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REVIEW

Planned home birth: benefits, risks, and opportunities

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Abstract: While the number of women in developed countries who plan a home birth is low, the number has increased over the past decade in the US, and there is evidence that more women would choose this option if it were readily available. Rates of planned home birth range from 0.1% in Sweden to 20% in the Netherlands, where home birth has always been an integrated part of the maternity system. Benefits of planned home birth include lower rates of maternal morbidity, such as postpartum hemorrhage, and perineal lacerations, and lower rates of interventions such as episiotomy, instrumental vaginal birth, and cesarean birth. Women who have a planned home birth have high rates of satisfaction related to home being a more comfortable environment and feeling more in control of the experience. While maternal outcomes related to planned birth at home have been consistently positive within the literature, reported neonatal outcomes during planned home birth are more variable. While the majority of investigations of planned home birth compared with hospital birth have found no difference in intrapartum fetal deaths, neonatal deaths, low Apgar scores, or admission to the neonatal intensive care unit, there have been reports in the US, as well as a meta-analysis, that indicated more adverse neonatal outcomes associated with home birth. There are multiple challenges associated with research designs focused on planned home birth, in part because conducting randomized controlled trials is not feasible. This report will review current research studies published between 2004 and 2014 related to maternal and neonatal outcomes of planned home birth, and discuss strengths, limitations, and opportunities regarding planned home birth.

Keywords: home birth, hospital birth, risks, benefits, maternal satisfaction

Background

For women in most developed nations, the choice of where to give birth is not really a consideration, because birthing in a hospital is the cultural norm. The hospital is where their mothers and their grandmothers most likely gave birth. This is, however, a relatively recent phenomenon. While time parameters vary from country to country, most developed countries experienced a dramatic shift from home to hospital birth during the 20th century. In the UK, for example, 80% of women gave birth at home in the 1920s, and in 2011 only 2.3% of births occurred at home.[1] The US had a similar shift, from 50% home births in 1938 to fewer than 1% in 1955.[2] New Zealand has slightly higher rates of home birth, at 2.5%,[3] and in the Netherlands approximately 20%[4] of births still occur at home. However, while rates of home birth remain low (Table 1),[1–10] there is evidence of a small but significant increase in home birth rates in some countries. In the UK, rates of home birth increased from 1% in 1991 to 2.3% in 2012.[1] In the US, the planned home birth rate increased to 0.89% in 2012 (up from 0.56% in 2004).[2] Whether or not this subtle shift in home birth rates will continue remains to be seen.

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Table 1 Comparison of home birth rates by country

Country	Year/s	Rate
England and Wales[1]	2012	2.3%
Sweden[5]	1992–2001	0.1%
US[2]	2012	0.89%
Japan[6]	2010	1.1%
Finland[7]	2012	0.6%
the Netherlands[4]	2013	20%
Canada[8]	2008	1.2%
Australia[9]	2011	0.4%
New Zealand[3]	2011	3.3%
Norway[10]	1990–2007	0.8%

Increased attention to the issue of home birth in recent years is evident in the media and in research, as well as by professional organizations. In the UK, the Royal College of Midwives and the Royal College of Obstetricians and Gynaecologists issued a joint statement that "support(s) home birth for women with uncomplicated pregnancies."[11] A recent publication from the National Institute for Health and Care Excellence in the UK states that low-risk multiparous women should be advised that birthing at home is as safe for the baby and that the rate of interventions for them will be lower than in the hospital setting.[12]

Position statements issued by maternity care organizations in the US illustrate the differing viewpoints and demonstrate the variance in interpretations of the outcomes of planned home birth. While the American College of Nurse-Midwives[13] and the Midwives Alliance of North America[14] support informed choice and access to home birth, the American Congress of Obstetricians and Gynecologists[15] and the American Academy of Pediatrics[16] maintain that hospitals or birthing centers are the safest place for women to birth, regardless of risk status.

Within the debate surrounding home birth, the emphasis is often placed on infant outcomes, reported as stillbirths, neonatal deaths, or Apgar scores. While infant outcomes are vital to the safety of home birth, maternal mortality and morbidity are also important and less often mentioned in these debates. Even less frequently are issues of maternal satisfaction with the birth experience considered. The focus of this review is to explore the issue of risk and benefits to both mother and infant related to place of birth – specifically home birth.

Methods

Because the issue of childbirth risk and access to health care facilities is very different in developing countries, this exploration is limited to those studies undertaken in developed countries. We chose to include primarily studies that had been conducted within the last 10 years, to avoid questions of advancing resources or changing risk factors over time with investigations conducted prior to the last decade. Additionally, there is literature that addresses the safety and care of women in birth center settings compared with hospitals that will not be included, as the focus of this review is home compared with hospital for the place of birth. Both quantitative and qualitative study findings were included, as the intent was to report not only the safety data related to home birth but also psychosocial elements such as satisfaction with the birth experience.

Search strategy

Primary research studies, meta-analyses, and opinion papers were identified by searching electronic databases and reviewing reference lists. With exceptions for landmark publications, we included only those published in the last 10 years. Search engines included PubMed, CINAHL, and ProQuest. Search terms included "homebirth", "home birth", and "out of hospital birth", with the majority of relevant findings yielded using "homebirth". We limited the search to publications in English, and within ProQuest we narrowed the search to "scholarly journals only". The electronic searches yielded 164 publications using PubMed, 202 for CINAHL, and 298 for ProQuest. Two annotated bibliographies of home birth outcomes were an additional resource for pertinent articles utilized in this review.[17,18] The authors reviewed each title and abstract for relevance to home birth, excluding those that were not relevant. A total of 23 primary quantitative reports and nine qualitative study reports were included in this review. Of the 23 quantitative reports, for 21 the primary outcome variables were related to safety (Table 2). Two quantitative reports and all nine qualitative studies were related to maternal satisfaction or motivation for choosing home birth (Table 3). Of note, while the search included studies published within the last 10 years, the majority of publications were within the last 5 years. Additional publications related to home birth, such as guidelines, protocols, and birth data reports, were also utilized for this review.

Results

Challenges with researching home birth

The "gold standard" for researching clinical outcomes remains the randomized controlled trial (RCT). Indeed, when comparing home birth with hospital, women who choose to birth at home are demographically different from the overall population of childbearing women. Birth certificate data in

Table 2 Maternal and neonatal outcomes associated with home birth

Author and year	Study design	Population and sample size	Outcome measures	Results
Australia				
Kennare et al[23] 2010	Retrospective population-based study of all births and perinatal deaths	1,141 planned home births (any birth that was intended to occur at home at the time of antenatal booking), 297,192 hospital births	Perinatal death, IP death, IP asphyxia, Apgar <7 at 5 minutes, use of PICU or NICU	Transfer rate: 30.6% Neonatal outcomes: Perinatal mortality rates similar (7.9 vs 8.2/1,000) IP fetal death higher in home birth group (1.8 vs 0.8/1,000) Apgar <7: 1.1% planned home births, 1.4% hospital births (NS) Admit to NICU 7.7% for home vs 15.0% for hospital (NS) Maternal outcomes: C/S rate 9.2% vs 27.1% Episiotomy rate 21.7% vs 3.6% PPH 5.5% vs 4.4% (NS)
Catling-Paul et al[24] 2013	Descriptive retrospective cohort study	12 publicly funded home birth programs 1,807, 97% of all home births	Place and mode of birth, perineal trauma, PPH, neonatal mortality, 5-minute Apgar score, birth weight, breastfeeding, admit to SCU	Transfer rate: 17% Neonatal outcomes: Mortality 1.7/1,000, 2.7% admit to SCN 96.8% breastfeeding initiation 69% breastfeeding at 6 weeks Maternal outcomes: 5.4% C/S rate 3.8% instrumental birth rate 56% intact perineum 2.6% episiotomy rate 1.8% PPH rate
Homer et al[25] 2014	Retrospective analysis of public birth data	258,161, 0.3% planning a home birth	Place and mode of birth Composite measure of neonatal mortality/morbidity Stillbirth	Transfer rate: 29% Neonatal outcomes: Stillbirth 1.44/1,000 home vs 1.05/1,000 hospital Composite outcome 7.1/1,000 home vs 5.8/1,000 hospital (NS) Maternal outcomes: 3.3% C/S rate for planned home birth 10.6% C/S rate for planned hospital birth 4% instrumental birth for planned home 15.5% instrumental birth for planned hospital
Canada				
Hutton et al[26] 2009	Retrospective 3-year cohort study	All women planning home birth (at time of labor onset) n=6,692 were matched n=6,692 with comparable low-risk women. Matched for parity and previous LTCS	Composite measure of perinatal and neonatal mortality/morbidity (death before 28 days, Apgar <4 at 5 minutes, resuscitation, admit to NICU or PICU, <2,500 g) Maternal mortality, morbidity (PPH, infection, third or fourth degree laceration, IP interventions, breastfeeding)	Neonatal outcomes: Perinatal/neonatal mortality 1/1,000 both groups Composite perinatal neonatal morbidity/mortality 2.4% for home vs 2.8% for hospital (NS) Maternal outcomes: PPH 0.8% home vs 1.2% hospital (P=0.026) Lacerations 54% home vs 61% hospital (P<0.000) C/S 5.2% home vs 8.1% hospital (P<0.000) Breastfeeding 6 weeks 87.5% home vs 76.8% hospital (P<0.000)

(*Continued*)

Table 2 (*Continued*)

Author and year	Study design	Population and sample size	Outcome measures	Results
Janssen et al[27] 2009	Prospective 5-year cohort study	Low-risk women Planned home birth n=2,889 Matched cohort attended by same midwives n=4,752 Attended by physicians n=5,331	Perinatal death – stillbirth after 20 weeks or death in first 7 days of life Obstetric interventions Adverse neonatal outcomes Adverse maternal outcomes	Neonatal outcomes: Perinatal mortality 0.35/1,000 in home birth group 0.57/1,000 in hospital midwife group 0.64/1,000 in hospital physician group (NS) Apgar <7 at 5 minutes RR 0.76 home vs 0.74 hospital midwife (NS) Maternal outcomes: C/S rate 7.2% home birth vs 10.5% hospital Operative vaginal birth 3.0% home vs 7.2% hospital midwife Intact perineum rate 54.4% home vs 46.1% hospital midwife PPH rate 3.8% home vs 6.0% hospital midwife
Japan				
Kataoka et al[6] 2013	Descriptive, retrospective	5,477 women attended by midwives, 83.9% in birth centers and 16.1% at home	Neonatal mortality, Apgar <7, length of labor, EBL, perineal laceration	Neonatal outcomes: No neonatal mortality in either group No difference in Apgar scores Maternal outcomes: PPH rate for primiparous women 17.6% in home vs 27.2% in birth center No difference in perineal outcomes
Hirazumi and Suzuki[28] 2013	Retrospective cohort (midwife-led home and midwife-led hospital)	291 women in midwifery-led care: 168 women chose home delivery	Transfer of care Perinatal outcomes: length of labor, augmentation, delivery mode, laceration, PPH, Apgar <7	Transfer rate: 21% Neonatal outcomes: Apgar <7 1.6% for home, 1.8% for hospital Maternal outcomes: Labor >24 hours 2% for both groups; C/S 2.4% for home, 2.5% for hospital; PPH 5.7% for home, 6% for hospital No difference between groups
the Netherlands				
De Jong et al[29] 2009	Nationwide retrospective cohort study	529,688 low-risk women Midwife-led care at labor onset 321,307 planned home, 163,261 hospital, 45,120 unknown	Groups controlled for parity, gestational age, maternal age, ethnic background, SES IP and neonatal death, admit to NICU	Neonatal outcomes: IP or neonatal death 0.06% home vs 0.07% hospital Admit to NICU 0.17% home vs 0.20% hospital
van der Kooy et al[30] 2011	Retrospective analysis of population data. Two analyses used: natural prospective (intention to treat) and perfect guideline approach	679,952 low-risk women, 602,331 using perfect guideline approach	IP and neonatal death <7 days Congenital anomalies Preterm, IUGR, Apgar scores	Neonatal outcomes: IP and neonatal death <7 days 0.15% planned home vs 0.18% planned hospital 4 risk factors were present in 85% of deaths: congenital anomaly, preterm, IUGR, or low Apgar score
de Jonge[31] 2013	Retrospective analysis of national perinatal register data and maternal morbidity data	Low-risk women with term singleton pregnancy: 146,752, 92,333 planned home birth, 54,419 planned hospital birth	Severe acute maternal morbidity (admit to ICU, uterine rupture, HELLP syndrome, major PPH, or other) PPH	Maternal outcomes: Severe maternal morbidity 1.5/1,000 home vs 2.7/1,000 hospital (NS) PPH rate 29.2/1,000 home vs 39.9/1,000 hospital (NS)

de Jonge et al[4] 2014	Retrospective nationwide cohort study utilizing 3 databases	Women in low-risk midwife-led care: 466,112 planned home birth, 276,958 planned hospital birth	IP or neonatal mortality Apgar scores Admit to NICU	Neonatal outcomes: IP or neonatal deaths nulliparous 1.02/1,000 home vs 1.09/1,000 hospital parous 0.59/1,000 home vs 0.58/1,000 hospital (NS) 5-minute Apgar scores <7 Primiparous 7.9/1,000 home vs 8.85/1,000 hospital Parous 3.2/1,000 home vs 4.57/1,000 hospital (NS) Admit to NICU Nulliparous 3.41/1,000 home vs 3.61/1,000 hospital Parous 1.36/1,000 home vs 1.95/1,000 hospital (NS)
New Zealand				
Davis et al[32] 2011	Population-based retrospective cohort study	Low-risk women (no previous C/S, stillbirth, PPH, or medical or pregnancy-related conditions: gestation between 36 and 42 weeks) n=16,453 Planned place of birth: home, primary unit, secondary and tertiary hospital	Mode of delivery Active management third stage labor Postpartum hemorrhage	Maternal outcomes: 1% PPH rate (>1,000 mL) despite lowest rates of active management of third stage 1% C/S rate, 2.6% home, 32% primary unit, 8.5% secondary hospital, 14.9% tertiary hospital ($P<0.0005$)
Norway				
Blix et al[10] 2012	Retrospective cohort	Planned home births with midwife (1,631) and low-risk comparison group (16,310)	Perinatal mortality Neonatal mortality Mode of delivery Epidural Episiotomy PPH	Neonatal outcomes: Perinatal mortality rate 0.6/1,000 home and hospital Neonatal mortality rate 0.6/1,000 home and 0.9/1,000 hospital (NS) No difference in Apgar scores Maternal outcomes: Instrumental birth: primiparas 5.7% home vs 14.8% hospital, multiparas 0.6% home vs 1.8% hospital Episiotomy: primiparas 13.3% home vs 16.7% hospital, multiparas 1.7% home vs 3.7% hospital PPH: primiparas 7.1% home vs 10.7% hospital, multiparas 1.9% home vs 6.6% hospital
Sweden				
Lindgren et al[5] 2008	Retrospective analysis of Swedish Medical Birth Register	All planned home births (regardless of actual place of birth). Twins, preterm, and postterm were included in home birth group but not the hospital group. 897 planned home births, 11,341 planned hospital births	Neonatal mortality (28 days or less) Apgar scores Mode of birth Episiotomy Perineal lacerations	Neonatal outcomes Neonatal mortality 2.2/1,000 home vs 0.7/1,000 hospital (NS) No difference in Apgar scores Maternal outcomes: Spontaneous vaginal birth 95% home vs 84% hospital ($P=0.002$) Vacuum 2% home vs 10% hospital ($P<0.001$) Episiotomy 1% home vs 7% hospital ($P<0.001$) Perineal lacerations 18% home vs 31% hospital

(*Continued*)

Table 2 (*Continued*)

Author and year	Study design	Population and sample size	Outcome measures	Results
UK				
Birthplace in England Collaborative Group[20] 2011	Prospective cohort study Compared home, birth center, midwifery, and obstetric units	64,538 low-risk women at term	Composite index combining stillbirth, early neonatal death, encephalopathy, meconium aspiration, birth-related injuries Interventions	Neonatal outcomes: Composite outcome measure was low for the entire sample and no different between groups When sample was split, the adverse outcomes were slightly higher in nulliparous at home (9.3/1,000) than in hospital (5.3/1,000) Odds of Pitocin, epidural, C/S, vacuum forceps higher in obstetric unit vs home
Nove et al[33] 2012	Observational, secondary analysis of maternity records	Low risk 5,998 planned home 267,874 planned hospital	Postpartum hemorrhage (>1,000 ml)	PPH rate was 0.38% at home vs 1.04% hospital (P=0.000)
US				
Johnson and Daviss[34] 2005	Retrospective descriptive study (98% in US and 2% in Canada)	5,418 planned home birth with CPMs	Transfers IP and neonatal mortality Interventions: epidural, episiotomy, C/S	Transfer rates: 12.1% Neonatal outcomes: IP and neonatal deaths 1.7/1,000 (excluding breeches and twins) Maternal outcomes: Epidural 4.7% Episiotomy 2.1% C/S 3.7%
Grünebaum et al[35] 2013	Retrospective cohort study of live birth certificate data in the US from 2007 to 2010	13,891,244 Four groups: Hospital physician Hospital midwife Freestanding birth center midwife Home midwife Multiple births, before 37 weeks, and <2,500 g infants were excluded	Apgar score of 0 at 5 minutes Seizures, neurologic dysfunction	Neonatal outcomes: Home births were more likely to have Apgar of 0 at 5 minutes (RR 10.55), seizures, and serious neurologic dysfunction (RR 3.80) Maternal outcomes: Women attended at home were more likely to be multiparous, non-Hispanic white, to deliver beyond 41 weeks, and to have macrosomic infants
Cheng et al[36] 2013	Retrospective cohort study of birth certificate data	Planned hospital birth compared with planned home births Low-risk women (including women with previous C/S) singleton, vertex, term 12,039 planned home births 2,069,714 planned hospital	5-minute Apgar score <4, 5-minute Apgar <7, seizures, admit to NICU, operative vaginal delivery, IOL	Neonatal outcomes: 5-minute Apgar score <4 0.37% home vs 0.24% hospital (P=0.009) 5-minute Apgar score <7 2.42% home vs 1.17% hospital NICU admission 0.57% home vs 3.03% hospital Higher rates of intervention in hospital births

Cox et al[37] 2013	Southeastern Pennsylvania, US Retrospective, descriptive analysis	Women cared for by CNMs who planned a home birth (mainly Amish), N=1,836	Demographic characteristics Reasons for transfer Maternal and neonatal complications	Transfer rates: 1,733 of births occurred at home (94.5%) Reasons for transfer were ROM at term, failure to progress, choice, C/S, breech, FHR abnormalities, hypertension, twins, maternal fever, IUFD Neonatal outcomes: 0.4% neonatal hospital admission 0.4% neonatal death (all with anomalies) Maternal outcomes: 5.5% PPH 14% perineal laceration rate 2.2% maternal postpartum complication rate
Grünebaum et al[38] 2014	Retrospective analysis of a CDC birth certificate-linked data set 2007–2010	Women attended by midwives at home N=61,993 vs those attended by hospital midwives in the US N=1,096,555 Also included data from hospital physician and freestanding BC midwife and home – other	Total neonatal mortality Subanalysis for nulliparas and gestation ≥41 weeks	Neonatal mortality: Midwife home births =1.26/1,000 Midwife hospital births =0.32/1,000 Neonatal mortality of women with a first birth Midwife home births =2.19/1,000 Midwife hospital births =0.33/1,000 Neonatal mortality of women with gestation ≥41 weeks Midwife home births =1.84/1,000 Midwife hospital births =0.27/1,000
Grünebaum et al[39] 2014	As above	As above	5-minute Apgar scores of 0 Neonatal seizures or serious neurologic dysfunction	Neonatal outcomes: 5-minute Apgar Hospital doctor RR =1.00 Hospital midwife RR =0.51 Home midwife RR =10.55 Neonatal seizures or neurologic dysfunction Hospital doctor RR =1.00 Hospital midwife RR =0.74 Home midwife RR =3.8
Cheyney et al[40] 2014	Retrospective, descriptive	Midwives Alliance of North America Statistics Project data registry 16,924 women	Actual place of birth Mode of birth 5-minute Apgar score <7 Transfers Breastfeeding	Transfer rates: Birthed at home 89.1% Neonatal outcomes: 5-minute Apgar score <7 1.5% IP or neonatal deaths 2.06/1,000 Maternal outcomes: Augmentation and/or epidural 4.5% Spontaneous vaginal birth 93.6%

Abbreviations: IP, intrapartum; PICU, pediatric intensive care unit; NICU, neonatal intensive care nursery; NS, nonsignificant; C/S, cesarean section; PPH, postpartum hemorrhage; SCN, special care nursery; LTCS, low transverse cesarean section; RR, relative risk; EBL, estimation of blood loss; SES, socioeconomic status; IUGR, intrauterine growth restriction; HELLP, hemolysis, elevated liver enzymes, and low platelet count; CPM, certified professional midwife; IOL, induction of labor; CNM, certified nurse midwife; ROM, rupture of membranes; FHR, fetal heart rate; IUFD, intrauterine fetal death; CDC, Centers for Disease Control and Prevention; BC, British Columbia; SCU, special care unit; ICU, intensive care unit.

Table 3 Maternal experience and satisfaction with home birth

Author and year	Place of study	Design	Sample size and age	Outcome measures	Findings
Bernhard et al[49] 2014	US	Qualitative descriptive	n=20 24–42 years (mean =33.1)	Women's experiences who chose a home birth	• Choices and empowerment • Interventions and interruptions • Disrespect and dismissal • Birth space • Connection
Boucher et al[50] 2009	US	Qualitative descriptive (secondary data analysis)	n=160 20–65 years (mean=35)	Reasons why women choose home birth	• Safety and better outcomes • Intervention free • Negative previous hospital experience • Control • Comfortable environment • Trust in birth
Catling et al[51] 2014	Australia	Constructivist grounded theory	n=17 21–40 years (mean=31.5)	Processes/influences on choosing a publicly funded home birth	• Feeling independent, strong, and confident • Doing it my way • Protection from hospital-related activities • Having a safety net • Selective listening and telling • Engaging support
Farrish and Von Robertson[52] 2012	US	Qualitative	n=22 20 to ≥60 years (no mean reported)	Factors that influenced African American women to seek a home birth	• Desire for control • Avoiding pharmacological pain relief • Dissatisfaction with the medical aspects of intrapartum care
Hildingsson et al[53] 2010	Sweden	Descriptive and comparative study – questionnaires from women who had a planned home birth and women who had a planned cesarean section	Home birth n=671 Planned cesarean section n=126 Ages of women in home birth: <25–60 years 25–35=395 >35=215	Compare women who chose a cesarean section vs a planned home birth and birth experience	Compared with women who chose cesarean section planned home birth women in demographics: • they were more educated • had lower body mass index • less likely to smoke When adjusted for background variables, women with a home birth felt: • less threat to the baby's life, • more satisfied with their participation in decision making and support from midwife • more in control • a more positive birth experience • more satisfied with intrapartum care • the intensity of pain more strongly, but had more positive experience of the pain
Jouhki[54] 2012	Finland	Qualitative descriptive	n=10 29–39 years (mean=37.9)	Factors that affected the decision and actual birth experience	• Reasons for home birth • Seeking information before choosing home birth • Factors supporting and inhibiting home birth • Most important reason for giving birth at home • Home birth experience and women's desire for alternative maternity care

Lindgren and Erlandsson[55] 2010	Sweden	Quantitative descriptive. Survey included an open-ended question. Each participant received a survey for each birth (1,038)	n=722 (1,025 birth totals) <20 years =88 20–25 years =257 26–35 years =606 >35 years =73 (no mean reported)	Factors that were experienced as empowering during a planned home birth	• Finding rest in acceptance of the process • Emotional sensations • Environmental sensations • Guidance • Verbal guidance • Nonverbal guidance • Tacit support • Physical factors • Mental factors • Overcoming disempowering conditions • Emotions • Actions
Lindgren et al[56] 2006	Sweden	Phenomenological	n=5 25–48 years (no mean reported)	How couples consider risks before making a decision about where to give birth	• Trust in the woman's ability to give birth • Confidence in the midwife • Confidence in the relationship • Physical and intellectual preparation
Merg and Carmoney[57] 2012	US	Phenomenology	n=11 30–51 years (90% in 30s)	Experiences of home birth vs hospital birth	• Respect/autonomy vs disrespect/coercion • Trust vs distrust • Accomplishment vs failure • Empowerment vs power struggle/powerless • Allies vs adversaries • Satisfaction vs dissatisfaction • Avoiding probable interventions • Healing vs broken
Murray-Davis et al[58] 2012	Canada	Grounded theory	n=34 25–40 years (no mean reported)	Why women choose to give birth at home	• Wanting: the internal motivation for home birth • Informing: learning and unlearning about birth • Choosing home: taking ownership for the decision
Sjöblom et al[59] 2006	Sweden	Phenomenological, hermeneutical	n=12 28–43 years (no mean reported)	Women's experiences of giving birth at home	• Having faith in one's own competence • Choosing support on one's own terms

the US indicate that women who have a planned home birth are more likely to be white, married, and not having their first baby.[2] Data from Sweden indicate that women choosing home birth there are more likely to have larger families, be older, have a higher level of education, and not work outside the home.[19] Women choosing out of hospital birth in the UK are more likely to be older, white, and of higher socioeconomic status.[20] Women in the Netherlands who plan a home birth are more likely to be older, multiparous, of Dutch origin, and have a medium or high socioeconomic status.[4]

To date, there have been two attempts to conduct an RCT of home birth. The first, in 1996, was conducted in the UK.[21] In this feasibility study, eleven participants were recruited from 71 women who met the criteria for a home birth. While the authors suggest that a larger trial might be possible, they acknowledge that because of the low incidence of severe morbidity or mortality, safety as an outcome variable would not be feasible in an RCT of home birth.[21] In 2009, researchers in the Netherlands, where home birth rates are the highest, designed an RCT and were able to enroll only one participant after 6 months of recruitment.[22] The study was then redesigned to explore reasons why women are reluctant to enroll in a home birth trial.[22] The main reasons women declined participation were that either they had already decided where they wanted to give birth or they wished to choose their own place of birth.[22] Since participation in research must be voluntary, it is clear that RCTs of place of birth are not feasible. Therefore, studies of home birth outcomes must rely on observational methods.

Outcomes from large observational studies in various countries have been conducted (Table 2).[4–6,10,20,23–40] In addition, a number of systematic reviews of the findings have been published,[39,40] as well as a meta-analysis of prior data.[41] Some prospective studies utilize an "intention to treat" whether early in pregnancy[23] or at the onset of labor,[20] while others compare outcomes based on where women ultimately birthed.[35,36] Utilizing an "intention to treat" model may artificially increase the adverse outcomes in the home birth group when women are appropriately transferred due to risk factors. However, using ultimate birth location may result in an artificially low rate of interventions such as cesarean section, because women would appropriately be transferred prior to these interventions.

A challenge associated with comparison of home birth findings is that the studies are conducted in different countries with a variety of home birth providers. For example, while two studies undertaken in Canada compared home versus hospital outcomes of births undertaken by the same midwives,[26,27] other studies compare outcomes with differing birth attendants (physicians, midwives, nurse–midwives, licensed, nonlicensed).[35,36]

An additional challenge is the population included in the home birth data. Unplanned home birth often includes women and infants for whom there is greater risk of mortality/morbidity (prematurity, no prenatal care).[41] For this reason, most current studies include only planned home births. However, when studies in the US utilize birth certificate data, unplanned home births may inadvertently be reported, because some states do not distinguish between planned and unplanned home births.[2]

Neonatal outcomes

When investigations of safety during planned home birth are conducted, neonatal outcome variables have been analyzed and reported in a variety of ways. Because serious morbidity and mortality are infrequent occurrences, some studies utilize a composite index that combines, for example, rates of intrapartum stillbirth, neonatal encephalopathy, and birth-related injuries.[21] The strength of utilizing this design is the power to determine differences for outcomes that are relatively rare. However, this approach assigns the same degree of importance to an outcome such as an intrapartum stillbirth and a fractured clavicle, which is a relatively benign birth injury. Other studies report neonatal deaths, neonatal intensive care (NICU) admissions, and 5-minute Apgar scores. Neonatal deaths are sometimes reported as early neonatal deaths ($\leq$7 days) or neonatal deaths ($\leq$28 days), adding to challenges in analysis and interpretation of findings. Five-minute Apgar scores are also reported in a variety of ways – $<$7, $<$4, or 0 – which, similarly, makes analysis and interpretation of research findings more challenging.

Studies conducted regarding neonatal outcomes related to home birth have reported conflicting results across various countries and populations of women. Some studies conducted in the US suggest that there may be an increased frequency of low Apgar scores and adverse neurologic outcomes in infants born at home in comparison with hospital.[35,36,38,39] In a retrospective descriptive cohort study, infants born at home were more likely to have a 5-minute Apgar score of 0, neonatal seizures, or serious neurologic dysfunction.[35] Data for this study were collected from the National Center for Health Statistics birth certificate data and included information from all birth certificates from 2007 to 2010.[35] Preterm and multiple gestations were excluded. Apgar scores were included on all birth certificates; however, other neonatal outcomes were incomplete because these data were not consistently

collected in all 50 states. While the analysis was comprehensive, the utility of birth certificate data for determining safety of home birth is limited. For example, a 5-minute Apgar score of 0 does not determine whether events occurred during the antepartum or intrapartum period. Why an Apgar score of 0 versus a more clinically significant measure such as <7 at 5 minutes[42] was analyzed is not clear. Additionally, this analysis did not differentiate between types of midwife attending the birth (lay midwife, certified professional midwife, certified midwife, or certified nurse–midwife). While the risk of adverse neonatal outcomes was not analyzed by specific risk factors, in a separate publication the authors report that there were more women with risk criteria (breech presentation, prior cesarean, twins, or gestational age over 41 weeks) in those attended by home birth midwives compared with the nurse–midwife-attended hospital births.[38] A later publication by the same authors utilizing a Centers for Disease Control and Prevention birth/infant death data set from 2006 to 2009 indicated a higher total neonatal mortality risk in infants born at home (1.26 vs 0.32 per 1,000).[39] Risk of adverse neonatal outcomes increased if gestation exceeded 41 weeks or if it was the mother's first birth.[39]

An additional retrospective study done in the US utilizing birth certificate data compared women who had planned home births versus planned hospital births.[36] Only women having term singleton vertex births were included; however, previous cesarean births were not excluded. For this study, Apgar score <4 was the primary outcome, with secondary outcomes of Apgar score <7, NICU admission, and obstetric interventions. The authors report an increase in 5-minute Apgar scores <4 (0.37% vs 0.24%), higher rates of neonatal seizures (0.06% vs 0.02%) with no difference in assisted ventilation rates, and lower rates of NICU admissions among infants born at home.[36] When a subanalysis was undertaken by midwife type, there was no difference in Apgar score between home and hospital among births attended by certified nurse–midwives, and the only difference that remained was that neonates born at home had fewer NICU admissions than those born in the hospital.[36] While birth certificate and associated data sets provide opportunity for large amounts of data, the reliability of some variables, such as labor and birth complications and congenital anomalies, has been brought into question.[43]

In a descriptive analysis of planned home birth among primarily Amish women in Pennsylvania, US, the rate of neonatal death was 0.4%, and all were attributed to fetal anomalies.[37] The rate of transfer to the hospital was also low (0.75%), despite many women having a high parity.[37] Of note, in this study, the birth attendants were certified nurse–midwives, and practice guidelines required that women were low risk and the midwives reported a good working relationship with the transferring facilities.[37] Also, because the population was primarily Amish, where birth at home is normalized, generalizability to the rest of the population is limited.[37] However, similar descriptive studies report similarly low neonatal mortality rates (1.7 per 1,000) when breech and twin home births were excluded and the reported Apgar score of <7 rate was 1.3%.[34] An additional descriptive study was undertaken analyzing both planned and actual rates of recent (2004–10) home birth data from the Midwives Alliance of North America database.[40] Low Apgar scores (<7 at 5 minutes) occurred in 1.5% of newborns, with 0.6% having a 5-minute Apgar score <7.[40] When infants with lethal anomalies were excluded, the rate of intrapartum fetal death was 1.30/1,000, the rate of early neonatal death was 0.41/1,000, and the rate of late neonatal death was 0.35/1,000.[40] Infants born in breech position were at significantly increased risk for death at all time points (13.51/1,000, 4.57/1,000, and 4.59/1,000), while infants born to primiparous women or those with a prior cesarean section were increased only at the intrapartum time point (2.91/1,000 and 2.85/1,000, respectively).[40] When higher-risk women were excluded from the analysis, the intrapartum death rate decreased to 0.85/1,000.[40] Of note, the data in this sample were obtained from midwives who voluntarily participated in data collection and self-reported the outcomes.[40]

Three studies of neonatal outcomes of planned home birth have been undertaken in the past 10 years in Australia.[23–25] In South Australia, perinatal data for all births from 1991 to 2006 were analyzed, including data from 1,141 planned home births and 297,192 hospital births.[23] Planned home births were defined as births that were intended to occur at home at the time of the first prenatal visit; of these, 30.6% occurred in the hospital.[23] The perinatal mortality rate for home birth was similar to rates within the hospital; however, the authors report that there were three planned home birth infants who died due to intrapartum asphyxia, concluding that this was a higher number than expected.[23] In this study, Apgar scores of infants transferred to the hospital from a planned home birth were lower than Apgar scores of planned hospital births.[23] This is not unexpected, since transfers represent women at higher risk of untoward outcomes, and in the US, barriers to transfer exist in the current maternity care system.[44] In New South Wales, Australia, using a variety of routinely collected linked data, the rates of stillbirth and neonatal deaths were not significantly different between

hospital (5.8/1,000), home (7.1/1,000), and birth center (5.3/1,000), although the authors report that the study was underpowered to achieve statistical significance.[25] A descriptive study of publicly funded home birth in Australia reported a stillbirth and early neonatal death rate of 3.3/1,000, which was reduced to 1.7/1,000 when deaths related to fetal anomalies were excluded.[24]

Safety of home birth in relation to neonatal outcomes was explored using a prospective design in British Columbia, Canada.[26] A strength of this study design was that the same providers (registered midwives) attended both the home births and the comparison hospital group.[26] Planned place of birth determined group placement versus actual place of birth. There were no differences in rates of perinatal deaths, which were low among all groups (home birth =0.35/1,000 and 0.57/1,000 for hospital midwife attended).[26] Neonatal adverse outcomes such as rates of birth trauma, resuscitation, and meconium aspiration were similarly low for both groups, with no increase in adverse outcomes for planned home births.[26]

Utilizing a composite index of perinatal mortality and morbidity, infants born outside the hospital (home and freestanding or alongside midwifery units) in the UK were no more likely to have an adverse event than those born within the hospital.[20] For this study, the researchers utilized an intention-to-treat model based on planned place of birth at the onset of labor.[20] All women were healthy and low risk. However, in a subgroup analysis by parity, nulliparous women in the planned home birth group were more likely to have an adverse neonatal outcome than those planning hospital birth.[20]

Studies conducted in the Netherlands, where home birth rates are the highest in the developed world, have not demonstrated an increase in adverse outcomes for infants during planned home birth.[4,29,30] In a retrospective analysis, records from 679,952 low-risk women were investigated to compare intrapartum and early neonatal mortality rates for low-risk women during planned home birth and hospital birth with a midwife.[30] The risk of intrapartum or early neonatal death was 0.15% for home birth versus 0.18% for hospital birth, a difference that did not reach statistical significance when preterm births (<36 weeks) were excluded.[30] In certain subgroups of women (very young or old or with small for gestation age), the risk may be slightly increased.[30] Similarly, two additional nationwide cohort studies in the Netherlands of low-risk women attended by midwives demonstrated no increased neonatal adverse outcomes (death or NICU admission) associated with home birth.[4,29]

A meta-analysis undertaken and published in 2010 included data from 12 studies and a total of 342,056 planned home and 207,551 planned hospital births.[45] The authors report that in the home birth group, gestation was significantly more likely to exceed 42 weeks. While the perinatal mortality rate was similar for both groups, the overall neonatal death rate was higher in the planned home birth group (0.20%) versus the planned hospital group (0.09%).[45] When deaths from fetal anomalies were excluded, the rates were 0.15% for home birth versus 0.04% for hospital.[45] While the benefit of combining data to increase the power to detect significance is compelling, comparing studies from differing countries across a 30-year timespan (1976–2006) and with varied data collection methods is of questionable value.[46] Notably, a majority of the births included in this study were taken from studies in the Netherlands that did not find a similar difference in mortality in the primary analysis.[29,30] While the meta-analysis reports the comparison as being between planned home birth and planned hospital birth, one included study used data obtained from birth certificates that did not differentiate between planned and unplanned home births.[47] Finally, one of the largest studies that was initially included in the meta-analysis for some of the outcomes but had not yet published neonatal morbidity and mortality rates out to 28 days has subsequently provided this information. The findings of this cohort investigation of 743,070 low-risk planned home and hospital births in the Netherlands found no increased risk of adverse neonatal outcomes with planned home birth when extending the time period out to 28 days for neonatal outcomes.[4] As a result, the authors of this publication suggest that if their results had been included in the meta-analysis conducted by Wax et al,[45]

> their conclusion inevitably would have been that not only perinatal mortality but also neonatal mortality was similar for planned home births versus planned hospital births, as more than 95% of home births in their study came from our data.[4]

Breastfeeding

Breastfeeding rates were included as a variable in two of the studies reviewed. In a Canadian study, infants born to women planning home birth were significantly more likely to be exclusively breastfeeding 1 week postbirth (91.5%) than those born during planned hospital birth (84.5%).[26] This difference remained at 6 weeks postpartum, with 87.5% of infants being exclusively breastfed in the home birth group (vs 76.8% in the hospital birth group).[26] While groups in this

study were matched on demographic characteristics such as age and parity, there may well be other factors that motivate women to plan a home birth and also exclusively breastfeed. Similar rates were reported among infants born at home in the US, with 97.9% at least partially breastfeeding and 86% exclusively breastfeeding at 6 weeks postpartum.[40]

Maternal outcomes

Women who have a planned home birth experience fewer interventions such as operative vaginal delivery and induction of labor when compared with women who birth within a hospital setting.[36] This finding is not surprising, since interventions such as operative vaginal birth or induction of labor with medication are typically not undertaken at home; rather, transfer to the hospital would be done prior to these interventions. A more realistic comparison can be made using an "intention to treat" model where participants are grouped based on their plan to have a home birth at time of labor onset, allowing the opportunity to compare rates of intervention such as cesarean section. In a Canadian study that matched women by risk factors, parity, and history of a prior low transverse cesarean section, women who intended to birth at home had cesarean section rates of 5.2% versus 8.1% in the low-risk women who planned a hospital birth.[26] Findings from descriptive studies indicate similarly low cesarean section rates of 3.7% in women planning a home birth.[34]

Across all studies, women intending to birth at home are significantly less likely to have other obstetric interventions such as epidural anesthesia, forceps, vacuum, augmentation of labor, or episiotomy, regardless of where they ultimately give birth.[20,23,25,26] This is somewhat to be expected, since these women are considered lower risk; however, these differences remain when a comparison design is utilized where women in both groups (home and hospital) were low risk and the same midwives were attendants.[20,26,37] In New Zealand, where the home birth rate is 3.3%, a population-based retrospective study demonstrated that women planning a home birth had lower rates of all interventions, including cesarean section and instrumental birth.[32]

While interventions that are unnecessary should clearly be considered a negative outcome, what is not clear is when those interventions may in fact be necessary, potentially preventing other adverse outcomes such as neonatal mortality or low Apgar scores. That said, there is consensus that the overall rate of interventions such as cesarean section is substantially higher than necessary.[48]

Studies indicate that maternal complications related to birth, such as postpartum hemorrhage and third and fourth degree perineal lacerations, are lower in women who plan a home birth.[26] For example, in primarily Amish women attended at home by certified nurse–midwives, the rate was 13% for any perineal laceration and 0.25% for third or fourth degree lacerations.[37] Of note, this population had high parity; only 17.1% were nulliparous. However, in this population, rate of postpartum hemorrhage was also low (5.5%), despite 33.4% of the women having high (5–13) parity.[37] Rates of perineal lacerations were similarly low for planned home births in southern Australia (34.2% first to second degree, 1.1% third or fourth degree).[24] Rates of other maternal complications such as retained placenta or endometritis were also low in this home birth population.[24] In comparison with planned hospital birth, postpartum hemorrhage rates (>500 mL blood loss) are either the same[32] or lower in women who plan home birth,[26,27] and they are less likely to receive blood transfusion.[20]

Women's experiences with birth setting

For the studies that explored why women chose a home birth, eleven research studies were evaluated that described influencing factors contributing to a woman choosing a home birth. Table 3 presents a summary of the eleven research studies (nine qualitative and two quantitative)[49–59] and addresses the major themes that evolved from the participants' responses.

Results of synthesizing the research studies with women regarding home births generated three major themes. The major themes were previous experiences of hospital birth, control and empowerment, and home environment.

Experiences of hospital birth

There were events that occurred during the birth process and hospital stay that motivated women to choose a home birth in subsequent pregnancies. Two central factors found to influence women's decision to choose a home birth after a hospital birth were too many interventions and interruptions and a desire to avoid pharmacological pain relief.

Not all interventions performed on laboring women are needed in order to have a good birth outcome. Women believed that the birth process is natural, not a disease, and would proceed much smoother if there were not so many interventions.[52,54,55,58,59] Unfamiliar people walking in and out of their hospital room contributed to a loss of concentration, increasing not only discomfort with the labor process but emotional discomfort as well.[51,55] Along with unfamiliar people walking in and out, women were dissatisfied with care received by their own health care providers.[49,52,57] Women felt they were treated disrespectfully and that procedures were

conducted with no explanation on the provider's part,[49–52] which can lead to mistrust.

One would think that women have the choice to use or not to use pharmacological pain relief during labor. Pharmacological pain management such as an epidural or narcotics must first receive a woman's informed consent. However, there was not a process of informed consent as perceived by women in many of the studies and thus became a basis for seeking home birth. Feelings of losing control during the birth process and "giving in", even though they did not want medication, was a key theme.[49,51,52,54] There were women whose birth plan was to avoid pain medications during labor. However, at some time during the labor process, women felt they were no longer able to sustain their desires due to pressure from the medical staff.[49,51] Not all women want to receive medications for pain, because they believe labor pain is a normal process of labor.[52,53] Feelings of pressure to receive pain medications may have contributed to women thinking differently and provided a basis for seeking an alternative, to give birth at home. In addition, Lindgren and Erlandsson[55] found in their study involving 722 women with a total of 1,025 births, of which 75% of those births were at home, that pain was rarely mentioned as a factor in home birth. This finding may suggest that women who birth at home may be better prepared or prepare differently in pain management, and possibly that their caregiver helps guide them in coping techniques. Knowing that pharmacological pain relief is not available, women most likely discover other ways to manage normal birth, which may increase women's sense of control and feelings of satisfaction and accomplishment.

Women believed they were not being given choices in the hospital setting. Some believed that their voices were not heard.[49–52,57] Women described their feelings that interventions were done that they felt were unnecessary and getting pain medications they really did not want, but felt their choice was taken away. When women are excluded from the decision-making process and/or decisional control is taken away, this ultimately may lead to dissatisfaction. Therefore, based on hospital birth experiences, home birth was chosen for subsequent births where they had perceived they would have greater control and opportunity for empowerment.

Control and empowerment

Choosing to birth in one's own home where women can control their environment and do it their own way and on their own terms, avoiding unnecessary interventions and interruptions, was consistently described by the women as empowering.[49,51,52,55,57,58] Being the decision maker in how a woman would want her birth to go or being a part of the decision-making team was described as being important. Women felt that they were competent to make their own decisions and believed in themselves.[52,54–56] Women became informed about home birth, learning about not only the risks but also the benefits.[54,56,58] One such benefit was experiencing birth in a home environment.

Home environment

For most people, home is a peaceful and restful place. When a person is at home, they have more control of events that occur and over the environment. Giving birth in their own home on their own terms in a comfortable environment was more satisfying.[49,50,52,55,57] It was also believed that birth would happen more normally at home without all of the interventions usually performed at the hospital.[49,50,54,58] In the hospital setting, it is a different environment and culture, and hospital staff have certain routines that can affect the birthing process. It is not uncommon to have different people walk in and out of a laboring woman's room. In one's own home, people who enter are invited guests and are usually people who will provide the woman with good support.[51,54,55] Good support is a helpful strategy to help a woman cope with the process of labor.

Discussion

While some studies suggest a small but significant increase in neonatal death and adverse outcomes,[23,35,36,38,39,45] the majority of studies across a variety of countries have shown no increase in neonatal morbidity and mortality for planned home birth.[4,6,10,24–30,37,40] Additionally, maternal outcomes are consistently better for planned home birth, including less intervention and fewer complications.[5,6,10,20,23–28,31,32–35,37] Satisfaction with the birth experience is also high in the home birth setting.[53,57]

Emotion, debate, and controversy surrounding the topic of home birth are clearly present, with strong opinions both for and against.[60] Websites and blogs have proliferated, some in favor of and others warning against the risks of home birth. The perspective of some US-based maternity care providers is that physicians have a moral obligation to actively discourage women against choosing to give birth at home.[61] Others argue that the principle of autonomy and thus a woman's right to make informed choices should prevail.[46] These differing ethical perspectives, framing the issue of planned home birth within the context of autonomy and/or beneficence with the fetus as the primary focus, creates tensions within the health care provider arena as professional organizations then position themselves within this debate.[60]

Safety of home birth is dependent on many factors. Provision for home birth is vastly different depending on location, even within countries. For example, the Birthplace in England Research Programme conducted a qualitative exploration of the organizational and professional factors that may impact the safety of the home birth setting.[62] They found that experience and comfort level for providing home birth services varied among midwives, as well as the amount of support and infrastructure available to support home birth. In the US, licensure for midwives varies greatly from state to state; thus, educational, certification, and practice experience may also vary widely, including legislation in some states that makes it illegal to provide home birth services. The International Confederation of Midwives recommends that global standards for midwifery education be a minimum of 3 years' postsecondary school at an accredited institution.[63] Standardized educational requirements to establish a minimum level of preparation have been argued to be an important aspect of assuring the level of preparation to attend a home birth.[64]

In the US and other countries, there is not a consistent mechanism for home birth attendants to consult or transfer care during either pregnancy or labor.[44] In fact, home birth midwives in the US identify many barriers to accessing hospital care for their home birth clients.[44] Transfer rates to hospital from planned home birth range from 9.9% to 31.9% and are higher in areas where home birth is an integrated part of the maternity system.[65] A long distance to the nearest hospital and difficulty or delay in seeking transfer due to lack of an integrated system of health care may contribute to the potential for adverse neonatal outcomes. Despite the range of legal and health system barriers, as well as varied educational preparation of midwives within the US, a recent comprehensive observational cohort study reported outcomes of women who chose a planned home birth had similar findings to other countries – low rates of interventions, similar patterns for transfer of care when necessary, and no increase in adverse neonatal outcomes.[44]

Uniform guidelines outlining eligibility and risk factors for home birth have been argued to be an essential component for safe home birth.[66] Evidence suggests that when guidelines are implemented and adhered to and when home birth is reserved for lower-risk women, home birth outcomes are as good as, or better than, outcomes of similar women within the hospital birth setting.[20,66] Conversely, when women with risk factors such as breech or multiple birth have a home birth, there may be an increase in neonatal mortality and morbidity.[39] Countries such as the Netherlands,[67] New Zealand,[68] and the UK[69] have guidelines that indicate that home birth should be offered to low-risk women only. While guidelines may vary in their definition of low risk (eg, a previous cesarean section), consistent implementation and use of guidelines have been cited as an important aspect to enhance the safety of home birth.[66]

Evidence suggests that home birth is cost effective, in many cases significantly less expensive than hospital birth. In the UK, costs associated with low-risk vaginal birth were 50% lower in a home birth setting than in the hospital.[70] However, in many areas, it is not part of the established maternity payment system (national health care or private insurance), rendering home birth out of reach financially for low-income women.[70] While there has been concern raised about the challenges of balancing risk, cost, and access to care in all settings, a recent policy change in the UK has been recommended that encourages women to consider the full range of options available to them for maternity care, which includes home, hospital, and birth center, as well as type of provider being midwife or physician.[12.]

Recommendations for policy, providers, and women choosing place of birth vary widely, and most likely there will not be consensus regarding best practice for place of birth for low-risk women among maternity care providers and policy makers in developed countries in the near future. There is, however, some indication that home birth may be more accepted and in some cases even encouraged, as in the case of the recent National Institute for Health and Care Excellence guidelines from the UK that recommend that low-risk multiparous women consider staying home or giving birth in a midwifery-led birthing unit.[12] This is a significant change resulting from the recent accumulation of evidence in support of the safety of home birth within the UK.[20]

Limitations

Because this review was limited to those resources available in English, some pertinent studies may have been excluded. Because we did not conduct a meta-analysis, we cannot speak to the combined results of the study outcomes, only to how they exemplify the outcomes of home birth in a particular country and study population. In addition, the limitations of specific studies were addressed throughout this review, as well as the overall challenges associated with home birth-related research.

While evidence regarding neonatal outcomes related to home birth remains inconclusive, what is clear is that when guidelines and systems of transfer are in place, there is either minimal or no increased risk associated with home birth for low-risk women.[4,6,20,24–34] Maternal outcomes are consistently in favor of planned home birth. Low-risk women experience

less intervention and fewer complications when they plan a home birth, even if they ultimately give birth within the hospital.[4,20,23–28,32–35,37] Additionally, women are very satisfied with their birth experience within the home setting.[49,56,59] When not only neonatal but maternal factors are taken into consideration, there is compelling evidence that home birth should be available to low-risk women who choose it, and that policies should be in place to support integrated systems of care to support it.

Disclosure

The authors report no conflicts of interest in this work.

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