Step 1: Offers All Birthing Mothers Unrestricted Access to Birth Companions, Labor Support, Professional Midwifery Care

The Coalition for Improving Maternity Services:

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ABSTRACT

The first step of the *Ten Steps of Mother-Friendly Care* insures that women have access to a wide variety of support in labor and during the pregnancy and postpartum periods: unrestricted access to birth companions of their choice, including family and friends; unrestricted access to continuous emotional and physical support from a skilled woman such as a doula; and access to midwifery care. The rationales for the importance of each factor and the evidence to support those rationales are presented.

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Step 1: Offers all birthing mothers:

- **unrestricted access to the birth companions of her choice, including fathers, partners, children, family members, and friends;**
- **unrestricted access to continuous emotional and physical support from a skilled woman—for example, a doula or labor-support professional; and**
- **access to professional midwifery care.**

For a description and discussion of the methods used to determine the evidence basis of the Ten Steps of Mother-Friendly Care*, see this issue's "Methods" article by Henci Goer on pages 5S–9S.*

Step 1: Offers all birthing mothers:

- *unrestricted access to the birth companions of her choice, including fathers, partners, children, family members, and friends.*

In the past, when birth typically took place in homes, trusted family and friends provided care and support for the laboring woman. This support continues to be valued by women and is associated with increased satisfaction with childbirth.

Access to Birth Companions

Rationale for Compliance	Evidence Grade	
No evidence of medical harm found for: • unrestricted access by mother to birth companions • access of mother to companions of her choice • fathers at birth • partners at birth • children at birth • family members at birth • friends at birth		NEH
Mothers reported less satisfaction with birth support when the support provider was a nurse or a doctor compared with a partner or doula (trained or experienced woman who provides continuous labor support) (DeClercq, 2002).	**Quality:** **Quantity:** **Consistency:**	A B NA*
The perception of support during labor is a key ingredient in a woman's ultimate satisfaction with her birth experience (Hodnett, 2002).	**Quality:** **Quantity:** **Consistency:**	A A A**
The perception of support during labor is more important in determining a woman's satisfaction with her birth experience than her experience of pain or her satisfaction with methods of pain relief (Hodnett, 2002).	**Quality:** **Quantity:** **Consistency:**	A A A**

A = good, B = fair, NA = not applicable, NEH = no evidence of harm

Quality = aggregate of quality ratings for individual studies

Quantity = magnitude of effect, numbers of studies, and sample size or power

Consistency = the extent to which similar findings are reported using similar and different study designs

*only one study

**multiple studies in systematic review (SR)

For more information on the Coalition for Improving Maternity Services (CIMS) and copies of the Mother-Friendly Childbirth Initiative *and accompanying* Ten Steps of Mother-Friendly Care*, log on to the organization's Web site (www.motherfriendly.org) or call CIMS toll-free at 888-282-2467.*

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INCLUDED STUDIES

DeClercq, E., Sakala, C., Corry, M., Applebaum, S., & Risher, P. (2002). *Listening to mothers: Report of the first national U.S. survey of women's childbearing experiences.* New York: Maternity Center Association.

Hodnett, E. (2002). Pain and women's satisfaction with the experience of childbirth: A systematic review. *American Journal of Obstetrics & Gynecology, 186*, 160–172.

EXCLUDED STUDIES

Bryce, R. (1991). Support in pregnancy. *International Journal of Technology Assessment in Health Care, 7*(4), 478–484. **Reason:** Not applicable. Data includes prenatal period only.

Campero, L., Garcia, C., Diaz, C., Ortiz, O., Reynoso, S., & Langer, A. (1998). Alone I wouldn't have known what to do: A qualitative study on social support during labor and delivery in Mexico. *Social Science & Medicine, 47*(3), 395–403. **Reason:** Not applicable. Does not discuss ''unrestricted access to companion of mother's choice.'' Companion was assigned doula.

Hodnett, E., Gates, S., Hofmeyr, G., & Sakala, C. (2003). Continuous support for women during childbirth. *The Cochrane Database of Systematic Reviews,* (*3*). Art. No. CD003766. DOI: 10.1002/14651858. **Reason:** Not applicable. Does not include ''unrestricted access to companion of mother's choice.'' Companions were assigned hospital staff, medical professionals, or doulas.

Hofmeyr, G., Nikodem, V., Wolman, W., Chalmers, B., & Kramer, T. (1991). Companionship to modify the clinical birth environment: Effects on progress and perceptions of labor and breastfeeding. *British Journal of Obstetrics & Gynaecology, 98,* 756–765. **Reason:** Not applicable. Does not discuss ''unrestricted access to companion of mother's choice.'' Companion was assigned doula.

Klaus, M., Kennell, J., Robertson, S., & Sosa, R. (1986). Effects of social support during parturition on maternal and infant morbidity. *British Medical Journal (Clinical Research Ed.), 293*(6547), 585–587. **Reason:** Not applicable. Does not discuss ''unrestricted access to companion of mother's choice.'' Companion was assigned doula.

Madi, B., Sandall, J., Bennett, R., & Macleod, C. (1999). Effects of female relative support in labor: A randomized controlled trial. *Birth, 26*(1), 4–8. **Reason:** Not applicable. Female relatives in this African culture had experience supporting women in labor and, therefore, functioned as doulas.

Wolman, W., Chalmers, B., Hofmeyr, G., & Nikodem, V. C. (1993). Postpartum depression and companionship in the clinical birth environment: A randomized, controlled study. *American Journal of Obstetrics & Gynecology, 168,* 1388–1393. **Reason:** Not applicable. Does not discuss ''unrestricted access to companion of mother's choice.'' Companion was an assigned doula.

Step 1: Offers all birthing mothers:

- *unrestricted access to continuous emotional and physical support from a skilled woman—for example, a doula, or labor-support professional.*

Across time and cultures, women have been supported during labor by other women who are skilled in providing continuous emotional and physical support. When childbirth moved to the hospital, this component of supportive care was largely lost. Skilled support (differentiated from support provided by family and friends or nursing and medical support) is once again available to women and has been studied extensively over the last decade.

Access to Labor Support

Rationale for Compliance	Evidence Grade	
No evidence of harm found for unrestricted access to continuous emotional and physical support from a skilled woman (Hodnett, 2003).	**Quality:** **Quantity:** **Consistency:**	A A A* and **
Compared with a similar population receiving comparable clinical care, continuous labor support by a skilled or experienced woman reduces the likelihood of having pain medication in labor, increases the likelihood of spontaneous birth (vaginal birth without the aid of vacuum extraction or forceps), increases satisfaction with the birth experience, and reduces the likelihood of severe postpartum pain (Hodnett, 2003; Schroeder, 2005; Simkin, 2002; Waldenström, 2004).	**Quality:** **Quantity:** **Consistency:**	A A A
Compared with a similar population receiving comparable clinical care, continuous labor support by a skilled or experienced woman results in fewer newborn admissions to a neonatal intensive care unit (Hodnett, 2003).	**Quality:** **Quantity:** **Consistency:**	A A A**
Compared with outcomes from studies of labor support provided by nurses (hospital employees), studies where support was provided by a nonmedical trained or experienced woman resulted in fewer cesareans, less need for oxytocin during labor, and less need for pain medication (Hodnett, 2003; Simkin, 2002; Simkin, 2004).	**Quality:** **Quantity:** **Consistency:**	A A A

A = good
Quality = aggregate of quality ratings for individual studies
Quantity = magnitude of effect, numbers of studies, and sample size or power
Consistency = the extent to which similar findings are reported using similar and different study designs
*no study reported harm
**multiple studies in SR

INCLUDED STUDIES

Hodnett, E., Gates, S., Hofmeyr, G., & Sakala, C. (2003). Continuous support for women during childbirth. *The Cochrane Database of Systematic Reviews* (*3*). Art. No.: CD003766.

Schroeder, C., & Bell, J. (2005). Doula birth support for incarcerated pregnant women. *Public Health Nursing, 22*(1), 53–58.

Simkin, P., & Bolding, A. (2004). Update on nonpharmacologic approaches to relieve labor pain and prevent suffering. *Journal of Midwifery & Women's Health, 49*(6), 489–504.

Simkin, P. P., & O'Hara, M. (2002). Nonpharmacologic relief of pain during labor: SRs of five methods. *American Journal of Obstetrics & Gynecology*, *186*(5 Suppl Nature), S131–159.

Waldenström, U., Hildingsson, I., Rubertsson, C., & Radestad, I. (2004). A negative birth experience: Prevalence and risk factors in a national sample. *Birth, 31*(1), 17–27.

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Lantz, P. M., Low, L. K., Varkey, S., & Watson, R. L. (2005). Doulas as childbirth paraprofessionals: Results from a national survey. *Women's Health Issues, 15*(3), 109–116. **Reason:** Not relevant. Survey of demographic characteristics of doulas, not their impact on birth outcomes.

Meltzer, B. (2004). *Paid labor: Labor support doulas and the institutional control of birth.* Unpublished dissertation, University of Pennsylvania. **Reason:** Not relevant. Study a discussion of doulas as a wage-earning population, not their impact on birth outcomes.

Step 1: Offers all birthing mothers:

- *access to professional midwifery care.*

Access to professional midwifery care is an important component of the *Ten Steps of Mother-Friendly Care* based on the following principles:

- Autonomy – In order to choose what best suits their needs, circumstances, and preferences, women must have access to all types of practitioners who are qualified to take sole responsibility for the care of childbearing women during the prenatal, intrapartum, and postpartum periods.
- Model of care – While any individual practitioner may practice a model of care conforming with the *Ten Steps of Mother-Friendly Care*, research shows that such practitioners are more likely to be midwives.

For the purposes of this document, ''professional midwifery'' is defined as a skilled attendant who has achieved official recognition as a midwife through licensure, registration, or certification. ''Access to professional midwifery care'' is defined as access to a professional midwife who is authorized to provide care independently throughout the childbearing period to women who are at low or moderate risk of complications. Professional midwives may attend births within hospitals, freestanding birth centers, the family's home, or some combination of these locations. This review does not specifically address studies pertaining to location for birth. (See the Appendix on pages 81S–88S for a review of birth locations.) However, because midwives tend to provide most of the care in out-of-hospital settings, studies of care in out-of-hospital settings are included here if midwives were the sole providers of care in that setting.

Access to Midwifery Care

Rationale for Compliance	Evidence Grade	
Compared with physicians caring for similar populations, care by professional midwives results in the following maternal outcomes:		
• more antepartum visits and/or increased length of visits (De Koninck, 2001; Fraser, 2000).	**Quality:** **Quantity:** **Consistency:**	A B A
• more education and counseling during prenatal care (e.g., nutrition, sexuality, smoking) (Oakley, 1996).	**Quality:** **Quantity:** **Consistency:**	A C NA*
• decreased incidence of antepartum and/or intrapartum hypertension (PIH, PET, preeclampsia) (Blanchette, 1995; Tucker, 1996; Turnbull, 1996).	**Quality:** **Quantity:** **Consistency:**	A B B (One study found equivalent rates of hypertension with midwifery care.)
• fewer hospital admissions during the antepartum period (Fraser, 2000; Jackson, 2003 American Journal of Public Health (AJPH); Hodnett, 2000; Tucker, 1996).	**Quality:** **Quantity:** **Consistency:**	A A B (One study found equivalent rates of hospital admissions with midwifery care.)
• fewer inductions of labor (see also Step 6, p. 42S) (Blanchette, 1995; Campbell, 1999; Davis,1994; Fraser, 2000; Harvey, 1996; Jackson, 2003 AJPH; Johnson, 2005; Tucker, 1996; Turnbull, 1996; Woodcock, 1994).	**Quality:** **Quantity:** **Consistency:**	A A B (One study found equivalent induction rates with midwifery care.)

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Access to Midwifery Care

Rationale for Compliance	Evidence Grade	
• less need for augmentation of labor (Blanchette, 1995; Bodner-Adler, 2004; Campbell, 1999; Davis, 1994; Fraser, 2000; Harvey, 1996; Hueston, 1993; Jackson, 2003 AJPH; Johnson, 2005; Law, 1999; Tucker, 1996).	**Quality:** **Quantity:** **Consistency:**	A A B (Two studies found equivalent rates of labor augmentation rates with midwifery care.)
• increased access to food and drink in labor (Jackson, 2003 AJPH; Oakley, 1995).	**Quality:** **Quantity:** **Consistency:**	A A A
• increased use of ambulation in labor (see also Step 4, p. 25S) (Jackson, 2003 AJPH; Hundley, 1994; Oakley, 1995).	**Quality:** **Quantity:** **Consistency:**	A A A
• less use of nonsupine positions for birth (see also Step 4, p. 26S) (Bodner-Adler, 2004; De Koninck, 2001; Oakley, 1995).	**Quality:** **Quantity:** **Consistency:**	A B A
• less use of intravenous fluids in labor (see also Step 6, p. 34S) (Harvey, 1996; Jackson, 2003 AJPH; Johnson, 2005; Law, 1999; Oakley, 1995).	**Quality:** **Quantity:** **Consistency:**	A A A
• less use of amniotomy in labor (see also Step 6, p. 38S) (Fraser, 2000; Harvey, 1996; Jackson, 2003 AJPH; Johnson, 2005).	**Quality:** **Quantity:** **Consistency:**	A A A
• fewer episodes of abnormal fetal heart rate in labor (Jackson, 2003 AJPH; Woodcock, 1994).	**Quality:** **Quantity:** **Consistency:**	B B A
• less use of continuous electronic fetal monitoring, external and internal (see also Step 6, p. 39S) (Fraser, 2000; Jackson, 2003 AJPH; Johnson, 2005; Hundley, 1994; Oakley, 1995).	**Quality:** **Quantity:** **Consistency:**	A A A
• more effective pain management in labor, including:		
○ no need for pain medications (Turnbull, 1996).	**Quality:** **Quantity:** **Consistency:**	A B NA*
○ less need for analgesia (Jackson, 2003 AJPH; Harvey, 1996; Hodnett, 2000; Law, 1999; Oakley, 1995; Turnbull, 1996).	**Quality:** **Quantity:** **Consistency:**	A A B (Two studies found equivalent rates of analgesia use in labor with midwifery care.)
○ less need for epidural anesthesia (Blanchette, 1995; Campbell, 1999; Carr, 2000; Davis, 1994; Fraser, 2000; Jackson, 2003 AJPH; Harvey, 1996; Hodnett, 2000; Hundley, 1994; Oakley, 1995; Turnbull, 1996).	**Quality:** **Quantity:** **Consistency:**	A A B (Two studies found equivalent epidural rates with midwifery care.)
○ more use of nonpharmacological pain relief measures, including hydrotherapy, comfort measures, and other strategies (see also Step 7, p. 65S) (Campbell, 1999; Fraser, 2000; Harvey, 1996; Hundley, 1994; Jackson, 2003 AJPH; Oakley, 1995).	**Quality:** **Quantity:** **Consistency:**	A A A

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Access to Midwifery Care

Rationale for Compliance	Evidence Grade	
• increased or equivalent number of spontaneous vaginal births (Harvey, 1996; Jackson, 2003 AJPH; Law, 1999; Tucker, 1996; Walsh, 2004).	**Quality:** **Quantity:** **Consistency:**	A A A
• fewer or equivalent vaginal instrumental births (vacuum extraction and forceps) (Davis, 1994; Durand, 1992; Fraser, 2000; Harvey, 1996; Jackson, 2003 AJPH; Johnson, 2005; Law, 1999; Oakley, 1995; Woodcock, 1994).	**Quality:** **Quantity:** **Consistency:**	A A A
• fewer cesarean sections, as follows:		
○ fewer cesareans overall (Davis, 1994; Durand, 1992; Fraser, 2000; Harvey, 1996; Hueston, 1993; Jackson, 2003 AJPH; Johnson, 2005; Law, 1999; Walsh, 2004).	**Quality:** **Quantity:** **Consistency:**	A A B (One study found equivalent cesarean section rates with midwifery care.)
○ fewer cesareans in nulliparous women (Davis, 1994; Fraser, 2000).	**Quality:** **Quantity:** **Consistency:**	A A A
○ fewer cesareans in multiparous women (Davis, 1994; Fraser, 2000).	**Quality:** **Quantity:** **Consistency:**	A A A
○ more vaginal births after cesarean (VBACs) (Blanchette, 1995).	**Quality:** **Quantity:** **Consistency:**	A C NA*
○ fewer cesareans for emergencies in labor, such as fetal distress (Davis, 1994; Tucker, 1996; Woodcock, 1994).	**Quality:** **Quantity:** **Consistency:**	A A B (One study found equivalent rates of cesarean sections for emergencies with midwifery care.)
○ fewer cesareans for inadequate progress in labor (Davis, 1994).	**Quality:** **Quantity:** **Consistency:**	A B NA*
○ fewer first cesareans (Blanchette, 1995; Davis, 1994; Fraser, 2000; Jackson, 2003 JOGGN).	**Quality:** **Quantity:** **Consistency:**	A A A
• fewer perineal injuries, as measured by:		
○ fewer episiotomies (Blanchette, 1995; Bodner-Adler, 2004; Campbell, 1999; Fraser, 2000; Harvey, 1996; Harvey, 2002; Hueston, 1993; Hundley, 1994; Jackson, 2003 AJPH; Johnson, 2005; Law, 1999; Oakley, 1995; Turnbull, 1996; Walsh, 2004).	**Quality:** **Quantity:** **Consistency:**	A A A
○ fewer 3rd- and 4th-degree lacerations (Fraser, 2000; Oakley, 1996; Woodcock, 1994).	**Quality:** **Quantity:** **Consistency:**	A A B (One study found equivalent rates of 3rd- and 4th-degree tears with midwifery care.)
○ more intact perineums (Bodner-Adler, 2004; Campbell, 1999; Turnbull, 1996).	**Quality:** **Quantity:** **Consistency:**	A B A

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Access to Midwifery Care

Rationale for Compliance	Evidence Grade	
• lower or equivalent incidence of shoulder dystocia (Blanchette, 1995; Woodcock, 1994).	**Quality:** **Quantity:** **Consistency:**	B B A
• lower incidence of retained placenta (Woodcock, 1994).	**Quality:** **Quantity:** **Consistency:**	B B NA*
• fewer or equivalent postpartum hemorrhages (Blanchette, 1995; Bodner-Adler, 2004; Fraser, 2000; Law, 1999; Oakley, 1996; Turnbull, 1996; Woodcock, 1994).	**Quality:** **Quantity:** **Consistency:**	A A C (One study found an increase in postpartum hemorrhages with midwifery care in Australia.)
• lower or comparable incidence of maternal infection or need for antibiotics after birth (Blanchette, 1995; Fraser, 2000; Jackson, 2003 AJPH; Oakley, 1996).	**Quality:** **Quantity:** **Consistency:**	A B B
Compared with physicians caring for similar populations, care by professional midwives results in the following perinatal outcomes:		
• more infants exclusively breastfeeding at birth (De Koninck, 2001; Oakley, 1996).	**Quality:** **Quantity:** **Consistency:**	A B A
• more infants exclusively breastfeeding 2–4 months after birth (De Koninck, 2001).	**Quality:** **Quantity:** **Consistency:**	A B NA*
• more infants remaining with the mother throughout hospital stay (Oakley, 1996).	**Quality:** **Quantity:** **Consistency:**	A B NA*
• fewer or equivalent number of preterm births (Fraser, 2000; Jackson, 2003 AJPH; Tucker, 1996; Turnbull, 1996; Woodcock, 1994).	**Quality:** **Quantity:** **Consistency:**	A B B
• fewer or equivalent number of low-birthweight infants (Blanchette, 1995; Davis, 1994; Fraser , 2000; Hueston, 1993; Jackson, 2003 AJPH; MacDorman, 1998; Turnbull, 1996; Woodcock, 1994).	**Quality:** **Quantity:** **Consistency:**	A A B
• lower incidence of fetal distress (Jackson, 2003 AJPH).	**Quality:** **Quantity:** **Consistency:**	A C NA*
• lower or equivalent incidence of infant acidemia when compared with physician care (Bodner-Adler, 2004; Davis, 1994).	**Quality:** **Quantity:** **Consistency:**	B C B
• fewer infants requiring resuscitation at birth (Hodnett, 2000; Woodcock, 1994).	**Quality:** **Quantity:** **Consistency:**	A A A
• fewer infants with birth trauma (Woodcock, 1994).	**Quality:** **Quantity:** **Consistency:**	B B NA*

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Access to Midwifery Care

Rationale for Compliance	Evidence Grade	
• fewer or equivalent number of infants admitted to intensive care units after birth (Harvey, 1996; Jackson, 2003 AJPH; Law, 1999; Tucker, 1996; Turnbull, 1996).	**Quality:** **Quantity:** **Consistency:**	A B B
• fewer infant sepsis workups for infection that requires treatment (Jackson, 2003 AJPH).	**Quality:** **Quantity:** **Consistency:**	A C NA*
• similar incidence of neonatal readmission (Jackson, 2003 AJPH).	**Quality:** **Quantity:** **Consistency:**	A B NA*
• fewer or comparable number of perinatal deaths (Durand, 1992; Johnson, 2005; MacDorman, 1998; Tucker, 1996; Woodcock, 1994).	**Quality:** **Quantity:** **Consistency:**	A B B
Care by professional midwives does not increase the incidence of adverse outcomes in women with risk factors such as poor access to care, low economic status, late entry to care, poor nutrition, substance abuse, and moderate to high medical risk factors. Instead, it results in fewer cesarean sections, fewer vaginal instrumental births, and more VBACs (Blanchette, 1995; Davidson, 2002; Mahoney, 2005).	**Quality:** **Quantity:** **Consistency:**	B B B
Women cared for by professional midwives report increased satisfaction in the following areas (De Koninck, 2001; Harvey, 2002; Hodnett, 2000; Hundley, 1997; Oakley, 1995; Shields, 1998; Turnbull, 1996): • relationship with their care provider (continuity of care, empathy, and the overall course of care) • access to information and counseling • quality of birth experience (feeling well prepared, feeling supported, enjoying the experience, participating in decisions, feeling care is personalized)	**Quality:** **Quantity:** **Consistency:**	A A B
Professional midwifery care reduces costs when compared with physicians working with similar populations for the following reasons (Blanchette, 1995; Carr, 2000; Fraser, 2000; Harvey, 1996; Oakley, 1995; Oakley, 1996; Turnbull, 1996): • midwives use fewer antepartum and intrapartum tests and procedures • women under the care of midwives experience fewer preterm births, fewer cesarean sections, and fewer vaginal instrumental births; thus, an attendant reduces incidence of the complications they may cause) • women under the care of midwives experience shorter postpartum stays • women under the care of midwives experience fewer hospital readmissions	**Quality:** **Quantity:** **Consistency:**	A A B (One study found equivalent rates of hospital stays and readmission rates with midwifery care.)

A = good, B = fair, NA = not applicable, PIH = pregnancy-induced hypertension, PET = preeclampsia toxemia, VBAC = vaginal birth after cesarean
Quality = aggregate of quality ratings for individual studies
Quantity = magnitude of effect, numbers of studies, and sample size or power
Consistency = the extent to which similar findings are reported using similar and different study designs
*only one study

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Blanchette, H. (1995). Comparison of obstetric outcome of a primary-care access clinic staffed by certified nurse-midwives and a private practice group of obstetricians in the same community. *American Journal of Obstetrics & Gynecology, 172*(6), 1864–1868; discussion 8–71.

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Walsh, D., & Downe, S. M. (2004). Outcomes of free-standing, midwife-led birth centers: A structured review. *Birth, 31*(3), 222–229.

Woodcock, H. C., Read, A. W., Bower, C., Stanley, F. J., & Moore, D. J. (1994). A matched cohort study of planned home and hospital births in Western Australia 1981–1987. *Midwifery, 10*(3), 125–135.

EXCLUDED STUDIES

Anderson, R. E., & Murphy, P. A. (1995). Outcomes of 11,788 planned home births attended by certified nurse-midwives. A retrospective descriptive study. *Journal of Nurse-Midwifery, 40*(6), 483–492. **Reason:** Have better quality, more recent research; no comparative data included.

Caelli, K., Downie, J., & Letendre, A. (2002). Parents' experiences of midwife-managed care following the loss of a baby in a previous pregnancy. *Journal of Advanced Nursing, 39*(2), 127–136. **Reason:** Not relevant. Evaluation is of a program, not professional midwifery care.

Greulich, B., Paine, L. L., McClain, C., Barger, M. K., Edwards, N., & Paul, R. (1994). Twelve years and more than 30,000 nurse-midwife-attended births: The Los Angeles County + University of Southern California women's hospital birth center experience. *Journal of Nurse-Midwifery, 39*(4), 185–196. **Reason:** Not applicable. Study lacks comparative analysis with physician outcomes.

Homer, C. S., Davis, G. K., Brodie, P. M., Sheehan, A., Barclay, L. M., Wills, J., et al. (2001). Collaboration in maternity care: A randomised controlled trial comparing community-based continuity of care with standard hospital care. *British Journal of Obstetrics and Gynaecology, 108*(1), 16–22. Compared midwifery care to "shared care," which included obstetricians, general practitioners, and midwives. However, only 34% of the study group participants actually had midwifery care throughout. Study does not provide data on time of transfers; hence, as much as 66% of the intrapartum and postpartum data on midwifery care may be from physician-managed care.

Hundley, V. A., Cruickshank, F. M., Milne, J. M., Glazener, C. M., Lang, G. D., Turner, M., et al. (1995). Satisfaction and continuity of care: Staff views of care in a midwife-managed delivery unit. *Midwifery, 11*(4), 163–173. Study lacked significants data for accurate comparison including costs associated with additional use of interventions, longer length of stay, and epidurals documented in control arm of trial.

Hundley, V. A., Donaldson, C., Lang, G. D., Cruickshank, F. M., Glazener, C. M., Milne, J. M., et al. (1995). Costs of intrapartum care in a midwife-managed delivery unit and a consultant-led labour ward. *Midwifery, 11*(3), 103–109. **Reason:** Not relevant.

Janssen, P. A., Lee, S. K., Ryan, E. M., Etches, D. J., Farquharson, D. F., Peacock, D., et al. (2002). Outcomes of planned home births versus planned hospital births after regulation of midwifery in British Columbia. *Canadian Medical Association Journal, 166*(3), 315–323. **Reason:** Not applicable. Mixed providers in study group (physicians and midwives in home births).

Khan-Neelofur, D., Gulmezoglu, M., & Villar, J. (1998). Who should provide routine antenatal care for low-risk women, and how often? A systematic review of randomised controlled trials. WHO Antenatal Care Trial Research Group. *Paediatric and Perinatal Epidemiology, 12*(Suppl 2), 7–26. **Reason:** Not applicable. Studies included had mixed providers in both groups.

Murphy, P. A., & Fullerton, J. (1998). Outcomes of intended home births in nurse-midwifery practice: A prospective descriptive study. *Obstetrics and Gynecology, 92*(3), 461–470. **Reason:** Not applicable. Lacks comparative analysis with physician outcomes.

Paine, L. L., Johnson, T. R., Lang, J. M., Gagnon, D., Declercq, E. R., DeJoseph, J., et al. (2000). A comparison of visits and practices of nurse-midwives and obstetrician-gynecologists in ambulatory care settings. *Journal of Midwifery & Women's Health, 45*(1), 37–44. **Reason:** Have better quality, more relevant research. This was a single practice in which midwives cared primarily for pregnant patients, while physicians cared primarily for gynecology patients.

Pang, J. W., Heffelfinger, J. D., Huang, G. J., Benedetti, T. J., & Weiss, N. S. (2002). Outcomes of planned home births in Washington State: 1989–1996. *Obstetrics and Gynecology, 100*(2), 253–259. **Reason:** Includes unplanned and possibly unattended home births. Includes unplanned home births with unqualified attendants. Includes preterm births. While it reports a high perinatal mortality, 10 of the 20 babies who died had congenital heart disease. Also, some home births may have been chosen with the parents knowing the prognosis. Selection criteria of home births studied never established.

Reinharz, D., Blais, R., Fraser, W. D., & Contandriopoulos, A. P. (2000). Cost-effectiveness of midwifery services vs. medical services in Quebec. L'Equipe d'Evaluation des Projets-Pilotes Sages-Femmes. *Canadian Journal of Public Health, 91*(1), 112–115. **Reason:** Not relevant. Does not compare care according to provider.

Stone, P. W., Zwanziger, J., Hinton Walker, P., & Buenting, J. (2000). Economic analysis of two models of low-risk maternity care: A freestanding birth center compared to traditional care. *Research in Nursing & Health, 23*(4), 279–289. **Reason:** Not relevant. Does not compare care according to provider.

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