

Outcome of pregnancies referred to a general practitioner maternity unit in a district hospital

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Abstract

Objective—To audit the outcome of pregnancies booked for confinement in a general practitioner maternity unit in a district general hospital.

Design—Retrospective review of case records.

Setting—General practitioner maternity unit in a district general hospital.

Patients—685 Women referred to a general practitioner unit in 1987.

Results—315 Nulliparous women and 330 multiparous women were booked for confinement; 202 women transferred to consultant care before delivery and a further 104 during labour or after delivery. Recognised risk factors, other than nulliparity, rarely predicted the need for transfer. Confinement in the general practitioner unit was associated with low intervention and good fetal outcomes.

Conclusions—The general practitioner maternity unit provides a safe alternative for confinement in low risk pregnancies. High rates of transfer deny this facility to many women who desire confinement in a low technology environment.

Introduction

The pattern of obstetric care has changed dramatically over the past 25 years with a shift to hospital based general practitioner and consultant care. Many general practitioners are now reluctant to offer total obstetric care, although many women would like to be booked for confinement under their family doctor's care in low technology surroundings. In 1983 only a quarter of general practitioners in the Northern region undertook total obstetric care.¹

There are data on patients managed in isolated and integrated general practitioner units,^{2,7} but published data for "alongside" general practitioner units are scarce and are restricted to the experiences of one practice between 1962 and 1988.^{8,9} This is despite the fact that one in five general practitioners who offer intrapartum care work in such units.¹⁰ It has been suggested that general practitioner maternity units should conduct an annual audit to identify possible improvements.⁴ We conducted such an audit for the unit at this hospital.

Patients and methods

This large district general hospital serves the northern Teesside conurbation. The maternity unit, with 2700 deliveries a year, comprises a consultant unit and an alongside general practitioner unit. The general practitioner unit is a separate five bedded labour ward, used exclusively for patients booked under the care of their general practitioners, and an adjacent postnatal ward. It provides a low technology environment where labour is managed in a more homely environment without the use of oxytocic drugs, continuous monitoring, or an epidural service.

Patients are booked by their general practitioners. Case records are reviewed by a consultant obstetrician, and when there is any doubt the case is referred to a booking committee comprising general practitioners,

obstetricians, and senior midwives. The booking committee may refuse, modify, or grant bookings referred to it. Thereafter patients are reviewed only once at the hospital, at 36 weeks in a midwives' clinic. If an abnormality is detected the general practitioner is contacted regarding further management.

All patients referred in 1987 were identified from the records of the antenatal clinic and their records reviewed. The following data were collected: the name of the general practitioner; the expected date of confinement; the patient's gravidity and parity; risk factors at booking (table I); modifications made to the booking; the time of transfer to the consultant unit, if relevant, and the reason; type of delivery and management of third stage; and fetal outcome in terms of Apgar score and weight at birth.

The χ^2 test was used to compare rates when numbers were sufficient.

TABLE I—Risk factors identified in study population

Social and physical:	Unmarried Short stature Younger than 18 Older than 30
Medical:	History of renal disease History of cardiac disease Epileptic Asthmatic Hypothyroidism Inflammatory bowel disease
Obstetric:	Previous termination of pregnancy Family history of neural tube defect Intrauterine contraceptive device in situ Previous premature labour Previous antepartum haemorrhage Previous congenital anomaly Previous intrauterine growth retardation Previous infant weighing >4000 g Previous postpartum haemorrhage Previous retained placenta

Results

In 1987, 685 women were referred for confinement in the unit. Twenty five referrals were discussed by the booking committee; 12 were declined, and five were modified (all subsequently transferred to consultant care). So 673 women were booked for confinement in the general practitioner unit. Twenty eight patients were not delivered in North Tees. Their pregnancies aborted or were terminated, or the patients were confined elsewhere. The remaining 645 women comprised 315 nulliparas and 330 multiparas.

TRANSFERS BEFORE DELIVERY

One hundred and eighty women (109 nulliparas and 71 multiparas) were transferred to consultant unit care after referral by their general practitioners or district midwives. After the review at 36 weeks 14 nulliparas and eight multiparas were transferred. Table II gives the reasons. There were more transfers for hypertension and a high presenting part at term among the nulliparas. For other reasons no differences related to parity were apparent.

INTRAPARTUM TRANSFERS

Four hundred and forty three patients started labour in the general practitioner unit; of these, 71 nulliparas

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and 25 multiparas required intrapartum transfer. Thus 121 (36.9% of bookings) nulliparas and 226 (65.3%) multiparas delivered in the unit. Table III gives the reasons for transfer.

TRANSFERS AFTER DELIVERY

In only eight cases did the patient need to be transferred or the consultant team be consulted after delivery. These were for third stage problems (retained placenta in three cases, primary haemorrhage in one) or to repair trauma to the genital tract (four cases). One of the women with retained placenta has also had this in a previous pregnancy.

RISK FACTORS

Altogether 253 women had one or more risk factors (table I) other than parity. Risk factors were more common in nulliparas (158 of 315) than multiparas (95 of 330) owing to the significantly higher number of unmarried mothers among the nulliparous group (134 v 54, $\chi^2=53.47$, $p<0.001$). Previous termination of pregnancy was also significantly more common in the nulliparous group (25 v 14, $\chi^2=3.87$, $0.02<p<0.05$).

Nulliparity was associated with a significantly higher transfer rate; 123 of the 315 nulliparas were transferred in the antenatal period compared with 79 of the 330 multiparas ($\chi^2=17.10$, $p<0.001$). Similarly, during labour 71 of the 192 nulliparas were transferred compared with only 25 of the 251 multiparas ($\chi^2=46.79$, $p<0.001$). Multiparous patients with identifiable risk factors were more commonly transferred before delivery than those without risk factors (33 out of 95 v 46 out of 235, $\chi^2=8.54$, $p<0.01$). Individual risk factors, other than parity, associated with increased transfer rates were, in nulliparas, age under 18 years (all 11 transferred, eight before delivery and three in the intrapartum period) and, in multiparas, being unmarried.

MODES OF DELIVERY

Table IV shows the modes of delivery of infants born to mothers booked for delivery in the general practitioner unit by place of delivery and time of transfer. Only 15 operative deliveries were performed in the general practitioner unit, four by general practitioners. Operative intervention in the transferred patients was more common, especially for nulliparas—in 81 an

TABLE IV—Modes of delivery. Figures are numbers (percentages) of infants

	General practitioner unit	Antenatal transfers	Intrapartum transfers	Total
<i>Nulliparas</i>				
	(n=121)	(n=123)	(n=71)	(n=315)
Spontaneous vertex delivery	106 (88)	69 (56)	44 (62)	219 (70)
Assisted breech delivery	NA	4 (3)	2 (3)	6 (2)
Vaginal operative delivery:				
By general practitioner	4 (3)	NA	NA	4 (1)
By consultant team	11 (9)	28 (23)	12 (7)	51 (16)
Lower segment caesarean section	NA	22 (18)	13 (18)	35 (11)
<i>Multiparas</i>				
	(n=226)	(n=86)	(n=25)	(n=337)
Spontaneous vertex delivery	226 (100)	74 (86)	24 (96)	324 (96)
Assisted breech delivery	NA	5 (6)	0	5 (1)
Vaginal operative delivery:				
By general practitioner	0	NA	NA	0
By consultant team	0	3 (3)	0	3 (1)
Lower segment caesarean section	NA	4 (5)	1 (4)	5 (1)

NA=Not applicable.

operative delivery was performed. Only 13 multiparas, including five with vaginal breech presentations, had operative deliveries.

FETAL OUTCOMES

Of the 648 liveborn infants delivered, only three had an Apgar score at 10 minutes of less than 7. None of these infants were delivered in the general practitioner unit, and in none of these cases would continuous fetal monitoring have affected the outcome.

Twenty eight infants weighed less than 2500 g at delivery. Four of these infants were delivered in the general practitioner unit. Of these, only one weighed less than the fifth centile (2270 g at 38 weeks). Another weighed 2260 g at 35 weeks' gestation. The remaining two weighed 2490 g and 2390 g at 38 weeks' gestation. On admission in labour seven mothers were transferred who delivered infants weighing less than 2500 g. In six of these cases the reason for transfer was preterm labour; all the infants were appropriately grown for their gestational ages. The seventh infant weighed 2110 g at 37 weeks' gestation; the fetus had been noted to be clinically small, but transfer had not been arranged. Seventeen infants, born to mothers who were transferred before delivery, weighed less than 2500 g. The weight of 13 of these infants was appropriate for their gestational age. Four infants, in whom suspected growth retardation was the reason for transfer, were small for dates. Thus weight less than the fifth centile for gestational age was not suspected in only one of the six infants.

Discussion

A general practitioner maternity unit can provide a low technology environment in which women can deliver their children safely under the care of their family doctor. When outside intervention is required this may be interpreted as a failure of such a unit to achieve its aims. It has been suggested that attention should be focused on the reasons for such help being required.⁴ It is difficult, however, to state that a particular unit has failed as the reasons for transfer are frequently unpredictable or reflect management along previously agreed local guidelines. Has the North Tees unit failed with only one in three nulliparas and two in three multiparas delivering in their place of booking? In this unit facilities to augment labour and monitor the fetal state continuously are not available; the threshold for requesting intervention by the consultant team is therefore low. Transfer may in itself not be a failure as the resultant obstetric intervention is aimed

TABLE II—Reasons for transfer before delivery

	Nulliparas		Multiparas		Total
	At 36 Referrals weeks	At 36 Referrals weeks	At 36 Referrals weeks	At 36 Referrals weeks	
Hypertension	35	5	8	2	50
Post dates	14		12		26
Antepartum haemorrhage	12		9		21
Suspected intrauterine growth retardation	9	4	7	2	22
Breech presentation	5	4	1	4	14
Twins	1		6		7
High head at term	11				11
Request for epidural	7		3		10
Intrauterine death	2				2
Other	6	1	19		26
No apparent reason	7		6		13
Total	109	14	71	8	202

TABLE III—Reasons for intrapartum transfer

	Nulliparas	Multiparas
To augment labour	29	8
For fetal monitoring	16	3
Premature labour	7	4
Hypertension	10	1
Other*	9	9

*Includes intrauterine death, antepartum haemorrhage, and undiagnosed breech presentation.

at ultimately achieving as normal an obstetric outcome as possible.

Transfers before delivery to consultant care originated by referral or after review at the 36 week clinic. Most transfers occurred after referral by the district midwife or general practitioner. The 36 week clinic was responsible for the referral of one in 10 of all transfers in the antenatal period. So the clinic enables an independent observer to detect abnormalities which in some cases were previously unsuspected.

There was a distinct pattern in the transfers before delivery. Nulliparas had to be transferred more commonly. Hypertension and a high head at term were indications significantly more common in nulliparas. Neither of these complications nor many of the other indications for transfer before delivery can be predicted at booking when prediction of risk is based on the criteria of the Cranbrook committee.¹¹ The ability of these criteria to predict outcome and thus their validity have recently been questioned.⁷ Nulliparas are also more likely to require transfer during labour. Other than parity it seemed that the age of the nulliparas and their marital state were the only factors that had any predictive power in our population. These findings agree with the findings of Reynolds *et al*, who found that, other than parity, maternal weight, smoking habits, and social class were associated with transfer before delivery.⁷ The risk factors that they identified as being associated with intrapartum transfer were maternal stature and marital state. Many of these factors are undoubtedly interrelated.

Women booking under the care of their family doctor hope to achieve a normal delivery of a healthy infant without any medical interference. Operative delivery rates provide an index of the level of intervention and may be used to compare different units. Table V gives the rates for several units. These figures relate

TABLE V—Outcome of labour in various units. Figures are numbers (percentages) of deliveries

	General practice* (n=499)	Isolated unit* (n=584)	Integrated unit* (n=3386)	This study (n=652)	North Tees General Hospital (n=2655)
Spontaneous vertex delivery	382 (84.9)	535 (91.6)	2797 (82.6)	543 (83.3)	2082 (78.4)
Assisted breech delivery	9 (1.8)	4 (0.7)	64 (1.9)	11 (1.7)	50 (1.9)
Vaginal operative delivery	71 (14.2)	35 (6.0)	362 (10.7)	58 (8.9)	260 (9.8)
Lower segment caesarean section	37 (7.4)	10 (1.7)	163 (4.8)	40 (6.1)	263 (9.9)

to one person's experience,⁹ the isolated unit at Keynsham near Bristol,⁵ the Oxford integrated unit,⁷ our study, and North Tees as a whole. Comparison should be made with caution as the units serve differing populations and have varying booking policies and the facilities and degree of intervention practised vary. Nevertheless, there is little difference among any of the groups. Perhaps more important are the outcome and mode of delivery of those transferred. Patients transferred are by definition at increased risk. Despite this most multiparous patients

deliver vaginally; only five multiparous patients were delivered by caesarean section. Nulliparas transferred in the antenatal period required most intervention. Those transferred during labour still achieved a vaginal delivery rate of more than 80% and in many cases a normal delivery, indicating a successful intervention in terms of achieving normality.

General practitioners' participation in intranatal care is undoubtedly declining. Many patients booked for such care fail to deliver at their place of booking. Nevertheless, patients booked for the general practitioner unit have low intervention rates and successful outcomes. The advantages that a general practitioner unit can offer are care in low technology surroundings and medical and in some cases midwifery staff who are well known to the patient. Transfer in labour necessitates the physical movement of the patient when the general practitioner unit is isolated or alongside the hospital unit and this in itself results in the patient losing the continuity of care she had previously enjoyed and desired. If transferred midway through labour the patient will undoubtedly find difficulty in establishing a relationship with new staff at a time when rapport is essential. This is undesirable. In many of the cases requiring transfer both before birth and during labour continued participation of the general practitioner could have been maintained in an integrated setting with the consultant team acting as troubleshooters. Such integration would circumvent many of the problems associated with transfer and would enable general practitioners and consultants to learn from each other to the patients' benefit. In addition to a possible increase in general practitioners' participation in cases requiring transfer integration might result in reduced intervention in the low risk pregnancies booked under consultant care.

The general practitioner maternity unit in North Tees provides an alternative facility to pregnant women in the area. Intervention rates are low and fetal outcomes good. High transfer rates, however, mean that many women booking under the care of their general practitioners are denied the facilities they wanted.

- 1 Marsh GN, Cashman HA, Russell IT. General practitioner participation in intranatal care in the Northern Region in 1983. *Br Med J* 1985;290:971-3.
- 2 Klein M, Lloyd I, Redman C, Bull M, Turnbull AC. 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 Gynaecol* 1983;90:118-22.
- 3 Klein M, Lloyd I, Redman C, Bull M, Turnbull AC. 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 Gynaecol* 1983;90:123-8.
- 4 Cavenagh AJM, Phillips KM, Sheridan B, Williams EMJ. Contribution of isolated general practitioner maternity units. *Br Med J* 1984;288:1438-40.
- 5 Garrett T, House W, Lowe SW. Outcome of women booked into an isolated general practice maternity unit over eight years. *J R Coll Gen Pract* 1987;37:488-90.
- 6 Young G. Are isolated maternity units run by general practitioners dangerous? *Br Med J* 1987;294:744-6.
- 7 Reynolds JL, Yudkin PL, Bull MJV. General practitioner obstetrics: does risk prediction work? *J R Coll Gen Pract* 1988;38:307-10.
- 8 Marsh GN. Obstetric audit in general practice. *Br Med J* 1977;ii:1004-6.
- 9 Marsh GN, Channing DM. Audit of 26 years of obstetrics in general practice. *Br Med J* 1989;298:1077-80.
- 10 Marsh GN. Encouraging GP intranatal care. *Practitioner* 1988;232:1127-31.
- 11 Ministry of Health. *Report of the maternity services committee*. London: HMSO, 1959. (Cranbrook committee report.)

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ANY QUESTIONS

Hormone replacement treatment (HRT) is now becoming an accepted treatment of menopausal women. Has any work been done on HRT for men? Might such treatment prevent conditions such as benign hypertrophy of the prostate?

Although the concentrations of total and free plasma testosterone are lower in men over the age of 70, the absolute levels are generally well within the normal ranges. There are, thus, no grounds for HRT for men save when unequivocal hypogonadism has been diagnosed. Under

these circumstances androgen replacement (provided that there are no contraindications such as prostatic carcinoma) will improve not only general wellbeing but will also increase muscle and bone mass. Androgen treatment would not prevent the growth in the prostate which occurs in most adult men in middle life since this growth is androgen dependent. Treatment with luteinising hormone releasing hormone analogues which decrease testosterone secretion has not been effective in treating prostatic symptoms. —T E T WEST, consultant physician, Shrewsbury