost (in Millions): Doula Impact

Period	Cesarean Births - Base	Vaginal Births with Complications - Base	Vaginal Births w/o Complications - Base	Cesarean Births - with Doula Services	Vaginal Births with Complications - with Doula Services	Vaginal Births w/o Complications - with Doula Services	Doula Use	Total Cost Impact: Doula Servcies
2025	$183	$94	$138	$178	$94	$141	$2	
2025-2029	$999	$513	$756	$950	$511	$787	$21	
2025-2034	$2,260	$1,160	$1,710	$2,073	$1,152	$1,833	$77	
2025 - Change				-$4.4	-$0.1	$2.8	$2.0	$0.3
2025-2029 - Change				-$49.0	-$1.6	$31.7	$21.3	$2.4
2025-2034 Change				-$186.6	-$7.8	$122.7	$77.2	$5.5

State Defrayal Considerations

Carriers offering individual and small group health benefit plans in Colorado are not currently required to cover doula services under Colorado's EHB-benchmark plan. The state therefore would likely be required to defray the costs of mandating coverage of these benefits.

Section 5: Social and Economic Impacts

Health Equity and Medical Trust[1]

The disparities that Black/African American, Latino, American Indian and Alaska Native birthing people face relative to white birthing people have been extensively documented. Doula services are being incorporated into several state and national efforts to help address and reverse growing disparities in negative birth outcomes for these communities. For example, Oregon started offering doula coverage in their Medicaid plan in 2014. The Oregon Health Authority, like other states who have studied this issue, such as Minnesota and Rhode Island, concluded that adding doula services to Medicaid and coverage requirements would not only generate cost savings through reducing adverse birth outcomes, but also reduce health inequities in the state.[5,6,7]

While there has been a large amount of research on the potential impact of doula services on birth outcomes, there has been less attention to the role that doulas play in reducing medical distrust, which could have benefits beyond birth outcomes. Multiple studies that included interviews with doulas noted racialized mistreatment in the medical system for the patients doulas serve.[17] Doulas reported that their

[17] Kett PM, van Eijk MS, Guenther GA, Skillman SM. This work that we're doing is bigger than ourselves: A qualitative study with community-based birth doulas in the United States. Perspect Sex Reprod Health. Published

patients see doulas as a way to protect them from mistreatment.[18] Doulas also reported the important role they played in empowering patients with limited English proficiency.

Section 6: Claims Cost Methodology

Cost Calculation – Base Experience

L&E used data from the Colorado All-Payer Claims database (APCD)[15] to identify the claims associated with delivery and newborns. This data is administered by the Center for Improving Value in Healthcare (CIVHC). The study was limited to Preferred Provider Organization (PPO) Plans, Health Maintenance Organization (HMO) Plans, Exclusive Provider Organization (EPO) Plans and Point of Service Plans (POS). Indemnity products were removed from the study as these benefits are not applicable to those plans.

Pregnancy and delivery claims were categorized into 5 different categories based on delivery method (vaginal or cesarean), and the presence or absence of complications during the pregnancy or labor and an "other" category that captures pregnancies that did not result in a birth during 2022. The claims were identified by CPT codes starting with 59, 7680, 7681, 7682, or a DX code starting with O. Unique member IDs were identified and the total of all pregnancy claims for each unique member ID was summed.

Member IDs that had a CPT code of 59400, 59409, 59410, 59610, 59612, or 59614 were marked as vaginal births, and member IDs that had a CPT code of 59510, 59514, 59515, 59618, 59620, or 59622 were marked as cesarean births. The deliveries with complications were identified using a primary diagnosis code of O60, O61, O62, O63, O64, O65, O66, O67, O68, O69, O70, O71, O72, O73, O74, O75, O76, or O77. In summary, a member was categorized as having a cesarean birth with complications if they had a CPT code of 59510, 59514, 59515, 59618, 59620, or 59622 and a primary diagnosis code of O60, O61, O62, O63, O64, O65, O66, O67, O68, O69, O70, O71, O72, O73, O74, O75, O76, or O77. A member was categorized as having a vaginal birth with complications if they had a CPT code of 59400, 59409, 59410, 59610, 59612, or 59614 and a primary diagnosis code of O60, O61, O62, O63, O64, O65, O66, O67, O68, O69, O70, O71, O72, O73, O74, O75, O76, or O77. If a member had a CPT code for both vaginal and cesarean birth, they were categorized into the cesarean birth category. This was a very small proportion of the population and is likely attributable to twins that had different delivery methods or an emergency cesarean after having attempted a vaginal birth. Members that were categorized as having cesarean births without complications had the CPT codes 59400, 59409, 59410, 59610, 59612, or 59614 and had a primary diagnosis code other than O60, O61, O62, O63, O64, O65, O66, O67, O68, O69, O70, O71, O72, O73, O74, O75, O76, or O77, and members that were categorized as having cesarean births without complications had CPT codes of 59510, 59514, 59515, 59618, 59620, or 59622 and had a primary diagnosis code other than O60, O61, O62, O63, O64, O65, O66, O67, O68, O69, O70, O71, O72, O73, O74, O75, O76, or O77.

online July 7, 2022. doi:10.1363/psrh.12203; Salinas JL, Salinas M, Kahn M. Doulas, Racism, and Whiteness: How Birth Support Workers Process Advocacy towards Women of Color. Societies. 2022;12(1):19. doi:10.3390/soc12010019.

[18] Sayyad A, Lindsey A, Narasimhan S, et al. We really are seeing racism in the hospitals: Racial identity, racism, and doula care for diverse populations in Georgia. PLoS ONE. 2023;17(6):1-14. doi:10.1371/journal.pone.0286663.

	CPT Codes
Vaginal Birth	59400, 59409, 59410, 59610, 59612, 59614
Cesarean Birth	59510, 59514, 59515, 59618, 59620, 59622

	Diagnosis Codes
Labor and Delivery with Complications	O60, O61, O62, O63, O64, O65, O66, O67, O68, O69, O70, O71, O72, O73, O74, O75, O76, O77

Market experience for plan year 2022 was used because this is the most recent full data year available. We assume the first year the new benefits would be in place is 2025. Therefore, market experience for plan year 2022 was reviewed and projected to 2025. This 2025 projection is considered the base case.

L&E projected the base scenario, without Doula services, and the scenario where Doula services are covered in the commercial market for the ten years after the initial year. Details on those projections are provided in Sections 2 and 3.

Section 7: Caveats, Reliance

This report was developed to comply with Colorado Senate Bill 23-288. This legislation instructs the Commissioner of Insurance to conduct an actuarial review of the potential health-care costs and benefits of including coverage for doula services for pregnant and postpartum persons covered by health benefit plans.

The Colorado Division of Insurance is the primary intended user of this report, with the understanding that it will be shared with the legislature and the public to inform healthcare policy in Colorado. It should not be applied to other populations, locations, or timeframes, and the information herein should not be used for other purposes.

Michael Brown is the actuary responsible for this communication. He is a Fellow of the Society of Actuaries (FSA) and a Member of the American Academy of Actuaries (MAAA) in good standing. He meets the Qualification Standards required to issue this report.

The responsible actuary listed above is financially independent and free from conflict related to this report and the supporting analysis performed for this study.

L&E relied upon data provided by CIVHC and the contained references. L&E has reviewed the data and assumptions for reasonableness but has not performed an independent audit. To the extent that information provided is inaccurate or incomplete, the analysis could be materially impacted.

This report was developed in February 2024. There are many future developments that could materially change these results including court rulings, new regulations, or a material change to the health care markets and trends in general. In addition, any changes made to the parameters or structure of the new benefits could have a material impact on the outcomes outlined above. These subsequent events are not included in this report and should be carefully considered by qualified experts before applying the findings contained within this report.

To: L&E
From: Amy Killelea
Summary of Health Equity and Doula Coverage Research
February 18, 2024

I. Introduction

There is a growing body of research supporting increased availability of doula services for birthing people.[1] The increased attention to doula services comes at a time that the United States is grappling with what has been termed a "maternal health crisis."[2] This crisis has prompted a whole-of-government approach from the federal government to reverse the poor maternal mortality and morbidity trends in the United States, particularly for Black/African-American, Latino, and American Indian/Alaskan Native (AI/AN) communities who are experiencing enormous disparities when it comes to maternal health access and outcomes.[3]

There are a number of factors driving the maternal health crisis in this country, including social determinants of health – e.g., employment, housing, education – that have a wide array of health consequences for marginalized communities. The disparities in birth outcomes, particularly for women of color, is also driven by pernicious systemic and institutional racism. Doulas who provide community-based care for the communities most affected by maternal health disparities – particularly the Black/African-American, AI/AN, and Latino – have reported that structural racism is a key factor in poor birth outcomes and that doulas and midwives could help address systemic discrimination.[4] This type of systemic racism shows up in the medicalized approaches to birth that often reflect racialized power dynamics and strip birthing people of autonomy and dignity.

As states consider adding insurance coverage requirements for doula services, they should assess the impact of doula services on health equity and structure benefits mandates in ways

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[1] Kathleen Knocke, Andre Chappel, Sarah Sugar, Nancy De Lew, Benjamin D. Sommers, ASPE, Issue Brief: Doula Care and Maternal Health: An Evidence Review (2022), available at https://aspe.hhs.gov/sites/default/files/documents/dfcd768f1caf6fabf3d281f762e8d068/ASPE-Doula-Issue-Brief-12-13-22.pdf

[2] President Biden's and Vice President Harris's Maternal Health Blueprint Delivers for Women, Mothers, and Families (June 24, 2022), available at https://www.whitehouse.gov/briefing-room/statements-releases/2022/06/24/fact-sheet-president-bidens-maternal-health-blueprint-delivers-for-women-mothers-and-families/.

[3] Petersen, Emily E, Nicole L Davis, David Goodman, Shanna Cox, Nikki Mayes, Emily Johnston, Carla Syverson, Kristi Seed, Carrie K Shapiro-Mendoza, William M Callaghan et al., "Vital signs: pregnancy-related deaths, United States, 2011–2015, and strategies for prevention, 13 states, 2013–2017," Morbidity and Mortality Weekly Report, 2019, 68 (18), 423.

[4] Center for American Progress, Community-Based Doulas and Midwives (2022), available at https://www.americanprogress.org/article/community-based-doulas-midwives/; Sayyad A, Lindsey A, Narasimhan S, et al. "We really are seeing racism in the hospitals": Racial identity, racism, and doula care for diverse populations in Georgia. PLoS ONE. 2023;17(6):1-14. doi:10.1371/journal.pone.0286663.

that recognize both the needs of birthing people and the capacity building support needs of a growing and diverse doula workforce.

Research for this memorandum was conducted using keyword searches of peer review literature published over the past ten years and a thorough review of white papers, government reports, and other "grey literature" on doula access and outcomes in the United States through a health equity lens. Following this environmental scan, the research team conducted informant interviews with three doulas practicing in Colorado to get a sense of whether the Colorado doula access landscape is similar to national trends and to identify any nuances in the challenges and topics identified in the research.

The memorandum summarizes: 1) the research base assessing birth outcomes for births with and without doula support, with an emphasis on communities with the highest maternal mortality and morbidity outcomes; 2) the impact of doula services on medical trust; and 3) how the doula workforce is structured and capacity needs that may impact the ability of doulas to increase provision of services to high-need communities.

II. Birth Outcomes

In the United States, research on doula services has consistently shown that these services reduce caesarean sections, reduce low birth-weight, reduce birth complications, and increase breastfeeding.[5] While studies generally do not support an assertion that doula services benefit Black/African-American, Latino, and AI/AN, and low-income birthing people more than their white counterparts, the evidence does suggest that doula services have a positive impact on these communities.[6] Coupled with the extensive evidence base that documents the disparities that Black/African-American, Latino, and AI/AN birthing people face

Colorado doulas interviewed underscored the impact their work had on birth outcomes, particularly the avoidance of c-sections. They underscored the role they played in helping birthing people to navigate complex systems and the impact this work had on their clients.

[5] Gruber KJ, Cupito SH, Dobson CF. Impact of doulas on healthy birth outcomes. J Perinat Educ. 2013 Winter;22(1):49-58. doi: 10.1891/1058-1243.22.1.49. PMID: 24381478; PMCID: PMC3647727; Kozhimannil K. B., Hardeman R. R., Attanasio L. B., Blauer-Peterson C., & O'Brien M. (2013). Doula care, birth outcomes, and costs among Medicaid beneficiaries. American Journal of Public Health, 103(4), e113–e121; Tikkanen, R., Gunja, M. Z., Fitzgerald, M., & Zephyrin, L. (2020, November 18). Maternal mortality and maternity care in the United States compared to 10 other developed countries. The Commonwealth Fund. https://doi.org/10.26099/411v-9255; Kozhimannil K. B., Hardeman R. R., Attanasio L. B., Blauer-Peterson C., & O'Brien M. (2013). Doula care, birth outcomes, and costs among Medicaid beneficiaries. American Journal of Public Health, 103(4), e113–e121; Bohren MA, Hofmeyr GJ, Sakala C, Fukuzawa RK, Cuthbert A. Continuous support for women during childbirth. Cochrane Database of Systematic Reviews 2017, Issue 7. Art. No.: CD003766. DOI: 10.1002/14651858.CD003766.pub6.

[6] Pre-natal to Three Policy Impact Center, Review of Evidence for Community Based Doula Services, https://pn3policy.org/wp-content/uploads/2023/09/ER.23B.0923_Community-BasedDoulas.pdf (summary here https://pn3policy.org/wp-content/uploads/2023/04/PN3PIC_CommunityBasedDoulas_Summary.pdf); Kennedy-Moulton, K., et al, Maternal and Infant Health Inequality: New Evidence from Linked Administrative Data, National Bureau of Economic Research Working Paper Series, Working Paper 30693 (September 2023), available at https://www.nber.org/system/files/working_papers/w30693/w30693.pdf.

relative to white birthing people, it is clear that doula services could help to reverse growing disparities in negative birth outcomes for these communities.

The Oregon Health Authority took up the question of how doula services would impact Medicaid and private insurance enrollees in the state and used a nuanced evaluation of statewide data assessing birth outcomes by race and ethnicity to guide its policy interventions (see Figure 1).[7] Oregon also overlaid whether birthing people lived in an urban setting or rural setting, and found that whether someone faced disparities compared to non-Latino white birthing people depended on race and ethnicity, with Black/African-Americans, Asians, and Pacific Islanders living in urban settings facing more disparities than white counterparts in urban areas. However, American Indians faced greater disparities in rural areas.

Figure 1: Oregon Health Authority and Oregon Office of Equity and Inclusion Report to Legislature 2012 (Disparities in Birth Outcomes)

Table 1: Disparities in Birth Outcomes
Based on statistical significance compared to Non-Latino White.

Based on statistical significance compared to Non-Latino White						
Indicator	Hispanic/ Latino	Non-Latino African American	Non-Latino American Indian	Non-Latino Asian	Non-Latino Pacific Islander	Non-Latino Multiple Race
Premature Birth	○	▲	▲	○	▲	▲
Low Birthweight	○	▲	▲	▲	▲	▲
Cesarean Delivery	○	▲	○	▲	▲	▲
Apgar Score	○	▲	○	○	○	○
Medicaid/OHP Births *(principal payment source)*	▲	▲	▲	○	○	▲
Infant Mortality	▲	▲	▲	○	○	○
Breastfeeding Initiated	○	○	○	○	○	○
Postpartum Depression Symptoms	○	○	○	○	○	○

Referent group is Non-Latino White
Underlying numbers are in Appendix I
Oregon Vital Records 2008-2010: Premature Births, Low Birthweight, Cesarean Delivery, Apgar Score and Medicaid Paid Births
PRAMS 2009-2010 Births: Breastfeeding Initiated, Postpartum Depression Symptoms
See Appendix III for explanationation of multiple race variable

Symbols	
No disparity/ Doing better	○
Disparity	▲
NP: Not provided due to small numbers	

[7] Tillman T., Gilmer R., & Foster A. (2012). Utilizing doulas to improve birth outcomes for underserved women in Oregon. Portland, OR: Oregon Health Authority, available at https://digital.osl.state.or.us/islandora/object/osl%3A28454/datastream/OBJ/view.

The Oregon Health Authority, like many states who have studied this issue, concluded that adding doula services to Medicaid and private insurance coverage requirements would not only generate cost savings through reducing adverse birth outcomes, but also reduce health inequities in the state and recommended doulas "as a strategy to improve health equity in Oregon's birth outcomes … [and] as an overall strategy for all pregnant women in order to improve birth outcomes whether care is funded by Medicaid or private insurance."

III. Medical Trust

While there has been a large amount of research on the potential impact of doula services on birth outcomes, there has been less attention to the role that doulas play in reducing medical distrust, which could have benefits beyond birth outcomes. Multiple studies included interviews with doulas noted rampant racialized mistreatment in the medical system for the patients doulas serve.[8] Doulas reported that their patients see doulas as a way to protect them from mistreatment.[9] Doulas also reported the important role they played in empowering patients with limited English proficiency.[10]

Colorado doulas interviewed noted the need for more support for the doula workforce because of the uniquely intensive nature of the work. One doula reported that qualitative interviews that her organization conducted with other doulas in the state indicated significant burnout because of long hours, little pay, and near constant exposure to and navigation of systemic racism in major medical and hospital systems. Doulas that reflect the communities they serve are best able to garner trust. And yet, doulas are subject to the same systemic racism and discrimination as the birthing people they serve, which can take a toll. Doulas need support (in the form of pay, training, and professional development) to remain in the field.

Other qualitative interviews with doulas echo the same findings, with interviewees emphasizing the need for the entire medical system to approach birth from a place of "profound respect" as opposed to a place of "profound fear."[11] Doulas play an important role of centering and empowering the patients they work with, and increasing access to doulas can be an important tool to dismantle

[8] Kett PM, van Eijk MS, Guenther GA, Skillman SM. This work that we're doing is bigger than ourselves: A qualitative study with community-based birth doulas in the United States. Perspect Sex Reprod Health. Published online July 7, 2022. doi:10.1363/psrh.12203; Salinas JL, Salinas M, Kahn M. Doulas, Racism, and Whiteness: How Birth Support Workers Process Advocacy towards Women of Color. Societies. 2022;12(1):19. doi:10.3390/soc12010019.

[9] Sayyad A, Lindsey A, Narasimhan S, et al. We really are seeing racism in the hospitals: Racial identity, racism, and doula care for diverse populations in Georgia. PLoS ONE. 2023;17(6):1-14. doi:10.1371/journal.pone.0286663.

[10] Ibid.

[11] Center for American Progress, Community-Based Doulas and Midwives (2022), available at https://www.americanprogress.org/article/community-based-doulas-midwives/.

institutional biases and discrimination.[12]

The connection between medical trust and health care access is also important in assessing potential doula uptake, even after increased reimbursement mechanisms become available. Studies indicate that many individuals who may benefit from doulas may not even know that this service exists or what they do.[13] Ensuring that the doula workforce reflects the communities served and investing in appropriate and culturally competent outreach and education efforts about the availability of doulas may be important to ensure that coverage requirements for doula services actually translate to uptake among the communities facing the greatest disparities in birth outcomes.

IV. Doula Workforce

Finally, research has also unearthed the importance of the composition of the doula workforce and investing in doula capacity and infrastructure as part of any effort to increase doula access. There is no public or private national database on the doula workforce. Instead, researchers have pieced together a picture of the workforce from a number of smaller studies and qualitative surveys. A recent literature review of published reports and studies on the doula workforce revealed that because they have been available largely to those who can afford to pay out-of-pocket, doulas have historically been white and also served predominantly white, higher-income individuals.[14]

As states explore policies to expand the doula workforce to address the inequities discussed above, they have sought to expand the number of doulas who reflect the communities in greatest need of doula support. Expansion of reimbursement mechanisms – through both Medicaid and private insurance coverage requirements – has been only one part of the policy response

Colorado doulas interviewed pointed out that even when coverage provides reimbursement for doula services, it does not expand access if the training and credentialing requirements are so onerous that most doulas cannot meet them. They noted that this type of professional gatekeeping will disproportionately impact Black and African-American, Latino, and indigenous doulas. TRICARE was given as an example of this challenge. TRICARE covers doula services as of 2022, but has a very limited pathway for doulas to be certified, requiring only three acceptable boards for certification. Doulas interviewed reported that many doulas simply could not accept TRICARE because it was too arduous to use these narrow and time-intensive certification entities. One doula noted that experience had to be another pathway to certification.

[12] Kett PM, et al., supra note 8.
[13] Attanasio LB, DaCosta M, Kleppel R, Govantes T, Sankey HZ, Goff SL. Community Perspectives on the Creation of a Hospital-Based Doula Program. Health Equity. Published online September 7, 2021. doi:10.1089/heq.2020.0096.
[14] Center for Health Workforce Studies, University of Washington (August 2022), available at https://familymedicine.uw.edu/chws/wp-content/uploads/sites/5/2022/08/Doula-Workforce-RR-2022.08.22.pdf; Lantz, P.M.; Low, L.K.; Varkey, S.; Watson, R.L. Doulas as childbirth paraprofessionals: Results from a national survey. *Women's Health Issues* 2005, *15*, 109–116.

to increase doula access. Ensuring that the doula workforce has appropriate training and certification and that doula work is financially sustainable are two related policy decisions that must accompany reimbursement mechanisms.[15]

Colorado doulas interviewed affirmed that this distinction between community-based and commercial or hospital-based programs was important and that equitable access depended on expanding the former. They noted that hospitals were moving toward employment of doulas, which they supported, but found that hospital programs generally did not have the same equity impact as expanding access to doulas who are operating in the communities they serve.

A growing number of qualitative studies and research assessing doula pilot programs point to an important distinction between "community-based doula programs" and "commercial" programs. The former typically involve smaller community-based organizations who employ doulas from and in communities served. Commercial programs typically involve larger or hospital-based doula programs. Interviewees in qualitative studies reported that investing in existing community-based infrastructure rather than funding new programs was important to preserving community expertise and ensuring that the doula workforce reflected communities served.[16]

Other reports on the doula workforce note that reimbursement structures need to recognize the unique nature of doula services and provide flexibility to allow smaller community-based organizations to navigate the system, including structuring reimbursement in ways that adequately reimburse for the time intensive services doulas provide. Doulas paid as independent contractors, for instance, lack the financial stability of working for an organization that pays both a living wage and offers benefits.[17] Flexible funding mechanism for doulas may include avoiding onerous certification and billing and reimbursement systems that exclude the very community-based doulas that are necessary

Colorado doulas interviewed emphasized the need to couple any coverage expansion with robust patient outreach and education activities. Many individuals – particularly communities who experience disproportionate rates of maternal morbidity and mortality – are not aware of what a doula is. The very fact that doulas have historically not been covered by public and private insurance mean that these services have been irrelevant for low-income individuals who cannot afford doula services.

[15] Strauss N, Giessler K, McAllister E. How Doula Care Can Advance the Goals of the Affordable Care Act: A Snapshot From New York City. J Perinat Educ. 2015;24(1):8-15. doi: 10.1891/1058-1243.24.1.8. PMID: 26937157; PMCID: PMC4720857.

[16] Eijk MSV, Guenther GA, Jopson AD, Skillman SM, Frogner BK. Health Workforce Challenges Impact the Development of Robust Doula Services for Underserved and Marginalized Populations in the United States. J Perinat Educ. 2022;31(3):133-141. doi:10.1891/JPE-2021-0013.

[17] Gomez AM, Arteaga S, Arcara J, et al. "My 9 to 5 Job Is Birth Work": A Case Study of Two Compensation Approaches for Community Doula Care. Int J Environ Res Public Health. 2021;18(20):10817. doi:https://doi.org/10.3390/ijerph182010817

to adequately address health inequities in birth outcomes. [18]

States that have expanded reimbursement mechanisms for doulas through Medicaid and private insurance have coupled that expansion with investment in training and certification for doulas.[19] These types of ancillary training investments and reimbursement and capacity building considerations may determine how effective any state policy designed to expand doula services will be. They also demonstrate the need for a coordinated cross-program and agency approach to doula services as a tool to meaningfully address health equity.

[18] Mathilde Roux, Women's Bureau, U.S. Department of Labor, Expanding and Diversifying the Doula Workforce: Challenges and Opportunities for Increasing Insurance Coverage (May 2023), available at https://www.dol.gov/sites/dolgov/files/WB/508_IssueBrief-doulas_06012023.pdf.

[19] Mayor Elorza Awards Doula Service Providers to Support Expanded Access to Local Maternal Health Care (2020) https://www.providenceri.gov/mayor-elorza-awards-doula-service-providers-support-expanded-access-local-maternal-health-care/.