

ORIGINAL ARTICLE OPEN ACCESS

Quality Care in Midwifery-Led Birth Centers: Assessing the Disconnect Between Reimbursement and Perinatal Outcomes

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Received: 27 February 2024 | **Revised:** 12 November 2025 | **Accepted:** 19 January 2026

Keywords: birth center | midwife | perinatal outcomes | perinatal quality | reimbursement

ABSTRACT

Background: Health care financing is thought to be a driver of health care quality. The purpose of this research was to analyze reimbursement for midwifery-led US birth centers and to evaluate the association between reimbursement ratios and clinical outcomes.

Methods: Secondary analysis of the American Association of Birth Centers Site Survey and the American Association of Birth Centers Perinatal Data Registry was completed. Descriptive statistics and logistic regression were used to analyze reimbursement ratios and their relationship to clinical outcomes.

Results: Between 2012 and 2020, 107 participating birth centers cared for 78,773 enrolled pregnant people. Public payors (Medicaid, Tricare, CHIP) were reported to pay less than a third of all charges. Comparing private payors to public payors, lower reimbursement ratios were demonstrated for professional services (77% vs. 43%), facility fees (89% vs. 45%), and newborn care (66% vs. 40%). Core clinical outcomes demonstrated high quality without significant variation between public and private payor groups: cesarean birth (10.2 vs. 9.2%), NICU admissions (0.9% vs. 1.1%). The median reimbursement ratio for public payors was 0.379. For every 1000 dollars increase in reimbursement, the odds of cesarean birth increased by a factor of 1.39 for nulliparous women (aOR 1.39; 95% CI, 1.10–1.75) and 2.15 for multiparous women (aOR 2.15; 95% CI 1.54–3.01).

Discussion: Despite poor reimbursement ratios, birth centers consistently exceeded national quality benchmarks in perinatal outcomes. Low reimbursement ratios for time-intensive, midwifery-led care without consideration of quality outcomes limit the potential for sustainability and spread of the birth center model of care.

1 | Introduction

Freestanding birth centers have been shown to be a durable model of high-value perinatal care for over three decades [1–5]. Midwifery-led birth centers have persistently demonstrated lower cesarean birth and higher breastfeeding rates across all racial and ethnic groups [5]. Compared to matched and risk-adjusted controls, clients with public insurance receiving care within birth centers had better birth outcomes with a cost savings of approximately \$2010 per dyad through the first year of

life [5]. These improved perinatal outcomes and consumer care experience have a long-term life course impact and represent a pathway to equity in care [6].

While birth centers offer improved patient outcomes and satisfaction, qualitative research and industry survey data showed that third-party payors fail to adequately reimburse the birth center model of care [7]. There are many questions about the sustainability of the birth center model of care within the confines of the current approach to reimbursement [8]. In 2017, the

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American Association of Birth Centers (AABC) survey found 17% of birth centers rated their financial health as below average or poor, while less than half (43%) rated it as very good or excellent [9]. Reasons for less-than-ideal financial health included inadequate reimbursement and a higher percent of clients insured by public payors which often provide the lowest reimbursement. A fee-for-service approach incentivizes procedure volume and creates limitations for providers caring for low-risk patients. In the current health care financing system, a higher complexity of care regardless of approach, necessity, or outcome generates higher payment. As such, birth centers' success in improving outcomes negatively impacts their reimbursement and therefore sustainability [7, 10].

The current approach to perinatal billing typically includes two components: professional fees and facility fees which can be billed for both the birthing person and the newborn [11, 12]. Professional fees, billed for the provider's services, vary based on the acuity of care, additional diagnoses, and interventions utilized. Often a global professional fee is utilized in perinatal care which allots a standard payment for the entirety of care including prenatal visits, birth, and postpartum care, irrespective of time spent, quality of services provided, or outcome. The facility fee compensates for utilization of the physical location, nursing support, and billable items used in care. This fee is also reimbursed at a higher rate with increased utilization of interventions and services as well as longer inpatient stay.

In March 2011, the United States Congress established the National Quality Strategy to address the grave gaps in the quality of the health care system [13]. The strategy clearly described reimbursement as one of the nine levers (core business functions) that drive quality. The perinatal care system in the United States is built on the assumption that health care financing serves as a driver of quality [14]; however, maternal morbidity and mortality have remained high despite the highest health care spending per capita of any country [15–17]. In an effort to address these discrepancies, alternative approaches to care processes and payment mechanisms are being proposed to improve pregnancy and birth care in the United States [18]. There are no known research publications that have evaluated the effect of reimbursement ratios (total reimbursement/total charges billed) on outcomes within a sample of medically low-risk clients at midwifery-led freestanding birth centers. The purpose of this research was to describe insurance charges and reimbursement ratio among medically low-risk childbearing people and to evaluate the association between reimbursement ratio and clinical outcomes to inform public policy.

2 | Methods

The study was a secondary analysis of the AABC Site Survey (2017) [9] merged with the AABC Perinatal Data Registry (PDR) (2012–2020). The AABC Site Survey [9] is conducted every 5 years to capture industry data on 10 core business domains, including third party payor contracting and reimbursement practices. The survey was sent to all known birth centers in the United States regardless of AABC membership status or Commission for Accreditation of Birth Centers (CABC) accreditation status.

Data were self-reported by the birth center representatives for business management and clinical quality. Additionally, birth centers self-reported charges and collections by payor type for three core billing components: professional fees (prenatal, birth, and postpartum care by the provider), facility fees (birth center facility fee from admission to discharge), and newborn fees (combination of professional and facility fee charged for newborn care).

The AABC PDR is a prospective data registry developed by AABC and is used by the industry as a tool for quality assurance, quality improvement, and research. Records of all childbearing families enrolled in care at the AABC PDR user sites between 2012 and May of 2020 were included in the analysis if their site completed financial variables within the 2017 AABC site survey. Individuals with medical risk factors at the time of admission in labour were excluded to eliminate medically warranted increases in utilization and cost, including previous cesarean birth, intrauterine growth restriction (IUGR), multiple gestations, malpresentation, and non-reassuring fetal heart rate status (Table 1). Because some birth center models have blended birth center and hospital practices, it was important to eliminate records of those with medically warranted admissions to the hospital that remained in the care of the midwifery team or were transferred to a higher level of care. This method afforded researchers the ability to explore the relationship between reimbursement ratio and clinical

TABLE 1 | Low risk medical sample exclusion criteria.

Medical risk exclusions	
Medical history	Prenatal complications
<16 years	Anemia, severe
Cervical abnormality	Abruption/previa
Diabetes	GDMA 2
Hypertension	Hypertension
HIV+	Hyperemesis
Substance abuse	IUFD
Seizures	IUGR
Smoker	Macrosomia
Uterine abnormality	Multiple gestation
Thyroid disease	Malpresentation
Pregnancy history	Maternal death
Cesarean	Non-reassuring fetal status
Pre-eclampsia	Pre-eclampsia
IUGR/LBW	Preterm labour
Sensitization	Preterm ROM
Preterm birth	Vaginal bleeding
	Sensitization with antibody

Abbreviations: GDMA, gestational diabetes mellitus, diet controlled; HIV, human immunodeficiency virus; IUFD, intrauterine fetal death; IUGR, intrauterine growth restriction; IUGR/LBW, intrauterine growth restriction/low birth weight.

outcomes within a sample of medically low-risk birthing people with public insurance.

To explore whether the quality of care was associated with reimbursement ratio, the core perinatal quality indicators considered include induction of labour (elective and medically indicated), episiotomy, cesarean birth, and breastfeeding initiation rate. Newborn outcome measures included birth weight in pounds and ounces, Apgar score < 7 at 5 min, and neonatal intensive care unit (NICU) admission. Intended birth location and attrition from birth center care were tracked within the AABC PDR, including transfers to higher levels of care (e.g., hospitals and providers: family practice physicians, obstetricians, and perinatologists) to account for risk adjustment.

When exploring the relationship between reimbursement ratios and clinical outcomes, sociodemographic and clinical control factors included years of education, body mass index, maternal age, gravidity, parity, marital status, public or private payor status, and Black or Latinx identity. Sociodemographic variables including race and ethnicity are not biologic factors; therefore, there should be no variations in birth outcomes [19]. Variations that exist between groups are unwarranted and assumed to be socially and structurally mediated [19].

Additionally, to assess the relationship between reimbursement ratio and clinical outcomes within the public payor population, the sample of 51 sites with completed charge and revenue data was linked to AABC PDR clinical outcome data, and a subset analysis was conducted between payments that were below and above the median payment. Perinatal outcomes (induction of labour, episiotomy, cesarean birth, breastfeeding) and neonatal outcomes (birth weight in pounds, APGAR scores, NICU admission) were compared. Health system utilization was compared between groups, including transfers to higher levels of care throughout the perinatal episode of care and place of birth intentions and birth locations.

2.1 | Statistical Analysis

Birth Center fees and payments were analyzed using descriptive statistics for both charges and reimbursements for professional, facility, and newborn care fees. Private and public payer reimbursement categories were analyzed for each type of charge and reimbursement category. The ratio of reimbursement to the charge for professional, facility, and newborn care for both private and public payer groups was analyzed.

Selected sociodemographic variables (education, BMI, maternal age, gravidity, parity, marital status, race and ethnicity) were analyzed by public and private payor groups and by reimbursement ratio. Sociodemographic variables that achieved statistical significance between payor types using *t*-test (significance level set at $p < 0.05$) were used as adjustment factors within the logistic regression model. Core maternal and newborn outcomes (e.g., induction of labour, mode of birth, birthweight, NICU admission) were analyzed by public and private payor groups and reimbursement ratios.

Public payors were selected as an important subset to best inform public policy. The public payor sample was divided into two

groups based on median reimbursement ratio by public insurers (< 37.9% and > 37.9%) for analysis. Core clinical outcomes including induction of labour, cesarean birth, transfer after admission in labour, breastfeeding initiation, low APGAR, low birth weight and NICU admission were compared by reimbursement rate (above median and below median). Nulliparas and multiparas are separated in the analysis to explore variations in the two population groups. Lastly, the sample is analyzed to explore changes in quality outcomes by every \$1000 incremental increase in reimbursement to quantify impact of payment on quality. Odds ratios and confidence intervals were calculated using logistic regression, with controls for risk factors employed based on the results of the sociodemographic *t*-tests. Logistic regression was used to test low-frequency events within the sample (e.g., low birth weight, neonatal intensive care admissions, postpartum and neonatal transfers). Robust standard errors were clustered at the birth center level. Regional fixed effects were included in the analysis to account for geographic differences by census region. All data analysis was performed in Stata (version 16.0; StataCorp LP). This study was covered under the New England Institutional Review Board, Exemption Status for the American Association of Birth Centers Perinatal Data Registry.

3 | Results

There were 107 participating birth center sites including 78,773 enrolled pregnant people between 2012 and 2020 included in this study. Complete financial data, including reimbursement ratio, was reported within only 51 (47.7%) of the participant sites.

3.1 | Private and Public Charges and Payments

The average reported charges and reimbursements by birth centers varied between public and private payors (Table 2). In this sample, private third-party payors were reported to reimburse over half of all billed components including professional, facility, and newborn fees. In contrast, public payors (Medicaid, Tricare, CHIP) were reported to pay less than a third of all charges. Fifty-eight (54.2%) of the participating sites caring for 11,514 people (14.6%) reported that they do not contract with public insurers due to inadequate reimbursement ratios. Within the sample birth centers reporting collections data for the professional service fees, public insurers were reported to reimburse \$1490, on average, compared with private insurers who were reported to reimburse \$2700 per birth. A similar pattern was found for reported payment for facility fees, where public insurers reimbursed \$1456 on average while private insurers paid \$2200 per birth. When comparing private payors to public payors, birth centers reported a lower reimbursement ratio of charges for professional service (77% vs. 43%), facility fees (89% vs. 45%), and newborn care (66% vs. 40%).

3.2 | Private and Public Payor Outcomes

Between 2012 and 2020, there were 78,773 episodes of perinatal care within the 107 merged AABC Perinatal Data Registry and AABC Site Survey participant sites (Table 3). Most of the consumers were privately insured, 51,535 (65.4%), while 27,238

TABLE 2 | Birth center fees and payments, AABC site survey.

	No. of sites	Mean (SD)	Median	Range	
				Minimum	Maximum
Total charges					
Total charges—birth center	107	7302 (2883)	6825	500	16,200
Birth center professional fee and reimbursement					
Professional fee charged	94	4079 (1589)	4000	1000	10,700
Professional reimbursement—private	74	3137 (2477)	2700	300	20,000
Professional reimbursement—public	55	1638 (788)	1490	300	4000
Birth center facility fee and reimbursement					
Facility fee charged	97	2840 (1146)	2850	300	5500
Facility reimbursement—private	71	2767 (4025)	2200	200	35,000
Facility reimbursement—public	46	1414 (605)	1456	325	2706
Birth center newborn fee and reimbursement					
Newborn fee charged	73	930 (730)	700	100	3000
Newborn reimbursement—private	53	721 (786)	400	100	4000
Newborn reimbursement—public	24	487 (493)	325	100	2000
Ratio public payment to stated reimbursement	55	1 (0.50)	0.99	0.24	3.11
Professional					
Professional—ratio reimbursement to charge—private	68	0.77 (0.61)	0.68	0.24	5.26
Professional—ratio reimbursement to charge—public	51	0.43 (0.24)	0.38	0.07	1.36
Facility					
Facility—ratio reimbursement to charge—private	68	0.89 (1.17)	0.75	0.15	10.00
Facility—ratio reimbursement to charge—public	44	0.45 (0.20)	0.40	0.13	1.00
Newborn					
Newborn—ratio reimbursement to charge—private	45	0.66 (0.34)	0.67	0.09	2.00
Newborn—ratio reimbursement to charge—public	23	0.40 (0.29)	0.28	0.09	1.18

Abbreviation: SD, standard deviation.

Source: AABC Site Survey (American Association of Birth Centers, 2017).

(34.6%) were publicly insured. Variations in the sociodemographic variables between public and private payor populations with the public payor population reporting fewer years of education (13.6 vs. 15.8), a lower rate of marriage (52.0 vs. 88.3), and a lower percentage of white Non-Hispanic identity (59.9 vs. 82.4) were noted. Core clinical outcomes demonstrated were not statistically significant between public and private payor groups: cesarean birth (10.2 vs. 9.2%), episiotomy (1.7% in both groups), infant birth weight (7.6 vs. 7.7 lbs), and NICU admissions (0.9% vs. 1.1%). Exclusive breastfeeding outcomes were wider between public and private payor populations (90.8% vs. 95.9%).

3.3 | Above and Below Median Reimbursement Ratio

The median reimbursement rate of public payors reported within the sample was 0.379, suggesting that half of participating birth

centers received 37.9% or less of what they billed to public insurers, and half received more than 37.9%. Birth centers receiving below median public insurance reimbursement had lower birth volume per year (169 vs. 204), fewer hospital births (51 vs. 72), fewer midwife FTEs (3.9 vs. 4.5), were more likely to employ doulas (0.8 vs. 0.04 FTE), and more likely to employ childbirth educators (1.2 vs. 0.5 FTE), respectively.

Clients receiving care within birth centers that received above median public insurance reimbursement were more likely to experience labour induction (9.9% < median vs. 13.4% > median) and more likely to experience cesarean birth (8.4% < median vs. 10.4% > median). While the sociodemographic characteristics between the groups of below and above median were similar, 23.9% of beneficiaries receiving care within above median reimbursement rate practices experienced antenatal attrition compared to 19.3% in below median practices. Similarly, fewer clients in above median practices intended birth center birth on

TABLE 3 | Payor status, reimbursement ratios and quality indicators, AABC Perinatal Data Registry 2012–2020 and AABC site survey.

	Public or private payor N = 78,773			Public reimbursement ratio N = 27,238		
	Public mean	Private mean	Total mean	Below median payment	Above median payment	Total
<i>Sociodemographic variables</i>						
Education (in year)	13.6	15.8	15.1	15.1	14.8	14.9
BMI	25.9	24.7	25.2	24.9	25.0	24.9
Maternal age (in year)	27.6	30.5	29.5	29.7	29.4	29.6
Gravidity	2.8	2.4	2.5	2.4	2.6	2.5
Parity	1.3	0.9	1.1	1.0	1.2	1.1
Married (mean %)	52.0	88.3	75.8	76.7	77.4	77.1
Race						
White non-Hispanic	59.9	82.4	74.6	74.8	76.0	75.5
Black	16.5	5.8	9.5	7.3	10.7	9.1
Hispanic	16.0	5.1	8.9	9.0	7.4	8.1
<i>Quality indicators</i>						
Maternal outcomes						
Labour Induction	10.8	11.3	11.1	9.9	13.4	11.8
Episiotomy	1.7	1.7	1.7	1.5	1.8	1.7
Cesarean	10.2	9.2	9.5	8.4	10.4	9.5
Exclusive breast	90.8	95.9	94.2	96.6	93.6	95.1
Exclusive formula	3.3	0.1	1.5	0.5	1.4	0.9
Infant outcome						
Birthweight pounds	7.6	7.8	7.7	7.7	7.7	7.7
Five minute Apgar	8.9	8.9	8.9	8.9	8.9	8.9
Low 5-min Apgar	1.3	1.1	1.2	1.3	1.4	1.3
NICU admission	0.9	1.1	1.1	1.0	1.4	1.2
Transfers						
Transfer—anteartum	24.9	19.3	21.2	19.3	23.9	21.8
Transfer—intrapartum	9.3	11.6	10.8	10.1	12.4	11.4
Transfer—newborn	1.0	1.3	1.2	1.3	1.2	1.3
Transfer—postpartum	0.8	1.3	1.1	1.4	1.1	1.2
Place						
Intended—birth center	74.4	87.4	82.9	89.3	79.9	84.2
Birth place—birth center	52.9	63.2	59.7	68.1	53.9	60.3
Intended—home	2.0	2.2	2.2	0.7	2.2	1.5
Birth place—home	1.7	2.3	2.1	0.8	2.2	1.6
Intended—hospital	18.2	7.5	11.2	6.8	12.7	10.0
Birth place—hospital	43.9	33.3	36.8	29.8	42.3	36.7

Source: AABC site survey (American Association of Birth Centers, 2017).

first prenatal visit compared to below median practices (79.9% vs. 89.3%) and were also more likely to give birth in the hospital (42.3% above median vs. 29.8% below median).

3.4 | Public Payor Reimbursement Ratio and Clinical Quality

Logistic regression technique was used to analyze the odds of selected clinical outcomes within the public payor sub sample based on reimbursement ratio (Table 4). Publicly insured, medically low-risk, multiparas were significantly more likely to experience cesarean birth if cared for within an above median reimbursement practice (aOR, 2.98; 95% CI 1.24–7.15). For every 1000 dollars increase in reimbursement from public insurers, the odds of cesarean birth increased by a factor of 1.39 for nulliparous women (aOR 1.39; 95% CI 1.10–1.75) and 2.15 for multiparous women (aOR 2.15; 95% CI 1.54–3.01), while breastfeeding rates decreased by a factor of 0.52 for nulliparous women and 0.40 for multiparous women (aOR 0.52; 95% CI 0.32–0.83; aOR 0.40; 95% CI 0.26–0.64). Within the above median reimbursement rate sites, multiparas had higher odds of adverse outcomes including significantly higher transfer rates (aOR 1.73; 95% CI 1.22–2.46), higher rates of low Apgar score at 5 min (aOR 3.22; 95% CI 1.16–8.95), higher cesarean birth (aOR 2.98; 95% CI 1.24–7.15) and higher NICU admission rates (aOR 2.31; 95% CI 1.14–4.67).

4 | Discussion

Despite significant differences in reimbursement based on private vs. public insurance payor type across 107 Birth Center sites, key quality metrics remained similar among medically low-risk childbearing people. There was no evidence that reimbursement was serving as a lever of quality. Additional descriptive analysis exploring charges and reimbursements of above and below median public payor reimbursement demonstrated an inverse relationship between reimbursement ratio and clinical quality among medically low-risk childbearing people which persisted when adjusting for sociodemographic and medical risk factors between the groups. These above median centers were found to have higher client volumes as well as increased hospital birth attendance which may suggest certain birth center characteristics could be associated with both quality and reimbursement. Variations in rates of vaginal birth and breastfeeding within this sample represented unwarranted variations in care with potential life course impact [20]. This research challenges the theory that payment is a lever or driver for quality [21]. The findings highlighted areas where the current approach to reimbursement is failing low-risk childbearing people [10, 17].

The findings in this research were similar to other research which demonstrated that the birth center model of care is poorly supported by healthcare financing systems, both private and public payers [7, 8]. The birth center model of care is primarily a midwifery-led and often midwifery-owned model of care, comprised mostly of female leaders and small business owners [9]. The chronic undervaluing of human-resource intensive, female centric work has been documented across the world for decades [22]. Midwifery care is associated with improved outcomes and

TABLE 4 | Public payor reimbursement ratio and odds of selected clinical outcomes within a medically low risk childbearing population, AABC PDR 2012–2020, AABC site survey, $N = 18,337$.

Reimbursement ratio	Adjusted odds ratio [confidence interval]						
	Induction	Cesarean	Transfer	Breastfeeding	APGAR < 7 at 5 min	Birth weight < 5.5 lbs	NICU
Public—above median							
Nullipara	1.31 [0.82, 2.10]	1.39 [0.91, 2.12]	1.83 [1.29, 2.60] ^a	0.28 [0.11, 0.69] ^a	0.58 [0.28, 1.18]	0.46 [0.19, 1.10]	0.88 [0.46, 1.71]
Multipara	1.28 [0.74, 2.22]	2.98 [1.24, 7.15] ^b	1.73 [1.22, 2.46] ^a	0.25 [0.09, 0.70] ^a	3.22 [1.16, 8.95] ^b	0.79 [0.44, 1.41]	2.31 [1.14, 4.67] ^b
Public—per \$1000 incremental increase							
Nullipara	1.20 [0.93, 1.54]	1.39 [1.10, 1.75] ^a	1.11 [0.82, 1.51]	0.52 [0.32, 0.83] ^a	0.73 [0.37, 1.41]	0.87 [0.52, 1.47]	0.59 [0.34, 1.01]
Multipara	1.14 [0.84, 1.56]	2.15 [1.54, 3.01] ^a	1.02 [0.78, 1.33]	0.40 [0.26, 0.64] ^a	1.51 [1.05, 2.17] ^b	0.64 [0.38, 1.09]	1.05 [0.75, 1.46]

Note: Reported odds ratios from a logistic regression. Controls for risk factors including region of birth, sociodemographic control factors, and medical risk exclusions including any diabetes history, hypertension history, pre-eclampsia, substance abuse, and smoking. Robust standard errors are clustered at the birth center level representing statistical levels at 1%, 5%, and 10%.

^a<0.01.
^b>0.05%.

yet diminished reimbursement capacity within the current third-party payment system [7]. Additionally, some states reimburse nurse practitioners and certified nurse-midwives at a fraction of their physician counterparts, which may account for a portion of this disparity [8].

The distinctive time dedication of advanced practice nursing, midwifery and birth center care is currently disproportionately reimbursed through professional fees. On the national level, Truven Health Analytics (2013)[23] found that over half of the cost of perinatal care in the United States was spent on facility fees (51%–54%), while less than a quarter (23%–24%) was spent on professional fees. In contrast, freestanding birth centers in this study billed over half (55.8%) of their total charge for professional fees with only 38.9% billed for facility fees. Of further note, the professional fees in this sample were reimbursed at an even lower rate than facility fees. The utilization of resources (professional vs. facility) and the approach to payments both serve to widen the reimbursement gap. Persistent underpayment of both professional and facility fees demonstrated in this research threatens the sustainability of midwifery-led care. This analysis supports previous research suggesting that birth centers face increasingly significant hurdles collecting reimbursement from public insurance, leading some centers to cap or restrict access to birth center birth for clients with public insurance to stay solvent [7–9].

4.1 | Implications for Practice, Research, and Policy

Midwives need to continue to contribute to clinical data registries, at the practice level, that document the variations in midwifery-led care, as distinct from the medical model. Through this, the high-leverage components of midwifery care can be built into value-based or outcomes-based payment programs. Coding and reimbursement solely based on procedures and interventions rather than accounting for the relationship-based processes of care, which have been demonstrated to improve clinical outcomes, threatens public health and the sustainability of midwifery-led care. It is imperative to pursue more accurate ways to quantify the cost: benefit ratio of freestanding birth center care, as well as value-based payments. Sustainable billing and reimbursement must be the foundation for expanding high-performing elements of perinatal care, including physiologic birth, midwifery care, and freestanding birth centers [24, 25]. Fee-for-service payments often ignore quality, high-value services, and ultimately outcomes.

More research is needed to understand the structural mechanisms underlying the poorer outcomes for medically low-risk multiparas in this study. This research demonstrated a lack of correlation between type of reimbursement and clinical outcomes yet found a correlation between increased public insurance reimbursement ratio and increased intervention. However, caution should be taken to not conclude causation. Systems level variations (e.g., practice volume, site of birth, and size of practice) need to be explored as mechanisms of actions for iatrogenic harm. Larger health care systems have more resources to navigate the complex processes of third party reimbursement, and the outcomes are presumed to be related to the structural elements which differed among the organizations with higher

reimbursement ratio. Continued research regarding the connection between reimbursement and clinical outcomes is needed to inform policy development.

To date, most public policy discussion centers around payment equity between advanced practice nurses, including midwives, and physicians. However, developing reliable, valid, and feasible ways to capture, code, bill, and collect reimbursement for relational care processes may improve reimbursement that is reflective of outcomes. Innovative payment systems can improve access to care, leading to improved outcomes and cost savings [17–19]. Additionally, outcomes-driven perinatal payment options offer payment strategies that create accountability for health care outcomes and costs [17]. Third party payors, namely public insurers, need to be held accountable for unsustainably low reimbursement for perinatal care services, as well as urged to examine the current disconnect between reimbursement ratios and outcomes.

4.2 | Limitations

There were several limitations of this research. The AABC PDR represents a sample of birth centers in the United States that were members of the American Association of Birth Centers. The American Association of Birth Centers is a standard-setting organization, and results from this study cannot be generalized to non-member birth centers. To mitigate limitations of self-reported payment data and federal data registries, research with claims data would increase the generalizability of the results. The unique characteristics of individual birth centers may impact outcomes. The assumption that public insurance is a proxy for poverty classification, with the acknowledgement that vulnerable populations exist within the private payor subset, though it is commonly understood to be at a lower rate. Reimbursement data was collected at a single time point in 2017 while outcomes spanned from 2012 to 2020; there is potential for changes in reimbursement to have impacted outcomes in a way that was not captured; however, ongoing research illustrates the persistent challenges of stagnant reimbursement [7]. Furthermore, the relatively low level of reporting of completed financial variables on the AABC Site Survey is a limitation to generalizability of the results.

5 | Conclusion

Birth centers achieved high-quality outcomes for clients despite low reimbursement ratios across all payor types. Lower reimbursement ratios from public insurance payors were not demonstrated to be associated with quality within the midwifery-led, birth center model of care; rather, higher reimbursement ratios were correlated with higher cesarean birth rates and lower breastfeeding rates among medically low-risk childbearing populations. It is imperative to reconsider and improve perinatal payment systems so they may serve as a driver of quality in improving maternal morbidity and mortality in the United States.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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