# PROPOSALS FOR MATERNAL HEALTH CARE IN ONTARIO

Submission

to the

Task Force on the Implementation of Midwifery

by the

Medical Reform Group of Ontario

October 20, 1986

## PREFACE

The Medical Reform Group was constituted in the fall of 1979 to provide a voice for physicians who believe:

1. Health care is a right that must be guaranteed without financial or other deterrents.

2. Social, economic, environmental, and occupational conditions must be recognized as causes of ill health.

3. The health care system must be changed to provide a more significant decision-making role for other health care workers and the public.

Voting membership in the Medical Reform Group is open to any physician or medical student who agrees with the organization's statement of principles. Since its establishment, the group has actively campaigned to preserve and improve medicare. It has lobbied the federal and provincial governments for a ban on extra-billing. The group has made presentations to the Hall Review of Medicare, the Parliamentary Task Force on the Established Program Financing Act, and the House of Commons Committee on Health and Welfare.

## CONTENTS

## EXECUTIVE SUMMARY

1. **Midwives are capable of independent practice**

Appropriately trained, certified, and publicly accountable midwives and family physicians/general practitioners are both capable of providing unsupervised primary obstetrical care.

2. **Midwives should be part of the primary care sector**

A clear distinction should be drawn between primary care obstetrics which is most appropriately provided by midwives and family physicians and secondary/tertiary care obstetrics which is the domain of consultant obstetricians. An important implication of this distinction is that midwives should not be based mainly in hospital units oriented toward the provision of secondary/tertiary care.

3. **Existing hospital settings are unsuitable for low-risk birthing**

Existing hospital obstetrical units, disposed in terms of attitudes, staffing and equipment toward technological approaches and the management of obstetrical complications, frequently offer an inhospitable environment for uncomplicated low-risk birthing. The likelihood of unnecessary amniotomy, anaesthesia, forceps delivery and episiotomy is substantial. Imperfect diagnostic procedures, such as electronic fetal monitoring, applied in low risk situations may result in significant numbers of normal labours being erroneously labelled as pathological.

4. **Low technology birthing alternatives are required**

Women have the right to low technology birthing alternatives which could be provided by midwives and/or family physicians at home, in free-standing birthing centres or in special low-risk obstetrical units in hospitals. These alternative models of care should receive continuing evaluation in relation to safety, patient acceptability, effectiveness and cost.

5. **Collaborative relationships are needed between primary and secondary/tertiary care**

The division between primary and secondary/tertiary care should not be rigid. Clearly midwives and family physicians have an important collaborative and supportive role to play in secondary/tertiary care obstetrics. Obstetricians with a special interest in primary care obstetrics should not be

excluded. Ease of patient movement and professional communication between primary and secondary/tertiary care sectors must be assured.

6. Close working relationships must be fostered between midwives and family physicians

Midwifery must be seen as one component of an integrated health care system providing continuity and comprehensiveness of care.

Since family physicians/general practitioners are the principal health care providers in the existing system, strong linkages between midwives and family physicians sharing care of patients must be developed. Two general models for this linkage can be identified:

1) family physicians and midwives working together in community health centres or health service organizations
2) negotiated linkages between midwives and family physicians practicing independently either individually or in formal or informal groups.

The first of these models is preferable and incentives should be developed to promote such arrangements. To ensure a minimum level of integration and communication, regulations should provide that any person receiving care from a midwife have an identified primary care physician and require formal communication at appropriate intervals.

The division of tasks between midwives and family physicians would form a spectrum with total care by midwives at one end, total care by family physicians at the other end and a variety of negotiated shared care arrangements in between. Specific arrangements would be determined by local conditions and the personal preferences of providers and especially, recipients of care.

Midwives should be fully responsible for their own professional actions. Neither family physicians nor obstetricians should have a supervisory relationship to midwives.

7. Midwifery should not be an add-on service

Midwifery should be viewed as an alternative mode of primary obstetrical care rather than as a supplement or add-on to existing services.

8. **Midwifery should receive full public funding**

Care provided by midwives in keeping with the above principles should be fully publicly funded.

9. **Primary care training sites are needed for midwives and family physicians**

Existing hospital obstetrical units cannot, in themselves, provide adequate training for family physicians and midwives in primary care obstetrics. Clinical settings developed expressly to accommodate low-risk birthing are needed as primary care training sites.

10. **Midwives and physicians can learn from each other**

Midwives, family physicians and obstetricians can make significant contributions to each other's education.

## PROPOSALS FOR MATERNAL HEALTH CARE IN ONTARIO

### 1. Capacity for independent practice

**Appropriately trained, certified, and publicly accountable midwives and family physicians/general practitioners are both capable of providing unsupervised primary obstetrical care#**

International standards of midwifery provide for an independent practice of midwifery(1). Ontario should meet those standards by establishing midwifery as a profession not subject to supervision or regulation by either the College of Nurses or the College of Physicians and Surgeons. Particular care should be taken to ensure adequate public participation and accountability of the professional regulatory body for midwifery. Extensive public input and accountability should help to avoid the current situation with the regulatory body for physicians, the College of Physicians and Surgeons of Ontario, which frequently appears more concerned with protecting professional interest than with serving the public interest.

Appropriate training for midwives should also meet international standards. Nursing qualification is unnecessary to enter midwifery training(2). Nurses who wish to train as midwives could be granted advanced standing for that portion of the curriculum which they have already covered in their nursing training. In general we do not support the licensure of midwives who have received only apprenticeship training or who are self-taught. In the initial establishment of the profession in Ontario it would be wise to offer certification to such midwives if they undergo special course work and pass appropriate examinations. This should help to prevent an underground, unregulated practice of midwifery which could be dangerous to the public(3).

#Primary care is basic care available without referral.

## 2. Midwives as primary care providers

**A clear distinction should be drawn between primary care obstetrics which is most appropriately provided by midwives and family physicians and secondary/tertiary care obstetrics## which is the domain of consultant obstetricians. An important implication of this distinction is that midwives should not be based mainly in hospital units oriented toward the provision of secondary/tertiary care.**

The importance of this point is illustrated by Klein's studies in Oxford, England (4,5,6). He compared the birth experiences and pregnancy outcomes among low-risk pregnant women booked for delivery in two systems of care within a single hospital: an integrated general practice unit and a consultant (shared-care) system. In the general practice unit the patient's personal community midwife provides intranatal care and usually does the delivery, most often with the GP in attendance. In the shared-care system the GP and community midwife provide most of the antenatal care. However, intranatal care is provided by a hospital midwife who also delivers most low-risk women. Although the midwife is a key element in both systems, Klein's studies revealed important differences in the resulting birth experience. Women booked for delivery in the general practice unit experienced fewer obstetrical interventions but superior (in the 1983 study) or very similar (in the 1985 study) newborn outcomes.

##Secondary care is care available on a referral basis to patients whose condition requires expertise beyond that of the primary care provider. Tertiary care is referred care provided by subspecialists to patients whose condition requires expertise or technology not generally available at the secondary care level.

3. Existing hospital settings unsuitable for low-risk birthing.

**Existing hospital obstetrical units, disposed in terms of attitudes, staffing and equipment toward technological approaches and the managment of obstetrical complications, frequently offer an inhospitable environment for uncomplicated low-risk birthing. The likelihood of unnecessary amniotomy, anaesthesia, forceps delivery and episiotomy is substantial. Imperfect diagnostic procedures, such as electronic fetal monitoring, applied in low risk situations may result in significant numbers of normal labours being erroneously labelled as pathological. The rising rate of Cesarean sections (currently about 20 percent) may in part reflect this phenomenon.**

As of 1979, an estimated 60 to 70 percent of labours were being monitored electronically in the U.S. (7). Universal electronic fetal heart monitoring (EFM) has been advocated (8, 30).

The strongest evidence regarding the usefulness of diagnostic or therapeutic interventions is provided by randomized controlled trials. In these studies each subject has an equal chance of being assigned to receive or not receive the intervention being studied. This procedure helps to insure strict comparability of intervention and control groups so that differences in outcome can confidently be attributed to the intervention itself. Three such trials of electronic fetal monitoring have been conducted in low-risk obstetric populations (9,10,11).

Studying 504 labours in Sheffield England, Kelso found no significant differences in neonatal outcomes but a doubling of the Cesarean section rate among women assigned to EFM (9.5% vs 4.4%) (9).

Wood studied 927 labours in Melbourne Australia (10). The rate of operative delivery (forceps and Cesarean section) was 34 percent greater in the EFM group. The number of babies remaining in the isolette beyond three days and the number requiring phototherapy were higher in the monitored group (2.7% vs .4% and 3.7% vs .8% respectively). The infants born to mothers not receiving EFM showed a higher rate of neurological signs and symptoms (.6% vs .2%) but this difference was not statistically significant.

The largest randomized trial of EFM was conducted by MacDonald in Dublin (11). This study involved 12,964 women, three-quarters of whom were at low or average obstetrical risk. The study setting was unusual in several respects:

1) Infrequent use of electronic fetal monitors prior to the study (less than 5% of cases).
2) Exceedingly low rates of obstetrical intervention (forceps 7.2%, Cesarean section 2.3%, epidural anaesthesia 3%)
3) Assignment of a personal nurse-midwife to each patient.

The Cesarean section rate was similar in the EFM and control groups (2.4% vs 2.2%). Forceps deliveries were 33 percent more common with EFM (8.2% vs 6.3%). Postpartum genital tract infections were three times more frequent among monitored women. Most neonatal outcomes including stillbirths and neonatal deaths did not differ. Among survivors, neurological abnormalities were more frequent in the control group (8.1/1000 vs 5.0/1000). However, when these infants were examined at one year of age, equal numbers in each group had major neurological disabilities.

A very large non-randomized trial of universal vs selective EFM has recently been published (31). This study, involving 34,995 pregnancies, was conducted over three years in a university-affiliated hospital serving an "indigent" population in Dallas, Texas. In alternate months electronic fetal monitors were made available on a universal or a restricted basis. Although the Cesarean section rate was 8 percent higher during months when universal monitoring was available (11% vs 10.2%), there were no clinically important or statistically significant differences in fetal and newborn outcome. Among a low risk subgroup representing 42 percent of pregnancies, the rate of Cesarean sections carried out because of "fetal distress" was more than twice as high during universal monitoring months (.9% vs .4%). There were no significant differences in perinatal outcome. In this study, the extent of forceps use was not reported.

Taken together, these studies indicate that in women at low/average obstetrical risk electronic fetal monitoring results in increased obstetrical intervention without significant benefit in neonatal outcome.

Routine or liberal use of episiotomies is widely practiced on the grounds that this policy reduces both serious trauma and longer term problems such as stress incontinence and vaginal prolapse. Two recent randomized trials of routine (12) or liberal (13) versus restricted use

of episiotomies have shown that such policies confer no advantage in terms of pain following delivery (12,13) or in urinary symptoms up to three months post-partum (13). In both studies a policy of restricted use of episiotomy resulted in a larger proportion of women retaining an intact perineum (no episiotomy or tears).

4. Need for birthing alternatives

**Women have the right to low technology birthing alternatives which could be provided by midwives and/or family physicians at home, in free-standing birthing centres or in special low-risk obstetrical units in hospitals. These alternative models of care should receive continuing evaluation in relation to safety, patient acceptability, effectiveness and cost.**

Klein has critically and comprehensively reviewed published studies comparing maternity care provided by family physicians/general practitioners and obstetricians (see Appendix 1). Although all of these studies have features which make their results less than definitive, the overall picture is clear. Family practice care tends to be associated with less obstetrical intervention but similar newborn outcomes. Where measured, patient satisfaction has been higher for family practice/general practitioner care.

Baruffi examined obstetrical procedure rates and newborn outcomes in equal numbers of women delivering in a free-standing alternative maternity centre and in a conventional hospital, both in Philadelphia (14,15). The two groups, each of approximately 800 women, were matched on sociodemographic characteristics. Medical-obstetrical risk was controlled for in the analysis of outcomes. Care in the maternity centre was provided by certified nurse-midwives with physician attendance. The centre was equipped for forceps and Cesarean section deliveries. Most differences in newborn outcome favoured the maternity centre. Rates of operative delivery (forceps and Cesarean section), oxytocin stimulation of labour, electronic fetal monitoring and use of anaesthesia were lower among maternity centre patients. Appropriately, the differences in intervention were most marked for women at low risk.

Goodlin studied perinatal and maternal complication rates in 500 births in an alternate birth centre located in a university medical centre, comparing them to a similar number of low-risk pregnancies cared for in standard labour and delivery rooms in the same hospital (16). The birth

attendants in the alternate birth centre were mainly family practice and obstetrical residents (55%) and midwives (40%). Midwives took no part in the care of patients in the standard labour and delivery rooms. During the course of labour 23 percent of women admitted to the alternate birth centre were transferred to standard care. Most differences in infant outcome favoured the alternate birth centre although meconium aspiration was significantly more common among alternate birth centre infants (1.2% vs .2%). Oxytocin augmentation of labour, primary Cesarean sections and the use of analgesia were all less frequent among alternate birth centre patients. By policy, electronic fetal monitoring was not performed in the alternate birth centre; 81 percent of standard care patients had EFM. Epidural anaesthesia was administered to 29 percent of standard care patients. No alternate birth centre patients had epidural anaesthesia while in the centre, although some patients transferred to standard care presumably received epidural anaesthesia subsequently.

These studies indicate that births in both free-standing birthing centres and hospital-based low risk, low intervention units can result in decreased intervention without compromising maternal or newborn safety.

In some centres birth rooms have been developed within or adjacent to conventional obstetrical units. These facilities are intended to provide a birth experience for low-risk women characterized by minimal obstetrical intervention. Birth rooms face the difficult challenge of attempting to be an island of non-intervention in what can be a sea of entrenched obstetrical technology and procedures. This task is made especially difficult when - as in usually the case - the birth room and conventional labour room share the same medical and nursing personnel. Professionals oriented toward intervention cannot be expected to check their establish habits, beliefs, attitudes and expectations at the birth room door.

One randomized trial and one quasi-randomized trial# comparing birth room and conventional labour ward births have been reported (32,33). Because of their small size, these studies lack the statistical power to detect clinically significant differences in the rate of important obstetrical interventions (for example, Cesarean section and forceps deliveries) and newborn outcomes (for example, five minute Apgar scores).

#Women who agreed to participate in the study were alternately assigned to the birth room or conventional care.

Chapman's randomized controlled trial was conducted in a London, England maternity hospital (32). The birth room, furnished as a home-like bedroom, had no facilities for electronic fetal monitoring or epidural anaesthesia. Women with previous normal pregnancies and deliveries who were receiving maternity care from community midwives working with general practitioners and who were planning early discharge from hospital were approached to participate in the study. Fifty-nine percent agreed to enter the trial. Most refusals resulted from a desire for epidural anaesthesia. Ultimately 72 women were allocated to standard labour ward management and 76 were assigned to the birth room. In both settings, women were attended by community midwives. Withdrawals from the trial before or at the time of hospital admission totalled 12.5 percent (10 women) in the labour ward group and 24 percent (18 women) in the birth room group. Most withdrawals occurred because of obstetrical complications. Four women (7% of those admitted to the birth room) were transferred during labour from the birth room to the labour ward. Three ward patients were withdrawn from the trial during labour. These seven subjects were (inappropriately) excluded from the analysis of results. In both groups over three-quarters of women who completed the trial responded to a detailed questionnaire six to eight weeks post-partum.

There were no differences between the two groups in length of labour, length of hospital stay, rate of breastfeeding and subjective degree of difficulty of the labour compared to the womens' previous experience. The proportion receiving analgesia, epidural anaesthesia, nitrous oxide and suturing for episiotomies or lacerations was significantly higher in the labour ward group. Continuous infant rooming-in occurred more commonly among birth room mothers (35% vs 11%). There were fewer episiotomies in the birth room group (18.5% vs 31%), although this difference was not statistically significant. Three times as many labour ward subjects reported insufficient freedom of movement during labour. More than twice as many birth room mothers felt their recent birth experience had affected the relationship with their infants more than previous birth experiences. A majority of women in both groups (91% of birth room subjects and two-thirds of labour ward subjects) expressed a preference for a birth room delivery in future pregnancies. Only five of 44 labour room subjects wished to repeat a labour room delivery.

Klein's study was carried out in a Montreal tertiary care hospital (33). Of 163 low risk women enrolled in the study at 36 to 38 weeks' gestation, 49 (30%) were withdrawn by their attending obstetrician because of a perceived increase in risk prior to allocation to the birth room or standard care. Fifty-six women were assigned to the birth room and 58 to standard care. In both groups slightly more

than half were primiparas (women experiencing their first labour and delivery). The same group of obstetricians and nurses provided care to patients in both settings. Transfer from the birth room during labour occurred in 63 percent of primiparas and 19 percent of multiparas (women with one or more previous deliveries). Interventions and outcomes occurring among transferred patients were quite properly assigned to the birth room in the analysis of results. There were no statistically significant differences between the two groups in the frequency of stimulation of labour, epidural anaesthesia, forceps delivery or Cesarean section. However, because of the small number of subjects, clinically important differences could have been missed. A statistically significant difference in the episiotomy rate was seen among multiparas delivered vaginally (31% of birth room subjects vs 65% of standard care subjects). A difference favouring the birth room in the proportion of vaginally-delivered women retaining an intact perineum was observed among both primiparas and multiparas (18% vs 0% and 15% vs 0% respectively). Klein reports that "satisfaction, measured through the use of several scales, was extremely high in the birth room and even among those transferred". However, he provided no details and in particular no comparison with standard care. He found "considerable scepticism" among medical and nursing staff about the usefulness and safety of the birth room. The high rate of transfer from the birth room and the limited differences in intervention rates between the birth room and standard care groups may be related to those attitudes.

These studies suggest that for many low-risk women birth rooms can provide a more satisfying birth experience than conventional care with a reduced level of obstetrical intervention. However, Klein's study provides a strong hint that much of this potential can be lost when those providing care are interventionist in their orientation.

The organized medical profession in Canada has been very vocal in its opposition to planned home birth (17). There is very little in the medical and obstetrical literature however to support this opposition. Recently, the Canadian Medical Association published a Policy Summary calling planned home birth "retrogressive and irresponsible". The CMA offered in a footnote to the policy summary to provide references. The reference list which they supplied in answer to our request contained 19 references, of which 8 were to scientific medical journals. Of these 8 references, four were favourable to planned home birth (18,19,20,21), two did not examine the issue of home birth (22,23), one article referred only to the monetary costs involved and did not mention safety at all (24), and the remaining article was a methodological study which was essentially neutral (25). We conclude that the CMA supplied reference list does not

support the CMA position on planned home birth, but rather supports the conclusion that planned home birth for low risk women is as safe as, if not safer than, hospital confinement. Balanced reviews of the available literature also support this latter position (26,27). (See Appendix 2 for a review of evidence relating of the safety issue.) One of Canada's prominent obstetricians co-authored a paper in the Journal of the American Medical Association which, while obviously leaning toward the view that the hospital setting is safer for birthing, was forced to acknowledge that "present data are limited and do not conclusively support either opinion" (28). In a similar vein, a very recent editorial in the Lancet, reviewing a session of the annual scientific meeting of the British Faculty of Community Medicine, reported that "the audience was left with a verdict of <u>not proven</u> on both issues - lack of safety in the home and greater safety in the hospital"(34).

Many physicians argue that birth in hospital is self-evidently safer because some unforeseen complication (such as prolapse of the umbilical cord) could arise at home and jeopordize the safety of mother or child or both, whereas such a complication would be easily managed in a hospital setting (in the case of a prolapsed cord, by immediate Cesarean section). This type of reasoning assumes that all hospitals are "ideal" settings. In reality, most hospitals providing obstetrical services in Ontario are not able to provide such measures as immediate Cesarean section. As physicians, we have all worked in teaching hospitals and have seen that even in these best-equipped and staffed units, delays in the provision of emergency care are not uncommon.

While it is true that in a planned home birth complications may arise which could be best dealt with in a hospital setting, it is also true that hospital based technology may be used in an irrational and even dangerous manner and lead to complications which would not have arisen had that mother had her baby at home. The temptation to interfere with the normal thereby transforming it into the abnormal is too great for many hospital personnel and doctors to resist. Those of us who work in hospitals delivering babies have seen this phenomenon at close range.

It is our view that neither the scientific literature nor the usual arguments regarding safety support the organized medical profession's opposition to planned home birth. We do not believe physicians have the right to prohibit low-risk women from having planned home births if the women wish to do so. Therefore, we support the right of midwives and physicians to attend such births. Appropriate emergency support services should be developed to facilitate the safe management of unexpected complications. As a group of physicians we can state that there are doctors in Ontario

who would be prepared to co-operate with legally-recognized domiciliary midwives.

5. Relationships between primary and secondary/tertiary care

**The division between primary and secondary/tertiary care should not be rigid. Clearly midwives and family physicians have an important collaborative and supportive role to play in secondary/tertiary care obstetrics. Obstetricians with a special interest in primary care obstetrics should not be excluded. Ease of patient movement and professional communication between primary and secondary/tertiary care sectors must be assured.**

Effective communication between care providers is essential. Obstetrical consultation should be readily available to midwives and family physicians working in primary care settings. Mechanisms must be put in place to facilitate smooth and rapid patient transfer from primary to secondary/tertiary care when complications occur or important risk factors are identified. Primary and secondary/tertiary care should be seen as complementary rather than competing.

6. Relationships between midwives and physicians

**Midwifery must be seen as one component of an integrated health care system providing continuity and comprehensiveness of care.**

**Since family physicians/general practitioners are the principal health care providers in the existing system, strong linkages between midwives and family physicians sharing care of patients must be developed. Two general models for this linkage can be identified:**

**1) family physicians and midwives working together in community health centres or health service organizations**

**2) negotiated linkages between midwives and family physicians practicing independently either individually or in formal or informal groups.**

**The first of these models is preferable and incentives should be developed to promote such arrangements. To ensure a minimum level of integration and communication, regulations should provide that any person receiving care from a midwife have an identified primary care physician and require formal communication at appropriate intervals.**

**The division of tasks between midwives and family physicians would form a spectrum with total care by midwives at one end, total care by family physicians at the other end and a variety of negotiated shared care arrangements in between. Specific arrangements would be determined by local conditions and the personal preferences of providers and especially, recipients of care.**

7. Midwifery not an add-on service

**Midwifery should be viewed as an alternative mode of primary obstetrical care rather than as a supplement or add-on to existing services.**

In order to avoid a major increase in health care expenditures, care provided by midwives should replace rather than supplement care provided by physicians. In shared-care situations, roles (and funding arrangements) must be clearly defined to guard against unnecessary duplication of services. Robinson has suggested that duplication of resources and services for "normal" maternity care is a significant problem in England and Wales (29).

8. Full public funding

**Care provided by midwives in keeping with the above principles should be fully publicly funded.**

9. Need for primary care training sites

**Existing hospital obstetrical units cannot, in themselves, provide adequate training for family physicians and midwives in primary care obstetrics. Clinical settings developed expressly to accommodate low-risk birthing, are needed as primary care training sites.**

10. Midwives and physicians learning from each other

Midwives, family physicians, and obstetricians can make significant contributions to each other's education.

## References


1. Midwives Coalition: Briefs to the Health Professions Legislative Review. Toronto, June, 1984 and October, 1985.

2. Midwifery Outside the Nursing Profession: The Current Debate in Washington. Health Policy Analysis Program, School of Public Health and Community Medicine, University of Washington. Seattle, Washington. October, 1980.

3. Ibid, p 37-39.

4. Klein M, Lloyd I, Redman C et al: A comparison of low-risk pregnant women booked for delivery in two systems of care: shared-care (consultant) and integrated general practice unit: I. Obstetrical procedures and neonatal outcome. Br J Obstet Gynecol 1983; 90: 118-122.

5. Klein M, Lloyd E, Redman C et al: A comparison of low-risk pregnant women booked for delivery in two systems of care: shared-care (consultant) and integrated general practice unit: II. Labour and delivery management and neonatal outcome. Br J Obstet Gynecol 1983; 90: 123-128.

6. Klein M, Elbourne D, Lloyd I: Booking for maternity care: a comparison of two systems. Occasional Paper No 31. Royal College of General Pract, 17 pages, April, 1985.

7. Banta HD, Thacker SB: Assessing the costs and benefits of electronic fetal monitoring. Obstet Gynecol Surv 1979; 34 (suppl): 627-642.

8. Nochinson DJ, Cetrulo C: Intrapartum fetal monitoring. J Fam Pract 1977; 4: 845-849.

9. Kelso IM, Parsons RJ, Lawrence GS: An assessment of continuous fetal heart monitoring in labour: a randomized trial. Am J Obstet Gynecol 1978; 131: 526-532.

10. Wood C, Renou P, Oats J et al. A controlled trial of fetal heart rate monitoring in a low-risk obstetric population. Am J Obstet Gynecol 1981; 141: 527-534.

11. MacDonald D, Grant A, Sheridan-Pereira M et al: The Dublin randomized controlled trial of intrapartum fetal heart rate monitoring. Am J Obstet Gynecol 1985; 152: 524-539.

12. Harrison RF, Brennan M, North PM et al: Is routine episiotomy necessary? Br Med J 1984; 288: 1971-1975.

13. Sleep J, Grant A, Garcia J et al: West Berkshire perineal management trial. Br Med J 1984; 289: 587-590.

14. Baruffi G, Dellinger WS Jr, Stobino DM et al: A study of pregnancy outcomes in a maternity center and a tertiary care hospital. Am J Public Health 1984; 74: 973-978.

15. Baruffi G,Dellinger WS Jr, Strobino DM et al: Patterns of obstetric procedures use in maternity care. Obstet Gynecol 1984; 64: 493-498.

16. Goodlin RC: Low-risk obstetric care for low-risk mothers. Lancet 1980; 1: 1017-1019.

17. CMA Policy Summary: Home Deliveries. Can Med Assoc J 1986; 134: 1400.

18. Campbell R, Davis I, Macfarlane A et al: Home births in England and Wales 1979: perinatal mortality according to intended place of delivery. Br Med J 1984; 289: 721-724.

19. Damstra-Wijmenga SMI: Home confinement: the positive results in Holland. J R Coll Gen Pract 1984; 34: 425-430.

20. Hinds MW, Gershon B, Allen D: Neonatal outcome in planned vs unplanned out of hospital births in Kentucky. JAMA 1985; 253: 1578-1582.

21. Sides BA: Problems and trends of home confinements: a 15 year survey (1966 to 1980) of obstetrical practice in an urban area. Practitioner 1981; 225: 1231-1234.

22. Beard RW, Capel K: A better environment for women in labour. Lancet 1985; 2: 1059.

23. Lievaart M, deJong PF: Neonatal morbidity in deliveries conducted by midwives and gynecologists. A J Obstet Gynecol 1982; 144: 376-386.

24. Stilwell JA: Relative costs of home and hospital confinement. Br Med J 1979; 2: 257-259.

25. Murphy JF, Danncey M, Gray OP et al: Planned and unplanned deliveries at home; implications of a changing ratio. Br Med J 1984; 288: 1429-1432.

26. Sagov SE, Feinbloom RI and Spindel P. Home Birth. Rockville Md: Aspen Systems Corporation, 1984; 24-35.

27. Kitzinger S, Davis JA: The Place of Birth. Oxford: Oxford University Press, 1978: 55-65, 98-115.

28. Adamson GD, Gare DJ: Home or hospital births? JAMA 1980; 243: 1732-1736.

29. Robinson S: Maternity care: a duplication of resources. J R Coll Gen Pract 1985; 35: 346-347.

30. Parer JT: FHR mmonitoring: answering the critics. Contemp Ob/Gyn 1981; 17(6): 163-174.

31. Leveno KJ, Cunningham FG, Nelson S et al: A prospective comparison of selective and universal electronic fetal monitoring in 34,995 pregnancies. N Engl J Med 1986; 315: 615-619.

32. Chapman MC, Jones M, Springs JG et al: The use of a birthromm: a randomized controlled trial comparing delivery with that in the labour ward. Br J Obstet Gynaecol 1986; 93: 182-187.

33. Klein M, Papageorgiou A, Westreich R et al: Care in a birth room versus a conventional setting: a controlled trial. Can Med Assoc J 1984; 131: 1461-1466.

34. Home, hospital or birthroom. Lancet 1986; 2: 494-496.

# APPENDIX 1

## Comparison of Maternity Care Provided by Family Physicians/General Practitioners and Obstetricians#

Michael Klein and Ellen Rosenberg
Department of Family Medicine
McGill University

Recently, there have been a few comparative studies that have looked at family practice obstetrics compared with carefully selected comparable patients looked after by obstetricians. In England, one such study (Taylor et al, 1980) looked at isolated general practitioner units versus consultant units. There was a problem, however, with geographical and social class comparability. Nevertheless, there was no difference in the principal outcome measurements for mothers and infants. Integrated general practitioner unit care in Oxford, England was studied retrospectively in two linked studies (Klein et al, 1983) who demonstrated that the major outcomes of induction of labour, epidural anaesthesia and forceps delivery were all markedly less frequently carried out in women booked for delivery in the general practice system. Infants of multips were more often intubated in the shared care system. In the second study, based on actual chart review, the authors looked at labour and delivery management and neonatal outcome and found that women booked for the shared-care system came into hospital at an earlier stage of labour (less advanced state of cervical dilatation) than those booked for the general practice unit, and they spent significantly longer time in hospital than their GPU counterparts. Yet first and second stages of labour, as classically determined, were longer in the GPU women, who also received less anaesthesia and analgesia, less electronic fetal monitoring and received less oxytocin, received fewer forceps deliveries, and fetal distress was less often diagnosed. The fetal outcomes were markedly different at one minute, with Apgar scores less than 6 in 17.5 percent of infants of primiparous women booked for the shared-care system compared with 1.6% of those booked for the GPU. Intubation rates of infants of primiparous women in the shared care system were 11 percent compared with none in the general practice unit.

#Excerpt from Klein M, Rosenberg E: A retrospective cohort matched pair design to compare family practitioner and obstetrician maternity care. Unpublished manuscript, 1986.

The authors concluded that the simplicity and safety of delivery of low risk women in the general practice unit had been demonstrated. More importantly, the two studies described two systems of care operating side by side, with excellent interrelationships, but markedly different styles of care for low risk women. The excellent outcomes of the GPU system are to a very important extent due to the constructive involvement of the consultants, yet the general practice unit system deals exclusively with low risk women, while the consultant system deals with women at all risk categories. The authors concluded that in the consultant unit some of the high risk approaches spilled over into the care of low risk women. In a prospective study, in the same environment (Klein et al. 1985), the authors demonstrated that the women using the two systems of care were indeed comparable, based on a large series of attitudinal, sociodemographic and expectational factors. Women booked in the general practice unit system more frequently visited their GPs throughout the period of antenatal care, had a more intense relationship with their midwife who worked closely with the general practitioners and consequently were more satisfied with their antenatal care. The management of labour was likewise different. GP booked women were more often seen at home by their GP-associated midwife before coming into hospital and consequently were admitted later in labour and spent less time in hospital. They had fewer obstetrical interventions of certain kinds, but the wide discrepancy that existed in the two previously reported retrospective studies was not noted. There was, however, a tendency to decreased use of narcotics and smaller doses of narcotics in the general practice system, and more general practice unit women received neither anaesthesia nor analgesia. The episiotomy rate was lower and the intact perineum rate higher in the general practice unit system. Interestingly, infant outcomes in the two systems of care were indistinguishable in this later study, and there is a suggestion that the consultant system had in fact learned that it was possible to have longer second stages of labour, fewer episiotomies and fewer procedures of all kinds -- this information coming directly from observation of the success of the general practice unit system.

In the United States the Seattle group, in different settings and with relatively small numbers has attempted to compare women looked after in the university family medicine department versus comparable women followed by the department of obstetrics and gynaecology (Ely et al, 1976). Phillips et al (1978) studied a similar population but added a third group, private general practitioners, while Wanderer et al (1980) studied family practice resident deliveries compared with a randomly chosen group of obstetrical deliveries. Obstetrical care provided by family doctors and obstetricians in a small midwestern town was audited by retrospective chart review (Meyer, 1981). These four studies are important but limited by small numbers and difficulties with comparability. Ely et al (1976) showed fewer forceps use by family physicians and longer first stage labour,

but more puerperal complications. Neonatal outcomes were similar and no discrepancies in the quality of care could be found between the two services. Phillips et al (1978) showed that family medicine patients had fewer inductions, artificial rupture of the membranes and oxytocin use, and family medicine patients received no analgesia twice as often as those followed by obstetricians, but those looked after by general practitioners almost always received some analgesia. Conduction anaesthesia was received at a high level by patients of obstetricians and general practitioners while its use was considerably lower among family practice resident patients. Cesarean section, episiotomy, forceps, perinatal complication rates and infant outcomes were similar in all groups. Meyer (1981) demonstrated that family doctors in his study used analgesics less frequently, but both groups were similar in their use of oxytocin, length of labour, frequency of amniotomy, type of delivery, type of anaesthesia, episiotomy rate, laceration rate and type, infant weight, gestational age and Apgar scores. The author concluded that there were more similarities than differences in obstetrical care provided by family physicians and obstetricians in that setting, which was one serving a rural predominantly white population. The author, in comparing his work with the previously mentioned US studies (Phillips, Ely and Wanderer) suggest that maternal and infant outcome is approximately the same, whether obstetrical care is provided by family physicians or obstetricians, but family physicians appear to have a tendency to intervene less in the birth process, particularly regarding administration of analgesia and anaesthesia. The author suggests, that a larger scale study is necessary, possibly in several centres -- in order to help to clarify whether the differences noted reflect genuine divergences in patterns of care or whether the differences are merely a reflection of local idiosyncratic factors.

Shear (1983) attempted to measure the association between continuity and quality of medical care, using pregnancy as a tracer condition. Using a retrospective cohort design, two groups of women were identified: 1) those cared for in family practice centres and 2) those cared for in obstetrical clinics. Continuity was much higher in the family practice groups. There was a tendency for more newborns from the obstetrical group to be admitted to neonatal intensive care, and patient satisfaction scores were higher for the family practice groups. Insignificant differences were seen between most aspects of labour and delivery, though family practice patients had a slightly increased duration of labour and slightly fewer episiotomies. The patients were equivalent in receiving oxytocin, Cesarean section and in length of stay. Infant Apgar scores at 5 minutes were equivalent.

Finally, there have been studies in hospital, with or without family practitioner involvement, that have impacted on the general debate: "Where is the best place and under what type of care is the normative low risk woman best served". Reeves and Anderson (1977) reviewed the perinatal mortality rate between 1956

and 1967 at a community hospital during a period of gradual reduction in family practice and surgeon deliveries with concomitant augmentation of deliveries under the care of obstetricians. The Cesarean section rate gradually increased, while the perinatal mortality rate, neonatal and stillborn mortality rate remained constant - as did the low birth weight rate. Obstetrician involvement seems to have contributed nothing more than an increase in the procedure rate. Similarly, Richards and Richards (1982) studied urban hospitals (largely staffed by obstetricians) and rural hospitals (largely staffed by family doctors) over 20 years. All groups were seeing the same type of patients with respect to age, parity, duration of pregnancy and other demographic factors. Indications for Cesarean section were the same. Despite an essentially unchanged number of total deliveries over 20 years and an increasing percentage of deliveries and Cesarean sections performed by obstetricians, the perinatal, neonatal and stillborn mortality rates remained unchanged.

## REFERENCES APPENDIX 1

Ely JW et al: An audit of obstetric care in a university family medicine department and an obstetrics-gynecology department. J Fam Pract 3(4): 397-401, 1976.

Klein M, Lloyd I, Redman C, et al: A comparison of low risk women booked for delivery in two different systems of care. Part I. Obstetrical procedures and neonatal outcomes. Br J Obstet Gynecol 90: 123-128, 1983.

Klein M, Lloyd I, Redman C, et al: A comparison of low risk women booked for delivery in two different systems of care. Part II. Labour and deliery management and neonatal outcome. Br J Obstet Gynecol 9: 123-128, 1983.

Klein M, Elbourne D, Lloyd I: Booking for maternity care: a comparison of two systems. Occasional Paper No 31. Royal College General Pract 17 pages, April 1985.

Meyer BA: Audit of obstetrical care: comparison between family practitioners and obstetricians. Family Practice Research J. 1(1): 20-27, Fall 1981.

Phillips WR, Rice GA, Hayton RH: Audit of obstetrical care and outcome in family medicine, obstetrics and general practice. J Fam Pract 6(6): 1209-1216, 1978.

Reeves BD, Anderson ER: Perinatal mortality rate at a community hospital, 1956-1975. Am J Ob Gyn 1977 128: 677-683.

Richards TA, Richards JL: A comparison of Cesarean section morbidity in urban and rural hospitals: A three-year, retrospective review of 1,177 charts. Am J Obstet Gyn 144: 270-275, 1982.

Shear CL, Gipe TG, Mattheis JK, Levy MR: Provider continuity and quality of medical care: a retrospective analysis of prenatal and perinatal outcome. Medical Care 21(12): 1204-1210, 1983.

Taylor GW et al: How safe is general practitioner obstetrics? The Lancet: 1287-1289, 1980.

Wanderer MJ, Suyehira JG: Obstetrical care in a prepaid cooperative: a comparison between family practice residents, family physicians, and obstetricians. J Fam Pract 4:601-606, 1980.

## APPENDIX 2

### Safety Aspects of Planned Home Birth: A Review of Some Statistical Evidence

A recent paper by Murphy and colleagues deals with the problems of comparing statistics from home and hospital confinements(1). All studies comparing the outcomes of planned home births to hospital births suffer from methodological difficulties. The fundamental problem is that the group of women giving birth in hospital is differenc in many respects from the group of women giving birth at home. A randomized trial is needed to overcome this selection bias, but it is very unlikely that such a trial could ever be carried out. Very large numbers of low-risk pregnant women would need to be entered in each group to detect any real difference in the relatively rare event of perinatal mortality, let alone the even rarer event of maternal mortality. No definitive answer to the issue of safety of planned home birth versus hospital birth will be forthcoming in the foreseeable future, in the opinion of these authors. In the meantime, policy-makers, care-givers, and patients must make decisions based on the currently available evidence.

A study by Sides reports on the outcomes of 1746 pregnancies over 15 years in a British general practice (2). Of these pregnancies, 59 percent were booked for a hospital consultant unit, 31.4 percent for the GP hospital unit, and 9.6 percent for home delivery. The overall perinatal mortality was 15.6/1000. The lowest perinatal mortality was 9.7/1000 for home confinement, while the GP and hospital consultant units each had a perinatal mortality rate of 16.4/1000. Only 5.7 percent of patients booked for home delivery required transfer to the consultant unit after the onset of labour, suggesting that good antenatal care and screening can produce an acceptably low transfer rate. Sides concludes that planned home delivery is "acceptably safe" and "should remain a viable option for selected patients."

Shearer attempted to compare the risks of booking for home birth with the risks of booking for hospital birth in Essex, U.K.(3). In this prospective study involving 26 practices, he studied 202 mothers who were booked to deliver at home, and 185 mothers who were booked to deliver in hospital. All were low-risk by age, height, parity and lack of past obstetrical complications or present medical conditions. The place of birth was selected by the mother and her general practitioner. There were no perinatal deaths in either group. The only significant difference was in the induction rate which was higher (19%) in those booked for hospital than in those booked for home (8%). (Patients booked for home but transferred to hospital were included in the "home" statistics.) While acknowledging the small numbers in this survey and the need for more reliable data about home birth, Shearer concludes that "the results suggest that there is no appreciable

increased risk to the mothers or their babies in booking for a home birth."

The outcome of 1692 confinements in Groningen, Holland in 1981 was explored by Damstra-Wijmenga who interviewed the mothers 3 weeks after they had given birth(4). The data were analysed by "intended place of birth", excluding 198 women (11.7%) who were referred to an obstetrician for full care at the beginning of their pregnancy because of medical risks. The remaining women chose home confinement (396 women), short-stay hospital care (547 women) or hospital care with a one-week stay (551 women). Under the Dutch system, almost all of these women would be cared for by a midwife or a general physician who would refer them to an obstetrician in the event of complications. The lowest percentage of referrals to an obstetrician during pregnancy, labour and delivery occurred in the group of women who had chosen home confinement. This difference was mainly due to a higher proportion of hospital patients who were diagnosed as having "poor progress of labour." This diagnosis was made in 11.7 percent of women chosing hospital delivery compared to 4.6 percent who had chosen home birth. There was no perinatal mortality in the planned home birth group and morbidity in the babies was lowest in that group, as measured by admissions to a special care infant unit.

A very important issue when examining the statistics on safety of home vs. hospital birth is the separation of births that are planned to occur at home from those that happen at home by accident. Two studies which have attempted to deal with this problem are those by Hinds from the U.S. and Campbell from the U.K (5,6). Hinds surveyed 1064 out-of-hospital births in Kentucky from 1981 to 1983 and obtained information on 809, of which only 71 percent had been planned to occur at home. Unplanned births were associated with an increased risk of low birth weight compared to planned births and neonatal mortality was much higher in the unplanned group (72.7/1000) than in the planned group (3.5/1000). Campbell analysed 8856 births occurring at home in England and Wales in 1979. Of these, 67 percent were booked for home (perinatal mortality 4.1/1000), 21 percent were booked for hospital (perinatal mortality 67.5/1000) and three percent were unbooked (perinatal mortality of 196.6/1000). (In the remaining nine percent the status of booking could not be obtained.) Those who were booked to go to hospital but did not deliver there included women with premature labour or precipitate delivery while those who were unbooked had not had any prenatal care. Because the perinatal mortality for these two groups is very high, it is crucial to know the intended place of delivery when analysing any statistics on safety of home delivery.

Looking further at the planned home birth group, Campbell found a very low proportion of low birth weight babies (2.5% compared to 7.2% in the general population). The perinatal mortality among babies who weighed 2500 grams or less and who were

"planned home births" was substantially lower (48.3/1000) that for all babies in this birth weight range in England and Wales (132.6/1000). Although transfers of planned home births to hospital were not included in their analysis, they estimate that had such transfers been included in the planned home birth statistics, the perinatal mortality rate would be no higher than 8/1000, still well below the national figure of 14.6/1000.

## REFERENCES APPENDIX 2


1. Murphy JF, Dauncey M, Gray OP et al: Planned and unplanned deliveries at home: implications of a changing ratio. Br Med J 1984; 288: 1429-1432.

2. Sides BA: Problems and trends of home confinements: a 15 year survey (1966 to 1980) of obstetrical practice in an urban area. Practitioner 1981; 225: 1231-1234.

3. Shearer JML: Five year prospective survey of risk of booking for a home birth in Essex. Br Med J 1985; 291: 1478-1480.

4. Damstra-Wijmenga SMI: Home confinement: the positive results in Holland. J R Coll Gen Pract 1984; 34: 425-430.

5. Hinds MW, Gershon B, Allen D: Neonatal outcome in planned vs. unplanned out of hospital births in Kentucky. JAMA 1985; 253: 1579-1582.

6. Campbell R, Davis I, MacFarlane A et al: Home births in England and Wales 1979: perinatal mortality according to intended place of delivery. Br Med J 1984; 289: 721-724.