

Maternity Support Survey

**A Report on the Cross-National Survey
of Doulas, Childbirth Educators and
Labor and Delivery Nurses in the
United States and Canada**

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EXECUTIVE SUMMARY

The Maternity Support Survey is a survey of maternity support workers from across the United States and Canada that investigates the following topics:

- Whether doulas and childbirth educators view their maternity support work as a career (including the conditions and financial challenges that maternity support workers face)
- How doulas and childbirth educators establish their expertise (the importance of certification and other credentials)
- How technology affects workload among labor and delivery nurses
- How health insurance and litigation concerns influence maternity support workers, organizational protocols, and the frequency of interventions into labor and delivery
- Emotional burnout among maternity support workers

The Maternity Support Survey partnered with the following organizations in the recruitment of participants: Association of Women’s Health, Obstetric and Neonatal Nurses (AWHONN), Birthing from Within, BirthWorks, CAPP Canada, DONA International, Health Connect One, International Childbirth Education Association (ICEA), Lamaze International, and toLABOR (formerly ALACE).

Road map to the report

For this report, we provide an overview of the rationale for the survey, and background. We discuss the maternity context of the U.S. and Canada, including maternal outcomes, quality initiatives, and the role of maternity support workers in each country. The report describes the data and methods as well as partner organizations in this survey.

Next, we present basic descriptive summaries of the results of the survey using cross-tabulations and averages. We present demographic data by maternity support role. All other tables compare across roles only and include respondents from both the United States and Canada. To determine statistical significance of differences across groups, we used chi-square tests of significance and t-tests for differences in means across groups.

Highlights from the Maternity Support Survey

The majority of respondents in all roles were white women in their 40s who have a bachelor’s degree or higher. There is a great deal of consensus among the three roles in attitudes toward typical childbirth practices, but the level of agreement showed that, in many cases, doulas were likely to hold stronger views compared to childbirth educators and nurses. All three roles agreed that

continuous electronic fetal monitoring has increased the cesarean rate, and that induction increases the risk of cesarean.

Future Analytic Directions

The research team is composed of scholars who have a variety of research interests. We have identified several topics for analysis in the near future. These topics and sample research questions are listed below:

- *Doula work as a career.* How do doulas sustain their practice through additional training and credentials?
- *Breastfeeding attitudes and practices.* How do maternity support workers compare in terms of their attitudes and practices around breastfeeding? How central is personal experience in their views on breastfeeding?
- *Emotional intelligence and emotional burnout.* How do maternity support workers differ by emotional intelligence, and how does emotional intelligence mitigate emotional burnout? How do these issues affect nursing quality of care and medical errors?
- *ACA changes in doula care coverage.* How might changes in reimbursement of doulas via the Affordable Care Act affect doula care work and the demographics of the doula workforce?
- *Documentation and L&D Nurses.* How do L&D nurses view documentation practices and its effects, if any, on their ability to care for birthing women?
- *Orientation toward reproductive justice.* How do maternity support workers compare in terms of their attitudes toward choice and rights in the context of reproductive and maternity practices?
- *Country comparisons.* How are the Canadian and the U.S. maternity care systems alike and different, in terms of maternity support workers?

RATIONALE for the Maternity Support Survey

Background

In the contemporary United States and Canada, a physician-centric biomedical paradigm dominates understandings of pregnancy and childbirth [1-5]. This paradigm highlights the likelihood of pathology and heightened risk and downplays the extent to which labor and birth are “normal” physiological processes. Many observers have criticized the medicalization of childbirth in terms of both its health outcomes and its impact on women’s experience, comparing it unfavorably to the midwifery model of care [2, 4, 6-14]. However, most analyses of the contemporary Western experience of birth have focused on whether midwives versus obstetricians are the optimal caregivers for low risk pregnant women, while ignoring the role of doulas, childbirth educators (CBEs), or labor and delivery (L&D) nurses, or allied and emerging roles, such as postpartum doulas, lactation consultants, or breastfeeding counselors [15-17]. Members of these occupations comprise what have been called “maternity support” roles, and provide information, emotional and/or physical support, and advocacy to women at some point during pregnancy, childbirth, and postpartum [17]. The Maternity Support Survey is the first survey of doulas, childbirth educators, and labor and delivery nurses across the United States and Canada in terms of their approach to maternal support and care.

The Maternity Context in Comparative Perspective

Surveying maternity support workers from both the United States and Canada offers a valuable opportunity to compare the experiences of doulas, childbirth educators, and labor and delivery nurses working in similar cultures but very different healthcare environments. In terms of similarities, both countries share a tradition of Western medicine and thus a medicalized culture of birth in which medical interventions are “normal.” The vast majority of women in both countries give birth in hospitals (98.7% in the U.S. and 98.6% in Canada) [18, 19]. Epidural analgesia, induction and stimulation with Pitocin and continuous electronic fetal monitoring (CEFM) are extremely common in both countries.

However, the maternity care systems of the two nations also have significant differences that stem from their health care and legal systems. The most obvious difference is Canada’s single-payer health care system, administered at the provincial level, which provides care to all residents without co-payments. Canada has fewer midwives by population than most developed nations and only five of Canada’s ten provinces legally recognize midwives as maternity care providers. Also, while the number of midwives is growing, there are too few midwives to meet demand [20-22]. However, in provinces that legally recognize

registered midwives, they are integrated into the health care system and obstetric backup for midwifery care is institutionalized. Midwives also receive payments from the provincial health plan for out-of-hospital births as well as hospital births. Efforts to improve the quality of maternity care in Canada explicitly include integrating different models of birth into the system and collaboration among nurses, midwives, family physicians, and obstetricians. [23].

In comparison, the American health care system, even after the implementation of the 2010 Patient Protection and Affordable Care Act (ACA), is fragmented and privatized. Medicaid, the public insurance program that pays for nearly half of all births in the U.S., is administered at the state level, with varying requirements for eligibility and coverage. The ACA includes several provisions relevant to childbearing women, including Section 2701, which provides a directive to develop a health care quality measurement program for adult beneficiaries of Medicaid. Section 2701 of ACA notes that “not later than January 1, 2011, the Secretary shall identify and publish for comment a recommended core set of adult health quality measures for Medicaid eligible adults.” While not explicitly identifying maternal quality measures, since Medicaid covers over 40% of US births, and childbearing women comprise a significant adult population within Medicaid, this has been viewed as an opportunity for the newly adopted quality measures in maternity care to be used for evaluation of Medicaid programs covering maternity benefits [24].

The United States regulates midwifery at the state-level, with some states prohibiting non-nurse midwifery by statute. Even in states with favorable midwifery regulations, insurance companies rarely reimburse midwives for out-of-hospital births, and these midwives face challenges finding supportive relationships with hospitals and obstetricians that can be barriers to practice. Litigation for adverse medical events is also both more common and a more normatively acceptable practice in the United States than in Canada [25].

The enormous systemic differences between the U.S. and Canada mean that maternity support workers in these countries operate under disparate conditions. A comparison of doulas, CBEs, and labor and delivery nurses from each country should provide new insights into the effects of the organizational and legal environment on birth outcomes and the practice of maternity support work.

Maternal Outcomes

In public health, there is an increasing awareness that maternal outcomes in the United States are worsening over time, in spite of the fact that Americans spend more on health care than other developed countries [25-28]. Maternal mortality rates have been increasing in the U.S. since 1982, and many maternal

deaths are preventable [29-32]. Statistics released in September of 2010 by the United Nations place the United States 50th in the world for maternal mortality — with maternal mortality ratios higher than almost all European countries, as well as several countries in Asia and the Middle East [33]. However, pregnancy-related deaths in the United States have risen from 7.2 per 100,000 live births in 1987 to 17.8 per 100,000 in 2009 (the latest year with reliable data), according to the U.S. Centers for Disease Control and Prevention. The rate among African-American women is more than triple that of white women: 35.6 versus 11.7 deaths per 100,000 live births. The US scores almost as poorly on other quality measures such as infant mortality, pre-term birth, and use of cesarean section [26, 34, 35].

Canada has historically had lower infant and maternal mortality rates than the United States, but has lost ground in recent years compared to other developed nations. Both infant and maternal mortality have been increasing in Canada since the mid-1990s [36-38]. For maternal mortality, Canada currently ranks 35th in the world with a rate of 12 deaths for every 100,000 live births – a considerably lower rate than in the United States [36]. However, Canada has slipped in world ranking since 1990: from 2nd to 11th place among OECD countries.

Maternal morbidity rates have also been rising in both the United States and Canada over the last two decades [30, 39-41]. Maternal morbidity refers to illness or injury arising from complications of pregnancy or delivery. Some examples of maternal morbidity include gestational diabetes, preeclampsia, and hemorrhage, and examples of severe morbidity include peripartum hysterectomy, renal failure, heart failure, stroke, pulmonary embolism, and septic shock. Some maternal complications are life-threatening for mothers and/or newborn infants. Maternal complications are a leading cause of neonatal mortality and morbidity.

Both the United States and Canada have advanced medical technology and surgical techniques, and a firmly entrenched Western medical culture of birth [42, 43]. Yet maternal outcomes are worsening. In fact, many birth advocates argue that advanced technology and surgery are a significant part of the problem [44, 45]. For example, cesarean delivery is associated with substantial increases in maternal mortality and morbidity, and cesarean rates have risen dramatically in both the United States and Canada [46, 47]. In 2011, 32.8% of births in the United States and 27.0% of births in Canada involved cesarean delivery [19, 48]. In 1985, the World Health Organization (WHO) recommended that total cesarean rates should not exceed 15% yet this recommendation was widely ignored in the U.S. and Canada. In 2000, ACOG released a report, “Evaluation of Cesarean Delivery,” which identified a target rate of 15.5% for primary cesareans among low-risk women, and this rate was also adopted by

the National Center for Health Statistics [49]. Today, variation by hospital and geographic region in primary cesarean rates among low risk women shows a clear need for quality improvement initiatives [49].

Maternity Care Quality Initiatives

In October 2008, the United States quality organizations, the National Quality Forum (NQF) released 17 perinatal measures that had been endorsed through its expert panel review process. From these 17 endorsed measures, The Joint Commission (TJC) selected five for its revised Perinatal Care Measure Set. Hospitals have had the option to voluntarily report on these measures since April 1, 2010. TJC recently announced that hospitals with over 1100 births per year will be required to report on this Perinatal Care Measure Set as of January 1, 2014 [50]. This set includes measures of early elective deliveries less than 39 weeks' gestation, percentage of nulliparous women with a term, singleton baby in a vertex position delivered by Cesarean section (CS), percentage of pregnant patients at risk of preterm delivery at 24-32 weeks gestation receiving antenatal steroids prior to delivering preterm newborns, percentage of health care-associated bloodstream infections in newborns, and percentage of newborns that were fed breast milk only during the newborn's entire hospitalization.

In Canada, the Society of Obstetricians and Gynaecologists of Canada (SOGC) has developed a National Birthing Initiative to meet the needs of Canadian women and babies during pregnancy, delivery, and recovery [37]. The National Birthing Initiative aims to promote women- and family-centered maternity and newborn care across Canada, which women can access close to home and that builds on local community resources. The National Birthing Initiative aims to address shortages of skilled birth attendants – both obstetrician/gynecologists and midwives – especially in rural and remote areas of Canada and in Aboriginal communities. Thus, a major objective of the National Birthing Initiative is to recruit and retain providers, track the current number of maternity care providers, assess future needs for providers, identify service gaps, and meet the educational needs of nursing, midwifery, and medical students and residents. Other key components of the National Birthing Initiative include developing an inter-professional coalition to collaborate on sustainable models of maternity and newborn care, supporting the collection of accurate, comprehensive data on maternity care across Canada, and developing national, standardized practice guidelines for all maternity care providers. Finally, an explicit aim of the Birthing Initiative is to integrate of different models of maternity care, including using family physicians and midwives as primary providers of maternity care and collaboration among maternity care providers [37].

The Role of Maternity Support Workers

There is evidence that maternity support influences birth outcomes and improves the quality of maternity care [51]. We define maternity support broadly to include the provision of advocacy, information, and emotional and physical support to women throughout their pregnancy, childbirth and postpartum. While childbearing women can receive support from their obstetricians and midwives as well as their partners, family members, or friends, we choose to focus on the particular roles of doulas, childbirth educators, and labor and delivery nurses as “maternity support” workers.

Overall, research has shown that women derive multiple benefits from emotional, physical and informational support during pregnancy, childbirth and postpartum, especially in breastfeeding [51, 52]. The benefits of a continuous labor support person during labor include reductions in the use of interventions, including cesarean section and assisted vaginal delivery using vacuum or forceps [53-56]. Studies on continuous labor support find that it is most effective when it begins early in labor, and that it decreases the need for pain medication, shortens labor, increases satisfaction with the birth experience, and leads to lower rates of postpartum depression [57-60]. Clinical trials examining supportive care in labor have found less benefit when this care is provided by labor and delivery nurses [61, 62]. Research on the effect of childbirth education on birthing outcomes have shown mixed results, with some suggesting that women who attend classes have fewer early labor admissions and may be less likely to have an early elective delivery [63, 64]. However, some studies also show that women who attend childbirth classes are more anxious and have more interventions, such as induction of labor and epidural use [9]. In the case of breastfeeding, research has found that health care providers’ (physicians, midwives, nurses) informational, physical and emotional support influence women’s breastfeeding intensity and duration [65-69]. Health care providers’ attitudes toward breastfeeding affect the quality of these forms of support [70].

The research on the benefits of supportive care during pregnancy, childbirth and postpartum, has primarily explored the impacts of receiving care on specific clinical outcomes and/or on how mothers and families view this care. There has been far less attention to the views and experiences of individuals who provide such care [17, 69, 71]. The research on maternity care providers’ attitudes and views has largely centered on midwives and obstetricians, with few studies examining the roles of labor and delivery (L&D) nurses, childbirth educators, and doulas [17, 72-74]. As a result, previous research has not systematically studied or compared the practices and perceptions of workers who provide informational, emotional and physical support and advocacy to pregnant women. To address this gap in the literature, the Maternity Support Survey asked maternity support workers (doulas, childbirth educators, labor and delivery nurses) for their views on typical childbirth practices, their sense of efficacy in

their maternity support roles, their orientation toward maternity support as a job or career, and their experiences with the American or Canadian health care system.

The Maternity Support Survey

The Maternity Support Survey collected data on the characteristics and attitudes of doulas, childbirth educators (CBEs) and labor and delivery (L&D) nurses as the three most prominent maternity support roles in the antepartum, intrapartum, and immediate postpartum periods. Labor and delivery nurses emerged in the early 1920s, as birth moved from the home to the hospital setting in the United States and Canada [74]. In the contemporary U.S. and Canada, labor and delivery nurses care for the majority of childbearing women in the intrapartum period.

In the mid-1950s, childbirth educators entered the scene, with ICEA and Lamaze International both forming in 1960. The 1970s saw the establishment of several organizations for the promotion of childbirth education and home birth midwifery, including Informed Home Birth. Doulas emerged in part out of childbirth educators' recognition of the limits of their ability to provide information and advocate for normal birth outside of the birth setting itself [17]. Initially many childbirth organizations did not favor including the labor support role as part of their training and certification programs, however, many childbirth educators offered labor support services to their students. Today, however, doula trainers note that many of their doula trainees continue in the field to become childbirth educators, rather than coming from their ranks in the first place [17].

With the publication in 1980 of the first randomized control trial on the effectiveness of continuous labor support, women who were providing such support came to be called 'doulas,' and the first national organization promoting, training and certifying doulas, National Association of Childbirth Assistants, was founded in 1984, and dissolved after a decade in existence [17]. Since then, numerous organizations that train and certify doulas have formed at both national and local levels. Formed in 1992, DONA International, formerly Doulas of North America, is the largest and best known of these, with nearly 7000 members (over 2600 certified) worldwide as of 2009. Other national organizations include Childbirth and Postpartum Professional Association (CAPP), founded in 1998, toLabor (formerly Association of Labor Assistants and Childbirth Educators (ALACE)), Birthing From Within and BirthWorks, and as many as 10-15 more. In addition, there are numerous local organizations that train and certify doulas, and have no affiliation with any national organization.

Best estimates of the percentage of women who attend some form of prenatal childbirth education class in the U.S. is 53% [9] and in Canada is 33% [75]. National surveys in the U.S. find that about 3-6% of women have a doula at their births, while the percent of women who use doulas in Canada is unknown. The relationship between childbirth education and nursing is also very close. Many nurses teach childbirth preparation classes in hospital-based courses, although numbers are very hard to come by. In addition, many labor and delivery nurses see educating women as a large part of their job, during labor and postpartum.

Because maternity support workers influence women's birth experiences and birth outcomes, it is important to understand their characteristics, careers, attitudes toward birth, attitudes toward hospital practices, and views of other maternity support workers. The Maternity Support Survey is a survey of maternity support workers from across the United States and Canada that investigates the following broad topics:

- Whether doulas and childbirth educators view their maternity support work as a career (including the conditions and financial challenges that maternity support workers face, their degree of emotional burnout)
- How doulas and childbirth educators establish their expertise (the importance of certification and other credentials)
- How technology affects workload among labor and delivery nurses
- How health insurance and litigation concerns influence maternity support workers, organizational protocols, and the frequency of interventions into labor and delivery
- Emotional burnout among maternity support workers

DATA AND METHODS

Data for this study come from a cross-sectional on-line survey of doulas, childbirth educators (CBEs), and labor and delivery (L&D) nurses in the United States and Canada. The survey recruited participants between November 2012 and March 2013 through professional organizations and web postings. The survey collected no personal identifiers, and the Institutional Review Board at the University of Arizona determined the study to be exempt.

Partner Organizations

The Maternity Support Survey partnered with the following organizations in the recruitment of participants: Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN), Birthing from Within, BirthWorks, CAPPA Canada, DONA International, Health Connect One, International Childbirth Education Association (ICEA), Lamaze International, and toLABOR (formerly ALACE).

Sampling

Ten professional organizations emailed their current members a recruitment letter via email with a link to the survey on SurveyMonkey.com. This initial email invitation was followed by up to two reminders. Among members of these organizations, 2,243 initiated and 1,768 completed the survey. Thus, the completion rate was 78.8%.

Since many maternity support workers are not members of participating organizations, and organizational members may not be representative of all workers, sampling through professional organizations did not ensure access to the entire population of interest. In an effort to expand the population that the survey was able to reach, the research team publicized the survey to other doulas, CBEs, and labor and delivery nurses via social media (Facebook, Twitter, and maternity blogs) and email networks. An additional 1,082 respondents started the survey through this strategy, and 839 completed it. The completion rate of these respondents was 77.5%.

We excluded respondents from the final dataset if they 1) were not a doula, CBE, or nurse and thus were not eligible to take the survey (688 participants), 2) did not answer the first question of the survey (42 participants), or 3) attempted to skip the last portion of the survey by stating that they were not a doula, CBE, or nurse (13 participants). These selection criteria resulted in the exclusion of a total of 743 survey participants from the data, with an initial sample size of 3,325 respondents. Among these respondents, 2,781 completed

the survey (83.6%). The remaining individuals partially completed the survey (175, or 5.3%) or did not complete the initial portion of the survey (543, or 16.3%).

Some existing research has examined the experiences and attitudes of doulas and/or nurses in Canada [71, 76, 77], or one maternity support occupation (doula, childbirth educators or nurses) in the United States [78, 79]. The Maternity Support Survey is the first to compare attitudes and experiences in three maternity support occupations in both the United States and Canada. This cross-national comparison is valuable because the two countries share many cultural similarities, but have significantly different health care and legal systems that influence the delivery of maternity care. Comparing across maternity support occupations will also illuminate similarities and differences in attitudes and experiences across workers with different structural positions in maternity care. The MSS is also unique in having surveyed maternity support workers who hold multiple roles, such as doula and CBE.

Electronic surveys like the Maternity Support Survey typically cast a wide net, but are unable to obtain random samples with a high response rate. Thus, a limitation of the sample is that it is non-random because of the recruitment methods, and the responses may not be generalizable to all maternity support workers in the United States and Canada. However, despite these limitations, the Maternity Support Survey obtained a large number of responses from a diverse range of professional organizations, and the data are largely consistent with other literature [80].

Survey design

The research team developed the survey over the course of 18 months by adapting measures from previous studies [77, 78], developing hypotheses, and creating additional measures based on the hypotheses. The areas that the survey covered included:

- Demographic characteristics
- Training and credentials in the maternity support field
- Sources of information/knowledge about birth
- Ability to financially support a household with maternity support work
- Childbirth and breastfeeding experience
- Attitudes toward common labor practices and breastfeeding
- Attitudes and views toward other maternity support roles
- Work experiences, including ethical challenges, work satisfaction, and burnout
- Emotional intelligence
- Hospital characteristics
- Understandings of informed consent

- Experiences with and knowledge of quality improvement initiatives
- Questions specific to each role, including certifications, workload, marketing strategies, malpractice risk, insurance coverage, computerized charting, and attitudes toward other maternity support roles

Measures in the Maternity Support Survey included fixed choices for variables like gender, age, religious affiliation, state or province of residence, marital status, income, and education. It also permitted respondents to choose multiple categories for variables like race/ethnicity, language spoken, ways that respondents updated their knowledge, and sources of attitudes. Questions about training and/or certification included the options of “no training,” “training but not certified,” “certification in progress,” and “certified.” The survey used 5-point Likert scales from “strongly disagree” to “strongly agree” to measure attitudes and work satisfaction. The survey assessed the frequency with which respondents encountered specific circumstances in their maternity support work using 4-point scales (usually “never” to “often”). The full survey is in Appendix A.

For this report, we present basic descriptive summaries of the results of the survey using cross-tabulations and averages. We present demographic data by maternity support role. All other tables compare across roles only and include respondents from both the United States and Canada. To determine statistical significance of differences across groups, we use chi-square tests of significance, and t-tests and one-way analysis of variance for differences of means across groups.

RESULTS

In this section of the report, we provide a brief overview of the respondents’ roles by country.

Country Differences in Maternity Support Roles

A total of 2,781 respondents completed the survey, including 2,405 in the United States and 376 in Canada. Table 1 shows the breakdown of respondents by country and maternity support role.

Table 1: Maternity Support Role by Country

Role	United States	Canada	All
All Doulas	1,320 (54.9%)	249 (66.2%)	1,569 (56.4%)
All CBEs	1,009 (43.3%)	135 (36.9%)	1,144 (42.6%)
All labor and delivery nurses	905 (39.2%)	107 (29.2%)	1,012 (37.9%)
Total	2,405	376	2,781

Note: Totals include respondents that hold multiple roles. As a result, categories are not mutually exclusive and percentages do not add to 100.

Survey respondents included 1,320 doulas, 1,009 CBEs and 905 labor and delivery nurses from the United States, and 249 doulas, 135 CBEs, and 107 labor and delivery nurses from Canada. In terms of country differences between the United States and Canada, the Canadian sample includes a higher proportion of doulas and a lower proportion of labor and delivery nurses than the American sample, and this difference is statistically significant (which means that it differs from what one would expect if the country populations were the same). This is likely an artifact of the sampling strategy for the Canadian sample, as the organizations that participated in recruitment in Canada represent more doulas than labor and delivery nurses. As a result, the samples from the two countries are not directly comparable because the Canadian sample over-represents doulas and under-represents labor and delivery nurses compared to the American sample.

In the survey design, we aimed to capture perspectives of workers who hold multiple maternity support roles. Table 2 illustrates patterns that account for the number of respondents’ roles. As Table 2 reveals, 759 respondents from the United States held two roles (532 were doula/CBEs, 208 were nurse/CBEs, and 19 were doula/nurses) and 107 respondents from Canada held two roles (98 were doula/CBEs, 7 were nurse/CBEs, and 2 were doula/nurses). There were also 35 respondents from the United States and 4 from Canada who held all three roles.

Table 2: Multiple Maternity Support Roles by Country

Role	United States	Canada	All
Doula only	734 (30.5%)	145 (38.6%)	879 (31.6%)
CBE only	234 (9.7%)	26 (6.9%)	260 (9.3%)
L&D Nurse only	643 (26.7%)	94 (25.0%)	737 (26.5%)
Doula/CBE	532 (22.1%)	98 (26.1%)	630 (22.7%)
Nurse/CBE	208 (8.6%)	7 (1.9%)	215 (7.7%)
Doula/Nurse	19 (0.8%)	2 (0.5%)	21 (0.8%)
All 3 roles	35 (1.5%)	4 (1.1%)	39 (1.4%)
Total	2,405	376	2,781

Note: Percentages may not add to 100 due to rounding.

This table illustrates the unique nature of the CBE role. Workers who teach childbirth education are especially likely to also hold other maternity support roles like doula or L&D nurse.

Characteristics by Maternity Support Role

In the following tables (Table 3 and Table 4), we present demographic and educational characteristics by maternity support role. Because respondents may hold multiple roles, doulas, CBEs and nurses are not mutually exclusive. Consequently significance tests in Table 3 compare doulas to non-doulas, CBEs to non-CBEs, and nurses to non-nurses.

Table 3: Demographic Characteristics by Maternity Support Role

Characteristic	Doula	CBE	L&D Nurse
	N (%)	N (%)	N (%)
Female	1,562 (99.6)	1,143 (99.9)	1,002 (99.0)
Male	7 (0.5)	1 (0.1)	10 (1.0)
Age in years	40.7 (12.0)	45.9 (11.7)	47.7 (11.3)
Race/ethnicity			
White	1,461 (93.1)	1,080 (94.4)	958 (94.7)
Black	40 (2.6)	28 (2.5)	17 (1.7)
Hispanic/Latina	53 (3.4)	43 (3.8)	30 (3.0)
Native American/ Canadian	38 (2.4)	19 (1.7)	10 (1.0)
Asian	20 (1.3)	9 (0.8)	10 (1.0)
Other/ Unknown	20 (1.3)	11 (1.0)	3 (0.3)
N	1,569	1,144	1,012

Note: All numbers rounded to one significant digit.

Table 3 reveals that doulas are a younger group on average compared to those who are childbirth educators and nurses. Over one third of doula respondents are under the age of 35, and over two thirds are under 45 years of age. In

contrast, one third of labor and delivery nurses are 55 or older, while less than 17% are under 35 years old. There are no substantial differences among groups in gender or race/ethnicity, except that doulas are significantly more likely to identify as Native American/Canadian or “other” race/ethnicity.

Table 4 illustrates educational attainment by maternity support role, revealing that doulas have lower average educational attainment and labor and delivery nurses have higher average educational attainment than other groups. These differences between doulas and non-doulas and nurses and non-nurses are statistically significant and are unsurprising given the educational credentials that most nursing positions require.

Table 4: Educational Attainment by Maternity Support Role

Characteristic	Doula	CBE	L&D Nurse
	N (%)	N (%)	N (%)
High school or less	66 (4.2)	15 (1.3)	0 (0.0)
Some college/ Associates degree	556 (35.4)	343 (30.0)	235 (23.2)
Bachelor’s degree	637 (40.6)	505 (44.1)	496 (49.0)
Master’s degree	245 (15.6)	230 (20.1)	226 (22.3)
Doctoral degree	37 (2.4)	34 (3.0)	17 (1.7)
Other	28 (1.8)	17 (1.5)	38 (3.8)
N	1,569	1,144	1,012

Note: All numbers rounded to one significant digit.

Attitudes toward Common Childbirth Procedures by Role

The tables that follow (Table 5 to Table 10) summarize differences in attitudes toward common childbirth procedures across maternity support roles. Since the proportion of respondents holding each role differed in the U.S. and Canada, we focus here on differences by role and not on country-level differences.¹

Continuous Electronic Fetal Monitoring

Table 5 presents attitudes toward continuous electronic fetal monitoring (CEFM). This table illustrates that nearly half of maternity support workers believe that CEFM does not reduce the risk of litigation, while only 22% believe that it does reduce this risk. Nurses were significantly less likely than non-nurses to believe that CEFM reduces the risk of litigation, with 56% of nurses disagreeing or strongly disagreeing with the statement that CEFM reduces the risk of litigation (compared to 46% of doulas and 48% of CBEs). Doulas were not significantly different from non-doulas on this measure, and CBEs were not significantly different from non-CBEs.

Table 5 also reveals that only 11% of all respondents agree or strongly agree with the statement that CEFM is more effective than intermittent auscultation, while 75.5% disagree or strongly disagree. There are strong and significant differences among maternity support workers. Over 90% of doulas disagree or strongly disagree that CEFM is more effective, compared to 82% of CBEs and only 54% of labor and delivery nurses.

In terms of the effects of CEFM on cesarean deliveries, Table 5 shows that 83% of all respondents believed that CEFM has been a major factor in the rise in cesarean deliveries. There are significant differences by maternity support role, primarily in terms of their degree of agreement: doulas and CBEs tended to strongly agree with this belief, whereas labor and delivery nurses were more likely to simply agree.

In line with the medical evidence, a majority of maternity support workers (58%) believe that CEFM has not reduced the incidence of cerebral palsy and neonatal morbidity. Only 9.1% agreed or strongly agreed that it had reduced the incidence of these health risks. Labor and delivery nurses were the most likely to believe that CEFM had reduced cerebral palsy and neonatal morbidity, with 16.5% agreeing or strongly agreeing with this statement compared to 7% of CBEs and less than 4% of doulas.

¹ We expect that future publications will examine cross-national differences in greater depth. For summaries of cross-national comparisons, please contact the first author.

Table 5: Attitudes Toward Continuous Electronic Fetal Monitoring (%)

	All	Doula	CBE	L&D Nurse
CEFM reduces the risk of litigation				
Strongly disagree	15.7	17.0	18.4	14.7
Disagree	33.4	29.1	30.1	41.4
Neither	29.3	31.6	28.8	24.3
Agree	16.9	17.2	17.8	15.5
Strongly agree	4.8	5.1	5.0	4.1
CEFM is more effective than intermittent auscultation				
Strongly disagree	41.4	57.4	49.7	17.7
Disagree	34.1	33.2	32.8	36.4
Neither	13.6	7.3	9.8	22.6
Agree	8.2	1.9	5.7	16.7
Strongly agree	2.8	0.2	2.1	6.6
CEFM has increased the CS rate				
Strongly disagree	3.9	4.7	5.2	2.5
Disagree	3.1	1.5	2.1	5.6
Neither	9.6	7.8	6.7	11.3
Agree	41.2	37.0	38.5	47.8
Strongly agree	42.2	49.0	47.6	32.8
CEFM has reduced CP and neonatal morbidity				
Strongly disagree	23.8	24.5	29.5	24.3
Disagree	34.5	34.9	35.3	33.6
Neither	32.6	37.0	28.4	25.8
Agree	7.3	3.0	5.0	12.8
Strongly agree	1.8	0.6	1.8	3.6
N	2,781	1,569	1,144	1,012

Overall, despite its near-ubiquitous use in hospital births, CEFM is not seen by any of these maternity support roles to reduce litigation risk, or poor neonatal outcomes. All roles agree CEFM is not more effective than intermittent monitoring and that use of CEFM has contributed toward the cesarean rate. Nurses face the constraints of institutional practice in which CEFM is routinely used, despite its limitations.

These differences in attitudes toward CEFM across maternity support roles were statistically significant. Table A in the Appendix shows average differences in attitudes on a scale of 1-5.

Epidural Analgesia

In terms of whether epidural analgesia interferes with the normal progress of labor, 15.7% of all respondents disagreed or strongly disagreed that it interferes, while 70% agreed or strongly agreed. Doulas were particularly likely to view epidurals as an interference, with 89% agreeing or strongly agreeing that they

interfere with labor progress. This compares to 81% of CBEs but only 39% of labor and delivery nurses. Differences by role were statistically significant.

Table 6 illustrates attitudes toward epidural analgesia. Overall, 61% of respondents disagreed or strongly disagreed with the statement that epidural analgesia should be offered to all women in labor. Doulas were particularly likely to disagree and were significantly different from non-doulas: 83.7% of doulas disagreed or strongly disagreed with this statement, while only 5% agreed or strongly agreed. Labor and delivery nurses were also significantly different from non-nurses on this attitudinal dimension, with 24.5% disagreeing or strongly disagreeing with the idea that women should routinely be offered epidurals, while 51% agreed or strongly agreed. CBEs were also significantly different from non-CBEs, but their views fell between those of nurses and doulas (and were closer to doulas' views).

In terms of whether epidural analgesia interferes with the normal progress of labor, 15.7% of all respondents disagreed or strongly disagreed that it interferes, while 70% agreed or strongly agreed. Doulas were particularly likely to view epidurals as an interference, with 89% agreeing or strongly agreeing that they interfere with labor progress. This compares to 81% of CBEs but only 39% of labor and delivery nurses. Differences by role were statistically significant.

Table 6: Attitudes Toward Epidural Analgesia (%)

	All	Doula	CBE	L&D Nurse
Epidurals should be routinely offered to all women				
Strongly disagree	35.5	52.2	42.3	8.5
Disagree	25.5	31.4	28.8	16.0
Neither	16.0	11.4	14.6	24.2
Agree	16.8	4.0	11.5	37.1
Strongly agree	6.2	1.0	2.9	14.1
Epidurals interfere with normal labor progress				
Strongly disagree	3.7	2.3	2.8	5.6
Disagree	12.0	1.7	5.4	28.6
Neither	14.5	7.0	10.7	27.3
Agree	38.2	44.0	42.3	29.6
Strongly agree	31.7	45.1	38.8	9.0
Epidurals increase the risk of cesarean delivery				
Strongly disagree	3.2	2.1	2.5	4.7
Disagree	13.0	2.6	6.7	29.3
Neither	13.7	7.0	11.0	24.6
Agree	39.6	45.1	43.2	31.1
Strongly agree	30.6	43.3	36.7	10.3
Epidurals conserve maternal energy for the 2nd stage				
Strongly disagree	8.8	12.7	12.5	2.7
Disagree	23.9	29.2	28.0	14.9
Neither	36.2	39.1	37.2	32.2

Agree	27.9	17.9	20.4	43.7
Strongly agree	3.1	1.1	2.0	6.5
N	2,781	1,567	1,144	1,011

Similarly, 16.2% of all respondents disagreed or strongly disagreed with the statement that epidural analgesia increases the likelihood of cesarean delivery, while over 70% agreed or strongly agreed. There were similar statistically significant contrasts by role as for other attitudes. Overall, 89% of doulas agreed that epidurals contribute to cesarean deliveries, compared to 80% of CBEs and 41% of nurses.

In terms of whether epidural analgesia conserves maternal energy for the second stage of labor, 31.1% agreed or strongly agreed that it does, while 32.7% disagreed or strongly disagreed. Differences by role were statistically significant, with labor and delivery nurses again more favorable toward benefits of epidural analgesia. Doulas and CBEs were more likely to disagree or strongly disagree with this statement (41.9% and 40.5% respectively) than labor and delivery nurses (17.6%), while labor and delivery nurses were much more likely to agree or strongly agree (50.2%, versus 19% of doulas and 22.4% of CBEs). Statistically significant differences across maternity support roles illustrate that labor and delivery nurses are more favorable toward epidural analgesia and its benefits, while doulas are particularly likely to emphasize the drawbacks to this analgesia. Table A in the Appendix illustrates the average attitudes toward epidural analgesia by role, highlighting the much higher favorability among labor and delivery nurses than CBEs or especially doulas.

Induction of Labor

Table 7 presents attitudes toward labor induction by maternity support role. While maternity support workers tend to view induction somewhat unfavorably,

Table 7 reveals that labor and delivery nurses are more favorable toward induction than other roles, while doulas are particularly unfavorable towards labor induction. Nearly 70% of all respondents disagree or strongly disagree with the statement that induction is safe as part of a standardized protocol, while only 17.3% agree or strongly agree. Thus most maternity support workers that responded to this survey view labor induction as a problematic practice.

There are also large and statistically significant differences by maternity support role. Nearly 90% of doulas and 81% of CBEs disagree or strongly disagree with the idea that induction is safe, compared to 40.3% of labor and delivery nurses. In contrast, 39% of nurses agree or strongly agree that induction is safe as part of a standardized protocol.

In the overall sample, 77.6% believe that inducing labor makes it difficult for women to avoid an epidural. The same type of contrasts by roles are present here, whereby 88.3% of doulas and 83.4% of CBEs agree or strongly agree that induction makes it difficult to avoid an epidural, compared to 60.7% of labor and delivery nurses. As

Table 7 indicated above, labor and delivery nurses are also generally more favorable toward epidural analgesia. These responses suggest that labor and delivery nurses are also more favorable toward labor induction than other maternity support workers.

Table 7: Attitudes Toward Labor Induction (%)

	All	Doula	CBE	L&D Nurse
Induction is safe as part of a standardized protocol				
Strongly disagree	42.9	62.8	52.2	13.3
Disagree	26.8	26.5	28.9	27.0
Neither	13.0	7.7	10.9	20.8
Agree	16.0	2.6	7.7	36.2
Strongly agree	1.3	0.4	0.4	2.8
Induction makes it difficult for a woman to avoid an epidural				
Strongly disagree	2.2	2.1	2.3	2.5
Disagree	9.1	2.9	5.0	19.0
Neither	11.1	6.7	9.4	17.9
Agree	43.2	42.6	45.7	42.8
Strongly agree	34.4	45.7	37.7	17.9
Induction increases the risk of cesarean delivery				
Strongly disagree	1.7	2.0	2.1	1.6
Disagree	3.5	1.0	1.6	7.2
Neither	6.7	3.6	4.2	12.4
Agree	37.9	30.6	35.5	46.8
Strongly agree	50.2	62.9	56.6	32.0
Induction ensures that labor progresses according to a labor curve				
Strongly disagree	29.0	39.7	34.6	11.9
Disagree	40.3	36.3	39.0	46.9
Neither	19.8	14.0	16.5	29.3
Agree	10.2	9.4	9.0	11.2
Strongly agree	0.7	0.6	0.9	0.8
N	2,781	1,568	1,144	1,012

A large majority of maternity support workers (88.1%) also believe that induction increases the likelihood of cesarean delivery, with 50.2% strongly agreeing that it does. Differences by role are again statistically significant, with 93.5% of doulas, 92.1% of CBEs, and 78.8% of labor and delivery nurses believing that induction increases the risk of cesarean section. Alternately, most maternity support workers disagree with the belief that induction ensures that labor progresses according to a labor curve, with 69.3% disagreeing or strongly disagreeing and only 10.9% agreeing or strongly agreeing with this statement. Doulas and CBEs are considerably less likely to support the idea that induction encourages labor progress than labor and delivery nurses, who are more agnostic on this question. Table A in the Appendix illustrates the average attitude scores for the full sample and by maternity support role, revealing statistically significant differences between groups.

Pitocin

Table 8 illustrates attitudes toward the use of Pitocin. As with induction, a majority of respondents (61.7%) do not believe that Pitocin is safe as part of a standardized protocol and there are statistically significant differences by role.

Doulas are particularly unfavorable toward the use of Pitocin as part of a standardized protocol, with 84.6% disagreeing or strongly disagreeing that it is safe and only 4.3% agreeing. In contrast, only 25% of labor and delivery nurses indicated that Pitocin is not safe as part of a standardized protocol, while 49.3% agreed or strongly agreed that it is safe.

Table 8: Attitudes Toward Pitocin (%)

	All	Doula	CBE	L&D Nurse
Pitocin is safe as part of a standardized protocol				
Strongly disagree	34.4	51.5	43.0	6.5
Disagree	27.3	33.1	31.1	18.5
Neither	16.4	11.0	13.8	25.7
Agree	20.7	3.6	11.2	47.1
Strongly agree	1.2	0.7	0.9	2.2
Pitocin makes it difficult for a woman to avoid an epidural				
Strongly disagree	1.9	2.1	1.8	1.8
Disagree	7.8	1.5	3.9	18.4
Neither	9.9	5.3	7.5	17.0
Agree	42.3	40.1	44.2	45.3
Strongly agree	38.1	51.0	42.6	17.6
Pitocin is a high-risk medication				
Strongly disagree	0.9	1.3	1.1	0.4
Disagree	3.5	3.9	3.4	3.0
Neither	12.9	16.7	14.4	5.1
Agree	40.1	41.3	40.7	36.4
Strongly agree	42.6	36.9	40.4	55.1
N	2,781	1,568	1,143	1,012

Among all respondents, over 80% believe that Pitocin makes it difficult for a woman to avoid an epidural (agree or strongly agree). This includes 91.1% of doulas, 86.8% of CBEs, and 62.8% of labor and delivery nurses, exhibiting similar significant differences by role as other attitudinal questions. Similarly, over 80% of respondents believe that Pitocin is a high-risk medication, including 78.2% of doulas, 81.1% of CBEs, and 91.5% of labor and delivery nurses.

Appendix Table A reveals average differences in scoring of these attitudes. Again, responses demonstrated a statistically significant difference by maternity support role, and a substantial contrast between nurses and other maternity support workers. Nurses are both somewhat more likely to view Pitocin as a high-risk medication but are also more likely to believe that it is safe as part of a standardized protocol.

Cesarean Delivery Table 9 presents respondents' experience with and attitudes toward cesarean delivery. This table reveals that a majority of respondents report attending a lower-than-average percentage of births with cesarean deliveries, with 65.8% of all respondents indicating that fewer than 20% of the births that they attend involve cesarean deliveries.

Table 9: Attitudes Toward Cesarean Delivery (%)

	All	Doula	CBE	L&D Nurse
Approximate % cesareans among births you attend	17.8	13.1	16.6	25.0
10% or less	40.7	56.6	45.2	16.7
11-20%	25.1	26.7	25.6	22.6
21-30%	21.4	10.3	18.0	38.2
31-40%	8.9	3.9	7.5	16.9
41-50%	3.0	1.8	3.0	4.5
More than 50%	0.8	0.7	0.8	1.2
Cesareans prevent urinary incontinence				
Strongly disagree	36.1	45.6	44.5	21.1
Disagree	40.9	36.0	38.5	49.4
Neither	19.8	16.4	15.0	24.5
Agree	3.1	1.9	1.8	4.8
Strongly agree	0.2	0.1	0.2	0.2
Cesareans are safer for babies				
Strongly disagree	65.0	80.0	71.2	41.3
Disagree	28.7	17.8	25.5	46.6
Neither	5.1	1.8	2.5	10.0
Agree	0.7	0.1	0.3	1.6
Strongly agree	0.4	0.3	0.4	0.5
Cesareans are as safe for women				
Strongly disagree	64.7	81.3	72.6	40.1
Disagree	28.8	16.6	22.7	47.5
Neither	4.3	1.2	3.2	8.8
Agree	1.5	0.4	0.8	3.1
Strongly agree	0.7	0.6	0.7	0.5
Vaginal birth compromises sexual functioning				
Strongly disagree	48.5	60.7	55.9	28.1
Disagree	38.5	31.2	36.5	49.4
Neither	9.5	5.5	5.2	16.4
Agree	2.6	1.4	1.5	5.2
Strongly agree	0.9	1.2	0.8	0.9
Women should be able to choose cesarean delivery without medical indication				
Strongly disagree	40.5	38.2	40.6	40.5
Disagree	29.6	26.9	30.5	34.0
Neither	15.3	17.1	15.2	13.4
Agree	12.4	14.6	11.6	10.9
Strongly agree	2.3	3.1	2.1	1.2
N	2,781	1,569	1,144	1,012

Respondents that attend births self-reported an estimate of the percent of cesarean deliveries in births that they attend. While we cannot be certain of the accuracy of these self-reports, doulas estimated that they attended a very low percent of births with cesarean deliveries (13.1%). A majority of doulas (56.6%)

indicated that cesarean deliveries occurred in 10% or fewer of the births that they attend, and 93.6% indicated a rate at or below 20%. This was what one would expect, given both the evidence about the effects of doulas on the likelihood of a cesarean and the motivations of many women who hire doulas for the purpose of having a vaginal delivery.

Labor and delivery nurses, on the other hand, estimated that an average of 25.0% of births that they attended involved cesarean deliveries. Only 39.3% of nurses indicated that cesareans occurred in 20% or fewer births and 55.1% indicated rates of cesareans delivery between 20 and 40%, which is approximately average in both the U.S. and Canada. CBEs' average estimation was 16.6%, although most do not attend births as part of their educator job.

In terms of maternity support workers' attitudes toward cesarean delivery, 77% of all respondents disagreed or strongly disagreed with the statement that cesareans prevent urinary incontinence. (Only 3.3% agreed.) Once again, there were differences between labor and delivery nurses and other maternity support workers in the sample, with 70.5% of nurses disagreeing with the idea that cesareans prevent incontinence, compared to over 80% of doulas and CBEs.

Maternity support workers also overwhelmingly (93.7%) disagree with the statement that cesareans are safer for babies than vaginal birth. This includes 97.8% of doulas, 96.8% of CBEs, and 87.9% of nurses. However, nurses disagree with this statement less strongly than other maternity support workers and are more likely to indicate that they neither agree nor disagree. It is possible that nurses have more knowledge about or exposure to situations where cesareans are safer for babies, and thus take a more conditional view of this question (i.e. it depends on the circumstances). Similarly, the overwhelming consensus was that cesarean deliveries were not as safe for mothers, as 93.5% of all respondents disagreed or strongly disagreed with this measure. Doulas were again the most strongly opposed to the idea that cesareans were equally safe for women, with only 1% agreeing with the statement that they are as safe. In comparison, 1.5% of CBEs and 3.6% of labor and delivery nurses indicated that cesareans are equally safe for women.

In terms of sexual functioning, 87% of respondents disagree or strongly disagree with the statement that vaginal birth compromises sexual functioning, and only 3.5% agree or strongly agree. However, labor and delivery nurses are much less likely to disagree and more likely to agree with this statement about sexual function.

On the issue of women choosing cesarean delivery, 70% of all respondents disagreed or strongly disagreed with the statement that women should be able to choose a cesarean delivery without medical indication. This included 65.1% of doulas, 71.1% of CBEs, and 74.5% of labor and delivery nurses. In this instance,

doulas are more favorable toward offering women the choice of a cesarean delivery, while nurses are somewhat more opposed to medically unnecessary elective procedures. This may stem from doulas’ role as an advocate for the pregnant woman, compared to nurses’ position as medical professionals. Appendix Table A illustrates average attitudes toward cesarean delivery.

Repeat Cesarean and VBAC

Table 10 illustrates attitudes toward repeat cesarean and VBAC for women with a prior cesarean. In terms of women’s health, 85.9% of all respondents disagree or strongly disagree with the claim that a scheduled repeat cesarean is the best option for a woman’s health when she has had a previous cesarean. Over 90% of doulas and CBEs (96.8% and 91.7% respectively) disagree with this statement, compared to 70.7% of labor and delivery nurses.

Table 10: Attitudes Toward Repeat Cesarean and VBAC for Women with Prior Cesarean Delivery (%)

	All	Doula	CBE	L&D Nurse
Scheduled repeat cesarean is the best for a woman’s health				
Strongly disagree	50.9	69.9	59.0	23.5
Disagree	35.0	27.0	32.7	47.1
Neither	10.1	2.4	6.6	20.8
Agree	3.2	0.4	1.5	7.0
Strongly agree	0.8	0.5	0.3	1.6
Scheduled repeat cesarean reduces the risk of litigation				
Strongly disagree	19.1	24.9	19.8	10.7
Disagree	26.3	22.1	26.3	32.6
Neither	28.8	28.4	29.6	28.7
Agree	21.2	19.7	19.8	23.7
Strongly agree	4.7	4.9	4.6	4.4
A woman who is a good candidate for VBAC should be able to attempt one				
Strongly disagree	1.8	1.9	2.1	1.9
Disagree	0.7	0.0	0.2	1.7
Neither	1.2	0.2	0.6	2.5
Agree	18.0	5.5	13.1	36.4
Strongly agree	78.2	92.5	84.0	57.6
N	2,781	1,569	1,144	1,012

When it comes to questions of litigation, 44.1% of respondents do not believe that scheduled repeat cesarean reduces the risk of litigation, while 27.2% do. Differences by maternity support role are small, although they are statistically significant: 28.1% of labor and delivery nurses believe that scheduled repeat

cesareans reduce the risk of litigation, compared to 24.6% of doulas and 24.4% of CBEs.

In terms of support for VBAC, the vast majority of respondents (96.2%) supported the idea that a woman who is a good candidate should be able to attempt a vaginal birth after cesarean. This included 98% of doulas, 97.1% of CBEs, and 94% of labor and delivery nurses. These differences, though small in magnitude, were statistically significant. Appendix Table A illustrates the difference in average scores and the results of statistical tests for differences across groups.

Ethical and Practice Issues

We were interested in exploring the extent to which maternity support workers encounter ethical issues in their practice. The following tables (Table 11 through Table 14) report survey findings on all respondents' views on informed consent and experience with ethical challenges. We asked nurses in particular about their experiences with medical errors and views on professional liability.

Informed Consent

Table 11 demonstrates respondents' views on informed consent. Respondents who indicated that they worked primarily in one hospital answered these questions with respect to their primary hospital.

Table 11: Views of Informed Consent (%)

	All	Doula	CBE	L&D Nurse
Care providers in my hospital explain the risks and benefits of every procedure				
Strongly disagree	9.9	13.2	10.9	9.5
Disagree	27.3	36.0	26.3	25.0
Neither	14.1	15.7	15.6	12.4
Agree	40.4	28.9	39.2	44.1
Strongly agree	8.3	6.1	8.1	9.0
When a woman signs forms upon admission, she has given informed consent				
Strongly disagree	34.2	48.0	40.7	28.3
Disagree	41.1	32.1	36.5	45.6
Neither	11.0	8.6	9.0	12.1
Agree	11.4	10.1	12.1	11.3
Strongly agree	2.3	1.2	1.7	2.7
Informed consent requires an on-going decision-making process				
Strongly disagree	3.0	1.7	3.3	3.1
Disagree	0.5	0.3	0.2	0.5
Neither	1.1	1.5	0.6	1.1
Agree	31.0	20.6	25.5	35.0
Strongly agree	64.5	76.0	70.4	60.3
N	1,452	408	521	927

Overall, 48.7% of respondents believed that care providers in their hospital explain the risks and benefits of every procedure, while 37.2% did not believe this. Looking at individual roles, 53.1% of labor and delivery nurses agreed or strongly agreed with this statement. Similarly, 47.3% of childbirth educators agreed or strongly agreed with the statement. On the other hand, doulas were

far less likely to determine that care providers, in their experience, explain the risks and benefits of every procedure. Only 35% of doulas agreed or strongly agreed with this statement on informed consent, while 49.2% disagreed or strongly disagreed.

When it comes to what constitutes consent, 75.3% of respondents did not believe that a woman has given informed consent if she simply signs forms upon admission to a hospital. This included 73.9% of nurses, 77.2% of childbirth educators, and 80.1% of doulas. There was also little variation by role in views on the requirements for informed consent. A vast majority (95.5%) of respondents agreed that informed consent requires an on-going decision-making process. In fact, 60.3% of labor and delivery nurses, 70.4% of childbirth educators, and 76.0% of doulas strongly agreed with this statement.

Appendix Table B illustrates average differences in scores on these measures, and the results of significance tests.

Ethical Challenges

Table 12 reveals the survey respondents' experiences with ethical challenges among respondents who worked primarily in one hospital. Overall, 26.7% have never witnessed a care provider tell a woman that her baby might die if she doesn't agree to a proposed procedure, and 40.1% of respondents had rarely experienced this. Comparing by role, labor and delivery nurses were more likely to report that that they had rarely seen a care provider say this to a woman (51.9%), than doulas (34.4%) or childbirth educators (38.8%). Interestingly, doulas were slightly more likely to witness this occasionally (29.0%) or often (7.8%), than nurses were. Childbirth educators were more likely to report not knowing because they are less likely to attend births within their educator role, and therefore the question was less likely to apply to them.

Few respondents reported that they had ever heard a care provider mention a laboring woman's racial or ethnic background in a way that was demeaning. Overall, 66.9% of respondents said that they had never witnessed this, and 19.9% reported they had witnessed it rarely. Doulas were the least likely to have ever witnessed this (71.4%). For nurses, 60.8% reported that they had never witnessed demeaning comments based on race or ethnicity, but a higher percentage of nurses than doulas reported that they had witnessed this occasionally (22.0% versus 6.9%). Again, a higher percentage of childbirth educators reported not knowing this information.

Table 12: Experiences with Ethical Challenges (%)

	All	Doula	CBE	L&D Nurse
Have you ever witnessed a care provider tell a woman that her baby might die if she doesn't agree to a proposed procedure?				
No, never	26.7	27.9	21.6	21.4
Yes, rarely	40.1	34.4	38.8	51.9
Yes, occasionally	25.1	29.0	28.3	22.0
Yes, often	5.8	7.8	6.6	4.2
Don't know/NA ²	2.3	0.9	4.6	0.5
Have you ever heard a care provider mention a laboring woman's racial or ethnic background in a way that was demeaning?				
No, never	66.9	71.4	63.8	60.8
Yes, rarely	19.9	18.3	20.3	25.8
Yes, occasionally	8.8	6.9	9.2	11.6
Yes, often	1.1	1.2	1.4	1.4
Don't know/NA	3.3	2.2	5.3	0.5
Have you observed a laboring woman receive more procedures because of her racial or ethnic background?				
No, never	63.0	56.5	54.6	74.5
Yes, rarely	13.9	16.5	15.2	11.4
Yes, occasionally	10.8	13.0	13.0	9.1
Yes, often	3.0	4.2	4.5	1.9
Don't know/NA	9.2	9.7	12.9	3.1
Have you witnessed a care provider use sexually degrading language with a laboring woman?				
No, never	69.5	66.6	61.4	75.7
Yes, rarely	20.2	22.9	23.1	18.6
Yes, occasionally	6.3	8.1	8.0	4.6
Yes, often	1.0	1.5	1.4	0.6
Don't know/NA	3.0	1.0	6.2	0.6
Have you witnessed a care provider engage in procedures without giving the woman a choice or time to consider the procedure?				
No, never	11.3	11.2	8.6	10.0
Yes, rarely	23.8	22.8	21.0	25.6
Yes, occasionally	36.7	40.5	37.5	32.3
Yes, often	26.2	25.3	28.2	31.8
Don't know/NA	2.1	0.2	4.8	0.3
Have you witnessed a care provider engage in procedures explicitly against the wishes of the woman?				
No, never	44.4	40.2	37.2	50.8
Yes, rarely	35.3	37.5	36.1	35.3
Yes, occasionally	14.6	18.6	17.3	10.3
Yes, often	2.3	2.6	3.0	2.7
Don't know/NA	3.4	1.2	6.4	1.0
N	2,918	1,569	1,144	1,012

² Some respondents do not attend births, so this question does not apply.

In terms of racial differences in treatment, 63.0% reported that they had never witnessed a laboring woman receive more procedures because of her racial or ethnic background. However, labor and delivery nurses were more likely to say never (74.5%) than doulas (56.5%) or childbirth educators (54.6%). Accordingly, 17.2% of doulas and 17.5 % of childbirth educators had in fact observed a difference in procedures by race/ethnicity either occasionally or often, compared to only 11% of nurses.

By comparison, respondents in all three roles indicated that the use of sexually degrading language with a laboring woman was very rare. Overall, 69.5% had never witnessed this behavior, and 20.2% had witnessed it rarely. Comparing across roles, nurses were especially likely to indicate that they had never seen this from a care provider (75.7%), while 18.6% had seen this rarely. Very few respondents reported often witnessing a care provider use sexually degrading language (1%). Again, childbirth educators were more likely to report not knowing because they are less likely to attend births as part of their educator role.

In contrast, respondents in all three maternity support roles indicated that it was relatively common for care providers to engage in procedures without giving a woman a choice or time to consider it. Overall, 61.9% indicated that they had witnessed this occasionally or often, compared to 35.2% that saw this occur rarely or never. Nurses were more likely to witness this often (31.8%) than doulas (25.3%) or childbirth educators (28.2%) were.

However, when asked if they had seen a care provider engage in procedures explicitly against the wishes of a woman, 79.7% reported witnessing this never or rarely and only 16.9% indicated that this occurred occasionally or often. In terms of differences by maternity support role, 50.2% of nurses reported never seeing this and only 13% of nurses reported seeing this often. Doulas and CBEs appeared to see this more frequently, with 40.2% and 37.2% respectively reporting that they never observed this, versus 21.2% and 20.3% reporting that they saw this often.

Appendix Table C presents averages between 1 and 4 by maternity support role for experiences with ethical challenges.

Practice Dilemmas Faced by Labor and Delivery Nurses

Table 13 reveals labor and delivery nurses' experiences with medical errors. On average, labor and delivery nurses witnessed less than one (0.9) medical error in the past 30 days that they have worked, supporting the other findings about the uncommon occurrence of errors. When asked what percentage of errors is reported to patients, 67.9% of nurses said that they are aware of no errors. This made the reporting percentage rather small. However, interestingly, among the

incidents that occurred, nurses tended to either report them to patients 100% of the time (13.9% of nurses indicated this), or they reported them to patients 0% of the time (9.9% of nurses indicated this).

Table 13: Experiences with Medical Errors Among Labor and Delivery Nurses

	Number or mean	Percent or SD
Medical errors you were aware of over past 30 days in unit (N=1,001)		
0	686	68.5
1	140	14.0
2-5	148	14.8
6-19	41	4.1
20 or more	5	0.5
Average	0.9	(2.38)
What % of errors are disclosed to patients (N=1,001)		
I am not aware of any errors	680	(67.9)
0	99	(9.9)
<25%	36	(3.6)
25-49%	9	(0.9)
50-74%	15	(1.5)
75-99%	28	(2.8)
100%	134	(13.4)
Electronic Medical Records have decreased medication errors (N=884)		
Strongly disagree	41	(4.6)
Disagree	170	(19.2)
Neither	299	(33.8)
Agree	313	(35.4)
Strongly agree	61	(6.9)
Quality of nursing care of your unit on your last shift (N=1,005)		
Poor	7	(0.7)
Fair	57	(5.7)
Good	188	(18.7)
Very good	440	(43.8)
Excellent	313	(31.1)

Note: Not all respondents answered all questions so they have different Ns.

Finally, when asked if electronic medical records have decreased the medical errors that nurses see, 42.3% agreed or strongly agreed with this statement. On the other hand, 23.8% of labor and delivery nurses disagreed or strongly disagreed with the statement, and 33.8% neither agreed nor disagreed. Some of this variation may be due to differences in the integration of electronic health records with medication administration practices. In examining nursing care for their unit during their last shift, 74.9% of nurses reported very good or excellent quality of care. Accordingly, the subsequent questions on medical errors appear to match this positive reporting.

Nurses and Liability

We asked nurses a series of questions about malpractice liability, which can be found in Table 14. Most nurses reported believing that, overall, the risk of malpractice suits in maternity care is high or very high (70.1%). Also, 61.6% of nurses reported worrying about their own malpractice liability at least sometimes. However, only 35.9% of nurses reported having liability insurance. It is possible that nurses responded that they did not have insurance when they did not carry their own independent insurance, but were covered by their hospital’s insurance. Often nurses only carry independent liability insurance if they work outside a hospital at least part of the time.

Table 14: Views of Labor and Delivery Nurses Toward Professional Liability

	N (%)
The risk of malpractice suits in maternity care overall is:	
Very low	18 (1.8)
Low	47 (4.7)
Moderate	200 (20.1)
High	316 (31.8)
Very high	381 (38.3)
Don't know	33 (3.3)
I worry about my own malpractice liability:	
Never	65 (6.5)
Rarely	308 (31)
Sometimes	439 (44.1)
Often	120 (12.1)
Always	54 (5.4)
Don't know/Not Applicable	9 (0.9)
Do you have liability insurance?	
Yes	357 (35.9)
No	585 (58.8)
Don't know	33 (3.3)
Not applicable	20 (2.0)
Total	995

Emotional Well-Being of Maternity Support Workers

The emotional well-being of care workers has been a topic of growing interest among researchers over the past thirty years. Research finds that one of the negative effects of caring for others is “emotional burnout.” Emotional burnout is generally described as psychological exhaustion resulting in feelings of hopelessness, cynicism, and inefficacy [81]. Emotional burnout has been linked to high turnover rates in care work fields such as nursing, stimulating interest in what factors might mitigate burnout and increase retention [82]. Research suggests that emotional intelligence – the ability to recognize other’s emotions and to regulate one’s own emotions – is negatively associated with emotional burnout [83].

To examine the well-being of maternity support workers, the MSS included questions from the Professional Quality of Life inventory and Schutte and colleague’s 33-item scale for emotional intelligence [84, 85]. We recoded and summed these items to create a standardized scales measuring emotional burnout and measuring the emotional regulation component of emotional intelligence. Table 15 shows the results for the average scores and standard deviations of these two scales.

Table 15: Emotional Well-Being by Maternity Support Role

Scale	All	Doula	CBE	L&D Nurse	N
Emotional Burnout	50 (10)	47.8 (8.7)	48.5 (9.3)	53.6 (10.6)	2,562
Emotional Regulation	41.7 (4.1)	42.3 (4.1)	42.2 (4.2)	40.9 (4.0)	2,852

Appendix Table D Professional Training, Certification and Licensure

In this section, we present findings on levels of training and certification among doulas and childbirth educators and information about nurse licensure.

Doula Training and Certification

Among all doula respondents (n=1569), the majority held at least one certification (64.3%) and only 28 individuals (1.8%) reported having no training. The most common organizational affiliation among doula respondents was DONA International, with 82% of the sample reporting training or certification in progress or completed (some doulas held more than one certification or training). The next most common organization was CAPP, with 14.4% of respondents reporting that they received training or certification through this organization, followed by ICEA (10.1%), ALACE (4.4%), and Birth Works (1.8%).

Table 16 shows the percentages with training or certification by organization (by row). Among DONA International doulas, 60.8% reported that they were certified, an additional 21% were in the process of certifying, and 18.2% had some training. Among CAPP doulas, 46.9% reported being certified, with an additional 15.9% in progress and 37.2% trained. For ICEA doulas, 46.9% were certified, 15.9% were in the process of certifying, and 51.3% were trained. Among ALACE doulas, 34.8% were certified, with 10.1% in progress and 55.1% trained. For Birth Works doulas, 17.2% were certified, while 3.4% were in progress and 79.3% were trained.

Table 16: Training and Certification Among Doula Respondents

	Training only N(%)	Certification in progress N(%)	Certified N(%)	Total Organization N(%)
DONA International	235 (18.2)	271 (21.0)	785 (60.8)	1291 (82.3)
CAPP	84 (37.2)	36 (15.9)	106 (46.9)	226 (14.4)
ICEA	81 (51.3)	13 (8.2)	64 (40.5)	158 (10.1)
ALACE	38 (55.1)	7 (10.1)	24 (34.8)	69 (4.4)
Birth Works	23 (79.3)	1 (3.4)	5 (17.2)	29 (1.8)
Other	90 (25.2)	48 (13.4)	219 (61.3)	357 (22.8)
Total				1569

Similar to doulas, the majority (68.7%) of the 1144 childbirth educators in the study reported that they had at least one certification and only 68 individuals (5.9%) had no training at all. Table 17 also shows the training or certification of

childbirth educators by organization (by row). The most common certification for childbirth educators was Lamaze International, with 35.4% of CBE respondents Lamaze trained, certified, or with certification in progress (some CBEs had more than one affiliation). This was followed by ICEA (29.8%), Bradley (21.9%), CAPP (16.4%), Birthing from Within (15.6%), ALACE (3.3%), and BirthWorks (3.1%). Among Lamaze International CBEs, 63% were certified and an additional 5.4% in progress and 31.6% trained. For ICEA CBEs, 55.7% were certified, with 6.2% in progress and 38.1% trained.

Childbirth Educator Training and Certification

Table 17: Training and Certification Among Childbirth Educator Respondents

	Training only N(%)	Certification in progress N(%)	Certified N(%)	Total Organization N(%)
Lamaze International	128 (31.6)	22 (5.4)	255 (63.0)	405 (35.4)
ICEA	130 (38.1)	21 (6.2)	190 (55.7)	341 (29.8)
Bradley	110 (43.8)	3 (1.2)	138 (55.0)	251 (21.9)
CAPP	71 (37.8)	25 (13.3)	92 (48.9)	188 (16.4)
Birthing from Within	125 (69.8)	28 (15.6)	26 (14.5)	179 (15.6)
ALACE	26 (68.4)	2 (5.3)	10 (26.3)	38 (3.3)
BirthWorks	24 (68.6)	0	11 (31.4)	35 (3.1)
Other	75 (26.9)	20 (7.2)	184 (65.9)	279 (2.5)
Total CBEs				1144

Among Bradley CBEs, 55% were certified, with 1.2% in progress and 43.8% trained. For CAPP CBEs, 48.9% were certified and an additional 13.3% in progress and 37.8% trained. For Birthing from Within CBEs, 14.5% were certified, with 15.6% in progress and 69.8% trained. Among ALACE CBEs, 26.3% were certified and an additional 5.3% were in progress and 68.4% were trained. For BirthWorks, 31.4% were certified and 68.6% were trained.

Labor and Delivery Nurse Licensure

In the U.S., 92% of nurses were registered nurses (RN). In Canada, 89.5% of participants had an RN (BScN).

Table 18: Labor and Delivery Nurse Licensure by Country

United States	N (%)	Canada	N (%)
RN (Registered Nurse)	833 (92)	RN (BScN)	94 (89.5)
APRN (Advanced Practice RN)	60 (6.6)	Nurse practitioner	1 (1)
LPN (Licensed Practical Nurse)	4 (0.4)	LPN/LVN/RPN	2 (1.9)

Other	8 (0.9)	Other	8 (7.7)
Total US	905	Total Canada	105

Professional Issues, Earnings and Future Work Intentions

Table 19 presents income data for doulas, childbirth educators, and labor and delivery nurses. Both doulas and CBEs reported earning less than \$4,999, on average, in 2011 from their maternity support work. Labor and delivery nurses earned quite a bit more, reporting average earnings of \$60-69,999.

Table 19: Median Income Earned by Maternity Support Role

	Doulas	CBEs	L&D Nurse
Median Income	< 4,999	< 4,999	60-69,999

Career Plans and Orientation

Table 20 presents information on whether doulas, childbirth educators, and nurses plan to continue doing this work 3 years from now. Nurses were more likely to report that they will not be in their current maternity support role at that time - 19.7% compared to 5.9% of doulas and 6.6% of CBEs.

Table 20: Future Plans Among Respondents (%)

	Doulas	CBEs	L&D Nurses
Do you plan to continue in this role 3 years from now?			
Yes	78.3	75.7	64.9
No	5.9	6.6	19.7
Don't Know	15.8	17.7	15.4
N	1546	1137	1010

We also wanted to evaluate whether doulas and childbirth educators are taking on as many clients/classes as they would like. These results are found in

Table 21 and

Table 22. The majority of doulas (58.6%) reported that they have as many clients as they would prefer in an average month. For the 34.6% of doulas who have fewer clients than they prefer, the most commonly cited reason was marketing challenges or difficulty reaching one's target population (62.1%). Other common reasons were a lack of referrals from providers (49.4%), competition with other doulas (42%), and lack of insurance reimbursement (40%).

Similarly, the majority of childbirth educators (67.1%) reported that they teach as many classes as they would prefer in a given year. Just like with doulas, the most common reason for teaching fewer classes than they would prefer was marketing challenges (58%). Other common reasons were lack of interest from pregnant couples (45%), lack of referrals from providers (39.6%), and competition from other CBEs (35.4%).

Table 21: Client Load and Obstacles To Desired Clients, by Doula Respondents

	N (%)
In an average month, I have:	
Fewer clients than I prefer	543 (34.6)
As many clients as I prefer	920 (58.6)
More clients than I prefer	39 (2.5)
Total	1502
What are the obstacles to having more doula clients?	
Intensity of the work	69 (12.7)
Lack of reimbursement from private insurers or Medicaid plan	217 (40)
Competition among doulas in my area	228 (42)
Cost or lack of liability insurance	19 (3.5)
Marketing challenges/Difficulties reaching target population	337 (62.1)
Do not get referrals from maternity care providers	268 (49.4)
Obstruction/hostility from medical care providers	68 (12.5)
Family caregiving responsibilities	163 (30)
Conflict with other paid work responsibilities	146 (26.9)
Other	93 (17.1)
Why do you take on more clients than you would like to?	
Need for personal income that extra caseload provides	10 (25.6)
Desire to maintain good working relationships with care providers	13 (33.3)
I have trouble saying “No” to people	22 (56.4)
Other (please specify)	16 (41)

Table 22: Class Load and Obstacles to Desired Classes by Childbirth Educators

	N (%)
In a given year, I teach:	
Fewer classes than I prefer	333 (29.4)
As many classes as I prefer	761 (67.1)
More classes than I would prefer	40 (3.5)
Total	1134
What are the biggest challenges to teaching more classes?	
Competition with other Childbirth Educators in my area	118 (35.4)
Lack of reimbursement from private insurers or Medicaid plan	82 (24.6)
Marketing challenges/Difficulties reaching target population	193 (58)
Obstruction/hostility from medical care providers	41 (12.3)
Lack of interest from pregnant couples	150 (45)
Lack of repeat business from pregnant women	60 (18)
Couples’ work schedules	108 (32.4)
Do not get referrals from maternity care providers	132 (39.6)
Family caregiving responsibilities	72 (21.6)
Conflicts with paid work responsibilities	59 (17.7)

Table 22, continued.

Why do you teach more than you would like to?	
Need for personal income that extra teaching provides	12 (30)
Need to cover cost of liability insurance	1 (2.5)
Desire to maintain good working relationships with providers	10 (25)
I have trouble saying “No” to people	16 (40)
Other (please specify)	20 (50)

We also asked doulas questions about whether they viewed their doula practice as a business. These results are included in Table 23. In total, 73.7% of doulas considered their doula practice a business. Also, 29.3% had a business license and an additional 13.3% were planning on getting a business license in the next 6 months.

Table 23: Orientation to Doula Work as a Business

	N (%)
Do you consider your doula practice to be a business?	
Yes	1138 (73.7)
No	407 (26.3)
Total	1545
Do you have a business license?	
Yes	335 (29.3)
No	655 (57.4)
Planning to in the next 6 months	152 (13.3)
Total	1142

CONCLUSION

This report provides a preliminary, high-level look at major survey items that were asked of each role (Doula, Childbirth Educator, Labor and Delivery Nurse).

Overall demographics

The majority of respondents in all roles were white women in their 40s who have a bachelor's degree or higher. Among our respondents, 56% were doulas, 43% were childbirth educators and 38% were labor and delivery nurses. 86% of the respondents were from United States and 14% from Canada.

Attitudes toward Common Childbirth Procedures

There is a great deal of consensus among the three roles in attitudes toward typical childbirth practices, but the level of agreement showed that, in many cases, doulas were likely to hold stronger views compared to childbirth educators and nurses. All three roles agreed that continuous electronic fetal monitoring has increased the cesarean rate, and that induction increases the risk of cesarean.

Continuous Electronic Fetal Monitoring (CEFM):

Overall, despite its near-ubiquitous use in hospital births, CEFM is not seen by any of these maternity support roles to reduce litigation risk, or poor neonatal outcomes. All roles agree CEFM is not more effective than intermittent monitoring and that use of CEFM has contributed toward the cesarean rate. Nurses may be constrained by institutional practice in which CEFM is routinely used, despite its limitations. Interestingly, more than 50% of nurses do not view it as more effective although most hospitals use CEFM as their standard of care.

Epidurals

Statistically significant differences across maternity support roles illustrate that labor and delivery nurses are more favorable toward epidural analgesia and its benefits, while doulas and CBEs are more concerned about epidurals' risks and efficacy. Nurses see high use of epidurals in hospital births, often with good effects; doulas tend to work with women who hire them explicitly because they prefer to avoid an epidural.

Pitocin

There is relatively strong consensus among maternity support workers that induction increases the risk of cesarean delivery, and that Pitocin (artificial oxytocin) is a high-risk medication. Nurses, however, are much more likely to view Pitocin as a high-risk medication (>90% agree or strongly agree that it is) than doulas and CBEs. This may be due to the increased focus in patient safety

around administration of Pitocin in labor. The Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN) has issued staffing guidelines for patients on Pitocin, recommending 1-to-1 care when women are receiving this medication. However, nurses are more likely than doulas or CBEs to believe that Pitocin administration is safe in the context of updated, standardized protocols for its use.

Cesarean Delivery, Repeat Cesarean and VBAC

There is relative agreement among all three roles that cesarean is not as safe as vaginal birth for both mothers and babies. However, nurses disagree less strongly than other maternity support workers and are more likely to indicate a neutral position. Nurses are likely to have more knowledge about or exposure to situations where cesareans are safer for babies, and thus take a more conditional view. All three roles tended to agree that women should not be permitted to have cesarean delivery for no medical indication. Similarly, most respondents in each role agreed women who are good candidates should be allowed to have a vaginal birth after cesarean (VBAC). These responses raise interesting questions about women-centered approaches in maternity support roles. For example, doulas and CBEs are more likely to hold stronger views than L&D nurses in these areas.

Ethical and Practice Issues

Informed consent

Nurses are more likely to think that risks and benefits are explained than doulas and CBEs, but even nurses think this happens only about 50% of the time.

Ethical challenges

There were no huge differences among the groups in answers to questions about witnessing challenging interactions with patients and providers. Of note, some of these issues - racial prejudice, inappropriate care - have been witnessed by all three groups of respondents at relatively high rates. About 15% of each role has witnessed racially or sexually degrading language or behavior and 25-32% of all groups report seeing care providers engage in procedures without giving the woman a choice or time to consider the procedure.

Emotional Burnout

All three groups were shown to report levels of emotional burnout and regulation within the average ranges, however, nurses reported statistically significant higher rates of burnout. L&D nurses were statistically more likely to report that they will NOT be doing their job in three years from the time of our survey (perhaps related to their answers on emotional burnout).

Future Analytic Directions

The research team is composed of scholars who have a variety of research interests. We have identified several topics for analysis in the near future. These topics and sample research questions are listed below:

- *Doula work as a career.* How do doulas sustain their practice through additional training and credentials?
- *Breastfeeding attitudes and practices.* How do maternity support workers compare in terms of their attitudes and practices around breastfeeding? How central is personal experience in their views on breastfeeding?
- *Emotional intelligence and emotional burnout.* How do maternity support workers differ by emotional intelligence, and how does emotional intelligence mitigate emotional burnout? How do these issues affect nursing quality of care and medical errors?
- *ACA changes in doula care coverage.* How might changes in reimbursement of doulas via the Affordable Care Act affect doula care work and the demographics of the doula workforce?
- *Documentation and L&D Nurses.* How do L&D nurses view documentation practices and its effects, if any, on their ability to care for birthing women?
- *Orientation toward reproductive justice.* How do maternity support workers compare in terms of their attitudes toward choice and rights in the context of reproductive and maternity practices?
- *Country comparisons.* How are the Canadian and the U.S. maternity care systems alike and different, in terms of maternity support workers?

APPENDIX TABLES

Appendix Table A: Attitudes Toward Common Childbirth Practices by Maternity Support Role

(Averages on Scale 1-5, Strongly Disagree to Strongly Agree)

	All	Doula ³	CBE ⁴	L&D Nurse ⁵
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
CEFM				
CEFM reduces the risk of litigation	2.6 (1.1)	2.6 (1.1)	2.6 (1.1)	2.5** (1.1)
CEFM is more effective than intermittent auscultation	2.0 (1.1)	1.5*** (0.7)	1.8*** (1.0)	2.6*** (1.2)
CEFM has increased the CS rate	4.1 (1.0)	4.2*** (1.0)	4.2* (1.0)	4.0*** (0.9)
CEFM has reduced CP and neonatal morbidity	2.3 (1.0)	2.2*** (0.9)	2.1*** (1.0)	2.4*** (1.1)
Epidural Analgesia				
Epidurals should be routinely offered to all women	2.3 (1.3)	1.7*** (0.9)	2.0*** (1.1)	3.3*** (1.2)
Epidurals interfere with normal labor progress	3.8 (1.1)	4.3*** (0.9)	4.1*** (1.0)	3.1*** (1.1)
Epidurals increase the risk of cesarean delivery	3.8 (1.1)	4.2*** (0.9)	4.0*** (1.0)	3.1*** (1.1)
Epidurals conserve energy for the 2nd stage	2.9 (1.0)	2.7*** (1.0)	2.7*** (1.0)	3.4*** (0.9)
Labor Induction				
Induction is safe as part of a standardized protocol	2.1 (1.1)	1.5*** (0.8)	1.8*** (1.0)	2.9*** (1.1)
Induction makes it difficult to avoid epidural	4.0 (1.0)	4.3*** (0.9)	4.1*** (0.9)	3.5*** (1.1)
Induction increases the risk of cesarean delivery	4.3 (0.9)	4.5*** (0.8)	4.4*** (0.8)	4.0*** (0.9)
Induction ensures that labor progresses on a labor curve	2.1 (1.0)	2.0*** (1.0)	2.0*** (1.0)	2.4*** (0.9)
	All	Doula ⁶	CBE ⁷	L&D Nurse ⁸

³ T-tests in this column compare all doulas to all non-doulas. Since respondents may hold multiple roles, doulas, CBEs, and labor and delivery nurses are not mutually exclusive categories.

⁴ T-tests in this column compare all CBEs to all non-CBEs.

⁵ T-tests in this column compare all nurses to all non-nurses.

⁶ T-tests in this column compare all doulas to all non-doulas. Since respondents may hold multiple roles, doulas, CBEs, and labor and delivery nurses are not mutually exclusive categories.

⁷ T-tests in this column compare all CBEs to all non-CBEs.

⁸ T-tests in this column compare all nurses to all non-nurses.

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	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Pitocin				
Pitocin is safe as part of a standardized protocol	2.3 (1.2)	1.7*** (0.9)	2.0*** (1.0)	3.2*** (1.0)
Pitocin makes it difficult for to avoid an epidural	4.1 (1.0)	4.4*** (0.8)	4.2*** (0.9)	3.6*** (1.0)
Pitocin is a high-risk medication	4.2 (0.9)	4.1*** (0.9)	4.2*** (0.9)	4.4*** (0.8)
Cesarean Delivery				
Cesareans prevent urinary incontinence	1.9 (0.8)	1.8*** (0.8)	1.8*** (0.8)	2.1*** (0.8)
Cesareans are safer for babies	1.4 (0.7)	1.2*** (0.5)	1.3*** (0.6)	1.7*** (0.7)
Cesareans are as safe for women	1.4 (0.7)	1.2*** (0.5)	1.3*** (0.6)	1.8*** (0.8)
Vaginal birth compromises sexual functioning	1.7 (0.8)	1.5*** (0.8)	1.6*** (0.7)	2.0*** (0.9)
Women should be able to choose cesarean delivery without medical indication	2.1 (1.1)	2.2** (1.2)	2.0 (1.1)	2.0*** (1.0)
Repeat Cesarean/VBAC				
Scheduled repeat cesarean is best for woman's health	1.7 (0.8)	1.4*** (0.6)	1.5*** (0.7)	2.6*** (0.9)
Scheduled repeat cesarean reduces litigation risk	2.7 (1.1)	2.6*** (1.2)	2.6 (1.1)	2.8*** (1.1)
A woman who is a good candidate for VBAC should be able to attempt one	4.7 (0.7)	4.9*** (0.6)	4.8*** (0.7)	4.5*** (0.8)
N	2,978	1,569	1,144	1,012

*Note: All numbers rounded to one significant digit. Significance of two-tailed t-tests: * $p < .05$; ** $p < .01$; *** $p < .001$*

**Appendix Table B: Informed Consent by Maternity Support Role
(Average on Scale 1-5, Strongly Disagree to Strongly Agree)**

	All	Doula	CBE	L&D Nurse
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Care providers in my hospital explain the risks and benefits of every procedure	3.1 (1.2)	2.8*** (1.0)	3.1* (1.1)	3.2*** (1.0)
When a woman signs forms upon admission, she has given informed consent	2.1 (1.1)	1.8*** (1.2)	2.0 (1.2)	2.1*** (1.2)
Informed consent requires an on-going decision-making process	4.5 (0.8)	4.7*** (0.7)	4.6* (0.8)	4.5* (0.8)
N	2,955	1,569	1,144	1,012

*Note: All numbers rounded to one significant digit. Significance of two-tailed t-tests: * $p < .05$; ** $p < .01$; *** $p < .001$*

**Appendix Table C: Ethical Challenges by Maternity Support Role
(Average 1-4, Never to Often)**

	All	Doula	CBE	L&D Nurse
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Ever witnessed a care provider tell a woman that her baby might die if she doesn't agree to a proposed procedure	2.2 (1.0)	2.2 (1.0)	2.3*** (1.0)	2.1** (0.8)
Ever heard a care provider mention a laboring woman's racial or ethnic background in a way that was demeaning	1.5 (0.9)	1.4*** (0.9)	1.6*** (1.1)	1.6 (0.8)
Observed a laboring woman receive more procedures because of her racial or ethnic background	1.8 (1.3)	1.9*** (1.3)	2.1*** (1.4)	1.5*** (1.0)
Witnessed a care provider use sexually degrading language with a laboring woman	1.5 (0.9)	1.5 (0.8)	1.7*** (1.1)	1.3*** (0.6)
Witnessed a care provider engage in procedures without giving the woman a choice or time to consider the procedure	2.8 (1.0)	2.8* (0.9)	3.0*** (1.0)	2.9 (1.0)
Witnessed a care provider engage in procedures explicitly against the wishes of the woman	1.8 (1.0)	1.9 (0.9)	2.1*** (1.1)	1.7*** (0.8)
N	2,955	1,569	1,144	1,012

Appendix Table D: Emotional Burnout by Maternity Support Role (%)

	All	Doula	CBE	L&D Nurse
I am happy				
Never	0.0	0.0	0.0	0.1
Rarely	0.3	0.2	0.2	0.4
Sometimes	7.9	5.6	5.9	10.2
Often	44.3	41.8	41.3	48.3
Very Often	47.4	52.4***	52.6	40.9***
I feel connected to others				
Never	0.0	0.0	0.0	0.1
Rarely	0.6	0.3	0.2	0.9
Sometimes	8.2	6.2	6.6	9.7
Often	42.8	37.7	38.8	50.7
Very Often	48.5	55.8***	54.3	38.5***
I am not as productive at work because I am losing sleep over traumatic experiences of a woman I cared for				
Never	42.9	43.2	43.5	37.1
Rarely	44.2	43.5	44.9	49.6
Sometimes	11.8	12.3	10.6	12.4
Often	0.6	0.6	0.6	0.5
Very Often	0.5	0.4	0.5	0.4***
I feel trapped by my job in maternity care				
Never	64.0	72.1	67.1	50.6
Rarely	21.4	19.0	21.1	25.1
Sometimes	11.0	7.0	9.0	17.4
Often	2.6	1.4	1.7	5.0
Very Often	1.1	0.6***	1.1	1.9***
I have beliefs that sustain me				
Never	1.4	1.4	0.5	1.8
Rarely	1.2	0.8	0.8	1.4
Sometimes	7.8	5.8	5.3	9.7
Often	35.3	32.1	30.8	39.7
Very Often	54.3	60.0***	62.6	47.5***
I am the person I always wanted to be				
Never	0.2	0.1	0.0	0.4
Rarely	2.0	1.6	1.6	2.7
Sometimes	18.6	17.9	16.7	18.3
Often	50.9	47.5	48.9	54.6
Very Often	28.3	32.8***	32.8	24.0**
I feel worn out because of my work in maternity care				
Never	19.3	21.5	21.3	13.2
Rarely	31.4	33.5	33.9	27.8
Sometimes	35.8	36.6	34.6	37.5
Often	9.6	6.4	7.7	14.2
Very Often	4.0	2.1***	2.5	7.4***

Appendix Table D, continued.

	All	Doula	CBE	L&D Nurse
I am a very caring person				
Never	0.0	0.0	0.0	0.1
Rarely	0.3	0.4	0.2	0.3
Sometimes	2.9	2.1	2.8	3.3
Often	32.3	31.2	32.0	34.2
Very Often	64.5	66.4*	65.0	62.0
I feel “bogged down” by the system				
Never	8.3	9.7	8.8	5.4
Rarely	21.2	23.4	21.1	16.5
Sometimes	37.6	40.7	39.2	33.8
Often	19.7	17.4	19.6	24.5
Very Often	13.2	8.8***	11.3	19.7***
I feel overwhelmed because my workload seems endless				
Never	21.5	29.2	24.7	8.6
Rarely	34.9	38.4	35.7	30.7
Sometimes	27.1	22.1	26.1	34.2
Often	10.3	6.7	8.4	16.0
Very Often	6.2	3.5***	5.1	10.5***
N	2,562	1,338	1,052	958

Note: All numbers rounded to one significant digit. Significance of two-tailed t-tests: * $p < .05$; ** $p < .01$; *** $p < .001$

Appendix Table E: Emotional Intelligence by Maternity Support Role (%)

	All	Doula	CBE	L&D Nurse
When I face obstacles, I remember times I faced similar obstacles and overcame them				
Strongly disagree	0.1	0.2	0.1	0.0
Disagree	1.1	1.2	0.8	0.7
Neither	10.6	9.8	9.9	11.8
Agree	64.5	64.1	61.4	65.4
Strongly agree	23.7	24.8	27.9	22.1
Other people find it easy to confide in me				
Strongly disagree	0.1	0.2	0.2	0.0
Disagree	0.7	0.3	0.6	1.4
Neither	5.8	3.5	4.3	9.0
Agree	52.2	46.8	49.2	58.5
Strongly agree	41.2	49.2***	45.8	31.1
I know why my emotions change				
Strongly disagree	0.1	0.1	0.1	0.1
Disagree	2.2	1.8	1.7	2.6
Neither	11.9	10.1	10.5	15.0
Agree	64.0	61.8	63.0	66.3
Strongly agree	21.9	26.2***	24.7	16.0
When I experience a positive emotion, I know how to make it last				
Strongly disagree	0.2	0.3	0.4	0.1
Disagree	3.2	2.7	2.9	3.8
Neither	21.6	20.1	20.4	24.6
Agree	56.7	55.5	55.0	57.3
Strongly agree	18.2	21.4***	21.4	14.2
I seek out activities that make me happy				
Strongly disagree	0.1	0.1	0.1	0.2
Disagree	1.0	0.8	1.0	1.3
Neither	6.0	4.3	5.4	8.1
Agree	59.6	57.5	56.9	62.4
Strongly agree	33.3	37.3***	36.6	28.0
I present myself in a way that makes a good impression on others				
Strongly disagree	0.1	0.1	0.1	0.0
Disagree	0.2	0.1	0.2	0.5
Neither	5.9	5.0	4.0	7.5
Agree	61.0	56.5	59.5	66.7
Strongly agree	32.8	38.2***	36.2	25.3
I have control over my emotions				
Strongly disagree	0.1	0.2	0.1	0.1
Disagree	3.5	3.1	3.7	4.2
Neither	17.9	16.7	15.7	19.7
Agree	62.7	62.6	62.5	62.9
Strongly agree	15.8	17.4**	18.1	13.2

Appendix Table E, continued.

	All	Doula	CBE	L&D Nurse
I motivate myself by imagining a good outcome to tasks I take on				
Strongly disagree	0.4	0.2	0.2	0.6
Disagree	3.2	2.4	3.1	4.5
Neither	16.1	15.1	14.3	18.1
Agree	57.2	56.5	55.6	57.4
Strongly agree	23.1	25.8***	26.8	19.5
I compliment others when they have done something well				
Strongly disagree	0.0	0.0	0.1	0.0
Disagree	0.0	0.0	0.0	0.1
Neither	1.3	1.0	1.2	1.9
Agree	46.7	41.5	44.2	52.9
Strongly agree	51.9	57.5***	54.5	45.2
I help other people feel better when they are down				
Strongly disagree	0.0	0.1	0.1	0.0
Disagree	0.1	0.1	0.1	0.3
Neither	3.6	3.0	2.8	4.3
Agree	54.5	48.6	52.7	61.6
Strongly agree	41.8	48.3***	44.4	33.9
N	2,868	1,569	1,144	1,012

Note: All numbers rounded to one significant digit. Significance of t-tests: * $p < .05$; ** $p < .01$; *** $p < .001$

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