Characteristics of Planned and Unplanned Home Births in 19 States
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OBJECTIVE: To estimate the differences in the characteristics of mothers having planned and unplanned home births that occurred at home in a 19-state reporting area in the United States in 2006.

METHODS: Data are from the 2006 U.S. vital statistics natality file. Information on whether a home birth was planned or unplanned was available from 19 states, representing 49% of all home births nationally. Data were examined by maternal age, race or ethnicity, education, marital status, live birth order, birthplace of mother, gestational age, prenatal care, smoking status, state, population of county of residence, and birth attendant. We could not identify planned home births that resulted in a transfer to the hospital.

RESULTS: Of the 11,787 home births with planning status recorded in the 19 states studied here, 9,810 (83.2%) were identified as planned home births. The proportion of all births that occurred at home that were planned varied from 54% to 98% across states. Unplanned home births are more likely to involve mothers who are non-white, younger, unmarried, foreign-born, smokers, not college-educated, and with no prenatal care. Unplanned home births are also more likely to be preterm and to be attended by someone who is neither a doctor nor a midwife and is listed as either “other” or “unknown.”

CONCLUSION: Planned and unplanned home births differ substantially in characteristics,
Home birth is a rare occurrence in the United States. For the past 40 years, the rate of all out-of-hospital births in the United States has been approximately 1% of all births. Before 1989 it was impossible to distinguish between a home birth and other out-of-hospital births. In 1989, a checkbox for home birth was added to the U.S. Standard Certificate of Live Birth as an option for recording place of birth. Since that year, the rate of home births has never increased to higher than 0.67% of all births. In 2006, the rate was 0.59%. Both the American College of Obstetricians and Gynecologists and the American Medical Association have recently issued statements criticizing the practice and have raised concerns about safety.

One basic difficulty in analyses of home births in the United States has been that, given the infrequency of home birth, data for a large population are typically needed to reliably explore trends or examine outcomes. Also, until recently, birth certificate data regarding place of birth did not distinguish between planned and unplanned home births. This article uses a new measure added to the U.S. Standard Certificate of Live Birth (2003 Revision) that identifies planning status and allows us to profile both planned and unplanned births that ultimately occur at home in the 19 states that have adopted the revised birth certificate.

A number of studies of the outcomes of home birth have been published, although not without controversy concerning design and methods. Fundamental problems have undermined the systematic analysis of home birth in the United States. It is not feasible to mount a randomized trial because mothers are disinclined to allow leaving to chance the selection of the place of birth. Also, because the percentage of home births in almost all industrialized countries is less than 1%, studies have limited power to identify differences in critical outcomes, such as maternal or neonatal deaths. Studies seeking to rely on the larger datasets available from the national vital statistics system to compare the outcomes of home and hospital births in the United States have been plagued by two conflicting biases. Until recently, the home birth variable on the Standard Certificate of a Live Birth did not distinguish planned and unplanned home births and therefore combined carefully planned home births with emergency unplanned births, with the latter presumably having poorer outcomes. However, the documentation of births that occurred at home did not capture those planned home births that resulted in prenatal or intrapartum transfers to hospital. These transfers also likely had poorer outcomes than those planned home births that did not involve a transfer to the hospital. Finally, studies of home births from other countries may not be applicable to the United States because they often involve countries like the Netherlands and England, where home births are more common and are integrated into the delivery of maternity care services. This article addresses one of these limitations by profiling planned and unplanned home births in the United States in 2006 in a 19-state reporting area.
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MATERIALS AND METHODS

This study examines the characteristics of planned and unplanned home births in the United States. Because the majority of births (99%) in the United States occur in hospitals, we compare the characteristics of planned and unplanned home births to those that occur in hospitals in Table 1. Data were examined by maternal age, race or ethnicity, education, marital status, live birth order, birthplace of mother, gestational age, prenatal care, smoking status, state, population of county of residence, and birth attendant. Data were from the de-identified 2006 vital statistics natality files, produced by the National Center for Health Statistics, and not subject to Institutional Review Board review. Information on whether a home birth was planned or unplanned was available from the 19 states (California, Delaware, Florida, Idaho, Kansas, Kentucky, Nebraska, New Hampshire, New York [excluding New York City], North Dakota, Ohio, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Vermont, Washington, and Wyoming) that had adopted the 2003 revision of the U.S. Standard Certificate of Live Birth by January 1, 2006. Approximately one half of all U.S. births (49%) and one-half of home births (12,475 of 24,970; 49%) were included in these 19 states. Not-stated responses were excluded before percents were computed. In 5.5% of cases (688) in which a home birth was recorded, the planning status was not indicated. A majority of these cases (424) came from one state: Pennsylvania. Cases missing planning status were excluded from the analysis presented here.

Gestational age was measured as the interval between the first day of the mother’s last menstrual period and the date of birth, except when inconsistent with birth weight and plurality, in which case the clinical or obstetric estimate of gestation was used. These methods are described in detail elsewhere.

RESULTS

Of the 11,787 home births with planning status recorded in the 19 states studied here, 9,810 (83.2%) were identified as planned home births. Table 1 presents the characteristics of mothers having planned or unplanned home births compared with those giving birth in hospital in those 19 states. There are clear distinctions across these three groups. Mothers with planned home births were overwhelmingly non-Hispanic white (90%), whereas less than half of mothers having hospital (49.7%) or unplanned home births (45%) were non-Hispanic white. Likewise, whereas Hispanic mothers accounted for almost one third of hospital births and one fourth of unplanned home births, only 5.6% of planned home births were to Hispanic mothers. Non-Hispanic black women accounted for 24% of unplanned home births, which is double their percentage for hospital births and 10 times their percentage for planned home births. If we examine (data not shown) the proportion of all home births that were unplanned within each race or ethnicity group, then we find that 69% of home births among non-Hispanic black mothers were unplanned. The proportions of unplanned home births in the other race or ethnicity groups were Hispanic mothers (48%), non-Hispanic Asian Pacific Islander mothers (41%), non-Hispanic American Indian mothers (14%), and non-Hispanic white mothers (9%).
Mothers having planned home births were also more likely to be older than 30 (52%), married (92%), born in the United States (91%), nonsmokers (98%), to have at least some college education (55%), and to have a gestation of 37 or more weeks (97%) than mothers having unplanned home births or hospital births. More than one fourth (29%) of planned home births were to women living in counties with populations of less than 100,000 compared with 17% of hospital births and 15% of unplanned home births.

The profile of mothers with an unplanned home birth appears to combine a number of risk factors. More than one fourth (26%) of all mothers with an unplanned home birth had no reported prenatal care, a figure that increased to 49% among Hispanic mothers (data not shown). Almost 20% of unplanned home births involved a mother who smoked, and the majority (54%) of unplanned home births was to mothers who were unmarried. A larger proportion of unplanned home births, compared with planned home or hospital births, was to mothers younger than 30, but this was not a function of a disproportionate number of unplanned births to teens. Both planned and unplanned home births involved mothers of higher parity than mothers who give birth in hospitals, with 53% of planned and 48% of unplanned home births being to mothers with parity of three or more compared with 28% for hospital births.

Distinct patterns of birth attendants in planned and unplanned home births are shown in Table 1. Although more than 99% of hospital births were attended by physicians or certified nurse-midwives, these two providers accounted for less than one in five (19.5%) unplanned home births and only one in four planned home births (25%). A majority (52%) of planned home births were attended by “other midwives.” These are typically certified professional midwives who specialize in home birth practices in the United States and are rarely involved in either unplanned home births (3%) or hospital births (0.1%). Approximately one in five (22%) planned home births was attended by someone categorized as “other.” Births attended by “other” attendants were more than twice as likely for unplanned compared with planned births. “Other” attendants may include any other person who delivered the neonate, such as a husband or family member, emergency medical technician, police officer, or fire fighter. The attendants identified in unplanned home births highlight the lack of planning, with more than three fourths listed as unknown (18%) or “other” (60%). Most of the remaining unplanned home births (17%) are attended by physicians, presumably in emergency situations.

Figure 1 examines the question of planning status from the perspective of the providers. For both certified nurse-midwives and other midwives involved in home births, virtually all were planned home births. For “other” attendants, approximately two thirds were planned, whereas for medical doctors (MDs) only one third (31%) were planned home births. A further examination of race/ethnicity of the mothers and birth attendants in planned home births (data not shown) found “other midwife” was the most common category across all race/ethnicity subgroups, but non-Hispanic black mothers were far more likely to have a physician attending the planned home birth (14%), with a rate many times higher than for non-Hispanic white (2%) or Hispanic mothers (2%).

Among births occurring at home, premature births accounted for 26% of unplanned home births compared with 3% of planned home births. Figure 2 presents the gestational age distributions for planned and unplanned home births. The gestational age distribution of planned home births is concentrated at 39 or more weeks, with 80% of
planned home births at 39 or more weeks compared with 42% of the unplanned home births. For comparison, 58% of hospital births occur at 39 or more weeks (data not shown).

Just as overall rates of home births vary by state, so do planned home births (Table 2). The proportion of home births that are planned ranges from 67% in South Carolina to 98% in Idaho. There appears to be a relationship between the overall proportion of births taking place at home in a state and the proportion of home births that are planned. Those states having at least 1% of their births at home averaged 95% of their births being planned, whereas for those states with less than 0.5% of home births overall, on average 73% of home births were planned.

DISCUSSION

The addition of a planning status category to the U.S. Standard Certificate of Live Birth has shown that 16.8% of home births were unplanned in the 19 states (49% of all home births) with the new item in 2006. The characteristics of mothers having unplanned home births differ substantially from those having planned home births that occur at home, with unplanned births more likely to involve mothers who are non-white, younger, unmarried, foreign born, smokers, not college-educated, and with no prenatal care. Unplanned home births are also more likely to be preterm and to be attended by someone who is neither a doctor nor a midwife and is listed as either “other” or “unknown” on the birth certificate. The proportion of all home births that were planned varied widely across states, ranging from 67% to 98%.

We also discovered wide disparities between racial and ethnic groups in describing who is most likely to have a planned home birth. While non-Hispanic white mothers account for less than half of all hospital and unplanned home births in the 19 states studied, they comprised more than 90% of planned home births. The pronounced distinctions seen in the racial composition of mothers having planned home births is also seen in their greater likelihood of higher education, older age, and being married. Whether this is a function of mothers with the characteristics of being more interested in choosing a home birth or having a situation that makes them more able to afford a practice that is largely not covered by insurance in the United States cannot be determined by these data.

The proportion of all births in the 19 states included in this analysis that are planned to and do occur at home was 0.48%. A major limitation of this study is that it cannot identify those births that are planned to occur at home but result in a transfer to the hospital. We can estimate an overall planned home birth rate by using transfer rates that have been established in other studies, ranging from 12.1% by Johnson and Davis7 to 12.5% in the study by Lindgren et al14 and the use of 14% by Mori et al15 based on an analysis of previous home birth studies. If we use a 13% transfer rate as an approximation, then the result would be a planned home birth rate of 0.54% in the 19
states studied here. Whereas the overall home birth rate combining planned and unplanned births has changed little in the past two decades, we cannot tell if the proportion of planned home births has changed over that period or if those planned home births that result in a transfer to the hospital have a different profile than those planned home births that occur at home. However, this study does provide the most complete description yet available of planned and unplanned home births that occur at home.

The debate over home birth has generated an unusual amount of commentary in recent years. In England steps have been taken to encourage the option of a planned home birth, but American College of Obstetricians and Gynecologists issued a position statement in 2007 that contends that birth should only take place in the hospital setting, and a resolution passed at the 2008 American Medical Association meeting criticized home birth. At the same time, a popular 2008 U.S. movie documentary advocated home birth, as have some consumer-oriented books. Despite the controversy, there has been relatively little change in overall home birth rates over the past two decades. There was a slight increase between 2004 and 2005, followed by a leveling-off in 2006, resulting in an overall home birth rate (0.59%) that was no higher than the rate in 1997.

The debate over home birth appears to have less to do with the frequency of its occurrence than what it symbolizes for the groups on either side of the issue. For home birth advocates, it represents a rejection of what they see as the overmedicalization of a natural process and the opportunity for mothers and families to control their own birth experience. The increased activism concerning home birth also comes at a time of record cesarean rates in the United States and may be, in part, a reaction to that. For medical societies in the United States, home birth is described in their resolutions as a practice that, because labor is unpredictable, involves unnecessary risks to the health of mothers and newborns.

It seems unlikely that such a polarized debate can be resolved by scientific studies, especially because a randomized trial of place of birth is probably not feasible. However, a prospective cohort analysis that tracks mothers from late in pregnancy through the immediate postpartum period documenting their intention concerning place of birth and then establishes an “intention-to-treat” analysis combining planned home births that result in a transfer to the hospital with those planned home births that occur at home could provide important information. The planned home births would then be compared with a comparably low-risk hospital population. Such a study is underway in England, and several others, mostly retrospective, have been recently completed. The two most recent from 2009, the study by Janssen et al from British Columbia and by de Jonge et al from the Netherlands, both found comparable outcomes between home and hospital births even after controlling for characteristics of the mothers. It is not clear whether findings from either study involving systems supportive of home birth would be applicable to the U.S. setting.

This study is subject to several limitations. As noted, we can only report on cases of home births that were completed at home and not those that involved a transfer to the hospital. Also, as a new variable on the birth certificate, less is known about the quality of the planning status variable when compared with most other birth certificate variables. More assessment is needed of the accuracy of reporting of
planning status for home births. Although the 19 reporting states accounted for 49% of all U.S. births and 49% of home births, results for this limited reporting area are not generalizable to the U.S. population as a whole. For example, because California and Texas are included in the 19-state area, Hispanics in this study include a higher percentage of Mexican births than in the United States as a whole. In the 19-state area, 5.5% of births did not have a planning status recorded, and there was considerable variation by state. This is why we chose to report individual state data as well as overall results. Finally, we do not examine outcomes of planned home births for analytic and a practical reasons. As noted, we can only report on cases of home births that were completed at home and not those that involved a transfer to the hospital. Therefore, any comparative analysis of outcomes with low-risk hospital births would exclude those home births that were potentially at the greatest risk for a poor outcome. There was also a practical concern that, given the natural delay of 1 year in recording infant deaths, the file that would link planned home births to infant deaths for all 19 states was not available in a timely manner for this analysis.

Finally, this study identifies another high-risk group that has received little attention: unplanned home births. Although relatively small in number (an estimated 4,000 nationally), these births involve high-risk populations that, based on screening criteria used in planned home births, should generally give birth in a hospital setting. The challenge in identifying and referring those in this population is that a significant portion of these unplanned home births involve mothers who have not been part of formal maternity care (26% overall reported no prenatal care, among which 49% were Hispanic mothers), and others likely involve unpredictably short labors. Authors of future studies may want to examine how to better identify prenatally the characteristics of those mothers whose pregnancies result in an unplanned home birth.

This study illustrates the clear distinction between planned and unplanned home births and the value of continually refining our vital statistics measures to better document trends in, and to analyze the implications of, changing birth practices in the United States.

REFERENCES


14. Lindgren HE, Hildingsson IM, Christensson K, Radestad IJ. Transfers in planned home births related to midwife availability and continuity: a nationwide population-
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