

Risk and Reputation: Obstetricians, Cesareans, and Consent

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ABSTRACT

When physicians performed cesarean sections in the nineteenth century, they customarily sought agreement from all present before proceeding. In contrast, after the introduction of electronic fetal monitoring in the late 1960s, obstetricians obtained permission for a cesarean by offering a choice that ensured consent—give birth by cesarean or give birth vaginally to a damaged or dead baby. This article argues that the manner in which physicians obtained consent for cesareans in the nineteenth century was one factor that kept the cesarean rate low, while the manner in which physicians obtained consent in the late twentieth and early twenty-first centuries was one factor driving up the cesarean rate. The dissimilar approaches to consent did serve a common purpose, however. Each preserved physicians' reputations. With the surgery likely to end in a woman's death in the nineteenth century, consensus ensured that a bad outcome would be a shared burden. And because the fetal monitor, in exaggerating the risks of vaginal birth, changed the nature of the malpractice climate for obstetricians, the late-twentieth-century approach to consent similarly protected physicians. As one early twenty-first-century obstetrician quipped, "You don't get sued for doing a C-section. You get sued for not doing a C-section."

KEYWORDS: caesarean section, obstetrics, obstetric practice, obstetricians, consent, electronic fetal monitor

Between 1965 and 1987, the cesarean section rate in the United States rose 455 percent—from 4.5 to 25 percent of births.¹ Today, almost one in three births is by cesarean.²

- 1 Paul J. Placek and Selma M. Taffel, "Recent Patterns in Cesarean Delivery in the United States," *Obstetrics and Gynecology Clinics of North America* 15 (December 1988): 607-27; Michelle J. K. Osterman and Joyce A. Martin, "Trends in Low-risk Cesarean Delivery in the United States, 1990-2013," *National Vital Statistics Reports* 63 (November 5, 2014), available online at http://www.cdc.gov/nchs/data/nvsr/nvsr63/nvsr63_06.pdf, accessed April 11, 2017.
- 2 American obstetricians performed 1,272,503 cesareans in 2015. For current cesarean rates see <http://www.cdc.gov/nchs/fastats/delivery.htm>.

These figures contrast sharply with earlier eras. Physicians performed cesareans in the nineteenth and early twentieth centuries extremely rarely; even in the 1940s and 1950s the nationwide average was only 2.5 percent of births.³ A lengthy series of medical innovations contributed to the postwar 2.5 percent rate. Cesarean surgery went from a notoriously dangerous medical procedure in the nineteenth century to a largely safe one by the mid-twentieth century thanks to anesthesia, first used in obstetrics in 1847; asepsis, introduced into surgical practice in the 1880s; improved surgical techniques specific to cesareans in the late nineteenth and early twentieth centuries; and antibiotics and banked blood made widely available after WWII.⁴ In other words, the cesarean rate increased—from negligible to measurable—in the 1940s and 1950s for medically justifiable reasons. What is less clear is why the once dreaded procedure became, by the first decade of the twenty-first century, the most commonly performed surgery in the

- 3 Between the early nineteenth century and 1871, Robert Harris, a physician, medical statistician, and prodigious collector of data on cesarean sections, found evidence of 85 cesareans performed in the United States. Robert Harris Collection, Wangenstein Historical Library of Biology and Medicine, University of Minnesota, Minneapolis, hereinafter referred to as the Harris Collection. Cesarean birth rates in the 1940s and 1950s are estimates based on local rates. Cesareans at Duke University Hospital in Durham, North Carolina, for example, decreased slightly between 1930 and 1950, from 2.5 to 2.3 percent of births. *Obstetrics Logs*, Book 1 January 1930-July 1932, Book 5 September 14, 1940-December 1941, and Book 15 August 29, 1949-June 17, 1950, Duke University Medical Center Archives, Durham, North Carolina. Other estimates set the rate at between 1 and 6 percent nationwide, although most areas of the country hovered closer to the low end. Between 1941 and 1949 at Johns Hopkins Hospital, for example, doctors performed 1,000 cesareans in 21,739 deliveries, a rate of 4.6 percent; doctors at Hopkins admitted being on the high end of the spectrum. In Alabama the overall rate was 1.32 percent from 1945 to 1947. Nicholson J. Eastman, *Williams Obstetrics* (New York: Apple-Century-Crofts, Inc., 1950), 1099-1101.
- 4 For more on the history of obstetric anesthesia, see Jacqueline H. Wolf, *Deliver Me from Pain: Anesthesia and Birth in America* (Baltimore: Johns Hopkins University Press, 2009). The first sterile surgical room opened in the United States in 1889 at Johns Hopkins Hospital. For more on asepsis during childbirth see Sherwin B. Nuland, *The Doctors' Plague: Germs, Childbed Fever, and the Strange Story of Ignác Semmelweis* (New York: W. W. Norton, 2003), 179; Irvine Loudon, *The Tragedy of Childbed Fever* (Oxford: Oxford University Press, 2000), 130-33. Improved surgical techniques for cesareans in the late nineteenth century included Italian obstetrician Edorado Porro's removal of the uterus and ovaries after the surgery to prevent infection and hemorrhage and German obstetrician Max Sänger's suturing of the uterus after the surgery. Prior to Sänger, physicians sutured only the abdominal wound. See Edwin Bradford Cragin, *Obstetrics: A Practical Text-Book for Students and Practitioners* (Philadelphia and New York: Lea & Febiger, 1916), 788; Joseph B. DeLee, *The Principles and Practice of Obstetrics* (Philadelphia and London: W. B. Saunders Company, 1918), 1027; W. S. Playfair, *A Treatise on the Science and Practice of Midwifery with Notes and Additions by Robert P. Harris* (Philadelphia: Leas Brothers & Co., 1889), available online at <http://babel.hathitrust.org/cgi/pt?id=nnc2.ark:/13960/t2697x784;view=1up;seq=13>, accessed July 31, 2017), and Theophilus Parvin, *The Science and Art of Obstetrics* (Philadelphia: Lea Brothers & Co., 1890), 680-687. Sänger's 200-page book, written in German, published in 1881, and devoted wholly to cesarean surgery, was titled *Der Kaiserschnitt* (The Cesarean). His 1903 obituary ended with this high praise: "whatever minor services to science and to humanity may shrink into insignificance, or perhaps be forgotten, one great achievement will stand out in all future histories of obstetrics and gynecology by the association of the name of Max Sänger with the Conservative Caesarean Section." Obituary Notice: Max Sänger, *The Journal of Obstetrics and Gynaecology of the British Empire* 3 (1903): 292-294, quote on 294. For the story of the first antibiotic, made available to civilians after WWII, see Eric Lax, *The Mold in Dr. Florey's Coat: The Story of the Penicillin Miracle* (New York: Henry Holt and Company, 2004.) For more on the history of the post-WWII global blood industry, see Douglas Starr, *Blood: An Epic History of Medicine and Commerce* (Great Britain: Little, Brown and Company, 1999), 121-143, 185-204.

United States.⁵ This article examines one of the factors that contributed to the precipitous increase in cesareans that began in the late 1960s—the link between the electronic fetal monitor, malpractice suits encouraged by the monitor, and a change in the way physicians obtained consent for the surgery.

Certainly cesareans are appropriate and necessary at times. In cases of cord prolapse, placenta previa, placental abruption, and persistent transverse lie of the fetus, the procedure can be life-saving. These life-threatening conditions are rare, however. Each occurs in fewer than one percent of births.⁶ In contrast, there are sound reasons to anticipate that a birth is likely to go well: 99 percent of the time there is only one fetus in the womb, 97 percent of infants deliver head first, and 97 percent of fetuses have no major structural or genetic abnormalities.⁷ Cesareans thus seem to be occurring far more often today than is medically necessary.⁸

Although the factors contributing to today's high cesarean rate are numerous and complex,⁹ I argue in this article that how obstetricians have sought consent for cesareans since the advent of the fetal monitor has been one significant factor. While obtaining consent in a collaborative fashion helped maintain a low cesarean rate in the nineteenth century, obstetricians' method of obtaining consent today has convinced

- 5 In 2010, statisticians announced that cesarean section had become, at about 1.4 million cesareans annually, the most commonly performed surgical procedure in the United States, surpassing surgical abortion. Denise Grady, "Caesarean Births Are at a High in the U.S.," *New York Times*, March 23, 2010.
- 6 Cord prolapse occurs in from .14 to .61 percent of births—most articles cite a .28 percent rate. See D. Uygur, S. Kis, R. Tuncer, F. S. Özcan, S. Erkaya, "Risk factors and infant outcomes associated with umbilical cord prolapse," *International Journal of Gynecology & Obstetrics* 78 (August 2002): 127-30. Placenta previa occurs in about .4 percent of births. A. S. Faiz and C. V. Ananth, "Etiology and risk factors for placenta previa: an overview and meta-analysis of observational studies," *The Journal of Maternal-Fetal & Neonatal Medicine* 13 (2003): 175-190. Placental abruption occurs in .65 percent of births. Cande V. Ananth and Allen J. Wilcox, "Placental abruption and perinatal mortality," *American Journal of Epidemiology* 153 (2001): 332-337. Transverse lie occurs in .12% of births. Mikael Gardberg, Yana Leonova, and Eero Laakkonen, "Malpresentation—impact on mode of delivery," *ACTA Obstetrica et Gynecologica Scandinavica* 90 (2011): 540-542.
- 7 Thomas H. Strong, *Expecting Trouble: The Myth of Prenatal Care in America* (New York: New York University Press, 2000), 3.
- 8 The World Health Organization (WHO) has long claimed that the optimal cesarean rate is between 5 and 10 percent of births, and that any rate above 15 percent is likely to do more harm than good. Fernando Althabe and José M. Belizán, "Caesarean Section: The Paradox," *The Lancet* 368 (2006): 1472-73.
- 9 Other factors in the medical culture that have contributed to the precipitous increase in cesareans include: the advent of new diagnostic tools (the Friedman curve in the 1950s and the Bishop score in the 1960s) which redefined "normal" labor and birth and, in doing so, made cesarean births more likely; machinery, in addition to the fetal monitor, such as sonographic equipment, that changed the nature of the relationship between the fetus and the outside world; the fee-for-service system that encourages American physicians to overtreat their patients; an insurance system that reimburses obstetricians more than twice as much to perform an uncomplicated cesarean than to attend an uncomplicated vaginal birth; and changes in the training of obstetric residents that focused on recognizing and alleviating dubious risks rather than learning techniques to nurture vaginal birth. In the culture at large, the faith in medical technology that came with the antibiotic age, the American penchant for scheduling and time-keeping, and the sweeping change in women's lives beginning in the 1970s converged with the changes in medical culture to normalize cesarean section and pathologize vaginal birth. The author discusses these and other factors contributing to the increase in cesarean sections in the United States in her book, *Cesarean Section: An American History of Risk, Technology, and Consequence* (Johns Hopkins University Press, forthcoming in 2018).

women that vaginal birth tends to be problematic, and that cesarean surgery is often the best remedy for any problem. Initially, as the cesarean rate began its precipitous rise in the early 1970s, many mothers questioned the need for their surgeries, some challenging obstetricians publicly.¹⁰ As the surgery became more common, however, doctors steered women to the view that cesareans are routinely necessary, and mothers' questions ebbed.

NINETEENTH-CENTURY CESAREANS AND "THE CONCURRENCE OF THE PATIENT"

Obstetricians avoided cesarean surgery in the nineteenth century, if at all possible. The reason for their aversion was obvious. The maternal death rate after a cesarean was so high—exceeding 50 percent in the United States and approaching 90 percent in some European countries¹¹—that the surgery, in the words of one physician, was tantamount to “sacrificial midwifery.”¹² With postpartum infection and hemorrhage likely side effects, and no effective treatment for either condition until after WWII, a cesarean section was usually deadlier than the condition it sought to alleviate.

Not wanting to shoulder the burden of a likely bad outcome, when the operation occurred in a woman's home, as almost all cesareans did before the 1880s, doctors did not proceed until they had obtained, not only the consent of the patient, but also the concurrence of everyone present. In 1827, at the first cesarean surgery in the United States to be documented in a medical journal,¹³ the physician decided the woman's life was likely lost anyway. As he wrote three years later in the *Western Journal of the Medical and Physical Sciences*, the surgery offered “the only means I could conceive of relief.” He shared his view with everyone present: the exhausted, semi-conscious patient; the two midwives who had summoned him for help; and several friends and family members of

10 Some of those stories appear in Nancy Wainer Cohen and Lois J. Estner, *Silent Knife: Cesarean Prevention and Vaginal Birth After Cesarean (VBAC)* (Massachusetts: Bergin & Garvey Publishers, Inc., 1983), xvi-xviii.

11 In the 85 cesareans performed in the U.S. between the early nineteenth century and 1871, 44 women died—a mortality rate of almost 52 percent. Bound, handwritten journal, *The Caesarean Operations of the United States* by Robert P. Harris, M.D. Philadelphia 1879, Harris collection. Francis Ramsbotham, a renowned London obstetrician, reported in 1841 that 90 percent of the cesareans performed in the British Isles had ended in maternal death. Francis H. Ramsbotham, *The Principles and Practice of Obstetric Medicine and Surgery, in Reference to the Process of Parturition* (London: John Churchill, Princes Street, Soho, 1841), 225.

12 Robert Barnes, *Lectures on Obstetric Operations, Including the Treatment of Haemorrhage, and Forming a Guide to the Management of Difficult Labor* (J. and A. Churchill, 1871), 312, 315.

13 This was not the first cesarean performed in the United States but rather the first one formally reported to the medical community. At least three other, unpublished cesareans occurred between “early” in the nineteenth century—the exact dates are unknown—and 1825. See Harris, “The Caesarean Operations of the United States.” According to the historian of medicine, Fielding H. Garrison, the first cesarean section in the U.S. occurred in rural Virginia at an unspecified time and was unreported for many years. The case is not recorded in Harris's journal so there is no means of corroborating the claim. An account of this surgery, along with accounts of other early cesareans in the U.S. and Europe, can be found in Alan Frank Gutmacher, *Into This Universe: The Story of Human Birth* (New York: The Viking Press, 1937), 251-267.

the patient. Everyone agreed to the plan “as affording some hope for life,” however slim. And defying the odds, the woman, although not her baby, survived.¹⁴

Other articles written by physicians about the cesareans they performed in women’s homes confirm that doctors did not proceed without broad agreement. In 1868, after a woman had labored for more than five days, Dr. D. Warren Brickell of New Orleans arrived at the patient’s bedside to assist two other doctors and a midwife. After a lengthy physical examination, Brickell suggested a cesarean, “but some great fears of Caesarean section being expressed,” he tried forceps first, followed by a craniotomy, to no avail. Only then was it “unanimously agreed that Caesarean section should be resorted to, and the patient and her friends readily assented.”¹⁵ In an 1881 case, a woman with a misshapen pelvis suffered a stillbirth, followed by two miscarriages. When she became pregnant for the fourth time, a doctor suggested cesarean surgery but “the patient, taking advice of some female friends at this juncture, declared her unwillingness to have any interference. We could do nothing but wait.” Eventually, she did agree to the surgery and gave birth to her first living child.¹⁶

As long as virtually all births, including cesarean births, occurred in women’s homes, physicians sought the explicit permission of the patient before performing any procedure, especially one as risky as cesarean surgery. As Francis H. Ramsbotham, the premiere obstetrician in London in the mid-nineteenth century, explained, “no operation in what is called *pure surgery*, is undertaken without the concurrence of the patient, and I do not know why we should place the obstetric branch of the science on a different footing.”¹⁷ Walter Channing, the most renowned obstetrician in Boston in his day, agreed. He never administered treatment without the permission of the laboring woman. During a particularly difficult birth in 1857, Channing proposed applying forceps, described in that era as an “operative delivery.” He explained why he believed forceps was necessary: “The labor was proceeding slowly. Suddenly contractions ceased. There was slight haemorrhage. Sinking rapidly followed.” Yet the patient rejected his proposal. “She said she was perfectly easy and would sooner die than submit to any operation. . . She died in a few hours.”¹⁸

Doctors only afforded white women the courtesy of consultation, however. Before the Civil War, most, if not all, black women undergoing cesarean surgery were slaves; they had neither voice nor their own home. In these cases, physicians consulted only with women’s owners before proceeding. In 1863, immediately after one black woman’s second birth by cesarean due to a deformed pelvis likely caused by rickets in childhood, her owner instructed the attending physician to remove her ovaries to prevent a

14 John L. Richmond, “History of a Successful Casarean [sic] Operation,” *Western Journal of the Medical and Physical Sciences* (January-March 1830): 485-489, quotes on 486.

15 D. Warren Brickell, “A Successful Case of Caesarean Section,” *New Orleans Journal of Medicine* 21 (1868): 454-466, quotes on 454, 456, and 457.

16 S. S. Lungren, “A Case of Cesarean Section Twice Successfully Performed on the Same Patient, with Remarks on the Time, Indications, and Details of the Operation,” *American Journal of Obstetrics and Diseases of Women and Children* 14 (1881): 78-94.

17 Ramsbotham, (1849 edition), 191.

18 Amalie M. Kass, *Midwifery and Medicine in Boston: Walter Channing, M.D. 1786-1876* (Boston: Northeastern University, 2002), 81.

third pregnancy. The child survived; the mother died ten days later of peritonitis. The doctor attributed the deadly infection to the procedure ordered by the mother's owner—"to render her barren"—rather than to the cesarean.¹⁹

In subsequent years, if a cesarean occurred in the hospital, and by the early twentieth century most did, the level of consent obtained by physicians from either black or white women is less clear. Rather than describe the explicit decision-making process in the medical record, doctors used the passive voice. A physician at the Philadelphia Lying-In Charity Hospital in 1900, for example, noted simply: "An operation was decided upon."²⁰ A few years later at the Manhattan Maternity and Dispensary a similar notation appeared: "Profuse hemorrhage. . .Caesarean section was decided upon."²¹

ONGOING CAUTION: "CESAREANS WERE A SUPER BIG DEAL"

Whether in the home or hospital, cesareans remained rare well into the twentieth century. Obstetricians continued to take pride in the "conservative obstetrics" that allowed them to avoid a procedure as drastic as cesarean surgery.²² As J. Whitridge Williams, head of the Department of Obstetrics at Johns Hopkins University, admonished his students in 1926: "any one with two hands and a few instruments can do a cesarean section, but. . .it frequently requires great intelligence not to do it."²³ Even in the late 1940s, when, at 2.5 percent of births, physicians were performing more cesareans than previously, obstetricians still boasted of their ability to avoid the surgery. One physician, treating a patient suffering from "slight premature separation of the placenta," consulted a local surgeon. The surgeon's response outraged him: "[he] advised Section without even doing a pelvic examination!" The obstetrician ignored the advice and the woman "delivered uneventfully." He was pleased that his intuition had been affirmed: "It took a little courage to say no operation in face of all the knives which were rattling around."²⁴

In the 1950s, a California obstetrician was similarly inclined to eschew cesareans. He was infuriated that a mother of five, who had given birth vaginally to each of her children, had been forced to deliver her sixth baby by cesarean due to a physician's diagnosis of a large fetal head and a small maternal pelvis. The California doctor complained, "I don't understand how in the hell she could deliver a 9+ lb baby previously & then have cephalopelvic disproportion. . .with this pregnancy." He was certain the stalled labor had been medically induced—by an almost 400 mg dose of Demerol.²⁵

19 Harris, *The Caesarean Operations*, Case 63.

20 Philadelphia Lying-In Charity Patient Charts, Volume 18 (1899-1900), birth on 1/30/1900, Pennsylvania Hospital Archives, Philadelphia, PA.

21 Manhattan Maternity and Dispensary Cesarean Section Cases, July 30, 1905 to December 11, 1912, Birth #93 in 1905, Medical Center Archives of New York-Presbyterian/Weil Cornell Hospital, New York, NY.

22 Edwin B. Cragin, "Conservatism in Obstetrics," *New York Medical Journal* 104 (July 1, 1916): 123.

23 J. Whitridge Williams, "Caesarean Section at the Johns Hopkins Hospital," *Northwest Medicine* 25 (October 1926): 519-526, quote on 526.

24 Letter from Samuel S. Lambeth to Nick, October 13, 1949, Francis Bayard Carter Papers, Duke University Medical Center Archives, Durham, NC, hereinafter referred to as Carter papers.

25 Letter from James Kowchak, Fresno County Hospital, Fresno, Calif. to Dr. Carter, undated, response dated November 19, 1952, Carter Papers.

Doctors' efforts to avoid cesareans continued well into the following decade. A retired obstetrician explained that when he was a resident in the late 1960s, if a woman had placenta previa he and his colleagues constructed a "double set-up" in the delivery room. They gathered "nurses, and all the instruments. . . for the cesarean, and. . . also had a vaginal delivery table in the room." They did not perform cesareans until they exhausted other options. "Cesareans were a super big deal," he explained.²⁶

"TUESDAY-THURSDAY-AND-SATURDAY OBSTETRICIANS"

Even as American obstetricians' attitudes toward cesarean surgery remained largely unchanged from the early nineteenth century through the 1960s, the training of obstetricians, the treatments they offered, and how (or if) they obtained patients' consent for those treatments, underwent significant change. Abraham Flexner's blistering 1910 criticism of the inadequacy of American medical education initiated the changes. In what eventually became known as the Flexner Report, Flexner reserved his harshest condemnation for the neglect of obstetrics in medical schools.²⁷

With disregard for obstetrics still a problem a decade after Flexner issued his assessment, the American Medical Association's Council of Medical Education stepped in to remedy the deficiency. In 1921, the Council assembled a Committee on Graduate Training in Gynecology and Obstetrics. The Committee eventually recommended the establishment of three-year, hospital-based residencies in obstetrics and gynecology for training purposes. Founded in 1930, the American Board of Obstetrics and Gynecology (ABOG) became the third medical specialty examining board in the United States, after ophthalmology, in 1916, and otolaryngology, in 1924.²⁸

After creation of the ABOG, the growth of residencies in obstetrics and gynecology was impressive—from 104 slots at 48 hospitals in 1935, to 773 positions in 255 hospitals in 1945.²⁹ As obstetricians came to enjoy the advantages of the hospital setting, the

26 Interviews of retired obstetricians by author, Chicago physician interviews #12 in Avon, IN, October 1, 2012, and #8 in Chicago, October 5, 2012, transcribed from digital tape recordings. Since 1996, the author has conducted interviews with retired obstetricians, practicing obstetricians, obstetric residents, and family physicians who made obstetrics part of their practice. Since 2004, the author has also interviewed mothers who gave birth by cesarean. The author recruited physicians by emailing all obstetricians and obstetric residents at large hospitals in Chicago and at local hospitals and obstetric practices in rural Ohio. The author recruited mothers through second parties and by snowball sampling. To achieve an urban/rural representation of experiences, interviews of both mothers and physicians took place in two locales: Chicago and rural Ohio. The physicians interviewed received their training between the late 1930s and the 2010s; the mothers gave birth by cesarean between 1971 and the 2010s. The Ohio University Institutional Review Board required that all interviews be anonymous.

27 Abraham Flexner, *Medical Education in the United States and Canada: A Report to the Carnegie Foundation for the Advancement of Teaching* (Carnegie Foundation for the Advancement of Teaching, 1910), 117-18.

28 Clyde L. Randall, *Developments in the Certification of Obstetricians and Gynecologists in the United States, 1930-1980: The American Board of Obstetrics and Gynecology* (American Board of Obstetrics and Gynecology, 1989); Paul Starr, *The Social Transformation of American Medicine: The Rise of a Sovereign Profession and the Making of a Vast Industry* (Basic Books, 1982), 356-57; Rosemary Stevens, *American Medicine and the Public Interest* (Yale University Press, 1971), 202.

29 "Hospitals Approved for Residencies in Specialties," *Journal of the American Medical Association* 107 (August 29, 1936): 703-15; "Approved Residencies and Fellowships for Veteran and Civilian Physicians," *Journal of the American Medical Association* 131 (August 17, 1946): 1322-54.

primary site of childbirth transferred from laboring women's homes to hospitals. While fewer than 5 percent of births occurred in hospitals in 1900, half of all births occurred there by 1939.³⁰ In 1954, when 95 percent of births took place in the hospital, 438 American hospitals hosted obstetric residency training programs.³¹ In their new work-site, obstetricians seized control in a way they were unable to in women's homes, creating a protocol in hospitals that did not require patients' consent.³²

The descriptions from obstetricians of routine practice in the 1940s, 1950s, and 1960s capture the contours of the resulting changes.³³ One obstetrician recalled that during his residency immediately after WWII at Chicago's behemoth Cook County Hospital, he regularly "cleared out a labor line"—comprised of 20 women, 10 on each side of the ward—"by just going along and giving each one a little stab [of Pitocin]. . .right under the skin, usually in any part, their hands, their butts, their thighs. . .I would induce all these women into full labor and call a whole corps of interns down to deliver these kids. All of a sudden, seven births would take place at one time."³⁴ After going into private practice alone—and as the father of two young children—he ensured both reliable office hours and family time on Sundays by earmarking Wednesdays and Saturdays as "delivery days." Using Pitocin, he explained, "basically you could get the bulk [of births] out of the way and not have to worry about never being home" or canceling appointments with other patients.³⁵ By 1957, the practice had become common enough throughout the country that *McCall's* magazine ran an article denouncing the "Tuesday-Thursday-and-Saturday obstetricians" who largely attended only pre-scheduled births.³⁶

The Chicago physician stuck to his routine for forty years. On designated delivery days, he performed gynecological surgeries in the early morning while nurses "prepped" his pre-scheduled obstetric patients. "The prep"—a term used universally by American obstetricians in the postwar era—included shaving pubic hair and

30 Judith Walzer Leavitt, *Brought to Bed: Childbearing in America, 1750-1950* (New York: Oxford University Press, 1986), 268-9.

31 1954 Report of the Assistant Secretary, American Board of Obstetrics and Gynecology, Carter Papers.

32 A prototypical medical decision-making strategy in obstetrics is the "maximin" strategy in which obstetricians take routine, aggressive preventive measures during all births to prevent bad outcomes in a slim minority of births. Nancy Y. Rhoden, "Informed Consent in Obstetrics: Some Special Problems," *Western New England Law Review* 9 (1987): 67-88. Yet there is no evidence that the maximin strategy achieves better results. See H. Brody and J.R. Thompson, "The Maximin Strategy in Modern Obstetrics," *Journal of Family Practice* 12 (June 1981): 977-86. For more on women's complaints that informed consent has been inconsistently implemented during childbirth, see Holly Goldberg, "Informed Decision Making in Maternity Care," *Journal of Perinatal Education* 18 (Winter 2009): 32-40. Judith Walzer Leavitt was the first to argue that women controlled birthing practices until birth moved to the hospital. See Leavitt, *Brought to Bed*.

33 For more descriptions of obstetricians' postwar hospital protocols see Wolf, *Deliver Me from Pain*, 105-135; Judith Walzer Leavitt, *Make Room for Daddy: The Journey from Waiting Room to Birthing Room* (University of North Carolina Press, 2009), 21-47; and Suzanne Arms, *Immaculate Deception: A New Look at Women and Childbirth* (Bantam Books, 1975), 62-106.

34 Interview by author with retired obstetrician, Chicago area, 12 July 1996, transcribed from tape recording.

35 *Ibid.*

36 "The doctor talks about babies by appointment," *McCall's* 84 (January 1957): 4, 81.

administering an enema. “Then I would come from the operating room and would start them off with Pitocin. All of them.”³⁷ After administering “the pit,” he “twilighted” mothers using an injection of scopolamine and Demerol, re-administering the mixture as needed throughout labor.³⁸ As first-stage labor ended, he dispensed a dose of nalorphine to mitigate the newborn’s inevitable respiratory distress. “Because it was the scope,” he explained, using the medical slang for scopolamine, “that really smothered the baby down.” After moving the mother from labor to delivery, he administered general anesthesia, greased the pelvic canal with antibacterial soap, performed an episiotomy, and applied forceps.³⁹

Women confirmed this type of routine, as well as their inability to refuse any of its components. At the behest of the editors of the *Ladies’ Home Journal* in 1958, mothers sent letters to the magazine describing their recent births. An article described the letters, under the dramatic headline, “*Journal Mothers Report on Cruelty in Maternity Wards.*” One woman characterized maternity care as a series of “assembly line techniques.” Another protested, “They give you drugs, whether you want them or not.” A mother from Georgia complained, “I was helpless and at their mercy.”⁴⁰

Laboring women voiced similar grievances in ensuing years. One mother, who gave birth in Boston in 1979, refused fetal monitoring, “but the staff insisted I have this before I could use the birthing room.” Because she had looked forward to using the birthing room, nurses’ insistence that she first consent to the monitor was tantamount to coercion. Compounding the unpleasantness, the birthing room was not the positive experience the expectant mother had envisioned. She was forced to labor on her back “strapped to that damn monitor.” Eventually, the doctor cut an episiotomy, “even though I begged and pleaded not to have one.”⁴¹ As another mother said of her hospital birth at around the same time: “nobody even implied that I had a right to question or refuse these procedures.”⁴²

This autocratic approach included the relatively rare cesarean section. One woman, who gave birth to her first child in 1971, entered the hospital in spontaneous labor.

37 July 12, 1996 interview.

38 For the history of “twilight sleep,” see Wolf, *Deliver Me from Pain*, 44-72.

39 July 12, 1996 interview. Feminist scholars have documented the relatively recent medical regimentation of childbirth. See, for example, Barbara Katz Rothman, *In Labor: Women and Power in the Birthplace* (New York and London: W. W. Norton & Company, 1991), 29-77.

40 Gladys Denny Shultz, “*Journal Mothers Report on Cruelty in Maternity Wards,*” *Ladies’ Home Journal*, May 1958, 44-45, 152-55.

41 Gayle Smith, “Angry and Happy at the Same Time,” in Janet Isaacs Ashford, *Birth Stories: The Experience Remembered* (Trumansburg, New York: The Crossing Press, 1984), 101-106, quotes on 103 and 105.

42 Deborah Regal, “Home Birth After Two Cesareans,” in Ashford, 124-129, quote on 124. That mothers are not given the opportunity to consent to treatments during labor is implied by the conclusions of the “Listening to Mothers” surveys conducted by Childbirth Connection in partnership with Lamaze International. The national survey of U.S. women who gave birth in 2005 found that most mothers believed in the value of avoiding unnecessary medical interference but were nevertheless subjected to a broad array of interventions and were poorly informed about their potential complications. See Eugene R. Declercq, Carol Sakala, Maureen P. Corry, and Sandra Applebaum, “Listening to Mothers II: Report of the Second National U.S. Survey of Women’s Childbearing Experiences,” *Journal of Perinatal Education* 16 (Fall 2007): 9-14.

Fetal monitors had not been introduced there yet, so nurses periodically checked her baby's heartbeat with a fetal stethoscope. One of the nurses, unable to detect the heartbeat, summoned a colleague who could not find the heartbeat either. Doctors decided to perform a cesarean section. They did not disclose their plan to the patient, however. Instead, they informed her husband. While someone did ask the patient to sign a consent form, no one told her what she was signing and she did not ask. As she explained years later, she was in labor. Nothing going on around her, or being done to her, was ordinary. Someone asked her to sign something, she signed it. When an orderly wheeled her into the operating room, she was baffled. "I'm going, like, 'what's happening?'" A doctor told her, "We're going to operate." She was flabbergasted. "WHY?" Even then, no one offered an explanation. "They just ignored me." She assumed that either her baby had died or that she was dying. No one attempted to reassure her. "It was like I was a non-entity."⁴³

(MIS)INTERPRETING THE ELECTRONIC FETAL MONITOR

While doctors were able to skirt consent for most obstetric procedures from the late 1940s through the late 1960s, the electronic fetal monitor, introduced in 1968, initiated another approach to consent—an explicit, but intimidating, means of asking permission to perform cesarean surgery. Monitoring labor was nothing new; birth attendants had always practiced some form of surveillance during childbirth. By the mid-nineteenth century, physicians were using a stethoscope to listen intermittently to the fetal heart rate (FHR) during labor. They theorized that changes in the FHR indicated fetal distress and, depending on the continuity and severity of any change, a quick delivery with forceps might be required. Use of the stethoscope became so integral to obstetric care that, in the early twentieth century, obstetricians created the fetal stethoscope, or "fetoscope." By the 1950s, however, they had lost faith in their ability to accurately count the fetal heartbeat during labor—the normal FHR of a fetus can, at times, be twice that of an adult.⁴⁴

To replace human fallibility with the theoretical infallibility of a machine, Edward Hon, a Yale University obstetrician, began developing electronic techniques in the late 1950s to continually evaluate and record the FHR during labor. He unveiled his monitoring device a decade later.⁴⁵ The ability of Hon's electronic monitor to continually record every nuance of the fetal heartbeat seemed so demonstrably superior to intermittent use of the fetoscope that the fetal stethoscope eventually disappeared from maternity wards. "Yeah," noted one obstetrician who began her residency in 1991, "nobody does that anymore. Zero. I have seen one in Africa."⁴⁶

43 Interview of mother by author, March 13, 2012, Chicago Mother Interview #1, Chicago, IL, transcribed from digital recording.

44 Thomas P. Sartwelle, "Electronic Fetal Monitoring: A Bridge Too Far," *Journal of Legal Medicine* 33 (2012): 313-379.

45 Edward H. Hon, "The Electronic Evaluation of the Fetal Heart Rate," *American Journal of Obstetrics and Gynecology* 75 (1958): 1215-30; Edward H. Hon, "The Diagnosis of Fetal Distress," *Clinical Obstetrics and Gynecology* 3 (December 5, 1960): 860-873.

46 Interview by author of obstetrician, Chicago physician interview #2, October 1, 2012, transcribed from digital recording.

The theory behind Hon's device was persuasive. A machine constantly recording the fetal heartbeat as a mother labored would enable obstetricians to learn instantly of fetal distress, perform an emergency cesarean section, and save a child from the lifelong neurological consequences of in-utero asphyxia. Some obstetricians were so convinced of the inherent value of electronic monitoring that, before conducting any studies, they confidently predicted the machine would reduce by half intrapartum deaths, "mental retardation," and cerebral palsy.⁴⁷

Although Hon likewise was sure of the utility of his device, he did not intend it to be employed universally, at least not initially. Rather, he characterized electronic monitoring as "fetal intensive care," implying it should be used only in situations identified by a physician as potentially dire. Hon's early articles describing his monitor listed the conditions warranting continual fetal monitoring—including amnionitis, Rh sensitization, placental abruption, prolapsed cord, postmaturity, toxemia, and meconium staining.⁴⁸ Despite Hon's narrow inventory, however, many physicians and hospitals quickly decided that the continual monitoring of all births would be an aid to all fetuses, not just those facing tangible threats. The benefits of the universal employment of Hon's monitor seemed obvious, the harms nil.⁴⁹

Hospitals adopted the fetal monitor so rapidly that by the time the *American Journal of Obstetrics and Gynecology* published the first study of the device in 1976, in which researchers randomly assigned laboring women to be monitored either continually by electronic monitor or intermittently by fetoscope, half of all hospital births in the United States were already electronically monitored.⁵⁰ Even more significantly for continued growth in the use of the monitor, no matter the studies, by 1976 all but one of the country's hospital-based obstetric residency programs employed the technology.⁵¹ In other words, when the first study appeared, members of the newest generation of board-certified obstetricians had already spent considerable time learning how to interpret fetal monitor strips and had come to believe the machine was essential to their patients' well-being and their own success as physicians. Consequently, they were unconvinced when the article published in the *American Journal of Obstetrics and*

47 E.J. Quilligan and R.H. Paul, "Fetal monitoring: Is it worth it?" *Obstetrics & Gynecology* 45 (1975): 96-100.

48 Richard H. Paul and Edward H. Hon, "A Clinical Fetal Monitor," *Obstetrics and Gynecology* 35 (February 1970): 161-169; Edward H. Hon and Roy H. Petrie, "Clinical Value of Fetal Heart Monitoring," *Clinical Obstetrics and Gynecology* 18 (December 1975): 1-23. In 1973, Hon began to echo others around the country, speculating that universal monitoring might demonstrate the same benefit during both low- and high-risk labors. Edward H. Hon, "Current Concepts of Fetal Monitoring," *California Medicine* 119 (July 1973): 63-64.

49 Physicians do not perform routine testing for particular diseases and conditions because the less likely a disease will be present, the more likely a positive test result will be a false-positive. For any given test, as the prevalence of the disease or condition decreases, the positive predictive value of the test decreases. Fredric D. Frigoletto and Allan S. Nadel, "Electronic Fetal Heart Rate Monitoring: Why the Dilemma?" *Clinical Obstetrics and Gynecology* 31 (March 1988): 179-83.

50 "Labor-Saving Devices," *Newsweek*, February 6, 1976, 84.

51 H. David Banta and Stephen B. Thacker, "Assessing the Costs and Benefits of Electronic Fetal Monitoring," *Obstetrical and Gynecological Survey* 34 (1979): 627-642. By 1988, 70 percent of births in the United States were conducted under EFM surveillance. Frigoletto and Nadel.

Gynecology demonstrated that the monitor was not only no more effective than the fetoscope, it also increased the cesarean rate dramatically.⁵²

Specifically, whether the electronic monitor continually observed the FHR, or a physician checked on the fetus intermittently with a fetoscope, the newborns of both groups had effectively identical Apgar scores; the same rate of all forms of neurological disability; and equivalent numbers of stillbirths, neonatal and perinatal deaths, and admissions to the neonatal intensive care unit. The sole difference was that the electronically monitored group had a cesarean rate of 16.5 percent; the fetoscope group had a cesarean rate of 6.8 percent.⁵³ By then, however, most obstetricians were not comfortable attending births unless they had access to the information provided by Hon's device. In 1979, one obstetrician inadvertently admitted that bias. "The benefits of monitoring have already been so great," he insisted, "that it is unlikely that a truly objective double-blind study in either high or low-risk patients will—or should—ever be completed."⁵⁴

By then, physicians and hospitals had many reasons to adhere to monitor use. The device eliminated the need for some costly personnel. "It is easier," one obstetrician observed, "to buy 10 machines than pay 10 nurses."⁵⁵ An obstetrician who completed her residency in 1977 agreed. "What happened. . . is that institutions invested so much in the hardware that no matter what randomized trial came out showing the lack of benefit—and virtually all of them did. . . it was so engrained that we couldn't get rid of it."⁵⁶ The machine eventually became so central to obstetric practice that hospital maternity wards were reconfigured to accommodate central monitoring stations so residents could observe many fetal heartbeats simultaneously.⁵⁷

Yet, despite embrace of the machine, of the eight randomized trials conducted from 1976 through 1987—one involving almost 35,000 women—only one study revealed any advantage of the electronic monitor over the fetal stethoscope. That study found that neonatal seizures were twice as likely to occur among infants monitored intermittently with a fetoscope. The significance of that finding became unclear, however, in a

52 Albert D. Haverkamp, Horace E. Thompson, John G. McFee, and Curtis Cetrulo, "The evaluation of continuous fetal heart rate monitoring in high-risk pregnancy," *American Journal of Obstetrics and Gynecology* 125 (June 1, 1976): 310-320.

53 Ibid.

54 Helen I. Marieskind, *An Evaluation of Cesarean Section in the United States* (U.S. Department of Health, Education, and Welfare, June 1979), 195.

55 Chicago physician interview #8. Studies have noted the lower cost of the electronic monitor versus the fetoscope. See, for example, Harvey A. Gabert and Morton A. Stenchever, "The Results of a Five-Year Study of Continuous Fetal Monitoring on an Obstetric Service," *Obstetrics and Gynecology* 50 (September 1977): 275-79. Other studies have noted that some women found the human contact afforded by frequent fetoscope use more valuable than electronic monitoring. Miriam Orleans, "Lessons from the Dublin Study of Electronic Fetal Monitoring," *Birth* 12 (1985): 86.

56 Chicago physician interview #6, October 4, 2012.

57 No records track how many American hospitals have adopted central monitoring stations. Research indicates only that "many" have. See, for example, M. Withiam-Leitch, J. Shelton, and E. Fleming, "Central fetal monitoring: Effect on perinatal outcomes and cesarean section," *Birth* 33 (December 2006): 284-88 and Lisa Heelan, "Fetal Monitoring: Creating a Culture of Safety with Informed Choice," *Journal of Perinatal Education* 22 (Summer 2013): 156-65.

follow-up study. A review of infants who had survived for one year after a neonatal seizure found that infants in the fetoscope group and those in the EFM group had similar rates of abnormalities.⁵⁸ And all the studies confirmed the correlation between continual electronic monitoring and higher cesarean rates, three and more times higher in most studies.⁵⁹ Under the perpetual gaze of the monitor, formerly infrequent diagnoses of fetal distress had become commonplace, resulting in a precipitous increase in cesarean births.⁶⁰ Edward Hon summed up his colleagues' untoward reaction to his monitor: "They're dropping the knife with each drop in the fetal heart rate."⁶¹

An obstetrician who started medical school in 1947 knew why. He contrasted his use of the fetoscope with his response to the electronic monitor. He recalled that using a fetal stethoscope, "I would listen to the heart tones after contractions. And [in a roughly 20-year period] I may have done one, two that I can remember, cesarean sections because the heart tones went bad while I was listening." The electronic monitor, however, issued urgent, seemingly authoritative messages about the fetal heart rate frequently. "You see the abnormalities," he said, "and you jump at it."⁶² Another obstetrician recalled that the monitor "made you realize that there were these wide variations that you did not expect to see, these decreases in heart rate that you don't pick up with a stethoscope. . . . As we started seeing these dips and things all over. . . it helped increase the section rate a lot."⁶³ Similar reactions among doctors were soon apparent

- 58 P.J. Placek and S.M. Taffel, "One-sixth of 1980 U.S. births by caesarean section," *Public Health Reports* 97 (March-April 1982): 183; Albert D. Haverkamp and Miriam Orleans, "An Assessment of Electronic Fetal Monitoring," *Women and Health* 7 (Fall-Winter 1982): 115-34; Dermot MacDonald, Adrian Grant, Margaret Sheridan-Pereira, Peter Boyland, and Iain Chalmers, "The Dublin randomized controlled trial of intrapartum fetal heart rate monitoring," *American Journal of Obstetrics and Gynecology* 152 (July 1985): 524-539; Stephen B. Thacker, "The efficacy of intrapartum electronic fetal monitoring," *American Journal of Obstetrics and Gynecology* 156 (January 1987): 24-30; Kenneth J. Leveno, et al., "A Prospective Comparison of Selective and Universal Electronic Fetal Monitoring in 34,995 Pregnancies," *Obstetric and Gynecological Survey* 42 (March 1987): 155-157.
- 59 Obstetricians observed this immediately. At a Salt Lake City hospital, for example, where 84.4 percent of patients were monitored in 1971 and 1972, cesarean section rates increased from 3.5 percent before the monitor, to six percent during the first year the hospital used the technology, to 9.5 percent during the second year. Harvey A. Gabert and Morton A. Stenchever, "Electronic fetal monitoring as a routine practice in an obstetric service: A progress report," *American Journal of Obstetrics and Gynecology* 118 (February 15, 1974): 534-537. See also William A. Check, "Electronic fetal monitoring: how necessary?" *Journal of the American Medical Association* 241 (April 27, 1979): 1772-1774; Ian M. Kelso, R. John Parsons, Gordon F. Lawrence, Shyam S. Arora, D. Keith Edmonds, and Ian D. Cooke, "An assessment of continuous fetal heart rate monitoring in labor," *American Journal of Obstetrics and Gynecology* 131 (July 1, 1978): 526-532; Albert D. Haverkamp, Miriam Orleans, Sharon Langendoerfer, John McFee, James Murphy, Horace E. Thompson, "A controlled trial of the differential effects of intrapartum fetal monitoring," *American Journal of Obstetrics and Gynecology* 134 (June 15, 1979): 399-412; MacDonald, et al, "The Dublin randomized controlled trial.," Leveno, et al.; A. Prentice and T. Lind, "Fetal Heart Rate Monitoring During Labour—Too Frequent Intervention, Too Little Benefit?" *The Lancet* 2 (December 12, 1987): 1375-77.
- 60 Maged M. Costaine and George R. Saade, "The First Cesarean: Role of 'Fetal Distress' Diagnosis," *Seminars in Perinatology* 36 (2012): 379-83.
- 61 Quoted in Mary Lee Grisanti, "The Cesarean Epidemic," *New York Magazine*, February 20, 1989, 56-61.
- 62 Interview by author of retired obstetrician, July 19, 2004, Chicago, IL, transcribed from tape recording.
- 63 Chicago physician interview #8.

nationwide. “Every drop in the [fetal] heart rate precipitated a rush. . .to do a cesarean,” one obstetrician who finished her residency in 1977 remembered. “The rest is history.”⁶⁴

Some obstetricians, however, puzzled by the sudden need for an inordinate number of cesareans, began to scrutinize interpretations of the monitor’s messages. In one of several efforts around the country in the late 1970s, senior obstetricians at one large Chicago hospital measured umbilical cord blood gases after every birth and compared the results with obstetric residents’ interpretation of the monitor strip. And often the pH, oxygen, and carbon dioxide levels in the newborn’s blood bore no relationship to residents’ interpretation of the fetal monitor’s printouts. Attending physicians would then scold residents: “You did an emergency cesarean and the pH of the baby was perfectly normal! And it had Apgars of 9 and 9! So the next time you see that pattern, think!”⁶⁵

Difficulty interpreting electronic fetal monitor strips was by no means unique to that hospital. From the machine’s inception, reports in the medical literature indicated that the meaning of a fetal monitor tracing would not be easy to deduce. Hospitals regularly saw false positive rates of 40 percent for fetal hypoxia.⁶⁶ Initially, physicians assumed insufficient training was the problem. To assure more accurate interpretations, almost a decade before fax machines became workplace fixtures, some hospitals began to send monitor tracings by phone, via a Xerox 400 Telecopier, to experts waiting to confirm a diagnosis.⁶⁷ The endeavor failed to solve the problem, however. Even the most intensively trained specialists agreed on the meaning of a particular pattern only 68 percent of the time.⁶⁸ Misinterpretations remained so common that in 1984, the American College of Obstetricians and Gynecologists (ACOG) issued a terse warning: “Electronic fetal monitoring is highly sensitive but has low specificity.” That is, the monitor strip was adept at indicating when a fetus was tolerating labor well

64 Chicago physician interview #6.

65 Ibid. Systematic studies demonstrated the same phenomenon. The majority of excess cesarean surgeries performed under electronic monitoring seemed to be unnecessary—between 71 and 95 percent of the babies delivered by cesarean for presumed fetal distress, as indicated by a reading of the monitor strip, demonstrated no clinical signs of distress at birth. Prentice and Lind.

66 K. S. Koh, D. Greves, S. Yung, and L. J. Peddle, “Experience with fetal monitoring in a university teaching hospital,” *Canadian Medical Journal* 112 (February 22, 1975): 455-460; Wing K. Lee and Michael S. Baggish, “The Effect of Unselected Intrapartum Fetal Monitoring,” *Obstetrics and Gynecology* 47 (May 1976): 516-520.

67 Frank H. Boehm and Donald A. Goss, “The Xerox 400 Telecopier and the Fetal Monitor,” *Obstetrics and Gynecology* 42 (September 1973): 475-478.

68 Alan B. Cohen, Henry Klapholz, and Mark S. Thompson, “Electronic Fetal Monitoring and Clinical Practice: A Survey of Obstetric Opinion,” *Medical Decision Making* 2 (1982): 79-95. Decades of additional experience failed to mitigate the problem. In a 2008 study, four obstetricians agreed on the meaning of 50 fetal heart rate tracings in only 22 percent of cases. Julian T. Parer, Tomoaki Ikeda, and Tekoa L. King, “The 2008 National Institute of Child Health and Human Development Report on Fetal Heart Rate Monitoring,” *Obstetrics and Gynecology* 114 (July 2009): 136-138 and Jane E. Brody, “Updating a Standard: Fetal Monitoring,” *New York Times* (July 7, 2009).

(demonstrating high sensitivity), but did not do a good job of indicating when a fetus was compromised (exhibiting low specificity).⁶⁹

Obstetricians nevertheless persisted in performing cesarean sections based on their interpretation of the machine's printouts.⁷⁰ One obstetrician trained in the 1990s explained, "In medicine there's always what they call evidence-based practice, and I think there's also practice-based evidence."⁷¹ And as early as the mid-1970s, interpreting electronic fetal monitor strips had become such a vital component of the training and accrued experience of American obstetricians, they were loath to relinquish the messages they had come to rely on for decision-making. One group of academics (a mix of obstetricians, ethicists, sociologists, and anthropologists) point out that during childbirth in the U.S., medical interventions continue to be used even when studies show they do not work. They cite two oppositional themes as driving this behavior—"purity in pregnancy," when medical interventions tend to be avoided even at the risk of maternal health, and "control in birth," when medical interventions are used "unreflectively" to deflect "any risk to the fetus, however small or theoretical." Both inclinations, these researchers contend, "can lead to reasoning about risk that is oriented more by magical thinking than evidence."⁷²

"THAT'S WHERE THE BABY WAS DAMAGED": THE MONITOR AND MALPRACTICE SUITS

In addition to the fetal monitor magnifying obstetricians' perception of risk during birth, the device increased the number of malpractice suits filed against obstetricians. As part of a 1979 Department of Health, Education and Welfare study of the increase in cesareans, the study's author interviewed dozens of obstetricians. Most cited malpractice threats as the primary reason for the increase. Certainly obstetricians had reason to worry about malpractice *costs* at that time, if not lawsuits. The National

69 "State-of-the-Art: Electronic Fetal Monitoring," *ACOG Committee Statement: State-of-the-Art Opinion in Obstetrics and Gynecology* (April 12, 1984).

70 ACOG continued to issue periodic caveats, including pointing out that intermittent use of the fetoscope was just as effective in low-risk births as EFM. In 1995, another ACOG bulletin noted for the first time that the "primary risk" of EFM was an increase in cesarean delivery. "Fetal Heart Rate Patterns: Monitoring, Interpretation, and Management," *ACOG Technical Bulletin: An Educational Aid to Obstetrician-Gynecologists* (Number 207, July 1995). Nine years later, ACOG stated in another *Practice Bulletin* that "increasing reliance on continuous electronic monitoring of fetal heart rate and uterine contraction patterns led to an increase in the number of cesarean deliveries performed for *presumed* fetal compromise and dystocia, respectively [emphasis mine]." The organization also noted that "with few exceptions, major improvement in newborn outcomes as a result of the increased cesarean delivery rate are yet to be proved." "Vaginal Birth After Previous Cesarean Delivery," *ACOG Practice Bulletin: Clinical Management Guidelines for Obstetrician-Gynecologists* 54 (July 2004). Nevertheless, after more than 30 years of guidelines and accompanying caveats, in 2009 a record 85 percent of births in the U.S. were electronically monitored. "Intrapartum Fetal Heart Rate Monitoring: Nomenclature, Interpretation, and General Management Principles," *ACOG Practice Bulletin* (Number 106, July 2009).

71 Interview by author of obstetrician, Chicago physician interview #4, October 3, 2012, transcribed from digital recording.

72 Anne Drapkin Lyerly, et al., "Risk and the Pregnant Body," *Hastings Center Report* 39 (November-December 2009): 34-42, quote on 35.

Association of Insurance Commissioners had recently estimated that obstetrician/gynecologists faced ten times the risk of being sued compared to other medical specialists.⁷³ Yet the vast majority of the suits brought against them in the late 1970s was for gynecologic, not obstetric, errors.⁷⁴ And fewer than 10 percent of the obstetric claims were related to cesarean birth.⁷⁵ The few suits at the time that were linked to cesareans stemmed from bad maternal outcomes *as a result of the surgery*, not from a damaged infant who might have been saved by the surgery.⁷⁶ The nature of those suits seemed to indicate that patients and attorneys still identified cesareans as problems, not solutions.

Yet while malpractice suits against obstetricians for failure to perform a timely cesarean had nothing to do with the initial, precipitous rise in the cesarean rate between the late 1960s and late 1970s—because those suits did not yet exist—the electronic fetal monitor eventually played a role in forging the notion that self-preservation dictated that obstetricians must practice so-called “defensive medicine” in the form of more cesareans. Before the monitor, malpractice suits against obstetricians for any reason were rare simply because a would-be litigant was seldom able to prove negligence. While the use of fetal stethoscopes during labor had allowed doctors to periodically assess fetal wellbeing, physicians’ memories and written notes were the only record of those evaluations. The fetal monitor, on the other hand, provided tangible documentation of entire labors.⁷⁷

With monitor strips as seemingly incontrovertible evidence, medical malpractice claims against obstetricians burgeoned. An obstetrician trained in the 1970s “still griev[e]s” the litigiousness spawned by fetal monitoring. Given the device, she observed, a lawyer could point to a squiggle on a page and claim, “‘Well, that’s where the baby was damaged.’ How do you disprove that?”⁷⁸ Lawyers began to tell juries: if only the obstetrician had been paying attention, and performed a timely cesarean section in reaction to the message provided by the stalwart monitor, lifelong damage would have been prevented and there would be no court case. The pioneer of this type of litigation was John Edwards—eventually a U.S. senator from North Carolina and one-time presidential and vice-presidential candidate. Edwards was instrumental in inventing the claim that a physician’s failure to recognize fetal hypoxia during labor, as signaled by a fetal monitor printout, was the primary cause of cerebral palsy and other forms of neurological damage.⁷⁹

73 Marieskind, 4.

74 Madeleine H. Shearer, Maile Raphael, Maryellen Cattani, “A Survey of California OB-GYN Malpractice Verdicts in 1975 with Recommendations for Expediting Informed Consent,” *Birth and the Family Journal* 3 (1976): 59-65.

75 Marieskind, 4.

76 Gena Coren, “The Caesarean Epidemic: Who’s Having This Baby, Anyway—You Or The Doctor?,” *Mother Jones* (July 1980): 28-35, 42.

77 Thomas P. Sartwelle, James C. Johnson, and Berna Arda, “Perpetuating Myths, Fables, and Fairy Tales: A Half Century of Electronic Fetal Monitoring,” *The Surgery Journal* 1 (November 2015).

78 Chicago physician interview #6. Malpractice claims surged with the introduction of the electronic fetal monitor. See Margaret Lent, “The Medical and Legal Risks of the Electronic Fetal Monitor,” *Stanford Law Review* 51 (April 1999): 807-837 and Sartwelle, “Electronic Fetal Monitoring: A Bridge Too Far.”

79 Jill Zuckman, “Medical bill debate pits doctor vs. lawyer,” *Chicago Tribune*, June 24, 2001.

Admirers cast Edwards as the champion of severely disabled children. The *Boston Globe* described his efforts on behalf of damaged babies as going “beyond a recitation of his case to a heart-wrenching plea to jurors to listen to the unspoken voices of injured children.”⁸⁰ He often stood before juries, playing the role of the fetus in the womb begging to be let out before it was too late. Juries responded sympathetically, allowing Edwards to amass a personal fortune of thirty-eight-million dollars, win at least 205 million dollars for his clients, and almost single-handedly create the concept of failure to perform a cesarean as a valid medical malpractice claim.⁸¹

Yet most, if not all, of his lawsuits were without merit. Cerebral palsy occurs almost exclusively during fetal development, or because of extreme prematurity, rather than as the result of an untoward event during a full-term birth. That is why, despite a more than five-fold increase in cesarean sections since the advent of the near-universal use of the electronic fetal monitor, the incidence of cerebral palsy, at one in 500 births, has remained unchanged.⁸² Nevertheless, by the mid-1990s, 60 percent of malpractice premiums paid by obstetricians went to cover allegations of cerebral palsy caused by failure to perform a cesarean.⁸³ The successful claims ensured that cesarean sections would become one of obstetricians’ primary strategies to immunize themselves against lawsuits.⁸⁴

If some obstetricians were nervous before Edwards launched his litigation tactics in the mid-1980s, his success in the courtroom universalized their anxiety, as if by contagious infection. “There is no question,” one obstetrician observed, “it’s had a steady incremental effect on how conservative obstetricians are in their practices.”⁸⁵ This physician’s use of the word “conservative,” however, denoted a change in meaning since the 1950s. While in earlier decades, “conservative” obstetricians employed every skill at their disposal to avoid a cesarean, by the late 1980s they performed a cesarean in the face of even niggling doubt about the trajectory of a birth.

“THEY SAID HER HEART WAS IN DISTRESS”: MONITORING AND CONSENT IN THE LATE-TWENTIETH CENTURY

For many women giving birth in the 1970s, the routine use of the fetal monitor was an unexpected development, and they were unprepared for its consequences. Until then,

80 Wendy Davis, “Edwards’s career tied to jury award debate,” *Boston Globe*, September 15, 2003.

81 Charles Hurt, “Edwards’ malpractice suits leave bitter taste,” *The Washington Times*, June 25, 2007; John Wagner, “The Advocate as Politician,” *Washington Post*, October 5, 2004.

82 Haverkamp and Orleans, “An Assessment;” Thomas P. Sartwelle and James C. Johnston, “Cerebral Palsy Litigation: Change Course or Abandon Ship,” *Journal of Child Neurology* (2014): 1-14.

83 Fritz K. Beller, “A Guest Editorial, The Cerebral Palsy Story: A Catastrophic Misunderstanding in Obstetrics,” *Obstetrics & Gynecology Survey* 50 (1995): 83; John V. Banta, “Medical liability crisis: an international problem,” *Developmental Medicine & Child Neurology* 45 (2003): 363; Andrew D. Freeman and John M. Freeman, “No-Fault Cerebral Palsy Insurance: An Alternative to the Obstetrical Malpractice Lottery,” *Journal of Health Politics, Policy and Law* 14 (Winter 1989): 708-718; Colman McCarthy, “Cesareans give birth to a bonanza,” *Detroit Free Press*, January 8, 1985.

84 Howard Minkoff, “Fear of Litigation and Cesarean Section Rates,” *Seminars in Perinatology* 36 (2012): 390-94.

85 Chicago physician interview #6.

cesareans had been so rare that most women did not anticipate the possibility of a surgical birth. The experience of one mother, who gave birth for the first time in 1976, illustrates how monitoring triggered a cascade of events: the heightened perception among obstetricians, and later mothers, of risk in childbirth; the increase in cesarean sections; and a new approach among obstetricians to consent for this surgery.

The twenty-year-old expectant mother entered the hospital in spontaneous labor. A doctor ruptured her amniotic sac. "I went," she said, "from feeling nothing to being totally in excruciating pain." Nurses attached her to a fetal monitor. Shortly after, physicians relayed frightening news. "They said I had to make a decision because they said either that I would die, or my baby would die, or both of us would die, if I didn't have a cesarean. . . They said her heart was in distress." She was stunned. Her pregnancy had been trouble-free. "I walked. I exercised. I really felt good. And it just seemed like this diagnosis came out of nowhere." She tried to stay calm "but I think I just felt disoriented to what was going on and I was feeling stress with the fetal monitor and the conversations."

She consented to the cesarean. "That's something I guess I'll never forget. . . that the baby would die, or I could die, or both of us. . . What they were saying, it just didn't seem right." The edict issued by doctors in 1976 seemed even less right to her when she described the birth twenty-eight years later. "Since then, of course, I've read these books that said that half of them [physicians] don't know how to read [the monitors]."⁸⁶

Although doctors had presented the young, first-time mother with a dilemma she had not anticipated—and that continued to disturb her almost three decades later—her quandary soon became a common one for laboring women. With the advent of electronic fetal monitoring, obstetricians confronted many mothers who were in the throes of labor with a prediction of serious risk to their babies if they continued to labor and give birth vaginally. One nurse witnessed such a scene in the early 1980s. A monitor signaled fetal distress. A doctor told a laboring mother that the baby had to be born immediately. The mother consented to a cesarean section. The baby was born "healthy, pink." It was not fetal distress, the nurse complained later, "it was physician distress. And now I'm distressed from working at this hospital."⁸⁷ Yet, as this nurse's protest implied, the fetal monitor's perceived messages were as upsetting to doctors as to patients.

Physicians' monitor-induced stress prompted them to steer mothers toward cesarean surgery. Rather than the collaborative approach to consent common in the nineteenth century, or the mid-twentieth-century approach that largely eschewed patient consent, doctors responded to disturbing monitor strips by issuing veiled threats to laboring women—do you want to risk damage to your baby's brain, or a threat to its very life, or do you want a cesarean section? Physicians used their professional authority to ensure women would respond with only one answer. As one obstetrician observed wryly, "I think if you told a mother that you'd have to cut off her arm to get a healthy

86 Interview by author of mother, July 18, 2004, Chicago area, IL, transcribed from tape recording.

87 Cohen and Estner, quote on 182.

baby she'd say, 'Go ahead, just give me anesthesia.'"⁸⁸ One woman who had undergone particularly traumatic cesarean surgery confirmed that sort of observation: "mother's overwhelming focus is on the safe delivery of her baby and, to that end, mothers will allow significant injury to themselves."⁸⁹ As this physician and mother implied, women would always consent to cesarean surgery, given how doctors framed the consequences of refusing it. And as more women gave birth by cesarean, pregnant women began to anticipate the distinct possibility of cesarean birth, as well as the notion that the surgery mitigated the seemingly omnipresent risks of vaginal birth.

CESAREANS INCREASE DESPITE EMBRACE OF BIRTH REFORM

The greatest irony of the normalization of cesarean surgery is that the most precipitous increase, occurring between 1970 and 1985, paralleled the peak militancy, and greatest successes, of the birth reform movement emanating from second-wave feminism.⁹⁰ In response to the technocratic approach to childbirth developed in the 1940s and 1950s, a largely white, college-educated audience of pregnant and aspiring-to-be-pregnant women began purchasing books in the early 1970s bearing such titles as: *Spiritual Midwifery* and *Immaculate Deception: A New Look at Women and Childbirth in America*.⁹¹ Some women worked with feminist organizations that were focused on eliminating the chauvinistic approach to gynecologic and obstetric care. Many expectant mothers began attending childbirth education classes. The classes, activists advised, would enable women "to resist the hospital routine of medication and interventions."⁹² Reformers characterized childbirth as a physiological event, "part of the natural order of things," that pregnant women should approach "matter-of-factly, instinctively, and without fear."⁹³ Birth reform organizations burgeoned, giving rise to Birth Day in Cambridge, Massachusetts; the International Childbirth Education Association headquartered in Seattle; the Midwives Alliance of North America; and The National Association of Parents & Professionals for Safe Alternatives in Childbirth, to name a few.⁹⁴

Initially, the rapid rise in cesarean sections did not appear on the list of feminist activists' healthcare grievances. Even the 1976 second edition of the best-selling feminist health manifesto, *Our Bodies, Ourselves*, described the surgery as only "occasionally" performed "in the case of a very long, hard labor that seems to be accomplishing little." Although the cesarean rate had more than doubled (from 4.5 percent in 1965 to 11

88 Chicago physician interview #6.

89 Susanna E.R. Stanford and David G. Bogod, "Failure of communication: a patient's story," *International Journal of Obstetric Anesthesia*, 28 (2016): 70-75, quote on 72-73.

90 For more on the history of the birth reform movement, see Wolf, *Deliver Me from Pain*., 136-167.

91 Ina May Gaskin, *Spiritual Midwifery* (Summertown, TN: Book Publishing Co., 1980); Arms, *Immaculate Deception*.

92 Boston Women's Health Book Collective, *Our Bodies, Our Selves: A Book By and For Women* (New York: Simon and Schuster, 1976), 267-269.

93 Arms, *Immaculate Deception*, 10-27, quotes on 11, 25.

94 Barbara H. Kane papers, Schlesinger Library, Radcliffe College, Cambridge MA; Boston Association for Childbirth Education papers, Schlesinger Library, Radcliffe College, Cambridge MA; Midwives Alliance of North American papers, Sophia Smith Collection, Neilson Library, Smith College, Northampton, MA.

percent in 1975) in the decade before release of the 1976 edition of the book, even the otherwise defiant Boston Women's Health Book Collective, author of *Our Bodies, Ourselves*, commanded readers, "If the doctor recommends a cesarean section, you must trust that judgment."⁹⁵

By the time the increase in cesareans did appear on activists' radar, it was too late for orchestrated protest. Although one grassroots organization focusing on the growing number of cesareans—Cesareans/Support, Education, and Concern (C/SEC, Inc.)—appeared in 1973, most did not emerge until after the influence of birth reform organizations had ebbed.⁹⁶ While advocates for birth reform had hoped their fight would culminate in birth as a woman-centered experience, unfettered by medical interference unless treatment was necessary, by the 1980s, birth reformers were not getting the focused publicity they once had enjoyed and their vision never came to full fruition. Anti-cesarean voices went largely unheard in this environment.

As more women gave birth by cesarean, pregnant women began to anticipate that during labor an electronic fetal monitor might very well issue a message signifying their fetus faced imminent harm. And unlike women giving birth in the earliest days of fetal monitoring, members of a subsequent generation were more likely than not to express gratitude for both the warning and their cesarean birth. After one woman's obstetrician ruptured her amniotic sac during her first birth in 1984, the fetal monitor indicated her baby's heart rate was fluctuating between 60 and 140 beats per minute. The obstetrician told her "We've got to get this baby out of here." She responded unhesitatingly, "just do what you need to do." Afterward, she harbored no doubt that the surgery had been necessary and beneficial. "We got him out. We got him healthy. We didn't lose me. We didn't lose him. Everything was fine."⁹⁷ Another woman who had two cesareans in the 1990s similarly viewed both surgeries as "saving me and my babies." She explained, "I really do feel strongly that I would have been one of those women who would have died in childbirth. I feel that. . . based on the fact that he [the doctor] said that I have small pelvic bones."⁹⁸ As the incidence of cesarean section increased, due in no small part to the electronic fetal monitor and its link to the malpractice climate and approaches to consent, both obstetricians and mothers became acculturated to the idea that risk was omnipresent during labor and that major abdominal surgery mitigated the risk.

95 Boston Women's Health Book Collective, 251-326, quotes on 287-88.

96 For more on C/SEC Inc., see Wainer Cohen and Estner. Other anti-cesarean groups emerged later. The Cesarean Prevention Movement (later renamed the International Cesarean Awareness Network or ICAN) appeared in 1982. With the advent of the internet, The Unnecesarean.com surfaced so that an unlimited number of mothers could voice their frustration over their unwanted surgeries. The website billed itself as "pulling back the curtain on the unnecessary cesarean epidemic." Today, The Unnecesarean continues its educational activities on Facebook. The Unnecesarean blog is located at <http://www.theunnecesarean.com>.

97 Interview by author of mother, Ohio Mother Interview #3, June 17, 2013, Southeast Ohio, transcribed from digital recording.

98 Interview of mother by author, Chicago mother interview #2, March 13, 2012, Chicago, IL, transcribed from digital recording.

CONCLUSION: THE NORMALIZATION OF CESAREAN SECTION

J. Robert Willson—an obstetrician who eventually held a host of leadership positions in his specialty, including presidency of the ACOG and directorship of the ABOG—reminded colleagues in 1953 that maternal and neonatal morbidity and mortality had been reduced over the decades by eliminating medical procedures that increased the possibility of infection, not by performing more procedures.⁹⁹ Nevertheless, obstetricians today identify *not* intervening as the risk. The electronic fetal monitor and its consequences—including obstetricians’ dubious interpretation of its messages, a heightened perception of risk, and the malpractice climate resulting from the “evidence” that monitor strips provide to malpractice attorneys—prompted obstetricians to use consent as a means of ensuring that women would agree to cesarean surgery each time it was offered to them.

For almost forty years, obstetric texts have reflected this normalization of cesarean birth. The authors of the 1980 edition of *Williams Obstetrics* noted, “In modern obstetric practice, there are virtually no contraindications to cesarean section.” Simultaneously, the same authors sprinkled the contraindications to vaginal birth throughout the text, in “recognition of [fetal] impairment, actual or suspected, . . . if . . . vaginal delivery were attempted.”¹⁰⁰ The onus of risk had transferred from cesarean surgery to vaginal birth.

Certainly some increase in cesareans has been warranted. The risk of cesarean surgery diminished significantly between the first decades of the nineteenth century and 1950, rendering the surgery far safer. By the post-WWII era, the medical innovations advancing surgical practice were legion—anesthesia, asepsis, improved surgical techniques, antibiotics, and the ability to store and transfuse blood. Yet even in the mid-1960s, obstetricians’ attitude toward cesareans had not changed significantly in the face of diminished risk. The cesarean rate remained modest, despite an increase. The dramatic rise came later, suggesting the bulk of the upsurge can be attributed to something other than medical need. This article argues that a change in how obstetricians obtained consent to perform a cesarean, prompted by the malpractice environment and public and medical perceptions of risk due to the electronic fetal monitor, was a significant contributor to the increase.

Thus far, physicians and hospitals have proved stubbornly resistant to changing the practices and moderating the attitudes that maintain the high cesarean rate. While medical deliberation dominated the first half of the cesarean story—from the early nineteenth century through WWII—with physicians determinedly keeping the rate low and taking pride in the skills allowing them to do so, the most recent portion of the cesarean story has been dominated by experimentation. Helen Marieskind, the author of the 1979 U.S. Department of Health, Education and Welfare study on the increase in cesarean sections, summed up the contemporary approach to cesarean surgery that still

99 J. Robert Willson, “Elective Induction of Labor: Is It Justifiable in Normally Pregnant Women,” *American Journal of Obstetrics and Gynecology* 65 (1953): 848-58.

100 Jack A. Pritchard and Paul C. MacDonald, *Williams Obstetrics* (New York: Appleton-Century-Crofts, 1980), quotes on 1085 and 1081.

prevails: “Caesarean section appears to be a sometimes useful and much needed technology presently utilized in an undocumented, unclarified, and uncontrolled manner.”¹⁰¹ Introducing the electronic fetal monitor without any proof of efficacy, and ignoring subsequent studies demonstrating the technology was largely ineffective and increased the cesarean rate considerably and unnecessarily, exemplified that trend.

Using their professional authority to warn laboring women of dire consequences if they balked at a recommendation for cesarean surgery, obstetricians normalized cesarean birth. Given how doctors framed the cost of withholding permission for the surgery, women invariably offered their consent. The starkly different approaches to obtaining mothers’ consent in the nineteenth versus the late twentieth century did share one motive, however. In the nineteenth century, because doctors insisted that all present agree to the cesarean before proceeding, when a mother did die, which was more likely than not, the physician’s reputation remained intact. The burden of a bad outcome was a shared burden. In the late twentieth and early twenty-first centuries, steering a woman toward consenting to cesarean surgery similarly protected obstetricians’ reputations. As an obstetrician practicing in the western United States noted: “You don’t get sued for doing a C-section. You get sued for not doing a C-section.” During both eras, the actual and perceived risks posed by childbirth drove physicians to seek consent for performing cesarean surgery in starkly different manners albeit for the same reason—to preserve their reputations.¹⁰²

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101 Marieskind, 25.

102 Pamela Paul, “The Trouble with Repeat Cesareans,” *Time* (February 19, 2009).