CLINICAL DECISIONS
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Is Home Birth Safe?

This interactive feature addresses the approach to a clinical case. A case vignette is followed by specific options, neither of which can be considered correct or incorrect. In short essays, experts in the field then argue for each of the options. Readers can participate in forming community opinion by choosing one of the options and, if they like, providing their reasons.

CASE VIGNETTE

MaryAnn B. Wilbur, M.D., M.P.H.

Ms. Lezack is a 31-year-old woman who has had one uncomplicated full-term spontaneous vaginal delivery. She is a healthy woman with no relevant medical or surgical history. She is now at 35 weeks' gestation with her second child and is here for a routine prenatal care visit. She has been very thoughtful in her participation in prenatal care, and this pregnancy has been straightforward to date. She and her husband are expecting a baby boy. Her first-trimester screening and anatomy screening indicate a very low risk of anomalies. Your examination today is reassuring; ultrasonography performed at bedside confirms that the fetus is in vertex presentation.

Ms. Lezack delivered a baby girl 30 months ago in your hospital. She remembers the birth of her daughter fondly but believes that she would have had a more satisfying experience if she had delivered at home. She has a friend who recently gave birth at home and says that it was a wonderful experience. Ms. Lezack tells you that she is very interested in pursuing a home delivery and she would like to understand her options. She seeks your opinion on home delivery and asks, "Is home birth a reasonable option for me?"

TREATMENT OPTIONS

Which of the following approaches do you think is appropriate for this patient?

1. **Support home delivery as a reasonable option for this patient.**
2. **Recommend delivery in a hospital setting.**

Choose an option and comment on your choice at NEJM.org

To aid in your decision making, each of these approaches is defended in a short essay by an expert in the field. Given your knowledge of the patient and the points made by the experts, which option would you choose? Make your choice, vote, and offer your comments at NEJM.org.

TREATMENT OPTION 1

Support Home Delivery as a Reasonable Option for This Patient

Sarah Little, M.D., M.P.H.

Ms. Lezack is the ideal candidate for a home delivery. She is a healthy, multiparous woman who is receiving adequate prenatal care and is pregnant with a singleton who is in cephalic presentation. Whether she chooses to deliver at home or in the hospital, her most likely outcome will be another uncomplicated vaginal delivery. However, she must understand the risks and benefits of each option to make an informed decision.

A study by Snowden et al. in this issue of the *Journal*[1] showed a lower rate of intervention in labor among women attempting home birth than among women delivering in the hospital — a finding similar to those of previous studies. The overall rate of cesarean delivery among women who attempted home birth was 5.3%, as compared with a rate of 24.7% among women who planned to deliver in the hospital (P<0.001). Cesarean delivery imposes substantial risk, including a rate of serious maternal complications and death that is three times as high as the rate with vaginal delivery, even among low-risk women.[2] In addition, one in four women giving birth in a hospital report feeling overwhelmed, frightened, or anxious. The consistent, one-on-one support of a home-birth attendant and the familiar environment of the home may improve the experience for some women.[3]

However, even in the patient who is at lowest

risk, unpredictable events can occur during labor, and immediate access to an operating room and a neonatal resuscitation team could improve outcomes. The data on perinatal mortality with home birth have been mixed. Studies from Europe found either no increased risk of perinatal mortality when women were at low risk or an increased risk only among nulliparous women.[4,5] These findings may not be applicable to the United States, where home birth is far less common (1%, vs. 20% in the Netherlands and 8% in the United Kingdom) and highly integrated care systems are lacking. Studies from the United States have been plagued by concerns about data validity. Snowden et al. analyzed risk on the basis of a mother's intended place of delivery, instead of the actual place of delivery (a more accurate intention-to-treat analysis), and found that the risk of perinatal death was twice as high in planned out-of-hospital births as in in-hospital births (3.9 vs. 1.8 deaths per 1000 deliveries; P=0.003). However, they did not find a significant risk when multiparous women were analyzed separately. Nonetheless, it is reasonable to assume that at worst, home birth may pose a risk of poor perinatal outcome that is twice as high as the risk with in-hospital birth.

Is this risk "acceptable"? Comparisons with other risks in obstetrics may be helpful. For example, the sentinel study on attempted vaginal delivery after prior cesarean section showed a higher risk of perinatal death or hypoxic–ischemic encephalopathy with that method of delivery than with repeat cesarean section (3.8 vs. 1.3 events per 1000 term deliveries; P<0.001).[6] The magnitude of the relative and absolute risk with attempted vaginal delivery after prior cesarean section is thus similar to that with a home birth, and yet a woman's decision to attempt a vaginal delivery after a prior cesarean section is a choice most obstetricians would find "acceptable."

Overall, home birth is a potentially reasonable option for a well-informed, low-risk patient like Ms. Lezack. I would advise her to have a qualified birth attendant present and a plan for prompt transfer to a hospital should complications arise. Recognizing that home birth is a reasonable option for women at low risk may help us move forward toward determining how we can create more coordinated care systems to make home birth safer for women in the United States and, perhaps more urgently, how we can improve patients' experience and reduce unnecessary interventions for women giving birth in U.S. hospitals.

Disclosure forms provided by the author are available with the full text of this article at NEJM.org.

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TREATMENT OPTION 2

Recommend Delivery in a Hospital Setting

Linda M. Szymanski, M.D., Ph.D.

Childbirth can be one of the most wonderful events in a woman's life. For some, the ideal experience is giving birth in the comfort of their own home, with little intervention, "just as nature intended." For appropriate candidates, a home birth can be the realization of a dream. As a perinatologist, however, I also know that birth, as natural as it is, can be complicated. When childbirth does not go as planned, the outcome can be unimaginable and devastating. A woman's dream delivery then becomes her worst nightmare.

The American College of Obstetricians and Gynecologists has examined available data and has issued its opinion that a hospital or birthing center is the safest place to deliver.[7] Although the absolute risk of perinatal complications and death with home birth is low, it is 2 to 3 times as high as that for in-hospital births. According to the study by Snowden et al., the perinatal death rate was 3.9 deaths per 1,000 deliveries for planned out-of-hospital births, as compared with 1.8 deaths per 1,000 deliveries for in-hospital births.[1]

A woman considering home delivery must be an appropriate candidate, be informed of the potential risks, be cared for during delivery by certified personnel affiliated with a health system or hospital, and have a plan for timely transport to a nearby hospital, if needed. Unfortunately, at this time in the United States, these conditions, particularly the latter two, are not consistently met. In contrast, home birth (particularly for multiparous women) is reported to be as safe as hospital delivery in the United Kingdom. The U.K. system is highly organized and coordinated, making home delivery less dangerous for women at low risk. Still, in the United Kingdom, nearly half of first-time mothers attempt-

ing home delivery are transferred to a hospital for delivery, and among nulliparous women, the rates of serious complications among those who deliver at home are higher than the rates among women who deliver in the hospital.[8]

Women rarely imagine themselves becoming one of the 1.6 per 1,000 women[3] whose baby will die during a home birth; but the reality is that it will happen to someone. This is the reason that I would advise Ms. Lezack to deliver in a hospital or a hospital-affiliated birthing center. Although she may be statistically more likely to receive interventions with an in-hospital birth, the hospital has the staff, facilities, and expertise needed to give her the best care in the rare event of emergency — and sometimes, minutes matter.

Fortunately, the medical system is changing. Hospitals are seeking designation as "Baby-Friendly" facilities, in which the goal is to encourage excellent infant-feeding outcomes and mother–baby bonding.[9] Some hospitals are offering water tubs in the first stage of labor, and still others are diligently working on performing family-friendly cesarean sections.[10] These changes may help create the atmosphere women are seeking, while at the same time allowing them access to emergency care, if needed.

Ultimately, it is Ms. Lezack's decision. If she chooses home birth, she needs to have the necessary supports in place and be prepared for potential emergencies. The odds are in her favor, but no one can predict the outcome. The question is, what level of risk is she willing to take?

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1. Snowden J, Tilden E, Snyder J, Quigley B, Caughey A, Cheng YW. Planned out-of-hospital birth and birth outcomes. N Engl J Med 2015;373:2642-53.
2. Liu S, Liston RM, Joseph KS, Heaman M, Sauve R, Kramer MS. Maternal mortality and severe morbidity associated with low-risk planned cesarean delivery versus planned vaginal delivery at term. CMAJ 2007;176:455-60.
3. Lothian JA. Listening to Mothers — The first national U.S. survey of women's childbearing experiences. J Perinat Educ 2003;12(1):vi-viii.
4. de Jonge A, Geerts CC, van der Goes BY, Mol BW, Buitendijk SE, Nijhuis JG. Perinatal mortality and morbidity up to 28 days after birth among 743 070 low-risk planned home and hospital births: a cohort study based on three merged national perinatal databases. BJOG 2015;122:720-8.
5. Brocklehurst P, Hardy P, Hollowell J, et al. 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;343:d7400.
6. Landon MB, Hauth JC, Leveno KJ, et al. Maternal and perinatal outcomes associated with a trial of labor after prior cesarean delivery. N Engl J Med 2004;351:2581-9.
7. ACOG Committee on Obstetric Practice. ACOG Committee Opinion No. 476: planned home birth. Obstet Gynecol 2011; 117:425-8.
8. Intrapartum care: care of healthy women and their babies during childbirth. London: National Institute for Health and Care Excellence, December 2014 (https://www.nice.org.uk/guidance/cg190).
9. Baby-Friendly USA home page (https://www.babyfriendlyusa.org).
10. Magee SR, Battle C, Morton J, Nothnagle M. Promotion of family-centered birth with gentle cesarean delivery. J Am Board Fam Med 2014;27:690-3.

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