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In Memoriam
Edmund D. Pellegrino
1920-2013

The Journal of Clinical Ethics mourns the loss of a long-time colleague and friend.

At the Bedside

When a Mother Wants to Deliver with a Midwife at Home

Edmund G. Howe

ABSTRACT

In this special issue of *The Journal of Clinical Ethics,* different views on both the ethical desirability of women delivering in hospitals or at home with midwives are discussed. What careproviders, including midwives, should recommend to mothers in regard to the place of giving birth is considered. Emotional concerns likely to be of importance to mothers, fathers, midwives, and doctors are also presented. Finally, possible optimal approaches at the levels of both policy and the bedside are suggested.

This special issue of *The Journal of Clinical Ethics* (*JCE*) involves the question of whether pregnant women should deliver with a midwife at home and how careproviders should advise them when they make this choice.[1] These questions are pressing. More than 99 percent of mothers in the U.S., for example, now deliver in hospitals, and, of these, more than 90 percent undergo "interventions" while in the hospital, but there is some evidence that 50 percent of the women don't want these interventions![2] Challenges to the present system are, therefore, increasing. Elizabeth Bogdan-Lovis, Charlotte de Vries, and Raymond de Vries are the guest editors of this special issue of *JCE*. In their article, "Ethics and the Architecture of Choice for Home and Hospital Birth," for example, they write that when they first proposed this topic to *JCE* in 2011, they couldn't have predicted the present "currency" of the issue.[3] Bogdan-Lovis and de Vries believe the core change needed is for clinicians to find a way to "respect a woman's wishes while upholding their professional commitment to provide competent care."

Frank A. Chervenak, Laurence B. McCullough, Amos Grünebaum, Birgit Arabin, Malcolm I. Levene, and Robert L. Brent, in "Planned Home Birth in the United States and Professionalism: A Critical Assessment," state that mothers should deliver only in hospitals, if they can, since there—and only there—will newborns who need immediate emergency care receive it.[4] Further, these authors believe that careproviders should strongly recommend delivery only in hospitals to their patients, and, if they don't, they should not regard themselves as professionals. These careproviders include midwives, some of whom deliver infants at home.

"In-hospital birthing" is the model that is currently most highly recommended for delivery in the U.S. The authors in this issue of *JCE* present differing perspectives on the comparative pros and cons of delivery at home—an alternative that challenges the standard model's presumptive place as the "standard" or preferable choice for women.

Bogdan-Lovis, de Vries, and de Vries did not invite Chervenak and colleagues to write their piece for this issue, *JCE* did, as we sought to present both "sides," and the best possible balance. Who, then,

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is right, and why? I will not answer these questions here, but instead highlight some particularly deep feelings that those who participate in delivering children are likely to have. Whether they are consciously aware of their feelings or not, these feelings may affect them throughout their lives.

I will begin by reviewing conflicting views on how to resolve some of these questions, and I will describe some additional factors that decision makers may want to consider. Then, I will discuss the strong emotions that mothers, fathers, midwives, and doctors may have. To close, I will discuss some possible goals that policy makers and careproviders may pursue.

A core issue is the extent to which the infants' interests alone should determine the relative "status" of delivery in the hospital versus at home, although, as the articles in this issue of *JCE* make clear, it is greatly open to debate what an infant's best interests are, and even whether they can be validly determined and compared. A primary position is that the autonomy of the mother, as well as her own interests, warrant moral weight. Bogdan-Lovis, de Vries, and de Vries and the authors they invited to contribute to this special issue all support, in one way or another, the possibility that home births may rightly serve broader interests than those of just the infant. They propose that respecting a mother's autonomy and interests to a greater extent may contribute to mothers and physicians having a more collaborative, trusting relationship than mothers may experience now.

The core question that this controversy raises is highly paradigmatic of moral enigmas that occur in other medical contexts. Thus, while these considerations are of the utmost importance in this context, they are also far reaching, and involve three widely present, critical moral questions. First, when "evidence" in assessing outcomes may not be definitive or conclusive, and when competing treatment options may be clinically supportable, when, and how can, and should individual patient choices be buttressed, respected, and enabled? Second, how should this analysis and answer be altered—if at all—when the interest of an additional party also is at stake (in this case, the infant, who cannot speak)? Third, when should patients make choices that are at odds with "best" medical practices?

Taking all of these considerations together, then, this special *JCE* issue, in addition to pursuing the "in-the-hospital-versus-at-home" question, identifies the three open questions above, and suggests ongoing and future challenges for research and clinical practices.[5]

DIFFERENT VIEWS

There are different views on how the presently available empirical data regarding infants born at home versus the hospital should be best interpreted. There also are different views on the extent, if any, to which a mother's autonomy and interests should "count" in making decisions about childbirth. I will review these next.

The Interests of Infants

When needed, emergency care is quickly available to infants who are born in a hospital. The need for such care may arise even when a pregnancy has been low risk. Examples are cord prolapse, postpartum hemorrhage, and shoulder dystocia.[6] Whether infants born at home or at the hospital face more risks, overall, is a question, nonetheless, that is still open. Howard Brody and Carol Sakala point out in "Revisiting 'The Maximin Strategy in Modern Obstetrics,' " for instance, that infants may be harmed when born in a hospital.[7] For example, they may be born by cesarean section (CS), which may cause childhood type 1 diabetes, asthma, and obesity, possibly because CS may impair an infant's immunological function. When, on the other hand, a woman delivers at home, an infant is more likely to have a "physiologic" or natural birth, which can create, Brody and Sakala report, a "beneficial cascade." An infant born in a hospital is more likely to be premature, to weigh less at birth, and to require ventilatory assistance. How the net risks compare for an infant born in a hospital and an infant born at home isn't settled. Some experts say more studies are needed. Others say that studies won't show which infant group faces greater risks. There may be, they say, too much selection bias. Women who want a home birth may, for instance, have better nutrition and stronger emotional support; birth certificates may not distinguish between high-risk, unplanned, and unassisted home births and planned home births; and it may be impossible to determine whether the transfer of an infant to the hospital occurred before or during labor.[8] The risks to infants must, in any case, be calculated over years; for example, an initial CS may make CS for a subsequent delivery necessary. Thus, even if the first CS is beneficial, subsequent CSs may cause the net effect of all to be harmful.

The Interests of Mothers

Other experts hold that the interests of the mothers should count, if not prevail. For instance, Howard Minkoff and Jeffrey Ecker suggest, in "A Reconsid-

eration of Home Births in the United States," that even if the relative risks to infants born at home are as much as three times as great as for infants born in a hospital, the absolute risk involved is as small as one in one thousand.[9] They assert that since this is such a low absolute risk, mothers' interests warrant moral weight.

Mothers who give birth in a hospital face physical risks, as Mary Regan and Katie McElroy state in "Women's Perceptions of Childbirth Risk and Place of Birth."[10] In hospital births, invasive interventions such as epidural anesthesia, intravenous infusion, oxytocin, and intrauterine pressure catheters are over utilized, and each of the interventions has its own risks and morbidities. Each intervention may also, these authors relate, contribute to the "escalating incidence of surgical birth." This poses the risks to infants just considered above.

In addition to the risks posed by these interventions, the needs and wants of a woman concerning childbirth must be considered. A mother's "right" to choose how she will deliver her baby is greatly important, since it involves her own body. Even more important may be the meaning that women feel in giving birth. The birth event may have unique and extraordinary meaning because it is the beginning of a woman's relationship with her child. Experiencing greater comfort at this time may be quintessential, and may be no small part of why many women want a midwife to attend them, and/or to deliver at home. Judith A. Lothian, in "Being Safe: Making the Decision to Have a Planned Home Birth in the U.S.," gives an example illustrating how midwives may help mothers achieve greater meaning and comfort during their pregnancy.[11] Lothian quotes a mother, speaking of her midwife: "She listens. I can call her anytime. . . . I never worry that I am bothering her." Another mother relates how this may happen during labor: "Instead of requiring me to ask permission of others (to take a drink, take a walk . . .), my permission was asked (to check the baby's heart tones, to listen to her lungs . . .) . . . .We made decisions based on how my daughter and I were doing, not out of fear of what could possibly happen."[12] Another woman succinctly captures and conveys what a midwife offered to her: "Sophia told me to 'open like a flower' . . . ," she recalls.[13]

Some women may, on the other hand, experience childbirth as traumatic. Regan and colleagues state, in this regard, "Studies report that women feel violated by their birthing experience and some even suffer from post-traumatic stress syndrome." Since some women may have this response, careproviders should design, and consider taking, initiatives to prepare women for what may occur, so it is not so new and traumatic, and routinely look for post-traumatic stress syndrome later. If, in anticipating childbirth, while giving birth, or after delivery, a woman shows signs of exceptional stress, careproviders may recommend counseling. This is important to not only the woman but to her infant, because if a woman is post-traumatically stressed, the child most likely will be, too. I think here of a woman who was traumatized to this extent by giving birth. While ostensibly "asleep" due to general anesthesia, she reported that she was actually under-anesthetized, such that she felt and remembered her pain. Subsequently she would lash out at her children, which she had not done before, and her children then lashed out at each other and at their friends. It is not so surprising, then, in light of these relative pros and cons, that Lothian reports that some mothers choose home birth "specifically" to increase their and their baby's safety.

In light of these most important concerns, both when mothers don't give birth in hospitals and when they do, it is of little surprise that profound differences presently exist in regard to how this decision should be made. There are, for example, conflicting views in regard to what the empirical evidence indicates, and even whether empirical evidence should or should not suffice in decision making at both the policy and patient care level. When it comes to decision making and sorting through applicable information, De Melo-Martin and Intemann found, "more data in itself is unlikely to change the value assumptions that each side relies on to interpret the data . . . attention to the value judgments that underlie such research is also essential."[14]

For those who place greatest or exclusive weight on the outcomes of infants in making this decision (whether to give birth only in a hospital or not), the interpretation of the data now available, and even perhaps of future data, no matter how validly obtained, is not clear cut. Even when researchers do not have biases, the ways in which they interpret the data are often open to debate. Similarly, clinicians' interpretations of the same data may differ profoundly. Thus, throughout medicine, there are often best-clinical practices, representing the most current state of the art, arrived at on the basis of experts' consenses, even though, individually, the experts may disagree.

In contexts in which people have strong views, these problems are likely to be exponentially increased because, as Kahneman and others have shown us so clearly,[15] our emotions may limit not only how we interpret data, but even, in some contexts, what we are able to see—literally! The blind-

ness that we may have regarding data that we don't expect to see, or with which we disagree, is literal, not simply metaphoric. (Spoiler alert: readers who want to experience this blindness for themselves should watch this video before they read on: *http://www.theinvisiblegorilla.com/gorilla_experiment.html*.) Such blindness is exemplified by a research project in which study participants viewed a short film of people passing a basketball back and forth. During the film, a person in a gorilla suit walks through their basketball game. After viewing the film, participants were asked what they saw. About half of the participants did not notice the gorilla.[16]

Emotional Autonomy

But is it enough to value mothers' feelings? Or should we assign these feelings greater than usual moral weight? Sjöblom, Idvall, and Rådestad assert that most mothers "see quantitative risks as important," but mothers may place moral weight also on "other sources of knowledge" such as "instinct, intuition, and embodied knowledge that is not intellectual."[17] We could accord exceptional moral weight to mothers' feelings. Such greater weight might not prevail to the extent that it alone determines an outcome, but it may at least serve as a "tie breaker." This may be particularly important in considering place of birth, since views are as divided as they are.

Why might it make sense to accord greater weight to mothers' preferences? One consideration is that mothers often say they would give their life for their child—and many would if they could. (Of course fathers feel this way too.) One example of this, looking to earlier practices, is that of mothers who wanted to have fetal surgery when their fetus had a spinal defect. Surgeons would say no, because they viewed the risk to the mother, relative to the gains for her fetus, to be too great. With newer technologies, such surgery has become less risky for the mother, and so surgery is now routinely performed, as it is beneficial for the fetus: a spinal opening will get worse if it is left alone, since the spinal cord will remain susceptible, to a greater extent, to further damage during gestation.[18]

We already give exceptional moral weight to parents' views when we allow them to choose for their child, under certain circumstances. For example, when a child is so severely ill that there is no good ethical reason to maintain the child's life, the decision on how to proceed is most often given to the parents. We also accord greater than usual moral weight to the feelings of a patient's loved ones. A patient may be kept on a ventilator, for example, even after brain death, so that loved ones coming from far away can see the patient in this state. The feelings of many individuals may be flooded at times of birth and death. At these times, the feelings can become who the individuals are. These feelings may or may not be the most rational. Consider these examples involving birth and death that I heard from a pathologist colleague of mine.

A mother delivered a stillborn baby who was greatly disfigured. He was so disfigured, in fact, that the staff chose not to let this mother see him. She grieved, badly, for a year. Then she learned that a picture of her baby had been taken and existed in the pathologist's report. She requested a copy of the picture. When she saw it, her grief went away.

An adult woman died when her camp stove exploded. Her face was literally "blown off." The staff didn't let her father see her like this. He, like the mother of the stillborn baby, grieved badly, until he learned, like the baby's mother, that there was a photo of his child in the pathology report. The father requested a copy of the photo. When he saw it, his grief, too, was relieved.

Feelings work like this, and the feelings of these two parents were extreme. Yet if only the "usual moral weight" given to parents' feelings had been extended to them, both would have continued to deeply grieve. In unusual cases like this, it may be better for careproviders (and others) to give the feelings of patients' loved ones exceptional weight. Giving loved ones what we might call "emotional autonomy" is in sharp contrast to the conventional practice of denying an individual's autonomy when her or his emotions are so strong that they impair the individual's capacity for adequate cognitive autonomy. Even if we granted a person emotional autonomy, how might we decide whether to assign a greater moral weight to that person's feelings?

An example of a criteria that might be used is to assess the person's proclivity for denial. An example from my own life involves a denial of dying. A person very dear to me was dying, and he knew death was near. He said, "I sometimes can't remember what I just said. This bothers me." His memory, not his dying, seemed to be primarily on his mind. My denial, however, was far greater: when he then asked to shake my hand, I did, perfunctorily. It did not occur to me that the reason he wanted to shake my hand was to say "Good-bye." How much we deny may reflect how much we feel. I should add that this person, very dear to me, may not have wanted me to shake his hand while showing full awareness that it could be the last time. He may have not wanted me to look with this sadness into his eyes.

EMOTIONS THAT PEOPLE MAY FEEL

In our discussions about childbirth, it is principally the mothers' feelings that are at stake, but the wellbeing of their newborn is at stake, too. Who will speak for the newborn? It may be that all of the people involved in childbirth do: the mother, the father, the careproviders. The differences in their views may not reflect their differing values regarding children, but rather reflect different notions of what is best for children.

Parents

Both parents may feel very strong emotions. This may, however, cause more rather than fewer problems.

Mothers

Mothers' feelings for their child may be unparalleled in their intensity. Mothers may also have other feelings that are of concern, and these feelings may leave the women more vulnerable to doing what others, seen as being in authority, want. Especially if stressed, mothers may, in the short run, overvalue what a perceived authority wants.

Impaired capacity to assert themselves. Often women aren't treated equally in our society. Many studies report that persons who have less status may be more vulnerable to not fully expressing what they need.[19] This effect may underlie some of the pain and trauma that some women report experiencing so often in hospitals, and, indeed, whether their doctors are men or women. In this context, our society's warped views may be internalized. Lothian offers a poignant, piercing example: one mother says, "I consider myself independent, a tough lady, but in those [doctors'] offices I, like I lose all my power. I want to cry instead of standing up and saying I don't want you to do that to me."[20]

The desire for immediate relief from fear. In all contexts, some people may be willing and able to give up immediate smaller gains for greater future gains. This difference is commonly referred to as the capacity to "defer gratification."[21] When the emotion felt is fear, however, some people bear it less well than others, and some individuals may want relief that is immediate.[22] Mothers may feel exceptionally fearful when they are delivering a child for the first time or when they have had a negative experience previously. They may, for these or other reasons, be more vulnerable to wanting the greater control and comfort they can have delivering at home with a midwife, although they might, if feeling less stressed, choose to deliver in a hospital. It is unclear whether babies will do better at home or in a hospital. Still, if mothers know that they felt fearful and chose to deliver at home with a midwife out of a need for emotional relief, this knowledge may leave them more likely to blame themselves if something goes wrong at home that might have been prevented in a hospital.

All careproviders, accordingly, should obviously seek to help mothers not have undue fear, to the degree that this is possible. As importantly, but perhaps less obviously, midwives who recognize this may take exceptional measures to help insure that mothers who deliver at home won't feel such guilt and regret. Midwives can inform a woman that even though she may feel fearful and has made choices to try to alleviate her fear, there are other sound reasons to choose to deliver at home. Thus, if the woman later happens to be among the rare group whose child does poorly, it is important that she be able to recall that her choice to deliver at home made sense for reasons other than trying to deal with fear.

More generally, if a woman delivers at home and has "bad results," she will be vulnerable to being second-guessed by other people who may think that she was not able to delay her own increased comfort or relief from fear for nine months, for the sake of her child. Even if others don't second-guess the mother, she may second-guess herself, for these and other reasons. Careproviders—in this context most likely midwives—might be able to prevent some of this pain by alerting women ahead of time about the risk second-guessing.

Midwives also could make it clear that a decision to have a child at home may be "scientifically" justifiable, or even preferable, based on the evidence presented in some of the articles in this issue of *JCE.* For example, as particularly Brody and Sakala's piece documents, there are serious risks in choosing either the hospital or the home setting.[23] Midwives also could quote Minkoff and Ecker, who write, "The goal in such conversation is to educate, not to make women feel guilty about what some may perceive to be a riskier choice. Regret is possible regardless of choice: a woman who has an uncomplicated low-risk hospital birth may, in retrospect, wish she had chosen a home delivery, while another who had a complication at home may wish she had opted for hospital birth."[24]

Grief and guilt. The risk most feared is, of course, that a baby might die or undergo severe harm due to delivery at home. Fortunately, these are fears that most mothers who choose to deliver at home won't experience. The most devastating emotion, in addition to regret, is guilt, although, as the articles in

this special issue point out, having feelings of guilt would not be based on reality.[25] Grief from an infant's death may be profound,[26] but may be still greater when accompanied by guilt. People have an almost irresistible urge to blame themselves when a calamity occurs, so long as there is any plausible way, that they could have prevented it. I think of examples from my own practice. For example, a mother called her teen-aged daughter but hung up after just a few rings. She did not know, when she hung up, that her daughter would take her own life soon after the phone stopped ringing. "If I had just hung on for another ring!" the mother cried. In another example, a man would visit his mother in the hospital after she'd had a stroke. One night, shortly after he left for the night, she died. "I should have stayed!" he cried. "If only I'd stayed another half-hour, I could have been with her."

Fathers

Fathers can be immensely beneficial to women while they are giving birth.[27] While some assert that biological fathers should have a say in numerous aspects of what happens to their fetus and baby, I shall not focus on that here.[28] Fathers who are present during childbirth may, though, cause some women stress.[29] A father may, for instance, insist that his partner deliver in the hospital when the woman wants to deliver at home. Most notably, some midwives have established training centers that enable them, with the mothers' permission, to invite fathers in and then put them at ease to the greatest extent possible.[30]

This, of course, adds some questions. For example, should fathers share what they feel during delivery? Because it is the mothers, not the fathers, who are doing the delivering![31] There are, however, sometimes very substantial gains when mothers have the baby's father with them during delivery. It may enhance fathers' bonding with their child, and this greater bonding may be particularly crucial should the two partners later separate.[32] If the mother and father disagree on whether the mother should deliver at home, and the child dies or has severe special needs, it may prove fatal to their future relationship. The parents may not be able to overcome the disagreement and/or the loss, and this may harm their child. Such a rift may occur even when both partners believe that there should be no blame. Either partner may find that the mere presence of the other evokes constant memories and associations of the birth and the child that are just too painful to bear. Our capacity to transcend such feelings may be limited.

Careproviders

Parents are not alone in being vulnerable to experiencing profound grief. Careproviders may feel unbearable pain as well. Feelings may affect midwives and doctors differently, for reasons I shall outline below. The differences may affect what midwives and doctors do, and may bear, as well, on what mothers choose.

Midwives

Midwives may experience as much or more agony as any careprovider when an infant is born dead or with severe special needs. Their agony may be greater if they generally tend to feel increased empathy for others.[33] They may have one advantage, though, if they know they will assist a mother to deliver at home: they will know in advance that there are limits to what they can do if a complication occurs. Midwives know and accept, for example, that advanced technology won't be available at home. They can thus anticipate these risks emotionally as well as cognitively. This may help them prepare for the possible pain, much as adult children may be able to emotionally and cognitively prepare for the death of a parent as they age. Our minds may prepare us in this way, outside our control, even though we might not want to prepare if we could choose. For example, as this happens, we may feel more distant from our aging loved ones. Midwives also may know—and know well—what they have to offer, and they may have already come to terms, cognitively, with the gains from home birth relative to the risks. Doctors, in contrast, may have emotional difficulty in not doing all that is possible.

But midwives have an additional source of chronic stress, and, one might say, emotional pain that doctors lack. As one midwife tersely notes, "we stand insignificant and socially marginalized in a culture that has passed us by in favor of technologically managed birth."[34] This pain may be exemplified by the following uncommon, but specific, example. As a registered midwife in New South Wales was delivering a baby, an emergency occurred and she used a "vacuum cup" to extract the baby, thereby saving the baby's life. The midwife had been trained to do this, although she was not credentialed to do this. She had, indeed, done it 30 times previously. But her professional Standards Committee then reprimanded her, and placed new "conditions" on her registration. The dean of an Australian nursing school, also a law professor, had this advice for midwives, in response: "make sure you understand the purpose of any continuing professional education program you participate in. . . . "[35]

Doctors

Doctors may be as vulnerable to feelings of fear as midwives are. Their fear may affect them in a different way, however, because they are credentialed to use technological interventions. As a result, they may feel afraid to not use interventions if their use could prevent harm to the babies they deliver. If they choose to do less than they could, and harm ensues, they may feel guilty throughout the rest of their lives. Doing all they can in this way may extend to their believing that they should, as strongly as they can, recommend to mothers that they not deliver at home, as Chervenak and colleagues do.[36]

This is not to say that making such a "strong recommendation" is justifiable or preferable. That is, all of the articles presented in this issue of *JCE,* taken together, might be construed as suggesting that the current state of the art is what, in research, would be called *clinical equipoise.* Clinical equipoise is a concept that is most often used in research contexts, and refers to situations in which clinicians are divided in regard to which one of two or more treatments is best for patients. If there is no agreement among physicians on which treatment is best, participants in research can enter studies in which they may, usually, on a random basis, receive any of the treatments offered in the study. Use of the phrase "clinical equipoise" indicates that clinicians do not know, at this time, which of two or more treatments is best. In the situation at hand, if doctors do not believe that there is clinical equipoise, they may be more fearful of not strongly recommending a birth in the hospital.

Doctors' emotional reality may not align with this. They may feel highly reluctant to accept what they see as more-risky outcomes. Like mothers, they have a wide range of choices, and the accompanying greater feelings of fear that come with them. There also may be psychological factors that affect and possibly limit doctors' capacity to objectively assess competing realities. Here I will focus on two.

Doctors' aversion to loss. First, doctors may be unduly loss averse. They may, as is the case for many among us, so strongly fear a loss that they will do all that they can to prevent it, even when the cost is giving up far greater, and highly disproportionate, gains.[37] Examples may be insisting on and strongly recommending that all mothers deliver in the hospital.

Doctors' vulnerability to being overly influenced by data and images. Second, doctors may be unduly influenced by data and images. This may compound their risk of making biased judgments due to being loss averse. An instance in which this affected practice most notoriously occurred not long ago, when orthopedic surgeons inferred from images of protruding spinal discs that the discs were the likely cause of patients' back pain. Thus, surgeons operated and "corrected" the discs until studies indicated that the surgical patients didn't do better than other patients.[38] An over-reliance on data and images, in addition to being loss averse, may be reasons that doctors choose to do CSs as often as they do, notwithstanding the objections voiced by mothers, such as those reported in articles in this issue of JCE. Yet, as in all questions regarding physicians' choices with their patients, doctors' concern for their patients may play the far greatest contributory role. Most, if not all, after all, chose to become doctors to help people.

Some persons believe and assert that, instead, doctors make decisions, especially in obstetrics, mostly to protect themselves from legal suit. Surely, to some degree, this is true.[39] In my psychiatric practice, I certainly do. When treating patients, as I come near the margins of the standard of care guidelines, my fear increases, not because I think that what I am doing in not best for a patient, but because of my fear of negative repercussions, such as a suit. An example is whenever I do something that is literally in a "black box warning" in the Physicians' Desk Reference (PDR). A warning placed in a black box in the PDR indicates that a particular practice is especially risky. This occurs, for instance, when I prescribe an anti-psychotic drug for an elderly patient, especially when the patient has dementia. When a patient has dementia, he or she may become so aggressive that a caregiver can't care for the patient at home. It may be that only these medications enable patients to remain calm enough to continue to live at home and, thus, continue to have the quality of life that they cherish. Yet antipsychotic drugs increase the risk that patients will have a serious side-effect such as a stroke, or even die. For this reason there is a "black box warning." If these drugs are prescribed, doctors should proceed much more carefully, which they view as being at their own peril.[40] To assume that physicians act as they do primarily for this reason is, I believe, generally wrong and short-sighted. For example, in the above situation, I will worry more when I prescribe these drugs, although there is no legal risk. Many people, including patients, presume that doctors leave their feelings for their patients at the hospital or clinic when they come home—that they can "compartmentalize" their feelings. Can they?

A study of oncologists found that grief was "pervasive in their lives." The "most striking finding"

was, in fact, "how poorly" compartmentalization works.[41] This failure of doctors to "contain" their most loving emotions may be greater when the patient is a child.

For example, Danielle Ofri, MD, describes the experiences of "Eva," a pediatrician.[42] When Eva was a resident, a baby was born with Potter syndrome, and the parents, who knew about the outcome before the birth, asked not to see the infant. (Babies with Potter syndrome almost always die within minutes of being born.[43]) Eva was asked to remove the baby from the room. She wrapped the baby in a blanket and took her to a "cramped room," alone, where she "was consumed with" immense sadness for the baby girl. Eva rocked her back and forth. "I love you, baby," she whispered, "I love you." The baby died. Eva "stuffed the whole thing way down" in her "consciousness," and continued to do so throughout her residency. At the end of her residency, a four-year-old boy was brought in, unconscious, and even though this was a tragic case, Eva didn't feel "even a twinge" of emotion. Her "armor had solidified." But later, watching a lighthearted Hollywood movie, even though it was a comedy, when a child lay in deep water and was sinking, Eva uncontrollably sobbed. "It was exactly like the post-traumatic stress experienced by war veterans." For years afterward, her nerves continued to clench whenever her beeper went off.[44]

This doctor's post-traumatic stress reaction was like that of some mothers who have a bad experience in a hospital, as some articles in this issue of JCE describe.[45]

POSSIBLE SOLUTIONS

In light of these different contentions, and particularly the deep feelings that some individuals have, what might we best do, at the policy level and at the bedside? Surely it is possible to avoid some of the tragedy and sadness described here. Mothers and babies have bad effects from CS. Babies have problems that are not treatable outside hospitals. Mothers feel traumatized. Mothers and fathers feel guilt. Midwives feel and are marginalized. Doctors feel grief and alone, and, sometimes, hostility, as well.

Policy

Mothers may want to be delivered by midwives at home. Doctors may want to be able to do all they can. Might better processes possibly allow all to do and feel better? Might, for example, contexts be established so that mothers and fathers, midwives, and physicians could meet all together, as equals, to forge somewhat better end results? This, in fact, has been done. In Nebraska, a medical practice has been established in which careproviders, at all "ranks," get together to seek, as a group, optimal results. They all share all of their thoughts, regardless of their different "status." All of those present are expected, first, to share each and every concern, and to be nonjudgmental. Moreover, and, indeed, most impressive to me, they are expected, when speaking, *to look each other in the eye*. They have found that this dynamic works.[46] Working together like this, midwives could give mothers and, indeed, doctors maximal support, and doctors could supervise and intervene, to a greater extent, when and as needed. Doctors might, with midwives' help and influence, choose to respond in some different ways.[47] Mothers, and fathers, might make different choices as well.

Infants experience a variety of problems during birth, throughout the world.[48] In some places, doctors and midwives, once viewed as "outsiders," have succeeded in working together harmoniously and effectively. Midwives have come to function, and indeed feel as, equals, too.[49]

Careproviders' Responses "at the Mothers' Bedside"

What, then, should careproviders recommend now? They could all recommend strongly, as Chervenak and colleagues urge, that all mothers deliver in the hospital. Alternatively, careproviders could simply share the current view of the American Congress of Obstetrics and Gynecology (ACOG), that while delivering at home, in their view, isn't preferable, it is still reasonable and, thus, acceptable. The basis for strongly recommending against home birth or the basis for the ACOG's approach may or may not be true, as the articles in this issue of *JCE* might challenge. But it is generally the standard of care for careproviders to share the truth, as they see it, with their patients—and it is often most effective. An example is when patients smoke. When careproviders tell patients, unequivocally, how smoking may harm them, it may help patients to find a way to not smoke. But in one study, careproviders were able to counsel a much greater percentage of patients who smoked, by approaching the patients before they were discharged from a hospital—a captive audience, as it were.[50]

In every clinical context, however, careproviders might do well to consider the connotative effect of what they say, as well as what is "the truth." This is because expressing some truths in some contexts may have the opposite effect than the speaker intended. For example, this might happen if carepro-

viders recommend to mothers—weakly or strongly—that they shouldn't deliver at home. Such negative responses often occur.[51] Such a negative response may be more likely when the careprovider's advice is emotionally driven.[52] That has been found to be the case in other contexts.[53]

Mothers' negative responses to careproviders telling them what they should do may, surprisingly, be exacerbated by what the women are experiencing biochemically. De Dreu, in "Oxytocin Modulates Cooperation Within and Competition Between Groups: An Integrative Review and Research Agenda," reports that the hormone oxytocin, which is present in greater amounts during pregnancy, may not only increase bonding; it may increase a tendency to react defensively when we find another to be threatening.[54] In this context, some women may respond in a way that is, without question, bad for their baby: they may refrain from visiting a maternal health center altogether.[55] Also, careproviders who tell women what to do might evoke "greater guilt" in women who deliver at home and have a "bad result." Further, careproviders who tell women what to do might have this effect on all women who choose to deliver at home. The women might echo what a careprovider has said to them: "This is not something I should do," even while they go ahead and do it. Thus, this approach could greatly impair the beauty women are otherwise hoping to feel in giving birth. In their article, Minkoff and Ecker ask whether careproviders should discuss with mothers their "moral duty of beneficence" to their infant. Doing this may increase the mothers' awareness of their duty, but, at the same time, may add to any guilt they might feel.

A different approach, using the principles of "motivational interviewing," has been successful in reducing the rate at which a fetus could be harmed by its mother's use of alcohol: women of childbearing age substantially reduced their consumption of alcohol and substantially increased their use of effective contraception.[56] This may be most instructive—this approach is wholly different from and mutually exclusive with telling patients what to do. In this approach, careproviders encourage patients to explore their ambivalence regarding a particular course of action by asking open-ended questions, listening, and reflecting what they have heard, and then inviting patients to consider with them what they consider to be the relative pros and cons. In this process, there is no "expert," although the careproviders, of course, give patients all of the information they request. Through such discussions, mothers may be able to see something they didn't see before, and they might, in response, by themselves, change their mind.

How might a careproviders use this approach when a woman is trying to decide whether to deliver in a hospital or at home? A careprovider might say, if the policy of the ACOG remains as it is, "The present consensus among some leading medical experts is that it is okay for mothers to deliver at home, and the experts also express a preference based on the risks. There are different risks either way. Would you like to discuss what you see as the relative pros and cons for you?" A careprovider can go one step further, and add, for a woman who wants to deliver at home, that because the risk is immediate, rather than long term, if the baby has a bad result, the woman may be more vulnerable to feeling guilt.

Pregnant women should understand that leading experts, at this time, see delivering at home as reasonable. Thus, if they feel guilt at any time, they should know that this guilt is not based in reality.[57] Indeed, if a bad result were to occur, women should regard this, both now and afterwards, as a risk and decision that they share with their careprovider and these foremost experts. This converts the mothers' decision to a shared choice. As Sherwin Nuland, a noted surgeon and author has said, it is most important for careproviders to convey to their patients that "they're both enmeshed in a journey they're taking together."[58]

CONCLUSION

In regard to questions involving where and how mothers will deliver their baby, mothers, fathers, midwives, and doctors all have especially deep feelings. This makes sense. Babies' and mothers' well-being is at stake. Here I have summarized different views and these persons' strong, different feelings. I have also proposed that, from the standpoint of policy, midwives and physicians may be able to work together to a much greater extent than they do now. Clinically, it is mothers who will and must, in the end, make these decisions. To the degree that they have "bad feelings" during that process, their decision making is likely to be impaired.[59] It is most critical, especially for this reason, for all careproviders to find ways to support mothers as richly as they can. Midwives may be now setting the paradigmatic example.[60]

NOTES

1. "Mothers" will be used subsequently to refer to

these women throughout this discussion. "[F]or purposes of ease, and without prejudice we will refer to [pregnant women] from herein as 'the mother.' " H. Draper and J. Ives, "Men's Involvement in Antenatal Care and Labour: Rethinking a Medical Model, *Midwifery* 29 (2013): 723-9, 724.

2. D. Boucher et al., "Staying Home to Give Birth: Why Women in the United States Choose Home Birth," *Journal of Midwifery & Women's Health* 54, no. 2 (March/April 2009): 119-26, 125.

3. E. Bogdan-Lovis and R.G. de Vries, "Ethics and the Architecture of Choice for Home and Hospital Birth," in this issue of *JCE.*

4. Frank A. Chervenak, Laurence B. McCullough, Amos Grünebaum, Birgit Arabin, Malcolm I. Levene, and Robert L. Brent, "Planned Home Birth in the United States and Professionalism: A Critical Assessment," in this issue of *JCE.*

5. I wish to thank and acknowledge Norman Quist for thoughts and wording in the above introduction, and, particularly, for his insights regarding this delivery issue's much wider implications.

6. I. de Melo-Martin and K. Intemann, "Interpreting Evidence: Why Values Can Matter as Much as Science," *Perspectives in Biology and Medicine* 55, no. 1 (2012): 59-70, 5.

7. H. Brody and C. Sakala, "Revisiting 'The Maximin Strategy in Modern Obstetrics,' " in this issue of *JCE.*

8. See note 6 above.

9. H. Minkoff and J. Ecker, "A Reconsideration of Home Births in the United States," in this issue of *JCE.*

10. M.J. Regan and K. McElroy, "Women's Perceptions of Childbirth Risk and Place of Birth," in this issue of *JCE.*

11. J.A. Lothian, "Being Safe: Making the Decision to Have a Planned Home Birth in the United States," in this issue of *JCE.*

12. Emphases added. L. Shive, "A Midwife's Gift: Olivia's Birth Story," *Midwifery Today—International Midwife* 88 (Winter 2008): 12-3, 13.

13. J. Strutt-Izzard, "A Bermuda Birth Story," *Midwifery Today—International Midwife* 93 (Spring 2010): 55-69, 69.

14. de Melo-Martin and Intemann, see note 6 above, p. 7.

15. D. Kahneman, *Thinking Fast and Slow* (New York: Farrar, Straus and Giroux, 2011); D. Kahneman and A. Tverski, "Prospect Theory: An Analysis of Decision Under Risk," *Econometrica* 47 (1079): 263-92, *http://www.princeton.edu/~kahneman/docs/Publications/prospect_theory.pdf,* accessed 19 August 2013.

16. D.J. Simons and C.F. Chabris, "Gorillas in Our Mist: Sustained Inattentional Blindness for Dynamic Events," *Perception* 28 (1999): 1059-74.

17. I. Sjöblom, E. Idvall, and I. Rådestad, "A Provoking Choice—Swedish Women's Experiences of Reactions to their Plans to Give Birth at Home," *Women and Birth* 25 (2012): e1-18, 15.

18. M. Meuli and U. Moehrlen, "Fetal Surgery for Myelomeningocele: A Critical Appraisal," *European Journal of Pediatric Surgery* 23, no. 2 (April 2013): 103-9.

19. Individuals' decision making can be influenced and diminished by concerns about being stereotyped as by devaluation because of their gender: "Studies of targets of stereotype threat, as they try to suppress thoughts of negative stereotypes, experience a depletion of self-control resources. . . . It is evident that stereotype threat . . . plays a more significant role in decision making than previously believed." P.B. Carr and C.M. Steele, "Stereotype Threat Affects Financial Decision Making," *Psychological Science* 21, no. 10 (Oct 2010): 1411-16, 1414.

20. Lothian, see note 11 above.

21. People generally prefer to receive rewarding outcomes sooner than later. For neuroimaging findings now supporting this, see B. Kim, Y.S. Sung, and S.M. McClure, "The Neural Basis of Cultural Differences in Delay Discounting," *Philosophical Transactions of the Royal Society of London, Series B, Biological Sciences* 367, no. 1589 (5 March 2012): 660-6.

22. S.A. Bynum et al., "Unwillingness to Participate in Colorectal Cancer Screening: Examining Fears, Attitudes, and Medical Mistrust in an Ethnically Diverse Sample of Adults 50 Years and Older," American Journal of Health Promotion 26, no. 5 (May-June 2012): 295-300. See, also, generally, "Fear is a Factor in Health Decisions," *Washington Post*, 11 June 2013, E3.

23. Brody and Sakala, see note 7 above.

24. Minkoff and Ecker, see note 9 above.

25. For neuro-imaging findings now supporting this, see A. Nicolle et al., "Amygdala Involvement in Self-Blame Regret," *Social Neuroscience* 6, no. 2 (2011): 178-89.

26. An example here is a mother whose face is widely known. She is the model for what some say is most famous of all Victorian paintings, John Everett Millais's "Ophelia." This painting portrays Ophelia in Shakespeare's "Hamlet" after she has drowned. She lies dead, face up, in a brook. Sadly, in real life, the model for this painting later gave birth to a stillborn child and took her life. A.C. Faxon, *Dante Gabriel Rosseti* (New York: Abbeville Press, 1989), 144.

27. Some evidence shows that mothers who receive active support during labor are likely to have shorter labor and need less pain relief. E.D Hodnett et al., "Continuous Support for Women During Childbirth," *Cochrane Database of Systematic Reviews* 3 (18 July 2007): CD003766; (update in 2011: 2 CD003766).

28. H. Draper and J. Ives, "Men's Involvement in Antenatal Care and Labour: Rethinking a Medical Model," *Midwifery* 29 (2013): 723-9.

29. In one study, when careproviders sought to draw fathers in, some mothers then felt excluded. Ibid., 724.

30. The Royal College of Midwives has offered guidance to midwives which included addressing fathers by name and encouraging them to express their thoughts and feelings. Ibid., 723.

31. "Protecting a vulnerable woman may be difficult to achieve if her husband is always present." Ibid., 725.

32. "Significant difficulties arise when the putative father is not the woman's partner. . . . It is, however, precisely these men toward whom policies designed to ensure future active fathering toward early involvement need

to be directed." Ibid., 724.

Fathers, once involved, may acquire feelings of commitment on a biological level. See, e.g., K.G. Lambert et al., "Modeling Paternal Attentiveness: Distressed Pups Evoke Differential Neurobiological and Behavioral Responses in Paternal and Nonpaternal Mice," *Neuroscience* 234 (27 March 2013): 1-12.

Kittay says, however, "We want to understand why the sense of commitment that attaches to motherhood seems not to be as deep . . . for the men who abandon their families and their obligations as a provider." E.F. Kittay, *Love's Labor: Essays on Women, Equality, and Dependency* (New York: Routledge, 1999), 26.

33. This is as true of all people who have, we might imagine, more "empathy neurons." This gift, for them and others, may come "with a price." They may be more vulnerable to experiencing emotional pain.

34. C.M. Bean, "Rights and Relationships," *Midwifery Today—International Midwife* 101 (Spring 2012): 39.

35. Emphasis added. L. Starr, "Policy, Scope and 'the Agony of the Moment,' " *Australian Nursing Journal* 19, no. 8 (March 2012): 29.

36. Chervenak et al., see note 4 above.

37. "It has been suggested that enhanced sensitivity to losses is driven by negative emotions, such as fear." S.M. Tom et al., "The Neural Basis of Loss Aversion in Decision-Making Under Risk," *Science* 315, no. 5811 (26 January 2007): 515-8, 515.

38. E.J. Carragee, "Intradiscal Treatment of Back Pain," *Spine Journal* 11, no. 2 (February 2011): 97-9. More generally, in regard to how such an over-reliance on visual images may occur, see M.E. Roser et al., "Right Hemisphere Dominance in Visual Statistical Learning," *Journal of Cognitive Neuroscience* 23, no. 5 (May 2011): 1088-99.

39. Nearly half of primary care doctors surveyed say they give their patients too much medical care, and 80 percent say that their need to practice defensive medicine has interfered with their patient care, and 30 percent of healthcare may be unnecessary. "When to say 'Whoa!' to Your Doctor: Common Tests and Treatments You Probably Don't Need," *Consumer Reports* 77, no. 6 (June 2012): 12-3.

40. V.C. Desai, P.C. Heaton, and C.M. Kelton, "Impact of the Food and Drug Administration's Antipsychotic Black Box Warning on Psychotropic Drug Prescribing in Elderly Patients with Dementia in Outpatient and Office-Based Settings," *Alzheimer's & Dementia* 8, no. 5 (September 2012): 453-7. These risks, although small, are increased in the elderly and greater still when these patients have dementia.

41. D. Ofri, *What Doctors Feel* (Boston, Mass.: Beacon Press, 2013), 107, citing L. Granek et al., "Nature and Impact of Grief Over Patient Loss on Oncologists' Personal and Professional Lives," *Archives of Internal Medicine* 172, no. 12 (25 June 2012): 964-6.

42. Ofri, ibid.

43. A baby with Potter's sequence just recently has survived, at least up until now, with dialysis and saline (salt water) infusions, although she has no kidneys. "She is every bit a miracle," one of her parents says. R. Roxane and A. Argetsinger, "Abigail Rose: Every Bit a Miracle," *Washington Post,* 30 July 2013, C2.

44. D. Ofri, see note 42 above, pp. 98-106. The author of this book offers pieces she writes for people wanting to subscribe, through *author@danielleofri.com.*

45. The post-traumatic stress that these mothers may experience calls for interventions designed to help prevent this early on, prior to delivery. Preventive interventions, now called "prehabilitation interventions," have been already introduced for women with breast cancer, once it is diagnosed. J.K. Silver and J. Baima, "Cancer Prehabilitation: an Opportunity to Decrease Treatment-Related Morbidity, Increase Cancer Treatment Options, and Improve Physical and Psychological Health Outcomes," *American Journal of Medicine & Rehabilitation* 92, no. 8 (August 2013): 715-27. These interventions may be helpful to doctors, as well.

46. This approach, known as Crew Resource Management (CRM), involves communication tools adopted in the aviation industry more than 25 years ago. It "provides an opportunity for each member of the team to speak up so that everyone feels responsible." Nebraska Medical Center, "From Cockpit to Operating Room," Nebraska (Fall/Winter 2006), *www.nebraskamed.com/article/95/from-cockpit-to-operating-room,* accessed 2 August 2013. "Throughout the procedure, team members verbalize concerns by making eye contact with the person with whom they're speaking." C. Lytle, "Operating Rooms Take Cue from the Cockpit," *University of Nebraska Medical Center News,* 22 February 2006, *http: //app1.unmc.edu/publicaffairs/todaysite/sitefiles/today_full.cfm?match,* accessed 2 August 2013.

47. J. D'Arcy, "Midwives vs Hospitals: There is a Middle Ground," *Washington Post,* blogs on parenting, 13 May 2011, accessed 2 August 2013.

48. Neonatal mortality accounts for 43 percent of children under five. A.C. Moran et al., "Measuring Coverage in MNCH Indicators for Global Tracking of Newborn Care," *PLoS Medicine* 10, no. 5: e1001415. Doi: 10.1371/journal.pmed.1001415 .p,

49. C.M. Josif et al., " 'No More Strangers': Investigating the Experiences of Women, Midwives and Others During the Establishment of a New Model of Maternity Care for Remote Dwelling Aboriginal Women in Northern Australia," *Midwifery* (12 May 2013), *http: //dx.doi.org/10.1016/j.midw.2013.03.012,* accessed 2 August 2013. "The divide between MGP [midwifery group practice] midwives and medical staff . . . in the early days of the model had been . . . well documented . . . as a risk to maternity services. . . . After 12 months divisions between hospital staff and MGP midwives and resistance to the model had diminished. In fact during the final round of interviews, relationships were described by all participants as more cooperative with much greater insight and appreciation of each other's roles. Emphases added; p. 6.

50. "[T]he most important take-home message was the set-up . . . the investigators made their initial counseling call while patients were still in the hospital while they were inpatients, a captive audience, if you like." M.A. Otto, "Begin Tobacco Counseling Efforts Before Discharge,"

Clinical Psychiatry News 41, no. 6 (June 2013): 22.

51. See note 2 above.

52. See note 17 above, p. e15.

53. Patients may, though, respond when careproviders are more emotional in what they say by being more compliant. Instruction leaflets in one study presented a hierarchy of "doctors at the top, midwives in the middle, and pregnant women at the bottom." This worked against women's having a more informed choice, as the document intended. It resulted instead in "informed compliance." H. Stapelton, M. Kirkham, and G. Thomas, "Qualitative Study of Evidence Based Leaflets in Maternity Care," *British Medical Journal* 324, no. 7338 (March 2002): 639.

54. C.K.W. De Dreu, "Oxytocin Modulates Cooperation Within and Competition Between Groups: An Integrative Review and Research Agenda," *Hormones and Behavior* 61, no. 3 (March 2012): 419-28.

55. See note 17 above, p. e14.

56. M.N. Velaquez et al., "A Dual-Focus Motivational Intervention to Reduce the Risk of Alcohol-Exposed Pregnancy," *Cognitive and Behavioral Practice* 17, no. 2 (May 2010): 203-12. These careproviders "roll with" their patients' resistance. If patients seem reluctant to hear information, for example, the careproviders suggest that they can do this at another time. Careproviders ask, though, which option for changing the patients prefer, reducing their alcohol use or using contraception. This approach may, in my view, be problematic in that patients may "hear this" as coercive; they may then be less willing to change, as a result. See, also, K.S. Ingersoll et al., "Pregnancy Motivational Interventions to Reduce Alcohol-Exposed Pregnancy Risk," *Journal of Substance Abuse Treatment* 44 (2013): 407-16.

57. This could, of course, reduce their guilt as intended, or possibly increase it, resulting in home delivery being a risk that they don't want to take on.

58. J. Wolfe, "Physician Sees Widening Gap Separating Doctor and Patient," *Psychiatric News* 47, no. 8 (20 April 2012): 27.

59. "Focused entirely on the bad feelings generated by the problem at hand, we lose our capacity to . . . [consider] . . . other ways of thinking and responding." S. Andreas, "Breaking the Spell," *Psychotherapy Networker* (May/June 2013): 42-9, 44.

60. For example: "Asking too many closed questions during a booking can dehumanize the interaction, making it feel almost like an interrogation." K. Murray, S. Hamilton, and D. Martin, "Delivering Effective Communication," *Practising Midwife* 9, no. 4 (April 2006) 24-6, 25. The gains from open questioning, in contrast to closed questioning are described when discussing motivational interviewing (also at note 56) in the text.

Features

Planned Home Birth in the United States and Professionalism: A Critical Assessment

Frank A. Chervenak, Laurence B. McCullough, Amos Grünebaum, Birgit Arabin, Malcolm I. Levene, and Robert L. Brent

ABSTRACT

Planned home birth has been considered by some to be consistent with professional responsibility in patient care. This article critically assesses the ethical and scientific justification for this view and shows it to be unjustified. We critically assess recent statements by professional associations of obstetricians, one that sanctions and one that endorses planned home birth. We base our critical appraisal on the professional responsibility model of obstetric ethics, which is based on the ethical concept of medicine from the Scottish and English Enlightenments of the 18th century. Our critical assessment supports the following conclusions. Because of its significantly increased, preventable perinatal risks, planned home birth in the United States is not clinically or ethically benign. Attending planned home birth, no matter one's training or experience, is not acting in a professional capacity, because this role preventably results in clinically unnecessary and therefore clinically unacceptable perinatal risk. It is therefore not consistent with the ethical concept of medicine as a profession for any attendant to planned home birth to represent himself or herself as a "professional." Obstetric healthcare associations should neither sanction nor endorse planned home birth. Instead, these associations should recommend against planned home birth. Obstetric healthcare professionals should respond to expressions of interest in planned home birth by pregnant women by informing them that it incurs significantly increased, preventable perinatal risks, by recommending strongly against planned home birth, and by recommending strongly for planned hospital birth. Obstetric healthcare professionals should routinely provide excellent obstetric care to all women transferred to the hospital from a planned home birth. The professional responsibility model of obstetric ethics requires obstetricians to address and remedy legitimate dissatisfaction with some hospital settings and address patients' concerns about excessive interventions. Creating a sus-

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tained culture of comprehensive safety, which cannot be achieved in planned home birth, informed by compassionate and respectful treatment of pregnant women, should be a primary focus of professional obstetric responsibility.

INTRODUCTION

Home births have increased in the United States by 29 percent, from 2004 to 2009.[1] The American College of Obstetricians and Gynecologists (ACOG) has stated that pregnant women have a right to elect planned home birth.[2] The Royal College of Obstetricians and Gynaecologists (RCOG) goes further and explicitly endorses planned home birth.[3] These statements make the implicit assumption that planned home birth is compatible with professional responsibility for pregnant and fetal patients in the intrapartum period (occurring during childbirth). The purpose of this article is to show that such an assumption lacks scientific and ethical justification and that therefore attendance at planned home birth is a violation of professional responsibility.

Professional responsibility is an essential component of all of clinical ethics. In planned home birth, this is especially the case, as we will show in this article. We therefore begin with an account of the ethical concept of medicine as a profession and its origins in the Scottish and English Enlightenments. On this basis, we then set out the components of the professional responsibility model of obstetric ethics and contrast it with the maternal-rights-based reductionist model. We then provide a critical appraisal of the assumption in the ACOG and the RCOG statements that planned home birth is compatible with professional responsibility in obstetric care. We also show that the ineliminable, clinically unnecessary and therefore clinically unacceptable intrinsic perinatal risks of the home setting mean that attendants at planned home birth, regardless of their training, cannot justifiably consider themselves to be professionals or claim to be engaging in professional obstetric care. We conclude by identifying the implications of the professional responsibility model for planned hospital birth.

THE PROFESSIONAL RESPONSIBILITY MODEL OF OBSTETRIC ETHICS, AN ESSENTIAL COMPONENT OF THE ETHICS OF PLANNED HOME BIRTH

The professional responsibility mode of obstetric ethics has major implications for the ethics of planned home birth. The professional responsibility model of obstetric ethics is based on the ethical concept of medicine as a profession.[4] When in the history of Western medical ethics did this concept originate? Many physicians and clinical ethicists believe that medical professionalism has roots in the Hippocratic Oath and other ethical texts in the Hippocratic Corpus.[5] However, the Hippocratic Oath can reasonably be read as a guild oath, the primary purpose of which was to secure the fealty of young men who were not the sons of physicians. "It is clear that the essential role of the Oath was to preserve the interests and privileges of the family possessing medical knowledge from the moment it was made available to others."[6] The entire first section of the Hippocratic Oath stipulates the obligations of these young men to their masters in the guild, solemnized in a "written contract,"[7] that is, a loyalty oath.

Obstetric practice figures prominently in the prescriptions and proscriptions that follow, which are not explained but can be read as self-interested; for example, avoiding high mortality rates and the ruined reputation that they bring in their wake to physicians whose patients die in high numbers. In ancient Greek medicine, a pessary was a stone placed in the cervix of a pregnant woman to cause it to dilate, resulting in uterine contractions that caused an induced abortion. In an era innocent of infection control and aseptic pessaries (which we now have), pessaries became major sources of infections for women and subsequent deaths.

The oath calls for the protection of *techné*. This term is wrongly translated as the "art" of medicine, in contrast to the science of medicine, because *techné* names the "science" of medicine. We use the scare quotes to indicate that *techné* is not science, but a fixed, unchanging, and unchangeable set of knowledge about the four humors and their imbalances, and the clinical skills of diagnosing the course and severity of diseases and injuries and intervening very modestly to alter that course.[8] This is not science as we know it. To make the Hippocratic Oath and accompanying texts the basis of professionalism in medicine is very odd, indeed.

Suppose, to the contrary, that the Hippocratic Corpus does indeed present a concept of medicine as a profession—rather than an unchanging, self-interested guild—that comes down to us intact from ancient Greece in what is usually invoked as the "Hippocratic Tradition." Robert Baker has dubbed this view the "Hippocratic footnote," and discredited it.[9] The historical problem is that there was no Hippocratic tradition, as Vivian Nutton has shown.[10] The oath fell out of favor in the early centuries of the Common Era. In medieval and Renaissance uni-

versities, graduates in medicine took an oath of loyalty to the faculty. Nutton argues that the mid-20th century witnessed a conservative reaching back to the revered founder of Western medicine, to valorize a set of values that did not originate in ancient Greece. Galvaõ-Sobrinho has argued that this has been a common use of the historical figure of Hippocrates. His name and the works that bear his name have been invoked to valorize views that the Hippocratic physicians would not recognize and are even incompatible with the content of the Hippocratic texts.[11]

The ethical concept of medicine as a profession originated in the Scottish and English Enlightenments.[12] Two physician-ethicists, John Gregory (1724-1773) of Aberdeen and Edinburgh in Scotland, and Thomas Percival (1740-1804) of Warrington and Manchester in England, invented the ethical concept of medicine as a profession. They did so precisely in response to the guild mentality that had come to dominate Western medicine. The individual and group self-interest was epitomized in the Statuta Moralia of the Royal College of Physicians in London. These "moral statutes" were designed to promote the self-interest of physicians in such matters as cultivating good reputations by never criticizing each other in public.[13] At that time, there was no accepted science of medicine, and therefore no accepted educational pathway into medical or surgical practice. Indeed, there were almost as many concepts of health and disease and treatments as there were physicians, who competed fiercely for the small private-practice market in the homes of the well to do. Gregory and Percival also wrote their medical ethics in response to the crisis of trust of the sick. As Dorothy and Roy Porter have convincingly documented from magisterial research on 18th-century primary sources, sick persons did not trust physicians, surgeons, and apothecaries (forerunners of modern pharmacists) intellectually, to know what they were doing, or morally, to be more concerned about the well-being of the sick than with lining their pockets with the money of the sick.[14] In present times, many pregnant women who elect home birth do so on the basis of trust in their attendants. This intellectual and moral trust is warranted if and only if those attendants can justifiably be regarded as healthcare professionals.

Gregory and Percival's invention of the ethical concept of medicine and its commitments warranting the intellectual and moral trust of patients bear directly on the ethics of planned home birth. Gregory and Percival set out to reform medicine into the profession that it has become over the past two centuries. They did so by turning to the best scientific method of their day: Baconian, experience-based medicine (a forerunner of what is now known as evidence-based medicine, or, better, the deliberative practice of medicine) and the best moral science of their day: Gregory to David Hume's sympathy-based moral science and philosophy (1711-1776) and Percival to Richard Price's (1723-1791) intuition-based moral science and philosophy.[15]

Using these intellectual resources, they forged a three-component ethical concept of medicine as a profession. First, physicians should commit to becoming and remaining scientifically and clinically competent. Second, physicians should use their scientific and clinical competence primarily to protect and promote the health-related interests of patients, keeping individual self-interest systematically secondary. Third, physicians should commit to sustaining medicine as a public trust (the phrase is Percival's) that exists primarily for the benefit of patients and society, keeping group or guild self-interest systematically secondary.[16] The result was to transform physicians from incompetent, self-interested practitioners into professional physicians. The sick were transformed into patients. Thus was introduced into the history of medical ethics the physician-patient relationship that is primarily fiduciary and not primarily contractual in nature.

The professional virtue of integrity is based in the ethical concept of medicine as a profession. Professional integrity comprises two commitments. The first is to intellectual excellence that is achieved by making the first commitment in the ethical concept of medicine as a profession. The second is to moral excellence that is achieved by making the second and third commitments in the ethical concept of medicine as a profession. Professional integrity sometimes requires healthcare professionals to protect patients from themselves.[17] In this respect, the ethical concept of medicine is justifiably paternalistic in nature: it rests on the assumption that scientific and clinical competence creates expertise about healthcare that the typical patient does not possess.

The ethical concept of being a patient is a function of the ethical concept of medicine as a profession. A human being becomes a patient when that human being is presented to a physician or other healthcare professional and there exist forms of clinical management that are reliably expected in deliberative (evidence-based, rigorous, transparent, and accountable) clinical judgment to result in net

clinical benefit for that human being. The ethical concept of being a patient is beneficence based.[18]

The professional responsibility model of obstetric ethics applies the ethical concept of medicine as a profession to obstetric care.[19] The focus of this article is on planned home birth, which, by definition, occurs at the end of pregnancy. During the intrapartum period, the obstetric healthcare professional has two patients, the pregnant patient and the fetal patient, when the pregnant women presents for care. The obstetric healthcare professional therefore has beneficence-based obligations to both the pregnant patient and fetal patient to protect and promote their health-related interests. The obstetric healthcare professional also has autonomy-based obligations to the pregnant woman. These obligations focus on empowering the pregnant woman with information that she needs to make decisions with her obstetric healthcare professional about the management of her pregnancy. The obstetric healthcare professional must in all cases take into account and balance beneficence-based and autonomy-based obligations to the pregnant patient and beneficence-based obligations to the fetal patient. This ethically complex relationship means that the fetal patient is not a separate patient, that is, beneficence-based obligations to the fetal patient are a part of, but not the entirety of, the ethical relationship between the obstetric healthcare professional and the pregnant patient and fetal patient.[20]

The professional responsibility model stands in sharp contrast to what we have elsewhere described as the maternal-rights-based reductionist model of obstetric ethics.[21] In the rights-based reductionist model, the pregnant woman's autonomy is the conclusive ethical consideration throughout pregnancy. She has an absolute right to bodily integrity, unconstrained by any ethical obligations to the fetus. The fetus is not a patient on this account and is ethically inseparable from the pregnant woman, the only patient in the rights-based reductionist model of obstetric ethics. This model has important implications for the relationship between the pregnant woman and the obstetric provider. The relationship is purely contractual, because the sole basis of the relationship is the exercise of the pregnant woman's autonomy. In the professional responsibility model, the pregnant woman's right to bodily integrity is not absolute; it is justifiably constrained by professional integrity.

The maternal-rights-based reductionist model has a radical implication that its advocates ignore. In such a model of healthcare, there are no patients. There are only sick individuals (*aegtorus* in the Latin texts that precede Gregory and Percival in the history of Western medical ethics, in which there is no word that is reliably translated in English as "patient") or clients who contract with providers. There are no healthcare professionals, because rights-based-reductionist models embrace an absolute right to the bodily integrity of the client, which eliminates professional integrity as an ethically justified constraint on the client's autonomy, because it prevents the physician from intervening in a professional manner. In the technical language of philosophy, the maternal-rights-based reductionist model, when it continues to use the language of "patient," is impermissibly parasitic on the professional responsibility model, which, as a matter of the logic of concepts, the rights-based reductionist model must reject.

CRITICAL APPRAISAL OF THE ASSUMPTION THAT PLANNED HOME BIRTH IS COMPATIBLE WITH PROFESSIONAL RESPONSIBILITY

We began this article with references to statements by professional obstetric associations of physicians. The ACOG sanctions the right of a pregnant woman to select the birth setting,[22] while the RCOG goes further and explicitly endorses planned home birth.[23] Both statements implicitly assume that planned home birth is compatible with professional responsibility to the pregnant patient and fetal patient in the intrapartum period of term pregnancies. We disagree and turn now to a critical appraisal of this implicit assumption.

We do so on the basis of our previous analyses of planned home birth and a new data analysis that was not available to either the ACOG or the RCOG. In our previous analyses we have shown that planned home birth, because the ineliminable risk of emergency transport of laboring women to the hospital, there is an increased risk of adverse perinatal outcomes.[24] We have recently reported the results of a new analysis of the U.S. Centers for Disease Control's National Center for Health Statistics birth certificate data files for the period 2007-2010 that strongly corroborates our earlier analyses.[25] The resulting study population of more than 13 million births is the largest study population to date.

Our analysis focused on relative risk, the ratio of the occurrence of an event in the group exposed to a form of clinical management—planned home birth in this case—versus the occurrence of an event in the non-exposed group—hospital birth in this case. Relative-risk analysis is commonly used in comparative analysis of outcomes. We demonstrated

a relative risk of 10.55 for five-minute Apgar scores of zero for home versus hospital birth, which increases to 14.24 for nulliparous women (women who have not previously given birth). The relative risk of seizures and other neurologic disorders was 3.80 for home versus hospital birth, which increased to 6.28 for nulliparous women. These increased risks result in clinically significant perinatal mortality and morbidity that can be prevented by hospital birth. These perinatal risks therefore become clinically unnecessary to impose on the fetal and neonatal patients, who cannot consent to them. There is an obvious beneficence-based obligation and therefore professional responsibility to prevent such unnecessary clinical risks to fetal and neonatal patients when there is a safe and effective alternative. That alternative is a planned hospital birth, which, our analysis indicates, significantly decreases perinatal morbidity and mortality. Given the clinically unnecessary violation of beneficence-based obligations to the fetal and neonatal patient, any claim that the home birth setting is compatible with professional integrity founders on these data.

In light of this new data analysis and its ethical implications, it becomes apparent that the ACOG statement suffers from internal inconsistency. First, the ACOG's position, in effect, holds that the pregnant woman's right to select her preferred birth setting at home should be recognized, even though the ACOG recommends against planned home birth.[26] The ethical implication of the new data analysis that we have just described is that one cannot sanction the right of a pregnant woman to select a birth setting that is inconsistent with professional integrity and responsibility without taking the view that such a right is unconstrained by professional integrity and responsibility. Yet the ACOG is committed to the professional integrity of obstetric practice. Second, in sanctioning such a right, the ACOG has implicitly invoked the maternal-rights-based reductionist model. In simultaneously recommending against planned home birth, the ACOG has implicitly invoked the professional responsibility model. As is clear from the above account of the two models, the two models cannot be invoked simultaneously.

In light of the new data analysis and its ethical implications, the RCOG's problem is more serious. By endorsing planned home birth, the RCOG has implicitly embraced the view that planned home birth is consistent with professional integrity and responsibility.[27] The clinically significant and unnecessary increased relative perinatal risks of planned home birth rule out such consistency.

As professional associations of obstetricians, the ACOG and the RCOG should be committed to the professional responsibility model of obstetric ethics. Our clinical and ethical analysis of the CDC data support the conclusion that planned home birth is not compatible with professional integrity and therefore professional responsibility in patient care. In light of the new data analysis and its ethical implications, both the ACOG and the RCOG should reconsider their statements on planned home birth. The RCOG now needs to justify its endorsement of planned birth both scientifically and ethically. Both the ACOG and the RCOG should unequivocally recommend against planned home birth. They should also be clear that no obstetrician should participate in planned home birth, because this would be facilitating clinically unnecessary, unsafe delivery, which is incompatible with professional integrity. Both the ACOG and the RCOG should be explicit that intentionally facilitating unsafe clinical practice of any kind is not permitted in professional medical practice.

The ACOG now needs especially to justify scientifically and ethically its sanction of planned home birth, because, as planned home birth has increased in frequency, clinically unnecessary risks of adverse perinatal outcomes have also increased. Neither the ACOG nor the RCOG sanction a woman's right to smoke or consume spirit beverages during pregnancy, and both explicitly recommend against these behaviors during pregnancy.[28] Any obstetrician who were to endorse or even sanction such clinically unsafe and unnecessary practices as smoking or drinking alcohol by pregnant patients would be justifiably regarded as acting inconsistently with professional responsibility. Mutatis mutandis, attendants at planned home birth, no matter their training or experiences, should not be regarded as acting consistently with professional responsibility. It follows that planned home birth should not be endorsed or even sanctioned by any professional obstetric organization.

PLANNED HOME BIRTH ATTENDANTS ARE NOT ACTING IN A PROFESSIONAL CAPACITY

The ethical concept of medicine has an important and heretofore unidentified implication for planned home birth. In light of the new data analysis, planned home birth is not consistent with the first commitment in the ethical concept of medicine as a profession. Scientifically and clinically competent provision of obstetric services requires

the capacity to diagnose and prevent obstetric complications. Scientifically and clinically competent provision of obstetric services also requires the ability to diagnose and respond quickly and effectively to unexpected obstetric emergencies. No such capacities exist in planned home birth. This clinical reality is not a function of who the attendant is. Instead, the setting of planned home birth is itself determinative, because, given limited diagnostic and treatment capacity and especially the high and highly variable transport times, there is no assured access to hospital-based advances in obstetric practices that have greatly improved maternal, fetal, and neonatal outcomes of unexpected obstetric complications and emergencies over the past century. The implication is clear and unfortunately stark: Any claim by an attendant to planned home birth to be providing scientifically and clinically competent obstetric services is altogether implausible.[29]

The second commitment of the ethical concept of medicine as a profession requires healthcare professionals to protect and promote the health-related interests of patients as the primary concern and motivation, keeping self-interest systematically secondary. The inability to provide scientifically and clinical competent obstetric services in the home setting of planned home birth means that it is not possible for this commitment to be met. This conclusion also has a clear and, unfortunately, stark implication for attendants at planned home birth: they cannot plausibly claim to be acting primarily in the health-related interests of pregnant women, fetuses, and neonates.

These two implications of the new data analysis, we freely admit, are jarring. Together these two implications support a third clear and, unfortunately, stark implication: no one who attends a planned home birth can with scientific, clinical, and ethical justification claim the title of being a "professional." This applies equally to physicians, certified nurse midwives, and those who represent themselves as professional or licensed midwives. Because it is not justified to describe attendants at home birth as professionals, no matter their training or experience, neither the pregnant woman nor the neonate can justifiably be referred to as "patients." The pregnant woman becomes merely a client in a contractual, not professional, relationship. This is the nature of the nonprofessional relationship that results from the rights-based reductionist model of obstetric ethics. There are associations of professional midwives and they have codes of ethics.[30] Having such a code is usually one of the defining features of a profession. This is not the case for code of ethics of associations of attendants at planned home birth. These codes of ethics cannot plausibly be represented to pregnant women or to the public as professional codes of ethics.

PROFESSIONAL RESPONSIBILITY AND HOSPITAL BIRTH

The professional responsibility model of obstetric ethics has important implications for obstetric practice. First and foremost, when a pregnant woman is transported to the hospital from a planned home birth, she should receive uniformly excellent obstetric care. The second component of the ethical concept of medicine as a profession requires the entire obstetric team to focus on the patient and not themselves. This means that no judgmental attitudes should be cultivated and no judgmental statements ever be made.[31] Because they would be self-indulging, such attitudes and statements would be patently inconsistent with professional responsibility.

The professional responsibility model also calls for continuous enhancement of the organizational culture of hospital-based obstetric care. First and foremost, the professional responsibility model calls for an organizational culture of safety and prevention of clinically unnecessary interventions.[32] Patient safety has become the paramount goal of hospital-based obstetrics over the past decade. This change has required reforming organizational culture and includes the adoption of team principles and safety drills.[33] Adopting a comprehensive safety culture reduced the rate of cesarean delivery.[34] Adopting a comprehensive safety culture has become an important means for responding effectively to the concerns of pregnant women about excessive obstetric interventions in the hospital setting. These improvements implement the first commitment of the ethical concept of medicine as a profession. The majority of these safety goals cannot be satisfactorily implemented at a planned home birth. While the team concept in the hospital includes multidisciplinary members, such as certified nurse midwives, nurses, anesthesiologists, pediatricians, and obstetricians, there is no team concept at a planned home birth. At a planned home birth there is almost always only one attendant assisting the pregnant woman with her delivery. As a consequence, team care cannot occur, much less become a component of planned home birth, which is not compatible with quality obstetric care.

The second commitment of the ethical concept of medicine as a profession requires the creation of an organizational culture of compassion that sup-

ports the preferences of pregnant women throughout their pregnancies and aims to maximize a homelike setting in the hospital. For example, there should be self-conscious, deliberate efforts to create a quiet setting on labor and delivery and postpartum floors.[35]

CONCLUSION

Planned home birth in the U.S. is not clinically or ethically benign and is not consistent with professional responsibility to and for pregnant, fetal, and neonatal patients. Obstetric healthcare associations should neither sanction not endorse planned home birth. Instead, these associations should recommend against planned home birth. Obstetric healthcare professionals should respond to expressions of interest in planned home birth by pregnant women by informing them that it has significantly increased, preventable, and clinically unnecessary perinatal risks, by recommending strongly against planned home birth, and by recommending strongly for planned hospital birth. Obstetric healthcare professionals should routinely provide excellent obstetric care to all women transferred to the hospital from a planned home birth. It is incompatible with the ethical concept of medicine as a profession for any attendant to planned home birth to represent himself or herself in any way as a healthcare professional.

The professional responsibility model of obstetric ethics requires obstetricians to address and remedy the legitimate dissatisfaction of pregnant women with some hospital settings. Creating a sustained culture of comprehensive safety, which cannot be achieved in planned home birth, informed by compassionate and respectful treatment of pregnant women, should be a primary focus of professional obstetric responsibility.

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DISCLOSURE

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NOTES

1. F.A. Chervenak et al., "Planned Home Birth: The Professional Responsibility Response," *American Journal of Obstetrics & Gynecology* 208, no. 1 (January 2013): 31-8; M.F. MacDorman, T.J. Matthews and E. Declercq, "Home Births in the United States: 1990-2009," *NCHS Data Brief* 84 (January 2012): 1-8.

2. ACOG, "Committee Opinion No. 476: Planned Home Birth," *Obstetrics & Gynecology* 117, no. 2 (February 2011): 425-8.

3. Royal College of Obstetricians and Gynaecologists/ Royal College of Midwives, "Home Births, joint statement No. 2, April 2007," *http://www.rcog.org.uk/files/rcog-corp/uploaded-files/JointStatmentHomeBirths2007.pdf,* accessed 24 June 2013.

4. F.A. Chervenak, R.L. Brent, and L.B. McCullough, "The Professional Responsibility Model of Obstetric Ethics: Avoiding the Perils of Clashing Rights," *American Journal of Obstetrics and Gynecology* 205, no. 4 (October 2011): 315.e1-5.

5. ABIM Foundation, American Board of Internal Medicine; ACP-ASIM Foundation, American College of Physicians-American Society of Internal Medicine; European Federation of Internal Medicine; "Medical Professionalism in the New Millennium: A Physician Charter," *Annals of Internal Medicine* 136, no. 3 (February 2002): 243-6.

6. J. Jouanna, *Hippocrates,* trans. M.B. DeBevoisem (Baltimore, Md.: Johns Hopkins University Press, 1999), 47.

7. H. von Staden, "In a Pure and Holy Way: Personal and Professional Conduct in the Hippocratic Oath," *Journal of the History of Medicine and Allied Sciences* 51, no. 4 (October 1996): 406-8.

8. R. Porter, *The Greatest Benefit to Mankind: A Medical History of Humanity* (New York: Norton, 1997), 55-62.

9. R. Baker, "The History of Medical Ethics," in *Companion Encyclopedia of the History of Medicine,* ed. W.F. Bynum and R. Porter (London, U.K: Routledge, 1997), 852-87.

10. V. Nutton, "The Discourses of European Practitioners in the Tradition of the Hippocratic Texts," *The Cambridge World History of Medicine Ethics,* ed. R.B. Baker and L.B. McCullough (New York: Cambridge University Press, 2009), 359-62.

11. C.R. Gãlvao-Sobrinho, "Hippocratic Ideals, Medical Ethics, and the Practice of Medicine in the Early Middle Ages: The Legacy of the Hippocratic Oath," *Journal of the History of Medicine and Allied Sciences* 51, no. 4 (October 1996): 438-55.

12. L.B. McCullough, "The Ethical Concept of Medicine as a Profession: Its Origins in Modern Medical Ethics and Implications for Physicians," in *Lost Virtue: Professional Character Development in Medical Education,* ed. H. Kenny and W. Shelton (New York: Elsevier, 2006), 17-27.

13. L.B. McCullough, *John Gregory and the Inven-*

tion of Professional Medical Ethics and the Profession of Medicine (Dordrecht, the Netherlands: Kluwer Academic Publishers), 1998.

14. R. Porter and D. Porter, *Patients' Progress* (Stanford, Calif.: Stanford University Press, 1989).

15. McCullough, see note 12 above; McCullough, see note 13 above.

16. McCullough, see note 12 above.

17. F.A. Chervenak, L.B. McCullough, and R. L. Brent, "The Perils of the Imperfect Expectation of the Perfect Baby," *American Journal of Obstetrics and Gynecology* 203, no. 2 (August 2010): 101.e1-5.

18. L.B. McCullough and F.A. Chervenak, *Ethics in Obstetrics and Gynecology* (New York: Oxford University Press, 1994).

19. McCullough, see note 12 above; Chervenak, Brant, and McCullough, see note 4 above.

20. McCullough and Chervenak, see note 18 above.

21. Chervenak, Brent, and McCullough, see note 4 above.

22. ACOG, see note 2 above.

23. RCOG, see note 3 above.

24. Chervenak et al., "Planned Home Birth," see note 1 above; F.A. Chervenak, L.B. McCullough, and B. Arabin, "Obstetric Ethics: An Essential Dimension of Planned Home Birth," *Obstetrics & Gynecology* 117, no. 5 (May 2011): 1183-7.

25. A. Grünebaum et al., "Apgar Score of Zero at Five Minutes and Seizures or Serious Neonatal Dysfunction in Relation to Birth Setting," *American Journal of Obstetrics and Gynecology* (published online 21 June 2013): pii: S0002-9378(13)00641-8. doi: 10.1016/j.ajog.2013.06.025 (epub ahead of print).

26. ACOG, see note 2 above.

27. RCOG, see note 3 above.

28. "ACOG Committee Opinion # 316: Smoking Cessation During Pregnancy," *Obstetrics & Gynecology* 104, no. 4 (October 2005): 883-8; see, e.g., "RCOG Statement on paper 'Maternal smoking during pregnancy and criminal offending among adult offspring,' " 16 November, *http://www.rcog.org.uk/what-we-do/campaigning-and-opinions/statement/rcog-statement-paper-%E2%80%98maternal-smoking-during-pregnanc*, accessed 24 June 2013.

29. Chervenak, McCullough, and Arabin, "Obstetric Ethics," see note 24 above.

30. See, for example, American College of Nurse Midwives, "Code of Ethics," *http://www.midwife.org/siteFiles/descriptive/code_of_ethics_2008.pdf*, accessed 24 June 2013; and Association of Texas Midwives, "Code of Ethical Midwifery Practice," *http://www.texasmidwives.com/PDFfiles/ATM%20Code%20of%20Ethics_Original.pdf,* accessed 24 June 2013.

31. Chervenak, Brent, and McCullough, see note 4 above; Chervenak, McCullough, and Arabin, "Obstetric Ethics," see note 24 above.

32. Ibid.

33. A. Grünebaum, F. Chervenak, and D. Skupski, "Effect of a Comprehensive Patient Safety Program on Compensation Payments and Sentinel Events," *American Journal of Obstetrics and Gynecolology 204, no. 2 (February 2011): 97-105.*

34. A. Grünebaum, J. Dudenhausen, F.A. Chervenak, and D. Skupski, "Reduction of Cesarean Delivery Rates after Implementation of a Comprehensive Patient Safety Program," *Journal of Perinatal Medicine* 41, no. 1 (January 2013): 51-5.

35. Grünebaum, Chervenak, and Skupski, see note 33 above.

Special Issue on Place of Birth

Guest Edited by Elizabeth Bogdan-Lovis, Charlotte de Vries, and Raymond G. de Vries

Ethics and the Architecture of Choice for Home and Hospital Birth

Elizabeth Bogdan-Lovis and Raymond G. de Vries

ABSTRACT

In this issue of *The Journal of Clinical Ethics*, we offer a variety of perspectives on the moral and medical responsibilities of professionals with regard to a woman's choice of where she will birth her baby. The articles in this special issue focus on place of birth, but they have larger resonance for clinicians whose decisions about providing the best possible care require them to sort through evidence, consider their own possible biases and the limitations of their training, and balance the wishes of their patients with the demands of colleagues, hospitals, and insurers. The articles published in this special issue of *The Journal of Clinical Ethics* will help those who wrestle with such dilemmas in everyday clinical decision making.

In 1989, Marc Keirse and colleagues wrote *A Guide to Effective Care in Pregnancy and Childbirth,* which paved the way for development of the Cochrane Collaboration/Cochrane Library of Systematic Reviews. In 1995, Keirse captured the dilemmas associated with clinical decision making regarding place of birth when he wrote, "It is a woman's prerogative and her fundamental human right to determine her reproductive behavior, and this includes how and where to give birth. The issue is to accommodate the autonomy of pregnant women in as safe a manner as possible for both mother and baby."[1] In order to illustrate the difficult clinical and ethical issues that arise when balancing "a woman's prerogative" with "safety for mother and baby," we open our introduction with the case of Linda Sterkte.

CASE

Linda Sterkte, 32, decided to give birth at home under the care of a certified nurse-midwife (CNM). Her previous physician-managed hospital birth was difficult: labor was induced, she had a vacuum delivery, and a midline episiotomy caused a tear that extended into her anal sphincter. This second pregnancy has been uneventful. She estimated to be at 41 weeks' gestation, and during her most recent exam her baby was of average gestational weight, around eight pounds. Her midwife has a formal backup arrangement with clinicians at the local hospital, and their collaborative protocol stipulates that at 41 weeks care is to be transferred from the midwife to the physician team, making home birth impossible.

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Despite the length of gestation, Ms. Sterkte still wishes to give birth at home. She asks the CNM to advocate on her behalf, to request that an exception be made to the established protocol, to give Ms. Sterkte an additional week, during which she would still be able to give birth at home.

Currently, in the U.S., there are perhaps three ways this story might proceed. (1) Because the midwife does not feel that she can obtain an exception to the backup protocol arrangement, she tells Ms. Sterkte that her care will be transferred to the backup physicians, and Ms. Sterkte reluctantly agrees. Or, (2) the midwife orders a biophysical profile using ultrasound to assess fetal movement, tone, breathing, amniotic fluid volume, and heart rate. The evaluation comes back normal, suggesting that the fetus is doing well. With this reassuring assessment, the CNM approaches the backup physicians to appeal for an exception. Or, (3) Ms. Sterkte refuses to be transferred to the care of the physicians at the hospital.

Each of these outcomes is rife with questions of ethics and professional responsibility, and exemplify the tensions inherent in the organizational arrangements that now structure the relationship between pregnant women and the medical professionals responsible for their care.

The first scenario highlights the situation of midwives in the United States. CNMs are autonomous professionals in their own right, but they are required to have an established collaborative agreement with a physician to insure availability for consultation and/or referral if a transfer to the hospital should become necessary. These arrangements can be delicate. To function effectively—that is, to facilitate continuity of care and seamless transport when necessary—arrangements need to be predicated on a habit of communication and professional trust. When midwives contest the opinions and routines of their supporting physicians, they may risk losing the collaborative agreement they need to meet the standards for safe practice.

The second outcome directs our attention to the fact that there are differences of opinions and *fact* about the risks of pregnancy and birth. Current best evidence indicates that, in and of itself, there is nothing particularly dangerous about 41 weeks of gestation.[2] Ms. Sterkte's biophysical profile suggests her baby is doing well; it simply is not ready to be born. The demands of the backup protocol, in light of the existence of evidence challenging its medical foundation and the contrary wishes of Ms. Sterkte, place the CNM, her physician colleagues, and Ms. Sterkte in an ethically and socially difficult situation.

The third outcome is perhaps the most challenging, as it pushes caregivers to find a way to respect Ms. Sterkte's wishes while upholding their professional commitment to provide competent care. This ordinary question of professional responsibility is complicated by the fact that Ms. Sterkte is pregnant and is making a choice for her unborn child as well.

The case raises a number of questions:

- What are the responsibilities of the CNM to her client, to the baby, to her backup physicians, to health and malpractice insurers, and to self?
- What are Ms. Sterkte's responsibilities—to her baby, her family, and her careproviders?
- What are the responsibilities of the backup physicians to the CNM, to the baby, to Ms. Sterkte, to health and malpractice insurers, to the hospital, and to self?
- Whose best interests will trump others' best interests, and under what circumstances?
- How much latitude is there for a patient to comply with or, alternatively, to refuse to abide by, an established protocol (in this case, when the demand for transfer of care at 41 weeks is based on equivocal best evidence)?
- What are the responsibilities of a clinician when a patient chooses to ignore professional advice?
- In light of the reassuring biophysical assessment of the baby, how should the midwife and the backup physician manage care for Ms. Sterkte and her infant?
- What is the role of trust in these overlapping relationships?

These questions revolve around place of birth, but they have larger meanings for clinicians whose decisions about providing the best possible care require them to sort through evidence, consider their own possible biases and the limitations of their training, and balance the wishes of patients with the demands of colleagues, hospitals, and insurers. There are no easy answers to these questions. In this issue of *JCE*, we offer a variety of perspectives on the moral and medical responsibility of professionals with regard to a woman's choice of where she will birth her baby. It is our hope that the informed opinions of our authors will help those who wrestle with these dilemmas in everyday clinical decision making.

When in 2011 we first discussed a special issue on "place of birth" with *JCE,* we could not have predicted just how much currency this topic would have in 2013. In the past two years there have been an unprecedented number of position papers, committee opinions, and pages in the professional journals of medicine, midwifery, and obstetrics dedicated to

place of birth. In 2011 and in 2013, a group of maternity careproviders, epidemiologists, and health policy makers came together in "home birth summits" in Washington, D.C., with the goal of addressing "their shared responsibility for care across birth settings in the United States."[3] In March 2013, the Institute of Medicine (IOM) found the issue compelling enough to organize a two-day meeting, Research Issues in the Assessment of Birth Settings.[4]

We began this project with an interest in the ethical issues that attend routine maternity care, an interest inspired by two developments: an escalating rate of intervention in healthy pregnancies and births, and a small but growing number of women choosing home birth.[5] Our focus on place of birth offers an ideal starting point for the examination of the ethics of the "usual and ordinary" care given to healthy pregnant women. Although few women in the U.S. choose to birth at home, their choice represents a significant challenge to the ordinary routines of care in childbirth. Forgoing the sophisticated technologies used in the obstetric management of labor and birth, these women call into question the clinical value, and the costs, of the way we currently organize maternity care.[6] Given their small numbers, you might expect these women to be dismissed as outliers or members of some "fringe group," but their challenge to the *status quo* is taken seriously. In turning their backs on a typical hospital birth, the American women who choose to birth at home call attention to a potentially embarrassing fact. According to the U.S. Centers for Disease Control and Prevention (CDC), the higher rates of interventions used in childbirth in the U.S. (for example, induction, epidurals, cesarean section) are not associated with better outcomes, measured in terms of rates of infant and maternal morbidity and mortality.[7]

This special issue of *JCE* will be useful to clinicians who are called on to offer advice about place of birth and to clinical ethicists who are interested in the problems that arise when evidence, practice, and patients' wishes conflict. Given the nature of the questions surrounding choice of birth place, we asked authors from a variety of disciplines—including midwifery, obstetrics, nursing, various social sciences, law, and philosophy—to join us in the search for answers. The authors include women who have given birth at home and in the hospital. We also include a number of "personal perspectives" that give us a glimpse of how choice of birth place is experienced by clinicians and clients.

Reflecting the diverse orientations of our authors, the articles and personal perspectives collected here offer wide-ranging and conflicting perceptions about what constitutes a "good birth"—measured both morally and medically. These divergent perspectives result in dissimilar approaches to the management of pregnancy and birth. It is important to remember that each approach represents a well-intentioned attempt to balance the best interests of mother and baby, avoid risk, and respect autonomy. To the extent that these approaches are incompatible, ethical tensions emerge. For example, some argue that it is ethically irresponsible to monitor all laboring women continuously with an electronic fetal monitor (EFM)—they point to evidence that EFM has limited clinical value and increases the number of unnecessary cesarean sections—while others find it morally suspect to *not* use continuous EFM, a technology that can anticipate problems in labor and birth.

As social scientists, we also have a keen interest in the underlying social structures that generate these varied perspectives on pregnancy and birth and the way these perspectives are translated into action. We find it noteworthy that while perspectives about the advisability of home and hospital birth vary, all of the participants in the discussion share a belief in the value of evidence as a guide to medical decision making. In this era of evidence-based medicine, evidence—data—have become *the* tool to organize clinical practice and to support ethical argument. The authors in this issue of *JCE* have differing opinions about what "counts" as evidence, which evidence is to be believed and which discounted, and how to interpret and use the evidence that they judge to be the most compelling. They also differ on the extent to which evidence should or shouldn't be balanced with other values.

More than in other areas of clinical practice, these articles suggest that discussions about place of birth are marked by "dueling data," heated disputes over the source, analysis, interpretation, publication, and dissemination of evidence. These disputes are grounded in fundamental disagreements about the nature of a "good birth." A disinterested observer of the research literature on birth place safety could easily conclude that researchers start with a conclusion and then search for data to support that conclusion. Almost without exception, supporters of home birth find it to be a safe, if not preferable, way to bring a child into the world, and supporters of hospital birth find that the hospital setting is the safest place for birth.

Researchers who favor hospital birth begin with the notion that birth is inherently unpredictable and risky, requiring *all* women, even those who are healthy, to be attended in a hospital or a well-

equipped birth center (located near a hospital).[8] If risks cannot be predicted, women must be monitored by technologies that can continuously confirm that the pregnancy and birth remain within the narrowly defined range of "normal" markers and mileposts. When those markers are exceeded, pharmacological and surgical interventions must be at hand.

Increasing reliance on electronic methods of monitoring and medical interventions may progress to the point that maternity careproviders may not be able to provide care to women who are unwilling to submit to the medical definition of "normal." These women may have a different view of birth, one that begins not with risk, but with a view of pregnancy and childbirth as natural physiological processes. They trust in the ability of their body to bear and birth children and fear the consequences of routine medical interventions that may not be necessary.

As these articles indicate, the "science" of birth place safety can give comfort to widely divergent views on birth. Since it is possible to interpret the currently available evidence differently, parties who hold differing views may come to feel additional distrust toward each other because their "facts" differ. Those who begin on the side of "all births are risky" produce and invoke research reporting that, compared to hospital birth, home birth is associated with poorer outcomes for babies. Those who start by trusting the ability of a woman's body to give birth generate and use scientific studies reporting home birth to be as safe statistically for mother and baby as hospital birth, while having the advantage of using fewer interventions that may cause long-range iatrogenic problems. These different bodies of evidence are then used to make moral arguments about women's choices.[9]

The effect of these different orientations and different bodies of evidence on clinical practice can be seen in how each of the parties thinks about the normal and safe length of gestation, as exemplified in the above case of Ms. Sterkte. Those working within the medical paradigm begin by identifying the normal range of gestation: between 39 and 41 weeks. By the logic of averages, a normal pregnancy should last 40 weeks, a marker that then is seen as the *normative* length of gestation, the uppermost limit of what is safe. For those who are alert to risk, pregnancy is then technologically arranged to ensure that babies are born as near as possible to the 40-week mark. There are a variety of strategies and drugs to stimulate labor, and those methods often are implemented either before or, more often, at the 40-week mark.[10] If risk to the baby increases as pregnancy exceeds 41 weeks, then it is imprudent to even approach that limit. The initiation of a technological solution to a *possible* problem more or less guarantees that a baby will be born within the next 12 to 24 hours, because when one technology is introduced, additional interventions often follow, based on the same clinical assumption: this will be best for the baby. This escalating effect is known as a "cascade of intervention," an approach to managing labor and birth that is partially responsible for the high rate of surgical births in the U.S.[11] When birth is seen to be fraught with danger, each step in the cascade is seen as justified to minimize risk and becomes a guarantee of a "safe" birth that more than compensates for the interventions used that may not have been necessary.

At the other end of the spectrum are those who see birth as an integral part of normal life, a rite of passage into motherhood/parenthood. In this perspective, the entire range of a usual gestation, from 39 to 41 weeks, is considered normal (that is, nonpathological) until proven otherwise.[12] Providers who begin with this understanding come to the delivery with knowledge, expertise, and methods for managing births that differ significantly from those who begin with the notion that birth is unpredictable and risky. In this second paradigm, the rare and unexpected poor outcome is seen as inevitable, a chance occurrence associated with the decision to avoid the plethora of unnecessary procedures that befall healthy mothers who birth in the hospital.

This issue of *JCE* also unpacks the special complexities of shared decision making that attend decisions about place of birth. Within the new model of patient-centered care, widely accepted now in many other contexts, shared decision making is held up as an ideal, even though current assessments suggest that multiple barriers exist to its full implementation.[13] Disagreements over the selection and interpretation of the available evidence, the evaluation of risk, the presentation of relevant information, the rights and responsibilities of mother and baby, and the rights and responsibilities of the careprovider may confound the desire for open communication and mutual respect. These disagreements are fueled by the democratization of evidence made possible by the ability of women to obtain information on the internet, independent of their careprovider. Open and honest communication about the place of birth is further complicated when a woman's choice of place of birth is depicted as a contest between the baby's best interests and mother's (selfish) desires. Shared decision making—here and elsewhere—requires a level of trust and respect that will

allow conversations to move beyond the characterization of patients as poorly informed and foolishly self-interested.

Another dynamic—"birth exceptionalism"—may complicate clear thinking about the benefits and burdens associated with place of birth. A birth exceptionalist has a tendency to see her experience as existing outside of regular patterns of behavior in maternity care. Viewed in isolation from larger social patterns, every woman's birth experience is seen as idiosyncratic, obscuring and obviating structural patterns of cause and effect. A woman might say, "I know that childbirth can be natural, but, in my case, medical intervention was necessary." The medical intervention may refer to a range of "necessary" interventions, that include labor induction of delivery (in the U.S., 41 percent) and cesarean surgery (in the U.S., 32.8 percent).[14] Mothers describe a precipitating crisis: "The cord was wrapped around my baby's neck." "My labor was too long." "My labor stalled." "My baby was too big." Because there is a crisis, medical intervention is justified. But the frequency of such claims of exceptionalism—often conveyed in the language of an heroic intervention that "saved the baby"—may cause us to question the frequency of these "heroic" stories among U.S. birth narratives. Perhaps instead, this may be the predictable process of a maternity care system that views all births as catastrophes waiting to happen. Framing these interventions as heroic may perpetuate such a catastrophic view, and complete the circle, erroneously justifying the conclusion that childbirth is unpredictable. Childbirth includes an element of risk, of potential pathology—in spite of the best care in the hospital or at home, babies sometimes die, and sometimes mothers do, too. Opponents of birth outside of the hospital setting are inclined to emphasize the poor outcomes in births outside of the hospital. The specter of newborn mortality and morbidity carries a particular moral weightiness, with a vividness that exceeds most other experiences of mortality and morbidity.[15] We humans express more regret over errors of omission than errors of commission. Thus, injuries from an unnecessary cesarean section will be lamented less than injuries that result from a decision to reject a medical intervention.[16] But for healthy, well-nourished women living in a safe environment, most of the time, the experience of childbirth is "uneventful," that is, ultimately, it results in both a healthy mother and a healthy baby. Proponents of birth options outside the hospital setting emphasize those outcomes.

Returning to Ms. Sterkte—might there be a fourth and more preferable outcome? We hope that reading this special issue will encourage readers to think of new ways to approach the difficult decisions that careproviders must make together with patients. In the process of collecting and editing these articles, we have seen our authors become less defensive about their points of view, more open to considering the informed opinions of others, and more willing to reflect on the sources of once stridently held beliefs. Remaining stubborn, seeking only to find evidence that confirms our own opinion about the morality and medical benefit of a woman's desire for a home or hospital birth, will not bring us closer to better, more just maternity care. Ms. Sterkte is best served when her caregivers listen to her, explain their own fears and desires, and together—patient, midwife, and physician—develop a plan that respects the interests of all parties.

MASKING OF THE CASE

The case of Ms. Sterkte is a composite of several actual cases from our experience and reports in the media, and the persons involved in the actual cases cannot be identified from the information provided.

ACKNOWLEDGMENT

As much a colleague as a managing editor, Leslie LeBlanc was both intimately involved in all production aspects for this special issue, and a highly interactive intellectual sounding board for our perspectives on direction and substance. From initial conception of this special issue, her keen insights into the related macro- and micro-level political tensions that led to all manner of ethical complexities enriched this volume. Beyond that intellectual contribution, her editorial persistence, patience, and skill effectively nurtured the volume to completion. With immeasurable gratitude, we thank her for this.

NOTES

1. This quotation is from M.J.N.C. Keirse, "Planned Homebirth in Australia," *Medical Journal of Australia* 198, no. 11(2013): 574-575. Keirse (Department of Obstetrics and Gynecology, Flinders University, Adelaide, Australia) is one of the original contributors to the inaugural, systematic review initiative that paved the way for subsequent development of the Cochrane Collaboration/Cochrane Library of Systematic Reviews, M. Enkin et al., *A Guide to Effective Care in Pregnancy and Childbirth* (New York: Oxford University Press, 1989).

2. E. Mozurkewich et al., "Indications for induction of labour: A best-evidence review," *BJOG: An International Journal of Obstetrics & Gynecology* 116, no. 5 (2009): 626-36; V. King, R. Pilliod, and A. Little, Medicaid Evidence-based Decisions Project, *Rapid Review: Elective Induction of Labor* (Portland, Ore.: Center for Evidence-based Policy, Oregon Health & Science University, 2010), *http://*

www.ohsu.edu/xd/research/centers-institutes/evidence-based-policy-center/med/upload/Elective-Induction-of-Labor_PUBLIC_RR_Final_12_10.pdf, accessed 5 August 2013.

3. *http://www.homebirthsummit.org/,* accessed 5 August 2013.

4. "Research Issues in the Assessment of Birth Settings," workshop sponsored by the Institute of Medicine of the National Academies, 6-7 March 2013, in Washington, D.C., *http://iom.edu/Activities/Women/BirthSettings.aspx,* accessed 2 August 2013.

5. M.F. MacDorman, T.J. Mathews, and E. Declercq, "Home births in the United States, 1990-2009," *NCHS* [National Center for Health Statistics] *Data Brief* 84 (January 2012), *http://www.cdc.gov/nchs/data/databriefs/db84.htm,* accessed 5 August 2013.

6. E. Rosenthal, "Paying Until It Hurts: Cash on Delivery, Part 2, Pregnancy: American Way of Birth: Costliest in the World," *New York Times*, 30 June 2013, *http://www.nytimes.com/2013/07/01/health/american-way-of-birth-costliest-in-the-world.html?pagewanted=all&_r=1&*, accessed 2 August 2013.

7. M.F. MacDorman and T.J. Mathews, "Behind International Rankings of Infant Mortality: How the United States Compares with Europe," *NCHS* [National Center for Health Statistics] *Data Brief* 23 (November 2009), *http://www.cdc.gov/nchs/data/databriefs/db23.htm*, accessed 5 August 2013.

8. A.D. Lyerly et al., "Risk and the pregnant body," *Hastings Center Report* 39, no. 6 (November-December 2009): 34-42; E.E. Namey and A.D. Lyerly, "The Meaning of 'Control' for Childbearing Women in the U.S.," *Social Science & Medicine* 71, no. 4 (August 2010): 769-76.

9. D.M. Immaculada and K. Intemann, "Interpreting Evidence: Why values can matter as much as Science," *Perspectives in Biology and Medicine* 55, no. 1 (Winter 2012): 59-70.

10. E.R. Declercq et al., *Listening to Mothers III: Pregnancy and Childbirth* (New York: Childbirth Connection, 2013).

11. Ibid.

12. A.D. Lyerly, "Ethics and "Normal Birth," Birth 39 (2012): 315-317.

13. G. Elwyn et al., "Shared decision-making: a model for clinical practice," *Journal of General Internal Medicine* 27, no. 10 (2012): 1361-7, E. Bogdan-Lovis and M. Holmes-Rovner, "Prudent evidence-fettered shared decision making," *Journal of Evaluation in Clinical Practice* 16, no. 2 (2010): 376-81, J.S. Blumenthal-Barby, "On Nudging and Informed Consent—Four Key Undefended Premises," *American Journal of Bioethics* 13, no. 6 (2013): 31-3.

14. J.A. Martin et al., "Births: Final data for 2010," National Vital Statistics Reports 61, no 1 (28 August 2012), *http://www.cdc.gov/nchs/data/nvsr/nvsr61/nvsr61_01.pdf,* accessed 5 August 2013.

15. N. Quist, "The Paradox of Questions and Answers: Possibilities for a Doctor-Patient Relationship," *The Journal of Clinical Ethics* 14, no. 1/2 (Spring/Summer 2003): 79-87.

16. D. Ofri, "My Near Miss," *New York Times*, 28 May 2013.

Revisiting "The Maximin Strategy in Modern Obstetrics"

Howard Brody and Carol Sakala

ABSTRACT

Published in 1981, "The Maximin Strategy in Modern Obstetrics" offered two claims—first, that obstetrical interventions ought to be assessed not singly, but rather as packages of interconnected measures that could cumulatively increase risks of harm; and second, that many of these interventions, considered either singly or as a package, lacked a sound evidence base. The first claim has been well supported by later literature, although the term "cascade effect" has proven a more felicitous descriptor for the phenomenon of interventions that trigger the use of other interventions to monitor, prevent, or treat possible side-effects. The second claim was initially supported in a very inadequate way, since the "Maximin" article appeared before an understanding of the methods of systematic reviews of medical evidence had been widely promulgated. Despite these defects, subsequent, rigorously conducted systematic reviews have tended to confirm the impression first offered in 1981, that practices that support physiologic childbearing and the innate, hormonally driven capacities of childbearing women and their fetuses/newborns are much more in keeping with the available evidence than practices involving common or routine high-technology interference with physiologic processes. Harm may occur either directly, through high-technology interventions, or when such procedures distract attention and resources from safe, effective biological processes and lower-technology measures. Surveys indicate a lack of knowledge of this evidence among childbearing women, signaling a serious ethical deficiency in shared decision-making processes and perhaps the skills and knowledge of maternity care clinicians.

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INTRODUCTION

The spring of 1979 found one of us (HB) doing a two-month stint as a family medicine resident in the labor and delivery unit of a community hospital in Fredericksburg, Virginia. While the residency was located at the University of Virginia Medical Center in Charlottesville, the chair of the obstetrics department refused at that time to allow his own unit to be contaminated by the presence of non-obstetrically trained physicians, so it had been necessary for family medicine to negotiate a distant obstetric placement for their residents.

At the Fredericksburg community hospital, HB observed the frequency with which technological interventions were utilized—a special feature of the unit seemed to be epidural anesthesia for management of labor pain, which yielded him a good deal of experience in applying forceps for outlet delivery. He noted that when one unusual woman was admitted and announced her desire to use the Lamaze method, the nurses laughed at her. The vol-

ume of births—at least those for which the attending obstetricians would allow a family medicine resident to participate—proved, however, to be much lower than planned, and HB spent a good deal of time instead in the medical library. He decided to devote that time to researching the available evidence on the benefits and harms of common obstetric interventions.

Worried that his own inexperience would hamper his ability to interpret this literature, HB approached a fellow family medicine resident, James R. Thompson, who had managed to attend many more births during his rotation. Their collaboration resulted in an article, "The Maximin Strategy in Modern Obstetrics" (hereafter, "Maximin"), published in the *Journal of Family Practice* in 1981.[1]

Our goal in the present article is to revisit this early attempt to discover the evidence base for medical approaches to childbirth, and to place that article in the context of evidence that has become available in the interval. We then address the ethical concerns that follow from this analysis.

TWO ARGUMENTS

"Maximin" offered two distinct arguments based on the literature review. The first argument was that we should not view obstetrical interventions singly, but should rather understand their role within an interconnected chain of interventions. Taken in isolation, a single intervention might appear beneficial or at least harmless. To assess the full impact on women and their newborns, one had to see the procedure as perhaps having been resorted to only as a consequence of some earlier intervention, and possibly, in turn, leading to a series of further interventions. Epidural analgesia, for example, might initially appear highly desirable as a relatively effective method for pain relief during labor. If, however, it regularly resulted in the increased use of the high-alert medication synthetic oxytocin or of instrumental delivery with vacuum extraction or forceps, its net impact could be detrimental. Ideally one would compare the entire set of commonly or routinely used interventions with a less-interventionist strategy, such as that of many midwives who prefer to support the innate capacities of a woman and her baby for initiating labor, laboring, giving birth, breastfeeding, and attachment, and to turn to interventions only when they might be expected to offer a clear benefit.

A literature review for "Maximin" turned up only one such comprehensive study.[2] Notably, its first author, Iain Chalmers, was a leader in establishing the methods and standard of systematic reviews to assess the weight of the best evidence and draw conclusions about effects of interventions.

The title of the article came from a technical term used in game theory to describe the strategy that the authors attributed to interventionist-minded physicians. "Maximin" denotes an approach that seeks to yield the best possible outcome if the worst possible contingencies are realized. A maximin strategy might be rational if the likelihood of the worst state of affairs arising is reasonably high. Such a strategy, on the other hand, might be undesirable if the actual probability of this occurring is quite remote. A maximin strategy is especially irrational if adopting it increases the probability of greater net harm or leads to the worst-case scenario. "Maximin" claimed that this latter eventuality was likely to be true of interventionist obstetrics. That is, interfering with normal physiologic labor to prevent a bad outcome in the event of things going wrong, however improbable that was in a low-risk pregnancy, actually made it more likely that various things would go wrong, and a bad outcome would result.

The second argument offered by "Maximin" was that there was very little scientific basis for many commonly employed obstetric interventions. "Maximin" was, at the time, unable to present positive evidence that an overly interventionist strategy was harmful in low-risk women. The evidence rather was suggestive, consisting of the absence of evidence of benefit and the theoretical plausibility of one intervention creating the need for further interventions with a net increase in the risk of harm. The best that could be stated at the time was that low-risk women would probably be just as safe with a more physiologic approach to labor and delivery unless specific indications justified a more interventionist strategy. Clearer answers, however, would soon emerge.

ASSESSING THE MAXIMIN SYSTEMS ARGUMENTS

The term maximin turned out to be inauspicious. Few physicians or childbirth professionals are devotees of the game theory literature. The article was often mistakenly cited as "The *Maximum* Strategy in Modern Obstetrics."

A much more apt term entered the medical literature five years later, when Mold and Stein described the "cascade effect."[3] The cascade effect illustrates how clinicians can cause harm by doing things that appear to be innocuous or beneficial, by not thinking far enough ahead to the sequence of

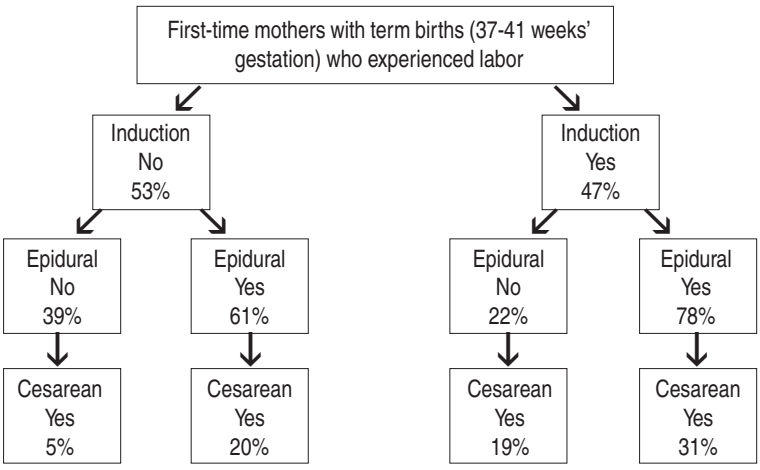
further interventions and effects that might ensue. The idea of a cascade of interventions was intuitively clearer, and Mold and Stein demonstrated that the concept had utility well beyond maternity care practice. Without the idea of a cascade effect, for example, it would be more difficult to understand why many common (and seemingly harmless) screening tests, used in low-risk populations, produce deleterious consequences when false-positive results precipitate anxiety and invasive procedures.[4] Analyses and recommendations of the U.S. Preventive Services Task Force[5] and the establishment of the Choosing Wisely program to reduce tests and interventions that may be unnecessary in many clinical areas[6] are recent reflections of this understanding.

In general, the idea that interventionist meddling with physiologic childbirth in healthy women leads to a cascade of interventions that magnifies maternal and newborn risk has stood up well under more exacting research scrutiny. Most recently, Childbirth Connection's national *Listening to Mothers III* survey of 2,400 women aged 18 through 45 who gave birth to a single baby in U.S. hospitals from mid-2011 to mid-2012 provided a striking illustration of this phenomenon. Figure 1 charts the use of three consequential interventions—labor induction, epidural analgesia, and cesarean section—among the 750 survey participants who were first-time mothers and experienced labor at term. Of those who experienced neither induction nor epidural, just 5 percent had a cesarean. Those who had either induction or epidural had a 19 percent to 20 percent cesarean rate. Those who experienced both induction and epidural had a 31 percent cesarean rate, about six times the rate of those with neither. Overall rates of these interventions in this group of women who labored at term reflect the current technology-intensive approach to maternity care in U.S. hospitals: 47 percent had labor induction, 69 percent had epidural analgesia, and 21 percent had cesarean section.[7]

Conversely, increasing evidence indicates that physiologic birth processes create a beneficial cascade. When they are protected, promoted, and supported, major hormone systems have been shown, for example, to help with stress and labor pain, provide fetal neuroprotection, help prevent postpartum hemorrhage, and enhance breastfeeding initiation.[8] Comparison of the effects on the fetus and newborn of vaginal versus cesarean birth demonstrates a number of positive physiologic effects of vaginal birth, and depriving the emerging fetus of those processes may lead to later problems, including numerous childhood chronic diseases. Carefully conducted systematic reviews have found that those born by cesarean are more likely than those born vaginally to develop childhood type 1 diabetes, asthma, allergy, and obesity. The plausible mechanism most commonly mentioned is an impact of mode of birth on immune function.[9] These long-term linkages to serious chronic diseases underscore the importance of judicious use of perinatal interventions.

ASSESSING THE EVIDENTIARY BASE

In retrospect, the 1981 "Maximin" article was relatively primitive in its attempt to review the obstetric literature, in keeping with the general knowledge level of its time. In a day when all literature reviews were unsystematic "narrative" reviews, and the adequacy of a review article in a medical journal was often assessed simply by counting the number of references, an article that boasted 107 citations seemed impressive. By 2013 standards, one is struck by the absence of any meth-



Base: first-time mothers with term births who experienced labor ($n = 750$)

In this group, which included 85% of first-time mothers, the oveall intervention rates were: labor induction 47%, epidural analgesia 69%, and cesarean section 21%. Source: E.R. Declercq et al., *Listening to Mothers III: Pregnancy and Birth* (New York: Childbirth Connection, May 2013).

FIGURE 1. Cascade of intervention in first-time mothers with term births who experienced labor

ods to limit bias, including by defining the review parameters at the outset, assuring an exhaustive and comprehensive search for relevant research findings, assessing the methodological quality of the individual studies, and pooling the results of relevant high-quality studies as appropriate. Compared with today's systematic reviews, "Maximin" thus fell far short.

To fill in gaps in the findings of "Maximin," the 2008 report, *Evidence-Based Maternity Care: What It Is and What It Can Achieve*—co-issued by the Milbank Memorial Fund, the Reforming States Group, and Childbirth Connection—provides a broad overview of much that is known through the large number of high-quality systematic reviews available more recently.[10] At the heart of this report are chapters identifying over used and under used maternity practices. Those practices were identified by comparing the results of recent, well-conducted systematic reviews assessing beneficial and harmful effects of practices relevant to the care of a large proportion of the maternal-newborn population with the care that this population was actually receiving. To describe contemporary practice, the report used results, as available, of Childbirth Connection's national *Listening to Mothers II* survey of women who gave birth in U.S. hospitals in 2005.[11]

Evidence-Based Maternity Care proposed the standard of "effective care with least harm" as most appropriate for the large vulnerable population of childbearing women and newborns. This is a variant, in the era of comparative effectiveness, of the principle "first, do no harm." Applying this standard, the report identified evidence-practice gaps involving over use of interventions that would be clearly beneficial in more limited use. These interventions include those shown in figure 1, and others:

- Labor induction
- Epidural analgesia
- Cesarean section
- Continuous electronic fetal monitoring
- Artificial rupture of membranes
- Episiotomy[12]

The many established downsides of these procedures, discussed in the report, call for their judicious rather than casual or routine use. Conversely, the report identified a large number of evidence-practice gaps signaling under use of practices that are generally effective, non-invasive, and beneficial, with few or even no known downsides. These practices include:

- Family physician maternity care, midwifery care
- Smoking cessation interventions for pregnant women
- External cephalic version for breech presentation fetuses
- Vaginal birth after cesarean (VBAC)
- Continuous labor support
- Measures for comfort, pain relief, and labor progress
- Non-supine positions for giving birth
- Delayed cord clamping in term and preterm babies
- Early skin-to-skin contact
- Breastfeeding and interventions to support its initiation and duration
- Practices to foster women's satisfaction with the childbirth experience
- Interventions for postpartum depression[13]

Two examples will illustrate the forgone benefits to women and newborns of these errors of omission. It is now well-established that having the continuous support of a companion during labor is associated with numerous benefits and has no known downsides. Such care can lead to a substantial decrease in the use of pain medication, assisted delivery, and cesarean section. Equally, it is associated with a woman's increased satisfaction with the childbirth experience and increased likelihood of experiencing the optimal spontaneous vaginal birth.[14]

In 1981, "Maximin" correctly identified the supine position during labor as a common pathway for how many other interventions, such as epidural analgesia, might cause harm. *Evidence-Based Maternity Care* reported the multifaceted value of the woman adopting a non-supine posture for labor and birth. The benefits include diminished pain, a reduced need for episiotomy, fewer fetal heartbeat abnormalities, and a shortened active pushing phase.[15]

Despite these benefits, the most recent national *Listening to Mothers* survey found that just 6 percent of women who gave birth in U.S. hospitals from mid-2011 through mid-2012 received continuous labor support through the care of a doula (a professional labor attendant), and 68 percent of women with a vaginal birth reported lying on their back while pushing their baby out and giving birth.[16]

While the *Evidence-Based Maternity Care* report primarily addressed the quality and outcomes of care, it also identified implications for the costs of childbirth care. It noted that charges in out-of-hospital birthing centers are approximately one-fourth those of uncomplicated vaginal births in hospitals, with no evidence of better outcomes in the latter setting.[17] Yet, currently, less than 1 percent of U.S.

women use freestanding birth centers.[18] The recently reported 6 percent cesarean rate in the National Birth Center Study II of 79 participating centers, 2007-2010, in comparison with the national rate of about one childbearing woman in three, suggests that major differences in practice style underlie the differences in cost.[19] The birth center rate is within an optimal cesarean rate range of 5 percent to 10 percent, whereas the national rate is well above 15 percent, the threshold when harm is a more likely result than benefit.[20]

Compared with other nations that spend less, the U.S. and its high-technology style of practice is, if anything, falling farther behind in desired outcomes.[21] Moreover, persistent and in some cases widening disparities exist for many maternal-newborn measures among racial and ethnicity groupings in the U.S.[22]

In addition to the potential for greatly reduced costs, *Evidence-Based Maternity Care* identified the potential for styles of practice and systems of care that are much more compatible with the evidence and demonstrate much more conservative use of interventions than usual care. A comparison, for example, of a large cohort of women who planned home births and used certified professional midwife careproviders with low-risk women who received hospital care during the same year (2000) reported differences in the use of electronic fetal monitoring (10 percent versus 84 percent), episiotomy (2 percent versus 33 percent), vacuum extraction (1 percent versus 5 percent), forceps (1 percent versus 2 percent), and cesarean (4 percent versus 19 percent).[23] The subsequent publication of a systematic review comparing home and hospital birth similarly found significant differences in interventions such epidural (9 percent versus 23 percent), electronic fetal monitoring (14 percent versus 63 percent), episiotomy (7 percent versus 10 percent), assisted delivery (4 percent versus 10 percent), and cesarean (5 percent versus 9 percent), which were mirrored by significant differences in morbidity favoring home birth care: third or fourth degree perineal laceration (1 percent versus 3 percent), vaginal laceration (8 percent versus 22 percent), retained placenta (1 percent versus 2 percent), and infection (1 percent versus 3 percent).[24]

ETHICAL IMPLICATIONS AND NEEDED DIRECTION

Of special concern for ethics, *Evidence-Based Maternity Care* refers to national *Listening to Mothers* survey results finding that while women who have recently given birth overwhelmingly wish to know all or most of the potential side-effects of consequential interventions, many had poor awareness of the harms of labor induction, epidural analgesia, and cesarean section, whether they experienced these interventions or not.[25] The most recent *Listening to Mothers III* survey confirmed these continuing knowledge deficits[26] and found that most women who had recently given birth felt that the recommendations of maternity careproviders would be up to date and consistent with the best evidence, that getting more tests and treatments indicates a higher quality of care than getting fewer tests and treatments, and that more-effective tests and treatments are generally more costly than less-effective ones. Despite the problems of over use and under use noted above, respondents also gave very high ratings to the quality of maternity care in the U.S.[27]

None of this, we are often told, can be blamed on the healthcare system. We live in a consumerist age. Especially since childbirth is a physiologic process rather than a disease, women's preferences should govern. We are often told that women are afraid of childbirth pain and demand anesthesia. Equally, they desire the convenience and predictability of induced labor or cesarean birth. Such rationalizations might carry weight if there were compelling evidence that women are well informed of their choices and of the true harms and benefits of common interventions, but the national *Listening to Mothers* survey data tell a very different story. Most women, it appears, are making these crucial life choices without full and balanced evidence-based information about the potential benefits and harms of the various care options for childbirth.

One obvious requirement for more ethical healthcare is consistent use of shared decision making. The use of decision aids—which present to patients the options for a specific condition; present a current, balanced, and evidence-based overview and benefits and harms of each; and help people with the condition consider their own values and preferences, leading to an individualized decision—has an extensive and impressive record across health and medicine[28] and a growing record within maternity care.[29] The extended period of pregnancy is opportune for engaging a highly motivated population to make wise decisions through the use of high-quality decision aids.

To illustrate, consider the example of the impact of such aids on men's decisions to undergo prostate-specific antigen (PSA) screening for prostate cancer—a screening intervention recently discouraged, based on solid evidence, by the U.S. Preven-

tive Services Task Force.[30] Studies of interactive decision aids report that when presented with the actual facts about harm and benefit, the men who, at baseline, request PSA screening may, more than 90 percent of the time, drop their request to a rate of around 50 percent.[31]

A shared decision-making program for maternity care incorporating rigorous decision aids and other complementary decision tools could be equally efficacious. Such an urgently needed program is currently being developed through a collaboration of the Informed Medical Decisions Foundation and Childbirth Connection.[32]

A challenge for shared decision making in the context of childbirth is the need to help women and their careproviders understand how the cascade effect could come into play and how they can avoid the unintended consequences of such an effect and achieve their desired outcomes. A cautionary example here is decision making for end-of-life care in hospitals. Detailed studies of hospital practices indicate that patients are ill-served when offered shared decision making around specific interventions, such as ventilator support, as other forces are at play. Hospital care at this time is generally driven by the cascade effect—once a person is admitted, a sequence of events starts to unroll that is very hard to put back into the bottle later on, regardless of the person's expressed preferences.[33] An initial step might be to include discussion of any co-interventions that are routinely used or are more likely to be used with the options under consideration.

Given the extent of maternity care practice variation across regions, hospitals, individual careproviders, and different types of careproviders,[34] the intertwined decisions about choice of careprovider and choice of birth setting are crucial decisions for childbearing women. Decision aids can provide important guidance, and developing and implementing decision aids to assist with these important decisions is a priority. Optimally, such tools should reach a women early in her pregnancy, before she makes decisions about careproviders and birth settings. They also might be used later in pregnancy to reassess and evaluate whether initial choices still seem to be meeting the woman's needs, or after she has concluded that this is so. Admittedly, these crucial decisions are somewhat of an anomaly in shared decision making, in that, as described here, they are unlikely to be made in consultation with a careprovider. The significance of these choices justifies deviation from the established model.

While ethical attention might well focus on shared decision making, policy matters deserve equal ethical scrutiny. Financial incentives in the current reimbursement system contribute to the over use of some practices and under use of others. For example, the large professional fee for attending a birth creates an incentive for careproviders to induce labor, and reimbursement is lacking or difficult to obtain for continuous labor support and time spent in shared decision making. This perverse reimbursement structure must be reconfigured. Innovative delivery and payment systems should be developed to reward optimal outcomes and create incentives for the use of high-performing settings such as freestanding birth centers, high-performing careproviders, and evidence-based practices.

As *Evidence-Based Maternity Care* clarifies, an insidious consequence of the cascade of intervention is that obstetricians, and often other types of maternity careproviders, see very few low-technology births, both in training and in practice. Consequently, they either lack the relevant knowledge and clinical skills entirely, or are likely to lose what they might have acquired. As a result, in the present environment, many women do not have access to such essential maternity care practices as external version to turn a breech presentation baby, vaginal breech birth, vaginal twin birth, vaginal birth after cesarean, and judicious use of assisted delivery. A revamping of basic and continuing education for all maternity care practitioners is needed to ensure a deep, enduring, and shared understanding of the underlying maternal and fetal/newborn physiology; of the skills and knowledge to protect, promote, and support physiologic childbearing; and of the rationale for conservative, judicious use of practices with serious unintended consequences.

Compendia of systematic reviews about the effects of care for pregnancy and childbirth were initially published more than two decades ago.[35] This "head start" on identifying, evaluating, and summarizing evidence to guide maternity care practice ultimately led to the paradigm-shifting establishment of the Cochrane Collaboration. Building on the pioneering work in maternity care, that international organization assesses the weight of the best evidence about the effects of care in all fields of health and medicine. Subsequently, thousands of systematic reviews for care during pregnancy and childbirth have been developed and updated within the Cochrane Collaboration, through programs of public agencies, and within the international journal literature. Although primary studies and syntheses on additional questions are still needed, this extraordinary body of reviews provides many signposts for practice that are not widely or uniformly taken up.

The failure of the maternity care system to reliably deliver well-established evidence-based care is a lingering conundrum. The newest national *Listening to Mothers* survey identified many concerns. For example, contrary to best evidence, many women received ultrasounds at the end of pregnancy to estimate the weight of their fetus and were encouraged to have labor induction or planned cesarean section because their baby might be getting quite large. While evidence and guidelines support vaginal birth after cesarean as a good choice for nearly all women with one or two previous cesareans, and the hazards of repeated cesareans are increasingly recognized, careproviders overwhelmingly steered such women to have repeat cesareans. Many women reported experiencing pressure from a careprovider to have the three major interventions covered in figure 1, including pressure to have labor induction among 25 percent who had labor induction, pressure to have cesarean section among 25 percent who had a cesarean, and pressure to have epidural analgesia among 19 percent who did not have epidural analgesia. Despite the high rates of intervention around the time of birth, 59 percent of respondents agreed that giving birth is a process that should not be interfered with unless medically necessary, while 16 percent disagreed, and 26 percent neither agreed nor disagreed. The proportion agreeing has steadily increased over the decade of *Listening to Mothers* surveys. Overwhelmingly, women wanted high-quality care and trusted the maternity care system to deliver the right care. However, many did not receive it and seemed to have little awareness of this.[36]

Multifaceted solutions are needed. Using shared decision making and other means of informing and engaging women, implementing innovative payment and delivery systems, and revamping the education of maternity careproviders have already been noted. Other crucial strategies include fostering a culture of continuous quality improvement and the expanded use of maternity care quality collaboratives, developing and implementing priority performance measures for quality improvement and public reporting, harnessing the power of electronic health records to foster high-quality maternity care, and developing the optimal maternity care work force mix and birth setting mix for the primarily healthy population of childbearing women and newborns.[37]

CONCLUSION

Despite the methodologic limitations of "Maximin," subsequent research suggests that both of its primary assertions are well supported. Interventions that interfere with physiologic labor, applied outside of specific well-supported indications, set off a cascade of further interventions, with the total package of interventions having great potential for increased risk of harm to women and children. The increased likelihood of several chronic childhood diseases in those who were born by cesarean section, rather than vaginal birth, is alone an alarming finding that warrants urgent attention.

The "Maximin" article was also prescient in identifying the breadth of important gaps between common practice and best evidence. Even as extensive use of interventions has become the norm in the U.S., the overall evidence base for childbirth care strongly supports a less-interventionist strategy, which most childbearing women endorse. Meanwhile, low-technology interventions that support rather than impede physiologic labor, such as the use of a companion for continuous support during labor and non-supine positions for giving birth, reach just a small proportion of those who would benefit. Ethical healthcare requires that these gaps be systematically and expeditiously addressed through the most effective tools of implementation science.

NOTES

1. H. Brody and J.R. Thompson, "The Maximin Strategy in Modern Obstetrics," *Journal of Family Practice* 12, no. 6 (June 1981): 977-86.

2. I. Chalmers, J.G. Lawson, and A.C. Turnbull, "Evaluation of Different Approaches to Obstetric Care," *BJOG: An International Journal of Obstetrics & Gynaecology* 83, no. 12 (December 1976): 921-33.

3. J.W. Mold and H.F. Stein, "The Cascade Effect in the Clinical Care of Patients," *New England Journal of Medicine* 314, no. 8 (February 20, 1986): 512-4.

4. H.G. Welch, L.M. Schwartz, and S. Woloshin, *Overdiagnosed: Making People Sick in the Pursuit of Health* (Boston: Beacon Press, 2011).

5. U.S. Preventive Services Task Force, "Recommendations," 2013, *www.uspreventiveservicestaskforce.org/recommendations.htm,* accessed 24 July 2013.

6. ABIM Foundation, Choosing Wisely, *www.choosingwisely.org,* accessed 24 July 2013.

7. E.R. Declercq et al., *Listening to Mothers III: Pregnancy and Birth* (New York: Childbirth Connection, May 2013).

8. S. Buckley, *Hormonal Physiology of Childbearing* (New York: Childbirth Connection, forthcoming).

9. M.J. Hyde et al., "The Health Implications of Birth by Caesarean Section," *Biological Reviews* 87, no. 1 (Februaruy 2012): 229-43; C.E. Cho and M. Norman, "Cesarean Section and Development of the Immune System in the Offspring," *American Journal of Obstetrics & Gynecology* 208, no. 4 (April 2013): 249-54; H-t Li, Y-b Zhou, and J-m Liu, "The Impact of Cesarean Section on Offspring

Overweight and Obesity: A Systematic Review and Meta-Analysis," *International Journal of Obesity* (2012) 1-7; C.R. Cardwell et al., "Caesarean Section is Associated with an Increased Risk of Childhood-Onset Type 1 Diabetes Mellitus: A Meta-Analysis of Observational Studies," *Diabetologia* 51, no. 5 (May 2008): 726-35; S. Thavagnanam, "A Meta-Analysis of the Association between Caesarean Section and Childhood Asthma," *Clinical and Experimental Allergy* 38, no. 4 (April 2008): 629-33; P. Bager, J. Wohlfahrt, and T. Westergaard, "Caesarean Delivery and Risk of Atopy and Allergic Disease: Meta-Analyses," *Clinical and Experimental Allergy* 38, no. 4 (April 2008): 634-42.

10. C. Sakala and M.P. Corry, *Evidence-Based Maternity Care: What It Is and What It Can Achieve* (New York: Milbank Memorial Fund, 2008), 25, *www.milbank.org/publications/milbank-reports,* accessed 24 July 2013.

11. E.R. Declercq, C. Sakala, M.P. Corry, and S. Applebaum, *Listening to Mothers II: Report of the Second National U.S. Survey of Women's Childbearing Experiences* (New York: Childbirth Connection, 2006), *www.childbirthconnection.org/listeningtomothers/,* accessed 24 July 2013.

12. Sakala and Corry, see note 10 above, pp. 35-50.

13. Ibid., 51-8.

14. Ibid., 53-4.

15. Ibid., 55; see also J.K. Gupta et al., "Position in the second stage of labour for women without epidural anaesthesia," *Cochrane Database of Systematic Reviews* 5 (2012): CD002006.

16. Declercq et al., *Listening to Mothers III: Pregnancy and Birth,* see note 7 above.

17. Sakala and Corry, see note 10 above., pp. 12-13; see also S.K. Tracy and M.B. Tracy, "Costing the Cascade: Estimating the Cost of Increased Obstetric Intervention in Childbirth Using Population Data," *BJOG: An International Journal of Obstetrics & Gynaecology* 110, no. 8 (August 2007): 717-24.

18. Ibid., 13.

19. S. Stapleton, C. Osborne, and J. Illuzzi, "Outcomes of Care in Birth Centers: Demonstration of a Durable Model," *Journal of Midwifery and Women's* Health 58, no. 1 (January-February 2013): 3-14.

20. Sakala and Corry, see note 10 above, p. 42.

21. Ibid., 1. United Nations Children's Fund, *The State of the World's Children 2009: Maternal and Newborn Health* (New York: UNICEF, December 2008; International Federation of Health Plans, 2012 Comparative Price Report (London: IFHP, 2013), *www.ifhp.com/documents/2012iFHPPriceReportFINALApril3.pdf,* accessed 24 July 2013.

22. National Center for Health Statistics, Healthy People 2010: Final Review (Hyattsville, Md.: NCHS, 2012), *http: //www.cdc.gov/nchs/healthy_people/hp2010/hp2010_final_review.htm,* accessed 24 July 2013.

23. Sakala and Corry, see note 10 above, p. 29.

24. J.R. Wax et al., "Maternal and Newborn Outcomes in Planned Home Birth vs Planned Hospital Births: A Metaanalysis," *American Journal of Obstetrics & Gynecology* 203, no. 3 (September 2010): 243e1-8.

25. Declercq et al., *Listening to Mothers II,* see note 11 above; E.R. Declercq et al., *Listening to Mothers: Report of the First National U.S. Survey of Women's Childbearing Experiences* (New York: Maternity Center Association, October 2002).

26. Declercq et al., *Listening to Mothers III: Pregnancy and Birth,* see note 7 above.

27. E.R. Declercq et al., *Listening to Mothers III: New Mothers Speak Out* (New York: Childbirth Connection, June 2013).

28. D. Stacey et al., "Decision aids for people facing health treatment or screening decisions," *Cochrane Database of Systematic Reviews* 10 (2011): CD001431.

29. M. Dugas et al., "Decision Aid Tools to Support Women's Decision Making in Pregnancy and Birth: A Systematic Review and Meta-Analysis," *Social Science and Medicine* 74, no. 12 (June 2012): 1968-78; F. Vlemmix et al., "Decision Aids to Improve Informed Decision-Making in Pregnancy Care: A Systematic Review," *BJOG: An International Journal of Obstetrics & Gynaecology* 120, no. 3 (February 2013): 257-66; R. Say, S. Robson, and R. Thomson, "Helping Pregnant Women Make Better Decisions: A Systematic Review of the Benefits of Patient Decision Aids in Obstetrics," *BMJ Open* 1, no. 2 (December 2011): e000261.

30. M. Djulbegovic et al., "Screening for Prostate Cancer: Systematic Review and Meta-Analysis of Randomised Controlled Trials," *BMJ* 341 (14 September 2010): c4543.

31. D.L. Frosch, R.M. Kaplan, and V. Felitti, "The Evaluation of Two Methods to Facilitate Shared Decision Making for Men Considering the Prostate-Specific-Antigen Test," *Journal of General Internal Medicine* 16, no. 6 (June 2001): 391-98.

32. A. Romano, *The First National Maternity Care Shared Decision Making Initiative* (Boston: Informed Medical Decisions Foundation, January 2013), *http: //informedmedicaldecisions.org/wp-content/uploads/2012/05/First_Natl_Maternity_SDM.pdf,* accessed 24 July 2013.

33. S.R. Kaufman, *And a Time to Die: How American Hospitals Shape the End of Life* (Chicago: University of Chicago Press, 2006); H.S. Chapple, *No Place for Dying: Hospitals and the Ideology of Rescue* (Walnut Creek, Calif.: Left Coast Press, 2010).

34. S.L. Clark et al., "Variation in the rates of operative delivery in the United States," *American Journal of Obstetrics & Gynecology* 196, no. 6 (June 2007): 526.e1-5; K. Baicker et al., "Geographic variation in the appropriate use of cesarean delivery," *Health Affairs* 25, no. 5 (September-October 2006): w355-67; C.E. Denk, "Cesarean Delivery: Comparing New Jersey Hospitals," New Jersey Department of Health and Senior Services, 27 January 2010, *http: //www.state.nj.us/health/fhs/professional/documents/csection_by_hospital.pdf,* accessed 24 July 2013.

35. I. Chalmers, M. Enkin, and M.J.N.C. Keirse, ed., *Effective Care in Pregnancy and Childbirth* (Oxford: Oxford University Press, 1989); M. Enkin, M.J.N.C. Keirse, and I. Chalmers, *A Guide to Effective Care in Pregnancy and Childbirth* (Oxford: Oxford University Press, 1989).

36. Declercq et al., *Listening to Mothers III: Pregnancy and Birth,* see note 7 above.

37. M.C. Carter et al., "2020 Vision for a High-Quality, High-Value Maternity Care System," *Women's Health Issues* 20, no. 1S (January-February 2010): S7-S17; P.B. Angood et al., "Blueprint for Action: Steps Toward a High-Quality, High-Value Maternity Care System," *Women's Health Issues* 20, no. 1S (January-February 2010): S18-S49.

A Reconsideration of Home Birth in the United States

Howard Minkoff and Jeffrey Ecker

ABSTRACT

Home births continue to constitute only a small percentage of all deliveries in the United States, in part because of concerns about their safety. While the literature is decidedly mixed in regard to the degree of risk, there are several studies that report that home birth may at times entail a small absolute increase in perinatal risks in circumstances that cannot always be anticipated prior to the onset of labor. While the definition of "small" will vary between individuals, and publications vary in the level of risk they ascribe to birth at home, studies with the least methodological flaws and with adequate power often cite an excess death rate in the range of one per thousand.

Home birth is, in that regard, but one example of patients' choices and plans that sometimes carry increased risk or include alternatives that individual physicians feel uncomfortable supporting or recommending. Our intention in this opinion piece is not to advocate for or against home birth. Rather, we recognize that home birth is but one example of a patient choice that might differ from what a provider feels is in a woman's best interests.

In this article we will discuss ethical considerations in such circumstances using home birth as an example. We consider in this article how the ethical principles of respect for autonomy and non-maleficence can be balanced using, among other examples, the choice by some for a home birth. We discuss how absolute rather than relative risk should guide individuals' evaluation of patient choices. We also consider how in some circumstances, the value and safety added by a physician's participation may outweigh a potentially small increment in absolute risk that might result from a patient's decision to deliver at home because of a perceived physician endorsement.

We recognize, however, that doctors and midwives participating in choices they have not recommended, or may even believe will lead to or increase risk for adverse outcomes, presents dilemmas and raises important questions. When does respect for patient choice and autonomy become support for poor decision making? When is participation not respectful but enabling? Finally we discuss the role and responsibility of organized medicine in making all births as safe as possible.

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INTRODUCTION

Several years ago the only hospital in New York City that provided backup services for midwives who performed home births closed.[1] While home birth advocates lamented the closure, obstetrics' organizations were less troubled. As recently as 2008 the American College of Obstetricians and Gynecologists (ACOG) had reiterated its long-standing opposition stating, "While childbirth is a normal physiologic process that most women experience without problems, monitoring of both the woman and the fetus during labor and delivery in a hospital or accredited birthing center is essential because complications can arise with little or no warning. . . ."[2] Those complications, whether a cord prolapse or a

placental abruption, can be accompanied by rapid drops in pH[3] and increases in base excess[4] that in turn are potentially perilous when they occur at some remove from a hospital, anesthesiologists, appropriate pharmaceuticals, equipment, and an operating room. A meta-analysis published in 2011 reinforced concerns about home birth, reporting that neonatal deaths were tripled in that setting.[5] A separate analysis by Evers and colleagues[6] of births in Utrecht in the Netherlands found that delivery-related perinatal deaths were more frequent among low-risk midwife-supervised deliveries than obstetrician-supervised secondary care. Given that many low-risk deliveries in the Netherlands are planned for home birth, these results were highly suggestive that site of birth could be linked to perinatal risk.

Given the risks these studies suggest, what would justify physicians' reconsidering home birth in the U.S.? First, as we have previously noted, some women desire home birth.[7] In the U.S., where home birth is actively discouraged, only approximately one in 200 births occur at home. However the rate may be rising. The National Center for Health statistics reported that "After a gradual decline from 1990 to 2004, the percentage of home births increased by 5 percent to 0.59 percent in 2005 and remained steady in 2006."[8] Additionally, the number of women who actually deliver at home may represent only a percentage of those who would, were that option more readily available. For example, in England it has been estimated that 8 to 10 percent of women desire home birth,[9] but because of a shortage of trained providers, only 2 percent actually deliver at home.[10]

Those facts alone should lead to some consideration about what drives people, if not *to* home birth, then at least *away* from hospitals. The ACOG seems to have recognized this dynamic when it modified its statement on home birth in 2011, noting that, although it believes hospitals are safer, it respects the right of women to make informed decisions about the site of birth.[11] ACOG was cautious in its statement, emphasizing the need to counsel women about the risks and benefits of their choice, limiting that choice to appropriate candidates, and highlighting the need for well-trained certified midwives to be part of the delivery team and to have provision made for timely transport to a hospital if needed. Still, its 2011 statement represented, at minimum, a dramatic change in tone and emphasis from statements promulgated as recently as 2008, when ACOG restated its opposition to home birth. "The American College of Obstetricians and Gynecologists (ACOG) reiterates its long-standing opposition to home births," adding, as noted above, that "While childbirth is a normal physiologic process that most women experience without problems, monitoring of both the woman and the fetus during labor and delivery in a hospital or accredited birthing center is essential because complications can arise with little or no warning even among women with low-risk pregnancies."[12]

A second reason for reconsideration of home birth is that the evidence upon which the ACOG based its original objection has serious limitations, as ACOG acknowledged in its more recent statement. Third, other organizations (for example, the Society of Obstetricians and Gynecologists of Canada—SOGC,[13] the Royal College of Obstetricians and Gynecologists—RCOG,[14] and the American Public Health Association—APHA[15]) that share ACOG's philosophy regarding many other issues, do not share ACOG's conclusions regarding home birth. The RCOG, for example, has stated they "support home birth for women with uncomplicated pregnancies. . . . There is ample evidence showing that labouring at home increases a woman's likelihood of a birth that is both satisfying and safe." Finally, even if it was determined that home birth in the best of circumstances (that is, with well-trained midwives, well-screened populations, and birth plans that included contingencies for emergency transit to hospitals) were associated with increased risk, women would retain autonomy and could chose to accept risk. This reality leaves open a key question: should obstetricians be involved in "harm reduction," that is, developing collaborative protocols and otherwise working to make home birth as safe as possible? This article will focus on these issues and conclude with a series of recommendations intended to make the choice of home birth a safer alternative, regardless of the frequency with which it is exercised.

WHY CHOOSE HOME BIRTH? WHY WORRY ABOUT SUCH A CHOICE?

Several reasons have been cited for women's interest in home birth, including the:

> . . . support and empowerment attained through their relationship with the midwife, perceptions of relaxation in their own home, being informed and included in the planning of their care, and the amount of time the midwife spent with their family . . . the confidence arising from their intense preparation and partnership with their midwives permitted them to choreograph their birth experience to a degree that would not be possible in a formal setting.[16]

A Swedish study reported that a wish to have the baby's siblings and a female friend present at the birth, not wanting pharmacological pain relief during labor and birth, and dissatisfaction with medical aspects of intrapartum care also played a role.[17] The U.S. Center for Health Statistics suggests women may choose home birth for reasons that include "a desire for a low-intervention birth in a familiar environment surrounded by family and friends and cultural or religious concerns."[18] Some Amish women, for example, feel that their beliefs are more likely to be respected at home,[19] and women from countries where home birth is the norm may be more likely to opt out of hospital birth. There is some evidence that the expectations of women choosing home birth are realized, at least in so far as several studies have reported higher satisfaction scores for women delivering at home.[20]

Satisfaction, however, must be balanced by considerations of safety. Unfortunately, while a large number of studies of home birth have been published, the literature is compromised by a lack of randomized trials and by biases in available retrospective population data. Such biases include inherent differences in the populations choosing different birth settings (as noted above) and difficulties in data ascertainment and reporting. Ideally, for example, studies of home birth should not include unscheduled home birth, since women who have an unplanned home birth represent a uniquely at-risk group (for example, potentially more limited resources, planning, and prenatal care).[21] Studies should also assign to the home birth cohort those women who required transfer to hospital after beginning with a plan to labor and deliver at home, for such a transfer may potentially harbor worse outcomes. If not appropriately addressed, the first issue inflates the risk of home birth, while the second inappropriately underestimates such risk.

Wax and colleagues, in a recent meta-analysis, addressed both issues and found that "Although planned home and hospital births exhibited similar perinatal mortality rates, planned home births were associated with significantly elevated neonatal mortality rates."[22] However, that finding is tempered by additional considerations. First, although the difference in the relative risk of neonatal death was significant in this study, the absolute increase was not large: approximately one additional death per thousand. Second, there was no standard for quality applied to home birth attendants, or exclusions if there were no clear systems to link homes to hospitals; thus it is possible that the results included outcomes from both suboptimally as well as appropriately prepared home settings. To this end, in sensitivity analysis, when studies that included births not attended by certified midwives were excluded, there were no longer significant differences in neonatal mortality. Also, a study by de Jonge and colleagues, the largest study in the meta-analysis[23] (more than 300,000 births, compared with approximately 20,000 among all of the other studies combined) was not included in the neonatal mortality assessment because it looked at early but not late neonatal deaths. It should be noted that the de Jonge study found no excess deaths in the home birth group, whether it included neonatal deaths within 24 hours of birth or within a week, and actually reported fewer neonatal intensive care admissions. Additionally, in the Wax meta-analysis, there were countervailing benefits reported among home births. Infants born at home were less likely to be premature, have low birth weight, and need assisted ventilation. There were fewer maternal interventions, including episiotomy and operative delivery. Women were less likely to experience lacerations, hemorrhage, and infections.

While the Wax meta-analysis has engendered much debate, subsequently published studies support its conclusion that home birth is associated with a small absolute risk of adverse neonatal outcomes, including mortality. For example, the Birthplace in England study, a large prospective cohort analysis of outcome by place of intended birth, concluded that, for nulliparous women (women who have not yet had a baby), the odds of a composite adverse outcome (stillbirth after start of care in labor, early neonatal death, neonatal encephalopathy, meconium aspiration syndrome, brachial plexus injury, fractured humerus, or fractured clavicle) were higher for planned home births (adjusted odds ratio 1.75, 95 percent confidence interval 1.07 to 2.86).[24]

Ultimately, although the Wax study concluded that risks from home birth was greater than those from hospital birth, it stated, "a reasonable estimate of the excess neonatal mortality realized by planned home births . . . would be one death per 1,333 births."[25] That level of risk is not dramatically different from other risks that are associated with a variety of delivery options, such as trial of labor after cesarean section (TOLAC) that are now open to women, and that are supported, or even encouraged, by professional obstetrical organizations. In addition, it is worth noting that in analyzing much of the same literature as Wax, the United Kingdom's RCOG concluded, "home birth is a safe option for many women."[26] In part, the RCOG's alternate interpretation of the same data may have been the result of an alternate frame and perspective that it used

for its analysis, since it set out "not to define safety in its narrow interpretation as physical safety only but also to acknowledge and encompass issues surrounding emotional and psychological well-being. Birth for a woman is a rite of passage and a family life event, as well as being the start of a lifelong relationship with her baby." For the RCOG and others, including patients, home birth may be about more than just morbidities and mortalities as traditionally defined by U.S. obstetricians.

The ACOG position, both the older version and the newer Committee Opinion, has focused on the risks of home birth, such as those highlighted by Wax, more than on the benefits enumerated by the RCOG. Differences in the weighting of values such as safety, patient satisfaction, and family choice explain only a part of the difference between the U.S. and England in attitudes toward home birth. Differences in the systems available to support home birth may also contribute to differences in perspectives across continents between ACOG and RCOG. de Jonge and colleagues, whose data contributed the bulk of the patients to the Wax meta-analysis, found, for example, that home birth was safe, "provided the maternity care system facilitates this choice through the availability of well-trained midwives and through a good transportation and referral system."[27] Similarly, the RCOG opinion regarding home birth explicitly stipulates, "Both the RCM [Royal College of Midwives] and the RCOG believe that to achieve best practice within home birth services it is necessary that organizations' systems and structures are built to fully support this service."[28] The U.S. currently lacks that framework, and ACOG has recognized the potential importance of that deficiency: "Another factor influencing the safety of planned home birth is the availability of safe and timely intrapartum transfer of laboring patients. The relatively low perinatal and newborn mortality rates reported for planned home births reported from Ontario, British Columbia and the Netherlands were from highly integrated health care systems."[29]

This absence of an organized system for home birth underpins, at least in part, the reticence of some ethicists to embrace the somewhat more liberal ACOG statement in 2011. For example, Chervenak and colleagues felt that this statement did not adequately address obstetricians' obligations to discuss and highlight risks with women interested in home birth.[30] In particular they noted that "transport systems in most locales are not as well developed as in the Netherlands," and went on to state, "the clinical and ethical significance of the transport issue cannot be overemphasized."

However, Chervenak and McCullough had a more elemental argument that turned on their particular view of physicians' obligations to mothers and their fetus, specifically the manner in which physicians should approach a pregnant woman's choice in the setting of home birth. Patient choice and respect for patient autonomy are increasingly valued in medical decision making, and deference to patient wishes has been proposed as an appropriate solution to resolving ethical and other conflicts that arise as patients and providers choose among alternate paths of management.[31] Indeed, some suggest the principle of respect for autonomy is "first among equals."[32] However, respect for autonomy may present challenges when patient choices do not match the choices preferred or, in some cases, permitted by individual providers, facilities, or healthcare organizations. Chervenak and McCullough, in their article on home birth, espoused the standard principle-based approach to medical ethics, of which respect for autonomy is an important part, but they assigned equal weight to fetal beneficence-based obligations and maternal autonomy-based obligations.[33] They further argued that if an intervention is reasonably expected to result in "unacceptable clinical risk" for either the mother or fetus, the clinician should recommend against it. They believed that home birth is such an unacceptable risk.

We would raise two issues in that regard: how to weigh risks, and, more importantly, the nature of physicians' obligations if the mother's weighting is different than the physician's. In regard to the first issue—the need to recommend against unacceptable risks—the devil is, of course, in the definition of "unacceptable." In the first instance, as we will argue later, using relative risk as a determining metric can lead to misleading advice. One could use the fact that the risks from making a left turn in a car are substantially higher than from making a right turn as an argument for counseling women with children in their car against ever making a left turn. Yet we accept that the inconvenience of making extra turns just to arrive at the same spot is sufficiently important to outweigh the risks to the child-passenger of a car that makes left turns. "Higher" is not enough when risks are to be judged. Before any potential higher risk from home birth drives decisions and/or policy, we believe that, given the absolute risks (approximately one per thousand), maternal concerns about the medicalization of birth must be afforded due consideration. At the very least, efforts to make hospital birth more attractive and less "medical," when appropriate, should be considered, since such efforts offer the possibility of pleasing both sides in

this debate. We agree that when discussing options with a patient who expresses an interest in home birth it is appropriate to raise the issue of the mother's beneficence-based obligations to her fetus. Since she may be balancing the importance of a family-centered experience against risks to her child, obstetricians should offer reliable counsel about the consequences of her decision. The goal in such conversation is to educate, not to make women feel guilty about what some may perceive to be a riskier choice. Regret is possible regardless of choice: a woman who has an uncomplicated low-risk hospital birth may, in retrospect, wish she had chosen a home delivery, while another who had a complication at home may wish she had opted for hospital birth. Obstetricians may need to couple that with efforts to make whatever choice a woman makes as a safe as possible, since her weighting of benefits and burdens may not mirror the obstetrician's.

The legitimate concerns about daunting logistical hurdles in the U.S. (how to organize an efficient system for hospital transport from home birth, especially in rural areas?) should not be seen as a fixed barrier to home birth. Rather, such concerns raise the question of whether, as obstetrical care in the U.S. undergoes other transitions (for example, the increasing rarity of solo practice, the use of laborists —obstetricians whose sole responsibility is covering a labor and delivery unit, more hospital-owned practices), we should develop an infrastructure that would more safely accommodate birth alternatives. There can be no argument that there are regions in the U.S. where designing a system for safe transport from home to hospital when intrapartum complications arise will be challenging, if not impossible. In some rural settings, homes may be hours from hospitals. In some urban areas, four- or five-story walkups make movement of women in labor exceedingly difficult and dangerous. However, a strategic approach to designing an integrated setting would recognize instances in which the risks of home birth would be prohibitive, and guidelines could reflect that reality. In some countries where home birth is common, for example, such a birth is only allowed on the first floors of a dwelling. Similarly, home birth would be discouraged by public and professional health organizations in areas where prompt hospital transfer could not be effected.

An integrated system that tethers home birth to backup centers lies, at best, somewhere in the future. In regard to physicians' obligations within the current system, we would suggest that there are three: first, to consider how their participation can potentially benefit or harm women; second, to open a dialogue with other stakeholders, including patients and home birth providers, in order to consider the future of home birth; and, third, to minimize risks to women who choose home birth, even if/when physicians do not agree with that choice. All of this may involve a shift to what some may recognize as a deliberative, rather than an informative, paradigm for patient engagement and counseling.[34]

In regard to these obligations, we acknowledge that provider participation in choices they have not recommended presents a dilemma. Central to the answers to the questions posed earlier (When does respect for patient choice and autonomy become support for poor decision making? When is participation not respectful but enabling?) is a balancing of the principles of beneficence (doing good) and non-maleficence (not doing harm). Arguably many, if not most, medical choices will be made safer by a physician's participation. Physicians and midwives possess knowledge and skills not held by most patients, assets that permit them to manage medical problems and emergencies in a manner that will lead toward optimal outcomes. If nothing else, physicians' training may allow them to recognize when a chosen plan encounters complications—anticipated or not—that require modifying or abandoning the original approach in favor of alternate strategies.

Yet, what if making a bad option safer makes that option appealing in ways that it would not otherwise be? Perhaps, absent physician involvement in a risky plan, a patient would have chosen the usual recommended course. In such cases, by respecting patient choice and actively participating in a plan they would not recommend, providers may seem to violate their obligation to do no harm. Participation and collaboration may not be the lesser of two evils when a third path—recommended clinical management—is the alternative, albeit an alternative that would seem to limit patient choice and autonomy. In considering limits on patient choice, it is important to recognize that while a patient's right to refuse almost anything (even when pregnant) has few limits, her right to demand any/every intervention is more limited. Using our current construct, let us assume a woman is a poor candidate for a home birth (for example, a breech with three prior cesarean sections and a placenta previa). One alternative would be having a physician in the home who would try his or her best to perform surgery with a kitchen knife and a sewing needle. A second approach would be to look away and forgo any involvement, and the third (recommended clinical management) would be to convince the patient to come to the hospital for a scheduled cesarean section.

Dilemmas of this sort are not uncommon in medicine. To what degree should physicians support those seeking a trial of labor after cesarean delivery at a site without immediately available resources for cesarean delivery, for example? As a matter of policy, the debate surrounding "harm reduction"—for example, needle exchange for those using intravenous drugs—presents similar issues. Home birth is another illustration of the complexities raised by these sorts of issues.

In regard to the second obligation that we suggest above (to open a dialogue with other stakeholders), medical and midwifery organizations have labored on equal footing in countries where home birth has been most successful. That relationship facilitates the final obligation noted above (making such deliveries as safe as possible for those who choose to have them, even after being informed of possible risks). Credible medical and midwifery organizations recognize that home birth must be subject to guidelines and standards. Therefore, judgments about home birth should be based on an assessment of what would transpire if an integrated healthcare system were in place that required credentialed home birth attendants, and that facilitated referral and transportation. If home birth would be an acceptable option under those circumstances, then obstetricians should be partners in efforts to create those conditions. While those efforts might be Herculean, the antecedent step would be simpler: to have a conversation with midwifery organizations to objectively consider all aspects of home birth, such as factors that make it more risky (for example, previous cesarean sections, long distances from a hospital) or less risky (qualified personnel in attendance, plans for transfer if necessary).

Regardless of whether those efforts are undertaken, obstetricians already have a critical third obligation: to play a role in assuring that women who have a home birth are as safe as possible, even if such a birth is opposed precisely because of the perceived danger that it entails. The debate about the appropriateness of home birth won't end merely because some studies suggest that neonatal death rates will rise by one per thousand, even if it were conceded that that number was accurate. That level of obstetric risk has been reported to result in different clinical choices by different populations.[35] Therefore, rather than ostracizing women who arrive at a hospital after a failed attempt at home birth, obstetricians should work with home birth advocates not only to make sure that women are informed of the risks of home birth and dissuaded as appropriate, but also to engage in a dialogue that would make the process as safe as possible for those who chose home birth in the face of fair and objective warnings. Accordingly, when women who start labor at home need to come to the hospital, obstetricians must assure that there is no delay in transport, that all women are readily accepted into the hospital, and that there is no delay in their care once they arrive. To some extent, these responsibilities speak to the issues raised in relation to the first obligation, that is, that obstetricians can help make home birth safer, but only if they participate.

Despite the contentiousness of this issue, and some apparently intractable differences between opposing sides of the debate, a few conclusions seem warranted. First, as suggested above, for many deliveries the birthing experience in the hospital can be made more accommodating without compromising safety. In fact, many of the priorities of women who desire out-of-hospital birth are now receiving greater emphasis in hospitals. For example, episiotomies are no longer advocated as a routine procedure. In some facilities, guidelines are less stringent in regard to the number of family members who can be present and/or these institutions offer alternatives to the previously "standard" practice of continuous electronic fetal monitoring. Additionally, many authorities are advocating the use of patient safety "bundles" (a small set of evidence-based practices—perhaps three to five—that, when performed together and reliably, have been shown to improve patient outcomes to reduce the rate of induction and of late preterm birth).[36] Other issues remain to be addressed, such as the high and rising cesarean section rate. Second, a hierarchy of risk should be articulated for patients when considering the appropriateness of an out-of-hospital birth. While no parturient, whether delivered at home or in a hospital, would fall into a "no risk" category," women with uterine scars, placenta previa, or transverse lies, or with no means of transport to a hospital, to cite but a few examples, face a risk that would, in the estimation of many, make birth outside of a hospital, staffed with an immediately available provider, inappropriate. The RCOG has stated, "The discussion with women regarding their potential transfer in labour should include consideration of the distance between birth settings and of other local circumstances which may introduce delay in transfer."[37] Third, we should all agree that appropriately trained and credentialed individuals should attend all births, regardless of where they occur (although what constitutes appropriate training is beyond the intended scope of this essay). Fourth, there is a need for a joint commitment from obstetricians and midwives

to bring the best of both disciplines to bear on the subject, as is evident in the RCOG policy which has, as noted above, the Royal College of Midwives as a cosignatory. At this juncture, more could be accomplished with full and frank discussions by all responsible stakeholders regarding the place of home birth in the U.S., than with an out-of-hand dismissal of the subject. As long as obstetricians absent themselves from any dialogue about home birth, the ability of ACOG or any other organization to set standards will be weakened.

We recognize that moving toward an environment in which home birth is as safe as it appears to be in other countries will require addressing major challenges such as the incremental costs of doing so, professional liability issues, and the vast rural and mountainous areas that make emergency transports difficult. Accordingly, while there is reason to imagine that physician participation (for example, developing transfer standards and agreements, accepting responsibility for patients sent to the hospital) will make home birth safer, informed consent conversations can also be used to make clear that a physician's participation does not signify that the obstetrician believes that the choice is without risk. With regard to the balance of respect for patient autonomy and the principles of beneficence and nonmaleficence, for some women an absence of physicians' participation will not drive them from home birth, and for these patients, the choice is home birth with or home birth without physician collaboration. For others, the choice is home birth with physician collaboration or hospital birth. Those whose choice depends on physician collaboration will likely be those most open to discussion and counseling.

As a matter of public health, many physicians recognize the importance of dialogue and risk reduction. We offer and support options that may make certain behaviors less risky, even if not risk free or recommended. Programs for needle exchange are not designed to eliminate intravenous drug abuse (indeed, some argue it does the opposite), but they are designed to reduce infection associated with such behavior and to provide a relationship/interaction for engaging those involved in such practices. Although a matter of sometimes contentious public debate, ACOG supports contraceptive counseling for teens, arguing that safer sex practices and pregnancy prevention are important resultant benefits, even if some critics contend that counseling encourages sexual activity. The potential benefits of physician participation in all of these activities, including home birth, argue that discussion and dialogue around such issues should be encouraged rather than dismissed out of hand, because of concerns about the behaviors that are the foundations of these conversations. Participation, discussion, and dialogue may, for example, allow physicians to guide and influence the nature of the care provided, including, as discussed in ACOG's recent home birth document, appropriate training for those who attend home births.

Finally, harm reduction should trump any other consideration. Respect for autonomy argues for accepting an informed woman's right to make a choice, even if a physician considers her choice foolish. While a physician might argue a right of conscientious refusal, in this instance the physician is not being asked to participate in home birth, but rather to deal with any untoward consequences, should a woman be brought from home to hospital with a peripartum complication. In that circumstance, the physician's right to conscientious refusal would be tightly circumscribed by her or his duty to rescue. "Harm reduction" is, in part, assuring that women who develop complications warranting transfer to a hospital receive care expeditiously and nonjudgmentally. Physicians are obliged to use their skills to ameliorate the risk of subsequent complications in all women, including those who chose a plan for home birth, even those who may have been aware of general recommendations or advice to reject such plans. Moreover, if the latter condition is not met, a midwife's subsequent reticence to return to the facility might lead to dangerous delays in future. Despite possible disagreements with a woman's choice, physicians should hold to their duty to exercise their fiduciary obligation to women by using their skills to minimize risks, even women who have shunned advice to have a baby in the hospital.

NOTES

1. A. Horticollis, "St. Vincent's Closing Puts Midwives in Jeopardy," *New York Times,* 5 May 2010.

2. "ACOG Statement on Home Births," 6 February 2008, *www.medscape.com/viewarticle/725383,* accessed 19 August 2013.

3. Fetal pH (measure of acidity or basicity) is measured during labor via fetal scalp blood testing to determine whether a fetus's level of oxygen is sufficient. T.Y. Leung et al., "Urgent cesarean delivery for fetal bradycardia," *Obstetrics & Gynecology* 114 (2009); 1023-8.

4. Base excess is the measurement of the amount of base present in the blood. M.G. Ross and R. Gala, "Use of umbilical artery base excess: Algorithm for the timing of hypoxic injury," *American Journal of Obstetrics & Gynecology* 187 (2002): 1-9.

5. J.R. Wax et al., "Maternal and newborn outcomes in planned home birth vs planned hospital births: a

metaanalysis," *American Journal of Obstetrics & Gynecology* 203, no. 3 (September 2010): 243-8.

6. A.C. Evers et al., "Perinatal mortality and severe morbidity in low and high risk term pregnancies in the Netherlands: prospective cohort study," *BMJ* 341 (2 November 2010): e5639.

7. J. Ecker and H. Minkoff, "Home birth: what are physicians' ethical obligations when patient choices may carry increased risk?" *Obstetrics & Gynecology* 117, no. 5 (May 2011): 1179-82.

8. M.F. MacDorman, F. Menacker, and E. Declercq, "Trends and characteristics of home and out-of-hospital births in the United States, 1990-2006," *National Vital Statistics Report* 58, no.11 (3 March 2010): 1-14, 16, *www.cdc.gov/nchs/data/nvsr/nvsr58_11.pdf*, accessed 19 August 2013.

9. [U.K.] Department of Health, *Changing Childbirth: Report of the Expert Maternity Group* (London, U.K.: Her Majesty's Stationary Office, 1993).

10. [U.K.] Department of Health, *National Service Framework for Children, Young People and Maternity Services*: *Core Standard*, Standard 11 (London, U.K.: Department of Health, 2004), *https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/199952/National_Service_Framework_for_Children_Young_People_and_Maternity_Services_-_Core_Standards.pdf*, accessed 19 August 2013.

11. ACOG, "Committee Opinion No. 476: Planned Home Birth," *Obstetrics & Gynecology* 17, no. 2 (February 2011): 425-8.

12. "ACOG Statement on Home Birth," see note 2 above.

13. Society of Obstetricians and Gynecologists of Canada, "Policy Statement on Midwifery," *Journal of Obstetrics and Gynecology Canada* 31, no. 7 (July 2009): 662.

14. Royal College of Gynaecologists/Royal College of Midwives, "Home Births, joint statement No. 2, April 2007, *http://www.rcog.org.uk/files/rcog-corp/uploaded-files/JointStatmentHomeBirths2007.pdf,* accessed 19 August 2013.

15. American Public Health Association, "Increasing access to out-of-hospital maternity care services through state-regulated and nationally-certified direct-entry midwives," 2001, *http://mana.org/APHAformatted.pdf,* accessed 23 July 2010.

16. P.A. Janssen, A.D. Henderson, and S. Vedam, "The experience of planned home birth: views of the first 500 women," *Birth* 36, no. 4 (2009): 297-304.

17. I. Hildingsson, U. Waldenström, and I. Rådestad, "Swedish women's interest in home birth and in-hospital birth center care," *Birth* 30, no. 1 (2003): 11-22.

18. MacDorman, Menacker, and Declercq, see note 8 above.

19. K.A. Granju, "The Culture of Childbirth," *City Pages* (Minneapolis), 1 May 1999, *http://www.citypages.com/1999-05-01/feature/the-culture-of-childbirth,* accessed 19 August 2013.

20. P.A. Janssen, E.A. Carty, and B. Reime, "Satisfaction with planned place of birth among midwifery clients in British Columbia," *Journal of Midwifery and Women's Health* 51, no. 2 (2006): 91-7; National Collaborating Centre for Women's and Children's Health, "Intrapartum Care: Care of Health Women and their Babies During Childbrith, Final Draft for Consultation, Commissioned by the National institute for Health and Clinical Excellence," 2007, *http://www.nice.org.uk/nicemedia/pdf/IPC-consfullguideline.pdf*, accessed 19 August 2013.

21. E. Declercq, M.F. MacDorman, F. Menacker, and N. Stotland, "Characteristics of Planned and Unplanned Home Births in 19 States," *Obstetrics & Gynecology* 116, no. 1 (July 2010): 93-9.

22. Wax et al., see note 5 above.

23. A. de Jonge et al., "Perinatal mortality and morbidity in a nationwide cohort of 529 688 low-risk planned home and hospital births," *BJOG: An International Journal of Obstetrics and Gynaecology* 116, no. 9 (August 2009): 1177-84.

24. Birthplace in England Collaborative Group, "Perinatal and maternal outcomes by planned place of birth for healthy women with low risk pregnancies: the Birthplace in England national prospective cohort study," *BMJ* 343 (2011): doi: 10.1136/bmj.d7400; *http://www.bmj.com/content/343/bmj.d7400,* accessed 19 August 2013.

25. J.R. Wax, M.G. Pinette, and F.L. Lucas, "Reply," *American Journal of Obstetrics & Gynecology* 24, no. 4 (April 2011): e18-20; reply to M.A. Davey and M.M. Flood, "Perinatal Mortality and planned home birth," " *American Journal of Obstetrics & Gynecology* 24, no. 4 (April 2011): e18.

26. RCOG/RCM, see note 14 above.

27. de Jonge et al., see note 23 above.

28. RCOG/RCM, see note 14 above.

29. See Janssen, Carty, and Reime, note 20 above; de Jonge et al., note 23 above.

30. F. Chevenak, L.B. McCullough, and B. Arabin, "Obstetric Ethics. An essential dimension of planned home births," *Obstetrics & Gynecology* 117 (2011): 1183-7.

31. ACOG, "Committee Opinion No. 390: Ethical Decision Making in Obstetrics and Gynecology," *Obstetrics & Gynecology* 110 (2007): 1479-87.

32. R. Gillon, "Ethics needs principles—four can encompass the rest—and respect for autonomy should be 'first among equals,' " *Journal of Medical Ethics* 29, no. 5 (October 2003): 307-12.

33. J.L. Ecker and F.D. Frigoletto, Jr., "Cesarean delivery and the risk-benefit calculus," New *England Journal of Medicine* 356, no. 9 (1 March 20007): 885-8, *http://www.ihi.org/IHI/Topics/PerinatalCare/,* accessed 9 August 2010.

34. E.J. Emanuel and L.L. Emanuel, "Four Models of the Physician-Patient Relationship," *Journal of the American Medical Association* 267, no. 16 (22-29 April 1992): 2221-6.

35. Ecker and Frigoletto, see note 33 above.

36. R. Resar et al., "Using a bundle approach to improve ventilator care processes and reduce ventilator-associated pneumonia," *Joint Commission Journal on Quality and Safety* 31, no. 5 (2005): 243-8.

37. RCOG/RCM, see note 14 above.

The Absolute Power of Relative Risk in Debates on Repeat Cesareans and Home Birth in the United States

Eugene Declercq

ABSTRACT

Background

Changes in policies and practices related to repeat cesareans and home birth in the U.S. have been influenced by different interpretations of the risk of poor outcomes.

Methods

This article examines two cases—vaginal birth after cesarean (VBAC) and home birth to illustrate how an emphasis on relative over absolute risk has been used to characterize outcomes associated with these practices. The case studies will rely on reviews of the research literature and examination of data on birth trends and outcomes.

Results

Childbirth involves some unique challenges in assessing health risks, specifically the issues of: (1) timing of risks (lowering health risk in a current birth can increase it in subsequent births); (2) the potential weighing of risks to the mother's versus the infant's health; (3) the fact that birth is a condition of health and many of the feared outcomes (for example, symptomatic uterine rupture) involve very low absolute risk of occurrence; and (4) a malpractice environment that seizes upon those rare poor outcomes in highly publicized lawsuits that receive widespread attention in the clinical community. In the cases of VBAC and home birth, the result has been considerable emphasis on relative risks, typically an adjusted odds ratio, with little consideration of absolute risks.

Conclusion

Assessments of the safety of interventions in childbirth should involve careful consideration and communication of the multiple dimensions of risk, particularly a balancing of relative and absolute risks of poor health outcomes.

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INTRODUCTION

Maternity care practices in the United States have undergone substantial shifts in the past two decades, most notably in the case of cesarean section. Starting in 1989, the U.S. experienced seven years of slow but consistent declines in the cesarean rate from 22.8 percent in 1989 to 20.7 percent in 1996.[1] This was followed by 13 years of a more rapid increase to 32.9 percent in 2009, a rate that has since stabilized (32.8 percent in 2011) with a total of about 1.3 million annually.[2] A critical component in the variation in overall cesarean rates was a series of substantial shifts in the use of vaginal birth after cesarean (VBAC), which increased from 18.9 percent in 1989 to 28.3 percent in 1996, followed by consistent declines to a current unofficial rate of 8.9 percent in 2010.[3] There was another less noticed and notable change through this same period in U.S. home birth rates. A gradual and steady decline in the very small number of U.S. home births occurred from 1989 (0.69 percent) until 2004 (0.56 percent), followed by consistent increases for the next six years (0.85 percent in 2011).[4] This article explores the conceptualization of relative and absolute risk in the sometimes heated debates over

VBACs and home birth in the U.S., with a particular focus on the emphasis on relative risk of poor outcomes in either VBACs or home births.

Examining the role of relative and absolute risk in debates on the safety of maternity care practices is at the heart of this analysis. The balancing of relative and absolute risk in identifying and communicating the chance for a poor health outcome is not a new issue, nor are the implications limited to childbirth.[5] However, this balance may be particularly relevant to the context of birth in industrialized countries. Healthy mothers in industrialized countries will rarely have poor outcomes (for example, only France, among the 33 wealthy countries that belong to the Organization for Economic Co-operation and Development, has a perinatal mortality greater than 1 percent[6]), which means that risks expressed as a relative risk when one intervention is compared to another, typically as an adjusted odds ratio, will involve a generally low absolute risk for an individual mother. For example, a mother in Norway rejecting a new medical intervention that a study suggests would reduce perinatal mortality in Norwegian births (currently 4.4 per 1,000[7]) by 30 percent might be altering her absolute risk (assuming all the conditions of the study applied to her) at a rate of slightly more than one per one thousand. Likewise, media reports of studies that only emphasize relative risk without noting the impact on absolute risk can further heighten patient anxiety and cloud decision making. So why is relative risk so prominent in discussions of medical outcomes?

Most contemporary quantitative studies rely on multivariate analysis, for theoretical reasons (it enables them to control for a variety of potential confounders) and for practical reasons (they wouldn't get published without it). These studies will have a dual finding: a relative risk of a given outcome in a group of interest (for example, those with a VBAC or home birth) compared to some reference group (for example, those with a repeat cesarean or hospital birth) and an absolute risk of the given outcome of interest (for example, neonatal death). The reliance on adjusted odds ratios has led to an emphasis on relative risk over absolute risk, although both would presumably be central to clinical decision making, particularly in the case of rare events such as poor childbirth outcomes in the U.S. How does a clinician balance a given intervention's association with a 50 percent lower risk of a poor outcome in one in one thousand cases? The interest, in recent years, in "shared decision making"[8] has been seen as one solution, encouraging clinicians and patients to jointly determine the optimal evidence-based course of action for that particular case. However, as Kaimal and Kuppermann note, shared decision making has not typically been the model for decisions on mode of delivery, with a heavier reliance by obstetricians on clinical guidelines.[9] In part, this may be a result of the history of decision making in obstetrics that has relied heavily on physician discretion and partly on the nature of the decision on the mode of delivery, which involves a discrete choice (one doesn't have a "partial cesarean") rather than on a range of treatment options.

There are also different conceptualizations of risk that can shape these decisions. Birth is not a singular event, and reducing "risk" in a current birth may alter risk profiles in subsequent births.[10] Birth also involves two patients, and, in some cases, reducing risk for one enhances it for the other. For example, a cesarean without trial of labor can often improve infant health, while at the same time complicating recovery and future births for the mother, and put a mother and infant at risk in a subsequent birth because of placental difficulties associated with repeat cesareans.[11] There are also risks, financial and professional, to clinicians who fail to intervene in a timely manner with, for example, a repeat cesarean, and while absolute risks of a poor outcome may be small, the widespread communication to clinicians of large malpractice settlements adds another dimension to their assessment of risk.[12] Clinicians constantly wrestle with the need to balance these competing risks. What's notable about the debates over VBACs and home birth is how often such judgments have apparently been reduced to a single finding—an adjusted odds ratio.

METHODS

This study adopts a case study approach to examine the debates over vaginal birth after cesarean and home birth. Descriptive data adapted from U.S. national and state data sets will be used to illustrate trends over time in these practices. A review of research and commentaries in the obstetrical clinical literature will provide the core information for the analysis. Finally, selected data from a national survey of mothers, *Listening to Mothers II (*2006), that involved 1,573 English-speaking mothers aged 18 to 45 who had a singleton, hospital birth in 2005, and a baby still living at the time of the survey, will be presented to illustrate maternal perspectives on these questions. The design, sample, and overall results from *Listening to Mothers II* have been presented elsewhere.[13] In addition to closed and open-ended questions concerning their experiences in

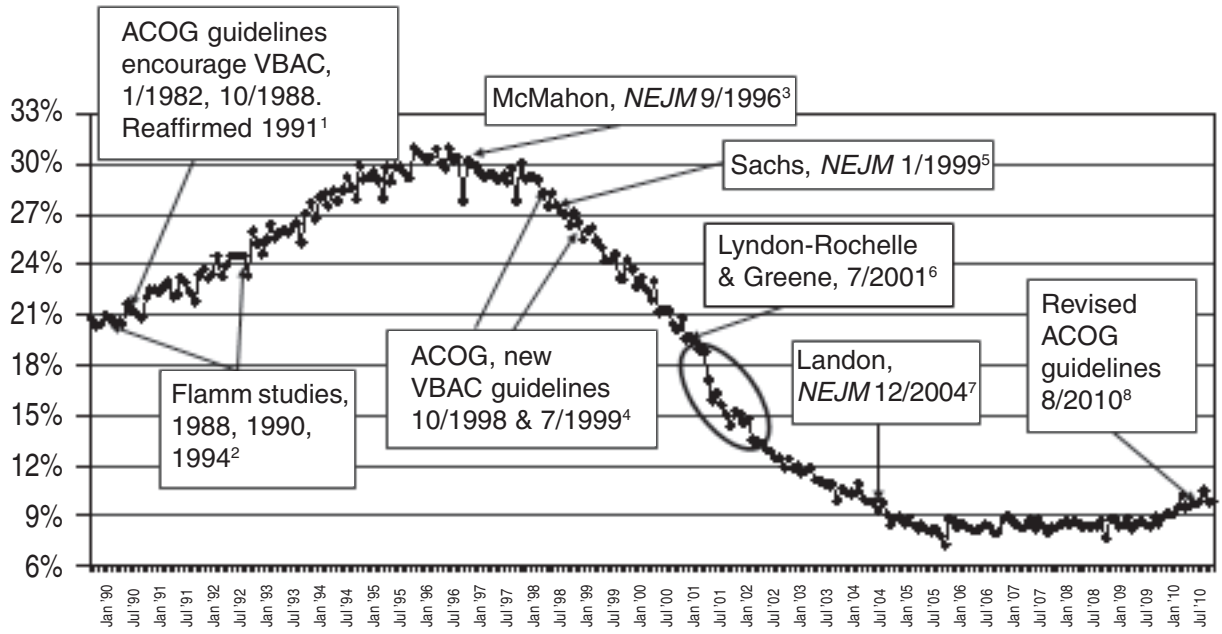
birth, the survey included attitudinal questions concerning mothers' perceptions of risk and their preferences on how risks in childbirth should be conveyed to them.

RESULTS

The Debate Over Vaginal Birth After Cesarean

In his 1916 article entitled "Conservatism in Obstetrics," Edwin Cragin, MD, famously stated, "the usual rule is, once a Cesarean, always a Cesarean."[14] That dictum was cited repeatedly in subsequent years with little attention to the remainder of Cragin's article, which argued against the overuse of primary cesareans in part because he believed they lead to repeat cesareans. Cragin's conclusion, "I believe that the extension of Cesarean section to conditions other than dystocia from contracted pelvis or tumors should be exceptional and infrequent," on page 3, is far less noted. Nonetheless, for decades the belief

FIGURE 1. Percentage of VBAC lower risk* mothers, U.S., monthly rates, 1990-2010



* Full-gestation (37+ weeks), vertex presentation, singleton births.

1. ACOG guidelines on vaginal birth after cesarean section (January 1982); ACOG guidelines on vaginal birth after cesarean section (October 1988); ACOG guidelines on vaginal birth after cesarean section (1991).

2. B.L. Flamm et al., "Vaginal birth after cesarean section: results of a multicenter study," *American Journal of Obstetrics & Gynecology* 158 (1988): 1079–84; B.L. Flamm et al., "Vaginal birth after cesarean delivery: results of a 5-year multicenter collaborative study," *Obstetrics & Gynecology* 76, no. 5, part 1 (1990): 750-4; B.L. Flamm et al., "Elective repeat cesarean delivery versus trial of labor: a prospective multicenter study," *Obstetrics & Gynecology* 83, no. 6 (1994): 927-32.

3. M.J. McMahon, E.R. Luther, W.A. Bowes, Jr., and A.F. Olshan, "Comparison of a trial of labor with an elective second cesarean section," *New England Journal of Medicine* 335, no. 10 (1996): 689-95.

4. "ACOG practice bulletin. Vaginal birth after previous cesarean delivery. No. 2, October 1998. Clinical management guidelines for obstetrician-gynecologists," *International Journal of Gynaecology & Obstetrics* 64, no. 2 (February 1999): 201-8; ACOG guidelines on vaginal birth after cesarean section (July 1999).

5. B.P. Sachs, C. Kobelin, M.A. Castro, and F. Frigoletto, "The risks of lowering the cesarean-delivery rate," *New England Journal of Medicine* 340, no. 1 (1999): 54-7.

6. M. Lydon-Rochelle, T.R. Easterling, and D.P. Martin, "Risk of uterine rupture during labor among women with a prior cesarean delivery," *New England Journal of Medicine* 345, no. 1 (2001): 3-8; M.F. Greene, "Vaginal delivery after cesarean section—is the risk acceptable?" *New England Journal of Medicine* 345, no. 1 (2001): 54-5.

7. M.B. Landon et al., "Maternal and perinatal outcomes associated with a trial of labor after prior cesarean delivery," *New England Journal of Medicine* 351, no. 25 (2004): 2581-9.

8. "ACOG Practice bulletin no. 115: Vaginal birth after previous cesarean," *Obstetrics & Gynecology* 116, no. 2, part 1 (August 2010): 450-63.

that an initial cesarean so weakened the uterine wall that labor prior to a subsequent vaginal birth was dangerous took hold, as clinicians feared uterine rupture if a women with a prior cesarean were allowed to labor. Given the nature of the long vertical incisions used in cesareans for much of the 20th century, the fear was not unfounded. As surgical techniques improved and the classic vertical incision was replaced by the low transverse incision, the potential for safe vaginal birth after an initial cesarean increased, and clinicians, particularly in Europe where approaches to reducing intervention in obstetrics have been more positively received than in the U.S., explored the safety of VBACs. Early research was promising, as a series of clinical trials followed by meta-analyses found that if the reason for the initial cesarean was not a chronic condition (for example, contracted pelvis) and the mother was otherwise not at medical risk, as many as 75 percent of women with a low transverse scar could successfully deliver vaginally in a subsequent birth.[15]

The subsequent growth in the VBAC rate (based on the number of VBACs divided by the total number of mothers with a prior cesarean) in the early 1990s (see figure 1) was not just a function of changes based on new research findings, but also a function of general concerns about rising cesarean rates in the U.S. in the late 1970s, when the rate increased from 5.5 percent (1970) to 16.5 percent (1980).[16] This was manifested in a 1980 consensus report from National Institutes of Health (NIH) concerning steps that could be taken to reduce the overall U.S. cesarean rate, which included increasing mothers' access to VBACs.[17] The American College of Obstetricians and Gynecologists (ACOG) later issued new practice guidelines to support the increased use of VBACs in 1988.[18] Insurers saw the potential to decrease the use of VBACs as a way to reduce charges for unnecessary surgery, and began to pressure obstetricians to justify why they performed repeat cesareans, while at the same time encouraging them, through special training and financial incentives (for example, extra payments for discussing VBAC options with patients) to perform more VBACs.[19] A backlash against VBACs arose within parts of the obstetrical community with a focus on several themes, including infringement on clinical judgment;[20] cost (with some studies concluding repeat cesarean birth might be cheaper when the cost of failed VBACs were taken into account);[21] consumer choice, suggesting that mothers seeking a repeat cesarean were being denied their rights;[22] and safety. The safety argument emphasized the greater relative risk of uterine rupture in VBACs.[23]

The VBAC rate peaked in 1996 and then began a swift decline. Figure 1 identifies a series of research articles, commentaries, and editorials, primarily in the *New England Journal of Medicine* (*NEJM*), that appear to be related to the decline of VBACs. The first, a research article in 1996, is a clear example of the emphasis on a single finding in a complex study.[24] McMahon and colleagues studied 6,138 mothers with a prior cesarean, comparing women with a trial of labor to those with elective repeat cesareans on a range of outcomes. There were no maternal deaths and they found no statistically significant difference in the overall rate of maternal morbidity, Apgar scores, admission to the neonatal intensive care unit, and perinatal mortality. When they combined three of their outcomes, hysterectomy, uterine rupture, and operative delivery, into a category of "major complications," they found the adjusted odds ratio for these complications in trials of labor to be 1.8, with a confidence interval just barely reaching significance (95 percent confidence interval. 1.1-3.0) compared to elective repeat cesareans. The absolute difference in major complications was 0.8 percent, or one in 125 cases. Notably, while the results section of the abstract of the study notes these overall mixed findings, the conclusion is unambiguous: "Among pregnant women who have had a cesarean section, major maternal complications are almost twice as likely among those whose deliveries are managed with a trial of labor as among those who undergo an elective second cesarean section."[25] Despite an accompanying editorial that noted the low absolute risk of negative outcomes associated with trials of labor,[26] the impact of the article's conclusion appears to be profound. A six-year rise in the VBAC rate began to be reversed from the all-time high (29.0 percent) in the month the article was published (September 1996). In the following months, the rate began to fall gradually and then leveled off at about 27 percent for the next 18 months, when a second decline began in mid-1998, just prior to the release of new guidelines from the ACOG. These guidelines cited the McMahon study and Level C evidence ("Based primarily on consensus and expert opinion") that "VBAC should be attempted in institutions equipped to respond to emergencies with physicians immediately available to provide emergency care."[27] The emphasis on resources being immediately available effectively limited most VBACs to larger hospitals, further restricting access for mothers.

The decline in VBACs continued gradually until July 2001, when another article in the *NEJM* by Lydon-Rochelle and colleagues documented poor

outcomes associated with induction of labor in mothers attempting a VBAC.[28] It did not conclude VBACs themselves were dangerous; however, an accompanying editorial by the *NEJM*'s obstetrical editor, entitled, "Vaginal Delivery after Cesarean Section—Is the Risk Acceptable?"[29] analyzed the study data, noting the low absolute risk of uterine rupture in trials of spontaneous labor (0.52 percent) and repeat cesareans (0.16 percent), but a higher relative risk. It essentially called for an end to VBACs, concluding, "a patient might ask, 'But doctor, what is the safest thing for my baby?' . . . my unequivocal answer is: elective repeat cesarean."[30] The findings from the article and the commentary in the editorial became mixed in subsequent media coverage, and the impact was immediate. The U.S. VBAC rate dropped from 17.6 percent in the month before the editorial to 13.4 percent by December 2001, a 24 percent decline in a national rate in six months,[31] without a definitive research finding. Interestingly, while the findings of systematic reviews concerning the safety of VBACs found a higher risk of uterine rupture with a trial of labor, the likelihood of a serious rupture was so low that the benefits of elective repeat cesareans were not as clear as suggested by the change in practice.[32] In December 2004, the largest prospective study (33,669 women in 19 centers that are part of the NIH Maternal-Fetal-Medicine network) of VBACs and repeat cesareans was published, also in the *NEJM*.[33] Similar to past studies, it found very low absolute risks for poor outcomes associated with trials of labor (for example, the re-opening of a site of a previous cesarean, 0.7 percent versus 0.5 percent for elective cesareans), but higher relative risks (1.38 95 percent confidence interval 1.04-1.85). While many of the findings paralleled McMahon, the Landon study's analysis of those differences took a more measured approach, concluding, "our data suggest a risk of an adverse perinatal outcome at term among women with a previous cesarean delivery of approximately 1 in 2000 trials of labor (0.46 per 1000), a risk that is quantitatively small but greater than that associated with elective repeated cesarean delivery."[34] By the time Landon's study was published, the national VBAC rate had dropped to 8 percent. In the months and years subsequent to the Landon study, the national VBAC rate has remained at around 8 percent. The impact of these constraints were seen in the results of a 2006 national survey of mothers, 57 percent of whom reported an interest in a VBAC, but no access to one.[35]

It would be naïve to assume that the shifting VBACs rates were driven solely by studies that emphasized relative over absolute risk. Several other factors, including a changing malpractice climate that encouraged repeat cesareans over VBACs,[36] growing clinician preference for cesareans,[37] greater acceptance of repeat cesareans by mothers,[38] and the virtual ban of VBACs in smaller to middle sized hospitals all contributed to this trend. However, the major studies cited to support these policy and practice shifts emphasized relative risk, with minimal attention to absolute differences in outcomes. The largest, best-quality study that presented a more balanced analysis of relative and absolute risks had virtually no impact on practice: in 2010, the NIH (the prime funder of the Landon study) convened a meeting to sort through the evidence and concluded, "Given the available evidence, trial of labor is a reasonable option for many pregnant women with one prior low transverse uterine incision,"[39] and, "Given the low level of evidence for the requirement for 'immediately available' surgical and anesthesia personnel in current guidelines, we recommend that the American College of Obstetricians and Gynecologists and the American Society of Anesthesiologists reassess this requirement with specific reference to other obstetric complications of comparable risk, risk stratification, and in light of limited physician and nursing resources."[40] The ACOG did issue new guidelines that provided more support for VBAC but, once again based on Level C evidence, refused to lift the "immediately available" phrase from the guidelines.[41] A more recent and widely cited study[42] exhibited the familiar emphasis on relative over absolute risk in creating a composite measure (similar to McMahon in 1996) of three outcomes (fetal death, infant death, and a created measure of "serious infant outcome"), and then finding a relative difference in outcomes (0.39 relative risk for poor outcomes from elective cesarean compared to trial of labor). However, as Kotaska points out in a review of this study, there were problems with not only the emphasis on relative risk, but also the construction of the composite measure, the classification of cases, and the assumption of long-term impacts from outcomes measured in the short term.[43]

The success in characterizing VBACs as high risk can be seen in the degree to which mothers have internalized the message. In the 2006 *Listening to Mothers II* survey, mothers who had received a cesarean were asked if they had requested that cesarean before they went into labor. While primary cesareans performed at the request of the mother were exceedingly rare (<1 percent), more than one-fourth (28 percent) of mothers with a prior cesarean had requested a repeat cesarean during her pregnancy.

Some mothers explicitly cited risk as their prime reason, with one mother stating, "I really wished I could have used a midwife for my second pregnancy, but because VBAC is considered 'high risk,' it was not an option. I had a midwife with my first pregnancy and I loved it."[44]

HOME BIRTH

While there are far more repeat cesareans in one month (~40,000) in the U.S. than there are home births in a year (31,500[45]), the debate over the safety of home birth in the U.S. tends to be as heated as that over repeat cesareans and VBACs.[46] A combination of ethical, practical, and measurement issues, along with the relatively small number of home births, makes research on outcomes of planned home births in the U.S. exceedingly difficult.[47] This has led to efforts to infer the applicability to the U.S. of results from other countries where home birth is more common and measurement systems allow for better tracking of planned home births. The best known such effort was a 2010 meta-analysis in the *American Journal of Obstetrics & Gynecology* by Joseph Wax and colleagues,[48] which attempted to combine the results from a series of studies from industrialized countries. Even though the article was an "Editor's Choice," its methodology has been the subject of considerable controversy;[49] but assuming the statistical analysis was sound, what is of interest here is the interpretation of risk. The primary outcomes the authors focused on were perinatal and neonatal mortality (both including and excluding anomalous conditions—primarily congenital anomalies that might cause death and be unrelated to place of delivery), and the results were driven by a Dutch study with 480,000 births,[50] or about eight times as many cases as the other 11 studies cited combined. Neonatal mortality includes only live births, and measures deaths within the first 28 days of life. Perinatal mortality combines both fetal deaths and early (within seven days) neonatal deaths in its measure. Given the differences in the way countries classify live births and fetal deaths, there are advantages in using perinatal mortality when combining data from different countries.

After finding no difference in perinatal mortality, the authors chose to exclude the Dutch study from the analysis of neonatal mortality (a decision that was the basis of much of the controversy) and found statistically significantly higher adjusted odds ratios for neonatal death in the home births in the case of all births (odds ratio 1.98, 95 percent CI—confidence interval—1.19-3.28) and nonanomalous births (odds ratio 2.87, 95 percent CI 1.32-6.25). They also found lower rates of intervention in home births. Their conclusion in the article and highlighted in the abstract and subsequent media coverage was clear, "Less medical intervention during planned home birth is associated with a tripling of the neonatal mortality rate."[51] This conclusion was quickly adopted in an ACOG Obstetric Practice Bulletin that was published shortly thereafter, which stated, "Women inquiring about planned home birth should be informed of its risks and benefits based on recent evidence. Specifically they should be informed that although the absolute risk is low, planned home birth is associated with a twofold to threefold increased risk of neonatal death."[52] What is not mentioned in either of the conclusions is the absolute differences in outcomes. For nonanomalous cases, the difference in neonatal deaths between planned home births (0.15 percent) and planned hospital births (0.04 percent) is one case per one thousand. In a far more measured commentary in *Obstetrics & Gynecology* in 2011, Ecker and Minkoff bring the focus back to absolute risk, stating, "Weighing benefits and burdens should not focus on the relative risk . . . but absolute risk. As noted for home birth, the magnitude of the relative risk in comparison to hospital birth remains unsettled but even in those studies that show a difference, the absolute risk remains low. In fact the absolute risk is congruent with risks accepted for other choices including a trial of labor after cesarean delivery."[53] With few exceptions[54] recent arguments that home birth is unsafe are based almost entirely on assessments of relative risk, typically citing the Wax conclusion, since the general health of women having planned home births, combined with risk selection during the prenatal period, results in generally positive maternal and infant outcomes for home births.

MATERNAL PERSPECTIVES ON COMMUNICATION OF RISK

The *Listening to Mothers II* survey included a series of questions concerning mother's expectations of how risks associated with birth should be conveyed to them. The questions were not framed as relative or absolute risk, but simply how much they should be told about possible procedures they might experience. Mothers were given one of three statements: "Quite a few women experience [labor induction or cesarean or epidural] while giving birth. Before consenting to an [induction/cesarean/epidural], how important is it to learn about possible side effects of an [induction/cesarean/epidural]?" Almost

four in five mothers responded in each case that they felt it was necessary to know every complication associated with the given procedure, and most of the remaining respondents felt they should know most of the possible complications.[55] It is almost impossible for clinicians to meet this expectation,[56] but it does capture mothers' interest in knowing everything they can, which would presumably include both relative and absolute risk.

DISCUSSION

The events described here concerning debates over the safety of VBAC and home birth identify a predominant reliance on relative risk in criticisms of each practice. In both cases absolute risk of a poor outcome (typically uterine rupture or neonatal death) was very low (from 1 percent to 0.05 percent), but in the studies at the core of the debate, a higher relative risk was the key evidence cited for changing practice. As noted, others have questioned whether the findings of higher relative risk were valid,[57] but of greater interest here is the acceptance of relative risk as the criteria for assessing a practice among both clinicians and ultimately mothers themselves. To understand why low levels of absolute risk are not persuasive to clinicians, we can learn from a political example. In his reporting on decision making in the Bush administration following the September 11 terrorist attacks, author Ron Suskind describes what he terms the "One Percent Doctrine."[58] The phrase is drawn from a statement by Vice President Dick Cheney, who apparently indicated at a security meeting that if there were even a 1 percent chance of a terrorist act occurring, it must be treated as if it were a certainty. The power of the vice president's claim is in suggesting it reflected his deeper concern with protecting Americans against another terrorist attack, which was deeper than anyone elses'—a position not unlike aggressive clinicians who advocate intervening even in cases of low absolute risk, arguing that intervention with, for example, a repeat cesarean can prevent even a small chance of a symptomatic uterine rupture. A conviction that medical intervention can eliminate low absolute risk with even weak evidence of a lower relative risk for that intervention can easily become the "proof" that a clinician who is inclined toward that procedure needs to intervene at a higher rate. This combination of predisposition and some form of evidence may help account for rapid shifts like the steep decline in VBACs.

The role of mothers in these risk assessments is not easy to characterize. A substantial majority feel it is their right to receive information on every possible risk that is associated with some of the most common interventions (for example, inductions and cesareans) in labor, presumably to better determine whether or not to avoid them. This desire for complete information is both understandable (shouldn't more information lead to a better decision?) and unrealistic. Current constraints on time for visits renders this an almost impossible standard, even assuming that a clinician has the requisite communication skills and the mother has a solid understanding of the statistical and clinical components of risk assessment. However, mothers' responses to open-ended questions in *Listening to Mothers II* about their best and worst experiences in pregnancy and childbirth revealed that many mothers have accepted the inevitability of repeat cesareans and fully internalized the idea of higher risk associated with VBACs. One mother remarked, "I was on bed rest for the majority of my pregnancy and it wasn't needed but my doctor didn't want to risk something happening even if it was a very small chance," while another stated, "I had a healthy pregnancy. I scheduled a C-section this time because of higher risk for uterine rupture." Perhaps the redefining of birth as a high-risk event was best captured by this mother: "There are an alarming number of High Risk [mothers], and people like me did not know there [were so many] high risk doctors. Maybe you can let more people know about it."

There is hope that the use of relative and absolute risk can be improved by the development of decision aids[59] and "shared decision making,"[60] in which "decisions are shared by doctors and patients, informed by the best evidence available, and weighted according to the specific characteristics and values of the patient; this exchange occurs in a partnership that rests on explicitly acknowledged rights and duties and on an expectation of benefit to both parties."[61] The disproportionate levels of information between the two parties in the decision process places the responsibility for sharing on clinicians, and this will be subject to their own perspective on the clinical decision process. Finding balance in the relationship between the "partners" in these decisions is tricky at best, as can be seen in the varying interpretations of patient autonomy in VBACs and home birth. Doctors performing elective repeat cesareans will cite their actions as manifesting their respect for the autonomy of the large number of mothers seeking another surgical birth.[62] At the same time, obstetricians opposed to home birth (often the same individuals advocating repeat cesareans) will cite the importance of professional

responsibility over patient autonomy in refusing to support a mother seeking a home birth.[63] This example suggests one view that could be best summarized as shared decision making as long as the decision coincides with the clinicians' views. Decision aids have had some success in informing mothers[64] concerning risks, but their impact on cesarean rates is mixed, and they have not yet been widely adopted.

Relative risk should unquestionably be a key element in decision making concerning an intervention. The difficulty arises when relative risk appears to be the only information that is communicated to patients and used to establish clinical guidelines. With thoughtful communication, mothers are capable of understanding both relative and absolute risks and sorting out the meaning of each for themselves. It is the obligation of the clinical and policy community to establish systems that will effectively assist in both.

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NOTES

1. J. Martin et al., "Births: Final Data 2011," *National Vital Statistics Reports* 62, no. 1 (2013), National Center for Health Statistics, *http://www.cdc.gov/nchs/data/nvsr/nvsr62/nvsr62_01.pdf,* accessed 29 July 2013.

2. B. Hamilton, J. Martin, and S. Ventura, "Births: Preliminary Data for 2011," *National Vital Statistics Reports* 61, no. 5 (2012), National Center for Health Statistics, *http://www.cdc.gov/nchs/data/nvsr/nvsr61/nvsr61_05.pdf,* accessed 5 March 2013.

3. U.S. Centers for Disease Control and Prevention, National Center for Health Statistics, "Vital Stats," *http://www.cdc.gov/nchs/VitalStats.htm*, accessed 19 August 2013.

4. See note 1 above; M.F. MacDorman, E.R. Declercq, and T.J. Mathews, "United States Home Births Increase 20 Percent from 2004 to 2008," *Birth* 38, no. 3 (2011): 185-90.

5. R. Harrison, D. Smith, P. Greene, and P. Kratt, "Relationship between relative risk of developing breast cancer and absolute risk in a population of rural, older African American women," *Breast Journal* 6, no. 5 (1999): 364-8.

6. Organization for Economic Co-operation and Development, *OECD health data 2010: statistics and indicators for 34 countries* (Paris: OECD, 2010).

7. Ibid.

8. R. Gee and M. Corry, "Patient Engagement and Shared Decision Making in Maternity Care," *Obstetrics & Gynecology* 120, no. 5 (2012): 995-7.

9. A.J. Kaimal and M. Kuppermann, "Understanding Risk, Patient and Provider Preferences, and Obstetrical Decision Making: Approach to Delivery After Cesarean," *Seminars in Perinatology* 34 (2010): 331-6.

10. R.M. Silver et al., "Maternal morbidity associated with multiple repeat cesarean deliveries," *Obstetrics & Gynecology* 107, no. 6 (2006): 1226-32.

11. E.R. Declercq, D. Cunningham, C. Johnson, and C. Sakala, "Mothers' Reports of Postpartum Pain Associated with Vaginal and Cesarean Deliveries: Results of a National Survey," *Birth* 35, no. 1 (2008): 16-24; G.C. Smith, J.P. Pell, A.D. Cameron, and R. Dobbie, "Risk of perinatal death associated with labor after previous cesarean delivery in uncomplicated term pregnancies," *Journal of the American Medical Association* 287, no. 20 (2002): 2684-90.

12. D. Fuglenes, P. Øian, and I. Sønbø Kristiansen, "Obstetricians' choice of cesarean delivery in ambiguous cases: is it influenced by risk attitude or fear of complaints and litigation?" *American Journal of Obstetrics & Gynecology* 200, no. 1 (2009): 48.e1-8; C. Sakala, Y.T. Yang, and M.P Corry, *Maternity Care and Liability: Pressing Problems, Substantive Solutions* (New York: Childbirth Connection, 2013), *http://transform.childbirthconnection.org/wp-content/uploads/2013/02/Maternity-Care-and-Liability.pdf,* accessed 19 August 2013.

13. Declercq, see note 11 above; E.R. Declercq, C. Sakala, M.P. Corry, and S. Applebaum, *Listening to Mothers II: Report of the second national U.S. survey of women's childbearing experiences* (New York: Childbirth Connection, 2006).

14. E.B. Cragin, "Conservatism in obstetrics," *New York Medical Journal* 104, no. 1 (1916): 1-3.

15. B.L. Flamm et al., "Vaginal birth after cesarean delivery: results of a 5-year multicenter collaborative study," *Obstetrics & Gynecology* 76, no. 5, part 1 (1990): 750-4; M.G. Rosen and J.C. Dickinson, "Vaginal birth after cesarean: a meta-analysis of indicators for success," *Obstetrics & Gynecology* 76, no. 5, part 1 (1990): 865-9; E.L. Mozurkewich and E.K. Hutton, "Elective repeat cesarean delivery versus trial of labor: a meta-analysis of the literature from 1989 to 1999," *American Journal of Obstetrics & Gynecology* 183, no. 5 (2000): 1187-97.

16. S.M. Taffel, "Cesarean section in America: dramatic trends, 1970 to 1987," *Statistical Bulletin—Metropolitan Insurance Companies* 70, no. 4 (1989): 2-11.

17. "NIH consensus development statement on cesarean childbirth: The Cesarean Birth Task Force," *Obstetrics & Gynecology* 57, no. 4 (April 1981): 537-45.

18. "ACOG practice bulletin. Vaginal birth after previous cesarean delivery. No. 2, October 1998. Clinical management guidelines for obstetrician-gynecologists," *International Journal of Gynaecology & Obstetrics* 64, no. 2 (February 1999): 201-8.

19. A.D. Lyerly and M.O. Little, "Toward an Ethically Responsible Approach to Vaginal Birth After Cesarean," *Seminars in Perinatology* 34 (2010): 8.

20. S. Zinberg, "Vaginal delivery after previous cesarean delivery: a continuing controversy," *Clinical Obstetrics & Gynecology* 44, no. 3 (2001): 561-70.

21. A. Chung et al., "Cost-effectiveness of a trial of labor after previous cesarean," *Obstetrics & Gynecology*

97, no. 6 (2001): 932-41.

22. M. Abitbol et al., "Vaginal birth after cesarean section: the patient's point of view," *American Family Physician* 47, no. 1 (1993): 129-34.

23. B.P. Sachs, C. Kobelin, M.A. Castro, and F. Frigoletto, "The risks of lowering the cesarean-delivery rate," *New England Journal of Medicine* 340, no. 1 (1999): 54-7.

24. M.J. McMahon, E.R. Luther, W.A. Bowes, Jr., and A.F. Olshan, "Comparison of a trial of labor with an elective second cesarean section," *New England Journal of Medicine* 335, no. 10 (1996): 689-95.

25. Ibid., 689.

26. R.H. Paul, "Toward fewer cesarean sections—the role of a trial of labor," *New England Journal of Medicine* 335, no. 10 (1996): 735-6.

27. "Vaginal birth after previous cesarean delivery," *International Journal of Gynaecology & Obstetrics* 66, no. 2 (August 1999): 197-204.

28. M. Lydon-Rochelle, T.R. Easterling, and D.P. Martin, "Risk of uterine rupture during labor among women with a prior cesarean delivery," *New England Journal of Medicine* 345, no. 1 (2001): 3-8.

29. M.F. Greene, "Vaginal delivery after cesarean section—is the risk acceptable?" *New England Journal of Medicine* 345, no. 1 (2001): 54-5.

30. Ibid., 56.

31. See note 3 above.

32. J.M. Guise et al., "Systematic review of the incidence and consequences of uterine rupture in women with previous caesarean section," *BMJ* 329, no. 7456 (3 July 2004): 19-25.

33. M.B. Landon et al., "Maternal and perinatal outcomes associated with a trial of labor after prior cesarean delivery," *New England Journal of Medicine* 351, no. 25 (2004): 2581-9.

34. Ibid., 259.

35. Declercq, Sakala, Corry, and Applebaum, see note 13 above.

36. L.R. Dubay, R. Kaestner, and T. Waidmann, "The impact of malpractice fears on cesarean section rates," *Journal of Health Economics* 18, no. 4 (1999): 491-522; Y. Yang et al., "Relationship Between Malpractice Litigation Pressure and Rates of Cesarean Section and Vaginal Birth After Cesarean Section," *Medical Care* 47, no. 2 (2009): 234-42; Sakala, Yang, and Cory, see note 12 above.

37. See note 9 above.

38. Declercq, Sakala, Corry, and Applebaum, see note 13 above.

39. "NIH Consensus Development Conference Statement on Vaginal Birth After Cesarean: New Insights," *NIH Consensus and State-of-the-Science Statements* 2, no. 3 (8-10 March 2010): 36, *http://consensus.nih.gov/2010/images/vbac/vbac_statement.pdf,* accessed 17 September 2013.

40. Ibid.

41. "ACOG Practice bulletin no. 115: Vaginal birth after previous cesarean," *Obstetrics & Gynecology* 116, no. 2, part 1 (August 2010): 450-63.

42. C.A. Crowther et al., "Planned Vaginal Birth or Elective Repeat Caesarean: Patient Preference Restricted Cohort with Nested Randomised Trial," *PLoS Medicine* 9, no. 3 (2012), *http://www.plosmedicine.org/article/info%3Adoi%2F10.1371%2Fjournal.pmed.1001192,* accessed 19 August 2013.

43. A. Kotsaka, "Quantifying VBAC Risk: Muddying the Waters," *Birth* 39, no. 4 (2012): 333-7.

44. Declercq, Sakala, Corry, and Applebaum, see note 13 above.

45. See note 1 above.

46. F. Chervanak et al., "Planned home birth: the professional responsibility response," *American Journal of Obstetrics & Gynecology* 208, no. 1 (2013): 1-8.

47. E.R. Declercq, "The Politics of Home Birth in the United States," *Birth* 39, no. 4 (2012): 281-5.

48. J.R. Wax et al., "Maternal and newborn outcomes in planned home birth vs planned hospital births: a metaanalysis," *American Journal of Obstetrics & Gynecology* 203, no. 3 (September 2010): 243.e1-8, *http://www.ajog.org/article/S0002-9378%2810%2900671-X/fulltext,* accessed 19 August 2013.

49. C. Michal et al., "Planned Home vs Hospital Birth: A Meta-Analysis Gone Wrong," *MedScape* 1 April 2011, *http://www.medscape.com/viewarticle/739987,* accessed 19 August 2013; E.C. Hayden, "Home-birth study investigated," *Nature* 18 March 2011, *http://www.nature.com/news/2011/110318/full/news.2011.162.html,* accessed 19 August 2013.

50. A. de Jonge et al., "Perinatal mortality and morbidity in a nationwide cohort of low-risk planned home and hospital births," *BJOG: An International Journal of Obstetrics & Gynaecology* 116, no. 9 (2009): 1177-84.

51. See note 48 above, p. 241.

52. Committee on Obstetric Practice and American College of Obstetricians and Gynecologists, "Planned Home Birth; Committee Opinion 476," *Obstetretics & Gynecology* 117, no. 5 (2011): 425-8.

53. J. Ecker and H. Minkoff, "Home Birth: What Are Physicians' Ethical Obligations When Patient Choices May Carry Increased Risk?" editorial, *Obstetrics & Gynecology* 117 (2011): 1179-82.

54. See note 46 above.

55. Declercq, Sakala, Corry, and Applebaum, see note 13 above.

56. See note 9 above.

57. See note 53 above.

58. R. Suskind, *The One Percent Doctrine: Deep Inside America's Pursuit of Its Enemies Since 9/11* (New York: Simon & Schuster, 2007).

59. Kaimal and Kupperman, see note 9 above.

60. Gee and Cory, see note 8 above.

61. Kaimal and Kupperman, see note 9 above.

62. W.B. Harer, Jr., "Vaginal birth after cesarean delivery: current status," *Journal of the American Medical Association* 287, no. 20 (2002): 2627-30.

63. See note 46 above.

64. A.A. Montgomery, C.L. Emmett, and T. Fahey, "Two decision aids for mode of delivery among women with previous Caesarian section: Randomised controlled trial," *BMJ* 334 (21 June 2007): 1305; J.A. Frost, A. Shaw,

A. Montgomery, and D.J. Murphy, "Women's views on the use of decision aids for decision making about the method of delivery following a previous Caesarian section: Qualitative interview study," *BJOG: An International Journal of Obstetrics & Gynaecology* 116, no. 7 (June 2009): 896-905.

Moral Science: Ethical Argument and the Production of Knowledge about Place of Birth

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ABSTRACT

Ethical arguments about caregiver responsibility and the limits of client autonomy rely on best evidence about the risks and benefits of medical interventions. But when the evidence is unclear, or when the peer-reviewed literature presents conflicting accounts of the evidence, how are clinicians and their clients to recommend or decide the best course of action? Conflicting evidence about the outcomes of home and hospital birth in the peer-reviewed literature offers an opportunity to explore this question. We present the contrary evidence and describe the social and cultural elements that influence the production of the science of birth, including professional, publication, and critical bias. We then consider how the science of birth has been used an misused in making ethical arguments about preferred place of birth. We conclude with a number of recommendations about the responsible use of the evidence, arguing for an "ethics of information" that can be drawn on to guide caregivers and clients in the use of evidence for clinical decision making.

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The debate over place of birth is not new. Partisans in this debate—"home is safer," "hospital is safer"—support their position with opinion, anecdote, and scientific evidence. While the nature, content, and quality of the evidence used in the arguments over place of birth have changed over the years, one thing remains constant: both sides seek to frame the debate in a way that puts their opponent on the defensive. Those who favor birth at home ask, "Have hospitals stopped the flood of iatrogenic injuries suffered by healthy women who birth in hospitals?" And those who favor hospital birth begin with the question, "Have home birth providers stopped ignoring the lifesaving benefits of modern obstetrical technologies?" Both are classic examples of a loaded question, impossible to answer without incriminating oneself.

Consider the title of a session at the first European Congress on Intrapartum Care—sponsored by

European Association of Perinatal Medicine in 2013.[1] The program included several sessions on "controversies," one of which was titled, "Home Births: Are There Any Increased Risks?" The organizers did not recognize the biased nature of this question nor the way the question required proponents of home birth to assume a defensive posture. The session *could* have been called "Hospital Births: Are There Any Increased Risks?"—in which case, proponents of *hospital* birth would be placed on the defensive, required to prove there were no iatrogenic or nosocomial injuries associated with hospital birth. A more evenhanded approach would have been to organize a session called, "The Relationship Between Risks and Place of Birth," allowing both sides to muster evidence supporting their position.

In and of itself, this rhetorical strategy is not surprising: after all, we expect a good debater to create a frame that favors her or his side of the argument. What is surprising is that this framing also has shaped the production of the *science* that informs this debate. As we shall see, a researcher's preexisting beliefs about place of birth are almost never disconfirmed by their data. In an era when clinicians rely heavily on evidence-based medicine, the effect of framing on scientific research is troubling. If the frame in which data are generated and interpreted biases the evidence, how can a clinician provide patients with reliable information and advice? To help clinicians sort through conflicting evidence and to respond responsibly to patients' requests for information regarding place of birth, we review the literature on the safety of home and hospital birth, paying close attention to the ethical dimensions of the way the science on place of birth is produced and used.

COMPARING THE SAFETY OF HOME AND HOSPITAL BIRTH

Before we begin our review and analysis of the literature on the risks and benefits associated with place of birth, we must make a few important observations. Clearly, it is not appropriate to compare the outcomes of home birth attended by highly skilled, well-educated, and well-equipped midwives with outcomes of obstetrical care given by poorly trained staff in an inadequately equipped hospital. And the reverse also is true: it is not legitimate to compare the outcomes of home birth, when the qualifications of the attendant(s) are unknown, with birth in well-equipped hospitals with well-trained staff. Similarly, comparative studies of birthplace safety also must control for the health of the mother. It is not fair simply to compare home and hospital birth, because mothers with complications are far more likely to give birth in a hospital, skewing the rate of poor outcomes. Similarly, both prospective and retrospective studies must use an intention-to-treat design because *planned* place of birth is not synonymous with actual place of birth.

To fully understand the outcomes associated with place of birth, it is important to know where labor began, where the birth was intended to take place, and where it actually took place. The essential question of birth place safety is: Is birth such a risky and unpredictable event that it is dangerous for a healthy mother (and her baby) to labor and birth in an environment where the full complement of obstetrical technology is not immediately available?

The best place to begin our review is with the Cochrane Collaboration, an organization that generally is recognized as an unbiased source of information that can be used to guide clinical practice. This collaboration is, in its own words:

> . . . an international network of more than 28,000 dedicated people from over 100 countries . . . [who] work together to help healthcare practitioners, policy-makers, patients, their advocates and carers, make well-informed decisions about health care, by preparing, updating, and promoting the accessibility of . . . systematic reviews of primary research in human health care and health policy [which] are internationally recognised as the highest standard in evidence-based health care.[2]

The authors of the most recent review of the outcomes of planned hospital birth versus planned home birth, Olsen and Clausen, begin with an interesting historical note.[3] They point out that the origins of the Cochrane Collaboration—which reviews evidence on everything from anesthesia to urology—can be found in questions about birth place and safety: "one of the pivotal issues when Archie Cochrane laid out the ideological ground for The Cochrane Collaboration" was the "transfer of low-risk births from home to hospital in the 1960s, despite the lack of high-quality evidence" (p. 2).

The gold standard for generating clinically relevant evidence is a randomized double-blind trial (RCT), a standard that is difficult, if not impossible, to meet in the case of place of birth. Olsen and Clausen were able to identify only one RCT of place of birth, a study done in the U.K. that enrolled only 11 of the 71 women who were invited to participate.[4] A more recent effort in the Netherlands found only one woman who was willing to be randomly

placed in a home birth cohort or in a hospital birth cohort, in spite of the effort to recruit participants on the part of 35 midwives in 14 practices.[5] Olsen and Clausen point out that extremely large trials are required to discover differences in maternal and perinatal mortality (p. 15). The unwillingness of women to join an RCT for place of birth, and the likely negative effects of assigning women to give birth in a location they do not prefer, make it extremely unlikely a trial of that size will ever be done.

Given the near impossibility of an RCT, Olson and Clausen consider what can be learned from "observational studies"—that is, studies that cannot control for bias via randomization. They note that "the amount of observational evidence has grown tremendously" in recent years and that "the methods for assessing and including evidence from observational studies in systematic reviews have also improved" (p. 6). Drawing on their review of the observational studies of place of birth, they offer this "plain language summary" of the evidence (p. 2):

> Most pregnancies among healthy women are normal, and most births could take place without unnecessary medical intervention. However, it is not possible to predict with certainty that absolutely no complications will occur in the course of a birth. Thus, in many countries it is believed that the safest option for all women is to give birth at hospital. In a few countries it is believed that as long as the woman is followed during pregnancy and assisted by a midwife during birth, transfer between home and hospital, if needed, is uncomplicated. In these countries home birth is an integrated part of maternity care. It seems increasingly clear that impatience and easy access to many medical procedures at hospital may lead to increased levels of intervention which in turn may lead to new interventions and finally to unnecessary complications. In a planned home birth assisted by an experienced midwife with collaborative medical back up in case transfer should be necessary these drawbacks are avoided while the benefit of access to medical intervention when needed is maintained. Increasingly better observational studies suggest that planned hospital birth is not any safer than planned home birth assisted by an experienced midwife with collaborative medical back up, but may lead to more interventions and more complications. However, there is no strong evidence from randomised trials to favour either planned hospital birth or planned home birth for low-risk pregnant women.

Notice a few things about this summary: (1) the authors assert that most women with a healthy pregnancy do not require medical intervention, (2) the frame for their review is that planned hospital birth is an intervention that must demonstrate advantages if it is to replace the more traditional planned home birth, (3) the authors underscore the importance of collaboration between caregivers at home and in the hospital, and (4) the authors conclude that a planned hospital birth *may* lead to more interventions and complications, but they go on to acknowledge that, at present, there is no evidence from RCTs to favor either home or hospital birth for healthy women.

A CLOSER LOOK AT THE SCIENCE OF BIRTH PLACE

The scientific literature on place of birth and safety is substantial. In order to better understand what the Cochrane review characterizes as a "hot debate,"[6] we look at eight studies, chosen because they are the most cited or because they were published after the review by Olsen and Clausen. We begin by summarizing the articles, and we then consider how the science of place of birth is produced, looking at the professional identities of the researchers, the process by which their research found its way into the scientific literature, and the differences in the use of published studies.

Research on the Risk and Benefits Associated with Place of Birth

To the uninitiated, the most surprising aspect of studies of the outcomes associated with place of birth is the fact that they offer sharply conflicting conclusions. We use that fact to group the eight studies into four categories:

1. Studies questioning the safety of home birth,
2. Studies questioning the safety of hospital birth,
3. Studies finding no difference in outcomes, and
4. Studies that report varied benefit and risks associated with place of birth.

Some studies resist classification. As we will see, the study by van der Kooy and colleagues could be placed in category 1 or category 3.[7]

Category 1: Studies Questioning the Safety of Home Birth

J.R. Wax et al., "Maternal and newborn outcomes in planned home birth versus planned hospital births: a metaanalysis," *American Journal of Obstetrics & Gynecology,* 2010 (hereafter, the Wax study).[8]

This meta-analysis included 12 studies conducted between 1976 and 2006 and concluded that:

> Planned home births were associated with fewer maternal interventions including epidural analgesia, electronic fetal heart rate monitoring, episiotomy, and operative delivery. These women were less likely to experience lacerations, hemorrhage, and infections. Neonatal outcomes of planned home births revealed less frequent prematurity, low birthweight, and assisted newborn ventilation. Although planned home and hospital births exhibited similar perinatal mortality rates, planned home births were associated with significantly elevated neonatal mortality rates.

The authors concluded that "Less medical intervention during planned home birth is associated with a tripling of the neonatal mortality rate."

A. Evers et al., "Perinatal mortality and severe morbidity in low- and high-risk term pregnant women in the Netherlands: prospective study," *BMJ*, 2010 (hereafter, the Evers study).[9]

While this is not a study of home birth, it is often referred to in debates about home birth. The researchers combined data from a national perinatal register and data from prospective reports of all antepartum stillbirths, intrapartum stillbirths, neonatal deaths, and admissions to a level three neonatal intensive care unit (NICU) of term infants within the first seven days of life in the research area, to compare outcomes for women who began labor in primary care (that is, with midwives or general practitioners) at home or in the hospital, with women who began labor under the care of an obstetrician. The researchers found:

> Infants of pregnant women at low risk whose labour started in primary care under the supervision of a midwife had a significant higher risk of delivery related perinatal death than did infants of pregnant women at high risk whose labour started in secondary care under the supervision of an obstetrician (relative risk 2.33, 95 percent CI [confidence interval] 1.12 to 4.83). NICU admission rates did not differ between pregnancies supervised by a midwife and those supervised by an obstetrician. Infants of women who were referred by a midwife to an obstetrician during labour had a 3.66 times higher risk of delivery related perinatal death than did infants of women who started labour supervised by an obstetrician (relative risk 3.66, 95 percent CI 1.58 to 8.46) and a 2.5-fold higher risk of NICU admission (2.51, 95 percent CI 1.87 to 3.37).

Category 2: Studies Questioning the Safety of Hospital Birth

P.A. Janssen et al., "Outcomes of planned home birth with registered midwife versus planned hospital birth with midwife or physician," *Canadian Medical Association Journal*, 2009 (hereafter, the Janssen study).[10]

This is a prospective, five-year long cohort study with an "intention to treat" design, comparing outcomes among midwife-attended planned home births (n = 2,802), midwife-attended planned hospital births (n = 5,984), and physician-attended hospital births (n = 5,985). Women in all three groups of the study had comparable risk profiles measured in terms of their eligibility for home birth. The authors found no difference in the rates of perinatal death in the three cohorts. Women in the planned home birth group had significantly fewer intrapartum interventions, including narcotic or epidural analgesia, augmentation or induction of labor, and assisted vaginal or cesarean delivery. In addition, women in the home birth group were less likely to suffer from postpartum hemorrhage, pyrexia, and third or fourth degree tears of the perineum. Babies of women planning a home birth were less likely to have Apgar scores of less than five at one minute and the babies were less likely to need drugs for resuscitation.

E. Hutton, K. Reitsma, and K. Kaufman, "Outcomes associated with planned home and planned hospital births in low-risk women attended by midwives in Ontario, Canada, 2003-2006: a retrospective cohort study," *Birth*, 2009 (hereafter, the Hutton study).[11]

The authors used the Ontario Ministry of Health Midwifery Program (OMP) database to compare outcomes of all women planning a home birth from 2003-2006 (n = 6,692) with a matched sample of women planning a hospital birth (n = 6,692.) Women with contra-indications for home birth were excluded from the hospital sample. The researchers found, "The rate of perinatal and neonatal mortality was very low (1/1,000) for both groups, and no difference was shown between groups in perinatal and neonatal mortality or serious morbidity (2.4 percent versus 2.8 percent; relative risk [RR], 95 percent confidence intervals [CI]: 0.84 [0.68-1.03])." With regard to maternal outcomes, they report,

> Women in the planned home birth group experienced fewer intrapartum interventions for each specific intervention studied (induction, augmentation, pharmaceutical pain relief, episiotomy, assisted delivery), including an absolute decrease of 2.9 percent in the rate of cesar-

ean section (5.2 percent versus 8.1 percent, RR [95 percent CI]: 0.64 [0.56, 0.73]). Women in this group also had less perineal trauma and reduced incidence of blood loss greater than 1,000 ml.

A. de Jonge et al., "Severe adverse maternal outcomes among low risk women with planned home versus hospital births in the Netherlands: Nationwide cohort study," *BMJ*, 2013 (hereafter, the 2013 de Jonge study).[12]

The researchers used data from a national registry in the Netherlands to compare maternal outcomes for 92,333 (62.9 percent) healthy women who had a planned home birth and 54,419 (37.1 percent) healthy women who had a planned hospital birth. They found that the rate of severe acute maternal morbidity among planned primary care births was 2.0 per 1,000 births. For nulliparous women (women who would give birth for the first time), the rate for planned home versus planned hospital birth was 2.3 versus 3.1 per 1,000 births (adjusted odds ratio 0.77, 95 percent CI 0.56 to 1.06), relative risk reduction 25.7 percent (95 percent CI -0.1 percent to 53.5 percent), the rate of postpartum hemorrhage was 43.1 versus 43.3 (0.92, 0.85 to 1.00 and 0.5 percent, -6.8 percent to 7.9 percent), and the rate of manual removal of the placenta was 29.0 versus 29.8 (0.91, 0.83 to 1.00 and 2.8 percent, -6.1 percent to 11.8 percent). For parous women (women who have given birth one or more times), the rate of severe acute maternal morbidity for planned home versus planned hospital birth was 1.0 versus 2.3 per 1,000 births (0.43, 0.29 to 0.63 and 58.3 percent, 33.2 percent to 87.5 percent), the rate of postpartum hemorrhage was 19.6 versus 37.6 (0.50, 0.46 to 0.55 and 47.9 percent, 41.2 percent to 54.7 percent), and the rate of manual removal of the placenta was 8.5 versus 19.6 (0.41, 0.36 to 0.47 and 56.9 percent, 47.9 percent to 66.3 percent). The authors concluded, "there was no evidence that planned home birth among low risk [that is, healthy] women leads to an increased risk of severe adverse maternal outcomes in a maternity care system with well trained midwives and a good referral and transportation system."

Category 3: Studies Finding No Difference in Outcomes

A. de Jonge et al., "Perinatal mortality and morbidity in a nationwide cohort of 529,688 low-risk planned home and hospital births," *BJOG: An International Journal of Obstetrics & Gynaecology*, 2009 (hereafter, the 2009 de Jonge study).[13]

The authors used data from the Perinatal Registry Netherlands,[14] collected between 2000 and 2006, to conduct a retrospective cohort study of 529,688 low-risk women who were in primary midwife-led care at the onset of labor. They compared perinatal mortality and morbidity for planned home births (321,301; 60.7 percent), planned hospital births (163,261; 30.8 percent), and unknown place of birth (45,120; 8.5 percent), controlling for parity, gestational age, maternal age, ethnic background, and socio-economic status. Criteria for inclusion was that subjects were strictly low risk. The main outcomes were intrapartum death, intrapartum and neonatal death within 24 hours and seven days after birth, and admission to a NICU. No significant differences were found between planned home and planned hospital births for any of the main outcomes.

J. van der Kooy et al., "Planned home compared with planned hospital births in the Netherlands: intrapartum and early neonatal death in low-risk pregnancies," *Obstetrics & Gynecology,* 2011 (hereafter, the van der Kooy study).[15]

This study also used the Perinatal Registry Netherlands, but included an additional year (2000 to 2007), providing the records of 679,952 low-risk women. Using a retrospective cohort study, the researchers compared intrapartum and early neonatal mortality rates (zero to seven days after birth) for planned home versus planned hospital births attended by midwives. As we noted above, the results of this study are somewhat difficult to classify. When comparing *observed* intrapartum and neonatal death at zero to seven days, the researchers found fewer deaths in home births (crude relative risk 0.80, 95 percent CI 0.71-0.91). After adjusting for case mix, there was no significant difference in the risk of mortality for home birth compared to hospital birth (odds ratio [OR] 1.05, 95 percent CI 0.91-1.21). But after a third hypothetical comparison (using a model to estimate the potential consequences of one of the "big four" conditions associated with poor neonatal outcome—congenital abnormalities, intrauterine growth restriction, preterm birth, and low Apgar score—the research team concluded that additional mortality may arise at home births. It should be noted that women with preterm labor, a fetus who is known to have restricted growth, and a fetus with a known congenital anomaly were not included in the cohort who planned home birth with a midwife in the Netherlands.

Category 4: Studies that Report Both Benefits and Risks Associated with Place of Birth

Birthplace in England Collaborative Group, "Perinatal and maternal outcomes by planned place of birth for healthy women

with low risk pregnancies: The Birthplace in England national prospective cohort study," *BMJ* 2011 (hereafter, the "Birthplace in England" study).[16]

This prospective cohort study was done in England (April 2008 through April 2010) and compared perinatal and maternal outcomes and interventions by planned place of birth at the onset of care during labour (planned home birth, freestanding midwifery birth centers, alongside midwifery units, and obstetric units). The study included 64,538 low-risk women with a singleton pregnancy at term. The primary study outcome was a composite measure that combined intrapartum stillbirth, early neonatal death, neonatal encephalopathy, meconium aspiration syndrome, and birth-related injury including brachial plexus injury and fractured humerus or clavicle. The researchers found that the incidence of the composite outcome measure was low for the entire sample (4.3 incidents per 1,000 births). Overall there were no "significant differences" in the odds of the primary outcome in any of the midwifery-led care settings compared with planned birth in an obstetric unit. When mothers were stratified by parity, the odds of an adverse neonatal outcome among nulliparous women were higher for planned home birth than for planned obstetric unit birth. There was no evidence of a difference in adverse outcomes for nulliparous or multi-parous women birthing in freestanding or alongside midwifery units compared to obstetric units. Of women who started labor in an obstetrical unit, 20 percent had at least one complicating condition compared with less than 7 percent in other settings. For low-risk women birthing in an obstetric unit, the odds of receiving augmentation, epidural, spinal analgesia, general anesthesia, ventouse or forceps delivery, cesarean section, episiotomy, and active management of third-stage labor were significantly higher than for all other birth settings.

Producing the Science of Birth

What do we learn from these eight studies? Most obvious is that researchers do not agree about the safety of birth in the hospital and at home. How can scientists, striving to be objective, come to such drastically different conclusions? Even when studies agree, the researchers disagree on how to interpret the point they agree upon. For example, four of the eight studies summarized above found that women who birth their baby in the hospital are subject to more interventions, but the Janssen study and the Hutton study see increased intervention as injurious, while the Wax study concludes that a paucity of intervention in home birth results in increased incidences of neonatal death. Putting these studies in their social context and in the historical context of earlier research on the place of birth, we discover: (1) persistent professional bias, (2) bias in the publication process, and (3) what we call "critical bias," that is, systematic differences in the criticisms leveled against the studies.

Professional Bias

Social norms and expectations, as well as the nature of discussions with prenatal careproviders, can play a significant role in a woman's choice of birth place and other maternity care options including breast feeding.[17] Similarly, women's choice of elective cesarean versus vaginal delivery has been correlated with the opinions of their primary caregiver and the nature and length of discussion on mode of delivery.[18] A careprovider's education, experience, and location of practice may have an impact on which birth site options she or he will present to women.[19] The Canadian Birth Place Study evaluated the range of attitudes towards planned home birth among maternity careproviders and predictors of which place of birth was favored by physicians and midwives. The authors report that 84 percent of the variance in preference in place of birth was accounted for by profession alone, and that midwives had significantly more favorable attitudes than both family physicians and obstetricians toward home birth.[20]

Consistent with these findings, the direction of the conclusions of the studies on the safety of home birth coincide almost perfectly with the profession of the first authors. Studies done by midwives find no association between mortality and place of birth, while studies done by gynecologists-obstetricians find increased risk of perinatal/neonatal death associated with planned home birth. The exception among these eight articles appears to be the study by van der Kooy, a gynecologist (in training at the time of the research) and her colleagues. But recall that these researchers, who found no difference in mortality rates between planned hospital and planned home birth, nevertheless conclude, "In certain subgroups, additional mortality *may* arise at home if risk conditions emerge at birth (up to 20 percent increase)" (p. 1037, emphasis added). Interestingly, the "Birthplace in England" study team, a group with balanced representation from several maternity care professions, found that home was the best option for multiparous women (no difference in outcomes and a significantly higher rate of interventions and adverse outcomes for mothers in hospital), and that birth centers or hospital obstetric

units may be the best option for primiparous women (less adverse outcomes for the newborn). The only study that specifically examined the association of place of birth and outcomes for mothers (the 2013 de Jonge study) was led by a midwife researcher.

In the history of this debate, there is at least one researcher who allowed her study results to shape her conclusions. Majorie Tew, MD, an epidemiologist from the United Kingdom, began her research on the safety of birth settings serendipitously. Like most people, she assumed the shift to hospital birth that occurred in the first half of the 20th century (in England and elsewhere) was based on medical evidence. The wisdom of this shift seemed obvious, given the decline in morbidity and mortality at birth that accompanied the move from home to hospital. Finding no published studies that confirmed this common sense assumption, Tew assigned her students to do an epidemiological study of home and hospital birth. As the work of the class progressed, she was taken aback to learn that the data indicated that *home* birth was the safer of the two options. In the preface to her "critical history of maternity care," Tew describes her reaction to her surprising discovery:

> I was teaching students in the Department of Community Health in Nottingham University's young Medical School how much they could find out about various diseases from the available official statistics. As part of these epidemiological exercises, I discovered to my complete surprise that the relevant routine statistics did not appear to support the widely accepted hypothesis that the increased hospitalization of birth had caused the decline by then achieved in the mortality of mothers and their new babies. At first, it seemed hardly possible that I could be right in questioning the justification for what the medical world and everyone else apparently believed, but my further researches only served to confirm my initial discovery.[21]

Her findings are summarized in a report of a meeting of the Forum on Maternity and the Newborn, in December 1984:

> [Tew] examined the hypotheses on which the maternity service policies were currently based: namely, that high technology birth in hospital was safer than low technology birth in general practitioner maternity units (GPUs) or at home, and that the higher the degree of predicted risk, the more advantage there was to be gained from delivery in hospital. Both these hypotheses, she maintained, were translated into policy without any statistical evidence to support them and on investigation they were found to be completely undermined by the statistical evidence that was available—in particular by the evidence, published and unpublished, of the national survey of British Births 1970.[22]

Tew used a measure of risk—the antenatal prediction score (APS), devised for the 1970 British Births Survey[23]—to demonstrate that very little of the hospitals' excess perinatal mortality rate (PNMR) was the result of their greater numbers of births at high or moderate risk: "After standardization for the APS, the PNMR became 26.8 for hospital and 6.0 for GPU/home." She also refuted the second hypothesis, "the higher the predicted risk, the greater the benefit of hospital delivery," by showing that "not only was the PNMR higher [in the hospital] at each level of risk, but that the PNMR for the low-risk group in hospital was higher than for the high-risk group in GPU/home.[24]

Publication Bias

Tew's story is interesting for a second reason. Fascinated by her findings and impatient to get her research published, she encountered resistance within her department and from editors of scientific journals:

> My pursuit of the subject was not encouraged in the Department. My temporary contract of employment was not renewed. . . . Medical journals were not eager to publish an article presenting the results of my statistical analyses. I was dismayed that there was such formidable resistance to discussing openly honest, well founded criticism of the basis of established policies. . . . I became determined to break through the resistance and to fight against the false use of statistics to support a system that was actually harming its proclaimed beneficiaries.[25]

Others who have done research that challenged existing obstetrical practice—what everyone "knew" to be true in spite of the lack of evidence—have reported similar problems. Michael Klein submitted the first of his ground-breaking articles on the harm of routine episiotomy to the *Journal of the American Medical Association* (*JAMA*). *JAMA* refused the article, even though three of four reviewers recommended publication. The single critical review challenged Klein's results because they contradicted a 40-year-old study done with no controls for social, obstetrical, or demographic factors. When Klein

called the editor to ask for an explanation, he was told that the fourth reviewer was one of *JAMA*'s principal obstetrical consultants, and thus they would not publish the article.[26] Researchers in the Netherlands also have described editorial bias at home and abroad. Dutch researchers whose work documents the safety of home birth have had difficulty getting published in English language journals,[27] while colleagues whose work *challenges* the safety of home birth could not get their research published in Dutch language medical journals.[28]

Are Tew and Klein overly sensitive about the resistance to their research? Their reports are consistent with a pattern in the publication of research related to place of birth suggested by the eight studies described above: compared to articles that question the safety of hospital birth, articles questioning the safety of home birth typically appear in journals with higher impact factors, directed at physician audiences, with larger international audiences. The studies finding higher mortality rates at home birth (the Wax study and the Evers study) or questioning the safety of home birth (the van der Kooy study) were published in the *American Journal of Obstetrics & Gynecology* (*AJOG*), the *BMJ*, and in *Obstetrics & Gynecology* (*OG*), respectively. The article reporting mixed outcomes (the "Birthplace in England" study) was published in *BMJ.* The three articles questioning the safety of hospital birth (the Janssen study, the Hutton study, and the 2013 de Jonge study) were published in the *Canadian Medical Association Journal* (*CMAJ*), *Birth,* and *BMJ.* The article reporting no difference in outcomes (and concluding that home and hospital birth were equally safe) was published in *BJOG: An International Journal of Obstetrics & Gynaecology* (*BJOG*). The rank order of the impact factors of journals concerned with obstetrics (2012)[29] is: *OG* (4.8), *AJOG* (3.9), *BJOG* (3.8), and *Birth* (2.9). Spanning all medical specialties, *BMJ* and *CMAJ* have broader readership; their impact factors are 17.2 and 6.5 respectively.

It is interesting that *BMJ* has published articles that *support* and articles that *challenge* hospital birth. This may be the result of the more empirical orientation of British medicine—the Cochrane Collaboration originated in the U.K., and the U.K. is home to NICE, the National Institute for Health and Care Excellence, a governmental organization set up to produce evidence that would reduce variation in the availability and quality of NHS treatments and care[30]—but it also may signal a change in editorial orientation. The 2013 de Jonge study, which found no difference in perinatal outcomes by place of birth, was rejected by the *BMJ* the year before that journal published the Evers study, which reported a greater number of adverse outcomes among births attended by primary caregivers (that is, midwives and general practitioners). Although all of the reviews were positive, the editors told the lead author that her research offered nothing new to the readership of the *BMJ.*

Critical Bias

Another interesting aspect of these eight studies is the varied degree to which each has been criticized. The Wax study and Evers study have been subject to far more methodological criticism than the six other studies. The authors of the Cochrane Collaboration review describe the "intense critique" of the Wax study, listing 11 critical reviews.[31] The editors of *AJOG* responded to this criticism—some of which called for a retraction—by appointing three specialists in maternal fetal medicine (but no midwives) to review the article. The editors reported that the results of these reviews were "slightly different from the result in the manuscript," but the direction of association and levels of significance were not changed. The editors concluded no retraction was necessary, adding, "It is clear that we need more rigorous and better designed research on this important safety issue of home birth, given the many confounding factors."[32] The controversy over the Wax study drew the attention of the larger scientific community when *Nature* published a report describing "potential errors in the study's statistics" including use of a faulty online meta-analysis calculator and "inappropriately including or excluding studies"—most noticeably the exclusion of the large 2013 de Jonge study, that found no difference in mortality in the first seven days after birth.[33]

The Evers study attracted significant criticism over its method.[34] In a study published in *BMJ* in 2010, de Jonge and colleagues pointed out that the numerator and denominator in the study do not come from the same population:

> . . . although the title suggests that this is a prospective cohort study, the entire population at risk has been defined retrospectively and was based on postal codes of the catchment area of one university hospital. All intrapartum and neonatal deaths were included from hospitals and midwifery practices within this area, but potentially not all births. Midwives in practices at the periphery of the catchment area will also care for many women in neighbouring regions. These births have not been included in the study, unless the baby died. This will artificially inflate mortality rates in midwifery practices.[35]

Critics also commented on the fact that the reported intrapartum and neonatal mortality rates were twice as high as those found in previous national studies in the Netherlands. A team of researchers in Amsterdam[36] that is replicating the Utrecht study[37] discovered that, in cases of perinatal death, it was not easy to determine where labor began—the critical independent variable in the Evers study. The way careproviders register a birth in the Netherlands often makes it impossible to identify whether a death occurred antepartum or intrapartum. Given this uncertainty, the Amsterdam team decided to classify the cases "undefined." It would be surprising if the researchers in the Utrecht study did not face the same problem, but we are not told whether they did, or how they were able to reach consensus in such cases. A perinatal audit done in 2010 that examined the majority of at-term perinatal deaths in the Netherlands[38] casts further doubt on the conclusions of the Evers study. Using these audit data, and counting all of the deaths, when it is unclear where labor started, against primary care, the calculated perinatal death rate for labors begun in primary care is one-third lower than the rate reported in the Evers study.

It is reasonable to ask why the other studies—those showing no difference or more harm in hospital settings—have not drawn extensive methodological criticism. The obvious answer would be that the Wax study and the Evers study have flaws in method and the others do not. But it also may be that the community that supports home birth is more alert to studies that challenge its beliefs or feels it is more necessary to reject the concept that more technology at birth results in better outcomes. In addition, conclusions and publications by those who are acknowledged experts in the dominant culture (medicine) may be less suspect than those produced by a marginalized or minority health profession (midwifery).[39]

The problems associated with the science of birth place safety make it unlikely that we will ever have a definitive answer to the question of the relative safety of hospital and home birth. While the authors of the Cochrane review are optimistic about the possibilities of well-controlled observational studies, they nevertheless conclude that, even in these studies "observed differences (or lack of differences) may be due to uncontrolled confounding and bias. Thus, some of [the] findings . . . may be partly or entirely due to bias.[40] Commenting on the debate over the Wax study, Andrew Vickers, a statistician at the Memorial Sloan-Kettering Cancer Center in New York, agrees, adding a comment about the politics behind the disagreements: "The scientific debate about home birth has become extremely polarized and politicized. It is becoming hard to be anything but skeptical about anything but the most carefully conducted randomized trials."[41]

THE USE AND MISUSE OF THE SCIENCE OF BIRTH

Given the near impossibility of a randomized trial of place of birth and the uncertain quality of the findings of observational studies, what are the ethical responsibilities of clinicians who wish to use the best evidence to advise their clients? How should a clinician respond when there is pervasive doubt about the advisability of one approach over another? Often clinicians will rely on advice in the form of guidelines and opinion papers from their professional associations. But here, too, we find patterns of bias consistent with what we saw in the production of evidence: when offering advice, maternity professionals call on scientific evidence that is consistent with their interests/ideology and, for the most part, ignore or dismiss contrary evidence (see an article by Claire L. Wendland, MD, in this issue of *JCE*).[42]

Consider the 2013 article, "Planned home birth: the professional responsibility response." The authors, the majority of whom are members of departments of obstetrics, describe what they believe to be the proper professional response to "recrudescence" of home birth:

> We argue that obstetricians and other concerned physicians should understand, identify, and correct the root causes of the recrudescence of planned home birth; respond to expressions of interest in planned home birth by women with evidence-based recommendations against it; refuse to participate in planned home birth; but still provide excellent and compassionate emergency obstetric care to women transported from planned home birth. We explain why obstetricians should not participate in or refer to randomized clinical trials of planned home versus planned hospital birth.[43]

In making their case, where do the authors go for evidence? The Wax study. They cite this study with no mention of the critiques of the method or the sources of data used/not used in the meta-analysis. On occasion they also use anecdote, citing a journalistic account of a maternal death from the *Daily Mail*[44] to support their assertion, "For unpredictable, extremely sudden complications, even rapid transport may not prevent the fetus or pregnant woman

from death or severe harm, such as sudden cardiopulmonary arrest, shoulder dystocia, or maternal exsanguination" (p. 32). Furthermore, they make no reference to studies that might contradict their opinion—including the 2009 de Jonge study, the Janssen study, and the Hutton study. And when they refer to research that suggests birth at home may be safe, they simply dismiss that evidence. After citing the conclusion of the "Birthplace in England study" that the results "support a policy of offering healthy nulliparous and multiparous women with low risk pregnancies a choice of birth setting," the authors assert, "We contend that this view is irrational and cannot be supported in light of the reported adverse outcomes for birth outside of an obstetric service" (p. 32). They conclude their argument by citing Ab Klink, MD, former Dutch Minister of Health.[45] They list the seven topics that Klink understood to be "essential to improve perinatal care in the Netherlands," the last of which is "that a woman can be reassured that at any time of the day or night any intervention that is necessary can be initiated within 15 minutes," and go on to say, "This last goal cannot now or in the foreseeable future ever be met by a home delivery" (p. 36). Unfortunately for their argument, they took this piece of information out of context. The Dutch guidelines allow 45 minutes for transport from a primary care setting to hospital. In its report, *Een goed begin* (A good beginning), the Stuurgroep Zwangerschap en Geboorte (Steering Committee on Pregnancy and Childbirth)[46] reiterate the national policy governing hospitals and emergency care: "in acute situations, ambulances must be able to deliver a pregnant women to a hospital within 45 minutes from the time the call was made."[47] Klink was referring to the amount of time required for a hospital to ready its team to receive the incoming patient.

The authors of an article in this issue of *JCE* (Howard Minkoff, MD, and Jeffrey Ecker, MD)[48] exhibit the same bias when using evidence. Although they are more nuanced in their handling of the evidence and in their description of the ethical responsibilities of physicians vis-à-vis home birth, they accept the findings of the Wax study. They acknowledge the controversy around the Wax study, but they defend their use of the findings by referring to just one of the several outcomes of the "Birthplace in England" study:

> While the Wax meta-analysis has engendered much debate, subsequently published studies support its conclusion that home birth is associated with a small absolute risk of adverse neonatal outcomes, including mortality. For example, the Birthplace in England study, a large prospective cohort analysis of outcome by place of intended birth, concluded that for nulliparous women, . . . the odds of a composite adverse outcome . . . were higher for planned home births (adjusted odds ratio 1.75, 95 percent confidence interval 1.07 to 2.86).

The main finding of the "Birthplace in England" study is that "there were no significant differences in the adjusted odds of the primary outcome for any of the non-obstetric unit settings compared with obstetric units." Minkoff and Ecker cite only one of the outcomes—relating to primiparous women—and fail to mention other outcomes. They ignore, for example, the finding that there were no differences in primary outcome for multiparous women and the finding that for *all* women there were more interventions in the obstetric unit compared to midwife-led care.

This pattern of selective use of evidence also is found in the position statements and committee opinions of professional associations. In their position statement on home birth, the American College of Nurse Midwives (ACNM) assert:

- Every family has a right to experience childbirth in an environment where human dignity, self-determination, and the family's cultural context are respected.
- Every woman has a right to an informed choice regarding place of birth and access to safe home birth services.
- CNMs (Certified Nurse Midwives) and CMs (Certified Midwives) are qualified to provide antepartum, intrapartum, postpartum and newborn care in the home.
- An integrated system of health care that includes collaboration among all health care providers is essential and fundamental to supporting a safe, seamless, transfer of care from home and/or out of the hospital setting when necessary.[49]

ACNM supports its position with evidence from the 2009 de Jonge study, the Hutton study, and the Janssen study. The position statement refers to, but rejects, the evidence offered by the Wax study and the Evers study: "Unfortunately, some studies that have not differentiated between planned and unplanned home birth or attendance by qualified versus unqualified attendants, and/or have not used clearly defined appropriate inclusion criteria for analysis, have been used inappropriately to discredit all home birth."[50]

The American College of Obstetricians and Gynecologists (ACOG) issued a committee opinion on

planned home birth in 2011. Like ACNM, ACOG recognizes the right of women to make an informed choice about the manner and place of birth, but, unlike ACNM, ACOG emphasizes the risks of birth at home:

> Although the Committee on Obstetric Practice believes that hospitals and birthing centers are the safest setting for birth, it respects the right of a woman to make a medically informed decision about delivery. Women inquiring about planned home birth should be informed of its risks and benefits based on recent evidence. Specifically, they should be informed that although the absolute risk may be low, planned home birth is associated with a twofold to threefold increased risk of neonatal death when compared with planned hospital birth. Importantly, women should be informed that the appropriate selection of candidates for home birth; the availability of a certified nurse-midwife, certified midwife, or physician practicing within an integrated and regulated health system; ready access to consultation; and assurance of safe and timely transport to nearby hospitals are critical to reducing perinatal mortality rates and achieving favorable home birth outcomes.[51]

The ACOG committee opinion is informed almost entirely by evidence from the Wax study, which is used with no comment about method or the criteria used to include/exclude studies. The opinion does mention the 2009 de Jonge study, the Janssen study, and the Hutton study, pointing out—correctly—that the evidence of the safety of home birth found in these reports: (1) "describe planned home births within tightly regulated and integrated provincial health care systems, which may not be generalizable to current practice in the United States," and (2) where there exist "strict selection criteria for appropriate candidates [for home birth]." Interestingly, the authors of the ACOG opinion do not reflect on the implications of this observation for the generalizability of the Wax study, a meta-analysis that mixes together outcomes from care systems with widely varying degrees of regulation and cooperation between professionals. And as Wendland points out in her article in this issue of *JCE,* while the opinion calls attention to the lack of such systems in the U.S., it fails to take the next step, encouraging obstetricians to create systems that protect women who make an informed choice for home birth.[52]

The use of evidence evinces the same biases we found in the production of the science of birth place safety. It is, of course, legitimate to question evidence one finds discomfiting, but to dismiss or unfairly evaluate such evidence in formulating clinical advice or models for professional responsibility is unethical. The responsible use of evidence in healthcare requires considering all the evidence, including that which contradicts one's assumptions.

TOWARD RESPONSIBLE USE OF THE EVIDENCE ON PLACE OF BIRTH

How can we solve the conundrum of professional/publication/critical bias in the production and use of evidence about the risks associated with place of birth? Our review suggests several steps:

1. Because there is a predisposition to look for evidence that confirms one's point of view and to—consciously or unconsciously—design research in a way that favors that point of view, research in this area must be done by "frenemies," that is, those who share a common goal—in this case, healthy mothers and babies—but who hold conflicting perspectives on how best to achieve that goal. Given the concern over the influence of bias in even well-designed observational studies, it makes sense to begin research on place of birth with team members from differing points of view, rather than the current practice of waiting until results are published and then ignoring or trying to discredit that research. *The frenemies must be real frenemies and not "tokens" chosen to demonstrate that all sides are represented, but ineffectual in their ability to challenge the point of view of the lead researcher. The multidisciplinary Research and Data Collection Action coalition that was formed at the national Home Birth Summits in 2011 and 2013 is an effort to bring true frenemies together to improve the quality of research on place of birth.*[53]
2. Research on place of birth must begin with agreement on the appropriate conditions and operationalization of variables for comparative study. This is why we need frenemies: as we have seen, researchers eager to confirm what they already "know" may introduce bias into the definition of independent variables, outcome measures, and criteria for inclusion/exclusion.
3. It is important to find a location where the conditions for objective comparison of birth place setting safety can be done. This will be challenging. Both ACOG and ACNM recognize that the outcomes of birth, in home or hospital, depend on maternity care that is well organized, regu-

lated, and integrated. For example, ACNM calls for an "integrated system of health care that includes collaboration among all health care providers,"[54] and ACOG stresses the import of having "a certified nurse-midwife, certified midwife, or physician practicing within an integrated and regulated health system; ready access to consultation; and assurance of safe and timely transport to nearby hospitals."[55] Other medical and midwifery associations, including the American Academy of Pediatrics (AAP) and the Midwife Alliance of North America (MANA), echo this call for better integration of care.[56] In modern medical systems, this kind of maternity care can be hard to find. New Zealand, the Netherlands, Canada, the U.K., and certain places in the U.S. are promising venues to study the effects of birth setting and careprovider type on maternity care outcomes.

4. Reducing conflict and confusion among maternity care professionals about the interpretation and application of the science of home birth may allow for more ethical presentation of the "state of the science" to women. A precursor to this ideal will be developing modules for inter-professional education on birth place that describe evidence-based birth site selection, the requisite competencies and characteristics of care in each setting, and strategies for optimal inter-professional communication and collaboration across birth sites.
5. The Cochrane review begins by defining *hospital birth* as an intervention, a move that many will find odd. Is not hospital birth the norm, and the decision not to use the technology of the hospital the "experimental treatment"? In a society where technology is held in high esteem, careproviders and women assume that technology improves birth outcomes. This attitude can carry over into the design of research on place of birth, introducing bias in favor of technology—another reason to work in research teams with equal representation of all professional and client stakeholders.

Returning to the question about birth place safety that began our article—Is birth such a risky and unpredictable event that it is dangerous for a healthy mother (and her baby) to labor and birth in an environment where the full complement of obstetrical technology is not immediately available?—we now see the search for an answer is complicated by professional allegiance, peer review, and selective use of evidence. If we are to respect women's right to choose, and to provide them with the information they need to make an informed decision about where they will birth their child, we must strive to produce objective evidence, and we must use that evidence fairly. Lacking consideration of the ethics of information, work in the field of reproductive justice is incomplete. Given the as-yet uncertain and conflicting outcomes of studies of the safety of home birth, it is crucial that careproviders do not simply choose evidence that seems right to them, but cannot withstand scientific scrutiny.

NOTES

1. *http://www.mcaevents.org/t/01/1st-european-congress-on-intrapartum-care,* accessed 19 August 2013.
2. *www.cochrane.org,* accessed 19 August 2013.
3. O. Olsen and J.A. Clausen, "Planned hospital birth versus planned home birth," *Cochrane Database of Systematic Reviews,* issue 9 (2012): CD000352. DOI: 10.1002/14651858.CD000352.pub2.
4. T. Dowswell, J.G. Thornton, J. Hewison, and R.J.L. Lilford, "Should there be a trial of home versus hospital delivery in the United Kingdom? Measuring outcomes other than safety is feasible," *BMJ* 312 (1996): 753.
5. M. Hendrix et al., "Why women do not accept randomisation for place of birth: Feasibility of a RCT in the Netherlands," *BJOG: An International Journal of Obstetrics and Gynaecology* 116, no.4 (2009): 537-42.
6. Olsen and Clausen, see note 3 above, p. 15.
7. J. van der Kooy et al., "Planned home compared with planned hospital births in the Netherlands: intrapartum and early neonatal death in low-risk pregnancies," *Obstetrics & Gynecology* 118, no. 5 (November 2011): 1037-46.
8. J.R. Wax et al., "Maternal and newborn outcomes in planned home birth versus planned hospital births: a metaanalysis," *American Journal of Obstetrics & Gynecology* 203 (2010): 243.e1-8.
9. A. Evers et al., "Perinatal mortality and severe morbidity in low- and high-risk term pregnant women in the Netherlands: prospective study," *BMJ* 341 (2 November 2010): c5639. doi:10.1136/bmj.c5639.
10. P.A. Janssen et al., "Outcomes of planned home birth with registered midwife versus planned hospital birth with midwife or physician," *Canadian Medical Association Journal* 181, no. 6-7 (September 2009): 377-83.
11. E. Hutton, K. Reitsma, and K. Kaufman, "Outcomes associated with planned home and planned hospital births in low-risk women attended by midwives in Ontario, Canada, 2003-2006: a retrospective cohort study," *Birth* 36, no. 3 (September 2009): 180-9.
12. A. de Jonge et al., "Severe adverse maternal outcomes among low risk women with planned home versus hospital births in the Netherlands: Nationwide cohort study," *BMJ* 346 (September 2013): 3263.
13. A. de Jonge et al., "Perinatal mortality and morbidity in a nationwide cohort of 529,688 low-risk planned

home and hospital births," *BJOG: An International Journal of Obstetrics and Gynaecology* 116, no. 9 (August 2009): 1177-84; doi: 10.1111/j.1471-0528.2009.02175.x.

14. *www.perinatareg.nl/home_english,* accessed 19 August 2013.

15. van der Kooy et al., see note 7 above.

16. Birthplace in England Collaborative Group, "Perinatal and maternal outcomes by planned place of birth for healthy women with low risk pregnancies: The Birthplace in England national prospective cohort study," *BMJ* 343 (2011): d7400.

17. V. Finsen, A.H. Storeheier, and O.G. Aasland, "Cesarean Section: Norwegian Women Do as Obstetricians Do—Not as Obstetricians Say," *Birth* 35, no. 2 (2008): 117-20; H.E. Lindgren et al., "Perceptions of Risk and Risk Management Among 735 Women Who Opted for a Home Birth," *Midwifery* 26, no. 2 (2010): 163-72; M. Cheyney, "Homebirth as Systems-Challenging Praxis: Knowledge, Power, and Intimacy in the Birthplace," *Qualitative Health Research* 18, no. 2 (2008): 254-67; A. Allcock, A. Griffiths, and R. Penketh, "The Effects of the Attending Obstetrician's Anxiety Trait and the Corresponding Obstetric Intervention Rates," *Journal of Obstetrics & Gynaecology* 28, no. 4 (2008): 390-3; C Hagelskamp et al., "Staying Home for Birth: Do Midwives and GPs Give Women a Real Choice?" *RCM Midwives* 6, no. 7 (July 2003): 300-3.

18. R. Al-Mufti, A. McCarthy, and N.M. Fisk, "Survey of Obstetricians' Personal Preference and Discretionary Practice," *European Journal of Obstetrics, Gynecology, and Reproductive Biology* 73, no. 1 (May 1997): 1-4; P. McGurgan, S. Coulter-Smith, and P. O'Donovan, "A National Confidential Survey of Obstetricians' Personal Preferences Regarding Mode of Delivery," *European Journal of Obstetrics, Gynecology, and Reproductive Biology* 97, no. 1 (2001): 17-9; A.L. O'Boyle, G.D. Davis, and B.C. Calhoun, "Informed Consent and Birth: Protecting the Pelvic Floor and Ourselves," *American Journal of Obstetrics & Gynecology* 187, no. 4 (October 2002): 981-3.

19. J. Davies et al., "Prospective Regional Study of Planned Home Births," *BMJ* 313, no. 7068 (1996): 1302-6; L. Floyd, "Community Midwives' Views and Experience of Home Birth," *Midwifery* 11, no. 1 (March 1995): 3-10; R. Shaw and C. Kitzinger, "Calls to a Home Birth Helpline: Empowerment in Childbirth," *Social Science and Medicine* 61, no. 11 (2005): 2374-83; Lindgren et al., see note 17 above; Cheyney, see note 17 above; B Reime et al., "Do Maternity Care Provider Groups Have Different Attitudes Towards Birth?" *BJOG: An International Journal of Obstetrics & Gynaecology* 111, no. 12 (2004): 1388-93.

20. S. Vedam et al., "The Canadian Birth Place Study: Describing Maternity Practice and Providers' Exposure to Home Birth," *Midwifery* 28, no. 5 (2012): 600-608; S. Vedam et al., "The Canadian Birth Place Study: Examining Attitudes and Beliefs of Physicians and Midwives," *BMC Pregnancy and Childbirth* (in press, 2013).

21. M. Tew, *Safer childbirth? A critical history of maternity care* (London: Chapman & Hall, 1995), viii-ix.

22. S. Inch, "Statistics and policy-making in the maternity services," *Journal of the Royal Society of Medicine* 78 (November 1985): 958.

23. The British Births Survey is the first part of a study conducted in the U.K. by the National Birthday Trust Fund in association with the Royal College of Obstetricians and Gynaecologists, that collected data about the births and families of babies born in the U.K. in one particular week in 1970. *http://www.esds.ac.uk/longitudinal/access/bcs70/l33229.asp,* accessed 19 August 2013.

24. Inch, see note 22 above, p. 959.

25. Tew, see note 21 above, pp. viii-ix.

26. M. Klein, "Studying episiotomy: When beliefs conflict with science," *Journal of Family Practice* 41, no. 5 (1995): 483-6.

27. R.G. de Vries, *A Pleasing Birth: Midwifery and Maternity Care in the Netherlands* (Philadelphia, Pa.: Temple, 2005).

28. E. Van Teijlingen, "A Social or Medical Model of Childbirth? Comparing the Arguments in Grampian (Scotland) and the Netherlands" (doctoral thesis, University of Aberdeen, 1995), 180.

29. Data on journals' impact factors from *http://impactfactor.weebly.com/index.html,* accessed 12 September 2013.

30. *nice.org.uk,* accessed 19 August 2013.

31. Olsen and Clausen, see note 3 above.

32. "Editor's comment," *American Journal of Obstetrics & Gynecology* 204, no. 4 (April 2011): e20. doi: 10.1016/j.ajog.2011.01.0412012).

33. *www.nature.com/news/2011/110318/full/news.2011.162.html,* accessed 19 August 2013.

34. *http://www.bmj.com/content/341/bmj.c5639?tab=responses,* accessed 19 August 2013.

35. A. de Jonge et al., "Too early to question effectiveness of Dutch system," *BMJ* 341 (2010): c7020.

36. Personal communication with the first author (RGdV).

37. Evers et al., see note 9 above.

38. *A terme sterfte 2010. Perinatale audit: eerste verkenningen* (Audit of perinatal deaths for the period 2010: Initial findings) (Utrecht, the Netherlands: Foundation Perinatal Audit Netherlands, 2011).

39. Cheyney, see note 17 above.

40. Olsen and Clausen, see note 3 above, pp. 6-7.

41. *www.nature.com/news/2011/11-318/full/news.2011.162.html,* accessed 19 August 2013.

42. C.L. Wendland, "Exceptional Deliveries: Home Births as Ethical Anomalies in American Obstetrics," in this issue of *JCE.*

43. F. Chervenak et al., "Planned home birth: the professional responsibility response," *American Journal of Obstetrics & Gynecology* 208, no. 1 (January 2013): 31-8.

44. R. Shears, "Woman, 36, who campaigned for home births dies having baby daughter at home," *Daily Mail* (U.K.) 31 January 2012, *http://www.dailymail.co.uk/health/article-2094348/Caroline-Lovell-Home-birthadvocate-dies-delivering-baby-daughter-home.htm,* accessed 19 August 2013.

45. Letter from Ab Klink, MD, Dutch Minister of Health and Sports, to the the President of the House of Representatives of the Netherlands, 6 January 2010, "Betreft: Advies Stuurgroep zwangerschap en geboorte"

(Subject: Advisory Steering on Pregnancy and Birth), *http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CCkQFjAA&url=http%3A%2F%2Fwww.rijksoverheid. nl%2Fbestanden %2Fdocumenten-en-publicaties%2Fkamerstukken%2F2010%2F01%2F07%2 Fadvies-stuurgroep-zwangerschap-en-geboorte%2Fx-cz-2978048.pdf&ei=RlQqUqfCK_aj4APCmoGIBw&usg=AFQjCNHT-iCvUv4xcCOcXkY2UHJUnY9JpA&bvm=bv.51773540,d.dmg,* accessed 19 August 2013.

46. *Een goed begin* (A good beginning) (Utrecht, the Netherlands: Stuurgroep Zwanderschap en Geboorte—Steering Committee Pregnancy and Childbirth, 2009).

47. See "Beleidsregels ex artikel 4 Wet toelating zorginstellingen," (Policy under article 2 Care Institutions Act), *zoek.officielebekendmakingen.nl/stcrt-2006-21-p20-SC73597.htm,* accessed 19 August 2013.

48. H. Minkoff and J. Ecker, "A Reconsideration Home Births in the United States," in this issue of *JCE.*

49. American College of Nurse Midwives, Division of Standards and Practice: Clinical Standards and Documents Section and Homebirth Section, "Position Statement: Home Birth," 2011, *http://midwife.org/ACNM/files/ACNMLibraryData/UPLOADFILENAME/000000000251/Home%20Birth%20Aug%202011.pdf,* accessed 19 August 2013.

50. Ibid.

51. "ACOG Committee Opinion No. 476, Planned home birth," *Obstetrics & Gynecology* 117 (2011): 424-8.

52. Wendland, see note 42 above.

53. See *www.homebirthsummit.org;* S Vedam, "In Search of a Common Agenda for Planned Home Birth in the United States," *Journal of Perinatal Education* 21, no. 2 (2012): 67-71.

54. ACNM, see note 48 above.

55. ACOG, see note 50 above.

56. American Academy of Pediatrics, Committee On Fetus And Newborn, "Planned Home Birth," *Pediatrics* 131 (2013): 1016, (published online 29 April 2013), DOI: 10.1542/peds.2013-0575; Midwife Alliance of North America, "Home Birth Position Paper," 2012, *http://www.mana.org/sites/default/files/MANAHomebirthPositionPaper.pdf,* accessed 19 August 2013.

Women's Perceptions of Childbirth Risk and Place of Birth

Mary Regan and Katie McElroy

ABSTRACT

In the United States, clinical interventions such as epidurals, intravenous infusions, oxytocin, and intrauterine pressure catheters are used almost routinely in births in the hospital setting, despite evidence that the overutilization of such interventions likely plays a key role in increasing the need for cesarean section (CS).[1] In 2010, according to the U.S. Centers for Disease Control and Prevention, approximately 32.8 percent of births in the U.S. were by CS.[2] The U.S. National Institutes of Health has reported that CS increases avoidable maternal and neonatal morbidity and mortality.[3] To increase understanding of what might motivate the overuse of CS in the U.S., we investigated the factors that influenced women's decision making around childbirth, because women's conscious and unconscious choices about giving birth could influence whether they would choose or allow delivery by CS.

In this article, we report findings about women's decisions related to place of birth—at home or in a hospital. We found that choosing a place of birth was significant in how women in our study attempted to mitigate their perceptions of the risks of childbirth for themselves and their infant. Concern for the safety of the infant was a central, driving factor in the decisions women made about giving birth, and this concern heightened their perceptions of the risks of childbirth. Heightened perceptions of risk about the safety of the fetus during childbirth were found to affect women's ability to accurately assess the risk of using clinical interventions such as the time of admission, epidural anesthesia, oxytocin, or cesarean birth, which has important implications for clinical practice, prenatal education, perinatal research, medical decision making, and informed consent.

INTRODUCTION

The starting point for our study was to understand the factors that contributed to the overuse of CS in the U.S., specifically, what factors influence women's decisions around giving birth. Little is known about how women think about childbirth. We started from the assumption that the degree to which women might be amenable to the use of non-clinically indicated interventions could influence the rate of use of these procedures that, in turn, would affect the likelihood of birth by CS. We found that women's decisions around childbirth were motivated by their perceptions of the risks associated with giving birth. In particular we found that making a decision about the place of birth (home or hospital) was a significant way participants used to mitigate their perceptions of the risk of childbirth.

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In our study, women who elected to birth at home did so to avoid the use of childbirth technologies; conversely, women who chose to birth in a hospital environment did so because they did not believe that the female body was able to birth safely without the use of medical intervention. These findings have implications for clinical practice, prenatal education, perinatal research, medical decision making, and informed consent.

METHODS

Design

A purposive sampling method was used to enroll 49 low-risk primigravid women (that is, women having their first child). Each completed a projective test, participated in a focus group session, and completed a postpartum telephone interview in the first six weeks after birth. The data reported here are primarily from the projective test and focus groups, which were analyzed using the Consensual Qualitative Research method.[4] Details of the data collection and analytic methods are described briefly below and in full elsewhere.[5]

Sample and Setting

Our study was conducted at a large urban academic institution in the mid-Atlantic region, in an ethnically and socio-economically diverse area. A convenience sample of low-risk primigravid women, 28 to 36 weeks pregnant, was recruited through word-of-mouth referral; advertisements in healthcare clinics, medical offices, online childbirth listserves, and prenatal classes; and direct approach in public places by research team members. A member of the research team used a standardized screening tool to screen all potential participants by telephone to determine if they met the inclusion criteria for admission: primigravid women who had low risk for CS, between 21 to 36 years old, 28 to 36 weeks pregnant at the time of inclusion, conceived without the use of assisted reproductive technologies, and with no pre-existing health conditions that might have increased their risk of CS were eligible to participate. To ensure the absence of fetal anomalies, women were asked to self-report findings from prenatal screenings related to fetal health.

In total, 72 women were screened and 52 were eligible and provided informed consent. Ultimately data from 49 women were included in the study—technical difficulty resulted in data loss from two women and a third was lost to follow up. Details of the demographics of the sample are presented in table 1.

Data Collection and Analysis

All 49 women completed the three phases of data collection. The first was a projective test that was designed to examine the extent of the women's understanding about birth and their perceptions of risk about the process. This was followed by a prenatal focus group, and finally a semi-structured postpartum interview. The intent was to gather information

TABLE 1. Demographic and birth characteristics, *N* = 49

Characteristic	Mean	SD
Age	28.8	3.88
Annual income	$104,364.40	$58,181.96
	n	%
Education		
Bachelor's degree or less	19	38.8
Post-graduate degree	30	61.2
Marital Status		
Not married	14	28.6
Married	35	71.4
Ethnicity		
Non-Caucasian	17	34.7
Caucasian	32	65.3
Type of birth		
Cesarean*	7	14.3
Vaginal	42	85.7
Place of birth		
Hospital	43	87.8
Home	6	12.2
Careprovider		
Physician	29	59.2
Midwife	20	40.8
Admission dilation**		
< 3 centimeters	20	43.5
>3 centimeters	26	56.5
Continuous electronic fetal monitoring**		
Yes	35	72.9
No	13	27.1
Oxytocin		
Induction	6	12.3
Augmentation	10	20.4
None	33	67.3
Epidural		
Yes	30	61.2
No	19	38.8

* 2 cesareans were planned in advance of labor
** decreased sample size due to missing data

prenatally regarding women's expectations and desires around giving birth and to compare this with their actual birth experiences, including the types and timing of the labor management strategies that were used such as admission in labor, use of epidural anesthesia, oxytocin, episiotomy, and type of birth (vaginal, surgical vaginal, or cesarean).

Over a period of one year, we held a total of 13 focus groups; each group included between three and six participants. The principle investigator (PI), the co-PI, and a research assistant facilitated digitally recorded sessions lasting 60 to 90 minutes. Predefined questions and topics were used to guide the discussion. Focus group discussions centered on participants' expectations and desires around childbirth, as well as the influential factors and information sources they used during pregnancy to make decisions about birth. An experienced transcriptionist recorded the focus groups sessions verbatim; identifying information was removed during the transcription process. The PI randomly audited 10 percent of the transcriptions to ensure that they accurately represented the discussions. The Consensual Qualitative Research (CQR) method was used to categorize data from the focus groups.[6] This method requires an iterative process of transcription analysis, coding, and consensus building until a final set of core domains and categories is produced.

Conceptual Framework

Snyder and Cantor contend that human cognition originates within an individual as a process formed by social and personal influences experienced over the span of a lifetime.[7] Social conditioning plays a pivotal role in the development of cognitive skill, and personality also makes crucial contributions to "knowing." In our study, we used this conceptual framework to support the assumption that pregnant women's prior experiences and social interactions about childbirth influenced the type of birth they chose or were willing to accept, particularly clinical interventions that might be used to manage labor and birth. Previous research suggests that the high rates of CS in the U.S. may be related to the "powerful influence [of] organizational culture"[8] that structures our social beliefs about what is "safe" or optimal for childbirth—birthing practices that are defined by hospitals and obstetrical (medical), midwifery, and nursing professional organizations. These socially endorsed standards are likely to have a direct bearing on how women think about childbirth and what specific types of clinical management they accept for birth.

To interpret our findings regarding women's perceptions of risk around childbirth and how their perceptions shaped their decisions about birth, we used Kahneman and Tversky's Prospect Theory.[9] This theory posits that individuals' perceptions of risk are systematically biased; that is, individuals typically overestimate the likelihood of critical but rare events, and/or underestimate the likelihood of more-common, less-critical adverse events. In the context of perceived risks around childbirth, we found that even though critical events such as maternal or neonatal death are extremely rare, women often chose to deliver by CS to mitigate their perceived risk, while they discounted the more-common risks of less-serious—but nonetheless disabling—adverse health outcomes, for example, infection or hemorrhage resulting from surgical birth. We report the details about our analytic method fully elsewhere.[10]

Ethical Considerations

Institutional review approval was gained from the University of Maryland Institutional Review Board. The informed consent of all participants was obtained prior to participation in any of the three phases of data collection. Participants received a total of $150 to compensate them for the time and effort of completing all phases of data collection. The stipend was paid at two points—$50 for completing the projective test and focus group and $100 after completing the postpartum interview.

RESULTS

All of the women in this study were highly motivated to avoid any untoward event that could have resulted in death or significant morbidity for themselves or their child, although, based on what they believed increased or decreased the risk of an adverse birth outcome, the degree to which they recognized such an event as wholly avoidable varied slightly across the cohort. Their perceptions of risk about childbirth originated from their beliefs about the female body's physiological capacity to give birth, specifically to go into spontaneous labor, progress to full dilatation, and birth a child without the need for clinical—or medical—interventions such as oxytocin, amniotomy, or epidural anesthesia. In our study, we found that women's beliefs about their ability to give birth fell along a continuum, anchored at one end by the view that clinical and medical interventions were seldom needed to manage birth, and an opposing view that clinical interventions were always needed (see figure 1).

Based on the women's responses in the focus groups, we were able to locate them at the beginning, middle, or end of this continuum, which we labeled matricentric, gynocentric, and fetocentric. In analyzing our data, we associated each of the three groups with a specific set of beliefs about the physiological capacity of the female body to give birth, which in turn motivated a unique taxonomy of clinical care, that often set the stage for a particular type of birth (see table 2).

The members of the three groups differed in how they assigned "cognitive authority," that is, what individual or group they saw as an authority or expert. The women's approach to "knowledge discovery"—that is, how well informed they were and the types of information they sought out—and how they dealt with conflicting information on birth and risks of birth depended on who they designated as a cognitive authority. Finally, we found that, based on a woman's placement on the perception of risk continuum, the role that her significant other played in the process of labor and birth varied.

Matricentric Women

We coded 13 of the cohort of 49 women (26.5 percent), as matricentric, meaning "centered upon the mother." We selected this term to denote the view that a woman and her unborn child were seen as an inseparable whole, and therefore the woman was thought to possess instinctive knowledge about her unborn child's well-being. The women coded at this end of the continuum displayed an unwavering belief that the female body is physiologically capable of performing birth without the need for clinical intervention to induce, augment, manage, or expedite the process. Of the 13 women in the cohort who fell in this range of the continuum, seven (53.8 percent) elected to have a home birth. None of the 13 women in this group had a CS or used any clinical intervention to manage birth. In the focus groups before giving birth, these women were able to provide rich, in-depth descriptions of birth that demonstrated a deep understanding of the range of options for birth and the process itself, and had detailed birthing plans that they had discussed with their careproviders. For these women, birth was seen as a critically important life experience that marked their passage into parenthood.

Their descriptions of birth were often touched by the mystical, and were represented as low-risk, low-key events with limited opportunity or necessity for clinical intervention. For example, one reported, "I imagine the birth being just a very sacred space; it is a really unique symbiotic relationship happening between the mom and the baby. Allowing that process to unfold in an undisturbed environment is for me the safest way to give birth . . . having people there who are supportive and aligned with and being a protector of that sacred space. So that I can do what I feel like I need to do and want to do—trusting my body and the process . . ." (from the participant coded as 63M9). Embedded in this

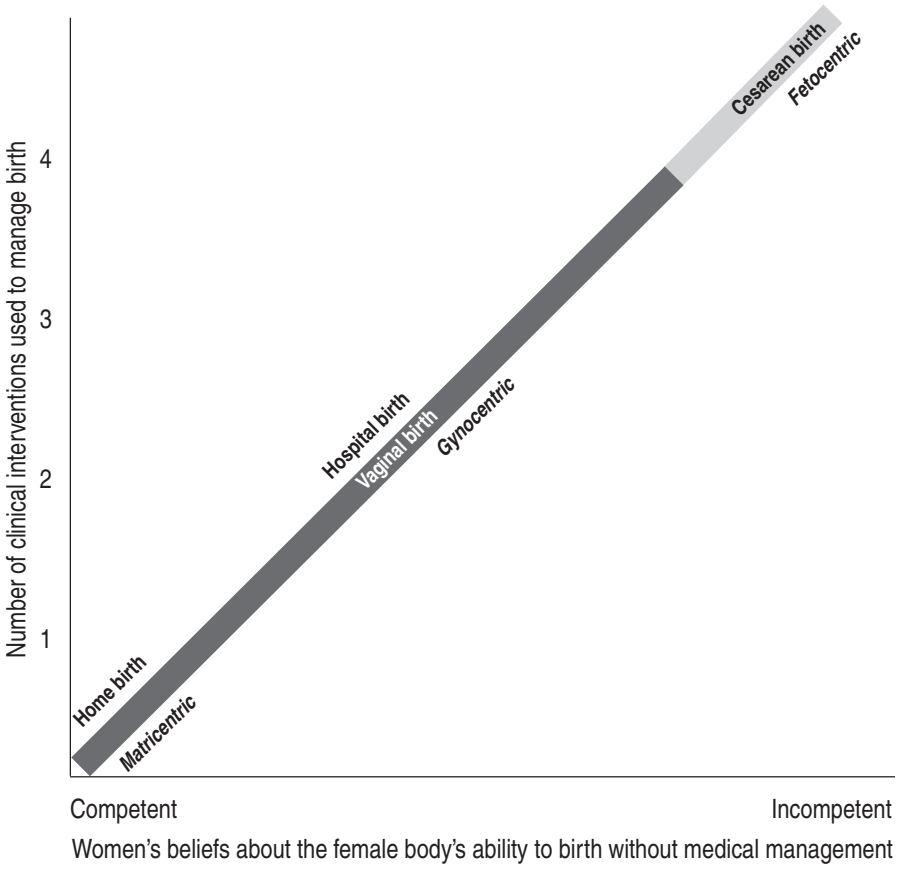

FIGURE 1. Study groups on a continuum of perceived risk and rate of c-section

TABLE 2. Characteristics of women in the three study groups ($N = 49$)

Characteristic	Matricentric group ($n = 13$; 26.5%)	Gynocentric group ($n = 11$; 22.4%)	Fetocentric group ($n = 25$; 51.1%)
Definition:	"Centered upon the mother," i.e., woman and child seen as one inseparable whole; woman has instinctive knowledge of the needs of her fetus	"Concerned with women only," i.e., woman desired natural child birth only if it did not impinge on the perceived needs of the child; mother and child might be seen as having competeing needs	Preoccupied with possibility of critical events such as maternal death or the loss of the child during birth
Number selecting home birth:	7 of 13 elected home birth	0 of 11 elected home birth	0 of 25 elected home birth
Rate of CS:	0% ($n = 0$)	18% ($n = 2$)	20% ($n = 5$)
Beliefs about birth:	Woman is capable of giving birth without the need for clinical intervention to induce, augment, manage, or expedite	Birth is normal physiological process, but medical intervention is needed to manage labor and ensure the safety of the baby	Giving birth is seen as high risk; mother is preo-ccupied with possibility of maternal death or losing child in birth
Cognitive authority held by:	Mother and partner	Mother and obstetrician or midwife	Obstetrician is the expert
Dealt with perception of risk by:	Seeking out evidence and advice from informed and experienced persons	Other women and anecdotal sources, being open to clinical interventions	Anecdotes/internet, rejecting evidence /experience not confirming beliefs
Flexibility of mother:	Less flexible about place of birth, fearing loss of autonomy in hospital	Flexible in expectations and preferences regarding giving birth	Less flexible about place of birth, fears medical emergencies outside hospital
Role of partner:	Central to the process: primary support person	Central to the process/potential source of concern: during birth may panic or need care from woman	Rarely mentioned
Perception of giving birth:	Critically important life experience: marks passage to parenthood	Unavoidably disappointing means to get to one's baby	Means to an end: delivery of healthy baby

viewpoint was the notion that the female body knows instinctively how to birth, and therefore, to enable that capacity, a woman must be able to do what it tells her to do—such as get up and move about, rock, or immerse herself in water. The mysticism seemed to be rooted in a "mind-body connection."

For matrocentric women, perceptions of childbirth risk centered on the use of clinical interventions that were seen as interfering with optimal body function, and the perceived risks of using interventions were seen to outweigh the benefits. For example, one woman said, "there are definitely effects on the baby with an epidural and with pitocin," and "one intervention usually leads to another intervention being utilized because you've interrupted that natural feedback system" (63M9). For women in this group, clinical interventions were recognized to subsume the body's physiological capacity to birth and therefore lead to addition interventions. The cumulative nature of clinical interventions was frequently addressed: "I . . . see how one intervention can lead to a more serious intervention which leads to even more serious intervention, which causes more risk that you don't necessarily have to take" (72M3). More-natural approaches were seen as beneficial, such as "having [a] woman to lay [*sic*] on her back to push is bad for her. Squatting opens your pelvis by around 15 percent. The size of your pelvis actually grows" (55M8). Women in this group understood the secondary or cumulative nature of interventions commonly used in delivery, and were well informed regarding their balance of risks and benefits.

Another interesting common phenomenon was the lack of time pressure these women expressed about labor. They saw labor as a progressive process and planned activities to occupy themselves during early labor. They had no sense of urgency and were more confident that they would recognize they were in labor and had a sense of how it would progress. For example: "I would like to go into labor at home and go about my day stopping for contractions. I'm planning things to do and I have lots of projects for early labor" (21M5). The lack of time pressure extended to when the women expected or preferred the careproviders to attend to them during labor. All of the women in the matricentric group elected to receive care from midwives and many also

had doulas (a trained, experienced professional who provides support during and after childbirth), but none expected a careprovider to come immediately or stay by their side throughout labor and birth.

Because they believed they were uniquely positioned to know what was best for their child, women in this group claimed cognitive authority for decisions about birth. This was evident in comments such as, "I will be in control and be able to listen to my own body and be able to call the shots (72M3)," and "what I've appreciated the most is that through each step I've been the one to make the decisions. And sometimes that can be a scary place because then you're responsible for that decision, but it's something that I was able to take ownership of instead of having it made for me" (26M4). Their comments related to decision making implied that not only did they prefer to make decisions about the birth, but that they understood the responsibility that they assumed by taking on this vital function.

In modern-day obstetrics it is not common for women to be the primary decision makers about what they want for birth or to be able to clearly define why they chose as they did. Furthermore, demanding cognitive authority for birth also meant that the women accepted responsibility for the outcome. This had particular importance for women who chose to birth at home, because while they saw it as the safest place for themselves and their unborn child, they also understood that if they experienced an adverse outcome, it would be attributed to having birthed at home. Women who chose to birth at home, or even at a birthing center, were cognizant that their choice put them on the margin of currently accepted social norms. This understanding was particularly well articulated by one woman who said:

> I think it's a difference between a passive risk or taking an active risk. If [you are having a hospital birth and] the baby starts going into distress or the heartbeat is slightly irregular you go and get a c-section [and it's clear that] you've actively done all that you can. So maybe [if you're in the hospital] you're not going to have the same sense of guilt about doing everything you could. There's not very many situations where it's so critically important that the baby needs that kind of care immediately, but if that were to happen at home, then I could see how the effect of that would be judged, like, we didn't do all that we can, that it's my fault that tragedy happened because we had a home birth [55M8].

Situations that are critical enough to require immediate lifesaving interventions are extremely rare, but when they happen during a home birth and the woman is not close enough to a hospital to obtain immediate care, the blame for a bad outcome may be levied against the woman who chose to birth at home, because if she had really "done all she could" to avoid a bad outcome, she would have chosen to birth in a hospital.

Conversely, the women in this group stated that when adverse events occurred in the hospital setting, the same judgments of blame and guilt would not apply, because "once you're in the hospital and under their care even if things didn't work out it's all right because they did everything that they could" (55M8). One key finding of our study is that most of the women supported the idea that if a woman gave birth in a hospital setting, then no one could be held culpable if an adverse event occurred. Regardless of the outcome, it would be assumed that everything that could have been done had been done, and therefore an adverse outcome could not be attributed to the types of care that were used to manage the birth in the hospital. The women in the matrocentric group recognized this logic as flawed, and were prepared to assume responsibility for the decision to birth at home because they believed so strongly that it would ensure optimal health outcomes for their baby.

Cognitive authority requires demonstration of expert knowledge, and in this study the women in the matricentric group demonstrated remarkable knowledge of evidence about birth. They were able to clearly articulate the risks and benefits for the options they elected, but also for those that they rejected. Their choice to take control making decisions was rooted in a desire to manage the process of birth and select care options that, in their view, ensured the best outcome for their baby. This was expressed in ideas such as, "I think I'll have more control over things at home and I will be able to listen to my own body . . . if I feel like I need to walk, I want to walk. If I feel like I need to squat, I want to squat" (17M4). Since birth was seen as a natural physiological process, the types of care these women chose were intended to optimize their body's capacity to birth efficiently and provide the best environment for their unborn child. This could be seen in commentary such as, "I want to dim the lights. I have a birth ball. And they have squatting stools [at the hospital where I'm birthing. I will be able to] walk around. We've also been practicing a lot of guided imagery and relaxation. So I really want to practice trying to relax as much as possible and saving energy in between contractions with massage and things like that" (35M6); and, "I want to be mobile. I want to be able

to move around. . . . eventually the contractions will come closer and closer together and then I'll try to use some things like taking a shower, listening to music, or some of the other relaxation techniques to get me through" (52M8).

Women in this group implicitly trusted their midwives and saw them as "a trained eye who notices that something's not going well and can intervene" (72M3). They universally expressed a belief that their careprovider would act in their best interests if anything went wrong. For example: " I trust my midwife enough to know that she knows if something were to happen during the birth she would inform us when we need to make changes. She would make the appropriate decisions that need to be made and that we could be a part of and trust those decisions" (72M3). This group did not express concern that clinical intervention might be needed, and said they were comfortable laboring without the direct observation of a midwife.

Conversely, hospitals were seen as places where things were done for the convenience of the clinicians and the institution. The matricentric women expressed a belief that the information provided by physicians and nurses was "heavily weighted to one direction" (26M4) to persuade them to take a certain path. The lack of faith in hospital-based birthing was striking, and comments such as, "there are many reasons why it starts to make you suspicious. Maybe they're not really acting in my best interests" (55M8), were common among this group. This lack of trust was focused on the use of interventions and practices that are common in hospital birthing that were considered to be done for the convenience of the staff, rather than for the benefit of the laboring woman. "During my research about when and why epidurals came to be, I learned they make it easier for the doctor. The same thing is true with positioning in labor" (72M3). While these sentiments are not reported in the scientific literature, there is considerable anecdotal evidence that supports the contention that both epidurals and especially supine positioning during the second stage of labor are done for the convenience of clinicians (nurses and physicians). Unnecessary use of invasive clinical interventions was the primary reason cited by this group for choosing to birth at home. For example, "I made my decision to have a home birth because I actually feel safer and more confident at home than I do in a hospital because of the rate of intervention use. It feels to me that they're used too often as a safety measure" (72M3).

These women described their partner as central to the process. The dyad was presented as a team in which the woman's partner was the primary support person who, along with the woman, made decisions about the type of birth planned for their child. This phenomenon could be seen in comments such as, "I expect my husband to be my number one support during this childbirth. When I'm hurting, when I'm scared, the main person I want touching me, holding me, and making me feel better immediately is my husband" (17M4), or "my husband and I have definitely talked about what his role is going to be and how he can help me. I've showed him different things that he can do and I've said to my midwife and my doula that I kind of see just the two of us in our room, and they only come in when they need to" (26M4). The place of birth and the type of careprovider appeared to be selected to ensure that both partners could be comfortable to fulfill the role they envisioned. For example, one couple chose a home birth because the partner "is a very shy, introverted person. That's why we chose a home birth because in the hospital, he would be so self-conscious that he wouldn't be able to let go and be what I need him to be" (26M4).

In summary, women at the matricentric end of the belief spectrum envisioned birth as normal physiological event, requiring minimal intervention, optimized by activities that supported and enhanced the body's natural physiological function. For these women, birth was seen as "sacred . . . a rite of passage for me and for my baby, preserving a particular atmosphere for the baby's first experiences of life, of you, of its world" (63M9).

There were no CSs in the women in the matricentric group.

Gynocentric Women

Women coded as gynocentric were mixed in their approach. Among the 49 women in the study, 11 (22.4 percent) were in this group. We used the term gynocentric to mean "concerned with women only," denoting the women's desires to birth naturally, but only to the degree that it did not impinge on the perceived needs of the unborn child. As such, the woman and her child were seen as sometimes having competing needs. Their perception of risk was related more to doubts about their own ability to birth without medical support of some kind, and while the women in this group tended to endorse birth as a physiological process, they preferred to birth in the hospital setting in order to have access to pain management and other childbirth technologies that might be needed. Of particular concern for them was access to emergency services for the neonate.

Women at this range on the spectrum believed that birth was a natural process and that the female body could birth without medical supervision, but they were not confident in their own ability to go through the process without the use of pain management. Their descriptions of birth were not carefully considered and were largely based on anecdotal evidence, as quotations from the interviews provided below illustrate. They typically were uncertain about the process of birth and what resources they would need, so they sought to have "a support system, somebody who's there to comfort me just in case. Who can calm me down because I wouldn't really stick to a plan because if I had a certain plan in my head and it doesn't go that way, then I'm frantic and panicking" (47M6).

Labor pain was seen as an unavoidable part of birth "I just see pain—that's the natural birthing experience" (47M6). The women said it was possible that they might become marginally hysterical and would need to be actively managed, because "the best thing to do while you're giving birth and going into labor is to stay calm. You don't want to raise your heart rate or the baby's heart rate" (47M6). Birth was seen as being infused by the potential for harm, and therefore it was best managed in the hospital environment, where "if there's a problem the doctors can do everything and anything necessary" (47M6).

Among this group the risks associated with clinical interventions were often underestimated, for example: "I didn't want a c-section because it's going to leave this horrible scar" (47M6). This statement indicates a failure to recognize that the real risks of having major abdominal surgery include hemorrhage, infection, and even maternal death. Minimizing the actual risk of adverse outcomes that could result from invasive interventions such as CS was common across this group and indicated a significant gap in their knowledge. For these women, there was a belief that if things went wrong, there would be no time for negotiation or choice, and that immediate action would be required to ensure that the baby would "be born healthy." In order to achieve that goal, they assigned decision-making authority to a careprovider who could "do whatever. If you have to knock me out, do it, I don't care. If I can take the pain or whatever comes, then I'll just take it. But if I can't at that time, then hey, give me whatever" (47M6). However, despite endorsing this viewpoint, it did not extend to averting the more common—albeit less severe—adverse outcomes associated with many of the clinical interventions they endorsed using to optimize the outcomes for their baby.

For these women, their partners as central to the process of giving birth, but as a potential source of concern. This was expressed as, "I'm worried that my spouse will panic and in turn, make me nervous" (FG1D). Their own fear of becoming frantic and panicked by the process of labor seemed to be transferred to how they believed their partner would cope. They saw the hospital environment as an option that would help alleviate their concern about their partner's coping capacity, so they planned to "go into the hospital a little earlier than anticipated" (FG1D). Many women said that, while in labor, they might need to care for their partner, suggesting that they did not feel very well supported by their significant other or see that person as someone who could support them through labor and birth effectively.

Their tendency to take precautionary action was reflected in their choice to birth in the hospital, because, if needed, that setting would provide immediate access to equipment and trained personnel. Hospitals were thought of as "the safer option because you have all the interventions and staff there so you can call in xyz doctor if it's necessary" (FG3C). Some women who fell along this range of the continuum chose a midwife to provide care, but the majority received care from an obstetrician. Their perceptions of risk were focused on rare critical events that could result in death or significant morbidity. This persuaded them that birth in a hospital was necessary because "if the doctor has to operate, it's right there. Or the medicine is right there if something goes wrong. And I think that anything can go wrong. I just feel that if I was at home—I mean, I only live five minutes from the hospital, but would that five minutes mean the death of me or my child?" (FG3C). Such notions of immediacy do not reflect the reality of childbirth, for which critical events are extremely rare, and modern surveillance systems identify when a critical event may be possible—for example, ultrasound diagnosis of a low-lying placenta that reduces the risk of hemorrhage.

The unknown nature of birth and potential for disaster seemed to make women in the gynocentric range feel that it was essential to be "flexible"—that is, open to the use of clinical interventions for labor and birth. "Flexibility" was motivated by the belief that labor and birth were highly changeable states, and therefore it was unlikely that a woman would be able to achieve the type of birth she wanted. To avoid being disappointed, these women believed they should simply accept the care that was provided. This was often stated as "flexible, go with the flow. You think you know what's going to happen but you don't, you never know so you have to

embrace the unknown" (FG3B). Being flexible meant that women in this group relinquished cognitive authority to others—primarily to their careproviders, but also to significant others or family members—to make decisions about labor and birth. For example, one woman stated that she was planning to have an epidural because her husband had told her to not "even think that you're not going to have an epidural" (FG3C), because he thought she had a low threshold for pain.

Remarkably, even though physicians were given the authority to intervene in whatever manner they saw fit, this group questioned the clinical necessity of their physician's choices and reported that they found their physician inaccessible and hurried. For example:

> . . . the physician was very quick, at the end of the appointment, she said, well, do you have any questions? And at this point . . . yeah, I have questions. I have a million. Do you have an hour? And I said to her, you know, I'm kind of feeling uncomfortable about this perineum thing—about the episiotomy. And I said, I've heard about massages or oil, what's your take on it, what can I expect? And this is her response to me. I'm like giving my heart out. I'm almost crying. And she's like, honey, you are so leaving with stitches [67P11].

Physicians were frequently seen as acting in a manner that was not in the best interest of the women: "I feel as though some doctors want what's best for them and not what's best for you. It's like they're having the baby, and you're not" (61P11). However, regardless of this recognition or the view that interventions were commonly routine and done for the convenience of careproviders and staff, these women still believed that they were doing everything possible to avoid an adverse event by delivering in a hospital.

For this group, birth was seen as a natural physiological process, up to a point, beyond which they were uncertain about what labor would be like, and they doubted that they would be able to go through it without an epidural. While they endorsed the body's capacity to birth and espoused the value of natural birth, they were very conscious of the pain associated with labor that they believed was inherent to the process. They would express this idea in statements such as, "I'm not against having something for the pain, but I would like to try to go naturally as long as I possibly can" (71M2), and, "I would also say having false labors or whatever I had before, I had a little bit of contractions, they're so painful. . . . And when I asked my doctor, when I asked if that's going to be the same as contractions, he's like no, contractions are worse. So, it's from the doctors and I believe doctors. It's painful" (29P4).

Women in this group were very open to learning about birth, but they did not demonstrate a deep understanding about the process or risks and benefits of particular approaches to the management of labor. The primary source of information about labor and birthing were described as "other women" and "anecdotal sources." This limited their knowledge to more-mainstream ideas, and they were not able to articulate the risks and benefits of the options they chose. This resulted in gaps in their knowledge that were at times significant. For example: "I just attended a childbirth class a month, a month and a half ago. And they were talking about [episiotomies]. And I left there thinking that getting the episiotomy would be better. The baby would have more time trying to come out when it's crowning" (61P11), and, "I'm going to have it at the hospital. There wasn't any preference. I didn't even know there was a difference between hospitals and birthing centers" (68P8). This lack of deep knowledge extended to their understanding of what labor was or how it would progress. This was seen in their concerns about getting to the hospital on time in labor. Their sense of time pressure created significant tension for them. For example: "I would want to be in the hospital [for the entire labor]" (28M4), and "I'll be calling my OB and seeing when would be a good time for me to go into the hospital. So whenever my OB tells me to go in, that's when I'll go in. Because I don't want to miss the time. I know there's a certain time to get the epidural" (18P5).

In summary, women in the gynocentric range of the risk spectrum believed that birth was a normal physiological process up to a certain point, but that medical intervention was needed to manage the laboring process, to access pain management techniques, and to ensure the safety of their baby. Central to this approach was a perceived need for women to be flexible and open to whatever interventions others felt were necessary. For gynocentric women, birth was an unavoidably disappointing means to get to their baby. Birth was an uncertain event that would never be what they wanted, and one in which they would have to accept whatever care was provided, because it was structured by "procedures and policies that [the careproviders] follow and that they don't deviate from" (09P4). Those procedures were intended to ensure the safety of birth, and so these women accepted them, and while the women may have questioned the clinical necessity of the inter-

ventions, they still accepted them without a fight: "I desire for my baby to be immediately put on my chest next to me before they take her to clean her off. But I know in talking to my doctors that that is ultimately not going to happen. They're going to take her away and clean her up, monitor her, do all the assessments that they need to do. And then within an hour, hopefully, they'll get her back to me. That part makes me a little sad" (09P4).

The CS rate for the women in the gynocentric group was 18 percent.

Fetocentric Women

We coded women who saw birth as a high-risk affair, marked by extreme uncertainty and danger, as fetocentric. For these women, birth was portrayed as "a disastrous scenario that included emergency c-section, IV, blood everywhere. . . ." (08P4). Of the 49 women in the study, 25 (51.1 percent) were in this group. Fetocentric women were preoccupied with the possibility of maternal death or of losing their child during birth. They sought care from an obstetrician and chose to give birth in a hospital and to use multiple clinical interventions to manage labor, including prescheduled CS.

Women at this end of the spectrum were wedded to the notion that the female body is incapable of birthing without active medical management to correct and redirect the flaws and omissions of human physiology. Medical science was seen as essential to the process, and without it labor was thought to be impossible to bear. Interventions such as epidurals were presented as key to managing the process, and essential to allow women to enjoy birth as much as possible. Without an epidural, women could be rendered "unconscious with the pain" (57P8). These women endorsed a robust belief in obstetrical science and saw clinical interventions as "tools that lead the way, that will not damage you but will help you go through the process" (57P8).

Physicians were considered the experts, and fetocentric women willingly ceded their cognitive authority to them, for example, one said,

> As much as I've tried to make myself an expert on the birthing process, I'm not one. So I place trust in the hands of who I think are experts. I think that's really important, that's their job—mine is something else. They do this every single day, so I just feel comfortable in the hospital even if I don't want to seek all of the various interventions that are open to me. And it's interesting that they call them interventions: I don't think doctors call them interventions, they call them routine procedures [5M5].

When women in the fetocentric group encountered views that called their ideals into question, they vehemently defended them, often denying scientifically validated evidence and overlooking the obvious. For example, one participant recalled a situation in which a prenatal instructor informed the class that the risk of maternal mortality was higher with CS. The woman was incensed because she felt that the comment was inaccurate and engendered fear in one woman in the class, whom she described as:

> . . . so scared she couldn't even introduce herself without crying. When she heard from the prenatal instructor that c-section increases your chances of dying! I said, no, you can absolutely not say that, because the professional that made that decision [to perform a cesarean] has many degrees and I cannot imagine that a doctor would make that decision taking that much risk for just the fun of it. She tried to convince me that the more medical interventions was more risk, and I tried to convince her that the medical professional would not take more risk than necessary" [08P4].

Among this group, the women demonstrated a remarkable capacity to dismiss the evidence in order to uphold their own belief system. That capacity blocked their ability to be fully aware of the risk and benefits of the clinical interventions that they might receive during labor and birth.

All of the women in the fetocentric group gave birth in the hospital setting under the care of an obstetrician. Typically, they relied on anecdotal reports regarding the process of labor and the risks and benefits of various care options, rather than seek information from persons with knowledge and experience. They would say things such as, "I try to look for unbiased sources usually on the internet because it's accessible" (11P6). However, when they encountered viewpoints that did not align with their own, they dismissed the ideas that were presented as irrelevant or incorrect. Few of these women talked about their partners, which suggests that they considered them to be inconsequential in terms of having a vested interest in the outcome or a say in the type of birth.

In summary, for these women the experience of birth itself was not relevant—it was instead simply a means to an end. "Childbirth doesn't have to be scary but in my opinion it is. It's going to hurt. It's not going to be the best thing in the world. But it doesn't matter in the end; you won't even be able to remember what happened" (12P5).

The rate of CS in this group was 20 percent—the highest of the three groups in this study.

DISCUSSION

In this study, women's perceptions about childbirth risk were rooted in their ideas regarding the female body's competence to perform birth and the need to control that process to ensure safe passage of the unborn child. Choices around the place of birth were a way to manage perceived risk, in the sense that the place of birth either gave access to clinical medical interventions or limited that option. The degree to which the women determined what was desirable for birth and how feasible it was to achieve their desires was highly personal. The majority of the participants knew what type of birth they wanted from an early stage in pregnancy and their choices were aligned with their conceptualization of birth.

We used Das and Teng's Risk Perception Model,[11] which integrates personal traits and cognition, as a way to explain why women in our study made such different choices for birth. In this model, personal traits include attributes such as assuming responsibility for outcomes and maintaining control over one's options.[12] Such traits were obvious in our study in the women who elected to have a home birth.

Allinson, Chell, and Hayes's Cognitive Approach[13] provided a means to examine the ways that women in our study collected, sorted, and evaluated information about options for birth and what they preferred. Using the Trait Approach, we could see how each woman constructed a reality that was comprised of risks and ways to avoid or limit those risks.[14] There were various approaches across the cohort, but matricentric women in particular demonstrated remarkable sophistication in this regard, as their decisions were motivated by limiting the perceived risks of childbirth for themselves and their unborn child. Women in the other groups had similar motivation, but limited their inclusion of evidence to information that validated their choices.

The ability of a woman to choose the type of birth that she wants is a relatively new innovation. The practice originated in the middle of the last century in response to pressure from birthing activists who publicly rallied against the highly medicalized models of care common to the era.[15] However, since as early as the 1980s, a common theme in the literature is that women are not really free to choose at all.[16] This opinion is supported by research-based evidence reporting that while women's preferences do influence the birth process, generally is it obstetricians' evaluation of the clinical indicators that define what choices are available.[17] Obstetricians report routinely informing women of the risks of interventions such as CS,[18] although in this study very few women could share an instance of being informed about the risks and benefits of any of the most commonly used clinical interventions. Furthermore, there is evidence that the information women are given is highly variable and insufficient to constitute full information.[19] Other studies report that information-based strategies to reduce incidence of CS have not been effective,[20] although it is not clear why or how the strategies could be improved. What is clear is that rates of morbidity and mortality have not demonstrably decreased, despite the high rates of CS in the U.S., suggesting that the rate of CS could be safely lowered to improve outcomes.

Our findings support previous research that reports that women's fear of birth is positively associated with maternal request for CS without medical indication.[21] In our study, the women's fear of childbirth influenced their willingness to be admitted to the hospital early in labor and to request or permit the use of clinical interventions regardless of medical necessity. The etiology of women's fear is not entirely understood, but one factor known to influence their resolve is a bad birthing experience in a prior delivery.[22] More research is needed to understand what constitutes a bad birthing experience and to identify ways to help women manage the fears that originate from them. This has significant implications for many of the women in this study whose births were not what they desired. Dissatisfaction with the birthing experience is reported to be as high as 7 percent in select samples, and in this study 14 percent of the women reported being dissatisfied with the process and said that in their next birth they would find a different careprovider and/or environment for birth.[23] Studies report that women feel violated by their birthing experience and some even suffer from post-traumatic stress syndrome.[24] In this study, some of the women's birth reports include experiences that are shocking in terms of the disregard shown to them. For example, one woman's obstetrician suggested that she have an epidural catheter placed "just in case" she decided she wanted it later in her labor for pain control. At that point the woman was five centimeters dilated and in active labor, but did not feel that she needed anything for pain. She explained this to the anesthetist, who administered the anesthesia anyway, disregarding her preference not have an epidural (14P6).

A common theme across the cohort was the need to control the birthing experience. Concern for the safety of the baby was a central factor driving deci-

sions about childbirth[25] that heightened conceptions of childbirth risk.[26] Research about risk perception identifies several important factors particularly relevant to how risk perception might influence women's decisions about childbirth. There is compelling evidence that experts and the lay public perceive risk differently. An expert's evaluation of risk is informed by applying population-level statistics to estimate the likelihood of occurrence of an adverse event in a particular individual. Alternately, an individual's judgments about risk often originate from her or his assessment of the localized effect.[27] For example, obstetrical healthcare providers evaluate childbirth risk based on clinical indices contrasted against national morbidity and mortality rates, while pregnant women's perception of childbirth risk is often filtered by social context, in combination with an intuitive evaluation of the likelihood of an undesired outcome for themselves or their unborn child. In other words, when women consider the likelihood of a particular outcome, it is filtered through what it would mean for them within the context of their life.

We found in this study that women's conceptions of risk about childbirth were formed over time from personal experiences, including information from friends and family, and representations in the popular media.[28] While each woman and each pregnancy is unique, sensationalistic media representations of childbirth risk may cause women to overestimate the probability of experiencing a negative birth outcome.[29] Research describes how these biases influence an individual's ability to assess probabilistic risk accurately,[30] how cognitive biases may influence a non-expert individual's ability to assess probabilistic risk accurately,[31] and how they are highly resistant to change.[32] This may explain why women in the gynocentric and fetocentric spectra of our continuum, when faced with evidence that was contrary to their beliefs, elected to discredit or ignore the information.

Decision making in uncertain circumstances can cause considerable stress, but this cognitive discomfort can be contained by choosing to act in a particular way. Simon, Houghton, and Aquino report that when individuals choose a specific path of action, that action disables their ability to process the risk associated with it.[33] That would suggest that even when women are fully informed of the risks of using a particular clinical approach to birth, in order to limit their perception of risk, if they have already chosen a course, it is probable that they will be incapable of accounting for the risks associated with their choice. For example, one woman in our study opted to schedule CS to deliver her baby, even though there were no clinical indications for the surgery, and this was against the express recommendations of her physician. She was informed of the risks of having unnecessary surgery, but chose to proceed anyway. Many women in our study reported not being informed about the risks and benefits of the clinical interventions that were used, but they still agreed to them. It is clear there is an urgent need for research to build our understanding about how to inform women about their options for birth in a way that they can hear, understand, and apply to their own choices for birth.

In conclusion, in this study, choosing the place of birth became a way for women to control their perceptions of risk about childbirth. The place of birth that these women chose was selected to either limit or gain access to the use of invasive clinical interventions such as epidural anesthesia. Women who chose to birth at home did so because they felt that clinical interventions used in the hospital setting carried iatrogenic risks that could harm their unborn child. This perception is supported by the literature, and in many cases there is compelling evidence that commonly used clinical interventions are associated with increased risk of maternal and neonatal morbidity and mortality, particularly if they are used without clear medical indication.[34] Among the women in our cohort who birthed at home, none experienced complications or required transfer to the hospital for any reason. In addition, there were no CS among this group, while 16.7 percent ($n = 42$) of the women who birthed in the hospital environment had CS. The home birthers also expressed satisfaction with their birthing experience and said they would birth at home again in any future pregnancy.

In a recently published opinion paper, Chervenak and colleagues call on perinatal careproviders "not to support planned home birth when there are safe and compassionate hospital based alternatives and to advocate for a safe-as-home-birth-like experience in the hospital."[35] Based on the findings in our study, that call fails to account for maternal and neonatal morbidity stemming from the routine use of nonmedically indicated and highly invasive childbirth technologies. For example, in feasibility testing currently being done in preparation for a grant submission, we found that more than 70 percent of low-risk primigravid women who were admitted to the study site in labor were started on oxytocin, despite evidence that their labor was progressing normally. In addition, intrauterine pressure catheters were used almost routinely for women receiving oxytocin, intravenous infusions and epidural anesthe-

sia were used in the vast majority of cases, and episiotomies and CS were common events. Chervenak and colleagues discuss the ethical obligation of obstetricians to disclosure risk about planned home birth when they obtain women's informed consent, but we found that the women we studied were not informed until they were in labor of the risks and benefits of the clinical interventions routinely used in hospitals to manage birth. To compare neonatal mortality and morbidity in relation to place of birth, we suggest that Chervenak and colleagues compare the short- and long-term prevalence of neonatal mortality and morbidity associated with the nonclinically indicated invasive interventions currently used to manage birth in low-risk women. If, in order to optimize maternal and neonatal morbidity and mortality, the intent is to curb the "recrudescence" of planned home birth, then hospitals should examine the routine use of interventions to better understand their association with adverse outcomes. More research is needed to demonstrate how best to use clinical interventions to optimize outcomes. Moreover, women who want natural childbirth or who state a desire not have interventions such as epidurals should be provided compassionate, supportive care by skilled perinatal practitioners.

We wholeheartedly support an improved and unbiased informed consent process that facilitates shared decision making, that will provide women with the data necessary to judge the risks and the benefits of the clinical interventions used to manage birth. In this study, many of the women commented that the information they received about birth was deeply polarized, seeming to fall on one of two extremes: adamantly supporting absolutely natural (physiologic) birth, or referring to the routine use of invasive interventions as the "gold standard" of obstetrical care. The findings of this (and other) studies on the management of childbirth suggest it is time for both sides of the debate to step back, review evidence supporting clinical practices, and find a more moderate stance that provides women the information they need, in a way they can comprehend, to choose the type of birth they desire.

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NOTES

1. "This is problematic because there is growing evidence that over utilization of these clinical interventions likely plays a key role in the escalating use of surgical birth." C.Y. Spong et al., "Preventing the first cesarean delivery," *Obstetrics & Gynecology* 120 (2012): 1181-93.

2. J.A. Martin et al., "Births: Final Data for 2010," National Vital Statistics Reports 61, no. 1 (28 August 2012), *http://www.cdc.gov/nchs/data/nvsr/nvsr61/nvsr61_01.pdf,* accessed 15 March 2013.

3. "NIH State-of-the-Science Conference Statement: Cesarean Delivery on Maternal Request," 27-29 March 2006, *http://consensus.nih.gov/2006/cesareanstatement.pdf,* accessed 15 March 2013; J.P. Souza et al., "Caesarean section without medical indications is associated with an increased risk of adverse short-term maternal outcomes: The 2004-2008 WHO Global Survey on Maternal and Perinatal Health," *BMC Medicine* 8 (2010): 71; F. Sachs, C. Kobelin, M. Castro, and F. Frigoletto, "The risks of lowering the cesarean-delivery rate," *New England Journal of Medicine* 340 (7 January 1999): 54-7.

4. C.E. Hill, B.J. Thompson, and E.N. Williams, "A Guide to Conducting Consensual Qualitative Research," *Counseling Psychologist* 25, no. 4 (1997): 571-2.

5. K. Lewin, *Principles of Topological Psychology,* trans. by F. Heider and G.M. Heider. (New York: McGraw Hill, 1936); M. Snyder, and N. Cantor, Understanding personality and social behavior: A functionalist strategy," in *The handbook of social psychology,* vol. 1, 4th ed., ed. D. Gilbert, S.. Fiske, and G. Lindzey (New York: McGraw Hill, 1988), 635-79.

6. Hill, Thompson, and Williams, see note 4 above.

7. Snyder and Cantor, see note 5 above.

8. E. Hodnett et al., "Effectiveness of nurses as providers of birth labor support in North American hospitals," *Journal of the American Medical Association* 288, no. 11 (2002): 1373-81; J. Greenwood, J. Sullivan, K. Spence, and M. McDonald, "Nursing scripts and the organizational influences on critical thinking: report of a study of neonatal nurses' clinical reasoning," *Journal of Advanced Nursing* 31, no. 5 (2000): 1106-14.

9. D. Kahneman and A. Tversky, "Prospect Theory: An Analysis of Decision under Risk," *Econometrica* 47, no. 2 (1979): 263-92.

10. M. Regan, K. McElroy, and K. Moore, "Choice? The factors influencing women's decisions for birth," *Journal of Perinatal Education* (2013, in press).

11. T. Das and B. Teng, "A risk perception model of alliance structuring," *Journal of International Management* 7 (2001): 1-29.

12. L.E. Palich and D.R. Bagby, "Using cognitive theory to explain entrepreneurial risk-taking: challenging conventional wisdom," *Journal of Business Venturing* 10, no. 6 (1995): 425-38.

13. C.W. Allinson, E. Chell, and J. Hayes, "Intuition and entrepreneurial behavior," *European Journal of Work and Organizational Psychology* 9, no. 1 (2000): 31-43.

14. Palich and Bagby, see note 12 above.

15. W. Simonds, B. Katz Rothman, and B. Meltzer Norman, *Laboring On: Birth in Transition in the United States* (New York: Routledge, 2007); E. Yam, A. Grossman, L. Goldman, and S. Garcia, "Introducing Birth Plans in Mexico: An Exploratory Study in a Hospital Serving Low-

Income Mexicans," *Birth* 34, no. 1 (2007): 42-8.

16. P. Bernstein, "In the Literature: Patient-Choice Cesarean Delivery: Really a Choice?" *Birth* 34 no. 1 (2007): 89-90; E.R. Declercq, C. Sakala, M.P. Corry, and S. Applebaum, "Executive Summary," in *Listening to Mothers II: Report of the Second National U.S. Survey of Women's Childbearing Experiences* (New York: Childbirth Connection, October 2006): 1-9; R. Al-Mufti, A. McCarthy, and N.M. Fisk, "Obstetricians' personal choice and mode of delivery," *Lancet* 347, no. 9000 (24 February 1996): 544; M. Richards, "The trouble with 'choice' in childbirth," *Birth* 9 (1982): 253-60.

17. H. Marx, J. Wiener, and N. Davies, "A survey of the influence of patients' choice on the increase in the caesarean section rate," *Journal of Obstetrics & Gynaecology* 21, no. 2 (March 2001): 124-7.

18. B.A. Bettes et al., "Cesarean delivery on maternal request: Obstetrician-gynecologists' knowledge, perception, and practice patterns," *Obstetrics & Gynecology* 109, no. 1 (January 2007): 57-66.

19. D. Horey, J. Weaver, and H. Russell, "Information for pregnant women about caesarean birth," *Cochrane Database of Systematic Reviews* 24, no.1 (2004).

20. L. Tumarkin, D. Browne, and M. Casey, *Giving birth in the dark: City hospitals still failing to provide legally mandated maternity information* (New York: Public Advocate for the City of New York, December 2006), *public advocategotbaum.com/policy/documents/GivingBirthInTheDark12.06.pdf,* accessed 5 August 2013.

21. H.L. Melender, "What constitutes a good childbirth? A qualitative study of pregnant Finnish women," *Journal of Midwifery & Women's Health* 51, no. 5 (2006): 331-9; J.R. Wax, A. Cartin, M.G. Pinette, and J. Blackstone, "Patient choice cesarean—The Maine experience," *Birth* 32, no. 25 (2005): 203–6.

22. Ibid.; M.H. Tsui et al., "Maternal fear associated with pregnancy and childbirth in Hong Kong Chinese women," *Women Health* 44, no. 4 (2006): 79-92.

23. "Dissatisfaction with the birthing experience has been shown to be as high as 7 percent in select samples and in this study 14 percent of the women reported being unsatisfied with the process and said that in their next birth they would find a different provider and/or environment for birth." U. Waldenström, I. Hildingsson, C. Rubertsson, and I. Rådestad, "A negative birth experience: prevalence and risk factors in a national sample," *Birth* 31, no. 1 (March 2004): 17-27.

24. J.N. Mozingo, M.W. Davis, S.P. Thomas, and P.G. Droppleman, " 'I felt violated': Women's experience of childbirth-associated anger," *MCN: The American Journal of Maternal/Child Nursing* 27, no. 6 (2002): 342-8.

25. R.M. Albuquerque, J.G. Cecatti, E.E. Hardy, and A. Faúndes, "Causes and factors associated with reproductive-age female mortality in Recife, Brazil," *Cadernos de Sau'de Publica* 14, no. 1 (30 March 1988): 41-8.

26. J. Weaver, "Caesarean section and maternal choices," *Fetal and Maternal Medicine Review* 15 (2004): 1-25.

27. P. Slovic, "Perception of risk," *Science* 236, no. 4799 (17 April 1987): 280-5.

28. A. Alaszewski, "A Person-Centred Approach to Communicating Risk," *PLoS Medicine* 2, no. 2 (2005): e41.

29. Ibid.

30. Slovic, see note 27 above.

31. M. Simon, S.M. Houghton, and K. Aquino, "Cognitive biases, risk perception, and venture formation," *Journal of Business Venturing* 15, no. 2 (March 2000): 113-34.

32. R.E. Nisbett, *Rules for Reasoning* (Hillsdale, N.J.: Lawrence Erlbaum, 1980); R.E. Nisbett and L.D. Ross, *Human Inference: Strategies and Shortcomings of Social Judgment* (Englewood Cliffs, N.J.: Prentice-Hall, 1980).

33. Simon, Houghton, and Aquino, see note 31 above.

34. M. Cedergren, "Maternal Morbid Obesity and the Risk of Adverse Pregnancy Outcome," *Obstetrics & Gynecology* 103, no. 2 (2004): 219-24; R. Johanson, M. Newburn, and A. Macfarlane, "Has the medicalisation of childbirth gone too far?" *BMJ* 324, no. 7342 (2002): 892.

35. F.A Chervenak et al., "Planned home birth: the professional responsibility response," *American Journal of Obstetrics & Gynecology* 208, no. 1 (January 2013): 31-8.

Exceptional Deliveries: Home Births as Ethical Anomalies in American Obstetrics

Claire L. Wendland

ABSTRACT

Interest in home birth appears to be growing among American women, and most obstetricians can expect to encounter patients who are considering home birth. In 2011, the American College of Obstetricians and Gynecologists (ACOG) issued an opinion statement intended to guide obstetricians in responding to such patients.

In this article, I examine the ACOG statement in light of the historical and contemporary clinical realities surrounding home birth in the United States, an examination guided in part by my own experiences as an obstetrician in home-birth-friendly and home-birth-unfriendly medical milieus. Comparison with other guidelines indicates that ACOG treats home birth as an ethical exception: comparable evidence leads to strikingly different recommendations in the case of home birth and the case of trial of labor following a prior cesarean; and ACOG treats other controversial issues that involve similar ethical questions quite differently.

By casting the provision of information as not just the primary but the sole ethical responsibility of the obstetrician, ACOG statement obviates obstetricians' responsibilities to provide appropriate clinical care and to make the safest possible clinical environment for those mothers who choose home birth and for their newborns. What, on its face, seems to be a statement of respect for women's autonomy, implicitly authorizes behaviors that unethically restrain truly autonomous choices. Obstetricians need not attend home births, I argue. Our ethical duties do, however, oblige us (1) to refer clients to skilled clinicians who will attend home birth, (2) to continue respectful antenatal care for those women choosing home birth, (3) to provide appropriate consultation to home birth attendants, and (4) to ensure that transfers of care are smooth and nonpunitive.

I support home birth, and during my years in the clinical practice of obstetrics backed up home birth midwives. Nonetheless, I have never attended a home birth, and do not wish to. The idea of it is uncomfortable—even alarming. During training, I came to see my task as an obstetrician as detecting complications that attend labor, birth, and the early postpartum period: intervening to avert them where possible, and treating them when prevention isn't possible. The job relies heavily on a set of diagnostic and therapeutic tools that includes my senses and extends to ultrasound, an array of medications, various monitors (for the fetal heart rate, for uterine contractions, for oxygen saturation, et cetera), banked blood products, and the operating room. The diagnostic tools are powerful. The therapeutic tools can be lifesaving. The hospital in which those tools are at the ready is a safe, comfortable, and familiar arena where I feel in control. Outside it I would feel at sea at a birth, bored because there is little for me to do, and afraid because if I detected a real or possible complication I would be incapable of intervening in any but the most rudimentary ways while

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awaiting ambulance transport. Boredom and fear are a bad combination.

Many obstetricians, like me, fear home birth. We do not want to attend it, and we do not want to feel responsible for it. Trying to be conscientious clinicians, however, we attempt to set our gut-level responses aside and to make reasoned and ethically sound clinical judgments that draw on medical evidence. Many of us seek assistance from our professional society, the American College of Obstetricians and Gynecologists (ACOG), as we look for paths through the confusing thickets of medical science, epidemiological research, and ethical argumentation. ACOG publishes a range of influential guidelines for its fellows, who include 90 percent of America's board-certified obstetricians. These guidelines typically summarize available research, outline the state of contemporary medical knowledge on a given topic, and guide recommended actions. ACOG's "practice bulletins" and "committee opinions" are intended to guide obstetricians as we face the many dilemmas of practice.

In this article I consider ACOG's committee opinion on home birth, issued in 2011, in light of ACOG's published guidance on other comparable practices. This examination draws upon the recent literature on home birth. It is guided as well by my own aversion to attending home birth, and my experiences in home-birth-friendly and home-birth-unfriendly medical milieus. I argue that ACOG treats home birth as an ethical exception: that is, as a special case for which neither scientific evidence nor ethical principles translate into action in the usual way. Interrogation of these anomalies leads to an alternative vision of ethical practice in relation to home birth. It also leads to a question that deserves reflection: does home birth's anomalous status relate—at least in part—to the complex swirl of feelings engendered in some of us when women reject our obstetrical technologies and embrace birth locations outside of our comfort zone?

HOME BIRTH: NATIONAL TRENDS AND INSTITUTIONAL RESPONSES

Rates of home birth in the United States began a long slow decline in the late 19th century. By 1969, home birth rates were under 1 percent, where they have remained ever since.[1] Within that tiny fraction of American births, the waxing and waning of home birth has attracted considerable attention from mainstream obstetrics.

In the late 1970s, the proportion of out-of-hospital births unexpectedly doubled. That resurgence in some ways presaged today's. It sprang from a diverse range of other cultural shifts including consumer rights, religious movements, feminism, and the back-to-the-land movement. The burst of interest in home birth was part of a historical moment in which a visible minority rejected mainstream social practices in favor of experiences deemed more authentic—or more natural. Absolute numbers of home births remained very small, but the response from mainstream obstetrics was strong. Obstetricians and gynecologists in some communities collectively decided to eject from antenatal care any woman expressing interest in home birth.[2] In 1977 Warren Pearse, then president of ACOG, equated home birth with child abuse.[3] Other obstetricians agreed, claiming that women who delivered at home were selfishly putting their own interests ahead of their children's safety. In the subsequent decades, as the broader cultural changes subsided, so did home birth.

Today interest in home birth is surging again. Media attention to the trend means that home birth looms large in the cultural imagination even though—once again—the actual numbers are small. The incidence of home birth has risen by almost a third in the past five years, but planned home births still remain less than 1 percent of all American births.[4] The causes of this recent rise are poorly understood. Dissatisfaction with impersonal and high-intervention hospital care appears to be one issue, but factors driving the increase in home births are probably multiple, and are beyond the scope of this article. One consequence is that obstetricians in most parts of the country can now expect to encounter patients who are considering home birth.

In an apparent response to the growing public attention to birth choices, ACOG in 2011 issued a committee opinion intended to guide obstetricians whose patients ask about home birth.[5] "Committee Opinion No. 476: Planned Home Birth" notes that little high-quality evidence about the effects of birth location on maternal and neonatal outcomes is available, in the absence of adequate randomized controlled trials.[6] It then briefly summarizes some of the research that *is* available, primarily drawing on a recent meta-analysis of observational studies comparing home and hospital birth. The statement is brief and clear. Identically worded abstracts at the beginning and the end sum up its analysis and recommendations:

> Although the Committee on Obstetric Practice believes that hospitals and birthing centers are the safest setting for birth, it respects the right of a woman to make a medically informed deci-

sion about delivery. Women inquiring about planned home birth should be informed of its risks and benefits based on recent evidence. Specifically, they should be informed that although the absolute risk may be low, planned home birth is associated with a twofold to threefold increased risk of neonatal death when compared with planned hospital birth. Importantly, women should be informed that the appropriate selection of candidates for home birth; the availability of a certified nurse-midwife, certified midwife, or physician practicing within an integrated and regulated health system; ready access to consultation; and assurance of safe and timely transport to nearby hospitals are critical to reducing perinatal mortality rates and achieving favorable home birth outcomes.[7]

The ACOG Opinion in Broader Perspective

Examining ACOG's committee opinion in a broader context helps us to see the ways in which home birth appears anomalous. We can see the bigger picture in two ways: first, by comparing the committee opinion on home birth to home birth guidelines produced by other professional organizations or proposed by other influential obstetrician-gynecologists; second, by comparing the committee opinion on home birth to committee opinions on other topics.

Professional societies other than ACOG reach variable conclusions about home birth. The American College of Nurse Midwives supports home birth, as does the American Public Health Association (APHA). Several European and Canadian professional societies for obstetrician-gynecologists pronounce home birth to be a reasonable alternative for low-risk women, and one that does not endanger their newborns. The United Kingdom's Royal College of Obstetrics and Gynaecology (RCOG), for instance, issued a joint statement with the Royal College of Midwives noting that "there is no reason why home birth should not be offered to women at low risk of complications and it may confer considerable benefits for them and their families. There is ample evidence showing that labouring at home increases a woman's likelihood of a birth that is both satisfying and safe, with implications for her health and that of her baby."[8] Meanwhile, the American Medical Association and the American Academy of Pediatrics, like ACOG, recommend against home birth. The point here is not to evaluate who is right and who is wrong; the point is simply to show that professional bodies drawing on the same evidence can reach very different conclusions.

The range of published medical recommendations on home birth is even wider once we move beyond professional societies. On one end of the spectrum, a few obstetricians contend that we are ethically bound to support women's choices to deliver at home. Plante, for instance, decries ACOG's opposition to home birth as part of a broader trend in obstetrics that undermines the rights and power of women: "the industrialization of birth may have consequences which actually decrease women's autonomy and strip choices away."[9]

Others contend that the ACOG statement does not go far enough to discourage home birth. Chervenak and colleagues argue that the lack of integration between home and hospital births means home birth in the United States should be presumed to be much more dangerous than it is in Europe and Canada.[10] Obstetricians may not ethically participate in home births for this reason, they argue. Pregnant women should not elect home birth either, for they are "ethically obligated to authorize and accept" any intervention that is "reliably expected to benefit the fetal patient and child it is expected to become."[11] In the event that a pregnant woman does *not* accept her ethical obligation to hospital birth, her obstetrician must provide directive counseling reminding her of her duties and the risks to which she is exposing her fetus.

In a recent article, Chervenak and colleagues elaborate on these contentions, proposing that a "professional responsibility approach" to ethics mandates that obstetricians not only counsel their patients against home birth, but refrain from participation in research on home birth, from attendance at home birth, and from advocacy for its availability.[12] After summing up what they interpret as the risks of planning a home birth, the authors conclude that "to regard these risks as ethically acceptable relegates pregnant and fetal patients who experience adverse events to the category of collateral damage. It is antithetical to professional responsibility to intentionally assign any damaged or dead pregnant, fetal, or neonatal patient to this category, even if the number is small. Obstetricians who nonetheless do so should be subject to peer review and justifiably incur professional liability and sanction from state medical boards. Policy makers who do so should be exposed as threats to professional responsibility."[13] I will return to this article later, for it provides clues to how and why home birth becomes ethically exceptional for obstetricians.

ACOG, Chervenak and his coauthors, RCOG, the APHA, and others are all reading from the same body of evidence to produce what they clearly consider

to be evidence-backed recommendations for ethical practice. How can the same evidence support such different conclusions?

HOME BIRTH AS EXCEPTION: READING THE EVIDENCE

The evidence cited to support practice guidelines has already passed many hurdles. A potential research question must be asked; it must be feasible to study; it must be funded or otherwise supported; the study must be completed; it must be published; that publication must circulate; and some piece(s) of that circulated evidence must be selected for inclusion. At every point in this chain, some potential evidence is lost. Which evidence disappears, which evidence becomes visible, and which evidence is never considered at all is far from random, as social scientists have pointed out.[14] A study on home birth research in the Netherlands concludes that "mainstream obstetric science follows mainstream obstetric practice,"[15] rather than vice versa, and that the *evidence* of evidence-based medicine "must be seen as a rhetorical justification for whatever particular groups were going to do anyway."[16] As Rooks notes, some practices that are well-supported by evidence (for instance, provision of continuous labor support by a doula—a person trained to provide nonmedical support during childbirth) are seldom applied in obstetrics, while practices with little or no evidentiary support (for example, nasopharyngeal suction of the newborn, continuous fetal monitoring in low-risk labors) become routinized.[17]

What evidence *should* one use to evaluate hospital and home birth in the most evenhanded way? The question has no simple answer. Prospective randomized studies are generally considered ideal evidence in medicine. It has not proven feasible, and may be unethical, to randomize low-risk women to home or hospital birth—the single published randomized trial to report outcomes enrolled only 11 women.[18] Retrospective analyses using birth certificate data, a common way to compare births that happened within and outside of the hospital, can be misleading. Complications that develop during labors at home and necessitate intrapartum transfer will be counted as hospital births, making home birth look safer and hospital birth more dangerous. But birth certificate data also lump together planned home births that are attended by skilled midwives or doctors with unintentional and unassisted out-of-hospital births, thus making home birth look *more* dangerous than it might otherwise. The best comparisons place *planned* home birth against *planned* hospital birth—no matter where the birth ultimately took place—for women with similar risk profiles. Even then, it is difficult (perhaps impossible) to factor in the varying credentials and skills of birth attendants in either location, the patterns of risk screening used, and the factors that may have led women to select home or hospital birth in the first place.

Given these multiple ambiguities, how did ACOG actually mobilize evidence on home birth? The committee opinion emphasized some evidence, converting it into guidelines. It presented other evidence without emphasis. Some potential evidence did not appear at all. A closer look is instructive, because it allows us to compare the evidence used in the case of home birth with the evidence used in other cases.

What Evidence Mattered?

The ACOG's counseling recommendations drew from a single controversial meta-analysis—known informally as the Wax study—that synthesized results from prior research on home birth across North America, Western Europe, and Australia.[19] Table 1 depicts the Wax study's data as presented in the ACOG opinion. The study's most controversial claim was that planned home birth at least doubled, and possibly tripled, neonatal deaths: ACOG highlighted that contentious claim as the centerpiece of obstetricians' counseling for patients considering home birth. The Wax meta-analysis and its claim of increased neonatal deaths in home birth settings drew serious methodological critique from epidemiologists on mathematical, research design, statistical, and analytical grounds; [20] its inclusion of data from unplanned, unattended out-of-hospital births in the "planned home birth" category especially troubled many critics, casting doubt on its conclusions regarding neonatal deaths. The full text of the ACOG's committee opinion also mentioned two additional large cohort studies that showed *lower* risks for neonates in planned home birth.[21] The statement did not summarize those studies' results, did not include them in the abstract, table, or conclusion, and did not recommend that obstetricians cite data from them when advising their patients.

Some data on short-term outcomes for mothers did appear in the statement, but their absence from the conclusion, abstract, or recommendations suggests that they were considered of secondary importance. The table presented in the committee opinion provided estimates of operative vaginal delivery (that is, delivery using forceps or vacuum), ce-

sarean section, lacerations that extend into the anal sphincter or anal canal itself, and maternal infection. All of these were two to four times as likely for women who planned hospital birth as for those who planned home birth. ACOG did not address these differences in its counseling guidelines, although many women would likely find them relevant to their birth choices.

In fact, because the Wax meta-analysis combined studies from the 1950s to the present and included research from countries with different patterns of in-hospital intervention, some findings look very different than the findings that ACOG's doctors and their patients might expect. Most strikingly, the 9.3 percent rate of cesarean in planned hospital birth is, even by conservative estimates, well less than half of what a low-risk American woman planning a hospital birth today could anticipate. ACOG's statement did not draw attention to this anomaly, or to the still markedly increased maternal interventions and complications attending hospital birth. The committee framed only the possibly increased neonatal death rates as critical to counseling patients.

What Evidence Didn't Matter?

Several kinds of evidence that could have been brought to the discussion were absent from the ACOG statement. Maternal psychosocial concerns, effects on the mother-newborn dyad, and long-term outcomes for women went unaddressed. No evidence on costs was cited.

Maternal subjectivity related to planned birth location, whether the sense of power and control that women often report with home birth and sometimes with hospital birth,[22] the distress that can attend an unmedicated labor at home, or the pain of recovery after a large abdominal incision in the hospital, did not appear in the ACOG's statement.

Implications for the maternal-newborn dyad, such as effects on bonding and breast-feeding, also went unmentioned. Research reports positive effects of planned home birth for breast-feeding,[23] and ACOG itself supports breast-feeding.[24]

Long-term outcomes of planned birth location were not addressed at any point in the statement. The substantially lower cesarean rate among those planning home birth, for instance, might have allowed consideration of long-term postoperative complications—or of pelvic floor dysfunction and urinary incontinence, which some researchers believe can be prevented with cesarean. Long-term implications of cesarean are an increasing focus of concern, one that has prompted a recent consensus statement aimed at reducing the use of primary cesarean.[25] As ACOG has recognized in other contexts, the cumulative morbidity and mortality of repeat cesareans are alarming enough that avoiding an initial cesarean is prudent. In this statement, however, implications for subsequent pregnancies or later life went unaddressed.

Because long-term outcomes of birth planning were invisible, the implication was that they were unimportant: home birth was not considered as a source of long-term health protection—or hospital birth as a potential source of long-term harm—for women. ACOG's omission of long-term outcomes in this statement contrasts with its fore grounding of those outcomes in other committee opinions and practice bulletins.

Other Cases, Other Uses of Evidence

Comparing ACOG's use of evidence in its 2011 guidelines on home birth to its use of evidence in other guidelines indicates that its treatment of home birth is anomalous. In table 2, I summarize the kinds of evidence presented in guidelines on non-indi-

TABLE 1. Planned home birth versus planned hospital births, as presented in the ACOG's Committee Opinion

	Planned home birth	Planned hospital birth	Odds ratio	95% confidence interval
Neonatal death—all newborns	2.0/1000	0.9/1000	2.0	1.2 - 3.3
Neonatal death—non-anomalous	1.5/1000	0.4/1000	2.9	1.3 - 6.2
Episiotomy	7.0%	10.4%	0.26	0.24 - 0.28
Operative vaginal delivery	3.5%	10.2%	0.26	0.24 - 0.28
Cesarean delivery	5.0%	9.3%	0.42	0.39 - 0.45
Third- or fourth-degree laceration	1.2%	2.5%	0.38	0.33 - 0.45
Maternal infection	0.7%	2.6%	0.27	0.19 - 0.39

Source: "ACOG Committee Opinion No. 476: Planned home birth," *Obstetrics & Gynecology* 117 (2011): 425-80, table 1.

cated surgery and on trial of labor after cesarean section (TOLAC).[26] ACOG takes some kinds of evidence as self-evidently critical to ethical decision making in the case of home birth, when it is not in other contexts. The guidelines on TOLAC are especially instructive because the cases are in critical respects parallel: for both home birth and TOLAC, weak and contested evidence suggests an increase in neonatal deaths and a decrease in maternal complications.

Labor after a cesarean differs from ordinary labor. Most of the time, a "trial of labor," as it is known, will end in an unremarkable vaginal birth. In rare but potentially catastrophic cases, the uterus ruptures along the old scar line. Certain common obstetrical interventions (such as various forms of labor induction) raise this risk. Fear of uterine rupture led to the old dictum, "once a cesarean, always a cesarean." Recognition of its rarity, and growing concern with the consequences of repeat cesarean section, meant both trials of labor and successful vaginal birth after cesarean increased through the 1980s and 1990s. Since the turn of the millennium, however, obstetrical practice has shifted rapidly back toward repeat cesarean. Institutional barriers now limit the availability of TOLAC in many settings: that is, pregnant women with a prior cesarean section, even those who are very likely to have uneventful deliveries, are permitted no alternative to surgery if they choose to deliver in hospital. Recent surveys indicate that about a third of hospitals and about half of obstetricians will not make TOLAC available at all.[27]

TOLAC is particularly interesting to consider because the evidence is comparable in two key respects to that on home birth: its overall problematic quality, and a balance between clear maternal benefit and a possible increase in neonatal death with both TOLAC and home birth. In both cases, the data on risk and safety are voluminous, mixed, and frustratingly ambiguous on many important points. In both cases, randomized controlled trials are not available and probably never will be. When compared to its alternative course of action, TOLAC combines a two- to threefold risk of neonatal death (by low- to moderate-grade evidence) with a substantially lower risk of medical complications for the mother.[28] For the sake of argument, if we were to accept the Wax study's problematic conclusions about home birth and neonatal death (as ACOG does, although I and many others do not), home birth too appears to combine a two- to threefold risk of neonatal death with a substantially lower risk of medical complications for the mother.

The data are, in important respects, similar, then. Yet ACOG's use of evidence to guide action is quite different in the case of TOLAC than it is for home birth. ACOG's practice bulletin on vaginal birth after cesarean notes and reiterates the call by the National Institutes of Health to make trial of labor available for all women who desire it. While the bulletin does not mandate that individual obstetricians attend trial of labor after cesarean, it notes that obstetricians who are too uncomfortable to do so should refer patients to obstetricians who will, and that "health care providers and insurance carriers should do all they can to facilitate transfer of care or comanagement in support of a desired TOLAC, and such plans should be initiated early in the course of antenatal care."[29]

The ACOG's statement on trial of labor also reminds obstetricians to consider the institutional and structural issues that are at work in their communities. After listing several decision-making strategies intended to guide counseling in rural and remote

TABLE 2. Evidence mentioned in ACOG guidelines

	Trial of labor after cesarean	Maternal-request cesarean delivery	Home birth
Perinatal outcomes			
Neonatal/perinatal death	X	X	X
Neonatal morbidity	X	X	
Maternal outcomes			
Short-term morbidity	X	X	X
Long-term morbidity	X	X	
Maternal death	X	X	X
Maternal-newborn dyad			
Breast feeding		X*	

* Mentioned under the heading of short-term maternal benefits.

areas where transfer may be difficult, the bulletin cautions that "none of the principles, options, or processes outlined here should be used by centers, health care providers, or insurers to avoid appropriate efforts to provide the recommended resources to make TOLAC as safe as possible for those who choose this option."[30]

Compare ACOG's support for *lowering* institutional and economic barriers to safe TOLAC with the organization's push to *erect* institutional and economic barriers to home birth. In 2008, the American Medical Association (AMA) voted to endorse ACOG's earlier policy statement that the safest place for birth was in the hospital, and tasked a subcommittee with drafting model legislation to that end.[31] This effort was widely interpreted among home birth practitioners as a foray by ACOG and the AMA into outlawing home birth. It may have been intended too to pre-empt moves to improve insurance coverage or ensure government payment for out-of-hospital births, in an era in which cost-effectiveness arguments carry increasing weight. In sum, comparison with the case of TOLAC indicates that the use of evidence to guide practice (and policy) on home birth is anomalous.

HOME BIRTH AS EXCEPTION: CHOOSING ETHICAL ACTIONS

The ways that ACOG draws on ethical principles to recommend action in the case of home birth are also anomalous, when compared to the organization's approaches to other controversial questions facing obstetrician-gynecologists. To understand what sorts of professional responses ACOG construes as ethical and unethical, we must first consider the range of actions that practitioners and institutions may take.

Treatment of Home Birth in Practice

The prevalence of home birth varies dramatically from state to state and community to community.[32] These variations probably reflect such factors as availability and legality of out-of-hospital birth attendants, coverage of home birth by insurers, and varying social and cultural perceptions of the desirability of home and hospital birth. Responses to home birth among hospital-based clinicians are also highly variable, both within and among communities.

A description of two places I know well—call them A and B—illustrates some of this contrast. A and B are points on a broader spectrum of response to home birth, neither at an extreme. Both are medium-sized university towns in states in which midwifery practice outside the hospital is legal. Both feature busy labor and delivery units at more than one hospital, and competition between the hospitals to attract pregnant women. Town A has certified nurse midwives (CNMs) who provide a substantial proportion of the obstetrical care at more than one hospital, and who participate extensively in the training of medical students, family medicine residents, and residents in obstetrics and gynecology. Town B's sole hospital-based CNM group appears more embattled. Its midwives are not integrated into the medical student or resident training programs. In both towns, a handful of out-of-hospital midwives attend home births; town B also has a freestanding birth center. In both towns, I know some physicians who believe that home birth is safe for carefully selected women and others who believe it is reckless and dangerous. The institutional patterns of response in the two places, however, have been quite different.

In town A, obstetricians decided decades ago that the persistence of home birth gave them reasons to make hospital transfer protocols and perinatal consultation networks seamless. A local perinatologist worked with community midwives to draft consultation and transfer arrangements that were later refined in practice. Despite personnel changes among the midwives and the doctors involved over the years, the university's perinatal team continues to provide backup and consultation for the local out-of-hospital midwives. Home birth midwives may send their clients in for screening visits with doctors in the obstetrics clinic. These women then return to their midwives, with the knowledge that a referral relationship is in place should it be wanted or needed later.

In town B, no formal relationship among obstetricians and home birth providers is in place. Obstetricians in one of the largest hospital practices say that they've been warned that anyone who backs up a home birth midwife will be fired from the practice. It is not uncommon in this community for physicians to refuse to provide continued antenatal care for a patient who plans a home birth; in many cases that means the patient's insurance cannot be used to help pay for routine antenatal labs, ultrasounds, or other indicated testing. Town B's out-of-hospital midwives cannot find a local obstetrician to evaluate their protocols or to review difficult cases or poor outcomes with them. In the absence of any formalized relationship, there are no smooth, rehearsed, stable protocols for transport or referral. Transports from out of hospital land with the on-call team, en-

suring fragmented care and setting the stage for conflict.

In print, even the obstetricians who are most strongly opposed to home birth take pains to note that respectful and compassionate care for women transferred to the hospital after beginning labor at home is crucial—in part because fear of poor treatment at the hospital can contribute to unsafe delays in necessary transfers, with harmful consequences for mothers and their infants; and in part because compassionate and respectful care is always an ethical obligation. In practice, transfers can be punitive for birth attendants and for their patients, who may be upbraided for attempting delivery at home or left to linger in the emergency room for hours.[33]

Institutional responses and professional practices like these have ethical weight. Discontinuation of antenatal care for women choosing home birth; refusal to consult with, refer to, or review problem cases with home birth providers—at the very least, these actions seem likely to threaten the safety of pregnant women who do elect home birth. What do guidelines have to say about practices like these? In the case of the ACOG's home birth statement, nothing. Obstetricians would not discontinue antenatal care for a woman who continued to smoke or to drink alcohol during pregnancy. Such action would be considered an unethical patient abandonment, even though tobacco and alcohol use carry well-documented harm to the fetus, and tobacco use increases late fetal and neonatal deaths. In these cases, we consider that our patients' best interest requires us to stay involved. Why does a plan to give birth at home alter the ethical calculus so dramatically?

Treatment of Home Birth in Ethical Guidelines

On the grounds of women's autonomy, ACOG has strongly resisted legislative restrictions on reproductive choice, even when that resistance costs obstetricians politically or financially. The organization has consistently held that "respect for autonomy has particular importance in reproductive decision making, which involves private, personal, often pivotal decisions about sexuality and childbearing."[34] The guidelines summarized in table 3 show that the ACOG takes autonomy seriously. In its responses to other controversial practices—requests for TOLAC (discussed above), requests for pregnancy termination, requests for non-indicated surgeries including maternal-request cesarean section—ACOG considers structural and institutional factors that make autonomous choices possible. This is the second important way in which home birth is anomalous: in all cases but home birth, the simple provision of information is not thought to be enough. Respect for women's autonomous choices obliges physicians to additional action.

Termination of pregnancy is unquestionably far more dangerous to a fetus than is home birth. Yet ACOG reminds physicians who will not themselves provide abortions that they should provide safe and timely referrals to those who will, and in fact should consider locating their practices in communities that have abortion providers. "Those who choose the profession of medicine," notes the statement, "are bound by special *fiduciary duties*, which oblige physicians to act in good faith to protect patients' health—particularly to the extent that patients' health interests conflict with physicians' personal or self-interest."[35] Physicians' beliefs about the moral status of a fetus vary, ACOG acknowledges, but such beliefs "do not justify an erosion of clinicians' basic obligations to protect the safety of women who are, primarily and unarguably, their patients."[36] The statement also asks doctors to take care to distinguish issues of self-interest from those of conscience, given the controversy that surrounds abortion and the unpleasantness of the procedure. The key prin-

TABLE 3. Duties of obstetricians in the ACOG literature on selected controversies

	Pregnancy termination	Non-indicated surgery	Home birth*	TOLAC**
Must the OB/GYN perform/attend?	No	No	No	No
Must the OB/GYN refer/facilitate access?	Yes	Yes	No	Yes
Must the OB/GYN promote availability and safety in the community?	Yes	No mention	No	Yes

* While the committee opinion on home birth itself does not address these questions, a separate press release from the ACOG makes clear that the organization does not support individuals who attend home birth or who advocate for it. ACOG Office of Communications, "ACOG Statement on Home Births," news release, 6 January 2008

** Trial of labor after previous cesarian

ciple here seems to be that women's rights to privacy and bodily integrity outweigh their physicians' discomfort with, distaste for—*or even moral misgivings about*—the procedure.

Maternal-request cesarean section is also controversial in obstetrics. Like home birth, non-indicated cesarean requested by a pregnant patient represents a very small proportion of American births.[37] Like home birth, it has a symbolic importance well beyond the raw numbers. In a recently issued committee opinion,[38] ACOG outlined the available evidence on short- and long-term consequences of maternal-request cesarean for mother and newborn, considered psychosocial concerns and fears that might lead a woman to request a surgical delivery with no medical indication, and proposed restrictions on when and for whom non-indicated cesarean was reasonable. The committee cautioned that women's requests for cesarean should not be prompted by fears about intrapartum pain relief: obstetricians should ensure that support in labor, intrapartum anesthesia, and childbirth education should all be in place. The statement did not comment specifically on whether obstetricians could ethically refuse to provide surgery without a medical indication, nor whether they were obliged to refer patients who requested such surgery. Another committee opinion more broadly addressing "surgery and patient choice"[39] made clear that physicians were *not* obligated to provide procedures they considered to be unindicated or unproven, but concluded that if a patient brought up such a request and she and her physician could not reach an agreement on it, that the most appropriate course for the obstetrician was to provide a referral to another healthcare provider.

This comparison of recommendations again reveals the unique status of home birth. Guidelines on TOLAC, on pregnancy termination, and on non-indicated surgery all place women's autonomy in the foreground. They all propose that physicians who sincerely believe these procedures are harmful to women and their infants should still ensure access to these options by referral. They all discuss institution-level constraints on women's autonomous choices. For TOLAC and for pregnancy termination, obstetricians are reminded that they must also consider such constraints at the community level, and do their best to make sure safe and accessible care is available for women residing in their communities. *Only home birth is different.* The ACOG's statement on home birth does mention institutional issues, but raises them as if physicians had no part in creating and perpetuating them: women raising the topic of home birth "should be informed that . . . the availability of a certified nurse-midwife, certified midwife, or physician practicing within an integrated and regulated health system; ready access to consultation; and assurance of safe and timely transport to nearby hospitals are critical" to a safe home birth.[40] While physicians are obligated to *inform* women of these structural necessities for safe home birth, they are not asked at any point in the statement to *make them possible*. The contrast is striking.

By casting the provision of information about neonatal outcomes as not just the primary but the *sole* ethical responsibility of the obstetrician, the ACOG's home-birth statement obviates obstetricians' responsibilities to provide appropriate clinical care and to make the safest possible clinical environment for mothers and newborns. What, on its face, seems to be a statement of respect for women's autonomy, implicitly authorizes behaviors that unethically restrain truly autonomous choices. ACOG's fellows may refuse to consult with other professionals who offer home birth, may eject women electing home birth from their practice, may refuse to consider hospital privileges for even the most highly qualified physicians and nurse-midwives who attend births at home, and may block all efforts to get home-birth attendants educated, credentialed, regulated, integrated into health networks, or effectively peer reviewed. Practices like these, although they endanger women and their newborns, are not called out as unethical. They are instead tacitly approved.

WHY IS HOME BIRTH SO EXCEPTIONAL?

This review has argued (1) that similar evidence leads to strikingly different recommendations in the case of home birth and the case of TOLAC, and (2) that ACOG treats cases that appear to involve comparable ethical questions quite differently than it treats home birth. Why is home birth such an exception? Is this anomalous treatment solely about litigation risk? Is it about competition with midwives for market share, as some out-of-hospital birth advocates suggest? Is it about patriarchal control, as others suspect?

While these are not implausible explanations, both personal experience and review of the literature suggest to me that inadequately interrogated and strongly felt emotions are likely playing a role. Conversation gets very heated very fast when the topic of home birth arises in a roomful of obstetricians. Trolling for comments by doctors in online home birth forums will give one a sense of how inflamma-

tory the discussion can be. Researchers have found extremely strong responses to home birth among physicians. A team of sociologists, in interviews with doctors whom midwives had identified as friendly to low-technology births, found that even these select physicians "equate home birth with the direst of consequences—life threatening situations for babies and mothers, and they equate hospital birth with safety for babies and mothers."[41] Some of their interviewees referred to women who attempted home birth and their attendants as irresponsible, irrational, or idiots. A recent literature review concluded that obstetricians commonly claim that home birth is far more dangerous than the evidence suggests, characterize it as unspeakably reckless, and swap stories of home birth "train wrecks."[42] Signs of strong emotional responses to home birth appear in the material I reviewed while researching this article: the use of emotionally resonant anecdote as if it were evidence is striking, as is the often-contemptuous descriptions of women who elect home birth.

This tone of disdain is anomalous in the ACOG's literature. A 2008 press release from ACOG included this comment on women who chose home birth: "Childbirth decisions should not be dictated or influenced by what's fashionable, trendy, or the latest cause célèbre."[43] ACOG characterized such fashion-following mothers as selfish: their "main goal should be a healthy and safe outcome for both mother and baby. Choosing to deliver a baby at home, however, is to place the process of giving birth over the goal of having a healthy baby."[44] I have found no other statements by ACOG that take this tone, dismissive and patronizing at best, disdainful at worst, about our patients: not patients seeking non-indicated surgeries, not patients asking about currently fashionable and potentially dangerous cosmetic "vaginal rejuvenation," not patients using tobacco, alcohol, or narcotics that may cause serious fetal and neonatal harm—or death.

Contempt is not the only emotion at work. Some of the most negative responses to planned home birth suggest fear as an underlying issue when they cite frightening anecdotes as evidence. The Chervenak article concludes that "planned home birth does not meet current standards for patient safety in obstetrics, as illustrated by the recent preventable death from hemorrhage of an Australian midwife homebirth advocate while attempting delivery of her own child at home."[45] It seems unlikely that Chervenak and his colleagues would accept at face value a parallel statement, say, "planned hospital birth does not meet current standards for patient safety in obstetrics, as illustrated by the recent sepsis and quadruple amputation of a previously healthy laboring woman in a Florida hospital, or the recent fatal cardiopulmonary arrest of a laboring woman during epidural placement in Michigan."[46] Terrible and factual as these anecdotes are, they do not constitute the kind of epidemiological evidence needed to drive policy. The same article earlier appeals to clinicians to recall their own encounters with the devastating effects of delayed transport, an appeal guaranteed to bring unpleasant memories and elevated heart rates to readers—but not to bring clarity to the discussion at hand.

What are evocations of contempt and fear doing in the ostensibly scientific literature? Eliciting emotional responses is rhetorically potent. ACOG has asked its fellows to submit stories of their experiences with intrapartum or postpartum transfers of patients who had planned home birth.[47] These anonymous stories, not a product of valid sampling, not confirmed with chart reviews, and not arrayed against any comparison group, cannot serve as medical science. Were ACOG interested in assessing outcomes of home birth transfers systematically, the approach to data collection would have to be structured differently. But disaster stories *can* serve to claim clinical and moral authority.[48]

Might strong negative emotional responses to home birth—whether they spring from fear of being involved in "train wrecks," from grief over the birth-related tragedies we have experienced in our practice lives, or from anger at women who claim their own authority over birth, and reject ours—be distorting our professional ethics? As Martha Nussbaum has pointed out, the failure to interrogate one's emotional response to a situation or (especially) to a person can be ethically problematic. Emotions like disgust, grief, and fear can be clues that moral judgments are happening, Nussbaum argues. If we investigate them carefully, we may uncover unconscious biases that pervert ethical judgment.[49]

Most of the time, birth is amazing and wonderful. Sometimes it is terrible. In many years of work in hospitals inside and outside of the United States, I have seen women and their newborns die. Some died for want of obstetrical intervention, some despite it, and some because of it. Sometimes we just don't know why they died. Their deaths are seared on my memory in a way that the (much, much more common) beautiful births are not. I am sympathetic to those of my fellow obstetricians who—perhaps with similar deaths in mind—cannot bear to think about birth outside the range of our technologies. When that aversion leads us to dismiss those who

do choose home birth as reckless and selfish, and supports the institutional treatment of home birth attendants as pariahs, we close down an important conversation before it gets started. We may also endanger the very people we would protect.

CONCLUSION

What might happen if obstetricians stopped treating home birth as an anomaly and started treating it the way we do other controversial topics? What if we collectively recognized the problems with evidence in the case of home and hospital birth, interrogated and honestly acknowledged our own emotional responses to birth that happens outside our hands and our hospitals, and reconsidered our obligations to our patients—our patients as moral agents who, like us, are struggling to do the right thing? What if we took seriously, rather than dismissing contemptuously, the forces that drive women away from hospitals?

Home birth advocates could ethically argue that home birth should be safe, legal, and accessible to any appropriately low-risk woman who elects it. Home birth opponents could ethically work to make home birth rare: rare *not* because the evidence has been distorted to scare women, rare *not* because structural barriers have been erected to bar women from access to home births with skilled and safe providers, but rare because hospital birth has been re-envisioned with the laboring woman at its center. Those who oppose home birth and those who support it could agree that *to be safest*, home birth should be integrated into a system in which transfer and consultation are readily available, not feared, and never punitive. We could go a step further, and recognize that *to be safest*, hospital delivery should not mean giving up the possibility of a low-intervention, high-support, respectful and woman-centered birth—even for sick women.[50]

Clinicians who attend births in homes and hospitals could treat one another as colleagues and not as straw men. The naïve "birth works" proponent who believes birth to be inherently risk-free and who cannot recognize a disaster in progress, like the malevolent physician-automaton who sees in every birth the opportunity for lucrative and high-technology interventions on women's docile bodies, is a powerful rhetorical figure. How many of us know actual midwives or doctors who fit either stereotype? Surely if they exist at all they are vanishingly rare. (In my own practice lifetime, working with obstetricians and midwives in a range of contexts, I can think of only one candidate—decades ago.) Their persistence in our minds and our rhetoric contributes to a polarized discourse that does our patients a disservice.

If the only choice is to be afraid of birth in the hospital or to be afraid of birth at home, everyone loses: sick women, well women, families, newborns, and even obstetricians and midwives. This polarization can have especially tragic consequences at the interface between home and hospital, when necessary transfer is delayed too long, or when a home birth client who does get transferred is punished in the hospital for her "reckless" behavior. ACOG's treatment of home birth as something so frightening that it must be treated differently than all other reproductive choices contributes to a discourse that makes birth less safe, not more.

Obstetricians need not attend home births. One could argue that we should not, in fact. Most of us are probably not possessed of the patience or the many other skills necessary to attend home birth well: I know I am not. We are also much too expensive to be used in such time-consuming work as sitting through a long labor with a single woman. The provision of information that ACOG selects for us does not discharge our ethical obligations in reference to home birth, however, any more than it would in reference to pregnancy termination, to non-indicated cesarean section, or to trial of labor after cesarean. Comparison with those cases suggests that our ethical duties oblige us also to reflect and to act. We should examine the evidence with an understanding that the data will likely continue to be imperfect, and with careful attention to our own deep-seated emotions and the biases they may engender. To ensure our patients' safety and respect their autonomy, we should also refer women who desire home birth to the best providers who will offer it; continue respectful antenatal care when sought by those women choosing home birth; provide appropriate consultation to skilled home birth clinicians; and ensure that transfers are smooth and nonpunitive.

NOTES

1. M. MacDorman, T.J. Mathews, and E. Declercq, "Home births in the United States, 1990-2009," *National Center for Health Statistics Data Brief No. 84*, (Hyattsville, Md.: National Center for Health Statistics, 2012).

2. W. Kline, "Birth in transition: modern midwifery and the controversy over home birth," paper presented at Medical History and Bioethics Colloquium, University of Wisconsin-Madison, 2 November 2012.

3. W.H. Pearse, "The home birth crisis," *Bulletin of the American College of Obstetricians and Gynecologists*,

July 1977.

4. MacDorman, Mathews, and Declercq, see note 1 above.

5. "ACOG Committee Opinion No. 476: Planned home birth," *Obstetrics & Gynecology* 117 (2011): 425-80.

6. Ibid., 425.

7. Ibid., 425 and 427.

8. Royal College of Obstetrics and Gynaecology / Royal College of Midwives, "Joint Statement No. 2 April 2007," *http://www.rcog.org.uk/womens-health/clinical-guidance/home-births,* accessed 17 December 2012.

9. L.A. Plante, "Mommy, what did you do in the industrial revolution? Meditations on the rising cesarean rate," *International Journal of Feminist Approaches to Bioethics* 2, no.1 (2009): 140-7, 140..

10. F.A. Chervenak, L.B. McCullough, and B. Arabin, "Obstetric ethics: an essential dimension of planned home birth," *American Journal of Obstetrics & Gynecology* 117 (2011): 1183-7.

11. Ibid., 1184.

12. F. Chervenak et al, "Planned home birth: the professional responsibility response," *American Journal of Obstetrics & Gynecology* 208, no. 1 (January 2013): 31-8.

13. Ibid., 3-4. Exactly what to "do so" covers here is unclear, even though the consequences of "doing so" are to be dire. Whether that vagueness is an accident of bad writing or an attempt to be maximally threatening to home birth advocates is not clear. The article displays a similar lack of clarity in defining what exactly "the professional responsibility approach" to ethics is, and whether it differs from a paternalism that understands pregnant women not as moral agents, but as fetal containers.

14. For an overview of this research, see H. Lambert and E.A. Bogdan-Lovis, "Introduction: Gift horse or trojan horse: social science perspectives on evidence-based health care," *Social Science & Medicine* 62 (2006): 2613-20.

15. R.G. DeVries, "The warp of evidence-based medicine: lessons from Dutch maternity care," *International Journal of Health Services* 34 (2004): 595-623, 617.

16. Ibid., 619. Evidence on home birth in the U.S. fits this pattern of rhetorical justification. As each new home birth study appears, it is torn apart by detractors and promoted as definitive by supporters. Once one is aware of the key players involved, the positions taken are mostly predictable.

17. J.P. Rooks, "Evidence-based practice and its application to childbirth care for low-risk women," *Journal of Nurse Midwifery* 44 (1999): 355-69.

18. See O. Olsen and J.A. Clausen, "Planned hospital birth versus planned home birth," *Cochrane Database of Systematic Reviews* issue 9 (2012).

19. J.R. Wax et al., "Maternal and newborn outcomes in planned home birth vs planned hospital births: a metaanalysis." *American Journal of Obstetrics & Gynecology* 2010;203:243.e1-8.

20. See, e.g., M.J.N.C. Keirse, "Home birth: gone away, gone astray, and here to stay," *Birth* 37 (2010): 341-6.

21. P.A. Janssen et al., "Outcomes of planned home birth with registered midwife versus planned hospital birth with midwife or physician," *Canadian Medical Association Journal* 181 (2009): 377-83; E.K. Hutton, A.H. Reitsma, and K. Kaufman, "Outcomes associated with planned home and planned hospital births in low-risk women attended by midwives in Ontario, Canada, 2003-2006: A retrospective cohort study," *Birth* 36 (2009): 180-9.

22. P.E. Klassen, "Sacred maternities and postbiomedical bodies: Religion and nature in contemporary home birth," *Signs: Journal of Women in Culture and Society* 26 (2001): 775-809; R. Davis-Floyd,"The technocratic body: American childbirth as cultural expression," *Social Science & Medicine* 38 (1994): 1125-40.

23. G. Chamberlain, A. Wraight, and P. Crowley, *Home Births: The Report of the 1994 Confidential Enquiry by the National Birthday Trust Fund* (New York: Parthenon Publishing, 1997).

24. "ACOG Committee Opinion #361: Breastfeeding: maternal and infant aspects," *Obstetrics & Gynecology* 109 (2007): 479-80.

25. C.Y. Spong et al., "Preventing the first cesarean delivery: Summary of a joint Eunice Kennedy Shriver National Institute of Child Health and Human Development, Society for Maternal-Fetal Medicine, and American College of Obstetricians and Gynecologists Workshop," *Obstetrics & Gynecology* 120 (2012): 1181-93.

26. "ACOG Practice Bulletin #115: Vaginal Birth After Previous Cesarean Delivery," *Obstetrics & Gynecology* 116 (2010): 450-63.

27. "National Institutes of Health Consensus Development Conference Statement: Vaginal Birth After Cesarean: New Insights. March 8-10, 2010," *Obstetrics & Gynecology* 115 (2010): 1279-95.

28. The NIH statement cited above provides a neonatal mortality rate (death in first 28 days of life) of 1.1 per 1,000 for trial of labor and 0.5 per 1,000 for elective repeat cesarean. Perinatal mortality (death between 20 weeks gestation and 28 days of life) is 1.3 per 1,000 for TOLAC, compared to 0.5 per 1,000 for elective repeat cesarean. See note 27 above, p. 1286.

29. "ACOG Practice Bulletin #115," see note 26 above, p. 457.

30. Ibid.

31. The original resolution is available for download at *http://elephantcircle.net/wp-content/uploads/2011/01/AMA-Resolution-205.pdf,* accessed 14 December 2012. A brief discussion of the resolution and response from the perspective of a health law expert is available at *http://lawprofessors.typepad.com/healthlawprof_blog/2008/06/ama—home-birt.html,* accessed 14 December 2012.

32. See note 1 above.

33. R.E. Davis-Floyd, "Home Birth Emergencies in the United States: The Trouble with Transport," in *Unhealthy Health Policy: A Critical Anthropological Examination*, ed. A Castro and M. Singer (New York: Alta Mira Press, 2004).

34. "ACOG Committee Opinion #385: The limits of conscientious refusal in reproductive medicine," *Obstetrics & Gynecology* 110 (2007): 1203-8.

35. Ibid., 1205.

36. Ibid., 1205.

37. Earlier estimates suggesting that cesarean section on maternal request accounted for 2.5 percent of all American births are now thought to be substantially too high, artifacts of working from hospital billing data. A large nationally representative study suggests a rate of about 1 percent: see, E.R. Declercq et al., *Listening to Mothers II: Report of the Second National U.S. Survey of Women's Childbearing Experiences* (New York: Childbirth Connection, 2006).

38. "ACOG Committee Opinion #559: Cesarean delivery on maternal request," *Obstetrics & Gynecology* 121 (2013): 904-7.

39. "ACOG Committee Opinion #395: Surgery and patient choice," *Obstetrics & Gynecology* 111 (2008): 243-7.

40. "ACOG Committee Opinion No. 476," see note 5 above, p. 425.

41. W. Simonds, B.K. Rothman, and B.M. Norman, *Laboring On: Birth in Transition in the United States* (New York: Routledge, 2007), 240.

42. R.A.S. Freeze, "Attitudes towards home birth in the USA," *Expert Reviews in Obstetrics and Gynecology* 5, no. 3 (2010): 283-99.

43. ACOG Office of Communications, "ACOG Statement on Home Births," news release, 6 January 2008.

44. Ibid.

45. Chervenak et al., 2013, see note 12 above, p. 5.

46. R. Stutzman, "Sanford woman settles lawsuit in flesh-eating bacteria case," *Orlando Sentinel,* 18 May 2009; M. Yoshida, H. Matsuda, I. Fukuda, and K. Furuya, "Sudden cardiac arrest during cesarian section due to epifual anaesthesia using ropivacaine: a case report," *Archives of Gynecology and Obstetrics* 277, no. 1 (2008): 91-4.

47. The author, an ACOG fellow, received emailed solicitations for stories of unsuccessful home birth attempts from the state and national organizations.

48. P.A. Kaufert, J. O'Neil, "Analysis of a dialogue on risks in childbirth: Clinicians, epidemiologists, and Inuit women," in *Knowledge, Power & Practice: The Anthropology of Medicine and Everyday Life*, ed. S. Lindenbaum and M. Lock (Berkeley, Calif.: University of California Press, 1993).

49. M. Nussbaum, *Upheavals of Thought: The Intelligence of Emotions* (New York: Cambridge University Press, 2001).

50. A.D. Lyerly, "Ethics and 'normal birth,' " *Birth* 39, no. 4 (2012): 3515-7.

Being Safe: Making the Decision to Have a Planned Home Birth in the United States

Judith A. Lothian

ABSTRACT

Although there is evidence that supports the safety of planned home birth for healthy women, less than 1 percent of women in the United States choose to have their baby at home. An ethnographic study of the experience of planned home birth provided rich descriptions of women's experiences planning, preparing for, and having a home birth. This article describes findings related to how women make the decision to have a planned home birth. For these women, *being safe* emerged as central in making the decision. For them, *being safe* included four factors: avoiding technological birth interventions, knowing the midwife and the midwife knowing them, feeling comfortable and protected at home, and knowing that backup hospital medical care was accessible if needed.

INTRODUCTION

Although there is no evidence that hospital birth is safer than planned home birth for healthy, low-risk pregnant women,[1] and there are an increasing number of well-designed observational studies that support the safety of planned home birth for healthy women,[2] less than 1 percent of women in the U.S. plan a home birth.[3] There is increased interest in home birth in the U.S., as reflected in a small but significant increase in planned home birth.[4] How do women in the U.S. make the decision to have a planned home birth? As part of a larger ethnographic study of the experience of planned home birth for women and their midwives, women described their experience of making the decision to have a planned home birth. This article presents these findings.

BACKGROUND

High quality observational studies suggest that for healthy, low-risk women, home birth is a safe alternative to planned hospital birth.[5] When compared to hospital birth, for planned home birth there are fewer interventions, no cesareans, and similar outcomes for mothers and babies.[6] Most of these studies were done in countries where, unlike the U.S., home birth is well integrated into the maternity care system. Of these studies, only three were conducted in North America.[7] The North American studies suggest no differences in outcomes for mother or baby when compared with hospital birth, but there were significantly fewer interventions in

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the planned home birth groups. A study by the Birthplace in England Collaborative Study Group found that, in the planned home birth group, there was a small but significant increase in risk for first-time mothers, although the risk was extremely low for both first and subsequent births.[8] In contrast, a large cohort study in the Netherlands found that first-time mothers were not more likely to experience complications, and that there were fewer maternal complications in all women giving birth at home, compared to those giving birth in the hospital.[9] A meta-analysis of home birth by Wax and colleagues identified fewer interventions with similar outcomes for mothers and babies, as well as less incidence of prematurity and low-birth-weight infants in the home birth group, compared to the hospital group.[10] The Wax study found an increase in risk of neonatal mortality for home birth compared to hospital birth; however, the largest study included in the meta-analysis did not differentiate between planned and unplanned home birth.[11] This could account for the finding of a small but significant increased risk of neonatal mortality in the home birth group.

The American Congress of Obstetricians and Gynecologists (ACOG) traditionally has opposed planned home birth, although its latest statement, a committee opinion on planned home birth, notes support for women's right to choose a birth setting, including the home.[12] Most recently, in a commentary on the ACOG committee opinion on planned home birth, obstetricians were advised to provide women who express an interest in home birth with evidence-based recommendations against it, to refuse to participate in home birth, and to not take part in any randomized control trials of home birth.[13] Suggesting that there is evidence that recommends against planned home birth for healthy, low-risk women reflects the ongoing opposition of the ACOG to planned home birth, rather than the growing body of research that supports the safety of home birth for some women.[14]

The home birth debate is taking place amidst increasing concern with the rising cesarean rate and intervention-intensive maternity care in the U.S. Two documents, *Evidence-Based Maternity Care: What It Is and What It Can Achieve,* and "2020 Vision for a High-Quality, High-Value Maternity Care System," highlight problems with the current maternity care system and suggest possible solutions.[15] Consumer advocacy efforts reflected in the documentary film *The Business of Being Born,* and in journalist Jennifer Block's *Pushed: The Painful Truth about Childbirth and Modern Maternity Care,* have received media attention, raising awareness of problems with the current U.S. maternity care; they challenge the current maternity care system and argue for the safety of planned home birth.[16]

The 2011 Home Birth Consensus Summit examined the status of planned home birth in the larger context of U.S. maternity care.[17] Stakeholders, including midwives, nurses, childbirth educators, doulas (labor support professionals), childbearing women, obstetricians, pediatricians, lawyers, insurance providers, and lobbyists met over a three-day period and ultimately developed nine common ground statements. One of those statements affirmed stakeholders' commitment to women's right to make an informed decision, free of pressure, coercion, or punishment, about the birth setting.

There is little research examining how women go about making such an important decision. How do women in the U.S. make the decision to have a planned home birth within the context of the current U.S. maternity care system and the controversies that swirl around it?

METHODOLOGY

Qualitative research aims to describe the lived experience of study participants, to understand the world from their point of view.[18] The aim of this ethnographic study was to describe the experience of home birth in the U.S., including the decision to have a planned home birth. Informal interviews and participant observation were used to obtain rich descriptions of women's experiences choosing, planning, and then having a home birth. In our initial meeting, I asked each woman to share how she came to the decision to have a planned home birth. Over the course of our months together, the women then elaborated on their decision to have a planned home birth.

Researchers' Stances

In qualitative research, it is essential to present the lens through which the researcher views the world, specifically what values, biases, and assumptions might influence what is observed and heard and how this information is then interpreted.[19] This is important because it helps the reader to judge the credibility of the findings.

For several decades I have advocated for normal physiologic birth and women's right to make autonomous decisions related to giving birth. My interest in home birth emerged out of concern for the increasing medicalization of childbirth in the U.S. and related restrictions on women's childbirth choices, including the choice of birth setting. I have

written about home birth as a possible way to protect and support normal, physiologic birth. However, when I began the study, I had been present at only one home birth, the birth of a granddaughter. I had no knowledge of the experience of home birth for women, including how women, other than my daughter, come to the decision to have a planned home birth.

To reduce the chance that my values and beliefs would unduly influence either data collection or analysis, I kept a journal, and during my time with the women in this study I constantly reminded myself to listen carefully, to not make judgments, and to keep my views, as much as possible, to myself. I asked myself, "How are my beliefs influencing what I hear, observe, and interpret what I hear and see?" The findings of this study reflect my ongoing efforts to reduce bias.

Recruitment

Women learned of the study from their home birth midwife and those interested in participating contacted me directly. The eligibility requirement was that the woman was planning a home birth. I met the women only after they had made that decision.

Ethical Considerations

The research design was reviewed and approved by the Institutional Review Board at Seton Hall University. The women were assured that their names would not be used and no one would be able to connect them to the findings. Specific permission was obtained for audio-recording the interviews. The women were assured of confidentiality and reminded that they could withdraw from the study at any time. None of the participants did so.

As a way to equalize the power in our relationship, I met the women in their home. I reminded the women over and over that I was learning from them, that they were the experts. These strategies increased women's trust and ultimately the quality of the data.

The research was supported by a Seton Hall University Research Council Grant.

Data Collection

For this ethnographic study I informally interviewed and observed 13 women during their pregnancy and after the birth of their baby. The informal interviews typically lasted two to three hours. Often their husband, their other children, and occasionally their mother were present. Each woman participated in informal interviews at least twice and as many as four times. I was also a participant observer at prenatal and postpartum midwifery visits and for some of the births.

As part of the larger study, one of my first questions was, "How did you decide to have a planned home birth?" Although this discussion was a significant part of the first visit, over the course of my time with the women they kept coming back to it, adding additional insight about their decision.

Interviews were audio-recorded and transcribed. Observations were carefully recorded soon after each meeting. I added participants until data saturation was reached and no new information was being learned.

Data Analysis

The data were analyzed using standard qualitative techniques—developing codes, categories, and themes.[20] To insure trustworthiness of both the data and the analysis, I followed Lincoln and Guba's guidelines.[21] Prolonged engagement and persistent observation, essentially spending long periods of time with the participants, increased the trustworthiness of the data; I met with the women over a period of several months, and each meeting lasted several hours. Lincoln and Guba describe using multiple types of data (triangulation of data) to enhance trustworthiness: I was a participant observer in addition to participating in informal interviews. Member checking also enhances trustworthiness. I regularly asked the women, "Am I getting this right?" or "Is this what you mean?" At the completion of the study, I checked back with the women and each assured me that the findings accurately reflected her experience. I kept an audit trail in which methodological and analytic decisions were carefully recorded. All of these activities contribute to the trustworthiness of the research and insure that the findings are "worth paying attention to."[22]

THE WOMEN: A SNAPSHOT

Seven of the women were experienced mothers. Two of these women had a previous home birth, and three women had a birthing center birth with a midwife. One woman had a prior cesarean and one woman had a traumatic hospital birth experience. Six of the women were expecting their first baby, and all but one of these women began the pregnancy under the care of an obstetrician.

Of the 13 women, 11 were Caucasian and two were Hispanic. One woman was French and had recently moved to the U.S. One woman was English and had lived in the U.S. for a number of years. All

of the women were married or had a partner. All of the women lived in a very large city in the northeast U.S. Their care was provided by five different certified nurse midwives (CNMs). One of the home birth midwives also assisted hospital births. The women were actresses (three), teachers (two), artists (two), writer (one), PhD student in sociology (one), nurse-midwife (one), and doulas and childbirth educators (three).

The women described themselves as "usually pretty mainstream," "not hippy dippy at all," and "I couldn't be less crunchy granola." One woman said, "I wanted to be able to do the normal, mainstream thing but it just wasn't happening." One of the doulas shared, "Before I was a doula I would have thought having a home birth was insane." All of the women had a mother who had a "natural birth," and two of them had a home birth (one in England, the other in France). The women shared that their mother told positive birth stories through their childhood. One woman said, "My mother always talks about birth being an amazing experience."

Unlike many, if not most women, these women were not fearful of birth, nor particularly concerned with pain. One woman said, "We've been programmed to be fearful and scared, but I say bring it on. Since when do I have to be afraid of pain?" Two women who had given birth before had negative experiences, of varying degree, with obstetricians, nurses, and hospitals. These women made the decision to have a planned home birth early in pregnancy and had thought about it before becoming pregnant. One of these women had trained as a doula and childbirth educator after her traumatic first birth experience as a way to help other women. Two women had a previous home birth and three women had a previous birthing center birth, one in a free-standing birthing center and two at a hospital based birthing center. Each of these women was confident that a planned home birth would be even more satisfying than their birth center birth, and they looked forward to the midwife coming to them instead of having to go to the midwife.

Five of the six women expecting a first baby confirmed the pregnancy with a gynecologist and initially intended to have standard maternity care. Their negative experiences early in pregnancy were pivotal in looking at other options.

One women expecting her first baby changed from an obstetrician to a home birth midwife early in the first trimester after becoming dissatisfied with her obstetrician. The four other women made a decision between 18 and 24 weeks, several after changing obstetricians first and being equally dissatisfied.

SETTING THE STAGE

Three themes emerged that set the stage for making the decision to have a planned home birth: "I want a natural birth," "I am increasingly worried about interventions," "I want to know who is taking care of me, and equally I want them to know me."

"I Want a Natural Birth"

All of the women were brought up with a positive birth story, and this probably contributed to their wanting a natural birth. All of the women described what they meant by natural birth in several ways: "letting labor and birth happen with no medical interventions," "the way nature designed birth to be," "no medication," "going into labor on my own." Four of the women had extensive knowledge and experience with birth. All of the women expressed the belief that "Pregnancy is not an illness. My body was created to give birth." One woman said, "I mean women have been doing this from the beginning of time."

The women were not naïve about the pain of childbirth, but were not fearful and believed they could manage the pain. One woman said, "I want to see how I do with it. This is the best pain." Another said, "I'm thirsty for going through the experience." This statement captured every woman's excited and confident anticipation of her labor and birth.

"I Am Increasingly Worried about Interventions"

All of the women were worried about intervention-intensive labor and birth in the hospital. They were all concerned with the rising cesarean rate. They believed that the likelihood of those interventions endangered their ability to have a natural birth. The following quotes provide some insight into the women's experiences and reactions.

One woman shared, "So I asked [my obstetrician] about epidurals and she looked at me and said, 'You'd have novocaine for a root canal wouldn't you?' I thought, "She doesn't get that this is bringing a new life into the world." Another woman said, "Every time I set foot in the doctor's office I worried about something being wrong." Others said, "I don't want to go into labor thinking of the odds." "Why am I having all those tests done? It makes no sense." "Why are you messing with me? Why are you putting stuff in my body to make things go faster? My body knows how to give birth." "We talked about pitocin and epidurals. I felt like she would do what she wanted. It made me feel nervous."

It is important to note that these women wanted information and were extremely knowledgeable

about pregnancy and childbirth. What they did not want was care that was focused on risks, or that involved the routine use of interventions. They did not want prenatal care that expects trouble.

Most of the women had seen the documentary *The Business of Being Born* (*BOBB*),[23] and this confirmed their fears about obstetric interventions. One woman summed it up: "We watched the *BOBB* and I was horrified at the idea of being in a hospital. It scared me." Another woman said, related to her initial plans to use an obstetrician and go to a hospital, "This all feels so uncomfortable, so wrong, so unsafe." One woman was exploring the option of changing obstetricians and hospitals and went on a hospital tour. "So, I went on a hospital tour and I said to myself 'I don't feel safe here,' anyone can come in and out and I'm not in control.'"

The women were not just concerned with routine intervention during labor and birth. They knew that one intervention could lead to another and that a cascade of interventions could lead to a cesarean.[24] They all described routine interventions as increasing risk for themselves and for their baby.

The women also talked about not having control in the hospital, and not being able to have choices in the hospital. They believed that routine interventions and the cascade of interventions would keep them from being able to do what they needed to do to have a natural birth. One woman said, "I began to realize that the chances of me having a natural birth in the hospital were slim."

"I Want to Know Who Is Taking Care of Me, and Equally I Want Them to Know Me"

For most of the women, negative experiences with obstetricians and hospitals helped shape their desire for being cared for by someone who knew them and who respected their choices. Several of the women's stories sum up the women's experiences in early pregnancy at obstetrician visits: "The last visit she came in and sat at the desk and looked at the computer and she had her back to me. The only time she looked at me was when she got up to leave. I thought, 'I'm not coming back.' " "It was clear she was really rushed and had no interest in any sort of 'me' issue, just make sure the baby is alive and the blood pressure is ok and get me out of the office."

The women shared these thoughts about the maternity care they had experienced: "I always felt bad, like these guys don't care if I'm here or not. No personal attention or concern." "You're on a conveyer belt. That doesn't feel safe." "They never spoke to me like a person."

One woman said, "I consider myself independent, a tough lady, but in those offices I, like I lose all my power. I want to cry instead of standing up and saying I don't want you to do that to me."

For these women, the obstetricians' behaviors conveyed a lack of respect, and a lack of caring about each woman's unique and special experience of pregnancy and birth. The women in this study wanted a careprovider who knew them, respected them, and cared about their experience. The women also believed that the outcome of respect for them would be a willingness to let them make decisions. Several women's words sum up what they wanted: "I want to know who will be with me." "I want to know my midwife well enough to trust her." "I want to make my own decisions." When the women talked about making their own decisions, it was always in the context of the supportive, collaborative, and trusting relationship they had with their midwife. It is also important to note that these women were extremely knowledgeable about childbirth and evidence-based maternity care.

MAKING THE DECISION: A MULTI-STEP PROCESS

Once the women realized that what they wanted would most likely not be possible in a hospital with an obstetrician, they began to do extensive research to understand their options. Making the decision to have a planned home birth involved a complex, multi-step process: learning more about birth and home birth, finding a home birth midwife, resolving doubts, and then protecting their decision.

Learning about Birth and Home Birth

The decision to have a planned home birth involved methodical searching for information, and talking to those knowledgeable about birth choices. From the beginning of pregnancy, the women read and visited internet sites to learn about birth. For the women who started out on a traditional path, the reality of their early experiences with obstetricians and hospitals motivated them to look into home birth. Three women who had given birth with a midwife either in the hospital or at a birthing center also did extensive research related to home birth.

The women read a wide variety of pregnancy and childbirth books and were drawn to the books that championed natural birth, like *Ina May's Guide to Childbirth*[25] and *The Official Lamaze Guide: Giving Birth with Confidence*.[26] One woman read 17 books and said, "I feel more prepared for birthing than I ever felt for anything." Many of the women

toured hospitals and birthing centers and saw *The Business of Being Born.*

Most of the women knew other women who had given birth at home, although they had not spoken to these women about the experience until they began considering having a planned home birth. One woman's husband was born at home and one woman had a cousin, a nurse, who had a home birth. Once they started seriously considering home birth, they searched the internet and reached out to blogs and websites about home birth. Several women went to information nights sponsored by a birth advocacy organization, and had the opportunity to speak with women who had had a planned home birth.

While still considering a hospital birth, several of the women interviewed a doula. The doulas were an important source of information for these women. One doula shared, "From what you say you want in labor it seems to me that you might consider a planned home birth." After doing some reading early in pregnancy, one woman said, "From everything we've read, what happens in the hospital just doesn't make sense. Like being on your back to push."

Finding a Midwife

Once the women decided that planned home birth might be an option, they searched websites and blogs and spoke with other women about finding a midwife. Finding a home birth midwife in many ways "sealed the deal." All of the women interviewed at least two midwives, with the exception of the woman who was a midwife herself. She had made a decision about her home birth midwife while still a student midwife. Husbands were actively involved in the decision making, although all of the men deferred to their wife for the final decision. The husbands were present at the initial interviews and supported both the decision to have a planned home birth and the choice of midwife.

The interviews included a discussion of prenatal care, as well as the birth. All of the women appreciated that prenatal care would be provided at home. One woman said, "The home birth is bigger than where my baby will be born. It is about the kind of care that I get."

According to all of the women, in a long interview with their midwife (at least two hours as compared to a typical obstetrician visit of 15 minutes), they began the process of getting to know each other. They were not rushed. The midwife listened carefully to what they wanted and to their concerns.

All of the women communicated that they "clicked" with the midwife they chose. One woman said, "When I met her it just felt right. She's down to earth but not crunchy." Another said, "She has a warmth, a slowness, so I thought 'She's the one.' " And another woman shared, "She answered our questions in language we could understand, very straightforward."

The women did not want their midwife to be indifferent or to take their experience for granted. One woman said, "The midwife is as excited as we are," and another woman said, "She loves what she does and it shows."

Women questioned the midwives about their level of experience and about risks and "what ifs." The husbands were especially concerned about this. One woman said, "I asked her 'what if' . . . and she knows just what to do." Another woman said, "She told us all the emergency equipment she brings to every birth and that made us feel better." And another woman said, "She was a good combination of super experience, like years in the ER [emergency room]. I feel safe with her and she is so down to earth." One husband said, "Just because she [the midwife] doesn't operate like a doctor doesn't mean she doesn't know things . . . she is extremely knowledgeable."

Resolving Doubts

All of the women, with the exception of the midwife and one doula/childbirth educator, had doubts initially about home birth, and this popped up intermittently for the women over the course of their pregnancy. Safety was important to these women. They were well aware that childbirth might entail possible risks for them and their baby. All of the women acknowledged that complications might occur. One of the women knew someone who had lost her baby during a home birth and also knew several women who had been transferred to the hospital during labor.

Reading and talking to other women helped resolve their doubts. Talking with their midwife, initially and then at each prenatal visit, also helped the women resolve lingering doubts. The women knew they were healthy and low risk, and so met the criteria for a planned home birth. Their concerns were about problems arising during the labor and birth. Many of the women specifically questioned their midwife about different scenarios. What if I can't bear the pain? What if I go into labor preterm? The midwives answered their questions and reassured them by clearly explaining what they would do, including, if necessary, bringing them to the hospital. One husband, an EMT [emergency medical technician] himself, said, "Our midwife has all the emergency equipment EMTs have." One of the

woman said, "I asked my midwife, 'what if,' and she said, if that happens we will deal with it." Another woman said, "She is always so reassuring but I trust that if there is anything to worry about she'd let me know that too."

All of the women lived within a mile of a hospital and most were close to a major medical center. Several women noted that "women have a misconception that if you need medical attention in a hospital you won't get it."

Protecting the Decision

Once the decision was made, all of the women were careful about whom to tell about their decision to have a planned home birth. Most of the women said that once the decision was made, they did not want to be challenged. Another shared that she wanted to protect herself from "bad energy." All of the women discussed whom they shared their decision with and whom they did not. One woman summed up what all of the women actually did: "We don't tell anyone who will give us a hard time about our decision . . . we just get a sense from people."

Some of the women had family members who were persuaded to think differently and came to support the decision wholeheartedly. One father who was born at home himself was doubtful at first. He and his wife watched *The Business of Being Born* and changed their minds. One husband's father was a physician. After talking with his son and daughter-in-law he said, "I think you have made the best decision for yourselves." One husband told his mother, who was concerned about the decision, "It's not your decision. We know more than you do. It is closed for discussion." One woman said, "I didn't tell half my siblings. They'd just worry. And give me grief." The need to protect the decision was in many ways a response to the societal belief that the hospital is the safest place to have a baby and that an obstetrician provides safer care than a midwife.

Over the course of their pregnancy, the women became increasingly sure of and pleased with their decision and confident in their ability to give birth. One woman said, "Birth is as safe as life gets." She elaborated that life involves risk that we try to reduce, but can never eliminate entirely, and that birth is no different. Another woman said, "A friend told me I must be so brave to have a home birth. I told her it's going to the hospital that requires bravery."

BEING SAFE

The meta-theme that emerged and that captured the essence of these women's decision to have a planned home birth was *being safe. Being safe* for these women included: avoiding routine interventions, knowing the midwife and the midwife knowing them, feeling comfortable and protected at home, and knowing that hospital medical care was available if needed. These women did not have a naïve or unrealistic view of risk. The factors they associated with being safe were evidence based and associated with reducing risk and enhancing safety for healthy women.[27]

Avoiding Interventions

All of the women viewed routine medical interventions as increasing risk for herself and for her baby. One woman articulated it this way: "That's the thing about the safety of the hospital. I didn't want those things that could lead to the domino effect." The women were concerned about cesarean and epidurals: "Women don't see cesarean as being unsafe. I do." And, "I'm not comfortable with the risk of an epidural." Another woman said, "At home I avoid all the hospital issues. Like them taking my baby to the nursery and giving formula."

In fact, the concerns the women expressed about intervention-intensive maternity care reflected a knowledge of evidence-based maternity care. They knew that it was safer for mother and baby to be together from the moment of birth. They knew that the epidural had unintended effects on labor, prolonging labor and increasing the risk of requiring an instrument delivery, and that the medications used in the epidural affect the baby. They knew that inducing labor disrupts the process of labor and increases the risk of needing a cesarean. They knew that cesareans were not without risk for themselves and their baby.[28] Because they were knowledgeable about the effects of interventions, all of the women believed that "The risk factors are just less at home."

"I Want to Know the Midwife and I Want the Midwife to Know Me"

Knowing the midwife and the midwife knowing them was important to these women. Right from the interview visit, all of the women reported that, when the midwife came, "It's all about me and my world." All of the women described their midwives similarly: "She listens. I can call her anytime." "I never worry that I am bothering her." "It's the encouragement. I know I'm getting her and that's it. I like that she is going to be the one and I know her." "She's always so reassuring." "We sit down and she lets me start to talk and that is the springboard for discussion. It's like a conversation and that's what I like." "It's so relaxing to be with her."

Out of this interaction, the women and midwives got to know each other, and, in doing so, developed a mutual respect that encouraged the women's autonomy. One woman's comment about testing was typical: "Testing? We talk and she says do what you want, it's entirely up to you." "It's wonderful to have freedom and respect." At the same time, the women had a deep respect for the midwives' knowledge.

Research suggests that women share concerns and information more honestly when there is mutual respect and a nonjudgmental approach.[29] This was certainly true for the women in this study. One husband said, "It's easy to be vulnerable at home. To express concerns. To talk about things you wouldn't in a doctor's office. With someone you know and who knows you."

The women in this study believed that knowing each other well and the mutual trust that developed enhanced safety.

Feeling Comfortable and Protected at Home

These women agreed that "I feel like I can do what I have to do and do it better at home." They understood both the process of normal physiologic birth and its challenges. They also understood what would help them in labor. The women agreed that at home, "I can do what I want. I'm in charge at home," and "There are no rules at home." The women knew they could eat and drink, move freely, use a birthing pool, and that "Everyone at the birth will be someone I want to touch me and encourage me." The women also identified that being at home allowed them to be protected from negative people. The women shared, "I don't feel like justifying my wishes and decisions to dozens of different people." The women had heard stories from women who wanted to walk in labor, wanted several support people, or wanted a water birth, and were either told they couldn't do it, or were pressured by nurses or physicians to "follow the hospital rules." These women were relieved to not have to fight to have the kind of labor and birth they wanted.

In summary, the women expressed, "I feel safe and protected at home." The privacy, freedom to move and find comfort in a wide variety of ways, and the excellent labor support that women had in their own home facilitated the normal physiologic process of birth and reduced the risk of needing interventions, thus enhancing safety.[30]

Knowing that Hospital Medical Care Is Available, If Needed

Right from the beginning and over the course of the pregnancy, the women developed an understanding of how and when their midwife would provide medical care. They knew that their midwife was knowledgeable, skilled, and experienced. They knew that the midwife brought equipment to handle emergencies to every birth. They knew that if complications arose that required hospital medical care, that it was available, and they would be transferred. One woman said, "I know if the pain gets too brutal I can go to the hospital." Another woman said, when discussing the possibility of complications, "The hospital is only two blocks away." One husband said, "We have a backup plan. We're not waiting until the last minute. If there's a problem, we're going to know and we'll address it immediately." The women also trusted the midwife's clinical judgment. "If she says we need to go to the hospital I will trust her completely."

DISCUSSION

The findings of this study are consistent with survey findings from the United Kingdom, the Netherlands, Australia, Sweden, and Canada and qualitative research done in the U.S. that describe women's reasons for choosing a planned home birth.[31] These studies identified that women who choose home birth want to avoid unnecessary interventions, have a relationship with their careprovider, make decisions for themselves, and have control over the birth environment. Many of the women in these studies also reported negative experiences with careproviders and hospitals. The findings of this study do not support the belief that women do not carefully consider risk or that they make the decision to have a planned home birth for selfish reasons.[32] The women in this study carefully considered their options and chose home birth specifically to increase safety for themselves and their baby.

Compared to previous research, this research provides a deeper understanding of both the process of making the decision to have a planned home birth and women's evidence-based understanding of safety. These women believed that safety was enhanced by avoiding interventions, feeling secure and comfortable in their own home, knowing the midwife and the midwife knowing them, and knowing that medical care was accessible if required. The women had an understanding of safety that went well beyond "medical" safety. They believed that feeling, and being, emotionally and physically protected and avoiding unnecessary interventions were important components of safety. They also believed that their relationship with their midwife increased safety. There is an increasing body of research that

suggests that these factors do indeed increase safety.[33]

Although these women had the opportunity to choose to have a planned home birth, they had to protect themselves from judgment by family, friends, and obstetricians who, if given the chance, would pressure them to do things differently. These findings are consistent with the findings in Cheney's qualitative study, "Homebirth as Systems-Challenging Praxis: Knowledge, Power, and Intimacy in the Birthplace."[34] The women in this study were able to protect themselves from pressure by avoiding anyone they thought would oppose their decision, by not telling family and friends unless they believed they would be supportive, and by developing support networks of women and families who had a home birth themselves. The need to do this raises ethical concerns. Why the intense pressure to give birth in a hospital with an obstetrician in the face of evidence that the alternative, planned home birth, is safe for healthy women? This deserves further study.

A U.S. survey of women's childbearing experiences, *Listening to Mothers II,* found that one-third of women who planned a hospital birth wanted a natural birth, yet less than 2 percent of the women had a birth characterized by the evidence-based care practices that facilitate normal physiologic birth, including allowing labor to start on its own, freedom of movement, labor support, keeping mother and baby together, giving birth in a non-supine position, and avoiding routine interventions.[35] The *Listening to Mothers II* findings suggest that the women in this study were correct in believing that giving birth at home would increase their chances of having a natural birth by avoiding hospital interventions like induction and restrictions on movement. The women also knew that at home they would be cared for only by people who cared about them and with whom they felt safe and protected. They knew that their baby would stay with them.

The women in this study questioned how safe U.S. hospitals are. In making the decision to have a planned home birth, the women opted out of a maternity care system that is neither evidence based nor respectful. Their decision to have a planned home birth challenges a maternity care system that needs to be challenged. Torres and de Vries describe the bioethics of current maternity care and highlight the ethical issues of non-evidence-based interventions and assembly line care.[36] "The bioethics of birth is about more than helping mothers accommodate to the existing system of maternity care; it is about challenging that system to promote better birthing."[37]

These women's decision to have a planned home birth challenges the maternity system to promote birthing that is evidence based, and simultaneously is emotionally, physically, and socially safe for women and their baby. It also challenges obstetricians, hospitals, and insurance providers to value and protect women's choice of planned home birth and to integrate home birth into the U.S. maternity care system.

NOTES

1. O. Olsen and J.A. Clausen, "Planned Hospital Birth Versus Planned Home Birth," *Cochrane Database of Systematic Reviews* no. 9 (2012), article no. CD000352, DOI: 10.1002/14651858.CD000352.pub2.

2. P.A. Janssen et al., "Outcomes of Planned Home Births with Registered Midwife versus Attended by Regulated Midwives versus Planned Hospital Birth in British Columbia," *Canadian Medical Association Journal* 181, no. 6 (2009): 377-83; E. Hutton, A. Reitsma, and K. Kaufman, "Outcomes Associated with Planned Home and Planned Hospital Births in Low-Risk Women Attended by Midwives in Ontario, Canada, 2003-2006: A Retrospective Cohort Study," *Birth* 36, no. 3 (2009): 180-9; K. Johnson and B.A. Davis, "Outcomes of Planned Home Birth with Certified Professional Midwives: A Large Prospective Study in North America," *BMJ* 330 (2005): 1416-9; P.A. Janssen et al., "Outcomes of Planned Home Births versus Planned Hospital Births after Regulation of Midwifery in British Columbia," *Canadian Medical Association Journal* 166, no. 3 (February 2002): 315-23; A. de Jonge et al., "Perinatal Mortality and Morbidity in a Nationwide Cohort of 529,688 Low-risk Planned Home and Hospital Births," *BJOG: An International Journal of Obstetrics & Gynaecology* 16, no. 9 (August 2009): 1177-84; Birthplace in England Collaborative Group, "Perinatal and Maternal Outcomes by Planned Place of Birth for Healthy Women with Low Risk Pregnancies: The Birthplace in England National Prospective Cohort Study," *BMJ* 343 (November 2011): d7400; A. de Jonge et al., "Severe Adverse Maternal Outcomes among Low Risk Women with Planned Home versus Hospital Births in the Netherlands: A Nationwide Cohort Study," *BMJ* 349 (June 2013): f3263.

3. M.F. MacDorman, T.J. Mathews, and E. Declercq, *Home births in the United States, 1990-2009* (Hyattsville, Md.: National Center for Health Statistics, 2012); J.A. Martin et al., "Births: Final Data for 2009," *National Vital Statistic Reports* 60, no. 1 (3 November 2011), *http://www.cdc.gov/nchs/data/nvsr/nvsr60/nvsr60_01.pdf,* accessed 19 August 2013.

4. Ibid.

5. See note 2 above.

6. Ibid.

7. Janssen et al., "Outcomes of Planned Home Births with Registered Midwife," see note 2 above; Hutton, Reitsma, and Kaufman, "Outcomes Associated with Planned Home and Planned Hospital Births," see note 2

above; Johnson and Davis, "Outcomes of Planned Home Birth," see note 2 above.

8. Birthplace in England Collaborative Group, see note 2 above.

9. de Jong et al., see note 2 above.

10. J.R. Wax et al., "Maternal and newborn outcomes in planned home births: A meta-analysis," *American Journal of Obstetrics & Gynecology* 203, no. 3 (September 2010): 243.e1-8.

11. A. de Jonge et al., "Perinatal mortality and morbidity in a nationwide cohort of 529 688 low-risk planned home and hospital births," *BJOG: An International Journal of Obstetrics and Gynaecology* 116, no. 9 (August 2009): 1177-84.

12. ACOG, "ACOG Committee Opinion No. 476: Planned home birth," *Obstetrics & Gynecology* 117, no. 2 (February 2011): 425-8, doi: 10.1097/AOG.0b013e31820eee20, *http://www.acog.org/Resources %20And%20 Publications/Committee%20Opinions/Committee%20on %20Obstetric%20Practice/Planned%20Home%20Birth .aspx,* accessed 19 August 2013.

13. F.A. Chervenak et al., "Planned Home Birth: The Professional Responsibility Response," *American Journal of Obstetrics & Gynecology* 208, no. 1 (2013): 31-8.

14. See note 2 above.

15. C. Sakala and M.P. Corry, *Evidence-Based Maternity Care: What It Is and What It Can Achieve* (New York: Childbirth Connection, the Reforming States Group, and the Milbank Memorial Fund, October 2008); Transforming Maternity Care Vision Team, "2020 Vision for a High-Quality, High-Value Maternity Care System," *Women's Health Issues* 20, supp. 1 (January-February 2010): S7-17, *http://transform.childbirthconnection.org/blueprint/,* accessed 23 January 2013.

16. R. Lake and A. Epstein, *The Business of Being Born* (New York: Barranca Productions, 2008), movie; J. Block, *Pushed: The Painful Truth About Childbirth and Modern Maternity Care* (Philadelphia, Pa.: DeCapo Press, 2007).

17. S. Vedam, "In Search of a Common Agenda for Planned Home Birth in America," *Journal of Perinatal Education* 21, no. 2 (Spring 2012): 67-71, *http://www.homebirthsummit.org/,* accessed 23 January 2013.

18. J. Lofland, D. Snow, L. Anderson, and L. Lofland, *Analyzing Social Settings: A Guide to Qualitative Observation and Analysis* (Belmont, Calif.: Wadsworth/Thomson Learning, 2006); S. Schatzman and A. Strauss, *Field Research: Strategies for a Natural Sociology* (Upper Saddle River, N.J.: Prentice-Hall, 1973).

19. M. Ely, *Doing Qualitative Research: Circles within Circles* (Philadelphia, Pa.: Falmer Press, 1991).

20. See note 18 above.

21. Y.S. Lincoln and E.G. Guba, *Naturalistic Inquiry* (Newbury Park, Calif.: Sage, 1985).

22. Ibid., 290.

23. *The Business of Being Born,* see note 16 above.

24. H. Brody and J.R. Thompson, "The Maximin Strategy in Modern Obstetrics," *Journal of Family Practice* 12, no. 6 (1981): 977-86.

25. I. M. Gaskin, *Ina May's Guide to Childbirth* (New York: Bantam Dell, 2003).

26. J.A. Lothian and C. de Vries, *The Official Lamaze Guide: Giving Birth with Confidence* (Minneapolis, Minn.: Meadowbrook Press, 2010)

27. H. Goer and A. Romano, *Optimal Care in Childbirth: The Case for a Physiologic Approach* (Seattle, Wash.: Classic Day Publishing, 2012).

28. Ibid.

29. M. Cheyney, "Homebirth as Systems-Challenging Praxis: Knowledge, Power, and Intimacy in the Birthplace," *Qualitative Health Research* 18, no. 254 (2008): 254-67.

30. Goer and Romano, see note 27 above.

31. Lothian and de Vries, see note 26 above; H.E. Lindgren et al., "Perceptions of Risk and Risk Management among 735 Women Who Opted for a Home Birth," *Midwifery* 26, no. 2 (2010): 163-72; D. Bouche, C. Bennet, B. McFarlin, and R. Freeze, "Staying Home to Give Birth: Why Women in the United States Choose Home Birth," *Journal of Midwifery & Women's Health* 54, no. 2 (2012): 119-26.

32. ACOG, see note 12 above.

33. Goer and Romano, see note 27 above.

34. Cheyney, see note 29 above.

35. E.R. Declercq et al., *Listening to Mothers II: Report of the Second National U.S. Survey of Women's Childbearing Experiences* (New York: Childbirth Connection, 2006).

36. J. Torres and R.G. de Vries, "Birthing Ethics: What Mothers, Families, Childbirth Educators, Nurses, and Physicians Should Know About the Ethics of Childbirth," *Journal of Perinatal Education* 18, no. 2 (2009): 12-24.

37. Ibid., 22.

Facilitating Women's Choice in Maternity Care

Marianne Nieuwenhuijze and Lisa Kane Low

ABSTRACT

Maternity careproviders often have strong views concerning a woman's choice of where to give birth. These views may be based on the ethical principle of autonomy, or on the principle of beneficence. The authors propose that an approach utilizing shared decision making allows careproviders and women to move beyond disagreements regarding which evidence on risk should "count," instead adopting a process of increased knowledge and support for women and their partner while they make choices regarding place of birth.

INTRODUCTION

The idea that women have a choice regarding where they give birth, at home or in the hospital, has provoked a variety of strong reactions from maternity careproviders in many parts of the world. Some careproviders view women as autonomous and able to make informed choices about place of birth, using autonomy as the guiding ethical principle. Others hold that beneficence must be the prevailing principle, and some see a woman who makes a choice to birth outside a hospital as an irresponsible mother who takes unnecessary risks with her newborn's life.[1] In this article we will reflect on these responses and explore whether the model of shared decision making can help address this complex situation in everyday encounters between careproviders and pregnant women.[2]

Supporters and opponents of home birth passionately debate the risks that are involved with either choice. Discussions about the place of birth often proceed as if there is one universally applicable right answer to the question of where a healthy woman with an uncomplicated pregnancy and obstetric history should give birth. In presenting an argument for or against one place of birth over another, careproviders often frame their preference as a dispassionate argument that is informed only by scientific evidence.[3] But methodological criticism of scientific evidence can lead to different interpretations of study results—which, in turn, can reignite arguments.[4] The passion of these arguments affirms the complexity of attempts to integrate the available scientific evidence with the values and beliefs of women and maternity careproviders regarding decision making and place of birth.

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Healthcare's gold standard to determine the "right" or best approach is the randomized clinical trial (RCT) which, despite different attempts, has not been successfully conducted in this area.[5] It is unlikely that a successful RCT will be conducted in the near future, because researchers find that women are not willing to participate in a trial that randomly assigns them to one group in the clinical trial or another (in this case, to be randomly assigned to give birth in a hospital or randomly assigned to give birth at home), because women strongly value their autonomy to choose.[6] Position statements issued by maternity careprovider organizations and editorial commentaries in medical journals[7] focus on the use of objective data to determine the "right" place of birth for all women, but often ignore the role that values and beliefs play in informing the decisions individuals make regarding childbirth. Birth is more than a medical procedure; it involves the whole life of those intimately involved.[8] It is a major life event that affects women and their families in physical, emotional, social, and cultural ways. In the context in which a family makes decisions about childbirth, so much is at stake that is difficult to fully articulate. It is not possible to sum up the full picture of harms and benefits that affect all aspects of life in a way that completely illuminates an individual family's decision regarding how and where the mother will give birth.

In determining the best place for birth, many kinds of information are considered and filtered through a woman's personal lens of values and experiences, including her previous healthcare experiences. This intimate decision cannot be reduced to ranking the value of autonomy against the value of beneficence. These two aspects of decision making must be integrated into a single final response. Arguments for the primacy of the principle of beneficence begin with the collection of evidence that identifies one choice as more risky than another, but, in the case of place of birth, the evidence is not yet conclusive for healthy pregnant women. On the other hand, arguments based on the principle of autonomy to defend women's freedom to choose omit, in certain circumstances, the complicated question of the autonomy of the future child. The intersection of these two principles is the ethical space in which a decision about place of birth is made. For example, a healthy pregnant woman may feel she does not want to give birth at her local hospital because it is the same location where her mother, who had cancer, was cared for until her death. The woman associates the location with painful memories of the loss of her mother. As a result, she may exercise her autonomy in selecting a home birth to avoid the complex emotions that could have an impact on her labor and birth process. However, should her membranes rupture (her waters break) and she does not go into labor after a day, there can be an increased risk for infection for the newborn. Should the woman's desire to avoid the hospital, where a careprovider can promote the labor process using medical interventions, persist, then the question of beneficence is raised. Her autonomous decision to not use the hospital may present a health risk to her newborn. In such circumstances, the intersection of the principles of autonomy and beneficence requires expanded decision making and understanding between the maternity careprovider and the woman regarding her choice of location for giving birth.

Scientific evidence regarding the safety of various places of birth has been used to change the focus from choice of location of birth to that of the moral responsibility of women and careproviders to select a place of birth. Scientific evidence may be tailored to coerce, belittle, or frighten a woman into making a particular decision. In some countries, for example, in the United States, discussions of place of birth are grounded in the varied philosophical approaches used by the professional organizations that represent maternity careproviders (obstetricians, physicians, nurses, and midwives). Physician organizations make an argument against the home as a site for birth, and midwifery organizations present scientific evidence that supports the home as a safe site for birth, particularly for low-risk women.[9]

For many women, the choice of where to give birth begins in their philosophical approach to life as a whole. They think about giving birth in the context of their personal lived experience, not based on the results of an RCT. Birth decisions are personal, informed by values and beliefs (paradigms or world views) and are contextual; they are not merely fact-based, objective, or simply calculated. How one individual interprets her personal risk, and what is an acceptable risk compared to benefit, is highly variable when the information that is available is not comprehensive or does not include the contextual aspects involved in the decision, including values and beliefs. Building on the prior example we used regarding the woman who did not want to give birth in the same location as her mother's death, another factor may be the age of the woman making the decision. If the woman has experienced a prior healthy pregnancy and birth and is again having a healthy pregnancy and anticipates a normal course of labor and birth, some maternity careproviders would con-

sider her an appropriate candidate for home birth. However, if a woman is 40 years old, in some instances, her age may be used to argue that she is not low risk, and therefore not an appropriate candidate for home birth. Because the literature supporting age as a risk factor is variable, this woman's emotional reasons for avoiding the hospital may arguably trump her age as a single risk factor in the context of a healthy pregnancy and otherwise low risk status.

In dealing with ethical dilemmas, ethicists like Parker and Verkerk offer a perspective that suggests these dilemmas must be considered in the encounter between patient and health professional, and not on the professional organization level.[10] Parker suggests that the careprovider-patient relationship should be characterized by a genuine engagement in a collaborative attempt to achieve shared understanding. Verkerk advocates a perspective of care ethics that addresses ethical dilemmas first by knowing the person involved: understanding her identity, relationships, and context. The model underlying this relationship and understanding should be oriented towards the patient making an informed decision through a process of conversation with an engaged and respectful careprovider. Rather than debating whether to place a woman's right to autonomy above the presumption of beneficence, it seems that—in line with Parker's and Verkerk's perspectives—an alternative direction would be shared decision making. Rather than creating a hierarchy of ethical principles with either beneficence or autonomy "winning," or according healthcare professionals an authoritative position that reigns over women's wishes, shared decision making allows a new approach that puts the encounter and conversation between patient and health professional at center. Shared decision making allows both the perspectives of autonomy and beneficence to be considered, and includes careproviders' perspectives and women's values and beliefs in the process of making a final decision regarding place of birth.

THE CONCEPT OF SHARED DECISION MAKING

Shared decision making (SDM) is generally defined as "an approach where clinician and patient share the best available evidence when faced with the task of making decisions, and where the patient is supported to consider options, to achieve informed preferences."[11] SDM emphasizes the relationship between careprovider and patient, the background of preference, and a process approach to making decisions. Both parties can bring their preferences, wishes, and values, and explore beneficial solutions. In the process of SDM, maternity careproviders enable, support, and advise pregnant women on the goals and decisions they face during pregnancy, birth, and postpartum. There is an interactive exchange of professional information (options, benefits, harms, uncertainties, and experiences) and personal information (circumstances and issues important to quality of life). Deliberation is based on the disclosure of values and preferences regarding the particular situation by both parties, building towards a consensus-based decision based on joint responsibility.

When a shared decision cannot be reached, women can seek another careprovider. A challenge in maternity care is that alternative providers may not be available or accessible, particularly when geographic location or a woman's insurance status or method of payment may preclude the use of another careprovider. In ideal circumstances, a woman would explore the question of place of birth at initial contact with a careprovider. Using a process of active engagement and openly presenting each other's perspectives using a dialectic process, a conclusion that a resolution cannot be reached would occur early enough in the woman's pregnancy to allow her to seek an alternative careprovider. When a process of SDM is used, the opportunity to resolve differences is enhanced because there is open, active discussion between the careprovider and woman, allowing the woman to be heard and met in her concerns and to build a relationship, rather than engagement at the level of rhetorical argument of a woman's autonomy to make a decision considered against concern for her infant's safety.

Elwyn and colleagues[12] developed a model that outlines a step-wise process for SDM. The model includes three key steps for clinical practice: choice talk, option talk, and decision talk, in which a clinician supports deliberation throughout the process (see table 1). Choice talk refers to making sure that patients know that a choice needs to be made and that reasonable options are available. Option talk refers to exploring patients' knowledge and considerations and providing more detailed information about the options. Decision talk refers to supporting deliberation, considering preferences, and deciding on the best option.

SDM offers women and maternity careproviders an improved way to address decisions about place of birth and other challenging care decisions, allowing a move from polarized debate on home versus hospital birth to an individualized interaction between the woman and her careprovider. In

this context, emphasis is placed on process and dialogue, rather than on the presentation of a morally superior approach that privileges medical authority and dispassionate "evidence." The use of SDM allows an individualized, contextualized approach that enables the parties involved to determine which motives and values inform the discussion and eventual decision or choices to be made by the woman and her partner.

SHARED DECISION MAKING IN MATERNITY CARE

There is a growing awareness that SDM can play an important role in maternity care,[13] as it offers opportunities for greater mutual understanding through a process of exchange and dialogue. SDM recognizes that a woman's values and preferences and a careprovider's values, expertise, and understanding from research are essential in decision making. Careproviders and women are able to openly discuss the benefits, harms, and uncertainties of different options. Consistent with Entwistle and Watt,[14] SDM allows a broad conceptualization of patients' involvement in decision making, recognizing the importance of the relationship between careprovider and patient. Patients are enabled to consider their "best" option; because their individual circumstances from outside the clinical context are taken into consideration, patients can develop a positive sense of involvement in a holistic process.

TABLE 1. Summary of SDM model

Choice talk
- Step back
- Offer choice
- Justify choice—preferences matter
- Check reaction
- Defer closure

Option talk
- Check knowledge
- List options
- Describe options—explore preferences
- Harms and benefits
- Provide patient decision support
- Summarize

Decision talk
- Focus on preferences
- Elicit preferences
- Move to a decision
- Offer review

Source: G. Elwyn et al., "Shared decision-making: a model for clinical practice," *Journal of General Internal Medicine* 27, no. 10 (2012): 1361-7.

Women's Views

In maternity care, most women want to participate in making decisions regarding their care.[15] In a survey of 1,573 American women who had given birth in the hospital at least once, most (73 percent) said they should make decisions after consulting their careprovider, and 23 percent supported shared mother-careprovider decision making as a way to reach a final decision.[16] However, not all women are willing or prepared to participate in the decision-making process. Some women who are not literate regarding health or who have difficulty understanding data or the concept of risk may have difficulty with shared decision making, and some may come from a cultural background that lacks a tradition of individuals making autonomous decisions.[17] There is evidence that the degree of involvement in making decisions about birth, and how these decisions are made, vary among women.[18] For some women, involvement in making shared decisions increased with the feeling that they were informed and could challenge a decision if the need arose.[19] Making healthcare decisions while giving birth is not without concerns for women, and taking full responsibility for decisions can be a burden for women and their partners. In one study, Parratt and Fahy found that women who felt supported during childbirth by people they trusted and felt free "to let go" and not try to exert control while they were giving birth, which had a positive effect.[20] Leaving the responsibility of making decisions with a woman, without first exploring her wishes for involvement in making decisions, may evoke feelings of abandonment.[21]

Some careproviders report that SDM lifts the burden of responsibility for certain choices from their shoulders.[22] The rationale for this perception of reduced responsibility or shared responsibility is that women actively participate in making decisions, and thus they carry a greater level of responsibility than if their careprovider alone is directing their care, including choice of the site of birth. However, participation in decision making can be a great burden for women, especially when the outcome is disappointing. Women and their partner should be made aware that not everything is "knowable" and "controllable"—unexpected things might happen during birth. Additionally, even when a decision is shared and a spirit of joint responsibility for the outcome is present, it does not mean that carepro-

viders are absolved of their professional obligations and responsibilities. Discourses on equality can hide the fact that health professionals have legal obligations in the event of a poor outcome.[23] The overlay of legal responsibility and potential for liability can challenge the process of SDM if concern for liability becomes the prevailing feature of the interaction between the careprovider and the pregnant woman.

Challenges and Opportunities

SDM in maternity care offers both challenges and opportunities. Many decisions made in maternity care take place outside the consultation room. During birth, the decision-making process may be influenced by limited time, the pain of contractions, and the need of the woman to stay focused on the birthing process, which interferes with interaction and elaboration of the options and decisions that need to be made. Through discussions of options and preferences during pregnancy, prior to birth, women should be prepared for the possibility that they may be asked to make urgent decisions during childbirth.[24] Regular checkups during pregnancy offer ample opportunity to establish a trusting relationship, anticipate various situations that may arise, revisit complex issues, and let time do its work. There is also time for careproviders to understand the values and expectations a woman and her partner have for the upcoming birth, so that discussions during labor and birth are facilitated by the trust and understanding that have been fostered previously.

Shared Decision Making in Action

What takes place in the day-to-day reality of practice? In a recent study[25] about women's childbearing experience in the U.S., a significant number of women said they felt pressure from a careprovider to agree to having an intervention during birth. For example, 19 percent of the women who did not have epidural analgesia felt pressure to have it, and 28 percent of the women who had a vaginal birth after a cesarean felt pressure during their pregnancy to choose a repeat cesarean. This study also explored how much women felt involved in the decision-making process around certain interventions, for example, the decision for either a repeat cesarean or a vaginal birth after cesarean in a previous birth. In 40 percent of the cases, women reported that they felt it was mainly their decision, and in another 39 percent, it was a decision made together by the woman and the careprovider. One in five women stated it was mainly the careprovider's decision. When asked, "How much did you and your maternity careprovider talk about the reasons you might not want to have a repeat caesarean?" 40 percent of the women indicated there was no talk about not scheduling a repeat cesarean, and only 20 percent said there was "a lot" of talk about it. In contrast, when talking about "reasons you might want to have a repeat caesarean," the women indicated that only 3 percent "did not talk about having a repeat caesarean," and 40 percent talked "a lot" about having a repeat caesarean. When careproviders expressed their opinion about a preferred option (73 percent), it was mostly in favor of an intervention (88 percent). This reported variance in presenting options highlights the influence of values and beliefs and a potential fear of liability by the careproviders in the study, since the evidence base available suggests there are benefits to not having a repeat cesarean except in unique circumstances, including considerations of the woman's desire for more children.[26]

Decisions in maternity care vary; not all are polarized like vaginal birth after caesarean section, place of birth, or elective caesarean without a medical indication. Less-polarized examples can be used to gain deeper insight into the use of SDM in the interaction between careproviders and women, for example, women's preferences and needs in the second of stage labor regarding birthing positions. Enabling women to choose and change birthing positions in birth is beneficial for women's positive experience of the birth[27] and for promoting a normal physiological birth.[28] In a study focused on the interaction between maternity careproviders and women in labor, maternity careproviders enabled women's selection of various birthing positions by using a dynamic process in which they moved back and forth from open, informative approaches to more closed, directive approaches, depending on the woman's needs and clinical assessments of the circumstances.[29] The authors report that once a careprovider started working with a woman, the woman often began actively working with the careprovider, suggesting positions she was first reluctant to use. This give-and-take or dialectic process combined the preferences of the woman with the ongoing assessments being made by the careprovider. The careprovider used her expertise to flexibly adjust her approach to match the unique features of the clinical situation in concert with the woman's desires.

CONCLUSION

The promotion of shared decision making in maternity care is justifiable and may be valuable in promoting optimal health outcomes for a woman and

the newborn. Through the use of shared decision making as a relational process between women and their maternity careproviders, the discussion remains focused on the wide range of elements that are brought to bear in the final choice women make regarding the place of birth. In many cases, shared decision making allows a balance between autonomy and beneficence, as framed by the women. Through the use of SDM as a process, there is an opportunity to enter into discussion that maintains the integrity of all of the individuals involved. The careprovider and the woman participate in the process with the goal of "opening up" the space at the intersection of beneficence and autonomy, that can then be contextualized for the individual woman, rather than starting with the stands of professional organizations or with ethical arguments that might create a "forced" choice.

Given the impossibility of resolving the beneficence versus autonomy debate over place of birth, SDM provides a relational process, a shared approach, that leads to a choice that contributes to optimal physical and psychosocial outcomes for mothers and babies.

NOTES

1. "Home Birth—Proceed with Caution," *Lancet* 376, no. 9738 (July 2010): 303; F.A. Chervenak et al., "Planned Home Birth: the Professional Responsibility Response," *American Journal of Obstetrics & Gynecology* 208, no 1 (January 2013): 31-8; E. Kingma, "The Lancet's Risky Ideas? Rights, Interests and Home-birth," *International Journal of Clinical Practice* (May 2011): 1-4.

2. G. Elwyn et al., "Shared decision-making: a model for clinical practice," *Journal of General Internal Medicine* 27, no. 10 (2012): 1361-7.

3. A. de Jonge et al., "Perinatal Mortality and Morbidity in a Nationwide Cohort of 529,688 Low-risk Planned Home and Hospital Birth," *BJOG: An International Journal of Obstetrics & Gynaecology* 116, no. 9 (Aug 2009): 1177-84; J.R. Wax et al., "Maternal and Newborn Outcomes in Planned Home Birth vs Planned Hospital Births: a Meta-analysis," *American Journal of Obstetrics & Gynecology* 203, no. 3 (September 2010): e1-8; A.C.C. Evers et al., "Perinatal Mortality and Severe Morbidity in Low and High Risk Term Pregnancies in the Netherlands: Prospective Cohort Study," *BMJ* 341 (November 2010): c5639 doi:10.1136/bmj.c5639; Birthplace in England Collaborative Group, "Perinatal and Maternal Outcomes by Planned Place of Birth for Healthy Women with Low Risk Pregnancies: The Birthplace in England National Prospective Cohort Study," *BMJ* 343 (November 2011): d7400; A. de Jonge et al., "Severe Adverse Maternal Outcomes among Low Risk Women with Planned Home versus Hospital Births in The Netherlands: Nationwide Cohort Study," *BMJ* 346 (June 2013), *http: //dx.doi.org/10.1136/bmj.f3263,* accessed 19 August 2013.

4. C.A. Michal et al., "Planned Home vs Hospital Birth: A Meta-Analysis Gone Wrong," Medscape Ob/Gyn & Women's Health, http://www.medscape.com/viewarticle/739987, accessed 1 April 2013; A. Tuteur, "A critique of the leading study of American Home Birth," Science-Based Medicine, 3 December 2009, *http://www.sciencebasedmedicine.org/a-critique-of-the-leading-study-of-american-homebirth/,* accessed 19 August 2013.

5. O. Olsen and J.A. Clausen, "Planned hospital birth versus planned home birth," *Cochrane Database of Systematic Reviews,* issue 9 (2012): CD000352. DOI: 10.1002/14651858.CD000352.pub2.

6. M. Hendrix et al., "Why Women Do Not Accept Randomisation for Place of Birth: Feasibility of a RCT in the Netherlands," *BJOG: An International Journal of Obstetrics & Gynaecology* 116, no. 4 (March 2009): 537-44; T. Dowswell et al., "Should there be a trial of home versus hospital delivery in the United Kingdom?" *BMJ* 312 (March 1996): 753-7.

7. "ACOG Committee Opinion No. 476, Planned home birth," *Obstetrics & Gynecology* 117 (2011): 424-8; F.A. Chervenak et al., see note 1 above; F.A. Chervenak, L.B. McCullough, and B. Arabin, "Obstetric Ethics: An Essential Dimension of Planned Home Birth," *Obstetrics & Gynecology* 117, no. 5 (May 2011): 1183-7.

8. R.G. de Vries, *A Pleasing Birth: Midwifery and Maternity care in the Netherlands* (Philadelphia, Pa.: Temple University Press, 2005), 14.

9. ACOG, see note 7 above; "Position Statement: Home Birth," American College of Nurse Midwives, Division of Standards and Practice: Clinical Standards and Documents Section and Homebirth Section, 2011, *http://midwife.org/ACNM/files/ACNMLibraryData/UPLOADFILENAME/000000000251/Home%20Birth%20Aug%202011.pdf,* accessed 19 August 2013.

10. M. Parker, "A Conversational Approach to the Ethics of Genetic Testing," in *Case Analysis of Clinical Ethics, ed. R. Ashcroft* et al. (Cambridge, U.K.: Cambridge University Press, 2005): 149-64; M. Verkerk, "Care Ethics as a Feminist Perspective on Bioethics," in *New Pathways to European Ethics,* ed. C. Gastmans, K. Dierickx, H. Nys, and P. Schotmans (Antwerp: Intersentia, 2007), 6580; M. Verkerk, "A Feminist Care-ethics Approach to Genetics," in *Case Analysis of Clinical Ethics,* ed. R. Ashcroft et al. (Cambridge, U.K.: Cambridge University Press, 2005), 133-48.

11. G. Elwyn et al., "Implementing Shared Decision Making in the NHS," *BMJ* 341 (2010): c5146.

12. G. Elwyn et al., see note 2 above.

13. R. Say, S. Robson, and R. Thomson, "Helping Pregnant Women Make Better Decisions: a Systematic Review of the Benefits of Patient Decision Aids in Obstetrics," *BMJ Open* 1 (2011): doi: 10.1136/bmjopen-2011-000261; P. B. Angood et al., "BLUEPRINT FOR ACTION Steps Toward a High-Quality, High-Value Maternity Care System," *Women's Health Issues* 20 (2010): S18-49.

14. V.A. Entwistle and I.S. Watt, "Patient Involvement in Treatment Decision-Making: The Case for a Broader Conceptual Framework," *Patient Education and Counsel-*

ing 63, no. 3 (November 2006): 268-78.

15. E. Hodnett, "Pain and women's satisfaction with the experience of childbirth: A systematic review," *American Journal of Obstetrics & Gynecology* 186, no. 5 (2002): S160-73; M. Hendrix et al., "Differences in Preferences for Obstetric Care between Nulliparae and Their Partners in the Netherlands: a Discrete-choice Experiment," *Journal of Psychosomatic Obstetrics & Gynecology* 31, no. 4 (December 2010): 243-51; A. Seefat, M. Nieuwenhuijze, and I. Korstjens, "Women Want Proactive Psychosocial Support from Midwives during Transition to Motherhood: a Qualitative Study," *Midwifery* 27 (2011): e122-7.

16. E.R. Declercq, C. Sakala, M.P. Corry, and S. Applebaum, *Listening to Mothers II. Report of the Second National U.S. Survey of Women's Childbearing Experiences* (New York: Childbirth Connection, 2006), 58.

17. R.M. Epstein, B.S. Alper, and T.E. Quill, "Communicating Evidence for Participatory Decision Making," *Journal of the American Medical Association* 291, no. 19 (May 2004): 2359-66.

18. T. Lavender, S.A. Walkinshaw, and I. Walton, "A Prospective Study of Women's Views of Factors Contributing to a Positive Birth Experience," *Midwifery* 15, no. 1 (March 1999): 40-6.

19. J.M. Green and H.A. Baston, "Feeling in Control during Labor: Concepts, Correlates, and Consequences," *Birth* 30, no. 4 (December 2003): 235-47.

20. J. Parratt and K. Fahy, "Trusting enough to be out of control: a pilot study of women's sense of self during childbirth," *Australian Journal of Midwifery* 16, no. 1 (March 2003): 15-22.

21. R. Kukla et al., "Finding Autonomy in Birth," *Bioethics* 23, no. 1 (2009): 1-8.

22. M.J. Nieuwenhuijze et al., "Shared decision-making in maternity care: challenges and opportunities," paper presented at the Normal Labour and Birth: 8th Research Conference, Getting it right first time: normal birth and the individual, family, and society, Grange-over-Sands,U.K., 5-7 June 2013.

23. D. Noseworthy, S. Phibbs, and C. Benn, "Towards a Relational Model of Decision-Making in Midwifery Care," *Midwifery* (August 2012): e42-8. doi: 10.1016/j.midw.2012.06.022.

24. Seefat, Nieuwenhuijze, and Korstjens, see note 15 above; Nieuwenhuijze, see note 22 above; Noseworthy, Phibbs, and Benn, see note 23 above.

25. E.R. Declercq et al., *Listening to Mothers III: Pregnancy and Childbirth* (New York: Childbirth Connection, 2013), 34-42.

26. Ibid.; F.G. Cunningham et al., "National Institutes of Health Consensus Development Conference Statement: Vaginal Birth After Cesarean: New Insights," *Obstetrics & Gynecology* 115, no. 6 (2010): 1279–95.

27. M.J. Nieuwenhuijze et al., "Influence on Birthing Positions Affects Women's Sense of Control in Second Stage of Labour," *Midwifery* (18 February 2013): doi:10.1016/j.midw.2012.12.00.

28. "Supporting Healthy and Normal Physiologic Childbirth: A Consensus Statement by ACNM, MANA, and NACPM," 2012, *http://www.midwife.org/acnm/files/cclibraryfiles/filename/000000002179/physioloigical%20birth%20consensus%20statement-%20final%20may%2018%202012%20final.pdf,* accessed 19 August 2013; J.K. Gupta, G.J. Hofmeyr, and M. Shehmar, "Position in the Second Stage of Labour for Women without Epidural Anaesthesia," *Cochrane Database of Systematic Reviews* issue 5 (2012), *http://apps.who.int/rhl/reviews/CD002006.pdf,* accessed 19 August 2013.

29. M.J. Nieuwenhuijze, L. Kane Low, I. Korstjen, and A. Lagro-Janssen, "Maternity Care Providers' Role in Enabling Women's Use of Birthing Positions during Second Stage Labor," paper to be presented at the 14th Healthcare Interdisciplinary Research Conference & Student Colloquium: Health, Wellbeing and Innovation: Recent advances in research, practice and education, 5-7 November 2013, Trinity College, Dublin, Ireland.

Personal Perspectives

One Obstetrician's Look at a Polarizing Birth Arena

Annette E. Fineberg

ABSTRACT

Birth, whether at home or in the hospital, should involve shared decision making that empowers women to choose or decline the interventions that are best for the woman and her baby. Obstetricians and home birth midwives must share important information with their patients.

The battle of the birth experience between home and hospital birth appears to lie in allowing women versus the medical establishment control of the process of birth. Women may perceive that the medical establishment dictates the birthing process for the economic and/or power advantage. The reality is that most physicians believe that they advocate for the safety, comfort, and improved outcome of healthier babies and mothers. Because of these two divergent views, birth experiences can occur in a vacuum of rationale dialogue and leave both sides bitter.

There is ample evidence in the Netherlands and United Kingdom that low-risk women can safely give birth at home with experienced maternity careproviders and with proper transfer protocols in place. However, in the United States this rarely occurs. There are clear situations when a hospital birth is safer, and there are situations when hospital interventions can cause more harm than good. There are many situations in pregnancy and childbirth in which mother and fetus face conflicting risks. Pregnant women must decide when, or if, to intervene on behalf of themselves and their unborn child. Much of the intervention in the hospital is to prevent rare but devastating outcomes.

Home birth providers vary dramatically in terms of experience and knowledge about potential obstetrical complications. Hospital providers vary dramatically in terms of their patience and motivation to facilitate vaginal birth. In many situations, a transfer from home to hospital involves the brow beating of both parents and careprovider, with threats to involve child protective services and a certain cesarean. There are rare examples in the US where physicians have put women first and made the transfer from home to hospital nonjudgmental.

My experience in the U.S. reveals a very polarized situation with pregnant women stuck in the middle. Obstetricians are not permitted by liability insurance to be involved in a planned home birth so a woman sent for consultation must transfer care (or at least that is what is documented in the chart.) California law requires a licensed home birth pro-

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vider to have hospital backup. This is a Catch 22 that is basically ignored by the Medical Board of California. A woman who transfers from home to hospital is labeled a "failed home birth," rather than transfer for pitocin or pain management or concern about fetal status.

Women and home birth midwives are harassed and belittled even when the transfer is appropriate. I don't blame women for not trusting their doctors. Most obstetricians are not trained to support normal birth. Rare complications are presented as certain outcomes to be avoided. However, my experience with midwives at home is that their behavior can also be equally unethical, withholding information or not believing that certain risk factors are valid and thus not informing women of potential risks. I actually heard a participant at a natural birth conference say something akin to "Having a baby is a natural process like having a bowel movement or coughing." Or another quote common on natural birth websites, "Don't heed the 'dead baby' card." No question, it is frequently used inappropriately to frighten women into unwanted interventions. But I have seen intrapartum deaths result from women not heeding the "dead baby card" when it was appropriately brought up by a concerned provider.
A woman on a natural birth blog summarizes the problem nicely:

> Here's the problem (and I've had 3 home births).
>
> I tend to see the appearance of autonomy without much *actual* autonomy to speak of. It's just that instead of handing over power, knowledge and decision making to the medical authorities women in the natural birth crowd participate in a submission of will to natural birth authorities and more loosely to "nature" itself, trusting that if you just don't anger nature with Evil Interventions that nature will smile on you and everything will be fine. I only see lip service to the idea of a woman having "autonomy". . . .[1]

For example, I have taken care of several women planning home births who were not offered group B strep[2] screening or treatment. One woman's baby became so infected during labor, a cesarean was required because the baby was in distress, with fever, thick meconium, fetal tachycardia. This was an unnecessary cesarean that almost certainly could have been avoided. A lot of expert debate and mathematical calculations went into determining how best to avoid this terrible outcome when most babies would be unaffected. Ironically, the demand for empiric treatment came from devastated parents who rallied professionals to change the standard of care.

Just because a woman prefers a home birth does not mean that she wants to avoid all modern medical intervention. Birth, whether at home, or in the hospital, should involve shared decision making that empowers women to choose or decline the interventions that are best for the woman and her baby. Ethically, some argue that only the mother can make this choice, but as providers we are bound to first do no harm; and in the United States the government gives rights to the child as soon as it is a viable being. We, as obstetricians, are guilty of unnecessarily scaring women at times. But home birth midwives are equally guilty of not sharing important information that would help women make these choices that may ultimately harm another being that is too young to voice her or his choice in this world.

NOTES

1. *http://rixarixa.blogspot.com/2011/06/is-autonomy-just-for-natural-birth.html,* accessed 16 October 2012.

2. Group B streptococcus (strep) is a common bacteria that is part of the normal flora of many women's intestinal tract. It can come and go and cannot be reliably eradicated prior to giving birth. With no treatment, 2 to 3 percent of babies can become infected and develop meningitis that frequently leads to death and disability, while the majority are unaffected.

Seeking an Alternative Baseline for Birth

Darcia Narváez

ABSTRACT

Birth is a spiritual experience for mother and baby. Women need information and psychological preparation before birth, and a knowledgeable companion during birth. Unless medical intervention is needed, medical personnel should step back and stay out of the way.

Too often we treat babies like plants, as if they don't feel much and are not affected by their early experience. We have hardly studied the effects of birth practices but we know a few things: that early pain leaves lasting sensitivity to pain, that trauma leads to hypervigilance and stress reactivity; that separation from mother leads to dysregulation.

Childbirth practices have moved far away from what is ideal for babies and mothers, raising ethical questions. Is it ethical to induce labor when due dates are guesses? As Thomas Insel, MD, Director of the National Institutes of Mental Health pointed out, artificial oxytocin may be having adverse effects that are unstudied,[1] and it turns out that the rise in autism parallels the rise in use of artificial oxytocin.[2] Is it ethical to reduce the use of doulas in hospital births because it decreases the need for c-sections, lowering the profits of anesthesiologists? Is it ethical to perform procedures on mothers and babies without full informed consent? For example, mothers need to know that epidural drugs can have detrimental effects on breast feeding success and bonding. Is it ethical to endorse infant circumcision as the American Academy of Pediatrics has done,[3] even though there are no certain positives for infants but known harms?

Can we shift away from medicalized birth to an alternative baseline for childbirth? To do this, medical personnel in training need to experience natural births, births with no medical interventions where the mother's experience is ecstatic. Even watching a film like *Birth as We Know It*[4] may expand imagination about what birth can be like. When done right, birth is a spiritual experience filled with mystery and wonder in which mother and baby get in touch with a wider reality.

How can we make most birth experiences transcendent for mom and baby?

First, medical personnel and mothers themselves need to understand that moms are not machines and babies are not products. Child birth is a relationship, a process between mother and child.

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Medical personnel should try as much as possible to stay out of the way. Each birth is unique with its own timing and pace as the relationship between mom and baby shifts from body-in-body to body-on-body. In some countries (for example, Israel[5]), after the water breaks, mothers have 48 hours without interference to have a natural birth.

Second, mothers need the chance to be in charge of the event, trusting their body signals and not being treated like they have to be rescued from themselves. Of course, mothers need to be prepared for the experience. This involves not only information about childbirth options and likelihoods, but psychological preparation. They need to learn ahead of time that they can "let go" and let nature take charge. This may require working through issues of trusting body signals and letting go of resentment of their own early trauma.

Third, mothers need support, doula support. Having a knowledgeable companion who supports the mother through the experience is priceless and leads to fewer medical interventions. But again, the mother should be in charge and be allowed to keep her power.

All mammals provide an evolved developmental niche or system for their young that facilitates optimal development. For humans it includes no pain beyond labor, constant touch, responsiveness to needs, companionship care. We know these things build a good brain. Human infants are born with only 25 percent of their brains developed. Brain development occurs rapidly. At its maximum, a young child's brain is creating two million synapses per second. Human baby brains likely will generate many more synapses and intelligence if they are supported in the ways they evolved to expect.[6] One expectation is on-demand breastmilk. Neonates have small stomachs and so need to eat frequently and not too much. Breastmilk has thousands of ingredients facilitating healthy development. In my view, infant formula, although necessary in emergencies, is a form of starvation diet, otherwise since it gives babies hardly anything they need to build a strong body, brain, and mind. Everyone—professionals, mothers, families—need training about infant needs and breastfeeding.[7]

Babies deserve to be born in a loving environment where the mother feels energized and welcoming. Adults should be ashamed if they are providing anything less. We must remember that birth is the baby's entry into the world that will leave lasting (implicit, subconscious) impressions of the nature of the world (friendly or dangerous), of people (welcoming or hurtful), of relationships (kind or mean). Which type of world view, trusting or suspicious, would you like your fellow citizens to have?

NOTES

1. T.J. Insel, "A neurobiological basis of social attachment," *American Journal of Psychiatry* 154, no. 6 (1997): 726-35.

2. S.G. Gregory et al., "Association of Autism With Induced or Augmented Childbirth in North Carolina Birth Record (1990-1998) and Education Research (1997-2007) Databases," *JAMA Pediatrics* (12 August 2013): DOI: 10.1001/jamapediatrics.2013.2904.

3. "From the American Academy of Pediatrics: Policy Statement: Circumcision Policy Statement," *Pediatrics* 130, no. 3 (1 September 2012): 585-6 (doi: 10.1542/peds.2012-1989), *http://pediatrics.aappublications.org/content/130/3/585,* 19 August 2013.

4. E. Vladimova, *Birth As We Know It* (Chico, Calif.: Birth Into Being, 2006), video, *birthintobeing. com,* accessed 19 August 2013.

5. Author's personal communication with an Israeli mother.

6. Zero to Three: National Center for Infants, Toddlers and Families, "Brain development: Frequently asked questions," 2009, *www.zerotothree.org/site/PageServer?pagename=ter_key_brainFAQ,* accessed 13 September 2013.

7. See extensive references in a group of posts on breastfeeding, starting with this one (with links to others): *http://www.psychologytoday.com/blog/moral-landscapes/201108/your-assumptions-about-infant-formula-are-probably-wrong,* accessed 13 September 2013.

Individual versus Professional Preferences

Julie Sharon-Wagschal

ABSTRACT

The author, the mother of two children in Amsterdam, describes her birth experiences, the first in the hospital, the second at home.

My first birth took place in a hospital, my second at home, and I want to speak here—from the perspective of the woman in labor—about the importance of choice and the impact that birth place location has on the experience. Both of our births were good, positive experiences, but there was a clear difference between the two.

My husband, an American, found the concept of home birth illogical and certainly not as safe as a hospital one. We'd heard little of what having a baby at home entails—how it might affect labor, its benefits, its safety. Living in Amsterdam, we'd taken our cues from a cultural norm that giving birth at home is something that you just do not do, unless you have no choice. We'd never known anyone who'd had a home birth. Our choice for the hospital was an easy one.

My early hours of labor at home were wonderful, with my husband and doula helping me feel safe and in control. This changed when we went to the hospital— from leaving the quiet of our house and stepping into the foreignness of the bright lights, sounds, and smells of a medical corridor, the cramped room that felt unclean by my home standards, the sense of feeling restricted. My preferences on how I wanted to lie and how and when I wanted to push were overridden, and two hours later my son was born.

I later understood that I was instructed to lie on my back because it was more useful for the midwife—that it was because I was in that hospital room that my preferences gave way to the midwife's preferences. Professional controls pre-empted personal desires for how to have my baby, just because we were in a hospital, a place where professionals are in charge.

My second labor started the same as the first, at home, with the important difference that we planned to stay there. We were better informed, by our hospital experience, and by reading more about what scientific evidence says about home birth. This pregnancy, I had slightly elevated sugar values that I was able to manage through diet. While I was assured by an internist that this would not be a problem, our midwife practice wanted us in the hospital for the birth, close to a baby monitor. I was 34 weeks along when I found another midwife whose hospital would support us in our choice.

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This time, my sense of safety never wavered. My sense of control never wavered. I was not asked to lie on my back or push or refrain from pushing against my will. My daughter and I could do the dance of labor and birth in a relaxed, patient way, with our midwife there beside us. In the hours afterwards, there was no packing up, checking out, strapping in, and driving off. We were home.

Our choices for our first birth were not as informed as they could have been, and perhaps we were fearful of what we didn't know. Both births were "good," with healthy babies and no complications or interventions. But I'd guess there are a lot of women like me, here in the Netherlands and elsewhere, who go to the hospital without asking more, learning more, understanding more, about the impact that location may have on the profound experience of giving birth.

ACKNOWLEDGMENT

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The Industry Take-Over of Home Birth and Death

Merilynne Rush

ABSTRACT

The generation in the United States who renewed interest in home birth is also returning to the tradition of funeral care at home. Caring for your own dead at home is legal in all 50 U.S. states.

In the last three to four generations, the event of childbirth has been removed from the American home and become a medical event. In a similar fashion, funeral care that once was performed by the family in the home has been taken over by a large, powerful, and costly funeral industry. It used to be that when someone died (usually in the home), the family washed and dressed the body themselves, and the loved one was laid out in the front parlor where family and friends came to pay their respects and say good-bye. However, with the development of modern embalming techniques that began during the U.S. Civil War, the rise of the funeral industry that occurred shortly after, changes in family structure and dynamics, and lack of knowledge, we lost the art of caring for our own dead. In fact, we have departed so far from tradition that most of us now consider being around a dead body to be morbid, dangerous, or illegal. Gone are the family, cultural, and religious traditions of honoring our loved ones through meaningful and personal death care at home.

There is a group of people, predominantly women, working hard to change this and bring death care back home. They call themselves death midwives, death doulas, or home funeral guides, and they preach that not only is it possible to have a home funeral, it is beneficial. Those who have attended a home funeral (sometimes called a "green funeral") have consistently spoken about how meaningful and healing the experience was. Caring for the body of your loved one after death is an extension of the love and attention that occurred during life. Seeing the small changes the body goes through helps one to understand in a visceral way that death has occurred, which in turn leads to acceptance and less complicated grief. When people are directly involved and have control and knowledge of the death care process, they move through the pain of loss in an empowering way.

Home funeral educators offer presentations and workshops that teach families how to have a home funeral. Some educators also make themselves avail-

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able to families at the time of death to guide them through the process of having a home funeral. They spread the word that the home funeral option is healthy, natural, simple, inexpensive, and uplifting for the family and their community.

The same baby boomers that brought back home birth are now embracing home death, home funeral, and green burial. They are discovering that embalming is very rarely required. They are learning about environmentally friendly alternatives to cremation and conventional burial. Previously, those who did not want the expense and grandiosity of an expensive funeral and environmentally damaging burial thought that their only alternative was a direct cremation, an approach that eliminates the ability to say good-bye in person and can lead to deep pain and loss. As people gain accurate information about home funeral, they lose their fears and grasp on to its simplicity. Home visitation encourages personal expression and community involvement. There is no need to attempt to make a generic funeral home seem homelike.

Natural birth and home birth are safe, empowering, and beautiful experiences that honor the woman and her family and welcome the baby into a loving, low-tech, and personal environment that encourages lifelong health for the family. A home funeral respects the dignity and individuality of the deceased, provides a loving and honoring way to say good-bye, empowers family and friends to be involved, and helps the bereaved on their grief journey.

RESOURCES

www.AfterDeathHomeCare.com
www.homefuneralalliance.org
www.funerals.org
www.homefuneraldirectory.com

On the Need for a Real Choice

Steve Calvin

ABSTRACT

For low-risk mothers who do not wish to give birth in a hospital, a nearby birth center led by midwives is an excellent option.

When talk turns to healthcare reform, pregnancy is what I know best. Each year, nearly 4 million women in the United States deliver a baby.[1] Pregnancy and related diagnoses account for a large percentage of hospital admissions and costs.[2] The total national cost of pregnancy and newborn care is at least $50 billion.[3] At least $20 billion is paid for by public programs.[4] The piles of dollars spent have not translated into satisfied mothers or the rational use of medical interventions. Reform in the delivery of pregnancy care is long overdue.

We currently have a system that maximizes the chance of an expensive, uncomfortable, inconvenient, and impersonal experience for most pregnant women. If more women knew that there was a patient-friendly alternative, change would happen quickly.

During medical school the joke was that pregnancy was a disease curable only by cesarean section. Thirty-three years later, the 33[4] percent rate of cesarean section in the U.S. is not a laughing matter. The intensity of medical training also makes it easy for physicians to slip into impersonal references to patients by their diagnosis rather than their name. It is important to remember that pregnancy really is a momentous normal biological process that most often ends with a healthy mother and baby.

Spontaneous labor clearly maximizes the chances for a normal vaginal birth (even if it inconveniently happens in the middle of the night). Unless there are clear medical reasons to induce labor, doing so increases the risk of unnecessary cesarean section. Often the best advice for birth attendants is, "Don't just do something, stand there."

On the other hand, years of obstetrical experience with a specialization in high-risk pregnancy care have shown me the disasters that can befall a pregnant women and her baby. Some are predictable and preventable, but many arise out of normal situations that rapidly go wrong. If birth is a journey, then it pays to utilize safety measures.

Some call for more home births attended by midwives as the best solution. Less than one in 100 deliveries nationally occurs at home in the U.S.[5] The problem is that 10 to 15 percent of the women and babies cared for at home or in a distant birthing center will need transfer to a hospital. These women

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are often unfairly referred to as "failed home births." Although home births should remain an option, the best option is an accredited birth center in close proximity to a hospital.

Many hospitals call their delivery suites "birth centers," but their presence in a hospital guarantees increased costs and a higher likelihood of intervention. The best solution is to utilize midwife-led, homelike, patient-friendly birth centers, near but independent of a hospital. This provides support for natural birth, true cost savings, as well as a pre-arranged medical safety net for those who need it. Better a five-minute wheel chair ride than a harrowing half hour trip in an ambulance.

What is comes down to in 2013 is that mothers should have real choices of careprovider and location. Whether delivered by midwives, family practice physicians, or obstetricians in hospitals or birth centers, I believe that the best care is delivered by arranging a seamless obstetrical safety net. This makes it much easier to avoid the routine medicalization of pregnancy. With the growth of these options throughout the country, we have reached the tipping point to a better pregnancy care system.

NOTES

1. *http://www.cdc.gov/nchs/fastats/births.htm,* accessed 9 September 2013.
2. *http://transform.childbirthconnection.org/resources/datacenter/factsandfigures/,* accessed 9 September 2013.
3. *http://transform.childbirthconnection.org/reports/cost/,* accessed 9 September 2013.
4. *http://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Population/Pregnant-Women/Pregnant-Women.html,* accessed 9 September 2013.
5. *http://www.cdc.gov/nchs/data/databriefs/db84.htm,* accessed 9 September 2013.

Law

Legal Briefing: Home Birth and Midwifery

Thaddeus Mason Pope and Deborah Fisch

ABSTRACT

This issue's "Legal Briefing" column covers recent legal developments involving home birth and midwifery in the United States. Specifically, we focus on new legislative, regulatory, and judicial acts that impact women's[1] access to direct entry (non-nurse) midwives. We categorize these legal developments into the following 12 categories.[2]

1. Background and History
2. Certified Nurse-Midwives
3. Direct Entry Midwives
4. Prohibition of Direct Entry Midwives
5. Enforcement of Prohibition
6. Challenges to Prohibition
7. Forbearance without License
8. Voluntary Licensure
9. Unclear and Uncertain Status
10. Growth of DEM Licensure
11. Licensure Restrictions
12. Medicaid Coverage

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1. BACKGROUND AND HISTORY

One hundred years ago, most births in the United States were home births.[3] Today, fewer than 1 percent of births take place in a home setting. Almost all U.S. births now occur inside a hospital setting.[4] Nevertheless, statistics from the U.S. Centers for Disease Control and Prevention (CDC) indicate that the low number of home births has significantly increased in recent years. Between 2004 and 2009, the percentage of home births jumped 29 percent, from 0.56 percent to 0.72 percent of the more than four million annual U.S. births.[5] Moreover, this is a national average. In eight states, the percentage of home births is 2 percent or higher.[6]

Despite this recent increase, the rate of home birth in the U.S. stands in sharp contrast to the rate of home birth in most other developed countries.[7] For example, while the Duchess of Cambridge recently famously decided to forgo a home birth,[8] 2.4 percent of women in the United Kingdom do have home birth.[9] In the Netherlands, the home birth rate is much higher, around 20 percent.[10] Notably, these and other European countries have a greater number of midwife-attended births, not only at home but also in hospitals and in freestanding birthing centers. This use of midwives across birth settings tends to make the systematic use of midwives out-of-hospital more acceptable. The normalization of midwifery care in one setting leads to the advancement of such care in other settings.[11] In contrast, the low 1 percent rate of home birth in the U.S. correlates to

the overall low 8 percent rate of all midwife-attended births.[12]

There are many reasons for the low rate of home birth in the U.S. Causal factors include: (1) historical and cultural factors such as disapproval of the medical community; (2) perceived safety concerns; and (3) women's lack of awareness of the ongoing practice of home birth and profession of midwifery, as fuelled by homogeneous depictions of hospital birth in the mainstream media.[13] But some of the most serious impediments to home birth are legal obstacles, such as criminal and regulatory restrictions on the ability of non-nurse-midwives to practice.[14] To be sure, restrictions on nurse-midwives also impact the availability of home birth. While additional nurse-midwives would like to be more involved, many are restricted by scope of practice and supervisory regulations.[15] In short, an examination of the legal status of home birth must naturally focus on the legal status of midwives.

Admittedly, some women give birth at home without the assistance of a medical or professional birth attendant. This practice is known as "unassisted childbirth or "freebirth."[16] Most U.S. home births, however, take place in the presence of a midwife.[17] There are two main types of midwives: (1) certified nurse-midwives and (2) direct entry midwives.

2. CERTIFIED NURSE-MIDWIVES

Certified nurse-midwives (CNMs) are registered nurses who have studied obstetrics and gynecology in a nurse-midwifery educational program that is accredited by the Accreditation Commission for Midwifery Education (ACME), the accrediting organization of the American College of Nurse-Midwives (ACNM).[18] After graduating with a master's or doctoral degree, these nurses are then certified as CNMs by the American Midwifery Certification Board (AMCB), the certifying organization of the ACNM.[19] The AMCB, in turn, is accredited by the National Commission for Certifying Agencies.

CNMs have the highest degree of academic medical training of all practicing midwives. CNMs are trained in both nursing and midwifery, and have a broad scope of practice. Consequently, they are able to provide a wide range of well-woman services beyond pregnancy and childbirth. Moreover, the legal status of CNMs is relatively settled. They are licensed in every state—sometimes as nurses and sometimes as CNMs. Their services are usually reimbursable by insurance. While CNMs are qualified to offer care both inside and outside hospitals, most of them focus on labor and delivery in a hospital setting.[20] CNMs attend fewer than one in five home births.[21] This ratio is most likely the result of the legal disincentives and outright prohibitions mentioned above, but may also be due to professional culture, lifestyle issues, and monetary concerns.

3. DIRECT ENTRY MIDWIVES

Most U.S. home births are attended by "direct entry midwives," individuals who train in the midwifery model of care[22] without becoming nurses. These non-nurse or "unmedicalized" midwives are trained in midwifery through a combination of self-study, schooling, and apprenticeship. There are three categories of direct entry midwives: (1) certified midwives, (2) certified professional midwives, and (3) "uncertified" midwives.[23] The legal status of these various types of midwives varies significantly from state to state, as discussed in Sections 4 to 11 below.

Certified Midwives

Certified midwives (CMs), like certified nurse-midwives, graduate with at least a master's degree from a midwifery education program accredited by the ACME.[24] Unlike CNMs, CMs do not need an RN (registered nursing) degree to become certified. On the other hand, it can be argued that the CM is closer to a non-nurse variation of the CNM credential, rather than a bona fide DEM type, due to the CM requirement of an advanced degree from an academic institution. CMs are quite rare.[25] They are licensed in only a handful of states.[26]

Certified Professional Midwives

Far more relevant to legal questions surrounding home birth are certified professional midwives (CPMs). The vast majority of home birth midwives are CPMs. These midwives are trained in midwifery and certified through the North American Registry of Midwives (NARM), the certifying body of the Midwives Alliance of North America (MANA).[27] NARM, in turn, is accredited by the National Commission for Certifying Agencies.[28] As discussed below in Section 10, over time, 26 states have licensed the CPM credential.[29]

There are two main routes to CPM certification.[30] First, a candidate can complete a formal midwifery education program that is accredited by the Midwifery Education Accreditation Council (MEAC). Second, a candidate can follow the "portfolio evaluation process" (PEP) pathway. The PEP neither requires nor grants a degree or diploma. Instead, the

candidate must complete an apprenticeship or internship program in which she attains minimum experience requirements (for example, a certain number of exams and births) and documents proficiency in midwifery skills.[31] This experiential model of education is not unique to CPM, but is emerging as a preferred method in many fields, such as engineering, business administration, and most recently, law.[32] Once certified, CPMs are required to recertify every few years. To this end, they must undertake continuing education and professional development.[33]

Uncertified Midwives

In contrast to CMs and CPMs, midwives who are not certified by either AMCB or NARM are, for the most part, also unlicensed.[34] Some uncertified midwives are religious birth attendants, who are arguably exempt from the legal framework governing nonreligious midwives.[35] Others are practicing cultural traditions or providing gratuitous services. These midwives are also often exempt from regulation.[36] However, many midwives believe the scope of states' religious exemptions to be broader than they actually are.

4. PROHIBITION OF DIRECT ENTRY MIDWIVES

Under the constitutional doctrine of privacy, a woman arguably cannot be restricted from giving birth in the location of her choosing. However, the law may restrict who may attend her. Across the U.S., there are four significant variations in the legal treatment of direct entry midwives (DEMs). First, some states license and regulate them. Second, some states permit DEMs to practice without licensure or regulation. Third, in some states, the legal status of DEMs is unclear and uncertain. Fourth, at the extreme of this spectrum, nine states criminally outlaw and prohibit the practice of direct entry midwifery.

The classic method by which state legislatures prohibit direct entry midwifery is by clarifying, through statute, that midwifery constitutes the practice of medicine (or nursing) and by then excluding DEM from the categories of person that can practice medicine (or nursing).[37]

Typically, states define the practice of medicine in an all-encompassing fashion to include all treating and diagnosing of any disease, injury, pain, or condition. This broad scope is limited only in its legal characterization of certain subsets of medicine as distinct professions, such as nursing. In other words, a practitioner can avoid the unauthorized practice of medicine only by practicing within the scope of another healthcare license.

Most CNMs therefore obtain licenses initially due to their nursing credentials.[38] However, in many states, no equivalent legal characterization is available to DEMs. Therefore, when a DEM practices midwifery in such a jurisdiction, she is committing the crime of practicing medicine without a license (often phrased as "the unauthorized practice of medicine").

Five states define direct entry midwifery as the unlicensed practice of medicine or the unlicensed practice of nurse midwifery: Illinois,[39] Iowa,[40] Kentucky,[41] Maryland,[42] and South Dakota.[43] Indiana also criminally prohibited direct entry midwifery and permitted only CNMs,[44] until a new statute, effective July 2013, instituted a new license for "certified direct entry midwives."[45]

North Carolina's prohibition is even more direct. The statute provides: "No person shall practice or offer to practice or hold oneself out to practice midwifery unless approved. . . ."[46] North Carolina only approves only CNMs to practice midwifery. Therefore, a DEM practicing in North Carolina would be "unapproved" and engaged in the unauthorized practice of midwifery.

Three other states have taken a very different and more circuitous approach to prohibition. For example, the relevant Alabama statute seems to permit practice by direct entry midwives with a license to practice midwifery. It states: "Nothing . . . shall be construed as to prevent lay midwives holding valid health department permits from engaging in the practice of lay midwifery as heretofore provided until such time as said permit may be revoked by the county board of health."[47] But in reality, the intention was simply to grandfather the existing midwives for some period of time and eventually replace them with nurse-midwives.[48]

In fact, the relevant Alabama health agencies have not issued any such licenses for decades.[49] Therefore, the official legal status of DEMs in Alabama is misleading and purely technical. No DEM may practice without a license. And no DEM has (or can get) a license.

Similarly, the relevant statutes in Georgia[50] and Rhode Island[51] potentially permit the licensing of DEMs. For example, the Rhode Island statute provides, "The state director of health is authorized and directed to make rules for the regulation of the practice of midwifery and for the licensing of midwives. . . ."[52] This statute, like many comparable ones, grants considerable discretion to the administrative agency charged with its implementation. In exercising its

discretion, the Rhode Island Department of Health promulgated rules for the practice of midwifery, authorizing only the practice of CNMs, not DEMs.[53] Georgia's administrative agency has exercised its discretion to limit the practice of midwifery to CNMs.

5. ENFORCEMENT OF PROHIBITION

The prohibition of direct entry midwifery is hardly a mere formality like archaic laws prohibiting women from wearing pants or laws prohibiting unmarried couples from living together. State attorneys actively prosecute midwives. The charges usually include: (1) the unauthorized practice of medicine, (2) child abuse, and (3) manslaughter. DEMs are most at danger of prosecution when they experience a bad outcome, especially the death of a baby. Occasionally, although rarely, prosecutors charge the mothers.[54] The restraining tactics employed against parents in such cases tend more often to be the involvement or threatened involvement of state child protective services agencies.

For more than a century, authorities have been charging DEMs with practicing medicine without a license.[55] One of the earliest and most famous cases was Massachusetts's prosecution of Hanna Porn in 1905.[56] A steady stream of prosecutions and convictions has continued ever since.[57] Over just the past few years, there have been dozens of prosecutions and convictions.[58] There have also been prosecutions of unlicensed midwives practicing in jurisdictions where a license is available.[59] When the baby or mother suffers a bad outcome, prosecutors often criminally charge the midwife with child abuse or manslaughter.[60]

Furthermore, in all states that do not affirmatively license DEMs, the mere threat of action by local law enforcement can exert a chilling effect on the practice of midwifery. As documented by midwives' personal accounts, the issuance of a cease and desist order is sufficient to cause midwives to go underground, stop practicing, or leave the state.[61] At best, the introduction of such a climate of fear may result in dangerous and excessively risk-averse practices by midwives, such as a reluctance to transfer a woman to a hospital, when transfer is indicated, or a refusal to accept clients with even the most minimal of risk factors.

In cases in which midwives are arrested, it is most likely, as with most criminal charges, that the defendant will accept a plea bargain rather than proceed to trial. Like people in other low-paid professions, midwives find the cost of hiring a defense attorney to be prohibitive. Court-appointed attorneys for the indigent are unlikely to understand the complexities of midwife prosecutions. All in all, the process of defending oneself against such charges is sufficiently punitive to destroy a woman's career in midwifery.[62]

Finally, while most of the legal barriers to home birth are legal barriers to DEM, pregnant women and mothers have themselves been sanctioned in at least five ways. First, they are charged with child endangerment or criminally negligent failure to seek medical attention.[63] Second, they have been taken into custody and forced to go to a hospital to give birth.[64] Third, they have been charged with child abuse.[65] Fourth, state child protection services workers have removed babies from their mothers' custody.[66] Fifth, even when authorities do not actually take any of these actions, the threat of such intervention is sufficient to cause parents to abandon plans for home birth.[67]

6. CHALLENGES TO PROHIBITION

For decades, DEMs have challenged criminal prohibitions on their practice. They have made five main constitutional arguments: (1) privacy, (2) due process, (3) equal protection, (4) First Amendment, and (5) vagueness. Almost all of these challenges have been unsuccessful.[68]

First, DEMs have argued that the criminal prohibition of DEM violates the woman's constitutional privacy right to choose a birth attendant. The courts have rejected this argument, holding that the right to privacy that protects a woman's right to have an abortion[69] has never been interpreted to also include the right to choose the manner and circumstances in which her baby is born.[70]

Second, DEMS have argued that treating nurse-midwives and non-nurse-midwives differently (permitting the former but not the latter) violates equal protection. Courts have rejected this argument too, holding that the distinction is reasonably related to the state's legitimate interest in protecting public health and safety.[71]

Third, DEMs have argued that the criminal prohibition of DEM deprives them of a substantive due process right to earn a living in their chosen profession. This argument fails for much the same reason as the equal protection argument. Since the right to earn a living is not a fundamental right, the courts have held that it is outweighed by state regulation reasonably related to the state's legitimate interest in protecting public health and safety.[72]

Fourth, DEMs have argued that the criminal prohibition of DEM violates their freedom of speech. In

contrast to the due process argument, speech is a fundamental right, triggering strict scrutiny analysis. Even these First Amendment challenges have failed. The courts have held that the states' licensing schemes are narrowly drawn to achieve the compelling state interest of protecting the health of mothers and children.[73]

Fifth, DEMs have argued that statutes prohibiting DEM are unconstitutionally vague. DEMs have contended that they could not determine what conduct was prohibited. These challenges have also usually failed.[74] The courts have held that most of these statutes explicitly and definitely state what conduct is punishable, thereby giving fair notice of what conduct is prohibited under the law.

In contrast to this track record of constitutional challenges by DEMs, pregnant women and new mothers have more successfully challenged criminal sanctions imposed on themselves for choosing home birth. For example, in *Massachusetts v. Pugh,* a woman failed to summon medical help during and after giving birth precipitously at home. The state obtained a conviction against her for criminal negligence. However, the Massachusetts Supreme Judicial Court reversed, holding that she had no duty to seek medical assistance.[75] The court explained: "Imposing a broad and ill-defined duty on all women to summon medical interventions during childbirth would threaten their liberty interest in refusing unwanted medical treatment."

Not only does the imposition of unwanted medical treatment threaten a woman's liberty interest, but her inability to procure healthcare constitutes a denial of human rights as evoked in three recent cases brought before the European Court of Human Rights. While these cases have no direct application to, or impact on, U.S. law; they are instructive and potentially persuasive.[76]

In *Ternovszky v. Hungary,* Anna Ternovszky alleged that she could not find adequate professional assistance for a home birth.[77] Due to the threat of prosecution, Hungarian midwives were dissuaded from assisting those wishing home birth. Ternovszky claimed that the uncertain legality of home birth midwifery interfered with the exercise of her rights under Article 8 of the European Court of Human Rights (ECHR) (respect for private and family life). The Court agreed. Hungary subsequently complied with the ECHR decision and authorized the licensing of home birth midwives. But the new Hungarian law excluded home birth midwifery from coverage under the national social insurance. And it also subjected home birth midwifery to extensive restrictions, such as prohibiting home births more than 20 minutes away from a hospital.[78] Nevertheless, it is exactly these remote locations that put women at higher risk for not receiving prenatal care, which midwives are well situated to provide.[79]

Anna Ternovszky's midwife, Agnes Gereb, was arrested in 2010. In 2012, she was sentenced to two years in prison for negligence related to two home birth fatalities from 2006 and 2007. She is currently under house arrest. A second case before the European Court of Human Rights alleges that Gereb did not receive a fair trial. Unlike other healthcare professionals who are held to the standards of their peers, Gereb was assessed against standards that were established by unqualified and biased experts.[80] This case is still pending.

In a third case before the European Court of Human Rights, several Lithuanian women complain that they cannot obtain adequate professional assistance in home birth because Lithuanian law prohibits and obstructs healthcare specialists who want to help pregnant women during home birth.[81] Lithuanian officials determined that the *Ternovszky* decision only emphasized the importance of legal certainty. They maintain, in opposition to the petitioners, that *Ternovszky* does not require the state to affirmatively establish a regulatory framework to allow home birth. This case is still pending.

7. FORBEARANCE WITHOUT LICENSE

In the United States, while DEM is prohibited in nine states (Alabama, Georgia, Iowa, Illinois, Kentucky, Maryland, North Carolina, Rhode Island, and South Dakota), DEMs in 11 other states (Connecticut, Kansas, Massachusetts, Maine, Michigan, Mississippi, Missouri, North Dakota, Nevada, Oklahoma, and Pennsylvania) have obtained (1) court decisions, (2) attorney general opinions, or (3) statutes holding that direct entry midwifery is not the practice of medicine or nursing. Therefore, DEM in these states falls outside the scope of the prohibition against the unlicensed practice of medicine. But while these states do not prohibit direct entry midwifery, they do not license or regulate it either.[82] Their posture has been one of forbearance or tolerance, in varying degrees. In these states midwives often consider their practice to be "alegal."

While, as discussed above, most constitutional challenges to the prohibition of DEM have failed, some statutory interpretation challenges have succeeded. In eight states, appellate courts have ruled that DEM is not the practice of medicine.[83] These states include: Connecticut,[84] Kansas,[85] Massachu-

setts,[86] Michigan,[87] Nevada,[88] North Dakota,[89] Oklahoma,[90] and Pennsylvania.[91]

In two other states, Maine[92] and Mississippi,[93] DEMs did not obtain a judicial decision. Instead, each state's attorney general issued an interpretive legal opinion holding that pregnancy and childbirth are not covered by the state's medical practice act.

In Missouri, DEMs have obtained a statute that provides direct entry midwifery is not the practice of medicine.[94] The Missouri law states that "any person who holds ministerial or tocological certification by an organization accredited . . . may provide [midwifery] services." The state medical association challenged the constitutionality of the statute, but the Missouri Supreme Court rejected the challenge and upheld the statute.[95]

Nevertheless, it is doubtful exactly what, if any, level of protection is actually afforded by these 11 states' court opinions, attorney general opinions, and statutes.[96] In theory, DEMs in these states should not be charged with the unauthorized practice of medicine/nursing. Regardless, local prosecutors may file charges, either in ignorance of state law or from a desire to challenge it. Such a challenge would be well founded. The U.S. Supreme Court was petitioned to take up an Illinois case that found practicing midwifery to be the practice of medicine. The Court's refusal to grant *certiorari*[97] indicates to prosecutors everywhere that the highest law of the land does not prevent them from issuing cease and desist orders to midwives or arresting them for the unauthorized practice of medicine or nursing.[98]

In addition, should an unlicensed midwife experience a bad outcome, prosecutors in the 11 states listed above might still charge her with reckless endangerment, negligent homicide, or some other criminal charge.[99] This stands in sharp contrast to the civil or disciplinary sanctions imposed on physicians or other licensed practitioners who experience bad outcomes. It is hard to imagine an arrest warrant being issued for a medical professional in the absence of egregious intentional conduct.

8. VOLUNTARY LICENSURE

Oregon and Utah have enacted unique "voluntary licensure" statutes: they permit practice by both licensed and unlicensed midwives. The Oregon statute has long provided that a license is "required only for purposes of reimbursement under medical assistance programs and is not required for the practice of direct entry midwifery."[100] In 2013, Oregon amended this statute[101] to allow a person to practice direct entry midwifery without a license, either if (1) the person is a licensed healthcare practitioner and midwifery services are within the scope of the person's license, or if (2) the person is acting as a "traditional midwife" and complies with a number of conditions like not using prescription drugs, not advertising, and making detailed informed consent disclosures on an approved form.[102]

Utah authorizes voluntary licensure through two statutes. One states: "Nothing in this chapter abridges, limits, or changes in any way the right of parents to deliver their baby where, when, how, and with whom they choose, regardless of licensure under this chapter."[103] The other statute provides that ". . . it is lawful to practice Direct-entry midwifery in the state without being licensed. . . . The practice of Direct-entry midwifery is not considered the practice of medicine, nursing, or nurse-midwifery."[104] So, in Utah, as in Oregon, a DEM can legally practice either with or without a license.

9. UNCLEAR AND UNCERTAIN LEGAL STATUS

Nine states prohibit DEM, 11 states tolerate it, and two states allow voluntary licensure. But in a fourth group of states, its legal status is unclear and uncertain. In these five states, no court opinion, attorney general opinion, or statute confirms that DEM constitutes the practice of medicine. But neither does any legal authority confirm that DEM does not constitute the practice of medicine. In the District of Columbia, Hawaii, Nebraska,[105] Ohio,[106] and West Virginia,[107] DEMs do not know, one way or the other, whether they can be, or will be, criminally charged with the unauthorized practice of medicine.[108]

The District of Columbia has long been categorized as a jurisdiction that prohibits DEM,[109] but a May 2013 decision from the D.C. Office of Administrative Hearings casts doubt on that assessment. The D.C. Department of Health charged Karen Carr with the unlicensed practice of nurse midwifery. In a lengthy and well-researched opinion, the administrative law judge (ALJ) dismissed those charges. The ALJ ruled that "lay midwifery [is] a practice separate from nurse midwifery, and one that the District of Columbia does not regulate."[110] Nevertheless, the decision is not binding precedent. Nor does it clarify whether DEM is separate from the practice of medicine. Therefore, the legal status of DEM in the District of Columbia remains uncertain.

10. GROWTH OF DEM LICENSURE

Even if the legality of DEM were certain, in the absence of licensure, the standards of practice would

remain unknowable. Licensure offers significant advantages beyond recognition and authorization. It benefits both midwives and families. Licensure benefits midwives by defining their scope of practice, clarifying what interventions they may provide without opening themselves to charges of the unauthorized practice of medicine, and affording an official imprimatur that confers a certain degree of legitimacy.[111]

At the same time, licensure benefits families by improving consumer protection and quality assurance. Licensure helps ensure that practitioners are minimally qualified. It assures that the practice is safer and more transparent, for example facilitating transfer to a hospital when indicated. Moreover, licensure provides a mechanism for regulating members of the profession by means of an internal oversight and disciplinary process.[112]

CNMs are licensed as nurses in every state.[113] In contrast, CMs are licensed in just three states: New Jersey,[114] New York,[115] and Rhode Island.[116] While not licensed, CMs are also permitted to practice in both Delaware[117] and Missouri.[118]

In CPM licensure there is substantial variation among the states. Since the development of the credential in 1994, the trend among the states has been to use the CPM as the basis for state licensure.[119] Some states developed their own standards and exams before the creation of the CPM credential.[120] Still other states do not require CPM certification, but allow CPMs to expedite licensure and bypass otherwise-required licensing requirements.[121]

Today, 26 states license and regulate DEMs.[122] The first eight states to do so, in the 1970s and 1980s, were Arizona,[123] Arkansas,[124] Delaware,[125] New Hampshire,[126] Louisiana,[127] New Mexico,[128] South Carolina,[129] and Texas.[130] During the 1990s, nine more states regulated DEMs: Alaska,[131] California,[132] Colorado,[133] Florida,[134] Minnesota,[135] Montana,[136] New York,[137] Oregon,[138] and Washington.[139] Lastly, during the 2000s, eight more states enacted legislation regulating DEMs: Idaho,[140] New Jersey,[141] Tennessee,[142] Utah,[143] Vermont,[144] Virginia,[145] Wisconsin,[146] and Wyoming.[147]

In 2013, Indiana enacted a statute authorizing the practice of DEMs, beginning 1 January 2014.[148] It urges the Indiana Medical Licensing Board, with input from a midwifery committee, to "Establish as a requirement for certification as a certified direct entry midwife the Certified Professional Midwife credentials developed by the North American Registry of Midwives or a successor organization."[149] The new law also establishes continuing education requirements and peer review procedures.

As this brief chronology suggests, there has been a distinct and steady trend toward expanded DEM licensure. And this trend continues. Organizations and associations supporting home birth and DEM have been politically active in many states. These include: the Internation Center for Traditional Childbearing, the North American Registry of Midwives,[150] the Big Push for Midwives,[151] Citizens for Midwifery,[152] the National Association of Certified Professional Midwives,[153] and the Midwives Alliance of North America.[154] Importantly, these advocacy efforts are also often supported by parents and doulas (professional birth assistants).

In 2013, new bills were introduced or reintroduced in a number of states, including: Alabama,[155] Illinois,[156] Massachusetts,[157] Maryland,[158] Michigan,[159] North Carolina,[160] and West Virginia.[161] Furthermore, some states have been moving to license DEMs through administrative, rather than legislative, action. For example, Pennsylvania currently does not license or regulate DEMs, but will soon promulgate rule-making authorizing a DEM license through its state board of medicine.[162]

11. LICENSURE RESTRICTIONS

Entry requirements are not the only obstacles to DEM practice. Even once licensed or permitted, midwives may not be able to legally practice because they cannot comply with restrictive license requirements.[163] State regulations typically limit the types of patients whom direct entry midwives can serve. For example, many states forbid DEMs to attend vaginal births after cesarean (VBAC), breech births, births of multiples, or other "high-risk" births. These restrictions are slowly being softened and removed. For example, 2011 legislation in Arizona required the state health department to adopt rules: (1) to reduce the regulatory burden on licensed midwives, (2) to expand the scope of practice (to include VBAC, for example), and (3) to link licensing standards to CPM certification.[164] While states remain divided over breech[165] and multiple births,[166] many now conditionally permit DEMs to attend VBAC.[167]

Nevertheless, all these patient-specific practice limitations are far less important than the most significant and material limitation on DEMs: a license requirement for physician supervision. Midwives must always make arrangements for medical care in the event of an unexpected change in risk status of the mother or child during the course of the pregnancy, labor, or birth that would exceed the midwife's scope of practice.[168] Consequently, some states that regulate midwives require that they have a

"collaborative agreement" or "affiliation" with a physician,[169] so that midwives may confer over complicated cases and potentially refer them to the physician.[170] Some states instead simply require consultation in specified circumstances.[171]

Other states, like California,[172] take this a step further and categorically require not just collaboration and consultation but physician supervision. Delaware requires only "collaboration," yet this is perceived to be just as onerous as a supervision requirement.[173] While supervision does not require the physical presence of the physician, the supervision requirement is still a material impediment for midwives, because they find it very difficult to find physicians who are willing to supervise them.[174] There are several possible reasons for such a refusal.

First, physicians may not be available in the rural area where the midwife works.[175] That is, they may not have "reasonable geographic and/or temporal proximity to the patient."[176] Second, supervising physicians are often afraid of increased liability. Third, it can be expensive. Physicians often pay substantially higher malpractice premiums when they supervise a midwife.[177] Fourth, some physicians object on philosophical or anti-competitive grounds.

Indeed, problems finding a physician supervisor are so great that one California judge refused to discipline a DEM who was practicing without supervision, because, despite the midwife's best efforts, no physician would enter such a relationship with her. While the California Medical Board is currently not enforcing this requirement, this state of affairs provides little comfort to California DEMs who are concerned about the legality of their practice.[178]

States have been considering amendments to eliminate or reduce the supervision or collaboration barrier. For example, in 2012, Louisiana enacted legislation limiting professional liability for physicians performing risk assessments for midwives.[179] While this directly benefits physicians, it also likely benefits midwives, because it makes physicians more likely to agree to perform required assessments. As of August 2013, California was still considering legislation to eliminate the supervision or collaboration barrier and give CPMs more autonomy.[180] Delaware tried to delete its collaboration requirement, but the final bill enacted did not contain the necessary language.[181]

12. MEDICAID AND OTHER INSURANCE COVERAGE

While the lack of DEM licensure and restrictions on DEM licensure are major barriers to home birth, they are not the only ones.[182] Many states do not require Medicaid or private insurance to cover midwifery care by direct entry midwives.[183] While the average hospital delivery costs around $30,000, charges for a DEM-attended home birth are far less: only a professional fee is charged, without accompanying facility fees.[184] But because most insurance companies do not offer coverage or reimbursement for this care, women who choose to have a delivery with a DEM often have to pay for their care out-of-pocket. Therefore, real access to midwifery services is restricted to women with financial means.[185]

This reimbursement situation is slowly changing. More states are requiring private insurers to include DEM services.[186] For example, in 2011, Vermont enacted legislation requiring health insurance policies to cover midwifery services and home birth.[187] Conversely, as more families lose employer-supplied health insurance and arrive at pregnancy with poorer coverage or none at all, an out-of-pocket home birth compares favorably to hospital birth paid entirely out-of-pocket or accompanied by high copays or deductibles. But the insurance coverage most important to pregnancy and birth is Medicaid.

Medicaid currently finances more than 40 percent of all U.S. births. States may offer Medicaid reimbursement to any healthcare professional licensed in the state. But even among the 26 states that license DEMs, Medicaid now pays for DEM services in fewer than 15 of those states.[188] The remaining states have elected not to include DEM coverage in their state Medicaid plans. However, pending federal legislation, the "Access to Certified Professional Midwives Act of 2013," would mandate the extension of Medicaid coverage to certified professional midwives.[189]

Federal amendments to public insurance programs may also expand access to home birth in another way. Medicare and Medicaid already require coverage for nurse-midwifery services.[190] In contrast to DEMs, CNMs are authorized to be paid directly for services that they are legally authorized to furnish under state law and that are of the type that would otherwise be covered if furnished by a physician or incident to a physician's services.[191] The Medicaid rate of reimbursement for CNMs had traditionally been at just 65 percent of the physician rate, but effective 1 January 2011, the Affordable Care Act (ACA) raised this to 100 percent.[192] While Medicare covers only a small percentage of births, it influences reimbursement levels of other payers. Increased reimbursement should lead to greater access and growth of the practice.[193] In contributing to more-independent CNM practice,[194] this increase

may also expand access to home birth attended by CNMs.

Two questions more open to debate are (1) whether Medicaid is currently restricted by law to reimburse only licensed practitioners, and (2) whether the Affordable Care Act's (ACA's) nondiscrimination provision will mandate inclusion in insurance plans for all licensed practitioners. In response to the first question, state Medicaid plans currently may include coverage by unlicensed providers. States that include such provisions do so in the context of home visiting services, rural health clinics, and substance abuse treatment; in some cases, supervision requirements apply. Theoretically, unlicensed midwives could likewise be included in state plans; however, as of 2007, the only states with Medicaid plans that reimbursed DEMs were Florida, New Hampshire, New Mexico, Oregon, South Carolina, Vermont, and Washington, all states that license CPMs.[195]

The second question, whether the ACA's provider nondiscrimination clause (§ 2706)[196] will mandate that insurance plans cover all licensed providers, seems to find agreement only in its lack of applicability to Medicaid (and other government-funded plans). It is intended to apply only to "group health plans and health insurance issuers offering group or individual coverage. . . ."[197] Opinions differ, however, as to the efficacy and enforceability of this provision, with nurse-practitioner[198] and chiropractor advocacy organizations[199] weighing in on the optimistic side, traditional medical organizations taking the opposite position,[200] and the federal government expecting insurers to implement § 2706 "using a good faith, reasonable interpretation of the law," without plans to issue any regulations on this section.[201] It seems, at the very least, premature to depend upon this section to "even up" inequalities in insurance coverage between CPMs and more mainstream maternity careproviders.

CONCLUSION

Restrictions on DEM practice impede significant quality improvement and cost reduction in prenatal care, labor, and delivery.[202] Moreover, the barriers to accessing midwife-attended home births disproportionately impact poor, minority, and rural women.[203]

Notably, the arguments for expanding access to DEM are very similar to those for removing the scope-of-practice barriers for nurse practitioners and for giving them a broader role in primary care. While physicians receive more training than nurses do in highly complex care, it is unclear that this extra training has a measurable impact on the quality and safety of routine primary care services. Just as liberalizing the nurse-practitioner scope of practice would expand access to rural and poor areas and bend the cost curve,[204] so too would removing barriers to direct entry midwifery.

Such barriers are not limited to the recipients of care, but apply also to potential careproviders, as the cost of advanced university degrees required of CNMs and CMs may be prohibitive to many prospective midwives. DEMs, on the other hand, can find training opportunities either within their communities or in a combination of local training arrangements and distance learning programs, thus allowing them to serve their communities of origin at a lower cost, while keeping local dollars in those communities. There they can hope to eventually set up shop as licensed midwives, in the process creating new jobs that also offer the best chance at providing culturally competent care for their particular communities.

In every way, then, the benefits furnished by this model of training and care bolster the legal and public health rationales for licensing DEMs. The U.S. Constitution allocates to each state the power to regulate behavior to preserve the health, safety, and welfare of its inhabitants. The states do not, however, grant licenses in order to promote monopoly within a field of healthcare or hinder competition between disparate healthcare providers in that field. Nor does an ambiguous level of legal protection benefit any of the parties involved: not midwives, who may practice safely and without state interference for decades, only to be arrested when the political wind shifts; not mothers, whose midwives may suddenly leave practice because of legal problems; and certainly not agents of law enforcement, whose duty to protect the citizens of their states requires a clear and certain knowledge of what behavior is permissible and what is not.

Furthermore, mothers have the human right to receive safe, accessible, affordable, respectful, and culturally competent care in pregnancy and childbirth. In addition, both constitutional and bioethical principles guarantee mothers a right to bodily integrity, a right to refuse care, and a right to care for their children as they see fit. Should a state erect obstacles to these rights, mothers will do what they always have done: what they must—whether this involves withholding information and trust from a state-imposed healthcare provider, or giving birth unattended for lack of an appropriate provider. Women cannot have full rights as mothers and citi-

zens if their right to give birth in the way they determine is best for them and their family is compromised by the state's refusal to license and regulate healthcare providers who can accommodate their needs.

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DISCLAIMER

Deborah Fisch advocates for legal recognition and oversight of Certified Professional Midwives in Michigan as a member of the executive committee of the Coalition to License CPMs.

NOTES

1. Most mothers and, indeed, midwives identify as women. We recognize that this is not always the case. While nevertheless following the custom of using female nouns and pronouns when discussing mothers and midwives, we acknowledge the complexities of gender identity in the context of our culture.

2. We focus on those laws impacting access to midwives and home birth. We do not address related issues concerning (a) access to freestanding birthing centers, (b) access to doulas, (c) the relationship between midwives and obstetricians, or the (d) informed consent obligations of obstetricians. Furthermore, given extreme variability in the legal treatment of midwifery in the United States, we do not have space to also examine at length the legal treatment of midwifery in other countries.

3. L.J. Reagan, *When Abortion was a Crime: Women, Medicine, and Law in the United States, 1867-1973* (Berkeley, Calif.: University of California Press, 1988).

4. A third location for births between the institution of the hospital and the autonomous home setting is the freestanding birth center.

5. M.F. MacDorman et al., "Home Births in the United States, 1990-2009," *NCHS Data Brief* 84 (January 2012). The authors noted that much of the increase was due to childbirth by older, married, White women. This suggests a grave lack of access to home birth maternity care by more marginalized populations. Groups like the International Center for Traditional Childbearing include in their mission the need to "develop and preserve the traditional role of the midwife in the Black community." *http://ictcmidwives.org/about-us/mission-statement/,* accessed 5 August 2013.

6. See MacDorman, note 5 above.

7. S. Goodman, "Piercing the Veil: The Marginalization of Midwifes in the United States," *Social Science and Medicine* 65, no. 3 (2007): 610-21.

8. B. Turner, "Duchess of Cambridge, Open Your Eyes to the Home Birth Revolution," *Telegraph*, 21 March 2013.

9. Office for National Statistics, "Characteristics of Birth 2, England and Wales, 2011 (Table 8)," *http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-279449,* accessed 5 August 2013.

10. R. de Vries et al., "What Does It Take To Have a Strong and Independent Profession of Midwifery? Lessons From the Netherlands," *Midwifery* (2013), *http://dx.doi.org/10.1016/j.midw.2013.07.007i,* accessed 5 August 2013.

11. W. Christiaens, M.J. Nieuwenhuijze, and R.G. de Vries, "Trends in the Medicalisation of Childbirth in Flanders and the Netherlands," *Midwifery* 29, no. 1 (2013): e1-8.

12. E.R. Declercq, "Trends in Midwife-Attended Births, 1989 to 2007," *Journal of Midwifery and Women's Health* 56, no. 2 (2011): 173-6.

13. Safety issues are hotly contested and fall outside the scope of this article. The history of midwifery and the reasons for its decline, since 1900, are also outside the scope of this article.

14. E.R. Declercq et al., "State Regulation, Payment Policies, and Nurse-Midwife Services," *Health Affairs* 17, no. 2 (1998): 190-200; M. Loecks, "Midwifery and the Law," in *Encyclopedia of Childbearing: Critical Perspectives,* ed. B. Rothman (Phoenix, Ariz.: Oryz Press, 1993), 255-8; V.V. Runes, "From Calling to Courtroom: A Survival Guide for Midwives," 2004, *http://www.fromcallingtocourtroom.net,* accessed 5 August 2013.

15. E.g., Cal. Bus. & Prof. Code § 2746.5; N.C. Gen. Stat. § 90-178.3(b). CNMs are specifically prohibited from attending home births in Alabama and Nebraska. Ala. Rev. Stat. § 34-19-8; Neb. Rev. Stat. § 38-613(3).

16. A. Hickman, "Born (Not So) Free: Legal Limits on the Practice of Unassisted Childbirth or Freebirthing in the United States," *Minnesota Law Review* 94, no. 5 (2010): 1651-81.

17. See MacDorman, note 5 above.

18. R.G. de Vries and R. Barroso, "Midwives among the Machines: Recreating Midwifery in the Late Twentieth Century," in *Midwives, Society and Childbirth: Debates and Controversies in the Modern Period,* ed. H. Marland and A.M. Rafferty (New York: Routledge, 1997), 248-72. The main professional organization for CNMs is the American College of Nurse-Midwives (ACNM), *http://www.midwife.org,* accessed 5 August 2013.

19. *http://www.amcbmidwife.org/home,* accessed 5 August 2013.

20. American College of Nurse-Midwives, "Issue Brief: Where Midwives Work," May 2012, *http://midwife.org/ACNM/files/ACNMLibraryData/UPLOADFILENAME/000000000277/Where%20Midwives%20Work%20June2012.pdf,* accessed 5 August 2013; Maryland Department of Health and Mental Hygiene, Midwives Working Group, "Meeting Minutes," 23 August 2012, *http://dhmh.maryland.gov/midwives/SitePages/Meetings.aspx,* accessed 5 August 2013.

21. See MacDorman, note 5 above.

22. See *http://cfmidwifery.org/mmoc/brochure_text.aspx,* accessed 5 August 2013.

23. DEMs are often referred to as "lay" midwives, a term implying that DEMs are untrained. In fact, these midwives usually have considerable training, merely less formal and academic than that of their hospital-based counterparts. Their training is also specialized to the conditions of out-of-hospital birth. J.P. Rooks, *Midwifery and Childbirth in America* (Philadelphia, Pa.: Temple University Press, 1999). We depart from customary usage, here, in order to employ a more descriptive and neutral term.

24. *http://www.amcbmidwife.org/amcb-certification/why-amcb-certification-,* accessed 5 August 2013.

25. The ACMB annual report for 2012, reports that the annual number of new CMs between 2000-2012 has ranged from two to 15, with an average of five. *http://www.amcb midwife.org/docs/annual-reports/amcb-annual-report-2012.pdf?sfvrsn=2,* accessed 5 August 2013.

26. See Section 10 above.

27. *http://www.mana.org/,* accessed 5 August 2013.

28. *http://www.credentialingexcellence.org/p/cm/ld/fid=121,* accessed 5 August 2013.

29. Before the advent of the CPM credential in 1994, individual states that licensed midwives each established their own requirements and standards. Since the availability of the CPM credential, the trend has been to use the CPM as the sole basis, or at least as an essential basis, for state licensure. See Section 10 above.

30. NARM also provides expedited paths for CNMs/CMs and other experienced midwives to obtain CPM certification.

31. *http://narm.org/entry-level-applicants/,* accessed 5 August 2013.

32. *http://www.abajournal.com/news/article/law_school_curricula_are_changing_survey_shows/,* accessed 5 August 2013.

33. *http://www.nacpm.org/,* accessed 5 August 2013.

34. R.G. de Vries, *Regulating Birth: Midwives, Medicine and the Law* (Philadelphia, Pa.: Temple University Press 1985); J.D. Rooks, *Midwifery and Childbirth in America* (Philadelphia, Pa.: Temple University Press 1997): 225-30.

35. *Northup v. Superior Court,* 237 Cal. Rptr. 255, 192 Cal. App. 3d 276 (1987).

36. E.g., Alaska Stat. § 08.65.170; Ark. Code Ann. § 17-85-105; Wash. Rev. Code. §§ 18.50.010 & 18.50.030.

37. Indiana recently established licensure for DEMs. But a pre-licensure case defined DEM as the unlicensed practice of medicine. *Smith v. State,* 459 N.E.2d 401 (Ind. App. 1984). Virginia repealed its prohibition of DEM in 2003. But an earlier statute specifically prohibited DEM. Va. Code Ann. § 32.1-147 ("All subsequent licensure for midwifery shall be limited to registered nurses who are trained as nurse-midwives. . . .").

38. A. Reed and J.E. Roberts, "State Regulation of Midwives: Issues and Options," *Journal of Midwifery and Women's Health* 45, no. 2 (2000): 130-49.

39. 225 Ill. Comp. Stat. Ann. §§ 60/3 & 60/3.5; *People v. Arendt,* 60 Ill. App. 89 (1895); *People v. Jihan,* 537 N.E.2d 751 (Ill. 1989); *Peckman v. Thompson,* 745 F. Supp. 1388 (N.D. Ill. 1990); *People v. Cryns,* 786 N.E.2d 139 (Ill. 2003); *Morris v. Department of Professional Regulation,* 824 N.E.2d 1151 (Ill. App. 2005). But see also *People v. Jihan,* 537 N.E.2d 751 (Ill. 1989); *Peckmann v. Thompson,* 745 F. Supp. 1388 (N.D. Ill. 1990).

40. Iowa Code Ann. §§ 147.2 & 148.1; 78 Iowa Attorney General Opinion 371 (1978).

41. Ky. Rev. Stat. Ann. §§ 311.560 & 314.043.

42. Md. Health Occupations Code §§ 8-503, 8-701 & 14-301; Hunter v. State, 676 A.2d 968 (Md. App. 1966).

43. S.D. Codified Laws § 36-4-8; South Dakota Board of Nursing v. Jones, 566 N.W.2d 142 (S.D. 1997).

44. Ind. Code §§ 25-22.5-8-2(b) & 25-23-1-13.1(a); *Smith v. State,* 459 S.E.2d 401 (Ind. App. 1984).

45. Ind. H.B. 1135 (2013) (Lehe), enacted as Ind. Pub. L. No. 232, codified at Ind. Code § 25-23.4-1.

46. N.C. Gen. Stat. § 90-178.3(a).

47. Ala. Code § 34-19-3.

48. Alabama's long history of safe and effective practice by African-American "granny" (or "grand") midwives is believed to have been cut short by the enactment of midwife licensure. In the early 20th century, the legislature required "lay midwives" to register with the state board of health in order to receive permits. Increasing amounts of supervision by medical and state public health personnel were instituted, culminating in the termination of the legal practice of "lay midwifery" in 1976, when the legislature restricted the practice of midwifery to nurse-midwives. S. Tovino, "American Midwifery Litigation and State Legislative Preference for Physician-Controlled Childbirth," *Cardozo Women's Law Journal* 11, no. 1 (2004): 61-106.

49. *State v. Kimpel,* 665 So. 2d 990 (Ala. Crim. App. 1995).

50. Ga. Code. Ann. § 31-26-2.

51. R.I. Gen. Laws § 23-13-9.

52. Ibid.

53. R23-13-MID R.I. Code R. § 1.6. (2012). Before it enacted a statute permitting the practice of DEM, this also used to be the approach that Missouri took to prohibiting DEM. Illinois General Assembly Legislative Research Unit, "Midwifery Licensing in Other States," 14 February 2008, *http://www.ilga.gov/commission/lru/37.Midwife Licensing.pdf,* accessed 5 August 2013.

54. L.M. Paltrow and J. Flavin, "Arrests of and Forced Intervention on Pregnant Women in the United States, 1973-2005: Implications for Women's Legal Status and Public Health," *Journal of Health Politics, Policy, and Law* 38, no. 2 (2013): 299-343.

55. *People v. Arendt,* 60 Ill. App. 89 (1895); People v. Cosper, 245 P. 466 (Cal. App. 1926); *Commonwealth v. Porn,* 82 N.E. 31 (Mass. 1907).

56. *Commonwealth v. Porn*, 82 N.E. 31 (Mass. 1907); E.R. Declercq, "The Trials of Hanna Porn: The Campaign to Abolish Midwifery in Massachusetts," *American Journal of Public Health* 84, no. 6 (1994): 1022-8.

57. Dozens of cases are collected by the advocacy and support group Sisters in Chains. *http://sistersinchains.org,* accessed 5 August 2013; S. Corcoran, "To Become a Midwife: Reducing Legal Barriers to Entry into the Midwifery Profession," *Washington University Law Quarterly* 80, no. 2 (2002): 649-74. *Sherman v. Cryns,* no. 2-01-0952, 2002

Ill. App. LEXIS 61 (28 January 2002); *People v. Odam,* 69 Cal. App. 4th 184 (1999); *Hunter v. Maryland,* 676 A.2d 968 (Md. Ct. Spec. App. 1996); *Colorado v. Rosburg,* 805 P.2d 432 (Colo. 1991); *Mo. State Bd. of Registration for the Healing Arts v. Southworth,* 704 S.W.2d 219 (Mo. 1986); *Leigh v. Board of Registration in Nursing,* 481 N.E.2d 1347 (Mass. App. 1985); *Smith v. State,* 459 N.E.2d 401 (Ind. App. 1984); *Bowland v. Santa Cruz,* 556 P.2d 1081 (Cal. 1976).

58. E.g., D. Denny, "Midwives: New Law Is Step in the Right Direction," *Herald Times,* 16 June 2013 (Jennifer Williams); "Midwife Arrest Protesters in LaGrange," *Fort Wayne Journal Gazette*, 11 April 2012; R. Rowe, "Two Midwives Arrested on Felony Charges," *Goshen News*, 4 April 2012, (Irene Keeslar); M. Gellatly, "S.C. Midwife Indicted for Indiana Deliveries," *Aiken Standard*, 4 April 2013.

59. M. Hennessy-Fiske, "Student Midwife Found Guilty," *Los Angeles Times*, 9 August 2011 (Katherine McCall).

60. M. McFall, Unlicensed Utah Midwife Charged in Newborn's Death," *Saint Louis Tribune,* 19 June 2013; C. Blake, "Death Sparks Midwife Rule Debate," *Asheville Citizen Times,* 6 April 2013; D. Malloy, "Judge Reluctantly Acquits Midwife," *Pittsburgh Post-Gazette,* 24 April 2009. Of course, sometimes the midwife really is culpable, for example, in delaying medically indicated transfer. Professional discipline sanctions and civil liability are imposed in such situations. E.g., A. Dutton, "Idaho Board Bans Meridian Midwives," *Idaho Statesman,* 8 August 2012; J. White and S. Kinzie, "Midwife Convicted in Death of Infant," *Washington Post,* 6 May 2011.

61. *http://www.gentlebirth.org/archives/illinois.html,* accessed 5 August 2013; *http://www.fromcalling tocourtroom.net/chap6.htm,* accessed 5 August 2013; *http://www.midwiferytoday.com/articles/answering questionhomebirth.asp,* accessed 5 August 2013; *http://wheresmymidwife.org/2013/04/25/history-lesson/,* accessed 5 August 2013.

62. Sisters in Chains, *http://www.sistersinchains.org/the-cost-of-persecution.html,* accessed 5 August 2013.

63. See Paltrow and Flavin, note 54 above, citing S*tate v. Greenup,* no. 2003-300B (La. Dist. Ct. St. John the Baptist Parish 16 August 2004); *People v. Portellos,* 827 N.W.2d 725 (Mich. 2012).

64. P*emberton v. Tallahassee Memorial Regional Medical Center,* 66 F. Supp. 2d 1247 (N.D. Fla. 1999); H.R. Bower, "How Far Can a State Go to Protect a Fetus? The Rebecca Comeau Story," *Golden Gate University Law Review* 31, no. 2 (2001): 123-54.

65. *Commonwealth v. Pugh,* 2009 WL 890988 (Mass. Super. 2009).

66. A. Bayer, "Baby Born via Home Birth Taken from Parents," *Examiner*, 2 September 2010.

67. "When the ultrasound showed twins, I was referred to a high-risk practice. The only discussion of 'options' was the date when my cesarean would be scheduled. When I tried to ask about how the risks of twins birth applied in my personal case, I received frowns but no answers. I explained that I wanted to attempt a physiological birth unless there was evidence that intervention was needed in my case. I was told that this kind of birth would not be allowed at any hospital in the area. When I said that I was looking for a midwife who could support a physiological twins birth, the OB said that she would have no choice but to call Child Protective Services." H. Hayes-Klein, "Informed Consent in Childbirth: Making Rights into Reality," 9 July 2013, *http://www.improvingbirth.org/2013/07/informed-consent-in-childbirth/,* accessed 5 August 2013.

68. As discussed above in Section 7, some constitutional challenges on the basis of statutory vagueness have been more successful. E.g., *People v. Jihan,* 537 N.E.2d 751 (Ill. 1989); *Pavek v. State,* 737 S.W.2d 136 (Tex. Crim. 1987).

69. *Roe v. Wade,* 410 U.S. 113 (1973); *Planned Parenthood v. Casey,* 505 U.S. 833 (1992).

70. *Connecticut v. Menillo,* 423 U.S. 9 (1975); *Bowland v. Santa Cruz,* 556 P.2d 1081 (Cal. 1976); *Colorado v. Rosburg,* 805 P.2d 432 (Colo. 1991); *State v. Kimpel,* 665 So. 2d 990 (Ala. App. 1995); *Leigh v. Board of Registration,* 481 N.E.2d 1347 (Mass. 1985); *Lange-Kessler v. New York Department of Education,* 109 F.3d 137 (2d Cir. 1999); *Sammon v. New Jersey Board of Medical Examiners,* 66 F.3d 639 (3d Cir. 1995); *Hunter v. State,* 676 A.2d 968 (Md. Ct. Spec. App. 1996).

71. *Colorado v. Rosburg,* 805 P.2d 432 (Colo. 1991); *Leigh v. Board of Registration,* 481 N.E.2d 1347 (Mass. 1985); *State v. Kimpel,* 665 So. 2d 990 (Ala. App. 1995).

72. *Lange-Kessler v. New York Department of Education,* 109 F.3d 137 (2d Cir. 1999); *Leigh v. Board of Registration,* 481 N.E.2d 1347 (Mass. 1985); *Firman v. Board of Medicine,* 697 A.2d 291 (Pa. Commonwealth 1997); *Sammon v. New Jersey Board of Medical Examiners,* 66 F.3d 639 (3d Cir. 1995); *Hunter v. State,* 676 A.2d 968 (Md. Ct. Spec. App. 1996); *Sherman v. Cryns,* 786 N.E.2d 139 (Ill. 2003).

73. *Dickerson v. Stuart,* 877 F. Supp. 1556 (M.D. Fla. 1995); *Lange-Kessler v. New York Department of Education,* 109 F.3d 137 (2d Cir. 1999).

74. *Bowland v. Santa Cruz,* 556 P.2d 1081 (Cal. 1976); *Sherman v. Cryns,* 786 N.E.2d 139 (Ill. 2003); *Dickerson v. Stuart,* 877 F. Supp. 1556 (M.D. Fla. 1995); *Colorado v. Rosburg,* 805 P.2d 432 (Colo. 1991); *State v. Kimpel,* 665 So. 2d 990 (Ala. App. 1995); *Missouri Board of Registration for the Healing Arts v. Southworth,* 704 S.W.2d 219 (Mo. 1986).

75. *Commonwealth v. Pugh,* No. SJC-10895 (Mass. 15 June 2012) *Commonwealth v. Pugh,* No. WOCR 2007-1323 (Worcester Sup. Ct. January 26, 2009).

76. *Graham v. Florida,* 130 S. Ct. 2011 (2010).

77. *Ternovszky v. Hungary,* No. 67545/09 (ECHR 14 December 2010).

78. MTI, "Homebirth midwife sentenced to imprisonment," *caboodle.hu: The Hungarian Portal,* 3 March 2011, *http://www.caboodle.hu/nc/news/news_archive/single_page/article/11/homebirth_mi-1/,* accessed 9 September 2013. See also International Conference of Jurists, Midwives, and Obstetricians, Conference Papers: Human Rights in Childbirth, 2012, *http://humanrightsinchild*

birth.com, accessed 5 August 2013.

79. Although this article discusses mostly care during labor and birth, a distinctive feature of midwifery is its prenatal care, characterized by the provision of extensive support and the close relationship developed with clients and their families.

80. *Gereb v. Hungary,* no. 64516/10 (ECHR 29 October 2010).

81. *Kosaite-Cypiene v. Lithuania,* no. 69489/12 (ECHR 19 October 2012).

82. For this position, many cite L.D. Hermer, "Midwifery: Strategies on the Road to Universal Legislation," *Health Matrix* 13, no. 2 (2003): 325-70.

83. *Leggett v. Tennessee Board of Nursing,* 612 S.W.2d 476 (Tenn. App. 1980). Other courts have made similar holdings. E.g., *In re Osborn,* no. 1999-040052, 1M-98-83794 (Cal. AOH 1999); *Peckman v. Thompson,* 745 F. Supp. 1358 (C.D. Ill. 1990); Banti v. State, 289 S.W.2d 244 (Tex. Crim. 1956).

84. *Albini v. Connecticut Medical Examining Board,* 51 Conn. L. Rptr. 798, 2013 WL 3673836 (Conn. Super. Ct. 2013).

85. *State Board of Nursing v. Ruebke,* 913 P.2d 142 (Kan. 1996).

86. *Leigh v. Board of Registration in Nursing,* 481 N.E.2d 1347 (Mass. App. 1985).

87. *People v. Hildy,* 286 N.W.2d 819 (Mich. 1939).

88. C. Wolfson, "Midwives and Home Birth: Social, Medical, and Legal Perspectives," *Hastings Law Journal* 37 (1985-1986): 909-76, citing *Pierce v. Douglas County District Attorney,* no. 12273 (9th Dist. Ct. Nev. 19 February 1982).

89. See Hermer, note 82 above.

90. Ibid.

91. *Goslin v. State Board of Medicine,* 949 A.2d 372 (Pa. 2008).

92. The following sources have been used to support the characterization of Maine as a state that tolerates DEM: Maine Attorney General Opinion (27 January 1978); Me. Rev. Stat. Ann. tit 32 § 13811; Me. Code Regs. §§ 02-392 ch.1(8A) & ch.33; *http://midwivesofmaine.org/faq.php,* accessed 5 August 2013.

93. Mississippi Attorney General Opinion 91-0445 (28 June 1991), 1991 *Westlaw* 577650; Miss. Stat. Ann. § 73-25-33.

94. Mo. Stat. Ann. § 376.1753. An earlier decision, predating the 2007 statute, upheld an injunction forbidding a DEM from practicing. *Missouri Board of Registration for the Healing Arts v. Southworth,* 704 S.W.2d 219 (Mo. 1986). Wyoming now licenses DEMs. But before 2003, Wyoming had a statute that excluded midwives from the practice of medicine. Wyo. Stat. Ann. § 33-26-103.

95. *Missouri State Medical Association v. State,* 256 S.W.3d 85 (Mo. 2008).

96. See three chapters in *From Calling to Courtroom,* note 14 above: C. Craven, "Why You Aren't Safe," V.V. Runes, "The Illusion of Safe Practice," and I. Darragh, "The Myth of the 'Alegal' Midwife."

97. *People v. Cryns,* 786 N.E.2d 139 (Ill. 2003), cert. denied (2003).

98. We are indebted to Katherine Prown of the Big Push for Midwives for her insight on this question. Email from Katherine Prown (30 March 2013) (on file with authors).

99. E.g., "Attorney: Law Used to Charge Midwife too Vague" *Springfield News Leader,* 7 July 2011; O. Uyttebrook, "Midwife Faces Child Abuse Charges," *Albuquerque Journal,* 11 September 2012; L. Tobias, "A Tragic Impetus to Certify Midwives," *Oregonian,* 6 July 2013.

100. Ore. Rev. Stat. § 687.415.

101. Ore. H.B. 2997 (2013) (Keny-Guyer), enacted as Ore. Laws ch. 657.

102. Ore. Rev. Stat. § 687.415.

103. Utah Code Ann. § 58-77-304.

104. Utah Code Ann. § 58-77-501.

105. In Hawaii, CNMs are the only midwives specified in statute and rules. Haw. Rev. Stat. § 457-1; Haw. Admin. Reg. § 16-89-81(c)(3). In Alabama and Nebraska, even CNMs are prohibited from performing home births. "A certified nurse midwife may perform authorized medical functions only in the following settings . . . a certified nurse midwife shall not attend a home delivery." Neb. Rev. Stat. § 38-613(3). Bills in recent legislative sessions have sought to amend this. Neb. L.B. 428 (2013); Neb. L.B. 712 (2012). "All deliveries must be planned to take place in the hospital." A similar restriction applies in Alabama. Ala. Rev. Stat. § 34-19-8.

106. J.M. Storck, "A State of Uncertainty: Ohio's Deficient Scheme of Midwifery Regulation in Historical and National Context," *Quinnipiac Health Law Journal* 89, no. 1 (2004-2005): 89-107; Ohio Families for Safe Birth, *http://safebirthohio.org,* accessed 5 August 2013.

107. *http://midwivesallianceofwv.com,* accessed 5 August 2013.

108. See *From Calling to Courtroom,* note 14 above.

109. D.C. Code §§ 7-751.01(6) & 3-1201.02(7).

110. *Carr v. Department of Health,* no. 2011-DOH-0002 (D.C. Admin. 22 May 2013) (Mangan, J.).

111. Even if a midwife is licensed, she might exceed the licensed scope of practice, and thus be engaged in the unauthorized practice of medicine. E.g., *Smith v. State,* 459 N.E.2d 401 (Ind. App. 1984); *Morris v. Department of Professional Regulation,* 824 N.E.2d 1151 (Ill. App. 2005); *People v. McCall,* no. B236269, 2013 WL 1140380 (Cal. App. 2013).

112. *Dent v. West Virginia,* 129 US 114 (1889) and C. Rausch, "The Midwife and the Forceps: The Wild Terrain of Midwifery Law in the United States and Where North Dakota is Heading in the Birthing Debate," *North Dakota Law Review* 84 (2008) 219-255.

113. *http://amcbmidwife.org/amcb-certification/why-amcb-certification-,* accessed 5 August 2013.

114. N.J. Admin. Code § 13:35-2A.2-4.

115. N.Y. Educ. L. § 6955; N.Y. Commissioner Reg. § 79-5; N.Y., Office of the Professions, "Midwifery: Questions and Answers," *http://op.nysed.gov/prof/midwife/midwifeqa/htm,* accessed 5 August 2013.

116. R.I. Gen. Laws § 23-13-9; R23-13-MID R.I. Code R. § 1.6. (2012).

117. Del. Code Regs. 16-4000-4106 §3.0 (2002).

118. Mo. Stat. Ann. § 376.1753.

119. Among others, the following states use CPM certification as a basis for licensure: Delaware, Idaho, Louisiana, Minnesota, New Jersey, Tennessee, Utah, Vermont, Virginia, and Wisconsin. Big Push for Midwives, "State Regulation PushChart" (May 2013), *http://pushformidwives.org/wp-content/uploads/2013/05/Push-for-Midwives-State-Regulation-PushChart_MAY-2013.pdf,* accessed 5 August 2013.

120. Among others, the following states use their own standards and tests in addition to, or instead of, CPM certification: Alaska, Arkansas, California, Colorado, Florida, Montana, New Hampshire, South Carolina, Texas, and Washington.

121. The following states allow CPMs to bypass certain licensure requirements: Colorado, New Mexico, and Texas.

122. See Big Push for Midwives, note 119 above. The Big Push lists 26 states as regulating CPMs, with an additional two (Maine and Missouri) legalizing CPMs. We categorize Maine and Missouri in Section 7, above.

123. Ariz. Rev. Stat. Ann. §§ 36-751 to -760; Ariz. Admin. Rules R9-16-101 to -112.

124. Ark. Code Ann. §§ 17-85-101 to -108; Ark. Admin. Code § 007.13.3-.300.

125. Del. Code tit. 16 § 122(3)(h); 16 Del. Code Reg. § 4106.

126. N.H. Rev. Stat. Ann. §§ 326-D:1 to D:14.

127. La. Rev. Stat. Ann. §§ 37:3240 to 37:3259.

128. N.M. Stat. Ann. § 9-7-6(F); N.M. Admin. Code tit. 16 §§ 11.3.1 to 11.3.14.

129. S.C. Code Ann. § 44-89-30; S.C. Code Reg. § 61-24.

130. Tex. Occ. Code §§ 203.001 to 205.505; Tex. Admin. Code §§ 831.11 to .13.

131. Alaska Stat. §§ 08.65.010 to .190; 12 Alaska Admin. Code § 14.110-.300.

132. Cal. Bus. & Prof. Code §§ 2521; Cal. Code Reg. tit. 16 § 1379.

133. Colo. Rev. Stat. §§ 12-37-101 to -110; Colo. Code Reg. § 739-1.

134. Fla. Stat. Ann. §§ 467.001 to .207; Fla. Admin. Code §§ 64B24-7.001 to .018.

135. Minn. Stat. Ann. §§ 147D.01 to .27.

136. Mont. Code Ann. §§ 37-27-101 to -325; Mont. Admin. R. §§ 24.111.601 to .613.

137. N.Y. Educ. L. §§ 6950 to 6958.

138. Ore. Rev. Stat. Ann. §§ 687.405 to .991; Ore. Admin Code §§ 332-015-0000 to 0080.

139. Wash. Rev. Code Ann. §§ 18.50.005 to .900; Wash. Admin. Code § 246-834.

140. Idaho Code Ann. §§ 54-5501 to 5513; Idaho Admin. Code r. 24.26.01.

141. N.J. Stat. Ann. §§ 45:10 to 10-22; N.J. Admin. Code §§ 13:35-2A.1 to .17.

142. Tenn. Code Ann. §§ 63-29-101 to -116; Tenn. Comp. R. & Reg. §§ 1050-5-.01 to.19.

143. Utah Code Ann. §§ 58-77-101 to -603; Utah Admin. Code R. §§ 156-77-101 to -604.

144. Vt. Stat. Ann. tit. 26 §§ 4181 to 4191; Vt. Code Reg. § 04-030-360.

145. Va. Code § 54.1-2957.7 to n-.13; 18 Va. Admin. Code §§ 85-130-10 to -170.

146. Wis. Stat. §§ 440.9805 to .988; Wisc. Admin. Code § 182.01 to -.30.

147. Wyo. Stat. §§ 33-46-101 to -108; Board of Midwifery Rules and Regulations, *http://plboards.state.wy.us/midwifery/RulesRegs.asps,* 006-195-001 Wyo. Code R. (2013), accessed 5 August 2013.

148. Ind. H.B. 1135 (2013) (Lehe), enacted as Ind. Pub. L. No. 232.

149. Ind. Code § 25-23.

150. *http://narm.org/advocacy/,* accessed 5 August 2013.

151. *http://pushformidwives.org/,* accessed 5 August 2013.

152. *http://cfmidwifery.org/index,* accessed 5 August 2013.

153. *http://www.nacpm.org/,* accessed 5 August 2013.

154. *http://www.mana.org/,* accessed 5 August 2013.

155. Ala. H.B. 178 (2013); Ala. S.B. 246 (2013).

156. Ill. H.B. 2685 (2013); Ill. H.B. 3636 (2013).

157. Mass. S.B. 1081 (2013); Mass. H.B. 2008 (2013).

158. Md. H.B. 1202 (2013).

159. Mich. H.B. 4749 (2013); Mich. S.B. 292 (2013).

160. Home Birth Freedom Act, N.C. S.B. 106 (2013); Decriminalize Direct Entry Midwifery, N.C. S.B. 107 (2013); N.C. H.B. 154; N.C. H.B. 155 (2013).

161. W.V. H.B. 2755 (2013).

162. 43 Pa. Bulletin 3813, 6 July 2013; B. Toland, "Proposal Makes Big Push for PA Midwives," *Pittsburgh Post-Gazette,* 26 July 2013.

163. See Tovino, note 48 above; J. Block, *Pushed: The Painful Truth about Childbirth and Modern Maternity Care* (Cambridge, Mass.: DeCapo Press, 2007), 181.

164. Ariz. H.B. 2247 (2012), enacted as Laws 2012 ch. 93. The regulations were implemented by 19 Ariz. Admin. Reg. 1805 (19 July 2013).

165. Some states allow DEMs to attend breech births, such as Arizona, California, Minnesota, New Mexico, South Carolina, Tennessee, and Wisconsin. It is not permitted in Alaska, Arkansas, Colorado, Idaho, Louisiana, Montana, New Hampshire, and Texas. Arizona Department of Health Services, Division of Licensing Services, "Midwifery Scope of Practice by State," *http://azdhs.go/als/midwife/documents/committee/additional-resources/state-law-chart-vbac-br-mg.pdf,* accessed 5 August 2013.

166. Some states allow DEMs to attend multiple births, such as California, Minnesota, New Mexico, South Carolina, Tennessee, Texas, and Wisconsin. It is not permitted in Alaska, Arkansas, Arizona, Colorado, Idaho, Louisiana, New Hampshire, and Vermont.

167. Some states allow DEMs to attend VBACs, such as Colorado, Florida, Idaho, New Hampshire, New Mexico, Tennessee, and Utah. It is prohibited in Alaska, Arkansas, and South Carolina. Other states do not impose particular condition-specific limitations but use a risk scoring system. Fla. Admin. Code § 64B24-7.004.

168. Vt. Stat. Ann. tit. 26 § 4190; Fla. Admin Code § 64B24-7.004(1); Minn. Stat. § 147D.05; 22 Tex. Admin.

Code § 831.60.

169. E.g. 16-4000-4106 Del. Code Reg. § 4.3; N.J. Admin. Code § 13:35-2A.6; N.Y. Educ. Code § 6951(1); Tenn. Code Ann. § 63-39-115(a).

170. Voluntary professional organization guidelines in Washington sets out three levels: discussion, consultation, and transfer. Midwives Association of Washington State, "Indications for Discussion, Consultation and Transfer of Care in an Out-of-Hospital Midwifery Practice," April 2008, *http://washingtonmidwives.org/for-midwives/indications-consultation.html,* accessed 9 September 2013.

171. Ariz. Admin. Code § R9-16-109; La. Rev. Stat. §§ 37:3244(b) & 37:3258; S.C. Code Reg. § 24(G)(1).

172. Cal. Bus. & Prof. Code § 2507.

173. 16 Del. Code Reg. 4106. See also *http://www.mommatraumablog.com/1/post/2013/04/freedom-to-safe-birth-options-denied-investigators-visit-delaware-families.html,* accessed 9 September 2013.

174. J. Ecker and H. Minkoff, "Home birth: what are physicians' ethical obligations when patient choices may carry increased risk?" *Obstetrics & Gynecology* 117, no. 5 (May 2011): 1179-82; H. Minkoff and J. Ecker, "A Reconsideration of Home Births in the United States," in this issue of *JCE;* C.L. Wendland, "Exceptional Deliveries: Home Births as Ethical Anomalies in American Obstetrics," in this issue of *JCE.*

175. *http://www.ruralhealthresearch.org/staff/lanzhao/,* accessed 5 August 2013.

176. Cal. Code Reg. tit. 16 § 1379.22.

177. K.M. Happe, "Is California Edging towards a 'Consultive' Relationship between Midwives and Physicians?" *McGeorge Law Review* 32, no. 2 (2000-2001): 713-32.

178. In re Osborn, No. 1999-040052, 1M-98-83794 (Cal. AOH 1999). J.B. White, "California Midwives Push to Scrap Doctor Supervision Requirement for Home Births," *Sacramento Bee,* 8 July 2013.

179. La. S.B. 320 (2012), enacted as La. Act 772, codified at La. Rev. Stat. § 37:3258.

180. Cal. A.B. 1308 (2013) (Bonilla).

181. Del. H.B. 194 (2013) (Barbieri), signed 31 July 2013.

182. B.A. McCormick, "Childbearing and Nurse-Midwives: A Woman's Right to Choose," *New York University Law Review* 58, no. 3 (1983): 661-713.

183. Amnesty International, "Deadly Delivery: The Maternal Healthcare Crisis in the USA," 2010, *http://www.amnestyusa.org/sites/default/files/pdfs/deadlydelivery.pdf,* accessed 29 August 2013.

184. Childbirth Connection, Catalyst for Payment Reform, and Center for Healthcare Quality and Payment Reform, *The Cost of Having a Baby in the United States,* 2013, *http://transform.childbirthconnection.org/wp-content/uploads/2013/01/Cost-of-Having-a-Baby1.pdf,* accessed 29 August 2013.; see also E. Rosenthal, "American Way of Birth, Costliest in the World," *New York Times,* 30 June 2013; and Health Management Associates, "Midwifery Licensure and Discipline Program in Washington State: Economic Costs and Benefits," 31 October 2007, *http://www.washingtonmidwives.org/assets/Midwifery_Cost_Study_10-31-07.pdf,* accessed 29 August 2013.

185. S.K. Hayden, "The Business of Birth: Obstacles Facing Low-Income Women in Choosing Midwifery Care after the Licensed Midwifery Practice Act of 1993," *Berkeley Women's Law Journal* 19, no. 1 (2004): 257-69.

186. Wash. Rev. Code § 48.43.045.

187. Vt. S.B. 15 (2011), enacted at Vt. Act 035, codified as Vt. Stat. Ann. tit. 8 § 4099d.

188. Alaska, Arizona, California, Florida, Idaho, New Hampshire, New Mexico, New York, Oregon, South Carolina, Texas, Vermont, Virginia, Washington. The details of coverage are more complicated than answering a yes/no question. For example, California DEMs qualify for Medicaid coverage only if they satisfy the physician supervision requirement. Since DEMs cannot satisfy this requirement, they do not qualify for Medicaid coverage.

189. Access to Certified Professional Midwives Act of 2013, H.R. 1976, 113th Cong., 1st Sess. (2013) (Pingree). Representative Pingree introduced a similar bill in 2011. H.R. 1054, 112th Cong., 1st Sess. (2011).

190. 42 U.S.C. §§ 1395x(gg) & 1396d(a)(17) (covering "services furnished by a nurse-midwife . . . legally authorized to perform under State law . . . .").

191. Kaiser Family Foundation, "Medicaid Benefits: Nurse Midwife Services," October 2010, *http://kff.org/Medicaid/state-indicator/nurse-midwife-service,* accessed 5 August 2013.

192. Patient Protection and Affordable Care Act, Pub. L. No. 111-148 § 3114, codified at 42 U.S.C. § 1395l(a)(1). CMS later implemented this provision. DHHS, "Medicare Program; Payment Policies under the Physician Fee Schedule and Other Revisions to Part B for CY 2011," 75 *Federal Register* 40,039, 40,120, 13 July 2010.

193. American College of Nurse-Midwives, "Health Care Reform," *http://midwife.org/Midwives-and-Medicare-after-Health-Care-Reform,* accessed 5 August 2013.

194. C. Sakala, "U.S. Health Care Reform Legislation Offers Major New Gains to Childbearing Women and Newborns," *Birth* 37, no. 4 (2010): 337-40.

195. S.M. Jenkins, "Medicare and Medicaid Coverage of CPM Services," *NACPM News*, September 2007, *http://www.nacpm.org/nacpm-medicaid-medicare.html,* accessed 5 August 2013.

196. Sec. 2706 of the Affordable Care Act is codified at 42 U.S.C. § 300gg–5 (2010) Non-discrimination in health care. It takes effect 1 January 2014.

197. FAQs about the Affordable Care Act Implementation Part XV, U.S. Department of Labor, 29 April 2013, *http://www.dol.gov/ebsa/faqs/faq-aca15.html,* accessed 5 August 2013.

198. "[S]ection 2706 of the ACA will go into effect in January 2014, barring insurance companies from discriminating against health care providers who are working within the limits of their licenses under current state law." L. Wallis, "Overcoming State Hurdles to Independent NP Practice: Recognition by reimbursement and insurance companies remain key issues," *American Journal of Nursing* 113, no. 3 (March 2013): 16.

199. ". . . Section 2706 would make it illegal for insurers to cover any health service for one class of providers licensed to perform it while rejecting coverage for an-

other also licensed to do so." D. Redwood, "Editor's Log, Provider Nondiscrimination Update," *Health Insights Today,* January/February 2013, *http://www.cleveland.edu/hit/janfeb-2013-vol-6-no-1/editors-log-provider-nondiscrimination-update/,* accessed 5 August 2013.

200. "To the extent CAM practitioners expect Section 2706 to increase insurance coverage for their services or increase reimbursement, yes that will likely happen to a certain extent. And of course the ACA greatly increases the number of insured people. But I don't expect it to be quite the boon they seem to be expecting." J. Bellamy, "Obamacare and CAM II: Discrimination (or not) against CAM," *Science-Based Medicine,* 4 October 2012, *www.sciencebasedmedicine.org/23031/,* accessed 5 August 2013.

201. See FAQs about the Affordable Care Act Implementation Part XV, note 197 above.

202. *Charting a Course for the 21st Century: The Future of Midwifery* (San Francisco, Calif.: Pew Health Professional Commission and University of California, 1999); U.S. Congress, Office of Technology Assessment, *Nurse Practitioners, Physician Assistants, and Certified Nurse-Midwives: A Policy Analysis* (Washington, D.C.: U.S. Government Printing Office, December 1986), *http://ota-cdn.fas.org/reports/8615.pdf,* accessed 16 August 2013; American Public Health Association, "Increasing Access to Out-of-Hospital Maternity Care Services through State-Regulated, Nationally-Certified Direct Entry Midwives, Resolution Adopted by the Governing Council," 2001, *http://www.apha.org/advocacy/policy/policysearch/default.htm?id=242,* accessed 5 August 2013.

203. See MacDorman, note 4 above; S. Coburn, "Obstructed Birth: Racism in Midwifery Regulation: The Emergence of the CPM and the Need for Movement Building," *http://lsrj.org/documents/awardsgrants/11_LSRJ_Writing_Prize_Sarah_Coburn.pdf,* accessed 5 August 2013.

204. Institute of Medicine, *Future of Nursing: Leading Change, Advancing Health* (Washington, D.C.: National Academies Press, 2011).

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