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Contested Care: The Limitations of Evidence-Based Maternity Care Reform

Elizabeth Kukura

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Contested Care: The Limitations of Evidence-Based Maternity Care Reform

Elizabeth Kukura[†]

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INTRODUCTION

The United States has traditionally been a leader in scientific and medical breakthroughs, but researchers and advocates have long criticized its performance in maternity care as both falling short of its industrialized-nation peers and failing women and their babies. With nearly a third of all babies born by cesarean surgery¹—dramatically higher than the World Health Organization’s recommended 10–15% rate²—and a maternal mortality ratio that is higher than the rates of fifty-nine other countries,³ it is clear that our existing approach to childbirth is ripe for reform. Over the years, advocates have mounted multiple critiques of the existing system of care for pregnant women and their newborns. Reformers have focused variously on the dominance of a medicalized model of birth, the high price tag of maternity care provision, and the relatively poor outcomes for women and babies, especially when measured against the cost of care in the United States.

Arguments for maternity care reform have increasingly invoked a growing body of scientific research about the various clinical practices that shape childbirth in an attempt to displace longstanding deference to expert opinion over data in the practice of obstetrics. Given the centrality of childbirth as a personal rite of passage for most women, a transformative moment for families, and a critical dimension of public health, the use of evidence-based arguments to improve birth experiences and birth outcomes is a necessary strategy to effect change in maternity care practices. But evidence-driven strategies alone are insufficient to achieve the wholesale and systemic changes advocates seek.

Continued reliance on third-party expert knowledge—which tends to be persuasive to legislators, judges, and other key decision-makers—perpetuates a

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1. See Joyce A. Martin et al., *Births: Final Data for 2013*, NAT’L VITAL STATISTICS REPORTS, Jan. 15, 2015, at 1, 7–8 [hereinafter NVS Birth Reports 2013], http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64_01.pdf.
2. See *Appropriate Technology for Birth*, 326 LANCET 436, 437 (1985).
3. See Carol Morello, *Maternal Deaths in Childbirth Rise in the U.S.*, WASH. POST (May 2, 2014), http://www.washingtonpost.com/local/maternal-deaths-in-childbirth-rise-in-the-us/2014/05/02/abf7df96-d229-11e3-9e25-188ebe1fa93b_story.html.

central problem with many common maternity care practices, which is that they devalue women's experiences and marginalize their agency. Evidence-driven reform efforts are also constrained in their ability to overcome inherent limitations in research methodology and various structural conditions that shape the economic and legal context of childbirth. This Article explores the landscape of evidence-driven maternity care reform and several important limitations of this approach with an eye toward strengthening advocacy and reform efforts to improve maternal health care in the United States.

Although evidence-based medicine is not a new concept in U.S. health policy, health care consumers are often unnerved to learn of the glacial pace at which accepted wisdom within the medical community is updated to reflect new scientific discoveries. The federal Agency for Healthcare Research and Quality has concluded that it can take up to two decades for the results of research trials to be incorporated into clinical practice.⁴ Efforts to promote evidence-based medicine have proliferated in recent years, with medical educators, researchers, and policymakers working to connect practitioners with current scientific knowledge in their fields and incentivize changes that ensure clinical practices reflect new evidence.⁵ Promoting evidence-based medicine is a leading strategy for both improving quality of care and reducing costs in the U.S. health care system. Reflecting the salience of this issue, federal lawmakers directed \$1.1 billion under the American Recovery and Reinvestment Act of 2009, along with additional funding under the Affordable Care Act, to generate and promote comparative effectiveness research, or research on the most effective "methods to prevent, diagnose, treat, and monitor clinical conditions or improve the delivery of care."⁶

Obstetrics is one health care specialization where the disjunction between standard practice and the latest in scientific evidence is particularly stark.⁷ Although advocates have engaged in efforts to change common childbirth practices almost as long as physicians have been responsible for attending births in this country, it is relatively recently that promoters of maternity care reform have turned to evidence-driven strategies as a primary mode of support for their

4. U.S. DEP'T OF HEALTH & HUMAN SERVS., AGENCY FOR HEALTHCARE RESEARCH & QUALITY, TRANSLATING RESEARCH INTO PRACTICE (TRIP)-II, at 1 (Mar. 2001) [hereinafter TRANSLATING RESEARCH INTO PRACTICE], <http://archive.ahrq.gov/research/findings/factsheets/translating/tripfac/trip2fac.html>.

5. See generally Eleanor D. Kinney, *Comparative Effectiveness Research Under the Patient Protection and Affordable Care Act: Can New Bottles Accommodate Old Wine?* 37 AM. J. LAW & MED. 522 (2011) (discussing the history of comparative effectiveness research and the creation of the Patient-Centered Outcomes Research Institute).

6. Alexander G. Fiks et al., *Comparative Effectiveness Research Using the Electronic Medical Record: An Emerging Area of Investigation in Pediatric Primary Care*, 160 J. PEDIATRICS 719, 719 (2012); Joshua S. Brenner et al., *An Evaluation of Recent Federal Spending on Comparative Effectiveness Research: Priorities, Gaps, and Next Steps*, 29 HEALTH AFFAIRS 1768, 1768 (2010).

7. See *infra* Section II.B.

campaigns.⁸ Among the potential reasons for this are two important historical factors. First, advocates have previously had a limited body of high-quality research studies on which to rely for evidence supporting the changes in childbirth practices they sought.⁹ Many clinical innovations in maternity care have been introduced without research into their safety or efficacy,¹⁰ and there continue to be many aspects of labor, delivery, and postpartum care that are woefully under-studied or neglected entirely in the research literature.¹¹ Second, advocates have struggled to assemble a complete picture of how women experience childbirth in the United States, a necessary precursor to reforming clinical practices and improving outcomes. Birth is an inherently personal event, and for many women, sharing a birth story is an intimate and private process. Data collection on the use of various medical interventions during childbirth is inconsistent and incomplete,¹² and wide geographic, institutional, and practitioner variation has increased the challenge of identifying dominant clinical practices and their frequency.¹³

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8. See, e.g., Judith Walzer Leavitt, *Birthing and Anesthesia: The Debate over Twilight Sleep*, 6 J. WOMEN CULTURE & SOC'Y 147, 160 (1980) (discussing department store rallies in 1914 of women who wanted more options for pain relief during labor, specifically the use of German-pioneered “twilight sleep” that put women in an altered state of consciousness so that they had no memory of childbirth and related pain).
 9. How research agendas are established and carried out implicates questions of institutional bias and resource allocation that are beyond the scope of this Article.
 10. See, e.g., MARSDEN WAGNER, BORN IN THE USA: HOW A BROKEN MATERNITY SYSTEM MUST BE FIXED TO PUT WOMEN AND CHILDREN FIRST 74–84 (2006) (discussing history of the use of diethylstilbestrol (DES) to stop vaginal bleeding and cytotec to induce labor without study of their risks or efficacy).
 11. See generally HENCI GOER & AMY ROMANO, OPTIMAL CARE IN CHILDBIRTH: THE CASE FOR A PHYSIOLOGIC APPROACH (2012) (discussing existing research literature on maternity care practices). Some of the earliest, best research about techniques to support physiologic birth came from the records of The Farm, a spiritual community founded in Tennessee in the 1970s by a group of cultural dissidents from San Francisco, where midwife Ina May Gaskin led a group of midwives in creating a system of maternal-child health care for the community. Katherine Beckett & Bruce Hoffman, *Challenging Medicine: Law, Resistance, and the Cultural Politics of Childbirth*, 39 LAW & SOC'Y REV. 125, 131–32 (2005). Gaskin promoted a low-intervention approach to childbirth, attracting women who traveled from across the country to Tennessee to give birth with her support. See INA MAY GASKIN, SPIRITUAL MIDWIFERY (2002). Documentation of their procedure-light, physiologic practices formed the foundation for advocacy in favor of a less medicalized childbirth culture in the United States and helped to identify areas where more research on best practices was needed. Beckett & Hoffman, *supra*, at 133–34.
 12. “New York and Massachusetts are the only two states with legislation mandating the collection of hospital-level maternity care data,” such as each hospital’s cesarean rate. *Understanding the Obstetric Data Reporting Landscape*, CESAREANRATES.COM, <http://www.cesareanrates.com/p/understanding-obstetric-data-reporting.html> (last visited Mar. 14, 2015). Beginning in 2014, the Joint Commission—an independent accrediting body for over 20,000 health care organizations in the United States—has required accredited hospitals with more than 1,100 births to report on the Perinatal Core Measures, which include the rate of cesareans in first-time mothers with singleton babies born full-term. *Id.*
 13. See *infra* Section I.C (discussing study that identified a variation of 200–300% in primary cesarean rates within regions); see also CAROL SAKALA & MAUREEN P. CORRY, EVIDENCE-BASED MATERNITY CARE: WHAT IT IS AND WHAT IT CAN ACHIEVE 9 (October 2008), www.childbirthconnection.org/pdfs/evidence-based-maternity-care.pdf (finding that the “use

Despite these challenges, advocates for improved maternity care have increasingly marshaled the results of scientific research, elevating evidence-based medicine both as a value unto itself and as an instrument for achieving specific changes in clinical practice. In the maternity care arena, evidence-driven strategies target diverse audiences, including state legislators, insurance companies, hospital administrators, physicians, and individual health care consumers. Evidence-based advocacy influences norm setting in a variety of different legal and quasi-legal contexts; these range from formal legislative change, to amendment of the professional guidelines that establish standards of care for practicing obstetricians, to revision of the institutional policies that determine the quality of care women receive when giving birth in hospitals. Reformers promote evidence-based medicine as a means of improving quality of care and reducing costs. They also invoke the results of research studies to bolster critiques of the monopolistic practices of physicians and profit-driven decision-making on the part of hospitals. In the highly contested terrain of childbirth, evidence-based medicine thus serves as an important frame for debates about control over medical decision-making, the limits of acceptable risk for women and their babies, and the very meaning of a positive birth outcome.¹⁴

This Article examines the state of maternity care in the United States, offering a critical analysis of reform efforts that employ evidence-based arguments as their main strategy to change the laws, policies, and practices that shape childbirth. Part I begins with a descriptive overview of twenty-first-century maternity care in the United States, shedding light on the historical, socio-legal, and political factors that have influenced childbirth—including the extensive constellation of clinical practices employed during most births. Part II surveys the evidence basis for maternity care reform and examines contemporary advocacy efforts aimed at changing dominant childbirth policies and practices with evidence-based arguments for reform. Part III offers a critical assessment of such evidence-based strategies. The critique is grounded in feminist concerns about overreliance on professional experts and scientific knowledge, the limitations of study design and research methodologies, and the role of structural economic and legal conditions that impact decision-making about women's bodies and health. The Article concludes that evidence-driven approaches to

of specific maternity practices varies broadly across facilities, providers, and geographic areas . . . primarily due to differences in practice style and other extrinsic factors").

14. As the comments section on any pregnancy- or childbirth-related blog will attest, tensions often run high in debates about maternity care practices. Although generally sharing the same fundamental goals of safe and healthy birth outcomes, women who desire unmediated, non-medicalized birth experiences are pitted against those who feel safer taking advantage of medical technology during childbirth, and battle lines are drawn between obstetricians and midwives. This Article does not seek to exacerbate such contestation by suggesting that all medical interventions are bad, that cesareans are not important, sometimes life-saving procedures, or that there is one best philosophical approach to childbirth. The medicalized nature of twenty-first-century childbirth in the United States is a strong theme throughout this Article because that is a central critique of advocates who seek to change the law and practices that shape contemporary maternity care.

changing maternity care hold great potential for legal and policy reform but should be pursued alongside other arguments grounded in law and morality, lest the promotion of evidence-based maternity care limit attainment of the ultimate goal reformers share: better birth for women and babies.

I. THE STATE OF U.S. MATERNITY CARE

Although the birth of a new baby may conjure images of a small bundle snugly wrapped in a pastel receiving blanket, childbirth is big business in the United States—and, as discussed in Part II, economic pressures shape how maternity care is delivered. The vast majority of women are consumers of childbirth-related health care at some point in their lives. Approximately 85% of women will carry a pregnancy to term and give birth,¹⁵ with nearly four million babies born each year.¹⁶ Childbirth is the leading reason for hospitalization within the U.S. health care system,¹⁷ with new mothers and their babies constituting 23% of all people discharged from hospitals.¹⁸ Total nationwide hospital charges for childbirth exceed the total cost of any other condition.¹⁹ Specifically, families welcoming a new baby generate \$111 billion annually in pregnancy- and childbirth-related hospital costs.²⁰ In 2011, the average hospital charge for an uncomplicated vaginal birth was \$10,657, while a complicated cesarean cost an average of \$23,923.²¹ These figures do not include the cost of newborn care, anesthesia, or compensation for the care provided by an obstetrician or midwife.²² In 2009, birth-related costs represented 26% of hospital charges to Medicaid, or \$54 billion, and 13% of hospital charges to private insurers, or \$49 billion.²³ Furthermore, analysis of hospital-based charges

15. CTRS. FOR DISEASE CONTROL & PREVENTION, RECOMMENDATIONS TO IMPROVE PRECONCEPTION HEALTH AND HEALTH CARE—UNITED STATES: A REPORT OF THE CDC/ATSDR PRECONCEPTION CARE WORK GROUP AND THE SELECT PANEL ON PRECONCEPTION CARE 2 (2006), <http://www.cdc.gov/mmwr/PDF/tr/tr5506.pdf>.

16. NVS Birth Reports 2013, *supra* note 1, at 3.

17. *See* SAKALA & CORRY, *supra* note 13, at 10.

18. *Id.* at 2.

19. *Id.*

20. CHILDBIRTH CONNECTION, UNITED STATES MATERNITY CARE FACTS AND FIGURES (Dec. 2012) [hereinafter UNITED STATES MATERNITY CARE FACTS AND FIGURES], http://transform.childbirthconnection.org/wp-content/uploads/2012/12/maternity_care_in_US_health_care_system.pdf.

21. CHILDBIRTH CONNECTION, AVERAGE FACILITY LABOR AND BIRTH CHARGE BY SITE AND METHOD OF BIRTH, UNITED STATES, 2009–2011, at 1 (2013) [hereinafter AVERAGE FACILITY LABOR AND BIRTH CHARGE], <http://transform.childbirthconnection.org/wp-content/uploads/2013/06/USCharges-chart-2009-2011.pdf>. Actual payments made for medical services tend to be lower than the charges issued by hospitals. *See* SAKALA & CORRY, *supra* note 13, at 13–14 (discussing availability of payment data).

22. AVERAGE FACILITY LABOR AND BIRTH CHARGE, *supra* note 21. The average charge for a vaginal birth at a birth center was \$2,277 in 2010, reflecting the most recent data available from 61 out-of-hospital birth centers. *Id.*

23. UNITED STATES MATERNITY CARE FACTS AND FIGURES, *supra* note 20. In 2010, private insurance paid for 48% of maternal childbirth-related hospital stays, while Medicaid paid for 45% of such stays. *Id.*

for childbirth obscures the cost of care provided before and after the birth itself. In 2010, prenatal care was the seventh most common reason for an outpatient visit in the United States.²⁴

The cost of maternity care in the United States may be high enough to cover a vast quantity of pastel receiving blankets, but it does not secure the positive birth outcomes one would expect for a \$111 billion price tag.²⁵ The United States is one of only eight countries that saw a rise in maternal mortality over the last decade.²⁶ From 1990 to 2013, the maternal mortality ratio (MMR) increased 136% from 12 to 28 maternal deaths out of every 100,000 live births.²⁷ The U.S. rate is nearly double the rate of Saudi Arabia and more than triple the rate reported by the United Kingdom.²⁸ In fact, the United States places sixtieth on a list of 180 countries ranked by maternal mortality—behind China at fifty-seventh and down almost forty spots since 1990.²⁹ While changes in how maternal deaths are reported may have contributed to some degree, the last three decades have seen a marked increase in the number of women dying in childbirth.³⁰ After steady decreases throughout most of the twentieth century, maternal mortality “stagnated” from 1982 to 1998.³¹ In 1998, eight women died for every 100,000 live births, but by 2003, that number had increased to thirteen

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24. See generally Ctrs. for Disease Control & Prevention, *National Ambulatory Medical Care Survey: 2012 Summary Tables*, <http://www.cdc.gov/nchs/fastats/physician-visits.htm> (last visited Mar. 4, 2016) (providing that infants and children contribute to a substantial number of outpatient visits).
 25. See THE LANCET, MIDWIFERY: AN EXECUTIVE SUMMARY FOR *THE LANCET'S* SERIES 3 (June 2014), http://www.thelancet.com/pb/assets/raw/Lancet/stories/series/midwifery/midwifery_exec_summary.pdf (“The quality of care is not directly related to the available resources in a health system. Despite their relative wealth, some high-income countries, such as the USA, rank lower on the health components of the 2013 Mothers Index than some far less wealthy ones”); see also Mary J. Renfrew et al., *Midwifery and Quality Care: Findings From a New Evidence-Informed Framework for Maternal and Newborn Care*, 384 LANCET 1129, 1129 (Sept. 20, 2014).
 26. Nicholas J. Kassenbaum et al., *Global, Regional, and National Levels and Causes of Maternal Mortality During 1990–2013: A Systematic Analysis for the Global Burden of Disease Study 2013*, 384 LANCET 980, 998 (2014). The seven other countries are Afghanistan, Belize, El Salvador, Guinea-Bissau, Greece, Seychelles, and South Sudan. *Id.*
 27. WORLD HEALTH ORG. (WHO) ET AL., TRENDS IN MATERNAL MORTALITY: 1990 TO 2013, at 8 (2014), <http://www.who.int/reproductivehealth/publications/monitoring/maternal-mortality-2013/en/> [hereinafter WHO ET AL.]; see also Kassenbaum et al., *supra* note 26 (reporting the U.S. MMR to be 18.5 per 100,000 live births, which, though relying on a different data set, shows a similar increase to the WHO study on MMR trends).
 28. WHO ET AL., *supra* note 27, at 7–8.
 29. Carol Morello, *Maternal Deaths in Childbirth Rise in the U.S.*, WASH. POST (May 2, 2014), http://www.washingtonpost.com/local/maternal-deaths-in-childbirth-rise-in-the-us/2014/05/02/abf7df96-d229-11e3-9e25-188ebe1fa93b_story.html.
 30. Changes in population health—including an increase in conditions like hypertension and diabetes, as well as better medical care for women with heart or neurological diseases who now survive into adulthood and become pregnant—are believed to have contributed to the rise in high-risk pregnancies. *Id.* Researchers note that the number of maternal deaths is probably still underreported and mischaracterized on death certificates. *Id.*
 31. SAKALA & CORRY, *supra* note 13, at 14.

women per 100,000 live births.³² That number has continued to climb every year since.

Women of color die in childbirth at a higher rate than white women, consistent with racial disparities throughout the U.S. health care system.³³ Recent statistics show that non-Hispanic black women are between three and four times more likely to die from pregnancy-related causes than white women, with even greater disparities in high-risk pregnancies.³⁴ Areas with a significant percentage of African Americans report some of the highest maternal mortality rates in the country. For example, Washington, D.C., where 50% of the population is black, has a rate of 41.6 deaths per 100,000 live births; the rate in Fulton County, Georgia, which includes Atlanta, is 94 maternal deaths per 100,000 live births among black residents, while the rate of white women dying in the county is too insignificant to report.³⁵ Most shockingly, Chicksaw County, Mississippi reports a rate of 595 deaths per 100,000 live births, which is higher than sub-Saharan countries such as Kenya (400 deaths) and Rwanda (320 deaths).³⁶

Maternal mortality is not the only measure upon which the United States lags behind other industrialized nations. Although the infant mortality rate in the United States declined 12% from 2005 through 2011 to 6.05 infant deaths per 1,000 live births, it is still higher than the rates of many peer nations.³⁷ In the last ranking of infant mortality rates among countries belonging to the Organization for Economic Cooperation and Development (OECD), issued in 2008, the United States ranked twenty-seventh.³⁸ The World Health Organization reports that “babies born in the U.S. have a higher risk of dying during the first month of

32. *Id.* Changes implemented in 1999 and 2003 in the measurement and recording of maternal mortality make it difficult to compare recent statistics with the period through 1998. *Id.*

33. See CTR. FOR REPRODUCTIVE RIGHTS, REPRODUCTIVE INJUSTICE, RACIAL AND GENDER DISCRIMINATION IN U.S. HEALTH CARE 13 (2014) (discussing issues that drive racial disparities in maternal mortality in the United States, including socioeconomic factors, geography, and the quality of health care).

34. Ctrs. for Disease Control & Prevention, *Pregnancy Mortality Surveillance System* (Jan. 21, 2016), <http://www.cdc.gov/reproductivehealth/MaternalInfantHealth/PMSS.html> (reporting that in 2011, the pregnancy-related mortality ratio for white women in the United States was 11.8 per 100,000 live births, compared to 41.1 deaths per for black women). See also AMNESTY INT’L, DEADLY DELIVERY: THE MATERNAL HEALTH CARE CRISIS IN THE USA 19 (2010), <http://www.amnestyusa.org/sites/default/files/pdfs/deadlydelivery.pdf>.

35. CTR. FOR REPRODUCTIVE RIGHTS, *supra* note 33.

36. *Id.*

37. See MARIAN F. MACDORMAN ET AL., NAT’L CTR. FOR HEALTH STATISTICS, RECENT DECLINES IN INFANT MORTALITY IN THE UNITED STATES, 2005–2011, at 1–2 (2013) [hereinafter RECENT DECLINES IN INFANT MORTALITY]. Sweden, Japan, and Finland report fewer than 3 infant deaths per 1,000 live births. Sarah Kliff, *Graph of the Day: The United States Has a Really High Infant Mortality Rate*, WASH. POST (Jan. 9, 2013), <http://www.washingtonpost.com/blogs/wonkblog/wp/2013/01/09/graph-of-the-day-the-united-states-has-a-really-high-infant-mortality-rate/>.

38. Abby Goodnough, *U.S. Infant Mortality Rate Fell Steadily From ‘05 to ‘11*, N.Y. TIMES (April 17, 2013), http://www.nytimes.com/2013/04/18/health/infant-mortality-rate-in-us-declines.html?_r=0.

life than babies born in forty other countries.”³⁹ As with maternal mortality, women of color—especially non-Hispanic black women—experience much higher rates of infant mortality than their white counterparts, as well as higher rates of preterm births and low birth weight.⁴⁰

In 2006, the Department of Health and Human Services (HHS) concluded that the United States has lost ground on goals for many maternity care measures, including low birth weight and very low birth weight, preterm births, maternal labor and birth complications, primary and repeat cesareans in low-risk women, cerebral palsy, and mental retardation.⁴¹ The review reflected worsening outcomes on a range of measures related to the health and well-being of women and their babies in the final decades of the twentieth century. For example, from 1981 to 2006, the national rate of preterm birth increased by 36%.⁴² Preterm babies suffer higher rates of complications due to the under-development of their lungs, hearts, and brains, among other organs.

Researchers for Amnesty International have called attention to the increase in birth-related complications that has accompanied the rising maternal mortality rate. Amnesty’s 2010 report, *Deadly Delivery*, notes that “[s]evere complications that result in a woman nearly dying . . . increased by 25 per cent between 1998 and 2005.”⁴³ More than one-third of women who give birth each year—approximately 1.7 million women—experience one or more complications with an adverse effect on their health.⁴⁴ This occurs despite the fact that an estimated 83% of women have low-risk pregnancies in the United States.⁴⁵

As researchers and advocates have tried to answer the question of why high maternal and infant mortality rates persist despite the many resources dedicated to maternity care in the United States—and the related question of why so many low-risk pregnancies leave women with adverse health consequences—it has become clear that modern maternity care is the product of major shifts in who attends to birthing women, where women give birth, and how birth happens. Taken together, these shifts represent the transition of childbirth in American culture from a social event to a medical event, accompanied by new ideas about the degree of intervention required to achieve a successful birth. Critics of modern maternity care decry the way in which the understanding of childbirth as a normal, natural, physiologic process has given way to the widespread view that

39. *U.S. Newborn Death Rate Trails Behind 40 Other Nations*, INT’L BUS. NEWS (Aug. 31, 2011), <http://www.ibtimes.com/us-newborn-death-rate-trails-behind-40-other-nations-307366>.

40. See SAKALA & CORRY, *supra* note 13, at 17; see also RECENT DECLINES IN INFANT MORTALITY, *supra* note 37, at 1–2.

41. U.S. DEP’T OF HEALTH & HUMAN SERVS., HEALTHY PEOPLE 2010 MIDCOURSE REVIEW (2006), <http://www.healthypeople.gov/2010/data/midcourse/html/focusareas/FA16ProgressHP.htm>. Preterm births are defined as live births before 37 completed weeks of gestation. *Id.*

42. SAKALA & CORRY, *supra* note 13, at 14.

43. AMNESTY INT’L, *supra* note 34, at 1.

44. *Id.*

45. SAKALA & CORRY, *supra* note 13, at 26.

birth is pathological—an illness or condition to be managed and controlled.⁴⁶ They identify the trend towards increasing medical intervention in birth as a major contributing factor to the poor outcomes women and babies experience.⁴⁷ Examining the historical shifts in how, where, and with whose support women give birth helps to explain the changes maternity care reformers seek and reveals particular sites of struggle over the future of childbirth-related health care.

A. From Midwife to Obstetrician: Shifts in Who Attends a Laboring Woman

The historical shift from midwife to obstetrician as the primary birth attendant is a key factor in understanding the landscape of twenty-first-century maternity care. Economic competition, professionalization, and discrimination on the basis of race, class, and sex have all played important roles in determining who is responsible for guiding women through childbirth at different points in American history.⁴⁸ The professionalization of medicine in the nineteenth century and, in particular, the growth of obstetrics as a field, have shaped the cultural preferences and market forces behind childbirth practices in the United States.

1. Midwifery's Early History

In the colonial era, the majority of births were attended by midwives.⁴⁹ This left physicians responsible for providing care only during the most complicated cases.⁵⁰ Historical accounts of childbirth in the United States describe a relatively peaceful coexistence of midwives and physicians in a “system of cooperation” and “professional courtesy” until the early nineteenth century.⁵¹

46. See, e.g., Judith A. Lothian, *Safe, Healthy Birth: What Every Pregnant Woman Needs to Know*, 18 J. PERINATAL EDUC. 48, 49 (2009) (“[I]t is essential to respect the simple, natural, physiologic process of labor and birth and not interfere in any way, unless there is a clear medical indication.”).

47. See, e.g., *id.* (“Standard maternity care in the United States is intervention intensive, expects trouble, and does not promote, support, or protect physiologic birth.”).

48. See generally MAINSTREAMING MIDWIVES: THE POLITICS OF CHANGE (Robbie Davis-Floyd & Christine Barbara Johnson eds., 2006) (describing the history of midwifery in the United States); BARBARA BRIDGMAN PERKINS, *THE MEDICAL DELIVERY BUSINESS: HEALTH REFORM, CHILDBIRTH, AND THE ECONOMIC ORDER* (2004) (describing the history of medical practice in the United States).

49. Catherine M. Scholten, “*On the Importance of the Obstetrick Art*”: *Changing Customs of Childbirth in America, 1760–1825*, 34 WILLIAM & MARY Q. 426, 427 (1977) (“[C]hildbirth was an event shared by the female community; and delivery was supervised by a midwife.”).

50. See *id.* (noting that physicians generally attended only those childbirths requiring the use of instruments).

51. Stacey A. Tovino, *American Midwifery Litigation and State Legislative Preferences for Physician-Controlled Childbirth*, 11 CARDOZO WOMEN'S L.J. 61, 64 (2004–2005) (citing LAUREL THATCHER ULRICH, *A MIDWIFE'S TALE: THE LIFE OF MARTHA BALLARD, BASED ON HER DIARY, 1785–1812*, at 12 (1991)); see also Scholten, *supra* note 49, at 436 (noting that by the first decade of the nineteenth century, midwifery was taught at five American

The dawn of the 1800s, however, witnessed an evolution in the field of medicine. Unlike earlier physicians who often practiced medicine part-time alongside other occupations, nineteenth century physicians began to practice their craft full-time and cultivate a new culture of professionalism.⁵² In an effort to increase demand for their services, physicians “waged systematic and virulent propaganda campaigns” against midwives, many of whom were immigrants.⁵³ These public relations initiatives invoked stereotypes of midwives as “dirty, illiterate, ignorant, and irresponsible, in contrast to hospitals and physicians, which were portrayed as clean, educated, and the epitome of responsibility in health care.”⁵⁴ Physicians cultivated a demand for a “higher standard of obstetrics,” endorsing more frequent and varied interventions into birth in order to ensure healthy outcomes.⁵⁵ Paradoxically, most newly trained doctors in the nineteenth century lacked any clinical training or experience with childbirth, due to prevailing norms of modesty that precluded physician-trainees from observing women in labor.⁵⁶ Nevertheless, physicians handled births of most middle- and upper-class women in the nineteenth century,⁵⁷ while midwives served immigrant and poor communities.⁵⁸ The racial and ethnic diversity of midwives reflected the diversity of the women they served. For example, the slave trade had brought midwives from West Africa, known as “granny midwives,” who were primarily responsible for attending deliveries well past the Civil War in poor, rural areas of the South.⁵⁹

By 1900, physicians attended approximately half of all births, while midwives attended the rest.⁶⁰ After 1900, the availability of pain medications such as opium attracted an increasing number of women to hospitals for physician-attended births.⁶¹ By 1930, midwives attended only 15% of births, and

medical schools).

52. See PAUL STARR, *THE SOCIAL TRANSFORMATION OF AMERICAN MEDICINE* 49–50 (1982); Tovino, *supra* note 51, at 65.
53. Robbie Davis-Floyd, *ACNM and MANA: Divergent Histories and Convergent Trends, in MAINSTREAMING MIDWIVES: THE POLITICS OF CHANGE*, *supra* note 48, at 32.
54. *Id.*
55. Suzanne Hope Suarez, *Midwifery Is Not the Practice of Medicine*, 5 *YALE J.L. & FEMINISM* 315, 327 (1993); see also JEAN DONNISON, *MIDWIVES AND MEDICAL MEN: A HISTORY OF THE STRUGGLE FOR THE CONTROL OF CHILDBIRTH* 44–45 (1977).
56. RICHARD W. WERTZ & DOROTHY C. WERTZ, *LYING-IN: A HISTORY OF CHILDBIRTH IN AMERICA* 85 (1989).
57. See JUDITH WALZER LEAVITT, *BROUGHT TO BED: CHILD-REARING IN AMERICA, 1750–1950*, at 39 (1986) (noting that the “transition to male attendants occurred so easily among advantaged urban women” because physicians “carried with them the status of advantages of their gender and of the popular image of superior education”).
58. See Suarez, *supra* note 55, at 377 n.88.
59. See JUDITH ROOKS, *MIDWIFERY AND CHILDBIRTH IN AMERICA* 18 (1997) (noting that “the first granny midwives came to America with the first boatloads of slaves; West African childbirth folklore, superstitions, traditions, and practices arrived with them”).
60. LEAVITT, *supra* note 57, at 12.
61. See *id.* at 39 (noting that “the male presence had already contributed opium and forceps to obstetrics and promised even greater benefits in the future”).

this number continued to decline as the decades passed.⁶² But the available public health data did not support the perceived superiority of physicians. According to early twentieth-century studies, places with the highest percentage of midwife-attended births reported the lowest maternal mortality rates.⁶³ In 1925, a national conference, convened at the White House, announced that “the record of trained midwives . . . surpasses the record of physicians in normal deliveries.”⁶⁴ As historians Richard W. Wertz and Dorothy C. Wertz highlight, although physicians brought “more precise and effective manipulations and interventions, both to prevent and to cure disease,” they were also “on the lookout for trouble in birth.”⁶⁵ The historians discuss one doctor, practicing in Boston in the 1920s, who urged women to think of birth “not as ‘something natural and normal, and not worth the time of obstetricians and specialists’ charges,’ but as ‘a complicated and delicately adjusted process, subject to variations from the normal which may be disastrous to the mother or baby, or both.’”⁶⁶

Physician dominance in the childbirth arena normalized the idea of birth as “an abnormal, pathogenic process which required routine medical assistance to prevent disaster.”⁶⁷ And the promotion of physicians’ superiority to midwives fell on receptive judicial ears. In her close reading of judicial opinions about midwifery in three states beginning in the early 1900s and stretching through the second half of the century, Stacey Tovino observed that the “courts’ continual refusal to acknowledge the skills of the defendant women midwives and their positive health outcomes suggests that the women midwives’ experiential knowledge was both subordinate to the male physician’s new scientific knowledge and rejected as a means of establishing professional and legal standing.”⁶⁸

To promote the idea that physicians were the foremost experts on childbirth—and preferable to midwives—the medical profession used ideas about racial superiority in their attacks on black and immigrant midwives. In the 1940s, white physicians discouraged white women from birthing with black midwives, despite widespread respect among women for the midwives’ skill and experience.⁶⁹ Opponents described midwives as “filthy and ignorant and not far removed from the jungles of Africa,” representing “a relic of barbarism.”⁷⁰

62. JUDY B. LITOFF, *Rediscovering the Midwife*, in *THE AMERICAN MIDWIFE DEBATE: A SOURCEBOOK ON ITS MODERN ORIGINS* 9 (1986).

63. *Id.* at 5.

64. Judith P. Rooks, *Nurse Midwifery: The Window Is Wide Open*, *AM. J. NURSING*, Dec. 1990, at 31.

65. WERTZ & WERTZ, *supra* note 56, at 136.

66. *Id.* at 141.

67. *Id.* at 164.

68. Tovino, *supra* note 51, at 106.

69. See MARGARET CHARLES SMITH & LINDA JANET HOLMES, *LISTEN TO ME GOOD: THE LIFE STORY OF AN ALABAMA MIDWIFE* 21, 67 (1996).

70. Neal Devitt, *The Statistical Case for the Elimination of the Midwife: Fact Versus Prejudice*,

Criminal prosecutions—initiated not by midwifery clients but by physicians who served on the state medical board—targeted immigrant midwives who served largely working-class, immigrant populations and charged sometimes as little as one-third of local physicians.⁷¹ Indeed, mid-century statistics reflect vast differences in midwifery care by race and class. In 1935, 5% of white women in childbirth were attended by midwives, compared to 54% of black women.⁷² By 1953, as midwives became further marginalized, only 3% of white women were attended by midwives, while 20% of black women employed midwives at their births.⁷³

2. The Professionalization of Midwifery

The earliest formal professional organizing among midwives began with nurses. Concerns about the limited access to care for poor, rural populations led to the creation of the Frontier Nursing Service in Kentucky in 1925.⁷⁴ In 1932, the Maternity Care Association created the first training program for nurse-midwives in the United States.⁷⁵ The 1950s saw the incorporation of nurse-midwives into the hospital setting, along with curricular development to support the training of more nurse-midwives.⁷⁶ The American College of Nurse-Midwives (ACNM) was founded in 1969 by nurses who were frustrated that neither the American Nurses Association nor the National League of Nurses had a special section for nurse-midwives.⁷⁷

The professionalization of midwifery in the latter decades of the twentieth century has led to several recognized types of midwifery practices, a patchwork of state laws restricting or regulating midwives, and enormous variation in access to midwifery care across the country. As discussed more extensively in Section I.B, midwives today attend births in one of three settings—a hospital, a freestanding birth center, or at home. The Midwives Alliance of North America (MANA)⁷⁸ categorizes certified midwives into three types: certified nurse-

1890–1935 (Part I), 4 WOMEN & HEALTH 81, 89 (1979).

71. See Tovino, *supra* note 51, at 82–87 (describing the activities of midwives in Massachusetts in the early twentieth century, including the plight of Finish midwife Hannah Porn, who endured ten criminal prosecutions for attending births).

72. George W. Lewis & Peter G. McCaffery, *Sociological Factors Affecting the Medicalization of Midwifery*, in MIDWIFERY AND THE MEDICALIZATION OF CHILDBIRTH: COMPARATIVE PERSPECTIVES 24 (Edwin Van Teijlingen et al. eds., 2000).

73. *Id.*

74. Nancy Schrom Dye, *Mary Breckinridge, the Frontier Nursing Service, and the Introduction of Nurse-Midwifery in the United States*, 57 BULLETIN HIST. MED. 485 (1983); see also Katy Dawley, *Origins of Nurse-Midwifery in the United States and its Expansion in the 1940s*, 48 J. MIDWIFERY & WOMEN'S HEALTH 86, 86 (2003) (recalling Mary Breckinridge's creation of the Frontier Nursing Service).

75. Schrom Dye, *supra* note 74, at 506.

76. See Helen Varney Burst & Joyce E. Thompson, *Genealogical Origins of Nurse-Midwifery Education Programs in the United States*, 48 J. MIDWIFERY & WOMEN'S HEALTH 464, 464–72 (2003) (reporting the history of nurse-midwives' incorporation and training in hospitals).

77. See LITOFF, *supra* note 62, at 11–12.

78. MANA is one of the two largest midwifery organizations in the United States, along with the

midwives (CNMs), certified professional midwives (CPMs), and certified midwives (CMs).⁷⁹

The development of the CNM credential led to an increase in the number of midwife-assisted births in the last decade of the twentieth century, but the vast majority of these midwife-assisted births take place in the hospital under the ultimate supervision of physicians.⁸⁰ CNMs earn a nursing degree before pursuing further study in gynecology and obstetrics.⁸¹ They are expressly permitted to work in all fifty states, generally practicing in institutional settings under physician control and subject to state regulations.⁸² Many insurance programs, including the federal health insurance programs for low-income people and service members, cover CNM services.⁸³

In contrast to CNMs, CPMs practice as “autonomous health professionals working within a network of relationships with other maternity care professionals.”⁸⁴ CPMs may pursue several different approaches to training, but all must be evaluated by the North American Registry of Midwives (NARM) and pass the NARM Written Examination and Skills Assessment.⁸⁵ They attend births at freestanding birth centers or at home. Currently, CPMs are legally authorized to practice in twenty-eight states.⁸⁶

CMs are certified according to the same guidelines as CNMs but lack

American College of Nurse-Midwives. Founded after the 1982 ACNM national conference, MANA’s early membership included both independent midwives who had attended the conference and nurse-midwives who protested the banning of independent midwives. *Id.* at 18.

79. *What Is a Midwife?*, MIDWIVES ALLIANCE OF N. AM. (MANA), <http://mana.org/about-midwives/what-is-a-midwife> (last visited Mar. 8, 2016). MANA also recognizes traditional midwives or community-based midwives—those midwives who choose not to become certified or licensed due to religious, personal, or philosophical reasons. *Id.*
80. In 2013, 94.6% of CNM-attended births occurred in hospitals. AM. COLL. OF NURSE-MIDWIVES (ACNM), ESSENTIAL FACTS ABOUT MIDWIVES (Feb. 2016), [hereinafter ESSENTIAL FACTS ABOUT MIDWIVES], <http://www.midwife.org/Essential-Facts-about-Midwives>. In fact, the number of births outside the hospital setting, almost all of which are attended by midwives—whether at home or in a freestanding birth center—has remained below 1.5% of all births for several decades. See MARIAN F. MACDORMAN ET AL., CTRS. FOR DISEASE CONTROL & PREVENTION, NAT’L CTR. FOR HEALTH STATISTICS, NCHS DATA BRIEF NO. 144: TRENDS IN OUT-OF-HOSPITAL BIRTHS IN THE UNITED STATES, 1990–2012, at 1–2 (Mar. 2014) [hereinafter TRENDS IN OUT-OF-HOSPITAL BIRTHS].
81. This training must be received in a program accredited by the American Midwifery Certification Board (AMCB), and CNMs must pass the AMCB examination before being licensed. ESSENTIAL FACTS ABOUT MIDWIVES, *supra* note 80. ACNM reports that as of February 2015, there were 11,018 CNMs practicing in the United States, as well as 88 Certified Midwives (CM), who met the certification requirements of the AMCB but lacked professional training as a nurse. *Id.*
82. *Id.*
83. See 42 U.S.C. § 1396d (2012) (Medicaid); 10 U.S.C. § 1079 (2012) (Civilian Health and Medical Program for the Uniformed Services (“CHAMPUS”).
84. *Who Are CPMs?*, NAT. ASS’N OF CERTIFIED PROF’L MIDWIVES (NACPM), <http://nacpm.org/about-cpms/who-are-cpms/> (last visited Mar. 8, 2016).
85. *What Is a Midwife?*, *supra* note 79; *How to Become a CPM*, N. AM. REGISTRY OF MIDWIVES (NARM), <http://narm.org/certification/how-to-become-a-cpm/> (last visited Mar. 8, 2016).
86. *Legal Status of U.S. Midwives*, MIDWIVES ALLIANCE OF N. AM. (MANA), <http://mana.org/about-midwives/legal-status-of-us-midwives/> (last visited Mar. 8, 2016).

training in nursing. Following a newer path to midwifery practice, CMs are currently authorized to practice in five states.⁸⁷ Finally, some midwives are independent practitioners whose education may consist of self-study, apprenticeship, midwifery school, or university-based training distinct from nursing.⁸⁸ Referred to alternately as lay midwives or direct-entry midwives, they focus their practice on attending home births.⁸⁹

Midwifery rejects an orientation centered on pathology and disease management. Instead, it advances a vision of “socially oriented preventive care, which incorporates prenatal care and a concern for the social and emotional aspects of pregnancy and birth Midwifery presumes that childbirth is a healthy and normal event.”⁹⁰ The Midwives Model of Care includes:

monitoring the physical, psychological and social well-being of the mother throughout the childbearing cycle; providing the mother with individualized education, counseling and prenatal care, continuous hands-on assistance during labor and delivery and postpartum support; minimizing technological interventions; and identifying and referring women who require obstetrical attention.⁹¹

Despite this woman-centered philosophical approach to childbirth—or perhaps because of it—midwives have been restricted in their ability to practice. In some parts of the country, they have even been targeted for criminal prosecution.⁹² Many women lack the ability to choose a midwife as their primary care provider during pregnancy and childbirth due to where they live or their insurance carrier. Instead, obstetric specialists—trained in pathology and surgery—are the lead caregivers for nearly 80% of U.S. women during pregnancy and labor.⁹³ This is the case despite the fact that most pregnant women are healthy and at low risk for complications.⁹⁴ Among developed nations, only the United States and Canada rely predominantly on specialists rather than midwives to provide maternity care to healthy women.⁹⁵

87. ESSENTIAL FACTS ABOUT MIDWIVES, *supra* note 80.

88. *What is a Midwife?*, *supra* note 79.

89. “Direct-entry midwife” is also sometimes used to refer to midwives who come to midwifery without separate training as nurses—namely CPMs and CMs. *See* Suarez, *supra* note 55, at 331–32. For more on the fluid language used to describe some midwives, see *id.* at 332 (noting that the imprecise use of “lay midwife” to describe midwives with varying degrees of formal education and compliance with legal requirements for the practice of midwifery means the “term may be used erroneously to discredit well-trained direct-entry midwives”).

90. *Id.* at 346–47.

91. *Midwifery Model*, MIDWIVES ALLIANCE OF N. AM. (MANA), <http://mana.org/about-midwives/midwifery-model> (last visited Mar. 8, 2016).

92. *See, e.g.,* Libby Copeland, *When a Home Birth Ends in Tragedy, Can the Midwife Go to Jail?*, SLATE (May 9, 2011), http://www.slate.com/articles/double_x/doublex/2011/05/when_a_home_birth_ends_in_tragedy_can_the_midwife_go_to_jail.html; *see also* Beckett & Hoffman, *supra* note 11, at 134.

93. *See* SAKALA & CORRY, *supra* note 13, at 62.

94. *See id.*

95. *Id.* In addition to obstetricians and midwives, maternity care is also provided by some family

B. From Home to Hospital: Shifts in Where Women Give Birth

In many ways, the shift from home to hospital as the primary location where women give birth tracks the historical conditions and economic pressures that influenced the rise in physician dominance discussed in Section I.A. In colonial times, childbirth was a “social”—not medical—event, with female relatives and neighbors gathering together to provide support to the laboring woman.⁹⁶ Throughout the nineteenth century, most women gave birth at home, even as middle- and upper-class women increasingly called physicians to their bedsides.⁹⁷ Hospital births were traditionally the last resort for poor, homeless, or working-class women.⁹⁸

The widespread transition to hospital births began in the twentieth century with middle- and upper-class women, who were influenced by new theories of germ transmission and preferred to receive maternity care from physicians.⁹⁹ Articles in the popular medical journals of the 1920s and 1930s encouraged women to give birth in hospitals for increased safety.¹⁰⁰ Desire for pain medication also increased the appeal of the hospital as a place to give birth.¹⁰¹ By 1940, more than half of births took place in the hospital,¹⁰² including 75% of births to women living in urban settings.¹⁰³ Ten years later, 88% of babies were born in the hospital, and by 1969, approximately 99% of births occurred in the hospital, a rate that persisted through the 1980s.¹⁰⁴ Relocating birth to the hospital disrupted traditional birth practices, excluding family and friends from the birth, separating mother and child after birth, and confining women to hospital beds. These disruptions help to explain why historian Judith Walzer Leavitt calls the shift from home to hospital the “single most important transition in childbirth history.”¹⁰⁵

physicians who serve as birth attendants for their patients. *Id.* at 63. Family physicians practice medicine with a primary care orientation that “falls between obstetricians and midwives.” *Id.*

96. ULRICH, *supra* note 51, at 12 (explaining that the late eighteenth century “was the era of ‘social childbirth,’ when female relatives and neighbors, as well as midwives, attended births”); *see also* Deborah Kuhn McGregor, “Childbirth-Travells” and “Spiritual Estates”: Anne Hutchinson and Colonial Boston, 1634–1639, in *MIDWIFERY THEORY AND PRACTICE* 175, 180 (Philip K. Wilson ed., 1996) (noting that “[c]hildbirth in seventeenth-century America was a communal event which women governed and shared”).
97. *See* LEAVITT, *supra* note 57, at 173 (noting that “[m]iddle-class women invited male physicians into their home birthing rooms”).
98. WERTZ & WERTZ, *supra* note 56, at 132.
99. *See* LEAVITT, *supra* note 57, at 173–74 (“[I]t was more the image of science’s potential, the lure of what science could offer, than any proven accomplishments that attracted women to the hospital.”).
100. *Id.* at 178.
101. *See id.* at 40 (noting that “the prospect of a difficult birth . . . led women to seek out practitioners whose obstetric armamentarium included drugs”).
102. *Id.* at 171.
103. WERTZ & WERTZ, *supra* note 56, at 133.
104. *Id.* at 135.
105. LEAVITT, *supra* note 57, at 195. Despite the loss of social supports, women perceived the shift to hospital birth as an advancement in safety, a worthwhile trade-off for the benefits

The adoption of the hospital as the primary location for childbirth persists today, serving as the site of over 98% of births in 2012.¹⁰⁶ However, due largely to the advocacy of natural birth activists, a third option became available in the latter decades of the twentieth century: the freestanding birth center.¹⁰⁷ Birth centers are “nonhospital facilities organized to provide family-centered care for women judged to be at low risk of obstetrical complications.”¹⁰⁸ They provide an alternative setting for women seeking midwifery care outside the hospital environment. Generally staffed by CNMs and CPMs, birth centers use fewer medical interventions during birth. They monitor the fetal heart rate intermittently with a Doppler ultrasound instead of continuous electronic monitoring, do not provide oxytocin to induce or augment labor, and offer no pharmacologic pain relief (other than local analgesia to suture tears in the perineum).¹⁰⁹ The cost of delivering at a birth center is significantly less than in a hospital; in 2010, the latest year for which birth center charges are available, the average cost for a vaginal delivery was \$2,277, compared to \$10,166 for an uncomplicated vaginal birth in a hospital.¹¹⁰ This suggests “the level of resource use in hospitals for uncomplicated vaginal births could be much lower.”¹¹¹ Currently, there are approximately eighty freestanding birth centers in operation across the United States.¹¹²

Some women still opt to give birth at home with a midwife (or in a very small number of cases, unassisted). Historically, the safety of home birth has been contentious, with supporters and opponents waging battle in the courts, the state legislatures, and the arena of public opinion.¹¹³ Although out-of-hospital births represent a small fraction of the overall number of annual births in the United States, the numbers have been creeping upwards.¹¹⁴ After declining

promised by the medical profession. As Leavitt, notes, “Women did not view the stay in the hospital as a time when they lost important parts of the traditional birth experience, but rather as a time when they gained protection for life and health, aspects of birth that had been elusive and uncertain in the past.” *Id.* at 181.

106. See TRENDS IN OUT-OF-HOSPITAL BIRTHS, *supra* note 80, at 1.

107. See Anne Scupholme et al., *A Birth Center Affiliated With the Tertiary Care Center: Comparison of Outcome*, 67 *OBSTETRICS & GYNECOLOGY* 598, 598 (1986).

108. Suarez, *supra* note 55, at 322 n.52 (citing Judith P. Rooks et al., *Outcomes of Care in Birth Centers: The National Birth Center Study*, 321 *NEW ENG. J. MED.* 1804 (1989)).

109. SHEILA KITZINGER, *HOMEBIRTH: THE ESSENTIAL GUIDE TO GIVING BIRTH OUTSIDE THE HOSPITAL* 58 (1991) (also noting that birth centers perform few episiotomies and no operative deliveries).

110. See AVERAGE FACILITY LABOR AND BIRTH CHARGE, *supra* note 21, at 1 (neither figure includes the charges for newborn care or the maternity care provider).

111. SAKALA & CORRY, *supra* note 13, at 13.

112. Susan Rutledge Stapleton et al., *Outcomes of Care in Birth Centers: Demonstration of a Durable Model*, 58 *J. MIDWIFERY & WOMEN’S HEALTH* 1, 3–14 (2013) (studying maternity care at seventy-nine birth centers across the United States from 2007 to 2010).

113. That the then-president of the American Congress of Obstetricians and Gynecologists (ACOG) once referred to home birth as “in utero child abuse” is just one example of the heightened rhetoric of this high-stakes conflict. See RAYMOND DE VRIES, *MAKING MIDWIVES LEGAL: CHILDBIRTH, MEDICINE, AND THE LAW* 53 (2d ed. 1996).

114. A 1989 revision of the U.S. Standard Certificate of Birth enabled reporting of separate data

gradually from 1990 to 2004, the percentage of out-of-hospital births increased from 0.87% of births in 2004 to 1.36% of births in 2012, the highest level since 1975.¹¹⁵ Of the 53,635 out-of-hospital births in 2012, 66% occurred at home, 29% took place in freestanding birth centers, and the remaining 5% occurred in a clinic, doctor's office, or other location.¹¹⁶ In 2012, the percentage of out-of-hospital births was higher for non-Hispanic white women than for any other group at 1 in 49 births.¹¹⁷

C. From Social to Medical: Shifts in How Women Give Birth

The shift to physician-attended hospital births introduced a host of medical interventions into the laboring process. This development reflected not only the new availability of equipment and specialized training but also the prevailing mindset that birth is an adverse health condition that must be managed. The entrenchment of this medically-oriented childbirth paradigm can be traced to the work of Dr. Joseph DeLee, the author of the most prominent obstetric textbook in the 1920s.¹¹⁸ DeLee characterized childbirth as a pathological process requiring a program of active control over labor and delivery.¹¹⁹ He promised a set of interventions—including sedation, preventive episiotomies, regular use of forceps, and placental extraction—to save women from their bodies' natural functions during childbirth.¹²⁰ Introduced without comprehensive study of their risks and benefits, many of these interventions became routine and remain so almost 100 years later.¹²¹

Comparing the length of “normal” labor at different points in history provides a useful example of how medical intervention has changed childbirth. In the 1971 edition of *Williams Obstetrics*, the average length of the second stage

on home and birth center births; prior to 1989, births were reported as occurring either in or out of the hospital without differentiation between out-of-hospital locations. *See* TRENDS IN OUT-OF-HOSPITAL BIRTHS, *supra* note 80, at 7. A 2003 revision added reporting on whether a home birth was planned, but the 2003 revision was implemented on a staggered basis, so only thirty-six states (comprising 71% of all U.S. births) reported data on the planning status of home births in 2012. *Id.*

115. *Id.* at 1. The National Center for Health Statistics defines “out-of-hospital” to include home, birth center, clinic or doctor's office, or other non-hospital location. *Id.*

116. *Id.* at 2. The percentage of home births increased from 0.56% in 2004 to 0.84% in 2011. *Id.* From 2011 to 2012, that number increased again to 0.89%. *Id.* Similarly, the percentage of birth center births increased from 0.23% in 2004 to 0.36% in 2011 and 0.39% in 2012. *Id.*

117. *Id.* Non-Hispanic white women also account for about 89% of the total increase in out-of-hospital births from 2004–2012. *Id.* at 3.

118. ROOKS, *supra* note 59, at 24–26.

119. *Id.* at 26 (“DeLee's unique contribution was to change the focus from responding to the perception of a problem to preventing problems by directing the course of labor and delivery through a panoply of interventions All of the interventions he prescribed eventually became routine.”).

120. *Id.* at 25 (discussing DeLee's innovations as intended to save women from the “evils that are natural to labor”); *see also* WERTZ & WERTZ, *supra* note 56, at 141 (“By 1920 doctors believed that ‘normal’ deliveries . . . were so rare as to be virtually nonexistent.”).

121. *See infra* Section II.B.2.

of labor was eighty minutes; by the 1985 edition, the average length of the second stage of labor was fifty minutes.¹²² This variability in “normal” labor duration over time shows how the preventive use of various procedures has enabled physicians to control and hasten labor.¹²³ The shortened duration of what is considered normal labor has also enabled earlier medical intervention.

Today, hospital-based childbirth has become a procedure-intensive medical event to an unprecedented degree. Forty-nine percent of all hospital procedures performed on individuals aged 18–44 in 2005 were obstetric procedures.¹²⁴ Six of the fifteen most common hospital procedures for the entire population are associated with childbirth: medical induction (along with manually assisted delivery and other procedures to assist delivery), repair of current obstetric laceration, cesarean, circumcision, fetal monitoring, and the artificial rupture of membranes.¹²⁵ Six of the ten most common procedures billed to Medicaid and private insurers in 2005 were related to maternity care.¹²⁶

Cesarean surgery is the most common operating room procedure in the United States;¹²⁷ a nearly record-high rate of 32.7% of all babies in the United States are born by cesarean.¹²⁸ A dramatic increase from the first-reported cesarean rate of 4.5% in 1965,¹²⁹ this statistic vastly exceeds the World Health Organization’s projection that medically necessary cesareans should represent 10–15% of all births in an industrialized nation.¹³⁰ In 1980, the National Institutes of Child Health and Human Development convened a Consensus Development Conference on Cesarean Childbirth to address concern regarding the then-record cesarean rate of 15%.¹³¹ Research available at the time showed that women who began laboring under a midwife’s care had less than half the number of cesarean births as comparable women who received obstetric care, indicating that the U.S. rate included a significant number of medically

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122. Compare LOUIS M. HELLMAN & JACK A. PRITCHARD, WILLIAMS OBSTETRICS 396 (14th ed. 1971), with JACK A. PRITCHARD ET AL., WILLIAMS OBSTETRICS 337 (17th ed. 1985). Suzanne Hope Suarez notes that the length of hospital-based labors in the 1940s was actually longer than the length of home births in the early 1970s. Suarez, *supra* note 55, at 318–19. But by the late 1960s and 1970s, labor in hospital births was nearly five hours shorter than in home births, “with an apparent *increase* in fetal distress and other complications.” *Id.*
123. Reducing the amount of time a woman experiences the pain and discomfort of labor may seem like a worthwhile accomplishment, but rushing the physiological changes that enable safe delivery increases the risk of complications for both woman and child. See *infra* Section II.B.2.
124. SAKALA & CORRY, *supra* note 13, at 11.
125. *Id.* at 11–12.
126. *Id.* at 12.
127. *Id.* at 2.
128. NVS Birth Reports 2013, *supra* note 1, at 7. The rate peaked in 2009 at 32.9% after increasing every year since 1996. *Id.*
129. SAKALA & CORRY, *supra* note 13, at 41.
130. *Appropriate Technology for Birth*, *supra* note 2.
131. See U.S. DEP’T OF HEALTH & HUMAN SERVS., NAT’L INST. OF HEALTH, CESAREAN CHILDBIRTH: NIH CONSENSUS STATEMENT ONLINE (Sept. 22–24, 1980), <http://consensus.nih.gov/1980/1980Cesarean027html.htm>.

unnecessary cesareans.¹³² Analysis of almost 250,000 births in 124 facilities in 2004 identified a 200–300% variation in primary cesarean rates within regions, concluding that “a pattern of almost random decision making” exists for the use of cesarean surgery.¹³³ A 2013 study reported that 13% of respondents experienced pressure from a health professional to have a cesarean, whether a primary or repeat procedure.¹³⁴

After a period of slight decline, the national cesarean rate rose by 50% from 1996 to 2006; it continued to rise, setting a new record each year from 2000 to 2009.¹³⁵ One factor in this steady climb was providers’ unwillingness to support and encourage women who had previously given birth by cesarean to attempt a trial of labor for a subsequent delivery. Known as vaginal birth after cesarean (VBAC), this practice was identified in the 1980s as a strategy for lowering the cesarean rate.¹³⁶ VBAC rates have varied over the years, influenced by several amendments the American Congress of Obstetricians & Gynecologists (ACOG) has made to the VBAC guidelines, which ACOG issues to its over 57,000 members.¹³⁷ In 1999, ACOG issued new, stricter guidelines for VBAC. The organization previously called for medical personnel to be “readily” available, but the 1999 guidelines called for “those institutions offering VBAC to have the facilities and personnel, including obstetric, anesthesia, and nursing personnel, *immediately available* to perform emergency cesarean

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132. Scupholme et al., *supra* note 107, at 601; Gigliola Baruffi et al., *A Study of Pregnancy Outcomes in a Maternity Center and a Tertiary Care Hospital*, 74 AM. J. PUB. HEALTH 973, 975–76 (1984).
133. Steven L. Clark et al., *Variation in the Rates of Operative Delivery in the United States*, 196 AM. J. OBSTETRICS & GYNECOLOGY 526.e1, 526.e1 (2007); *see also* Katy B. Kozhimannil, et al., *Maternal Clinical Diagnoses and Hospital Variation in the Risk of Cesarean Delivery: Analyses of a National US Hospital Discharge Database*, PLOS MED, OCT. 2014.
134. EUGENE R. DECLERCQ ET AL., LISTENING TO MOTHERS III—PREGNANCY AND BIRTH: REPORT OF THE THIRD NATIONAL U.S. SURVEY OF WOMEN’S CHILDBEARING EXPERIENCES 35 (2013) [hereinafter LISTENING TO MOTHERS III], <http://www.childbirthconnection.org/listeningtomothers>.
135. SAKALA & CORRY, *supra* note 13, at 16. The repeat cesarean rate rose by 28% from 1996–2005. *Id.*
136. Previously, prevailing medical wisdom assumed that “once a cesarean, always a cesarean” was the required philosophy. *See* Bruce L. Flamm, *Once A Cesarean, Always a Controversy*, 90 OBSTETRICS & GYNECOLOGY 312 (1997). By the mid-1980s, adoption of a low transverse incision as standard practice in most cesarean surgeries helped improve the safety record of VBAC for women with low-risk pregnancies. *See* Sheryl Gay Stolberg, *A Risk is Found in Natural Birth After Cesarean*, N.Y. TIMES (July 5, 2001), <http://www.nytimes.com/2001/07/05/us/a-risk-is-found-in-natural-birth-after-caesarean.html>. The primary objections to VBAC concern the risk of uterine rupture, meaning that the scar from the previous cesarean gives way during labor, causing complications for both the woman and the baby. As discussed in Section II.B.1, *infra*, research suggests that the slight risk of uterine rupture for otherwise low-risk women outweighs the risks associated with elective repeat cesarean, but this continues to be a contested issue for ACOG, its members, and birthing rights advocates.
137. *See* Elizabeth Kukura, *Choice in Birth: Preserving Access to VBAC*, 114 PENN STATE L. REV. 955, 962–67 (2010) [hereinafter Kukura, *Choice in Birth*] (detailing the impact of ACOG’s policy changes and the implications of VBAC restrictions for birthing women in the United States).

delivery when conducting a trial of labor for women with a prior uterine scar.”¹³⁸ The earlier guidelines for VBAC were the same as the general standard for obstetric services, which required a physician be available to perform a cesarean within thirty minutes of a decision to do so.¹³⁹ The new standard exceeded the capability of many doctors, especially practitioners who were responsible for providing prenatal care in clinics, resulting in a “chilling effect” on the availability of VBAC.¹⁴⁰ From 1996 to 2005, VBAC rates declined from 28% to 8%, reflecting the impact of the 1999 Practice Bulletin.¹⁴¹ A 2009 study reported that over 800 hospitals refused to support VBAC for women planning to give birth at that facility.¹⁴²

In 2010, ACOG replaced the 1999 Practice Bulletin with revised guidelines stating that a VBAC-restrictive “policy cannot be used to force women to have cesarean delivery or to deny care to women in labor who decline to have a repeat cesarean delivery.”¹⁴³ The 2010 Practice Bulletin nevertheless retains the restrictive language that VBAC should be “undertaken in facilities with staff immediately available to provide emergency care.”¹⁴⁴ Where a conflict arises between a woman and the physician or hospital, ACOG recommends transfer to a facility that will support a trial of labor.¹⁴⁵ This recommendation fails to address the situation of women who are already in labor or who live in an area where health care at a tertiary-level hospital is unavailable.¹⁴⁶ A 2013 study reported that 48% of pregnant women wanted to have VBAC as an option, but almost half of those women could not find a provider or hospital willing to support them.¹⁴⁷

Against a backdrop of increasing awareness and concern about the U.S. cesarean rate, advocates recently welcomed a new first-stage labor guideline issued by the Society for Maternal-Fetal Medicine (SMFM) and ACOG.

138. AM. COLL. OF OBSTETRICIANS & GYNECOLOGISTS, PRACTICE BULLETIN NO. 5, VAGINAL BIRTH AFTER PREVIOUS CESAREAN DELIVERY (1999) (emphasis added) (“VBAC should be attempted in institutions equipped to respond to emergencies with physicians immediately available to provide emergency care.”).

139. See Kukura, *Choice in Birth*, *supra* note 137, at 963.

140. See *id.*

141. SAKALA & CORRY, *supra* note 13, at 41.

142. *State by State VBAC Hospital Policy Summary*, INT’L CESAREAN AWARENESS NETWORK, <http://ican-online.org/advocacy/VBAC-hospital-policy-summary> (last visited Apr. 4, 2016). The website is currently updating this page. A summary of its findings can be found on Full Circle Midwifery’s website. *State by State VBAC Hospital Policy Summary*, FULL CIRCLE MIDWIFERY, <http://www.fullcirclemidwifery.com/2009/03/state-by-state-vbac-hospital-policy-summary/> (last visited Apr. 4, 2016).

143. AM. COLL. OF OBSTETRICIANS & GYNECOLOGISTS, PRACTICE BULLETIN NO. 115, VAGINAL BIRTH AFTER PREVIOUS CESAREAN DELIVERY (2010).

144. *Id.*

145. *Id.*

146. *Id.*

147. LISTENING TO MOTHERS III, *supra* note 134, at 21 (noting that of the 46% of women denied a VBAC, 24% cited an unwilling caregiver and 15% cited the unwillingness of the hospital to support a trial of labor).

Released in February 2014, the Obstetric Care Consensus guideline recognized that “allowing most women with low-risk pregnancies to spend more time in the first stage of labor may avoid medically unnecessary cesareans.”¹⁴⁸ SMFM and ACOG acknowledged evidence “show[ing] that labor actually progresses slower than we thought in the past, so many women might just need a little more time to labor and deliver vaginally instead of moving to a cesarean delivery.”¹⁴⁹

The guideline identifies specific policy changes to decrease the number of cesareans, such as allowing prolonged early labor and longer active labor, considering cervical dilation of six centimeters (instead of four centimeters) the start of active labor, and extending the time for the pushing phase.¹⁵⁰ This revised guideline from the leading professional organization for obstetricians better reflects the evidence on labor progress. It also represents a victory for advocates who have sought to create more supportive environments for women—environments in which women can labor without the specter of drug-induced augmentation or cesarean surgery looming over their heads should their labors exceed a certain period of time pre-determined by the hospital.

The Department of Health and Human Services defines low-risk women as those giving birth at term (at least 37 completed weeks of gestation) to a single infant in a head-first position.¹⁵¹ In 2003, 82.6% of women met these criteria, which means that “more intensive and invasive care is appropriate for about one mother in six.”¹⁵² Research suggests, however, that rates of invasive medical procedures during childbirth vastly exceed this target number. In 2012, Childbirth Connection conducted a study of 2,400 women who had given birth to a single child in a hospital during the previous year, providing one of the best sources of information about the use of procedures during childbirth.¹⁵³ The report revealed that 41% of women underwent an attempt at having their labor

148. *Nation's Ob-Gyns Take Aim at Preventing Cesareans*, AM. COLL. OF OBSTETRICIANS & GYNECOLOGISTS (Feb. 19, 2014), http://www.acog.org/About_ACOG/News_Room/News_Releases/2014/Nations_Ob-Gyns_Take_Aim_at_Preventing_Cesareans.

149. *Id.*

150. *Id.*

151. SAKALA & CORRY, *supra* note 13, at 26.

152. *Id.*

153. Because this study surveyed women directly about their childbirth experiences, it is understood to provide a more complete picture of the prevalence of various interventions during childbirth, as well as women's perceptions of the care they received. The Listening to Mothers surveys, undertaken beginning in 2002, have, for the first time, documented the frequency of many practices that have been recorded only at the clinical, community, or state level, if at all. LISTENING TO MOTHERS III, *supra* note 134, at 1. Validation studies of birth-related medical procedures have concluded that the official rates often undercount the prevalence of such procedures because the official rates are derived from birth certificates and hospital discharge records, which often omit a significant proportion of procedures that occur during birth. SAKALA & CORRY, *supra* note 13, at 26. For example, validation studies of the rate of medically induced labor—reported to have risen 135% from 9.5% to 22.3% between 1990 and 2005—suggest that official rates only identify 45–61% of actual instances of induced labor. *Id.* at 16.

artificially induced by a health care provider,¹⁵⁴ 31% had their labors artificially accelerated with synthetic oxytocin, and 36% had their water broken by their care provider in order to induce or speed up labor.¹⁵⁵ The majority of women (57%) were limited in their mobility after well-established contractions.¹⁵⁶ Significant proportions had an intravenous drip (62%) and a bladder catheter (47%), both of which limit mobility for laboring women.¹⁵⁷

Respondents also reported widespread use of pain medications during childbirth, with 67% in the 2012 study receiving an epidural or spinal analgesia and 16% receiving a narcotic analgesia.¹⁵⁸ Twenty-five percent of women reported receiving an episiotomy, a surgical incision to widen the vaginal opening.¹⁵⁹

Researchers have noted that procedures that interfere with the physiologic process of birth can also cause a “cascade of secondary interventions” that are used to monitor and treat the side effects of the original interventions.¹⁶⁰ The cumulative effect of such interventions is “to create a distorted understanding of childbirth as a time when things are likely to go wrong and intensive medical management is required.”¹⁶¹

A 2000 study compared intervention rates for low-risk women (as defined by HHS) receiving typical care during hospital-based births and those for women

154. LISTENING TO MOTHERS III, *supra* note 134, at 14. Combined with self-attempts to induce, 53% of respondents experienced induced rather than spontaneous onset of labor, thereby shortening the length of gestation. *Id.* Research shows that the average gestation has become shorter over time, raising concerns about under-development of the brain and lungs, which evidence suggests continue to develop after 37 weeks—the current definition of “full term.” SAKALA & CORRY, *supra* note 13, at 36 (discussing study concluding that the most common gestational age at birth for single babies had declined from 40 to 39 weeks during the period 1992–2002). Wide variation in the rates of induced labor suggests that this practice is not always related to the needs of women or babies. Compare Kenneth C. Johnson & Betty-Anne Daviss, *Outcomes of Planned Home Births with Certified Professional Midwives: Large Prospective Study in North America*, 330 *BMJ* 1416, 1418 (2005), <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC558373/pdf/bmj33001416.pdf> (reporting that 9.6% of women experienced an induction attempt), with LISTENING TO MOTHERS III, *supra* note 134, at 14 (reporting a 41% rate of induction by provider).
155. LISTENING TO MOTHERS III, *supra* note 134, at 18.
156. *Id.*
157. *Id.*
158. *Id.* at 17.
159. *Id.* at 19.
160. SAKALA & CORRY, *supra* note 13, at 28. LISTENING TO MOTHERS III reported that of first-time mothers who labored, 47% experienced an induction and, of those having an induction, 78% had an epidural; among women who had both an attempted induction and an epidural, 31% ultimately had a cesarean. See LISTENING TO MOTHERS III, *supra* note 134, at 24. Women who experienced either labor induction or an epidural—but not both—had cesarean rates of 19% to 20%. See *id.*
161. SAKALA & CORRY, *supra* note 13, at 28. Anthropologist Robbie Davis-Floyd has analyzed the role obstetrical interventions serve in diminishing societal fear of birth. See Robbie E. Davis-Floyd, *The Role of Obstetrical Rituals in the Resolution of Cultural Anomaly*, 31 *SOC. SCI. MED.* 175 (1990). Paradoxically, such fear-assuaging interventions appear to increase the risk of complications in otherwise low-risk births, thus further ratcheting up the fear and anxiety associated with giving birth. See *infra* Section II.B.2.

giving birth with certified professional midwives (CPMs). The rates of intervention among low-risk women with usual care ranged from two to sixteen times greater than the rates for women receiving midwifery care.¹⁶² The cesarean rate was 19% for hospital births, compared to 4% for CPM-attended births (after transfer to a hospital); electronic fetal monitoring was conducted in 84% of hospital births, compared to 10% of CPM-attended births; 33% of women birthing in hospitals received an episiotomy, compared to 2% of women birthing with midwives; and the use of both forceps (2% versus 1%) and vacuum extraction (5% versus 1%) was higher for hospital births.¹⁶³ There was no increased risk associated with the infrequent use of interventions for women receiving their maternity care from CPMs.¹⁶⁴

Data on birth outcomes have consistently revealed that intervention-heavy childbirth does not lead to safer childbirth. As the discussion of mortality rates and other complications above indicates, the historical shifts in who attends laboring women, where birth takes place, and how childbirth occurs have not produced the improved outcomes that technology and professional expertise once promised. The phenomenon of high intervention rates without a resulting improvement in outcomes has been referred to as the “perinatal paradox: doing more and accomplishing less.”¹⁶⁵ It is against this paradoxical backdrop that advocates for maternity care reform have mounted campaigns that draw on evidence from scientific literature to justify their calls for change.

II. THE PURSUIT OF EVIDENCE-BASED MATERNITY CARE REFORM

Record-high cesarean rates and the United States’ relatively poor performance on birth outcome measures have raised concern beyond the medical and public health communities. Various stakeholders—including health care consumers, women’s health advocates, reproductive justice activists, and midwives and their supporters—are engaged in efforts to change the laws, policies, and practices governing childbirth in order to achieve a less medicalized maternity care system in the United States. There is a growing body of research that supports a less procedure-intensive approach to childbirth for women with low-risk pregnancies. Enthusiasm among advocates about the potential for employing this body of scientific research to achieve particular childbirth policy goals is both strategic and pragmatic. In contrast to childbirth reform efforts of earlier eras—such as the natural birth movement of the 1970s, which drew philosophical and strategic inspiration from the feminist, countercultural, and civil rights movements—advocates now have much more evidence upon which to base their case for systemic reform.

162. Johnson & Daviss, *supra* note 154, at 2.

163. *Id.*

164. *Id.*

165. See, e.g., Roger A. Rosenblatt, *The Perinatal Paradox: Doing More and Accomplishing Less*, 8 HEALTH AFFAIRS 158 (1989).

A. Defining Evidence-Based Maternity Care

Evidence-based medicine is “the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients.”¹⁶⁶ The principles of evidence-based medicine were developed to address problems with the traditional approach to medical practice, which generally consists of understanding the basic mechanisms of disease coupled with clinical experience.¹⁶⁷ As noted above, the Agency for Healthcare Research and Quality (AHRQ) estimates that it can take up to twenty years for original research to be incorporated into routine clinical practice, which means that significant work is often required to implement research findings about beneficial (or harmful) practices.¹⁶⁸ Current federal health policy prioritizes comparative effectiveness research—an outgrowth of evidence-based medicine—to reduce variation in medical practice.¹⁶⁹

Researchers generally evaluate the quality of medical research according to a hierarchy of study design articulated by early proponents of evidence-based medicine.¹⁷⁰ The strongest type of study is the systematic review, which is a rigorous methodology for surveying, studying, and pooling all the evidence on a particular clinical issue.¹⁷¹ The next strongest form of study is the randomized controlled trial (RCT), in which participants are randomly assigned to receive either the form of care being studied or the usual care (or a placebo treatment).¹⁷² Because they intend to ensure that the groups being compared are similar, RCTs

166. David L. Sackett et al., *Evidence Based Medicine: What It Is and What It Isn't*, 312 *BMJ* 71, 71 (1996). The authors go on to state: “The practice of evidence-based medicine means integrating individual clinical expertise with the best available external clinical evidence from systematic research.” *Id.*

167. GOER & ROMANO, *supra* note 11. A typical critique of the traditional approach is captured in the following comment: “The trouble with conventional wisdom of medical practice is that it tends to be more conventional than wise.” David A. Grimes, *How Can We Translate Good Science Into Good Perinatal Care?*, 13 *BIRTH* 83, 88 (1986). Another discussion of how evidence-based medicine improves on traditional medical practice observes that “[c]linical experience . . . has been defined as making the same mistakes with increasing confidence over an impressive number of years.” David Isaacs & Dominic Fitzgerald, *Seven Alternatives to Evidence Based Medicine*, 319 *BMJ* 1618, 1618 (1999).

168. See TRANSLATING RESEARCH INTO PRACTICE, *supra* note 4.

169. See David Eddy, *Evidence-Based Medicine: A Unified Approach*, 24 *HEALTH AFFAIRS* 9 (2005); Alan M. Garber, *Evidence-Based Guidelines As a Foundation For Performance Incentives*, 24 *HEALTH AFFAIRS* 174 (2005); Milton C. Weinstein & Jonathan A. Skinner, *Comparative Effectiveness and Health Care Spending: Implications for Reform*, 326 *NEW ENG. J. MED.* 460 (2010).

170. GOER & ROMANO, *supra* note 11, at 12.

171. *Id.* Systematic review procedures “help limit investigator bias and error that can easily distort results of single studies and of more conventional and haphazard research reviews.” SAKALA & CORRY, *supra* note 13, at 22. The leading source of systematic reviews for pregnancy and childbirth research is the Cochrane Pregnancy and Childbirth Group of the Cochrane Collaboration, which was established to develop and update systematic reviews across a variety of clinical areas. See *About Us*, COCHRANE, <http://www.cochrane.org/about-us> (last visited May 9, 2016).

172. GOER & ROMANO, *supra* note 11, at 12.

provide the optimal form of evidence derived from experimental trials.¹⁷³ Experimental studies are considered the next best form of evidence, followed by observational studies, and then case studies.¹⁷⁴ Expert opinion not based on a critical review of the evidence is considered the least valid form of evidence within evidence-based medicine.¹⁷⁵

A 2001 report by the Committee on Quality of Health Care in America and the Institute of Medicine (CQHCA/IOM) identified “underuse of beneficial care, overuse of services unlikely to offer benefits, and illogical variation in care from provider to provider and place to place” as impediments to evidence-based health care.¹⁷⁶ A follow-up report published by the IOM identified pregnancy and childbirth as national priority areas for health care quality improvement.¹⁷⁷

The IOM’s recommendation reflects the significant gaps that exist between current maternity care practices and the results of the best available research.¹⁷⁸ A comprehensive report published in 2008 by Childbirth Connection and its partners (the “Milbank Report”) identifies “effective care with least harm” as the goal of evidence-based research.¹⁷⁹ This means that practices with “established or plausible adverse effects should be avoided when best available research identifies no clear anticipated benefit to justify their use.”¹⁸⁰ An evidence-based framework also “questions the wisdom of using interventions with a marginal expected benefit that is overshadowed by greater risk of established harm.”¹⁸¹ Echoing the CQHCA/IOM report, the Milbank Report identifies a “widespread and continuing underuse of beneficial practices, overuse of harmful or ineffective practices, and uncertainty about the effects of inadequately assessed practices.”¹⁸² It notes that a growing body of research literature—including systematic reviews—is available to help clarify the effects of maternity practices, yet those resources are “grossly underutilized in policy, practice, education, and research.”¹⁸³ An analysis of ACOG obstetrical practice bulletins published from June 1998 through December 2004 likewise found that only a small proportion of them satisfied high standards of evidence: only 23% were Level A (“based on

173. *Id.*

174. *Id.*

175. SAKALA & CORRY, *supra* note 13, at 63.

176. *Id.* at 22.

177. INST. OF MED., PRIORITY AREAS FOR NATIONAL ACTION: TRANSFORMING HEALTH CARE QUALITY 41 (Karen Adams & Janet M. Corrigan eds., 2003).

178. *See id.* at 24 (“Gains could be made in the standardization of these measures so that more meaningful and comparable quality-of-care information could be generated, thus reducing burden and contributing to greater improvements.”); *see also* SAKALA & CORRY, *supra* note 13, at 8.

179. SAKALA & CORRY, *supra* note 13, at 3 (“Evidence-based maternity care uses the best available research on the safety and effectiveness of specific practices to help guide maternity care decisions and facilitate optimal outcomes in mothers and newborns.”).

180. *Id.* at 21.

181. *Id.*

182. *Id.* at v.

183. *Id.* at 1.

good and consistent scientific evidence”); 35% were Level B (“based on limited or inconsistent scientific evidence”); and 42% were Level C (“based primarily on consensus and expert opinion”).¹⁸⁴ As discussed further in Section II.B, current research does not support the routine use of common practices, including numerous prenatal tests and treatments, continuous electronic fetal monitoring, the rupturing of membranes during labor, and episiotomy. Moreover, various beneficial practices, including continuous labor support, nonsupine positions, delayed cord clamping, and early mother-baby skin-to-skin contact, are underused in maternity care.

B. Identifying the Evidence Basis for Evidence-Based Arguments

In order to evaluate evidence-driven strategies for maternity care reform, it is important to be familiar with what the scientific literature shows about the medical care most women receive during childbirth. Without this understanding, it is difficult to assess advocacy for changes to U.S. childbirth policies, whether directed at state legislatures, norm-setting professional organizations, or other maternity care stakeholders. This Section provides an overview of the key concepts and findings on practices impacting childbirth in order to provide context for the subsequent discussion of evidence-driven advocacy efforts and their implications.

1. Cesareans & VBAC: Research Supports Vaginal Birth for Lower Risk of Complications

Recent research supports the WHO’s recommendations that the national cesarean rate be between 5–10% of all births and its finding that rates above 15% are likely to do more harm than good.¹⁸⁵ Absolute indications for cesarean include prolapsed umbilical cord (when the cord precedes the baby’s head), placenta previa (growth of the placenta over the cervical opening), placental abruption (separation of the placenta from the uterus prior to birth), or persistent transverse lie (the fetus stays in a fixed horizontal position).¹⁸⁶ Women also give birth by cesarean under other conditions, including complications diagnosed during labor and elective procedures scheduled before labor begins. Some of those circumstances would fall within the WHO’s target because the risks associated with allowing labor to take its course would outweigh the risks of cesarean surgery. Other cesareans, however, occur in situations where, under an evidence-based framework, the balance of risks and benefits counsel against the

184. *Id.* at 63.

185. *Id.* at 42 (citing Fernando Althabe and José M. Belizán, *Cesarean Section: The Paradox*, 368 *THE LANCET* 1472, 1472–73 (2006)). A more recent WHO study concluded that, annually, 3.2 million additional cesareans were needed in low-income countries, while about 6.2 million unnecessary cesareans were performed in middle-income and high-income countries. See Renfrew et al., *supra* note 25, at 10.

186. SAKALA & CORRY, *supra* note 13, at 41.

procedure.

Research on the potential impacts of planning an elective cesarean provides an illustrative example. Elective cesarean birth is associated with an increased risk of respiratory morbidity in newborns when compared with vaginal or intended vaginal birth.¹⁸⁷ Recent research also reveals that elective cesareans heighten the risk of iatrogenic prematurity due to the imprecision of methods used to measure gestational age.¹⁸⁸ Furthermore, research suggests that vaginal birth itself provides health benefits to babies: passage through the vagina helps clear fluid from babies' lungs before and during labor and increases the chances that a newborn's intestine will be colonized with beneficial bacteria, while also reducing colonization with harmful bacteria.¹⁸⁹ The evidence thus supports undergoing a trial of labor rather than scheduling an elective cesarean.

When considering the entire universe of cesareans—both planned and unplanned—a 2006 systematic review aimed at identifying the likelihood of all known harms between vaginal and cesarean births “overwhelmingly support[ed] striving for vaginal birth in general and spontaneous vaginal birth in particular.”¹⁹⁰ Short-term harms to women more likely to result from a cesarean included maternal death, emergency hysterectomy, blood clots and stroke, surgical injury, longer hospitalization, rehospitalization, infection, poor birth experience, less early contact with babies, intense and prolonged postpartum pain, poor overall mental health and self-esteem, and poor overall functioning.¹⁹¹ In addition, women who give birth by cesarean are more likely to experience the longer-term harms of chronic pelvic pain and bowel obstruction.¹⁹²

Cesareans are also more likely to impact a woman's future reproductive life, including future pregnancies: women with cesareans are more likely to experience involuntary infertility, cesarean scar ectopic pregnancy, placenta previa, placenta accreta, placental abruption, uterine rupture, hemorrhage, low birthweight babies, preterm birth, stillbirth, and maternal death.¹⁹³ Repeat cesareans are associated with cumulative abdominal adhesion formation and adverse reproductive effects.¹⁹⁴ Babies born by cesarean are similarly more

187. *Id.* at 43.

188. *Id.* The term “iatrogenic” refers to harm caused inadvertently by a physician, medical treatment, or diagnostic procedure. *Iatrogenic*, MERRIAM-WEBSTER ONLINE DICTIONARY, 2016, <http://www.merriam-webster.com/dictionary/iatrogenic> (last visited Apr. 7, 2016).

189. SAKALA & CORRY, *supra* note 13, at 41. Bacterial colonization during passage through the vagina is also thought to explain the association between cesarean delivery and asthma and allergy. *Id.*

190. CAROL SAKALA, CHILDBIRTH CONNECTION, VAGINAL OR CESAREAN BIRTH?: A SYSTEMATIC REVIEW TO DETERMINE WHAT IS AT STAKE FOR MOTHERS AND BABIES (2006), <http://www.pqcnc.org/documents/sivbdoc/sivbeb/6ChildbirthConnectionEvidencereVaginalandCesareanBirth.pdf>.

191. *Id.*

192. *Id.*

193. *Id.*

194. *Id.*

likely to experience certain harms, including respiratory problems, surgical injuries, failure to establish breastfeeding, and asthma in childhood and adulthood.¹⁹⁵

The systematic review identified a few maternal outcomes that favored birth by cesarean over vaginal delivery: increased perineal pain, urinary incontinence, and anal incontinence.¹⁹⁶ In addition, one newborn outcome favored cesareans over vaginal birth: brachial plexus shoulder nerve injury.¹⁹⁷ These possible benefits notwithstanding, the systematic review clearly supported vaginal birth over cesareans.

Studies also support limiting cesareans to clearly established indications and reducing the use of unsupported indications for cesarean, such as “large baby,” twin births, preterm births, and babies that are small for their gestational age.¹⁹⁸ *Listening to Mothers III* reported that 29% of first-time mothers who discussed with their provider whether to have a cesarean due to the caregiver’s concern about a large fetus did in fact have a cesarean, compared with the survey’s overall primary cesarean rate of 19%.¹⁹⁹

Research shows that women are less likely to deliver by cesarean when they receive continuous support from a non-staff companion, when the fetal heart rate is monitored intermittently rather than with continuous EFM, when induction of labor is avoided (especially for first-time mothers presenting with an “unfavorable” cervix²⁰⁰), and when they decline an early epidural.²⁰¹

The risk of complications in future pregnancies associated with cesarean surgery is intertwined with access to and the safety of VBAC. As discussed above, after a period in the 1980s and 1990s when VBAC was promoted as an approach to lowering the national cesarean rate, ACOG issued professional guidance that recommended restricting the type of facility supporting VBAC to tertiary-care hospitals—those with the highest level of specialized care. ACOG’s

195. *Id.*

196. *Id.* There is a lack of research exploring whether such conditions are associated with vaginal birth itself or with common use of practices that increase the chance of injury, such as episiotomy, staff-directed pushing, supine birthing position, or staff-applied abdominal pressure. See SAKALA & CORRY, *supra* note 13, at 46.

197. Brachial plexus shoulder nerve injury is a primarily transient and occasionally permanent condition that impacts use of the affected arm. SAKALA & CORRY, *supra* note 13, at 46. The systematic review found that approximately one permanent injury occurs in every 10,000 vaginal births. SAKALA, *supra* note 190.

198. *Id.*

199. LISTENING TO MOTHERS III, *supra* note 134, at 40. The actual average birth weight of the babies in the cases where concern about a large fetus was raised was 7 pounds, 13 ounces, which is significantly below the standard for a large baby (or “macrosomia,” at 8 pounds, 13 ounces). *Id.* at 37.

200. “Unfavorable cervix” refers to a determination that a woman’s cervix is not dilated or is dilating and effacing too slowly. See Deborah A. Wing, *Techniques for Ripening the Unfavorable Cervix Prior to Induction*, UPTODATE, <http://www.uptodate.com/contents/techniques-for-ripening-the-unfavorable-cervix-prior-to-induction> (last visited May 25, 2016).

201. SAKALA & CORRY, *supra* note 13, at 48.

practice bulletins on VBAC have limited where women can undergo a trial of labor if they have previously delivered by cesarean, but these bulletins were not supported by adequate scientific evidence.²⁰² When comparing VBAC with elective repeat cesarean, a 2004 systematic review of studies on uterine rupture found that 370 women would need to have a repeat cesarean to prevent just one symptomatic uterine rupture and over 7,100 women would need to have a repeat cesarean to prevent the death of one baby from complications related to uterine rupture.²⁰³ The likelihood that a woman would have an emergency hysterectomy or die did not differ between VBAC and repeat cesarean.²⁰⁴

For women who intend to have multiple children, the risks of cesarean surgery increase with each subsequent birth. Two large studies by the Maternal-Fetal Medicine Units Network found that a greater number of repeat cesareans was associated with an increase in placenta accrete, cystotomy, bowel injury, ureteral injury, ileus, the need for postoperative ventilation, intensive care unit admission, hysterectomy, blood transfusion requiring four or more units, the duration of operative time, and the duration of hospital stay.²⁰⁵ In contrast, an increased number of VBACs upon multiple subsequent births was associated with a decreased likelihood of uterine rupture, scar separation, surgical complications, blood transfusion, and endometritis, as well as an increased likelihood of VBAC success.²⁰⁶ Researchers found no increase in newborn morbidity or mortality with an increasing number of VBAC births.²⁰⁷ All told, the research literature indicates that the choice between cesarean and vaginal birth is not neutral. Research favors vaginal delivery for its lower risk of complications for both women and babies.

2. Labor & Delivery: Research Favors More Judicious Use of Interventions During Labor

As discussed in Section I.C, a significant concern about the model of medical management of birth is the number of additional interventions used to monitor or treat the original interventions. Ultimately, “the original and cascading interventions transform normal labor into a technology-intensive experience.”²⁰⁸ Labor and delivery involve a long list of common medical

202. See Kukura, *Choice in Birth*, *supra* note 137, at 96–97.

203. See Jean-Marie Guise et al., *Systematic Review of the Incidence and Consequences of Uterine Rupture in Women with Previous Cesarean Section*, 329 *BMJ* 19, 19, 25 (2004), <http://www.bmj.com/content/bmj/329/7456/19.full.pdf>.

204. *Id.*

205. See Robert M. Silver et al., *Maternal Morbidity Associated with Multiple Repeat Cesarean Deliveries*, 111 *OBSTETRICS & GYNECOLOGY* 285 (2006).

206. See Brian M. Mercer et al., *Labor Outcomes with Increasing Number of Prior Vaginal Births after Cesarean Delivery*, 111 *OBSTETRICS & GYNECOLOGY* 285, 285–92 (2008).

207. *Id.* at 289.

208. SAKALA & CORRY, *supra* note 13, at 39; see also Kathleen Rice Simpson, *Reconsideration of the Costs of Convenience: Quality, Operational, and Fiscal Strategies to Minimize Elective Labor Induction*, 24 *J. PERINATAL & NEONATAL NURSING* 43, 43 (2010) (related

interventions that are often used alongside one or several other procedures. This Section examines the evidence basis for some of the most common interventions used during labor and delivery.

a. Induction of Labor

Listening to Mothers III reported that more than four out of ten women experienced artificial labor induction initiated by their care provider.²⁰⁹ For example, among women whose provider raised concerns about a large fetus, 67% ultimately had a medical induction of labor,²¹⁰ despite well-established research that does not support suspected fetal macrosomia as a valid indication for induction.²¹¹ An evidence-based framework does not support this type of elective nonmedical induction, or induction that physicians often recommend for certain medical concerns without evidence to support such a practice. In many of these circumstances, induction actually increases the risk of complications for women and babies without offering a clear health benefit.

In a hospital setting, labor induction typically involves the administration of synthetic oxytocin (called Pitocin) through an intravenous line, the insertion of a prostaglandin gel into the cervix to encourage cervical ripening, or a combination of the two.²¹² Research shows that this synthetic oxytocin interferes with the functioning of a woman's oxytocin receptors and her own natural oxytocin production, which helps to reduce postpartum hemorrhage, and facilitates breastfeeding and bonding with the baby.²¹³ Similar to elective cesareans, elective induction may lead to birth earlier than desired because of the imprecise methods for identifying gestational age.²¹⁴ These methods have been shown to have a margin of error of up to two weeks—with negative consequences for fetal development, especially brain development.²¹⁵ Induction

interventions include intravenous line, continuous EFM, confinement to bed, pharmacologic labor-stimulating agents, and pain medications); Barbara L. Wilson et al., *The Relationship Between Cesarean Section and Labor Induction*, 42 J. NURSING SCHOLARSHIP 130 (2010); Kathleen Rice Simpson, *Clinicians' Guide to the Use of Oxytocin for Labor Induction and Augmentation*, 56 J. MIDWIFERY & WOMEN'S HEALTH 214, 214 (2011).

209. LISTENING TO MOTHERS III, *supra* note 134, at XI.

210. *Id.* at XV.

211. SAKALA & CORRY, *supra* note 13, at 38. The term “fetal macrosomia” refers to a newborn who is significantly larger than average. *Diseases and Conditions: Fetal Macrosomia*, MAYO CLINIC, <http://www.mayoclinic.org/diseases-conditions/fetal-macrosomia/basics/definition/con-20035423> (last visited Apr. 7, 2016).

212. *Tests and Procedures: Labor Induction*, MAYO CLINIC, <http://www.mayoclinic.org/tests-procedures/labor-induction/basics/what-you-can-expect/prc-20019032> (last visited May 25, 2016).

213. SAKALA & CORRY, *supra* note 13, at 37.

214. *Id.*

215. SAKALA & CORRY, *supra* note 13, at 37–38. Research on fetal brain development suggests that major development can continue through forty-one weeks of gestation; over one third of brain volume increase takes place in the last six to eight weeks of pregnancy, with a five-fold increase in white matter volume from thirty-five to forty-one weeks. See Hannah C. Kinney, *The Near-Term (Late Preterm) Human Brain and Risk for Periventricular Leukomalacia: A*

also appears to increase the likelihood of cesarean for first-time mothers, for women whose cervixes are not ready for labor, and when induction occurs at earlier gestational ages.²¹⁶ Elective induction is also associated with an increased likelihood of fetal monitoring, epidural analgesia, assisted delivery by forceps or vacuum extraction, postpartum hemorrhage and transfusion, longer intrapartum period and postpartum stay, and higher costs.²¹⁷

Another common procedure for inducing labor is the artificial rupture of membranes (AROM), which involves using a tool similar to a crochet hook to break the sac of waters protecting the fetus in utero.²¹⁸ A 2007 systematic review concluded there was no evidence of shorter labor or improved newborn outcomes when the membranes are ruptured after spontaneous labor was underway.²¹⁹ The research literature does suggest, however, a possible increase in cesareans, possible adverse effects on fetal heart rate, and a risk of umbilical cord prolapse or compression after AROM.²²⁰ Under an evidence-based framework, this lack of evidence of a clear benefit, combined with evidence of potential harms, counsels limited use of these common procedures for inducing labor.

b. Pain Relief

The most common form of pain relief that women use during labor is an epidural analgesia—or pain medication delivered into the epidural space of the spinal cord, blocking sensations in the abdominal area (and sometimes beyond). One study reports that 67% of women received an epidural analgesia (or the spinal variant, which inserts the medication directly into the fluid of the spinal cord).²²¹ The popularity of the epidural and unexceptional nature of its use tend to obscure the accompanying risks. Research associates epidural use with “immobility, voiding difficulty, sedation, fever, hypotension, itching, longer length of the pushing phase of labor, and serious perineal tears.”²²² For the baby, epidural use is associated with an increased risk of rapid fetal heart rate, hyperbilirubinemia, increased workup for sepsis and administration of antibiotics (due to fever in the woman), and poorer performance on newborn assessment measures.²²³ When the epidural is administered spinally, its use is associated with an increased likelihood of bradycardia (abnormally low heart rate) in the

Review, 30 SEMINARS IN PERINATOLOGY 81, 82, 86 (2006).

216. SAKALA & CORRY, *supra* note 13, at 38.

217. *Id.*

218. *Id.* at 49.

219. See R.M.D. Smyth et al., *Amniotomy for Shortening Spontaneous Labour*, June 18, 2013, COCHRANE DATABASE OF SYSTEMATIC REVIEWS, at 1, Art. No. CD006167.

220. *Id.*

221. LISTENING TO MOTHERS III, *supra* note 134, at 16.

222. SAKALA & CORRY, *supra* note 13, at 39.

223. *Id.*

fetus.²²⁴ Numerous co-interventions are used to monitor or treat the effects of epidurals, such as continuous EFM, intravenous infusions, and frequent blood pressure monitoring.²²⁵ Women who receive epidurals are also more likely to experience bladder catheterization, synthetic oxytocin, medication for hypotension, vacuum extraction or forceps, and episiotomy.²²⁶ Epidurals are also associated with an increased likelihood of cesarean in some circumstances, such as when initiated early in labor or when used with low-dose synthetic oxytocin.²²⁷

Women who desire pain relief during labor do not have to choose between an epidural—with its associated risks—and nothing. Research suggests that a variety of pain relief techniques with no known risks are currently under-utilized in maternity care practices. For example, systematic reviews report that women identify non-invasive methods—such as immersion in water, hypnosis, acupuncture, and intradermal sterile water injections for low back pain—as useful pain relief measures during labor.²²⁸ These methods are associated with a decreased use of medication and pose no known safety risks.²²⁹ Evidence also suggests that laboring in a hands-and-knees position helps to reduce pain associated with posterior babies because the forward-facing position of the baby is associated with pain and a more difficult labor.²³⁰

Listening to Mothers III highlights the extent to which non-invasive pain relief methods are underused in clinical practice. According to the report, only 22% used massage, stroking or acupressure; 21% used relaxation, visualization, or hypnosis; 12% applied hot or cold objects to ease the pain; 10% used inflatable birthing balls; 10% took a shower; and 8% immersed themselves in a tub or pool.²³¹ Although some women find laboring in water unappealing or reject other sensations during contractions, a significant factor for the underuse of such non-invasive pain relief measures is the failure of hospitals to make them available. In fact, women who desire a waterbirth—delivering the baby while in

224. *Id.*

225. *Id.*

226. *Id.*

227. *Id.*

228. *Id.* at 54.

229. *Id.* at 40.

230. *Id.* at 54.

231. *Id.* at 17. In the previous administration of the *Listening to Mothers* survey, which included certain questions that were not asked in 2012, 91% of women who labored in a tub for water immersion reported it was “very” or “somewhat” helpful, but this method was only used by 6% of respondents. EUGENE R. DECLERCQ ET AL., LISTENING TO MOTHERS II: REPORT OF THE SECOND NATIONAL U.S. SURVEY OF WOMEN’S CHILDBEARING EXPERIENCES, CHILDBIRTH CONNECTION 32 (Oct. 2006) [hereinafter LISTENING TO MOTHERS II], http://www.childbirthconnection.org/pdfs/LTMII_report.pdf. Similarly, 81% of those who used hot or cold objects reported it was “very” or “somewhat” helpful, but only 6% used this method; 78% of those who spent time laboring in the shower reported it was “very” or “somewhat” helpful, but only 4% tried this method; and 67% of women who employed birthing balls found it “very” or “somewhat” helpful, but only 7% of respondents used a ball to ease their labor pains. *Id.*

a tub of water, rather than simply laboring for some period of time while in the tub—have found their access restricted by a joint Opinion Statement that ACOG and the American Academy of Pediatrics issued in 2014.²³² The Statement denounced waterbirth as “an experimental procedure that should only be performed within the context of an appropriately designed clinical trial.”²³³ Preliminary data from an American Association of Birth Centers (AABC) study of nearly 4,000 waterbirths in birth centers across the United States supports the use of waterbirth as safe for women and babies—and the ACNM, AABC, and Royal College of Midwives released a statement endorsing waterbirth as a safe, evidence-based option—but the Opinion Statement nevertheless prompted suspension and termination of waterbirth programs across the country.²³⁴

Doula support is another underused technique associated with reduced reliance on pain medication and improved outcomes for women and babies. Doulas are non-medical caregivers who are trained to provide emotional, physical, and informational support to women giving birth.²³⁵ They help women in labor find more comfortable positions, offer non-invasive pain relief techniques, and reduce anxiety and stress.²³⁶ Research shows that women with doulas have “fewer forceps and vacuum-extractor deliveries and fewer cesareans[,] . . . [do] not request as much pain medication . . . [, and have] less need for major labor interventions.”²³⁷ Continuous labor support by non-staff is also associated with an increased likelihood of spontaneous vaginal delivery,²³⁸ decreased use of pain medication,²³⁹ and increased satisfaction with the childbirth experience when compared with usual care.²⁴⁰

Applying an evidence-based framework suggests that using “safer, less invasive physiology-enhancing methods for comfort and labor pain relief,” and a more conservative and judicious approach to epidurals, would result in optimal outcomes for most women and babies (and better value for the consumers and insurers paying the bills).²⁴¹

232. AM. COLL. OF OBSTETRICIANS & GYNECOLOGISTS, COMMITTEE OPINION NO. 594, IMMERSION IN WATER DURING LABOR AND DELIVERY 1 (Apr. 2014).

233. *Id.*

234. See AM. ASS'N OF BIRTH CTRS., POSITION STATEMENT: IMMERSION IN WATER DURING LABOR AND DELIVERY (2014), http://c.ymcdn.com/sites/www.birthcenters.org/resource/collection/46992E86-D0A4-476E-8B09-F5ECE203B16E/AABC_Position_Statement_-_Immersion_in_Water_during_Labor_and_Birth.pdf.

235. See PENNY SIMKIN, BIRTH PARTNER: A COMPLETE GUIDE TO CHILDBIRTH FOR DADS, DOULAS, AND ALL OTHER LABOR COMPANIONS 8–10 (4th ed. 2013) (describing the role of doulas in the birth process).

236. *Id.*

237. *Id.*

238. SAKALA & CORRY, *supra* note 13, at 54.

239. *Id.* at 40.

240. *Id.*

241. *Id.* at 41.

c. Labor Management

Research has shown that more than two-thirds of women experience continuous electronic fetal monitoring (EFM) during labor.²⁴² This reflects the extent to which continuous monitoring has become the standard of care in hospital labor and delivery wards, despite the lack of benefits associated with its use.²⁴³ Continuous EFM requires a woman to wear a band that holds the monitor—connected by wires to the machine—in place against her belly. This restricts her to positions that enable a clear reading of the fetal heart rate. The machine, which can be monitored remotely from the nurses' station, produces a steady printout of paper that captures every contraction along with the fetal heart rate.

A 2006 systematic review that compared continuous EFM with intermittent EFM found that continuous monitoring did not reduce the likelihood of perinatal death or cerebral palsy.²⁴⁴ It did, however, increase the likelihood of cesarean and delivery with vacuum extraction or forceps.²⁴⁵ Continuous monitoring was also found to impair mobility, increase discomfort, and result in medical staff focusing on the machine rather than the woman.²⁴⁶ The review showed that continuous EFM did result in a slight reduction in newborn seizures, with no long-term impact on babies.²⁴⁷ But put in perspective, 661 women would need to be monitored continuously in order to avoid one seizure.²⁴⁸

Two systematic reviews have considered the impact of a baseline period of fetal monitoring using continuous EFM.²⁴⁹ Upon admission to the hospital, women spend an average of thirty to sixty minutes in a triage unit hooked up to the EFM so baseline measurements can be recorded.²⁵⁰ The systematic reviews looking at this practice concluded there was no evidence to support using this admission test with low-risk women.²⁵¹ Monitoring a baseline fetal heart rate resulted in no benefit to newborns; it did, however, increase the likelihood of

242. LISTENING TO MOTHERS II, *supra* note 231, at 31.

243. *Id.*

244. See Z. Alfirevic, et al., *Continuous Cardiotocography (CTG) as a Form of Electronic Fetal Monitoring (EFM) for Fetal Assessment during Labour*, COCHRANE DATABASE OF SYSTEMATIC REVIEWS, Art. No. CD006066, July 19, 2006, at 2.

245. *See id.*

246. *Id.* Jamie Abrams has noted how the technological advances in ultrasounds, amniocentesis, and fetal monitoring have allowed physicians to evaluate the fetus directly, rather than relying on the woman to report complications, “creat[ing] tensions within the medical services delivery model” by elevating the notion of the fetus as a second patient of the doctor. Jamie R. Abrams, *Distorted and Diminished Tort Claims for Women*, 34 CARDOZO L. REV. 1955, 1972 (2013). In the context of the law, this phenomenon results in a tort landscape dominated by fetal harms, despite the fact that the “duty to the fetus is not recognized formally as a dominant duty, although this in fact appears to be the case.” *Id.* at 1975.

247. *See* Alfirevic et al., *supra* note 244.

248. *See id.*

249. SAKALA & CORRY, *supra* note 13, at 49.

250. *Id.*

251. *Id.*

cesarean and assisted delivery among low-risk women.²⁵² Applying an evidence-based framework, intermittent monitoring—which allows for mobility and optimal positioning, while monitoring the fetal heart rate—is preferable to continuous monitoring, the current standard of care.

d. Delivery

The best available evidence does not support several common maternity care practices employed during the pushing phase and delivery. It also shows that several beneficial practices are under-utilized in most hospitals. For example, a recent systematic review reaffirmed evidence that routine use of episiotomy does not benefit women but instead exposes them to risk of harm.²⁵³ Routine episiotomy is associated with increases in perineal injury, stitches, pain and tenderness, length of healing, the likelihood of leaking stool or gas, and pain with intercourse.²⁵⁴ Although research has shown a 25% rate of episiotomy among women receiving standard hospital care, benchmark rates of 2% or less have been reported in studies of women receiving physiologic care.²⁵⁵ The evidence also suggests that for women without epidurals, staff-directed pushing²⁵⁶ does not confer the presumed benefits, such as shorter labor and improved fetal status.²⁵⁷ Rather, staff-directed pushing appears to increase the likelihood of late fetal heart decelerations and the frequency and severity of perineal trauma in women.²⁵⁸ In spite of these risks, *Listening to Mothers II* found that 75% of women experienced staff-directed pushing.²⁵⁹

The research literature provides support for three under-utilized practices during pushing and delivery: nonsupine positioning, delayed cord-clamping, and immediate skin-to-skin contact. Studies of women without epidurals have found that upright and side-lying positions are associated with less severe pain, less use of episiotomy, less use of vacuum extraction and forceps, fewer heartbeat abnormalities in babies, and shorter pushing phases.²⁶⁰ Although the standard practice in U.S. hospitals is to clamp the umbilical cord immediately upon delivery, research shows that delaying the cord clamping for at least two minutes is associated with improved hematologic status, iron status, and iron stores, as

252. *Id.*

253. *Id.*

254. *Id.*

255. *Id.* at 50.

256. Staff-directed pushing refers to the practice of hospital staff coaching women to push their babies out in forceful pushing once the cervix is ten centimeters dilated, rather than waiting for the sensation of an urge to push. *See, e.g., id.* at 54.

257. *Id.* at 54–55.

258. *Id.*

259. LISTENING TO MOTHERS II, *supra* note 231, at 34 (in determining when and how hard to push, “21% of mothers relied on their bodies’ own sensations, 28% pushed when a nurse or provider told them to, and 47% indicated they used both.”).

260. SAKALA & CORRY, *supra* note 13, at 55. More research is needed to clarify the impact of using upright positions for women with epidurals.

well as reduced anemia in infants.²⁶¹ Evidence also shows that skin-to-skin contact between women and their babies immediately after birth and during the first twenty-four hours postpartum is associated with improved breastfeeding, improved newborn temperature regulation, reduced newborn crying, and more affectionate maternal behaviors.²⁶²

Applying an evidence-based framework suggests that a reduction in the use of episiotomy and staff-directed pushing—along with an increase in under-utilized practices, such as nonsupine positioning, delayed cord-clamping, and immediate skin-to-skin contact—would shorten the pushing phase, reduce risk of harm to the woman, and improve newborn health upon delivery.

3. Midwifery: Research Supports the Safety of Midwife-Led Care for Low-Risk Women

In earlier eras, midwives who found themselves persecuted and marginalized—whether by turf-protecting physicians, biased legal authorities, or shifting cultural preferences—lacked data to defend their expertise or safety record. Contemporary midwifery proponents finally have a solid body of medical evidence on which to draw when defending the right of midwives to practice and promoting the midwifery model as a safe, health-affirming, and cost-effective form of maternity care for women with low-risk pregnancies. One systematic review that compared midwifery care in freestanding birth centers with obstetrician-led care in hospitals found that women receiving midwifery care had a reduced likelihood of episiotomy and cesarean.²⁶³ Another systematic review concluded that women who received midwifery care were less likely to experience labor induction, labor augmentation, EFM, pain medications, assisted vaginal birth (vacuum/forceps), and episiotomy.²⁶⁴ Yet a third systematic review—this one comparing prenatal care by midwives or general practitioners with obstetricians—found that use of midwives and general practitioners was associated with a reduced likelihood of pregnancy-induced hypertension and preeclampsia, greater satisfaction, and lower costs.²⁶⁵

A meta-analysis of fifteen studies that compared certified nurse midwife (CNM) care with physician-led care found midwife care was associated with less use of analgesia, anesthesia, intravenous fluids, EFM, AROM, and forceps, as well as a greater likelihood of spontaneous vaginal birth and reduced low

261. *Id.*

262. *Id.*

263. See Denis Walsh and Soo M. Downe, *Outcomes of Free-Standing, Midwife-Led Birth Centers: A Structured Review*, 31 BIRTH 222, 225 (2004).

264. See Ulla Waldenström & Deborah Turnbull, *A Systematic Review Comparing Continuity of Midwifery Care with Standard Midwifery Services*, 105 BRIT. J. OBSTETRICS & GYNAECOLOGY 1160, 1160 (1998).

265. See Dina Khan-Neelofur et al., *Who Should Provide Routine Antenatal Care for Low-Risk Women, and How Often? A Systematic Review of Randomised Controlled Trials*, 12 PAEDIATRIC & PERINATAL EPIDEMIOLOGY 7, 18–19 (1998).

birthweight.²⁶⁶ The comparison favored CNMs on all measures except for an increased likelihood of spontaneous perineal tears (primarily smaller first-degree tears), a finding that is compatible with reduced rates of episiotomy (a second-degree incision).²⁶⁷

Given the relative acceptance of CNMs within the medical system—as evidenced by their legal right to practice in all fifty states, their coverage by federally administered health insurance programs, and their ultimate supervision by physicians—current conflicts over midwifery focus largely on the safety of home births and the related issue of licensing for certified professional midwives (CPMs), the largest category of midwives attending home births.²⁶⁸ Working outside the direct control of physicians and representing a low-cost path of maternity care for low-risk women, CPMs are often perceived as a threat to the professional livelihood of obstetricians.²⁶⁹ Legal attacks on midwives focus on midwives' safety records and on the safety of home birth more generally.²⁷⁰ Yet a recent study using data on nearly 17,000 midwife-led births—the largest analysis of planned home births in the United States ever published—confirmed the safety of home births.²⁷¹ The study revealed a cesarean rate of only 5.2% (after transfer to a hospital) and lower rates of medical interventions than hospital births, with just 1% of babies requiring a transfer to the hospital after birth, mostly for non-urgent conditions.²⁷² Ninety-seven percent of babies were born full-term; they weighed an average of eight pounds at birth, and nearly 98% were being breastfed at the six-week postpartum visit.²⁷³

Two additional studies published in 2015 analyzed the safety of out-of-hospital births and found less risk of complications for women who gave birth at

266. See Sharon A. Brown and Deanna E. Grimes, *A Meta-Analysis of Nurse Practitioners and Nurse Midwives in Primary Care*, 44 NURSING RES. 332, 337 (1995).

267. *Id.*

268. The differences in training and legal status between certified nurse midwives (CNMs) and certified professional midwives (CPMs) are discussed in Section I.A, *supra*.

269. Beckett & Hoffman, *supra* note 11, at 133–34, 154–55 (discussing arguments by opponents of midwifery licensure that midwives are “encroaching on [the] professional turf” of physicians).

270. See, e.g., Copeland, *supra* note 92 (noting the reluctance of families to cooperate with prosecutors in criminal cases brought against their midwives); Beckett & Hoffman, *supra* note 11, at 134–36 (discussing legal action against midwives).

271. Melissa Cheyney et al., *Outcomes of Care for 16,924 Planned Home Births in the United States: The Midwives Alliance of North America Statistics Project, 2004 to 2009*, 59 J. MIDWIFERY & WOMEN'S HEALTH 17, 26 (2014). Previous studies relied on birth certificate data, which does not reflect where the woman intended to give birth but only the final place of birth. The MANA dataset, however, provides a more complete picture of outcomes for women who planned home birth, including those mothers who birthed at home and those who transferred to the hospital during a planned home birth (but not those who planned hospital births and ended up giving birth at home or en route to the hospital). See Marsden Wager, *Is Homebirth Dangerous?*, THE BIRTH GAZETTE, Fall 1989, at 16–17 (explaining that most out-of-hospital births are unplanned, accidental, and often premature births with a high mortality rate).

272. Cheyney et al., *supra* note 271, at 20.

273. *Id.* at 21, 23.

home, though the studies came to opposite conclusions about the risks to babies.²⁷⁴ Researchers at Oregon Health and Science University (OHSU) found 1.2 more perinatal deaths per 1000 deliveries among women who had planned home births as compared with planned in-hospital births.²⁷⁵ A Canadian study, however, found no difference in perinatal deaths between planned home and hospital births.²⁷⁶ The OHSU study reported twenty-four fewer cesareans per 100 deliveries among women who had planned home births, while the Canadian study reported only two fewer cesareans—a difference likely associated with the fact that Canadian midwives continue to attend births of women who have transferred to hospitals, whereas women in the OHSU study would most likely have transferred directly to an obstetrician’s care.²⁷⁷ Midwifery and obstetrics experts have praised the quality of the recently released research and noted how it has contributed to an understanding of the various risks and benefits of different childbirth settings.²⁷⁸

A 2014 study published in *The Lancet*—one of the most well-respected general medical journals in the world—that analyzed systematic reviews, case studies, and modeling of deaths concluded that midwifery is “a vital solution to the challenges of providing high-quality maternal and newborn care for all women and newborn infants.”²⁷⁹ The study identified seventy-two effective practices—relevant for all childbearing women and infants—that are within the scope of midwifery.²⁸⁰ In high-income settings, like the United States, the research suggested that midwife-led care is “a more cost-effective option than medically-led care” and supported an approach that involved midwives collaborating as part of multidisciplinary teams to provide care for women and infants who develop complications.²⁸¹

The study most commonly cited to support the argument that home births assisted by midwives are dangerous was published by ACOG in the 1970s. In concluding that “out-of-hospital births pose a two to five times greater risk to a baby’s life,” the study misleadingly included miscarriages, premature births, taxi cab deliveries, and other unplanned out-of-hospital births, along with planned

274. Compare Jonathan M. Snowden et al., *Planned Out-of-Hospital Birth and Birth Outcomes*, 373 *NEW ENG. J. MED.* 2642, 2645 (2015), with Eileen K. Hutton et al., *Outcomes Associated with Planned Place of Birth Among Women with Low-risk Pregnancies*, *CANADIAN MED. ASS’N J.*, Dec. 22, 2015, at 1.

275. Snowden et al., *supra* note 274.

276. See Hutton et al., *supra* note 274, at 1, 10.

277. Henci Goer, *Dueling Statistics: Is Out-of-Hospital Birth Safe?*, *LAMAZE INT’L: SCI. & SENSIBILITY* (Jan. 5, 2016), <https://www.scienceandsensibility.org/homebirth-safety/> (analyzing the differences between the Snowden and Hutton studies).

278. See Pam Belluck, *As Home Births Grow in U.S., a New Study Examines the Risks*, *N.Y. TIMES* (Dec. 30, 2015), http://www.nytimes.com/2015/12/31/health/as-home-births-grow-in-us-a-new-study-examines-the-risks.html?_r=0 (quoting both the Executive Director of the National Association of Certified Professional Midwives and the Vice Chairman of the American College of Obstetricians and Gynecologists’ committee on obstetric practice).

279. *MIDWIFERY: AN EXECUTIVE SUMMARY*, *supra* note 25, at 8.

280. *Id.* at 4–5.

281. *Id.* at 5; see also Renfrew et al., *supra* note 25, at 1140.

home births attended by trained midwives.²⁸² More recently, in 2008, after the documentary *The Business of Being Born* focused national attention on home birth, ACOG issued the following statement: “Unless a woman is in a hospital, an accredited freestanding birthing center, or a birthing center within a hospital complex, with physicians ready to intervene quickly if necessary, she puts herself and her baby’s health and life at unnecessary risk.”²⁸³ ACOG cast further aspersions on women who choose home birth by stating that home birth “is to place the process of giving birth over the goal of having a healthy baby.”²⁸⁴ That same year, the American Medical Association (AMA) issued a statement calling for model legislation “in support of the concept that the safest setting for labor, delivery, and the immediate post-partum period is in the hospital, or a birthing center within a hospital complex[,] . . . or in a freestanding birth center.”²⁸⁵ The AMA offered no evidence to support this claim.

Applying an evidence-based framework, the research favors midwifery care for women with low-risk pregnancies. Both CNM- and CPM-led maternity care were associated with fewer cesareans, fewer interventions, and better infant outcomes. Arguments advanced by major medical professional organizations about the supposed dangers of home birth are based on misleading research, or not supported at all.

C. Translating Evidence Into Policy

While the concept of implementing scientific research results in clinical practice—thereby displacing conventional medical wisdom with safer and more effective treatment—is not new, the chorus of voices calling for evidence-based maternity care reform is louder and more organized than at any point in history. As discussed above, there may be multiple reasons for this, including a growing body of research literature on maternity care that supports reducing the overuse of harmful practices and increasing the use of under-employed, beneficial practices. Inspiration for more and better research on maternity care may flow both from the influx of federal spending to support comparative effectiveness research and a national desire to lower the United States’ troubling cesarean rate. In addition, the *Listening to Mothers* surveys have provided the most nuanced and comprehensive evidence of how women experience childbirth in the twenty-

282. Suarez, *supra* note 55, at 354, 354 n.277 (citing Press Release, Am. Coll. of Obstetricians & Gynecologists, Health Department Data Shows Danger of Home Births (Jan. 4, 1978)). This misleading study had far-reaching effects in policy-making and public opinion. *See, e.g., id.* (discussing use of the ACOG Home Birth study during the 1991 Florida legislative session to defeat legislation that would provide training programs for direct-entry midwives). As sociologist Raymond De Vries has highlighted, the ACOG study was not only misleading, but also unscientific. *See* DE VRIES, *supra* note 113, at 134.

283. Press Release, ACOG Office of Commc’ns, ACOG Statement on Home Birth (Feb. 2008), www.acog.org/from_home/publications/press_releases/nr02-06-08-2.cfm.

284. *Id.*

285. Am. Coll. of Obstetricians & Gynecologists, *Home Deliveries*, Res. 205, (Apr. 28, 2008), https://www.ftc.gov/system/files/documents/public_comments/2014/03/00041-88892.pdf.

first century, including the prevalence of medical interventions into the birthing process. These studies provide an informed starting point for advocates seeking to change specific hospital policies or provider practices. Although a comprehensive analysis of all evidence-driven maternity care reform strategies is beyond the scope of this Article, this Section will survey several prominent examples of how advocates use scientific research to promote legal and policy reform in the maternity care arena.

1. Using Research in Legislative Advocacy

Scientific evidence has served as a critical tool for advocates in the hotly contested terrain of midwifery licensure campaigns.²⁸⁶ Midwifery is regulated at the state level, usually through specific nurse-midwife licensure acts, medical practice acts, or new lay midwifery licensure acts.²⁸⁷ As discussed in Section I.B above, CPMs are currently licensed in twenty-eight states, with campaigns underway in another fourteen states.²⁸⁸ Advocates lobbying state legislatures generally arm themselves with data on the advantages of midwifery care for women with low-risk pregnancies and the safety of home births.²⁸⁹ In their study on the development of the alternative birth movement, sociologists Katherine Beckett and Bruce Hoffman found that the lobbying materials of birth activists consistently include abstracts of epidemiological studies showing that home births attended by midwives are “as safe [as] or safer” than hospital births for low-risk women.²⁹⁰ By calling for midwifery opponents to provide data to support their claims about the dangers of home birth, “birth activists have

286. Although there has been a healthy debate in the midwifery community about whether litigation or legislation provides the most promising route to reform, and whether regulation is a desirable goal for midwives at all, commentators generally recognize that state legislatures provide the best hope for of pro-midwifery legal reform. *See, e.g.*, Beckett & Hoffman, *supra* note 11, at 135–36. A number of courts have rejected constitutional challenges to midwifery restrictions, rejecting the argument that the right to privacy encompasses a woman’s right to the birth attendant of her choice. *See, e.g.*, *Hunter v. State*, 676 A.2d 968, 975 (Md. Ct. Spec. App. 1996) (holding that the right to privacy does not include the right to choose a midwife); *Colorado v. Rosburg*, 805 P.2d 432, 437 (Colo. 1991); *Leigh v. Bd. of Registration in Nursing*, 506 N.E.2d 91, 95 (Mass. 1987); *Bowland v. Mun. Ct.*, 18 Cal. 3d 479, 495 (Cal. 1976). *But see* *Tovino*, *supra* note 51, at 62 n.6 (listing instances where courts have legalized midwifery through statutory interpretation rather than constitutional arguments). On arguments for different approaches to midwifery legalization generally, see Susan Corcoran, Note, *To Become a Midwife: Reducing Legal Barriers to Entry Into the Midwifery Profession*, 80 WASH. U. L.Q. 649, 670–73 (2002); Suarez, *supra* note 55, at 360–61; Charles Wolfson, *Midwives and Home Birth: Social, Medical, and Legal Perspectives*, 37 HASTINGS L.J. 909, 938–39 (1986). For a contrary view, see DE VRIES, *supra* note 113, at xvi (arguing that regulation effectively destroys the aspects of midwifery that distinguish it from the medical establishment).

287. *Tovino*, *supra* note 51, at 69.

288. *Certified Professional Midwives (CPMs) Legal Status by State*, BIG PUSH FOR MIDWIVES, <http://pushformidwives.org/cpms-by-state/>.

289. Beckett & Hoffman, *supra* note 11, at 142–43.

290. *Id.*

positioned themselves as the truly scientific ones.”²⁹¹ This strategy uses the association between medicine and science to “highlight[] the fact that the ‘scientific’ evidence does not support medicine’s claim that home birth is unsafe.”²⁹² Beckett and Hoffman report that their interviews with state legislators revealed that the scientific research midwives offered was a significant factor in persuading lawmakers that licensing midwives is good public policy.²⁹³

A notable example of legislative success for proponents of evidence-driven maternity care advocacy is the 2000 amendment of the California midwifery law. Although an amendment to eliminate the physician supervision requirement for licensed midwives failed (and was not ultimately successful until 2013),²⁹⁴ the 2000 legislation noted that “numerous studies have associated professional midwifery care with safety, good outcomes, and cost effectiveness in the United States and other countries.”²⁹⁵ The legislative findings also included the following statement:

California studies suggest that low-risk women who choose a natural childbirth approach in an out-of-hospital setting will experience as low a perinatal mortality as low-risk women who choose a hospital birth under management of an obstetrician, including unfavorable results for transfer from the home to the hospital.²⁹⁶

With this language, legislators incorporated the evidence basis for promoting midwifery care directly into the legislation itself—a victory for midwifery advocates.²⁹⁷ Identifying a need for coordinated strategy and resource-sharing in midwifery licensure efforts, activists launched the Big Push for Midwives Campaign in 2008 to “provide strategic planning and message development for state consumer and midwife groups that are actively working on legislation to license [CPMs].”²⁹⁸ The campaign grew out of the PushSummit 2007, a convening of seventy birth activists, consumers, and midwives engaged in advocacy on midwifery issues.²⁹⁹ The PushSummit was part of the National Birth Policy Coalition, which consists of approximately fifty state and national consumer and midwifery organizations united to “ensure the availability of safe,

291. *Id.* at 143–44.

292. *Id.*

293. *Id.* at 156 (legislators also cited the rigorous nature of NARM’s certification process as a persuasive factor, as well as midwives’ “impressive” qualities).

294. Assemb. B. 1308, 2013–14 Sess., ch. 665 (Cal. 2013).

295. Act of Sept. 1, 2000, ch. 303, 2000 Cal. Stat. § 4(d).

296. *Id.*

297. See Tovino, *supra* note 51, at 97–98 (“Those who viewed [judicial rejection] of lay midwives’ constitutional right of privacy claims as ‘scandalous’ likely were pleased by the specific findings set forth within the 2000 Legislation.”).

298. *Our Mission*, BIG PUSH FOR MIDWIVES, <http://pushformidwives.nationbuilder.com/> (last visited May 11, 2016); *History*, BIG PUSH FOR MIDWIVES, <http://pushformidwives.nationbuilder.com/history> (last visited May 11, 2016).

299. *History*, *supra* note 298.

evidence-based care during pregnancy, labor, birth, and postpartum.”³⁰⁰ The Big Push collects research relevant to the midwifery debate and provides strategic support to organizations actively lobbying state legislatures to license CPMs.³⁰¹

2. Other Prominent Evidence-Driven Advocacy Organizations

Childbirth Connection is a leader in the generation and promotion of evidence-based maternity care reform. Established in 1918 as the Maternity Care Association, its mission is “to improve the quality and value of maternity care through consumer engagement and health system transformation.”³⁰² Childbirth Connection promotes its Transforming Maternity Care initiative, which gathered over 100 maternity care experts to identify critical focus areas for change and specific achievable strategies in a 2010 “Blueprint for Action.”³⁰³ As part of this initiative, Childbirth Connection produced the Milbank Report, which identified opportunities for improving maternity care based on the best available evidence and served as a background document for the Blueprint for Action.³⁰⁴

Childbirth Connection is also responsible for the *Listening to Mothers* surveys. These surveys have filled a significant gap in knowledge about women’s childbirth experiences, including the use of a wide range of interventions, women’s experiences with their caregivers, and the degree to which women are informed about their rights as well as the risks and benefits of the care they receive.³⁰⁵ The surveys report information that is not otherwise collected at the national level and provide more accurate estimates for a number of data points that are undercounted in studies on birth certificates and hospital discharge records. Childbirth Connection targets policymakers, administrators, clinicians, and educators with the survey results so these stakeholders can better “understand and improve the quality of maternity experiences.”³⁰⁶ Childbirth Connection also maintains a variety of other evidence-based resources for health professionals, including an Evidence-Based Maternity Care Resource Directory, a quarterly column on current evidence (published simultaneously in the *Journal of Obstetric, Gynecologic and Neonatal Nursing* and the *Journal of Midwifery*

300. *Id.*

301. *About*, BIG PUSH FOR MIDWIVES, <http://pushformidwives.nationbuilder.com/about> (last visited May 24, 2016).

302. In 2014, Childbirth Connection became a core program of the National Partnership for Women & Families. *See About Us*, CHILDBIRTH CONNECTION, <http://www.childbirthconnection.org/aboutus.asp> (last visited May 11, 2016).

303. *See* Peter B. Angood et al., Transforming Maternity Care Symposium Steering Comm., *Blueprint for Action: Steps Toward a High-Quality, High-Value Maternity Care System*, 20 WOMEN’S HEALTH ISSUES S18 (2010), <http://transform.childbirthconnection.org/blueprint/> (noting that the Blueprint emerged from Childbirth Connection’s 90th Anniversary national policy symposium, *Transforming Maternity Care: A High-Value Proposition*, in April 2009).

304. *Id.* at S19.

305. *Listening to Mothers Surveys and Reports*, CHILDBIRTH CONNECTION, <http://www.childbirthconnection.org/article.asp?ClickedLink=334&ck=10068&area=27> (last visited May 11, 2016).

306. *Id.*

and Women's Health), and systematic reviews on the harms of cesarean versus vaginal birth, the importance of continuous support for women during childbirth, and the management of labor pain.³⁰⁷

Another prominent proponent of evidence-based maternity care reform is the Coalition for Improving Maternity Services (CIMS), which promotes its highly visible Mother-Friendly Childbirth Initiative (MFCI) to “encourage . . . evidence-based Mother-and-Baby-Friendly maternity care.”³⁰⁸ The MFCI recognizes that the “inappropriate application of technology and routine procedures that are not based on scientific evidence” contribute to high cost and poor outcomes in maternity and newborn care.³⁰⁹ To be designated as “mother-friendly” by CIMS, a hospital, birth center, or home birth service must fulfill ten steps, which include offering access to midwifery care, eliminating routine use of practices that are unsupported by scientific evidence, and maintaining an induction rate of 10% or less, a total cesarean rate of 15% or less in tertiary care hospitals, and a VBAC rate of 60% or more (with a goal of 75% of more).³¹⁰ Since the initiative began, more than 1,200 individuals and organizations have ratified or endorsed the MFCI.³¹¹ CIMS also organizes regular symposia and public fora to educate health care providers and consumers about evidence-based maternity care.

Evidence Based Birth (EBB) is an example of an advocacy organization that is heavily research-oriented and has attracted a wide following through an engaging social media presence and its ability to translate research findings into a useable form for advocates and consumers. Founded as a website in 2012 by PhD nurse researcher Rebecca Dekker to provide accessible summaries of evidence-based information on pregnancy and childbirth, EBB promotes itself with the tagline “[g]iving birth based on best evidence.”³¹² Dekker, who also writes for several other birthing-rights-oriented online publications, distributes a monthly newsletter and publishes articles that compile and explain the evidence

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307. See, e.g., *Evidence-Based Maternity Care Resource Directory*, CHILDBIRTH CONNECTION, <http://www.childbirthconnection.org/article.asp?ClickedLink=184&ck=10263&area=2> (last visited May 11, 2016); *Current Resources for Evidence-Based Practice*, CHILDBIRTH CONNECTION, <http://www.childbirthconnection.org/article.asp?ClickedLink=199&ck=10268&area=2> (last visited May 11, 2016); Henci Goer et al., *Vaginal or Cesarean Birth: What is at Stake for Women and Babies? A Best Evidence Review*, CHILDBIRTH CONNECTION (2012), <http://www.childbirthconnection.org/article.asp?ck=10271>; Ellen D Hodnett et al., *Continuous Support for Women During Childbirth (Review)*, COCHRANE DATABASE OF SYSTEMATIC REVIEWS, 2012, at 1, <http://www.childbirthconnection.org/article.asp?ck=10272>; Donald Caton et al., *The Nature and Management of Labor Pain: Executive Summary*, 186 AM. J. OBSTETRICS & GYNECOLOGY (SUPPLEMENT) S1 (2002), <http://www.childbirthconnection.org/article.asp?ck=10273>.
308. *Mother-Friendly Childbirth Initiative*, COAL. FOR IMPROVING MATERNITY SERVS. (CIMS) (July 1996), <http://www.motherfriendly.org/mfci/>.
309. *Id.*; see also Henci Goer et al., *Step 6: Does Not Routinely Employ Practices, Procedures Unsupported by Scientific Evidence*, 16 J. PERINATAL EDUC.(SUPPLEMENT) 32S (2007).
310. *Id.*
311. *Mother-Friendly Childbirth Initiative*, *supra* note 308.
312. EVIDENCE BASED BIRTH, www.evidencebasedbirth.com (last visited Apr. 4, 2016).

on various childbirth-related topics.³¹³ In addition, she presents new evidence on her Facebook page, sharing birth-related news stories, asking birthing rights trivia questions, and querying over 18,000 followers about what they perceive as the most pressing issues in maternity care.³¹⁴ With over 1.37 million visitors to the EBB website in 2014, Dekker conducts webinars on her research reviews and provides continuing education for nurses, midwives, and childbirth educators.³¹⁵ She also provides training on how to use evidence-based medicine in appointments with care providers, conduct research on evidence-based medicine, and challenge restrictive childbirth policies such as VBAC bans.³¹⁶

Another relatively new organization seeking evidence-based maternity care reform is Improving Birth, founded in 2012 to “bring evidence-based care and humanity to childbirth.”³¹⁷ Improving Birth maintains a consumer-friendly website with information about induction, cesareans, and VBAC. It provides educational resources on how common maternity practices compare to the best available evidence and connects users to information about the rights to informed consent and to refuse medical treatment.³¹⁸ On Labor Day 2014, Improving Birth organized the third annual Rally to Improve Birth in over 100 U.S. cities, along with media outreach calling on hospitals to “examine their own rates of procedures, labor ward protocols, and physician practices.”³¹⁹

The organizations surveyed here represent only certain pieces of the evidence-driven maternity care advocacy landscape, but they illustrate the extent to which the maternal health advocacy sector is organized around the generation, dissemination, and implementation of the best available evidence on maternity care practices. The strategic use of scientific research to reform laws, policies, and practices governing maternity care is an essential component of advocacy efforts aimed at achieving safer and healthier birth outcomes. But, as Part III explores, evidence-driven reform strategies alone are unlikely to secure the transformative change that mothers, babies, and families so desperately need.

313. See *Topics from A to Z*, EVIDENCE BASED BIRTH, <http://evidencebasedbirth.com/blog-topics/> (reflecting topics ranging from augmentation of labor to waterbirth) (last visited May 11, 2016).

314. *Evidence Based Birth*, FACEBOOK, <https://www.facebook.com/EvidenceBasedBirth/> (last visited Apr. 2, 2016).

315. Rebecca Dekker, *January Newsletter*, EVIDENCE BASED BIRTH (Jan. 8, 2015), http://archive.aweber.com/birthevidence/N7EOb/h/January_Newsletter_.htm (noting that the number of visitors to the website in 2014 nearly doubles the number of visitors in 2013).

316. *Id.*

317. *About Us*, IMPROVING BIRTH, <http://improvingbirth.org/about-us/> (last visited May 11, 2016).

318. *Evidence, Facts, and Rights*, IMPROVING BIRTH <http://www.improvingbirth.org/evidencefactsrights/> (last visited May 11, 2016).

319. Press Release, Improving Birth, Consumers Urge Accountability from Hospitals in Maternity Care (Sept. 1, 2014), <http://www.improvingbirth.org/press/>.

III. CRITIQUE OF EVIDENCE-BASED STRATEGIES FOR MATERNITY CARE REFORM

Evidence-driven advocacy strategies are understandably appealing to advocates for their ability to offer seemingly neutral and scientifically-grounded justifications for childbirth practices that promote better outcomes and a reduction in cost. An evidence-based case for maternity care reform holds significant potential for convincing policy-makers in state legislatures, professional governing associations, and hospitals to make legal and policy changes that will result in safer and more positive experiences for women and babies. As discussed in Part II, various advocacy groups and other stakeholders have adopted an evidence-driven approach in their campaigns and public education efforts regarding the laws, policies, and practices governing childbirth.

But there are reasons to be critical of a reform strategy that relies so heavily on expert-generated evidence. Advocates who seek to transform the medical paradigm of childbirth may find their project constrained by the need to articulate claims based on the existing research literature. Their prospects for success depend on the existence of high-quality research studies answering the appropriate questions. Furthermore, merely shifting deference from one type of expert knowledge to another continues to devalue women's experiences in the childbirth process. Evidence-driven reform strategies may also be insufficient to tackle the financial incentives that influence maternity care practices or the legal forces shaping tort law standards. None of these concerns should result in a wholesale rejection of evidence-based arguments for maternity care reform, but they do counsel a critical and multi-faceted approach to advocacy efforts that seek fundamental change in maternity care.

A. Still Deferring to the "Experts": How Elevating Evidence-Based Maternity Care Undermines Women's Autonomy

One major concern for proponents of evidence-based arguments for maternity care reform is that the strategic move at the heart of their advocacy merely shifts deference from the perceived expertise of professional obstetricians to expertise grounded in research studies and knowledge acquired from the pages of medical journals. As Henci Goer and Amy Romano observe, "we have replaced the fallible expert opinion of clinicians with the fallible expert opinion of medical academicians."³²⁰ Taking this concern seriously does not require adopting an anti-science or anti-medicine orientation; rather, it calls for recognition of the ways in which societal deference to professional experts—and

320. GOER & ROMANO, *supra* note 11, at 15 (citing Dave Holmes et al. *Deconstructing the Evidence-Based Discourse in Health Sciences: Truth, Power and Fascism*, 2006 INT. J. EVID. BASED HEALTHCARE 180, 185 ("The . . . ideology [of evidence-based medicine] lends [its] disciples a profound sense of entitlement. . . . By a so-called scientific consensus, this 'regime of truth' ostracises those with 'deviant' forms of knowledge, . . . rejecting their work as scientifically unsound.")).

the power attendant to such cultural privilege—can marginalize other forms of knowledge and expertise. In the maternity care context, reverence for professional expertise often undermines women as autonomous decision-makers.

History shows how the professionalization of obstetricians was rooted in physicians' economically motivated desire to capture a larger share of the market for childbirth services, and the elevation of their expertise and prestige as birth attendants resulted from organized campaigns to marginalize midwives and assert their own superiority.³²¹ The high value placed on science in the nineteenth century bolstered the political mobilization of professional medicine;³²² that the Rockefeller and Carnegie foundations dedicated funds to the creation of a "respectable scientific American medical profession" reflects the societal reverence for expert knowledge at the time.³²³ The ascendance of the physician as childbirth expert occurred, paradoxically, despite the fact that most practitioners had no actual clinical experience with childbirth—a phenomenon that persists in a modern form today, as most obstetric residents have limited exposure during the course of their training to physiologic birth unmediated by technological interventions.³²⁴

Scholars who have studied childbirth as a cultural phenomenon in the United States have identified an "American way of birth" that is "deeply rooted in Western and especially American culture, embedded in a modernist epistemological framework that conceives of the body in mechanistic terms and seeks to eliminate risk through the application of science, professional expertise, and technology."³²⁵ Sociologist Thomas F. Gieryn has observed that "'science' often stands metonymically for credibility, for legitimate knowledge."³²⁶ In light of cultural norms that privilege professional expertise, reverence for science can undermine other forms of credibility and block additional paths for acquiring legitimate knowledge. In the childbirth context, another important source of knowledge is the woman herself, as she is the one who has carried the pregnancy, experiences the physical labor, and knows the needs and limits of her own body.³²⁷

321. See generally Frances E. Kobrin, *The American Midwife Controversy*, BULLETIN OF THE HISTORY OF MED. (1966) (describing the shift from midwife-led care to obstetric-led care); DONNISON, *supra* note 55; see also BARBARA EHRENREICH & DEIRDRE ENGLISH, *WITCHES, MIDWIVES, AND NURSES: A HISTORY OF WOMEN HEALERS* 21–22 (1973) (recounting how the shift from midwife to physician reflected societal preference for "science versus ignorance and superstition").

322. EHRENREICH & ENGLISH, *supra* note 321, at 82.

323. *Id.*

324. See WAGNER, *supra* note 10, at 208–09 ("Although obstetricians will be focusing on cases with serious complications, it is still important for obstetricians to know what normal looks like in order to distinguish between normal and pathological.").

325. Beckett & Hoffman, *supra* note 11, at 126.

326. THOMAS F. GIERYN, *CULTURAL BOUNDARIES OF SCIENCE: CREDIBILITY ON THE LINE* 1 (1999).

327. This invokes a body of feminist critique about the gendered bias in scientific culture and the role of science and technology in disrupting feminist understandings of the body. See, e.g., CORDELIA FINE, *DELUSIONS OF GENDER: HOW OUR MINDS, SOCIETY, AND NEUROSEXISM*

Cases involving forced cesareans illustrate how the law privileges professional expertise over women's rights and preferences and fails to contemplate that a refusal to consent to a cesarean could be justified by the knowledge and understanding that the woman brings to the decision-making process. In a much-discussed case from the 1980s, Ayesha Madyun was admitted to the hospital two days after her water broke.³²⁸ The doctor recommended a cesarean due to general concerns about the chance of the fetus developing an infection, despite the lack of any indication of complication.³²⁹ Madyun refused to consent to the cesarean—citing both her belief that a vaginal birth was still possible and her religious convictions as a Muslim—at which point the doctor sought and obtained a court order to perform the surgery over her objections.³³⁰ The court refused to “ignore the undisputed opinion of a skilled and trained physician to indulge the desires of the parents,” thereby demoting Madyun's understanding of the right course of action to a mere indulgent desire.³³¹ The “undisputed” nature of the prevailing expert opinion was questionable: the doctor was a trainee and there was no indication of a second opinion from a more experienced physician; additionally, Madyun herself disputed the opinion of the doctor and could point to a lack of medical indication that a cesarean was necessary.³³² Though the risk of sepsis increases after a woman's water breaks, the Madyun baby was ultimately born without any sign of infection.³³³ Notably, the judge dedicated a whole paragraph to the doctor's credentials, underscoring the law's deference to professional expertise, but ignored the credentials of Madyun as an autonomous human being with self-knowledge and personal convictions.³³⁴ The *Madyun* case reflects a common scenario in maternity care decision-making: choosing a course of treatment requires the balancing of competing risks after informed consent. To override the woman's informed decision enshrines deference to physicians and erodes important principles of informed consent and patient autonomy.

Another example of a court's “unabashed preference for medical knowledge”³³⁵ over the expertise brought to the birthing experience by the woman herself is the case of Laura Pemberton, who, a day into her home birth

CREATE DIFFERENCE (2010); SANDRA HARDING, *THE SCIENCE QUESTION IN FEMINISM* (1986); RUTH BLEIER, *SCIENCE AND GENDER: A CRITIQUE OF BIOLOGY AND ITS THEORIES ON WOMEN* (1984).

328. RACHEL ROTH, *MAKING WOMEN PAY: THE HIDDEN COST OF FETAL RIGHTS* 89 (2003).

329. *Id.*

330. *Id.* at 89, 92–93 (noting also that the baby was ultimately born without any sign of infection).

331. *In re Madyun*, 114 DAILY WASH. L. RPTR. 2233 (D.C. Super. Ct. 1986). The opinion of Superior Court Judge Richard A. Levie in *In re Madyun* appears as Appendix to *In re A.C.*, 573 A.2d 1235 app. (D.C. 1990).

332. See Rebecca A. Spence, *Abandoning Women to Their Rights: What Happens When Feminist Jurisprudence Ignores Birthing Rights*, 19 CARDOZO J.L. & GENDER 101, 110 n.67 (2012) (citing *In re A.C.*, 573 A.2d app. at 1261).

333. ROTH, *supra* note 329, at 89.

334. *Id.* at 92–93.

335. Spence, *supra* note 332, at 110.

VBAC labor, went to the hospital to receive intravenous fluids to avoid dehydration.³³⁶ When the obstetrician on call refused to give her the IV unless she consented to a cesarean and sought a court order compelling her to submit to the surgery, Pemberton returned home and continued to labor without complications.³³⁷ The sheriff and State Attorney appeared and forced her—strapped to a stretcher in active labor—to return to the hospital for a “hearing.”³³⁸ At the hearing, Pemberton had no opportunity for legal representation.³³⁹ The court ordered the cesarean, rejecting Pemberton’s evidence regarding the risks of cesarean surgery and her testimony about her ability to deliver her baby vaginally.³⁴⁰ Instead, it found that “[t]he medical evidence belies Ms. Pemberton’s bravado”—as if she were resisting the cesarean based on principles of courage and honor rather than her informed and reasoned conviction that she was capable of birthing vaginally and that the risk of unnecessary surgery outweighed the risk of VBAC complications.³⁴¹

Jamie Abrams has observed that the “concerning judicial narrative of heroic medicine and reckless motherhood further distorts and diminishes the birthing woman.”³⁴² Mothers are characterized as stubborn or reckless for expressing medical preferences, which “are framed as emotional wants or desires.”³⁴³ This judicial narrative undermines the woman as a decision maker and “positions the doctor to ‘protect’ the fetus using science and data to expand the rights and duties to the fetus.”³⁴⁴ Viewed in this context, courts regularly privilege both professional expertise and scientific expertise over the rights, preferences, and knowledge of pregnant women. Traditionally, physicians have been perceived as the experts whose opinions matter most. By calling for deference to scientific literature, evidence-based arguments to change the clinical practices of physicians may simply reconfigure the weight of respect afforded to third-party expertise in maternity care.

Many within the birthing rights community seek to reconceive birth as a “normal,” physiological process instead of a disease or illness that needs to be controlled.³⁴⁵ This notion reflects the primary orientation of the midwifery model

336. *Pemberton v. Tallahassee Mem’l Reg’l Med. Ctr., Inc.*, 66 F. Supp. 2d 1247, 1249 (N.D. Fla. 1999); see also Laura Pemberton, *Address at National Advocates for Pregnant Women’s National Summit to Ensure the Health and Humanity of Pregnant and Birthing Women*, NAT’L ADVOCATES FOR PREGNANT WOMEN (July 6, 2009), http://www.advocatesforpregnantwomen.org/main/events/napw_conference/.

337. *Pemberton*, *supra* note 336 (recounting how she fled in her bare feet out the back steps of the hospital after a nurse alerted her to the hospital’s pursuit of a court order).

338. *Id.*

339. *Id.*

340. *Id.*

341. *Pemberton*, 66 F. Supp. 2d at 1252.

342. Abrams, *supra* note 246, at 1993.

343. *Id.* at 1994 (citing example cases and noting that this narrative is present in nearly every case arising out of a VBAC lawsuit).

344. *Id.* at 1994–95.

345. The call to reclaim birth as a “normal” process highlights the imprecise nature of language,

of care, namely that birth is a normal process and not a condition to be managed or feared.³⁴⁶ It requires providers to allow room for the wide variation in experiences that women undergo during labor and delivery without resorting to medical intervention to exert control over the process. It also lessens the likelihood that an unwarranted sense of panic will lead women to accept interventions they do not want out of deference to physician expertise. This returns women to their central role in the childbirth experience. This model requires a robust approach to informed consent and a commitment to incorporating women's experiences and knowledge about their bodies as a foundational building block of maternity care.³⁴⁷ Reliance on scientific knowledge and data alone to justify maternity care reform runs the risk that decision-making about women's bodies during childbirth will still rest elsewhere—simply with a different set of experts.

B. Slave to the Research: The Limitations of Study Design and Research Methodologies for Evidence-Based Maternity Care

Relying on evidence-based arguments to achieve successful maternity care reform requires three assumptions: that well-designed, unbiased research studies are available; that these studies pose the appropriate questions; and that they are conducted in a way that makes them generalizable to the population as a whole. In recent years, advocates have benefited from the release of strong research studies that can be marshaled to support particular beneficial practices or the general safety of home birth for women with low-risk pregnancies.³⁴⁸ The production of useful data, however, requires a variety of conditions, including sufficient funding and participants who adhere to the research protocol enough to avoid significant dilution of results by the crossover effect.³⁴⁹ It also requires the involvement of researchers who can work within a research environment constrained by the norms of a medical model of childbirth.³⁵⁰ Advocates should not assume that such high-quality research will always be available. They must also be equipped to understand the strengths and weaknesses of the evidence on which they rely. Finally, they should prepare for the possibility that future

as one might question what “normal” means in a modern childbirth context where the vast majority of births are procedure-intensive medical events.

346. See *supra* Section I.A (quoting and discussing the Midwives Model of Care).

347. See Karen H. Rothenberg, *New Perspectives for Teaching and Scholarship: The Role of Gender in Law and Health Care*, 54 MD. L. REV. 473, 475 (1995) (“An important task of feminist ethics is to . . . offer alternative models for medical relationships that neither replace patient authority with technical expertise nor abandon patients to their ‘rights,’ where that amounts to granting them the opportunity to assert their independent authority in a hostile, frightening environment.”) (citing to SUSAN SHERWIN, *NO LONGER PATIENT: FEMINIST ETHICS AND HEALTH CARE* 137 (1992)).

348. See *supra* Section II.B (discussing research findings on maternity care practices).

349. See GOER & ROMANO, *supra* note 11, at 13 (discussing problems caused by protocol violation and crossover).

350. *Id.*

research may not support the conclusions and goals they advance.³⁵¹

Although evidence-based medicine undoubtedly improves on forms of medical decision-making based on inherited collective wisdom or anecdote, advocates should understand the limitations of research studies in the maternity care arena. Despite the many strengths of systematic reviews, they reflect reviewers' biases in terms of which studies are selected and how they are interpreted.³⁵² Readers must depend on how reviewers characterize the component studies that comprise the systematic review. This can make it difficult to evaluate the quality of underlying research or identify methodological shortcomings.³⁵³ Many studies involve a follow-up period that is too short to identify late-developing adverse effects—such as the effects of obstetric interventions like cesareans—or the narrowing of differences over time.³⁵⁴ Observational studies may also fail to capture important factors because they rely on available data, especially when certain biases influence what data is deemed worth collecting in the first place.³⁵⁵

There are several possible limitations on the utility of randomized controlled trials (RCTs) that are important to consider in the maternity care context. Structurally, RCTs are constrained by the framing of the initial research questions; they generally interrogate whether a particular intervention is better than the standard management protocol, which bypasses the possibility that physiologic care or another intervention might be better than either approach being studied.³⁵⁶ Nor can RCTs account for the fact that a woman's willingness to participate in a randomized trial by itself distinguishes her from other women who decline participation, potentially limiting the generalizability of the results.³⁵⁷ A common concern with RCTs is that protocol violation and crossover may weaken or completely undermine the results of the studies. Protocol violation or crossover occurs when providers or participants fail to abide by the protocol.³⁵⁸ This can happen either because physicians believe it is medically

351. For example, if a future well-conducted research study should find slightly higher rates of risk of uterine rupture during VBAC than previously reported, advocates who put all their eggs in the “because the data says so” basket when promoting the easing of VBAC restrictions will find themselves in a weakened position to argue that women should not be compelled to have a repeat cesarean when they are prepared to assume the risk of a trial of labor over the risk of another surgery.

352. GOER & ROMANO, *supra* note 11, at 14 (discussing the types of subjective concerns that may creep into systematic reviews).

353. *Id.* at 13–14. In addition, many studies rely on surrogate outcomes, such as laboratory results, imaging studies, or clinical observations, which are easier to measure but may “relate weakly or not at all to clinically important outcomes.” *Id.* at 12–13.

354. *Id.* at 12.

355. *Id.* at 13.

356. *Id.* at 14.

357. *Id.* at 13. The question of generalizability is underappreciated; all studies generally include and exclude participants based on certain criteria, which may limit the appropriateness of applying the study results to the population as a whole. *Id.* at 12.

358. *Id.* at 13 (discussing how crossover from one treatment group to another creates problems for the integrity of a study). Although RCTs presume that context can be eliminated through

necessary to deviate from the protocol or because participants prefer the other treatment.³⁵⁹ For example, in many RCTs on epidural use, a significant proportion of women in the non-epidural group ultimately choose epidurals in labor, detracting from the integrity of the study.³⁶⁰ The expense and complicated logistics of designing an RCT usually preclude trials from including enough participants to detect differences in rare outcomes, such as maternal mortality.³⁶¹ Concerns about expense and feasibility also make RCTs inappropriate where study of long-term outcomes is necessary.³⁶²

As a general matter, the hierarchy of study types discussed in Section II.A helps to impose order on a vast body of scientific literature, but it can also lead readers to misjudge the strength of particular evidence or it can obscure the value that certain types of studies can bring to a particular purpose.³⁶³ In the maternity care context, relying on a range of study types provides a more comprehensive array of information about different aspects of childbirth. Understanding the limitations of study design—and, where possible, supplementing knowledge acquired through one type of study with carefully considered results of other well-designed studies—is essential for advocates who seek changes in maternity care practices grounded in evidence-based claims.³⁶⁴

The role of the medical model as the underlying norm for the vast majority of births in the United States adds a maternity-care-specific complication to evaluating and employing research on maternity care practices. Because medical management of childbirth forms the backdrop for virtually all obstetric research, studies of new treatments are compared to current practices. These current practices are assumed to be the “gold standard,” despite their reliance on medical intervention that may deviate from best practices that maximize health and safety.³⁶⁵ Henci Goer and Amy Romano note that the “ubiquity of the medical

study design, issues such as environment and care provider philosophy can still influence outcomes, especially where crossover is a concern. *Id.* at 14. RCTs are also limited by ethical concerns that may prohibit assignment of certain participants to a control group, such as randomly assigning babies to a non-breastfeeding group.

359. *Id.* at 13.

360. *Id.*

361. *Id.* at 13; SAKALA & CORRY, *supra* note 13, at 23.

362. *Id.*

363. See GOER & ROMANO, *supra* note 11, at 12. For example, case studies can identify rare problems that may not be detected by RCTs, and observational studies may be the only way to collect valuable information over a long period of time. *Id.* Goer and Romano also criticize the very notion of hierarchy in organizing evidence, pointing out that a systematic review of small, poor-quality RCTs will appear to outrank the results of a single, high-quality RCT, thereby misleading the reader into overvaluing certain evidence and undervaluing other results. *Id.*

364. Advocates should also be cautious about the influence of commercial interests in study design. *Id.* at 14 (discussing differences in findings when studies are reviewed by doctors with different specializations).

365. See GOER & ROMANO, *supra* note 11, at 16–17 (discussing the invisibility of the medical-management model when its precepts are assumed by all studies and criticizing “standard management” control groups as comparing “frying pans” with “fires”). For example, to justify eating and drinking during labor or keeping women and babies together immediately

management model has instituted a set of iatrogenic norms.”³⁶⁶ Studying the effects of medical intervention as standard care produces a set of measures that are presumed to be “inherent parameters of the physiologic process,” making it “impossible to dislodge the practices that produced” the iatrogenic norms because research on alternative practices will always appear to produce abnormal results and therefore substandard care.³⁶⁷ The medical-management model of birth “also acts as a cultural blinder, limiting what research questions get asked, what comparisons are made, what outcomes are considered important, how results are interpreted, and what implications are seen.”³⁶⁸

Beyond the limitations of study design and research methodologies, Goer and Romano raise an overarching concern that strikes at the core of evidence-driven maternity care reform strategies. They question a central premise of evidence-based medicine, which is “that well-conducted research permits the attainment of scientifically objective truth.”³⁶⁹ Studies are designed by human beings, and human beings bring subjective biases and contextualized understandings of the subject matter to their research. In their case studies on the influence of medical evidence by social and cultural forces, Raymond De Vries and Trudo Lemmens concluded:

Our evidence suggests that mainstream obstetric *science* follows mainstream obstetric *practice*. A patient and expectant approach to birth . . . where all is considered normal until proved otherwise, produces a science that proves intervention to be unnecessary. Alternatively, an aggressive approach to birth . . . where birth is regarded as normal only in retrospect, generates a science that demonstrates the need for monitoring and intervention.³⁷⁰

The context in which researchers undertake to design and implement studies shapes not only what questions are asked but also what data are considered relevant and how research results are interpreted. Where particular

after birth—both practices thought to support physiologic birth—evidence must show that they produce outcomes superior to the existing practices of restricting food intake and separation of the infant. *See id.*

366. *Id.* at 17.

367. *Id.* As an example of this phenomenon, Goer and Romano highlight how decades of immediate cord clamping, which deprives newborns of a significant proportion of blood volume, has produced a bilirubin distribution curve based on infants who have fewer red blood cells in their first days of life than they should. *Id.* This means that the results of studies on delayed cord clamping—a practice that increases blood volume and iron stores in newborns—appear problematic because newborns have bilirubin levels higher than the iatrogenically established norm. *Id.*

368. *Id.* at 17–18 (discussing how the medical management model emphasizes statistical significance over clinical significance and providing examples of this phenomenon that lead to encouragement of medically unnecessary cesareans).

369. *Id.* at 15.

370. *See* Raymond De Vries & Trudo Lemmens, *The Social and Cultural Shaping of Medical Evidence: Case Studies from Pharmaceutical Research and Obstetric Science*, 62 *SOC. SCI. & MED.* 2694, 2704 (2006).

philosophies, cultural attitudes, or clinical practices predominate, their very ubiquity may render their impact on the scientific research process invisible.

De Vries and Lemmens's observation suggests that the contingent nature of research on clinical practices may preclude an objective, scientifically-grounded truth upon which to base maternity care. The assumption that evidence-based medicine replaces subjective opinion with objective fact means that evidence-based medicine has become the "organizing structure for knowledge and a mechanism of ideological reinforcement for the dominant scientific paradigm."³⁷¹ But the underlying assumption that objective scientific truth is attainable must be viewed critically, lest the popularity of evidence-based medicine—favored for its perceived ability to justify certain care practices with objective fact—become the pursuit unto itself, rather than a tool for improving health outcomes.³⁷² A critical understanding of the methodological constraints of study design and the inherently contextual nature of scientific research itself is essential for the effective employment of evidence-driven strategies for maternity care reform.

C. Structural Conditions Remain Unchanged: Evidence-Driven Reform Strategies Fail to Reach Financial Incentives and Legal Constraints

Another limitation of evidence-driven reform strategies is that they fail to address certain structural conditions—both financial and legal—that influence the provision of maternity care in the United States. Corporate control of hospital policies and the financial interests of individual physicians and administrators play a significant role in the way law and policy shape clinical practice. Evidence-based arguments may persuade a medical decision maker to change course on a particular issue. Such an approach will not, however, reach the underlying economic incentives and legal constraints that influence the behavior of actors within the maternity care system.

1. Impact of Health Care Financing on Clinical Practice

As discussed in Part I, maternity-related costs play a significant role in escalating health care costs, constituting 26% of hospital charges to Medicaid and 13% of hospital charges to private insurers.³⁷³ Health care financing provides certain incentives to maintain the health care delivery status quo,

371. David Holmes et al., *Deconstructing the Evidence-Based Discourse in Health Sciences: Truth, Power and Fascism*, 4 INT. J. EVIDENCE BASED HEALTHCARE 180, 184 (2006).

372. Sakala and Corry sound a note of caution about overuse of the term "evidence-based" when not appropriate, warning consumers to "be wary of bandwagon slogans describing 'evidence-based' products and services and of deeply flawed execution that may not in fact reflect these principles." SAKALA & CORRY, *supra* note 13, at 22.

373. See UNITED STATES MATERNITY CARE FACTS AND FIGURES, *supra* note 20, at 2. In 2010, private insurance paid for 48% of childbirth-related hospital stays, while Medicaid paid for 45%. *Id.*

complicating efforts to improve quality and reduce costs.³⁷⁴ Significant disincentives for supporting physiologic birth are also embedded in the current financing structures.³⁷⁵ For example, systems that compensate based on service bundling and global fee payments “encourage use of interventions and measures to hasten and control childbirth.”³⁷⁶ Systems that facilitate childbirth on a predictable schedule, with heavy reliance on inductions and planned cesareans, enable hospitals to plan their staffing needs accordingly and reduce staff at low-volume times.³⁷⁷ Faster turnover of delivery rooms and briefer use of operating rooms allow more births and create more revenue for hospitals and providers, incentivizing interventions to accelerate labor and delivery.³⁷⁸

Cesareans are more lucrative procedures than vaginal births. They require longer hospital stays and more intensive care, thus encouraging hospitals and providers to promote their use.³⁷⁹ Elective cesareans require a lower time commitment for physicians and ensure that physicians are compensated for their role in the birth.³⁸⁰ This is in contrast to vaginal births, which can span multiple staff shifts and result in another provider earning the payment for delivery.³⁸¹ The perverse incentives of the health care financing system have therefore served not only as a barrier to the implementation of evidence-based maternity care, but also as a powerful inducement for hospital administrators and providers to find additional ways of meeting their economic goals.³⁸² Evidence-driven reform strategies are ill-suited to address these economic incentives underlying hospital maternity care.

374. See, e.g., Atul Gawande, *The Cost Conundrum*, THE NEW YORKER, June 1, 2009, at 36, <http://www.newyorker.com/magazine/2009/06/01/the-cost-conundrum> (discussing factors that lead to overutilization of health care services and interfere with quality improvement and cost reduction initiatives).

375. Beyond the specific financial incentives (and disincentives) discussed here, there is reason to believe that greater support for physiologic birth might reduce expenditures on NICU services, such as services needed to treat respiratory problems in newborns with medically unnecessary cesareans. See SAKALA & CORRY, *supra* note 13, at 60.

376. *Id.* at 8.

377. *Id.* at 60 (noting that maximizing the number of births occurring on weekdays is preferable because it is easier to hire and retain nursing staff for weekday shifts). Research shows that birth in the United States takes place disproportionately during non-holiday weekday hours, suggesting that some inductions and cesareans are scheduled for reasons other than maternal and newborn welfare. *Id.*

378. *Id.*

379. See THOMSON HEALTHCARE, THE HEALTHCARE COSTS OF HAVING A BABY 6 (2007), <http://www.kff.org/womenshealth/upload/whp061207othc.pdf> (finding that employer-sponsored insurance plans paid an average additional \$2,090 in hospital bills for cesareans in 2004 compared with vaginal births).

380. SAKALA & CORRY, *supra* note 13, at 60.

381. *Id.*

382. See generally Elizabeth R. Kukura, *Giving Birth Under the ACA: Analyzing the Use of Law to Improve Health Care*, 94 NEB. L. REV. 799, 840–46 (2016) (discussing the need for reimbursement reform in maternity care and the contributions of the Affordable Care Act to restructuring health care payment systems).

2. Tort Law as an Impediment to Evidence-Based Maternity Care

Even where individual physicians are able to resist the impact of market pressures and financial incentives on their approach to managing childbirth, they are nevertheless affected by the shifting standards of care as other maternity care providers alter their practices.³⁸³ The U.S. system of tort liability encourages adherence to current standards of care, even when they are not supported by the best available evidence. In a malpractice suit, a physician is judged according to the practices of his colleagues in the medical community, whether or not those practices accord with the scientific literature.³⁸⁴ Thus, because physicians want to limit their malpractice liability, the law of torts acts as a disincentive for physicians to provide evidence-based maternity care.³⁸⁵

Tort law's disincentive function is compounded by ACOG's professional guidance, which may lack support in the research literature or depart from an evidence-based standard of care. ACOG is a professional organization that serves its obstetrician and gynecologist members and protects their interests.³⁸⁶ It is not a research or scientific organization, but the fact that it claims over 57,000 members means that the professional guidance it issues for the benefit of its members can serve as evidence of the legal standard of care.³⁸⁷ For example, in 2003, ACOG updated its guidance on slow or stalled labor progress (dystocia), removing a list of explicit criteria for diagnosing dystocia before proceeding with a cesarean.³⁸⁸ This made it easier for obstetricians to encourage cesareans by using dystocia as a medical rationale without having to satisfy any specific criteria for the diagnosis. Such recommendations from ACOG lack strong scientific support but nevertheless influence practice and thus the standards governing legal liability.

Because the tort system may discourage the adoption of new scientific

383. The 2008 Childbirth Connection report notes that "providers appear to be responding more directly to unintended payment system incentives than they did in the past," citing market pressures, such as tightened reimbursement by insurance companies and increased malpractice insurance premiums, as a significant factor. SAKALA & CORRY, *supra* note 13, at 59.

384. See Nancy K. Kubasek, *Legislative Approaches to Reducing the Hegemony of the Priestly Model of Medicine*, 4 MICH. J. GENDER & L. 375, 396-97 (1997) (discussing how the reasonable physician standard strengthens control of the medical community and limits the ability of individual women to mount legal challenges against widespread but scientifically unsupported practices).

385. SAKALA & CORRY, *supra* note 13, at 61.

386. *The American College of Obstetricians and Gynecologists: About Us*, THE AM. COLL. OF OBSTETRICIANS & GYNECOLOGISTS, <http://www.acog.org/About-ACOG/About-Us> (last visited May 24, 2016) (noting that the American College of Obstetricians and Gynecologists, or ACOG, is a private "professional membership organization" with over 57,000 members). The American Congress of Obstetricians and Gynecologists, a companion organization formed in 2010, "focuses on socioeconomic, political, and grievance activities for its members." *Id.*

387. *Id.*

388. See generally, American Coll. of Obstetricians & Gynecologists Comm. on Practice Bulletins, *ACOG Practice Bulletin No. 49: Dystocia and Augmentation of Labor*, 102 OBSTETRICS & GYNECOLOGY 1445 (Dec. 2003).

evidence as the basis for clinical practice, evidence-driven advocacy strategies may have limited utility as a means of structural reform. By failing to remove incentives embedded in health care financing systems and tort liability, individual changes achieved through evidence-based appeals may improve the most visibly flawed parts of maternity care without achieving necessary systemic change.

IV. CONCLUSION

Health care for women in childbirth is complex. Medical interventions into the birthing experience are sometimes necessary and lifesaving; other times, they are counterproductive, hijacking the physiologic process and requiring an escalating amount of technology and treatment with little or no benefit. Childbirth in the United States is a high-tech, procedure-intensive endeavor that takes place almost exclusively in the hospital with a physician as the birth attendant. But this was not always the case, and the scientific research literature shows that the current medical-management model of childbirth should not be the norm. With the national cesarean rate nearing one-third of all births and rising poor maternal and infant health outcomes, maternity care advocates are engaged in much-needed work to improve the provision of health care to pregnant and birthing women and their babies. Now, more than ever, they have the benefit of a growing body of high-quality research on maternity care practices to support their advocacy.

Use of evidence-driven arguments to reform childbirth practices is strategic and effective, but such an approach is unlikely to achieve the transformative change sought by advocates who desire a new culture of birth as a normal, healthy, physiologic process. The shift from deference to professional physician expertise to deference to scientific expertise fails to address how the current maternity care system decenters the experiences of women as experts in their own bodies, pregnancies, and labor whose decision-making capacity should be prioritized. Evidence-based reform strategies depend on the existence of high-quality, well-designed research that supports the reformers' goals; the constraints of conducting such research within the existing medical paradigm of childbirth may preclude advocates from being able to obtain and leverage research results that support physiologic birth. Advocates should also be cognizant of the ways that financial incentives and legal constraints shape the provision of maternity care. These incentives require structural reform on a scale broader than what the principles of evidence-based medicine can accomplish.

Concerns about the potential of evidence-driven strategies to achieve the necessary changes in the laws, policies, and practices governing childbirth should encourage advocates to maintain a multi-faceted approach. Robust and meaningful informed consent and the right to refuse medical treatment are well-established legal rights that lose their meaning for many women in childbirth; maternity care reform should include the systemic changes necessary to protect

these rights. Advocates for a less-medicalized approach to birth would also be wise to encourage societal reconsideration of the inherent and inescapable risk involved in childbirth. No amount of intervention can eliminate this risk completely, but the aggressive use of technology to manage birth gives the illusion that full control is possible and sets the stage for an ever-increasing reliance on medical intervention. Interrogation of other morality-based claims—such as the dignity of women in childbirth and the wasteful allocation of resources in the provision of health care—should also be part of the effort to change maternity care practices.

Scholars, advocates, and activists who understand birthing rights as an integral part of a broader women's rights and reproductive rights agenda have reason to be encouraged by recent developments in maternity care reform. This Article is not meant to suggest that advocates should abandon evidence-driven reform strategies altogether; rather, in sounding a note of caution about the potential limitations of evidence-based arguments for maternity care reform, the goal of this work is to encourage an even more nuanced conversation about how to improve this country's maternity care system, resulting in better health outcomes and a less contested culture of childbirth.