

# Ten years' experience in a general practice obstetric unit

M. J. V. BULL, MA, FRCGP, DRCOG

General Practitioner, Oxford; Hospital Practitioner, John Radcliffe Hospital, Headington, Oxford.

**SUMMARY.** The outcomes of over 8,000 bookings in a general practice obstetric unit closely associated with a consultant unit were surveyed prospectively over a 10-year period. There was a progressive (though erratic) reduction in perinatal mortality rates for all original bookings and for final admissions in general practice care though these appeared to be at the expense of an increasing transfer rate for primiparae both during pregnancy and in labour. The performance of general practice obstetricians was also examined and the implications for the future of general practice obstetrics are discussed.

### Introduction

THE Cranbrook Committee (Ministry of Health, 1959) foresaw that by 1970 domiciliary confinements should have fallen to 30 per cent. In the event, this figure was easily surpassed and by 1975 about 95 per cent of all births were occurring in obstetric hospitals or designated maternity units (DHSS, 1975a). This trend has accelerated during the last decade because, in spite of recommendations regarding criteria for home confinements (Oxford Regional Hospital Board, 1967) based on analyses of consecutive *Confidential Enquiries into Maternal Deaths* (DHSS, 1975b), it was rapidly appreciated that normality in obstetrics is at best retrospective (Lloyd, 1975) and, in spite of careful primary selection, between 25 per cent and 30 per cent of women booked for home confinement will require transfer to specialist care during pregnancy or in labour (Sides, 1973). Furthermore, the risks, expressed in terms of perinatal mortality, of physical transfer of patients in labour from general practice to specialist care are known to be unacceptably high (Hobbs and Acheson, 1966).

In spite of the acknowledged safety (Fedrick and Butler, 1978), confinement in specialist obstetric units

does not universally find favour when delivery is often associated with the use of oxytocic infusions for induction and augmentation of labour (*British Medical Journal*, 1976) and a seemingly more mechanistic and impersonal approach is applied to the process of parturition. Moreover, it has recently been demonstrated (Chalmers *et al.*, 1976) that, in some centres at least, implementation of these techniques does not necessarily result in an improvement in perinatal loss; indeed, some authorities (Ashford and Ferster, 1976; Barry, 1976) point out that the steady national fall in the perinatal death rate may not be causally related to increasing institutional confinement.

Although there are still protagonists of domiciliary obstetrics (Gervis and Sutherland, 1976; Hudson, 1976) the risks of home confinement usually now seem too great, more especially since it was shown that the tendency to book at-risk patients in general practice care increases both with the distance of the patient from specialist obstetric units and with the availability of local general practice maternity units (Hobbs and Acheson, 1966). More recently (Cox *et al.*, 1976) the difficulties of selecting patients for domiciliary confinement have again been stressed and the probability of unexpected complications quantified (Curzen and Mountrose, 1976). It has been suggested that the solution to the dilemma may lie in the introduction of the community team into the specialist obstetric hospital to care for low-risk patients (Matthews and Fox, 1976; Marsh, 1977). Such a project has been operating in Oxford since 1966 with the major advantages of continuity of care for the patient by her general practice obstetrician and community midwife coupled with the immediate availability of specialist skill in the event of complications.

### Aim

The aim of this survey is to record the results achieved by the Oxford Unit during a 10-year period and to examine trends apparent in this style of family practitioner obstetrics.

**Method**

*Organization*

The General Practice Maternity Unit at Oxford originated as an independent 12-bed structure built immediately adjacent to one of the specialist obstetric hospitals. In July 1972, however, all hospital obstetric services in Oxford were transferred to the new John Radcliffe Hospital and the General Practice Unit then became fully integrated. Twelve lying-in beds are still designated for general practice use and all services are available on an equal basis with specialist staff. Patients booked in general practice care are attended by community midwives (previously local health authority employees) who, working in pairs, are attached to individual practices and provide continuing care for the mother throughout pregnancy, during labour, in the puerperium, and on return home.

Management of the Unit is supervised by a committee comprising six general practitioners (two of whom are clinical assistants in obstetrics, the remainder being nominated by the local medical committee), two consultants (including the Professor of Obstetrics), one paediatrician, and three nursing officers (including the Divisional Nursing Officer, Midwifery, and the Nursing Officer, Community Midwives). Any general practitioner who is on the special obstetric list of the family practitioner committee and who practises within a reasonable distance (16 kilometres) of the hospital may book his patients. He has full autonomy in the selection, booking, and management of his patients but the latter must conform to the agreed booking criteria for general practice care and he is also expected to abide by patient management policies currently operating in the hospital. Bookings are accepted by the Maternity Liaison Sister who has administrative responsibility for the Unit. If the suitability of the patient for general practice care is in doubt, she may refer to one of the general practice clinical assistants who, in turn, may advise a specialist opinion.

In general this system works well. Transgressions are rare and this may be because, when they are seen to have

occurred, the responsible practitioner may be requested to report at a quarterly clinical meeting which is attended by members of consultant staff as well as by general practitioners and community midwives.

It has never been found necessary to limit the number of bookings per doctor since admissions have never exceeded the potential capacity of the Unit. Duration of stay after delivery is also flexible and dependent largely on the patient's wishes and her social circumstances, the latter having been assessed during pregnancy by her community midwife. Very early discharge policies have seemed neither necessary nor desirable and only 13 per cent of patients have requested discharge in under 48 hours. The average postnatal bed occupancy period is now five days.

*Audit*

On acceptance of a booking a coding sheet (designed for the subsequent transfer of data to an 80-column business machine card) is initiated. This is completed by the patient's community midwife on discharge after delivery or in the event of cancellation or transfer of care during pregnancy. Information recorded includes: the general practice's identification code; patient's age, parity, civil state, blood group, height; outcome of booking (cancellation, transfer in pregnancy, labour, puerperium); reason for cancellation; complications of pregnancy; induction of labour (method); complications of labour by stage of labour; mode of delivery (spontaneous, forceps, lower segment caesarean section); accoucheur; general practitioner attendance during labour (by stage); analgesia for delivery; state of perineum (laceration, episiotomy); outcome of birth (live birth, stillbirth, neonatal death); weight and sex of baby; paediatric complications; method of infant feeding on discharge; complications of puerperium; and duration of hospital stay. In retrospect, it would also have been useful to have recorded the social class and ethnic group of patients and duration of labour (hours).

At the end of each year the coding sheets are scrutinized for omissions and anomalies before the data are transferred to the punched cards. Sorting is then done

**Table 1.** Outcome of all General Practice Unit bookings.

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	Total	Percentage
Cancellations	65	67	67	75	71	66	55	50	51	38	605	7.4
Transferred in pregnancy	153	186	186	203	218	231	215	184	167	183	1,926	23.6
Total admissions in general practice care	511	612	627	624	654	569	521	538	496	484	5,636	69.0
Transferred in labour	55	82	79	76	70	76	65	50	67	61	681	8.3
Aid in labour	13	3	8	9	27	31	44	28	25	26	214	2.6
Transferred in puerperium	2	3	6	4	7	16	9	14	11	14	86	1.1
Babies transferred	13	7	18	20	17	17	27	9	13	9	150	1.8
Born before arrival at Unit	0	5	4	2	5	5	3	5	2	5	36	0.4
Total bookings	729	865	880	902	943	866	791	772	714	705	8,167	100.0

mechanically according to an *ad hoc* programme that has become standardized over the years. The tables produced form the basis for each annual report for the General Practice Obstetric Unit.

**Results**

*Outcome of booking*

In Table 1 the outcomes of all bookings are shown numerically for each year studied, and the decline in the total number since 1972 has closely paralleled the local birth rate. Over the years, there has been a gradual increase in the proportion of patients transferred to specialist care in both pregnancy and labour (secondary and tertiary selection) with a consequent slow decline in the number of patients finally delivered in general practice care to approximately 60 per cent. To summarize, for every 100 patients originally booked, seven will cancel (owing to change of domicile, abortion, or option for domiciliary confinement), 23 will be transferred to specialist care in pregnancy, and eight will be transferred in labour, leaving 61 finally to be delivered in the care of the practitioner (although specialist advice or assistance may be required with two or three of these).

*Perinatal mortality*

The perinatal death rate for each group of original bookings (excluding cancellations) is shown in Table 2. The relatively high fetal mortality rate (37.7/1,000) occurring in patients referred to specialist care during pregnancy suggests that transfer was indeed justifiable and examination of the indications reveals that toxæmia, post-maturity, suspected disproportion, malpresentation, and antepartum haemorrhage are, in that

order, the principal reasons and causes which would not have been apparent at primary selection.

With patients transferred in labour, the perinatal loss seems reasonable (17.6/1,000). This may be because most of the problems are mechanical (failure to progress in first stage, delay in second, fetal distress, retained placenta) but is also a tribute to the technical skill of specialist colleagues and their proximity.

Fetal loss in patients finally delivered in general practice care is (and should be if primary, secondary, and tertiary selection have been successful) very low indeed (1.4/1,000). It has, however, been pointed out that, to assess the success of booking policies for patients in general practice care, the perinatal mortality rate for all *original* bookings should be examined (Woods, 1971). Figure 1 compares the perinatal mortality rate for general practice bookings and admissions (the latter include patients transferred in labour) with the national figure and those for the whole Division of Obstetrics at Oxford hospitals. It may be noticed that in spite of sporadic annual variations the perinatal mortality rate for all Unit bookings seems to decline at a level approximately four per 1,000 below the Divisional rate and that the latter itself is well below the national figures for England and Wales. The mean figure for the whole 10-year period was 12.2/1,000 births.

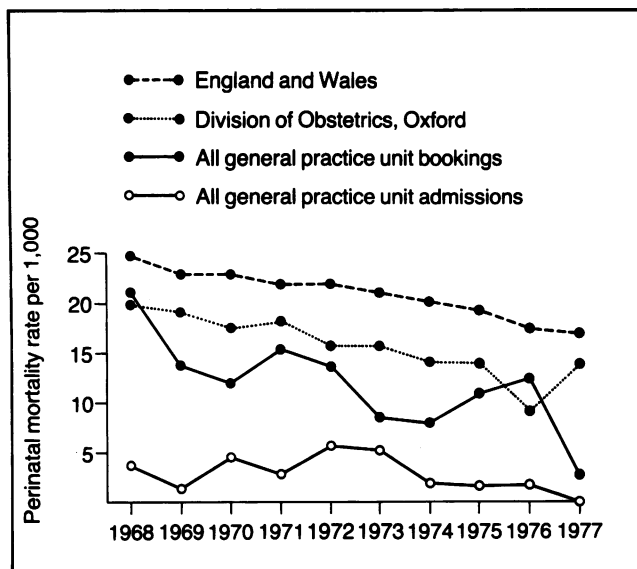
*Mode of delivery*

In Table 3 each of the three groups of patients is analysed by mode of delivery. Predictably there is a high operative delivery rate in the first and second groups which were selected out because of the identification of risk factors in pregnancy or of complications in labour. However, if the figures are again adjusted to relate to

**Table 2.** Perinatal mortality.

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	Total	Mortality rate/1,000
<i>Patients transferred during pregnancy</i>												
Live births	144	176	179	203	218	235	214	195	162	186	1,912	
Stillbirths	10	4	5	6	6	3	5	7	6	1	53	27.0
Neonatal deaths (0 to 7 days)	2	6	2	5	2	1	1	0	1	1	21	10.7
<i>Total number of patients</i>	153	186	186	203	218	231	215	184	167	183	1,926	
<i>Patients transferred during labour</i>												
Live births	54	82	78	74	68	74	65	49	66	61	671	
Stillbirths	1	0	1	2	2	2	0	1	1	0	10	14.7
Neonatal deaths (0 to 7 days)	0	1	0	0	0	1	0	0	0	0	2	2.9
<i>Total number of patients</i>	55	82	79	76	70	76	65	50	67	61	681	
<i>Patients delivered in general practice care</i>												
Live births	458	531	548	549	586	493	455	488	429	423	4,960	
Stillbirths	0	0	0	0	0	0	1	0	0	0	1	0.2
Neonatal deaths (0 to 7 days)	1	0	2	0	2	0	0	0	1	0	6	1.2
<i>Total number of patients</i>	456	530	548	548	584	493	456	488	429	423	4,955	

Discrepancy between number of patients and number of births is accounted for by multiple pregnancies.



**Figure 1.** Perinatal mortality rates for England and Wales, Division of Obstetrics (Oxford), General Practice Unit bookings, and General Practice Unit admissions.

the total number of patients booked (excluding cancellations), it may be seen that, out of 7,562 patients originally booked, 80 per cent delivered spontaneously, 17 per cent required forceps delivery (including breech), and the caesarean section rate was three per cent. The operative delivery rate was thus approximately half of

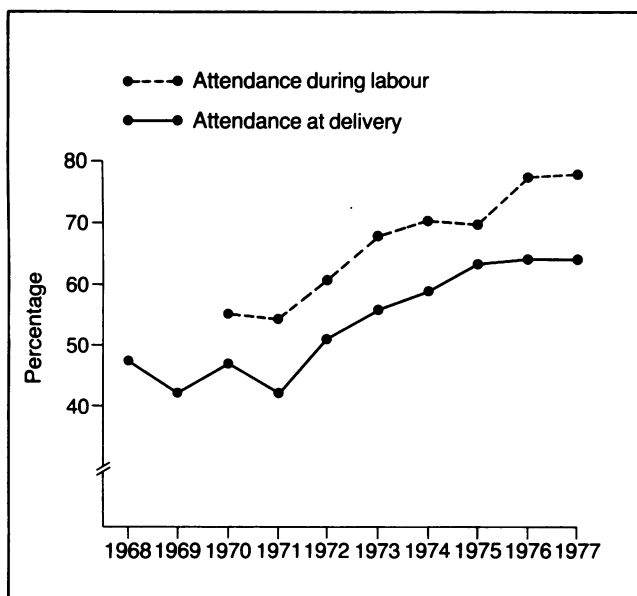
that which is seen in many specialist units and could equally be held to imply reasonable primary selection of cases for general practice care.

*Participation by general practice obstetricians*

During the years surveyed, between 50 and 70 general practitioners working in 24 to 30 practices have taken advantage of the facilities of the General Practice Obstetric Unit in Oxford. The majority of practitioners work in group practices and in many of these certain partners take special responsibility for obstetrics. The average number of patients booked per practice is, however, relatively small (25 per year) and only three Oxford practices now admit more than 40 patients per year in their own care. However, if general practitioners elect to provide complete maternity services for their patients, they have an ethical and contractual obligation whenever possible to attend these patients in labour (NHS General Medical and Pharmaceutical Services Regulations, 1974). This attitude has been fostered in the Oxford Unit and the results are shown in Figure 2. In this context "attendance at delivery" requires the presence of the doctor for the second and third stages of labour since this is the time when acute emergencies such as haemorrhage or fetal apnoea are most likely to occur. It appears from the survey period that the overall attendance of general practitioners is still rising and the flattening off of attendance at delivery (at approximately 64 per cent) may be more a reflection of Oxford's traffic problems than of lack of concern by

**Table 3.** Mode of delivery.

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	Total	Percentage
<i>Patients transferred during pregnancy</i>												
Spontaneous	76	104	108	96	117	117	114	78	102	109	1,021	52.8
Forceps, low	37	33	26	38	44	42	43	34	34	24	355	18.4
Forceps and rotation	6	18	15	35	23	38	22	22	21	16	216	11.2
Breech	10	19	16	17	11	12	10	20	5	13	133	6.9
Lower segment caesarean section	20	10	15	17	23	22	25	27	6	24	189	9.8
Other	4	2	6	0	0	0	1	3	1	2	19	0.9
<b>Total</b>	<b>153</b>	<b>186</b>	<b>186</b>	<b>203</b>	<b>218</b>	<b>231</b>	<b>215</b>	<b>184</b>	<b>169</b>	<b>188</b>	<b>1,933</b>	<b>100.0</b>
<i>Patients transferred during labour</i>												
Spontaneous	15	40	34	39	24	21	18	12	22	14	239	35.1
Forceps, low	19	9	21	14	18	24	22	19	21	18	185	27.2
Forceps and rotation	13	20	20	11	15	20	20	12	17	17	165	24.2
Breech	2	2	1	8	7	3	3	2	2	5	35	5.1
Lower segment caesarean section	1	8	1	3	6	8	2	4	4	5	42	6.2
Other	5	3	2	1	0	0	0	1	1	2	15	2.2
<b>Total</b>	<b>55</b>	<b>82</b>	<b>79</b>	<b>76</b>	<b>70</b>	<b>76</b>	<b>65</b>	<b>50</b>	<b>67</b>	<b>61</b>	<b>681</b>	<b>100.0</b>
<i>Patients delivered in general practice care</i>												
Spontaneous	435	523	529	533	563	473	438	477	407	410	4,788	96.8
Forceps, low	19	7	19	13	18	15	16	9	18	8	142	2.9
Forceps and rotation	2	0	0	1	2	4	2	2	2	0	15	0.3
Breech	0	0	0	1	1	1	0	0	0	0	3	0
<b>Total</b>	<b>456</b>	<b>530</b>	<b>548</b>	<b>548</b>	<b>584</b>	<b>493</b>	<b>456</b>	<b>488</b>	<b>427</b>	<b>418</b>	<b>4,948</b>	<b>100.0</b>



**Figure 2.** Attendance by general practitioners at confinements at the General Practice Obstetric Unit.

practitioners. Of course, in an emergency community midwives have direct access to specialist services but the availability of this facility is in no way held to abrogate the responsibilities of general practitioners to attend their patients.

Although attendance figures in labour are fairly high compared with some other reports (Oldershaw and Brudenell, 1975; Richmond, 1977; Lewis *et al.*, 1978), the great majority of patients were delivered by community midwives or their pupils. General practitioners personally delivered only 203 (4.2 per cent) of their patients and of these 157 (3.2 per cent) were with forceps. However, only 31 per cent of forceps deliveries for patients admitted in general practice care were undertaken by the patient's own doctor and perhaps this is a reflection of loss of confidence in his own skill engendered by a low annual caseload. The remainder were transferred to specialist care for delivery but, even so, continuity of care was often preserved since the community midwife and general practitioner can remain in attendance and assist where appropriate. Usually, only patients delivered by caesarean section remain in consultant care after the delivery.

Induction of labour was performed in only six per cent of all general practice admissions, the usual indication being uncomplicated postmaturity. Oxytocic augmentation of labour was required, however, in a further six per cent of cases.

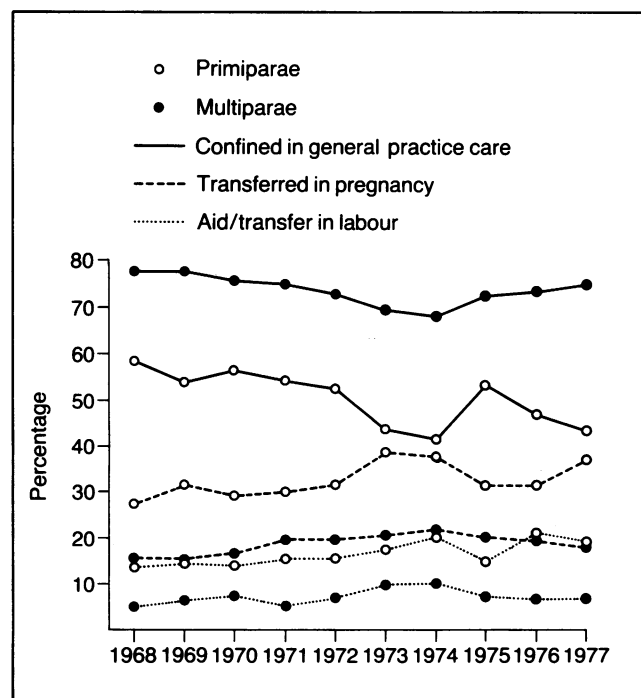
*Primiparous patients*

Reservations have been expressed regarding the propriety of booking patients in general practice care for their first confinement (Cooper, 1969; Geals and Howat, 1977; James, 1977). In this survey 3,614 primi-

parous patients (excluding cancellations) were booked, (47.8 per cent). Of these, 32.6 per cent were transferred to consultant care in pregnancy and a further 16.6 per cent required transfer or assistance in labour, leaving 50.8 per cent finally delivered in the care of their practitioners. Comparable figures for multiparae were 19.4 per cent, 6.9 per cent, and 73.7 per cent, respectively. However, whilst the transfer pattern for multiparae remained rather stable during the 10-year period, that for primiparae altered progressively (Figure 3).

In 1968, 58.6 per cent were delivered in general practice care but by 1977 the rate had fallen to 43.4 per cent with a commensurate increase in numbers transferred during pregnancy and labour. This trend is in all probability associated with the increasing age of women at first confinement during the last decade. In the first year of the survey, 75 per cent of nulliparae were under the age of 25 years; by the last, only 52 per cent. This survey also confirmed the observation that in primiparae admitted in general practice care, the incidence of instrumental delivery increased progressively with age (Geals and Howat, 1977). Of the patients aged under 25, 17.6 per cent required instrumental delivery (forceps or caesarean section), whereas the proportion rose to 27.7 per cent in those aged 25 or over. These figures are statistically significant ( $p < 0.01$ ) and might support an argument for booking only younger primigravidae in general practice care. Differences in transfer rates (either in pregnancy or labour) were not significant, however, nor were those for patients of small stature (152 to 157 cms) compared with those who were taller.

**Figure 3.** Outcome of bookings (percentage) at the General Practice Maternity Unit: primiparae and multiparae compared.



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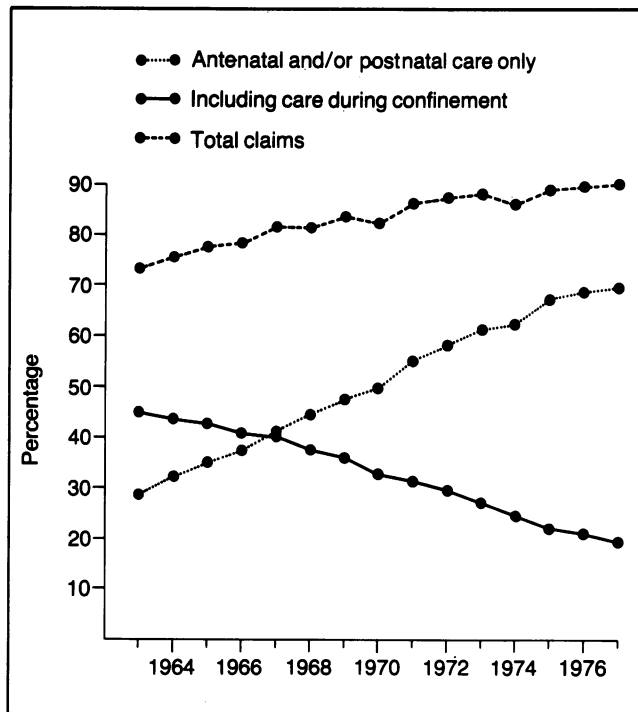


Figure 4. Trends in general practice obstetrics (England and Wales); claims for maternity services (percentage of all births).

## Conclusions

This survey of the performance of an integrated general practice obstetric unit reveals a pattern very similar to that recorded by other authors (Geals and Howat, 1977; Richmond, 1977; Lewis *et al.*, 1978). By and large, the outcome expressed solely in terms of perinatal mortality can be regarded as satisfactory when compared with national figures. The important questions, however, are whether this style of obstetric care is now either economic or desirable. It is agreed that, in view of the fall in birthrate in the last decade, the existing number of consultant obstetric beds nationally could comfortably accommodate all maternity patients. Whether consultant outpatient departments could undertake all necessary antenatal examinations without the assistance of general practitioners (shared care) is much less certain. Figure 4, based on claims for maternity services (England and Wales), indicates that as general practitioners become less involved with intranatal care they are becoming increasingly involved in antenatal supervision. If antenatal care is indeed the keystone for good obstetrics (Moore, 1978), how shall the necessary high standards be maintained? With undergraduate instruction in obstetrics in many medical schools now almost rudimentary and postgraduate experience not yet mandatory, it could be argued that only those general practitioners who also have responsibility for deliveries will provide supervision of the highest calibre. Likewise, increasingly obsessional selection of cases for potential normality may further erode a general practitioner's experience, reduce his role to below that of an experi-

enced midwife, impair his job satisfaction, and thus further diminish his performance in preventive antenatal care.

Evidence more recently to hand suggests that the pattern of general practice care is indeed changing (MacFarlane, 1979). Home confinement, in spite of sectional pressures, is now minimal and deliveries in peripheral (NHS Group A) hospitals are also shown to have declined sharply between 1970 and 1975. The fact that *all deliveries* in general practice units fell only marginally during this quinquennium is accounted for by the significant increase in the number of patients confined in integrated general practice units of the type I have described. If this trend can be maintained there may well be benefits for patients (a degree of choice with safety and continuity of care), for general practice obstetricians and community midwives (continuing experience, responsibility and job satisfaction) and for consultant staff (reduced workload, higher quality shared antenatal and postnatal care) alike with continuing improvement of the service which is so vital to the nation's future population.

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## Abdominal pain and lactose intolerance

The role of lactose malabsorption was studied prospectively in 80 schoolchildren with recurrent abdominal pain. Malabsorption was documented in 40 per cent (16 of 59 whites, 12 of 16 blacks, and four of five Hispanic children) on the basis of elevated levels of hydrogen in their breath. Those with lactose malabsorption, however, were not clinically distinguished on the basis of past milk ingestion ( $p > 0.05$ ), weekly pain frequency (median, five versus six times), presence of diarrhoea (40 versus 27 per cent) or symptom response to lactose load. In children with malabsorption who completed a six-week diet trial, 70 per cent reported increased frequency of pain ( $p < 0.002$ ) when placed on their usual lactose-containing diet. Lactose malabsorption has a substantial role in the symptoms of children with recurrent abdominal pain, and it should be considered before performing invasive procedure or assuming a psychogenic origin.

## Reference

- Barr, R. G., Levine, M. D. & Watkins, J. B. (1979). Recurrent abdominal pain of childhood due to lactose intolerance. *New England Journal of Medicine*, 300, 1449-1452.