DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY
HEALTH ECONOMICS RESEARCH UNIT

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MIDWIFE MANAGED DELIVERY UNIT: A RANDOMISED CONTROLLED COMPARISON WITH CONSULTANT LED CARE - THE MORBIDITY AND SATISFACTION DATA

If women are to have choice in the location for their delivery, the maternity services must provide a safe and acceptable range of options. In Aberdeen the midwife managed delivery unit aims to offer women choice, participation and control in their labours. This briefing paper provides results from a recent randomised trial of the midwife managed delivery unit.

Study Aim

The objective of the trial was to examine whether there are differences in intrapartum care and delivery of low-risk women in a midwife managed delivery unit compared to a consultant led labour ward.

1. METHODS

Study population

Low-risk women were identified from GP referral letters. The selection criteria for the study were those established for booking women for delivery in general practitioner units in Grampian. In total 2844 women were recruited to the study over a 14 month period.

Trial design

This was a pragmatic randomised controlled trial. Women were randomised at booking to deliver in either the Midwives Unit or the consultant led Labour Ward. An initial allocation of 2:1 in favour of the Midwives Unit was used to ensure that the space in the Midwives Unit was fully utilised. The antenatal care of all women participating in the study was otherwise identical to that received by other women booking at Aberdeen Maternity Hospital.

Data collection

Information in this paper was collected from six sources:

- Staff questionnaire, completed by the midwife in charge of the delivery as soon after the birth as possible;
- Client questionnaire, completed by the woman after discharge home;
- Interviews of a random sample of 400 women drawn from the study population;
- Casenote review;
- (SMR2) Scottish Morbidity Register forms;
- Aberdeen Maternity and Neonatal database.

Analysis

The method of analysis was by intention-to-treat. That is, all subjects were analysed in the group to which they were allocated, whether or not they completed, or indeed received, that care. This pragmatic method of analysis permits unbiased estimates of the performance of the Midwives Unit under normal clinical conditions which would allow transfer to the Labour Ward both before and during labour. It, therefore, avoids misinterpretation of the data (Newell 1992).

2. RESULTS

Analysis of demographic data confirmed that subjects in the two arms of the trial were equally matched in terms of age, parity, social class and education.

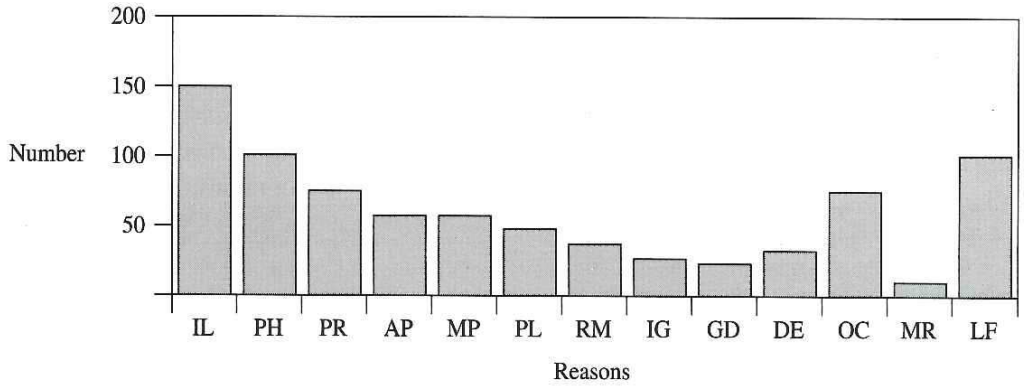
Key

IL = Induction of labour for postmaturity
PH = Pregnancy induced hypertension
PR = Prolonged rupture of membranes
AP = Antepartum haemorrhage
MP = Malpresentation
PL = Preterm labour
RM = Reduced fetal movement
IG = Intra-uterine growth retardation
GD = Gestational diabetes
DE = Delivery elsewhere
OC = Other clinical reasons
MR = Maternal request
LF = Lost to follow up

a. Transfers

Of the women randomised to the Midwives Unit (1900), 38% (727) were transferred antenatally and a further 16% (303) were transferred intrapartum. Reasons for antepartum transfer are given in the histogram below.

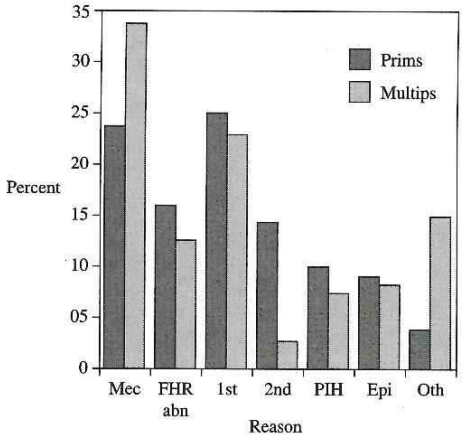
Reason for antepartum transfer from the Midwives Unit group.



Intrapartum

Primigravid women were significantly more likely to be transferred intrapartum than multigravid women. Suspected fetal distress was the most common reason for intrapartum transfer with 40% of all intrapartum transfers being for this reason. The percentage of women transferred for delay in first stage of labour was similar for both primigravid (25%) and multigravid (23%) women. However, primigravidae were significantly more likely to be transferred in second stage (13%) than multigravidae (2%).

Reason for intrapartum transfer



Key

Mec = meconium
FHR abn = fetal heart rate abnormality
1st = delay in first stage
2nd = delay in second stage
PIH = pregnancy induced hypertension
Epi = epidural
0th = other

b. **Interventions**

Monitoring

Women allocated to the Midwives unit were significantly less likely to have continuous fetal heart rate monitoring and more likely to have intermittent monitoring by Pinard stethoscope or hand held Doppler. The increased electronic monitoring in the Labour Ward group might explain the more frequent *observation* of fetal distress and the higher use of fetal scalp electrodes.

Neonatal outcome

There was a slightly higher incidence of neonatal resuscitation amongst babies of women in the Midwives Unit group. This was accounted for by a higher rate of administration of nalaxone. However, Apgar scores at 1 and 5 minutes and cord pH, were identical in both groups. The percentage of babies requiring admission to the neonatal unit was also the same in both groups.

Analgesia

Significantly more women allocated to the Midwives Unit reported using natural methods of pain relief. These methods included breathing, massage, moving around and having a bath. They were also more likely to have tried Transcutaneous Electrical Nerve Stimulation (TENS). Women allocated to the Labour Ward, on the other hand, were more likely to have had an epidural for pain relief.

Mobility

Women allocated to the Midwives Unit were significantly more likely to be able to move around for most of the time during labour. In both groups, the most common reasons given for restricted mobility were because the woman was attached to a monitor/drip or had an epidural.

Labour outcomes

The only outcome of labour which was significantly different was a lower episiotomy rate among women allocated to the Midwives Unit.

c. Continuity of carer

Women in the Midwives Unit group were significantly more likely to have the primary care giver as the midwife at delivery. In addition, this midwife was also more likely to have carried out all vaginal assessments if the woman was allocated to the Midwives Unit group.

Continuity of carer after delivery also differed between the groups. Significantly more women allocated to the Midwives Unit continued to receive care from the same midwife until transferred from the delivery suite.

d. Satisfaction

Midwife satisfaction

A statistically significant difference in midwife satisfaction was found between the two groups, with the midwives who cared for women in the Midwives Unit group being more satisfied. The factors identified as the best predictors of midwife satisfaction are too many to include here and anyone wishing to know more should contact the research team at the address below.

Client satisfaction

Women booked for the Midwives Unit were more satisfied with their care overall than those women booked for the Labour Ward. When asked about satisfaction with their care and management by staff, 78% of women booked for the Midwives Unit said they liked it in every way. This compared with 73% of women booked for the Labour Ward. Women in the Labour Ward group were more likely to say they liked it in some ways but not in others. Total dissatisfaction with care was the same in both groups.

KEY POINTS

- This study confirms that midwife managed care is as safe as the standard consultant led care (where the midwife managed unit is located within close proximity of emergency services). Indeed, the lower rate of intervention amongst women allocated to the Midwives Unit indicates that this alternative is the more effective option for low-risk women.

- The high rate of transfer demonstrates that existing criteria are unable to determine who is low-risk. 50% of women who were identified as low-risk at booking, using existing criteria, went on to become high-risk during pregnancy or labour.

- The high rate of intrapartum transfer in primigravidae should be noted by those deciding an criteria for delivery in stand alone units.

The trial was carried out in the Department of Obstetrics and Gynaecology. The cost analysis was carried out in Health Economics Research Unit and is outlined in the companion paper.

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ABOUT HERU

HERU is funded by the Chief Scientist Office of the Scottish Office Home and Health Department. The remit of the Unit is to: research into economic approaches to health care; develop economic techniques to be rapidly applied by economists and/or health care personnel; demonstrate and test these approaches and techniques; and accumulate and make available to the health service a body of expertise in health economics. The views expressed in this briefing note are those of the authors (Vanora Hundley and Cam Donaldson) and not SOHHD.

Anyone wishing to know more about HERU should contact Anne Bews at the above address.