

Obstetric retrospect

LOUIS A. C. WOOD, MB, B.CHIR, MRCP, DRCOG
General Practitioner (retired), Waunfawr, Gwynedd

SUMMARY. A series of 818 consecutive obstetric patients in a general practice between 1946 and 1970 is analysed in detail. The findings are discussed in relation to other studies from general practice and to current obstetric hospital practice.

Introduction

HAVING a special interest in obstetrics, I kept detailed records of all maternity cases in my practice from 1946 to 1970. A complete and unselected series spanning 25 years and including all cases wherever booked and wherever delivered is, I believe, unique. Since retiring I have analysed these records, being curious to know what results had been achieved during a period when general practice obstetrics was coming under severe and frequent criticism. The object of this paper is to present facts rather than theories. Although the number of cases is relatively small, a personal series has particular value.¹

Between 1946 and 1970 many general practitioners published reports on obstetrics. Some of these reports depend on data supplied by several individuals;^{2,3,4,5} some are limited to deliveries in patients' homes or in general practitioner maternity units;^{6,7,8,9} some personal studies exclude hospital bookings but include transfers to hospital care;^{1,3,7,9,10,11} three studies resembled mine in being comprehensive, but covered shorter periods.^{12,13,14}

During these years the gradual concentration of maternity services within specialized hospital departments was proceeding under the guidance of the Royal College of Obstetricians and Gynaecologists, aided by a series of committees and reports.^{15,16,17,18} Widely differing views have been expressed on this policy and there is still no general agreement.^{19-30,57}

The pregnancies

This paper discusses 818 consecutive pregnancies of more than 28 weeks' duration. These were my own cases from a rural practice in Kent within which my share of patients averaged 2,500. Six hundred and fifty-one (79

per cent) were under sole general practitioner care. Five hundred and eighty-six of these were attended throughout by myself; 65 were delivered by a partner, locum, or midwife, although the overall responsibility was mine. One woman died in pregnancy. This left 817 labours resulting in 832 births.

The practice background

In 1946, hospital beds were limited and bookings were restricted. The hospital obstetric department was eight miles away; a small general practitioner maternity home was seven miles away. There were a few private nursing homes. Most villages had their own resident district nurse-midwife and 59 per cent of confinements were at home. Over the years hospital confinements rose from six per cent to 38 per cent of cases (Figure 1). By 1960 the use of private nursing homes had ceased and district midwives were becoming scarce. The general practitioner unit functioned well throughout this period but has since been closed. Around 1950 an 'obstetric flying squad' was set up; at the same time installation of radiotelephone equipment in our practice made possible close liaison between midwife and doctor during labours. Domiciliary forceps deliveries and general anaesthetics were commonplace in the earlier years of this survey but had become rare by 1960. For most of the period there were no satisfactory methods of inducing labour or of estimating fetal maturity, disproportion or placental position. Of necessity many high-risk cases were delivered by the general practitioner in the patient's home or in small maternity homes without technological aids. Results must be assessed against this background.

Methods

I recorded in detail the progress of all pregnancies of more than 28 weeks' duration throughout antenatal, intranatal and postnatal phases. At first I used a plain card; subsequently I used the card designed by the Royal College of General Practitioners. Notes were made at each consultation and, except in the case of hospital deliveries, within an hour of each birth. I followed up 574 babies and 576 mothers for at least two years, and a few for as long as 25 years. In the past four years I have analysed these records. In presenting the results, de-

© *Journal of the Royal College of General Practitioners*, 1981, 31, 80-90.

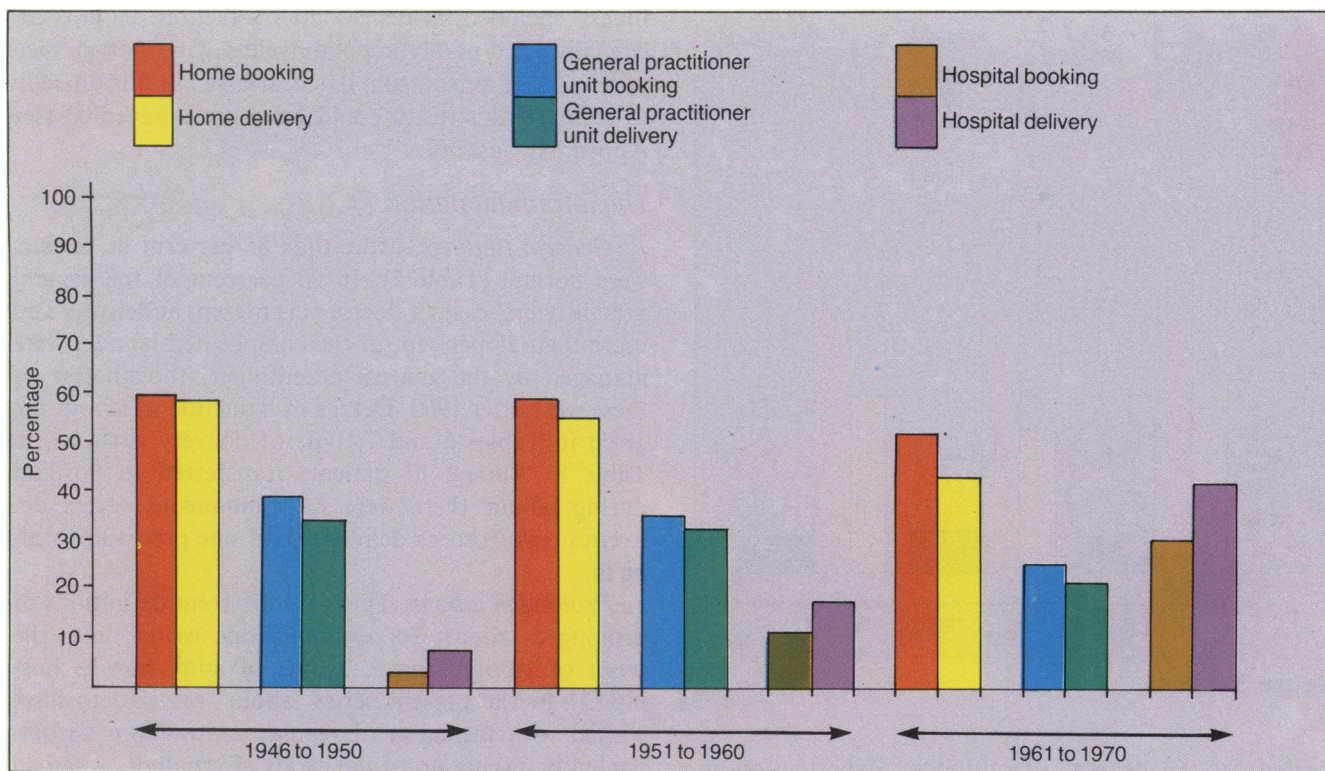


Figure 1. Place of booking and delivery.

liveries in the general practitioner maternity home and in private nursing homes are classed together as "general practitioner maternity unit", because all of these have similar facilities. The series has been divided into three periods: 1946-50, 1951-60, 1961-70.

Results

General considerations

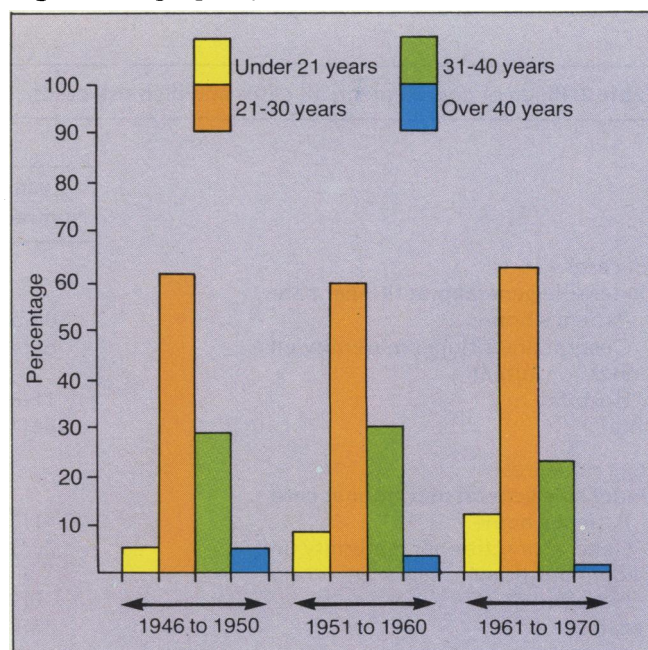
Trends in age distribution and parity over the years follow national ones: growing numbers of pregnancies under age 21, fewer over 40 and fewer grand multiparae (Figures 2 and 3). Social class distribution is peculiar (Table 1) and reflects a community which is predominantly agricultural but also has a number of London commuters. The place of confinement of all cases and (using the criteria of Curzen and Mountrose³¹) high-risk cases, is shown in Table 2.

The antenatal period

Few previous studies from general practice mention the number of antenatal examinations performed, but it seems to be accepted that a minimum of seven is desirable.^{1,6,9} A recent report gives an average of 10.9 attendances in 60 patients.³² Table 3 shows the number of antenatal examinations in this series and the number of transfers from general practitioner to consultant care. Our practice kept in touch with hospital-booked patients rather than handing over all responsibility; this often prevented misunderstandings and allowed us to alert hospital staff to factors of which they might

otherwise have been ignorant. Relations with consultants were good: 21 domiciliary consultations were performed by consultants at the general practitioner's request and sharing the antenatal care of the consultants' patients worked well. Antenatal complications, listed in Table 4, were quite evenly divided among different age groups, parities and social classes; 375 complications affected 272 patients. Fifteen per cent of these were referred to hospital and 85 per cent were

Figure 2. Age groups.



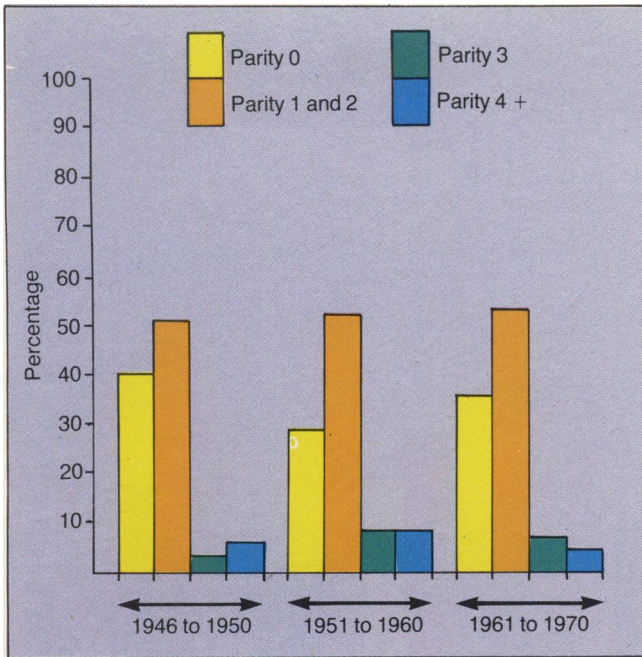


Figure 3. Parity.

treated by the general practitioner. Hypertension in Table 4 refers to women with labile blood pressure and those, often overweight, with moderate hypertension unaffected by pregnancy; 'operations' included two for osteomyelitis of ilium and one for volvulus; 'other

illness' included influenza, chest infection, mumps encephalitis and paralytic poliomyelitis. One woman died as a result of antepartum haemorrhage but it is difficult to see how this death could have been prevented (see Appendix, Case 10).

The intranatal period

1. *General findings.* More than 85 per cent of labours were normal (Table 5). In 90 per cent of the general practitioners' cases a doctor was present at delivery and more than 55 per cent of the complicated labours were managed by the general practitioner, though few of these were after 1960. Details of induction of labour are given in Tables 6 and 7; type of delivery is shown in Table 8. Among 17 patients transferred to hospital during labour there were 14 spontaneous vertex deliveries, two forceps deliveries and one premature still-birth.

2. *Prolonged labour.* There are different definitions of prolonged labour; for example, one writer times the onset of labour from the time of admission to hospital.³³ In the present series labour was said to have started with the onset of regular contractions accompanied by taking up of the cervix. Excluding caesarean sections, 72 per cent of labours were completed in less than 12 hours; a further 15 per cent were completed before 18 hours. It was finally decided to define prolonged labours as those lasting 24 hours or more.³⁴

Table 1. Social class.

	1946-50	1951-60	1961-70	Total	England and Wales 1951	England and Wales 1971
Class I	8.8	11.7	8.2	9.9	3	6
Class II	23.9	21.1	27.9	23.8	12	20
Class III	13.5	18.3	23.8	19.1	58	53
Class IV	32.6	29.8	24.5	28.7	16	16
Class V	21.2	19.1	15.6	18.5	11	5

Table 2. Place of confinement, all cases and high-risk cases.

	Total confinements			
	1946-50 Number (%)	1951-60 Number (%)	1961-70 Number (%)	Total Number (%)
<i>All cases</i>				
Under sole general practitioner care				
Patient's home	108 (59)	193 (53)	117 (43)	418 (51)
General practitioner maternity unit	65 (35)	117 (32)	51 (19)	233 (29)
Under consultant				
Hospital	11 (6)	54 (15)	101 (38)	166 (20)
Total	184 (100)	364 (100)	269 (100)	817 (100)
<i>High risk cases</i>				
Under sole general practitioner care				
Patient's home	41 (53)	73 (50)	22 (22)	136 (42)
General practitioner maternity unit	29 (38)	42 (29)	12 (12)	83 (26)
Under consultant				
Hospital	7 (9)	30 (21)	67 (66)	104 (32)
Totals	77 (42)	145 (40)	101 (38)	323 (40)

Obstetrics in General Practice 2

Table 3. Antenatal examinations by general practitioners; transfers* to specialist care.

	1946-50	1951-60	1961-70	1946-70
<i>Average number of examinations</i>				
General practitioner booked cases	10.5	10.5	10.5	10.5
Hospital booked cases	7.0	9.4	9.4	8.6
Antenatal transfers to hospital care**	5 (2.9)	10 (3.0)	25 (12.4)	40 (5.6)

*Antenatal transfers in other studies 1, 4, 6, 13, 38, 39, 40 range between 1.9 and 26.6 per cent.

**Figures in brackets show transfers as percentage of general practitioner unit bookings.

Table 4. Antenatal complications.

	1946-50 Number (%)	1951-60 Number (%)	1961-70 Number (%)	Total Number (%)
<i>Complications</i>				
Threatened abortion	6	12	12	30 (4)
Excessive vomiting	11	24	7	42 (5)
Pre-eclampsia, mild	7	22	15	44 (5)
Pre-eclampsia, severe	2	6	1	9 (1)
Hypertension	8	12	8	28 (3)
Antepartum haemorrhage	4	8	6	18 (2)
Urinary infection	0	10	14	24 (3)
Hydramnios	0	0	2	2 (0.2)
Rhesus iso-agglutination	1	2	3	6 (0.7)
Malformation or disease of genital tract	2	5	1	8 (1)
Varicose veins	10	26	10	46 (6)
Cardiac disease	1	5	5	11 (1)
Anaemia (Hb below 70 per cent)	7	24	24	55 (7)
Surgical operations	1	2	1	4 (0.5)
Psychological illness	1	4	7	12 (2)
Other illness	6	15	15	36 (4)
Total complications	67	177	131	375 (100)
Total patients with complications	48 (26)	128 (35)	96 (36)	272 (100)

Table 5. Labours, management and transfers.

	1946-50 Number (%)	1951-60 Number (%)	1961-70 Number (%)	Total Number (%)
Normal labours	145 (79)	316 (87)	239 (89)	700 (86)
Complicated labours	39 (21)	48 (13)	30 (11)	117 (14)
Complications managed				
by general practitioner	26 (67)	35 (73)	4 (13)	65 (56)
in hospital	13 (33)	13 (27)	26 (87)	52 (44)
Transfers in labour	1 (0.5)	6 (2)	10 (5)	17 (2.5)

Table 6. Induction of labour.

	1946-50 Surgical/Medical		1951-60 Surgical/Medical		1961-70 Surgical/Medical		Total
<i>Place</i>							
Patient's home	0	4	0	2	3	0	9
General practitioner maternity unit	0	6	2	3	2	1	14
Hospital	1	0	1	1	33	1	37
Total (%)	11 (5.9)		9 (2.5)		40 (14.8)		60 (7.3)

Table 7. Reasons for induction.

	1946-50	1951-60	1961-70	Total
Reason				
Postmaturity	3	2	8	13
Supposed postmaturity	4	2	14	20
Toxaemia	4	4	8	16
Rhesus iso-agglutination	0	0	1	1
Breech	0	0	2	2
Miscellaneous or unknown reasons	0	1	7	8
Total	11	9	40	60

Table 8. Type and place of delivery.

	1946-50 General practitioner			1951-60 General practitioner			1961-70 General practitioner			Total (%)
	Home	unit	Hospital	Home	unit	Hospital	Home	unit	Hospital	
Spontaneous vertex	85	53	7	171	104	41	114	49	76	700 (85.7)
<i>Forceps</i>										
Low	11	6	2	10	5	4	1	2	9	50
Mid	2	1	0	1	1	1	0	0	0	6 (9.3)
With rotation	7	3	0	3	3	0	0	0	4	20
<i>Breech</i>										
Spontaneous	1	0	0	3	1	0	1	0	2	8
Assisted	0	1	0	3	0	0	0	0	1	5 (1.6)
<i>Twins</i>										
Spontaneous	1	1	0	2	2	2	1	0	2	11
Assisted	1	0	0	0	1	1	0	0	1	4 (1.8)
Caesarean	0	0	2	0	0	5	0	0	6	13 (1.6)
Total	108	65	11	193	117	54	117	51	101	817 (100)

There were 59 of these (seven per cent). In four cases labour had been induced; in every case there was inefficient uterine action and in 10 the presentation was occipitoposterior. There was some increase in the percentage of long labours over the years (Table 9).

One and a half hours were normally allowed in the second stage before interference, unless this was indicated earlier, but this interval tended to be longer in cases where the doctor had been called to a midwife's patient. Of the patients experiencing long labour 17 (29 per cent) were delivered by forceps but none came to caesarean section; the rate of postpartum haemorrhage was not much different from that of the whole series, and though maternal distress was seen in eight cases and fetal distress in four, no after-effects were seen, all babies recovered rapidly and there were no stillbirths or neonatal deaths. No correlation was found between long labour and postmaturity, age or height of mother nor the size of baby; overt nervous tension was shown by only five mothers; 61 per cent of long labours were primiparae and 17 experienced long labour on two or more occasions.

3. *Postpartum haemorrhage (PPH)*. This complication is unpredictable and requires urgent action. Definitions

Table 9. Prolonged labour.

	Labours lasting more than 24 hours			
	1946-50	1951-60	1961-70	Total (%)
<i>Place</i>				
Patients' home	4	15	9	28 (6.7)
General practitioner unit	5	8	5	18 (7.7)
Hospital	0	3	10	13 (7.8)
Totals (%)	9 (4.9)	26 (7.9)	24 (8.9)	59 (7.2)

vary, but in the present series PPH means blood loss estimated at 500 ml or more. The flying squad was called to one domiciliary patient, but only this case plus four others in hospital needed transfusion. Half the cases were classified as low-risk and more than 80 per cent followed an uncomplicated vertex delivery. A striking feature was the high risk in patients with a history of previous PPH; in fact 18 patients accounted between them for 44 of the 80 cases. Manual removal of placenta was required in seven cases of PPH and in a further four without haemorrhage. The incidence of

PPH fell after 1960 (Table 10). Prior to 1950 it was still uncertain whether giving ergometrine before the delivery of the placenta was safe and it was used only in selected cases; 86 of the first 184 patients received none. Subsequently ergometrine was given routinely by intramuscular or intravenous injection, before or after placental delivery according to the circumstances. In the last few years the introduction of 'Syntometrine' given with the birth of the shoulders was felt to be a major advance.

I have included in the Appendix (Case 11) an account of a death from PPH; the patient was not known to me until after her labour and therefore does not belong to this series, but her tragic case illustrates some important points.

4. *The perineum (Table 11).* More than 60 per cent of patients suffered no perineal damage. The suture rate was highest in general practitioner maternity units (55 per cent), reflecting the high proportion of primiparae (58 per cent) delivered there. Second degree tears and episiotomies in general practitioner cases were sutured in layers, always under local analgesia. Breakdown of perineal wounds occurred in three cases, all hospital deliveries. In all others the perineum and pelvic floor were assessed as satisfactory at six weeks after labour.

The postnatal period

In 672 (82 per cent) patients the puerperium was normal. Complications are listed in Table 12; neither place of delivery nor any other factor appeared to influence their incidence. Pyrexia was associated with mastitis in seven patients, uterine infection in seven, urinary infection in two, superficial phlebitis in two; in 12 patients there were no localizing signs. Four cases of

Table 10. Postpartum haemorrhage (vaginal deliveries).

Place	Number with PPH of 500 ml or more			
	1946-50	1951-60	1961-70	Total (%)
Patients home	8	28	9	45 (10.7)
General practitioner unit	12	9	2	23 (9.8)
Hospital	0	3	9	12 (7.2)
Totals (%)	20 (10.9)	40 (11.1)	20 (7.6)	80 (9.9)

Table 11. The perineum (vaginal deliveries).

	1946-50	1951-60	1961-70	Total (%)
<i>Perineal state</i>				
Intact	94	229	160	483 (60.1)
1st degree tear	34	48	31	113 (14.0)
2nd degree tear	33	49	31	113 (14.0)
Episiotomy	21	33	40	94 (11.7)
Total sutured (%)	88 (48.3)	130 (36.1)	102 (38.7)	320 (40.0)

Table 12. Postnatal complications.

	1946-50	1951-60	1961-70	Total (%)
<i>Complication</i>				
Subinvolution	8	28	15	51 (6.2)
Mastitis	7	14	9	30 (3.7)
Pyrexia	10	11	4	25 (3.0)
Superficial Thrombophlebitis	2	9	4	15 (1.8)
Urinary infection	3	6	4	13 (1.6)
Depression	0	2	7	9 (1.1)
Other illness	1	3	3	7 (0.8)
Miscellaneous	5	5	8	18 (2.2)
Totals (%)	36 (19.5)	78 (21.4)	54 (20.0)	168 (20.5)

depression needed specific treatment (one in a psychiatric hospital) out of a total of nine. Many of the miscellaneous group were minor complaints but they did include two cases of wound breakdown after caesarean section, and one each of deep vein thrombosis and postpartum eclampsia, all hospital cases. A two-year follow-up of 576 mothers revealed no morbidity attributable to pregnancy or labour.

The baby

1. *Neonatal morbidity (excluding stillbirths and neonatal deaths).* Table 13 shows the birth state of 813 babies; Apgar scoring was estimated from detailed notes made within an hour of birth. 'Resuscitation' here means mouth to mouth respiration, administration of oxygen and sometimes nikethamide injection into the umbilical vein; only one child was intubated. A two-year follow-up of 574 babies was made and 376 were traced to 1970: four infants died in hospital and three at home within two years of birth. Three of these deaths were due to Down's syndrome, one each to congenital heart disease, meningitis, gastroenteritis and pneumonia. No delayed ill-effects were noted in any case of forceps or breech delivery, in those suffering respiratory difficulties at birth or in any born after labours lasting more than 24 hours.

2. *Prematurity and low birth weight.* There were 43 premature babies whose birth weights ranged from 1,250 to 3,000 g. Twenty-one were less than 2,500 g. Twelve had no apparent cause for premature birth, six followed toxæmia, three placenta prævia, two haemolytic disease and three induction of labour for supposed postmaturity; five had severe congenital deformities and there were three sets of twins. Mortality was high in this group—six stillbirths, four neonatal deaths and two more deaths within four weeks. An additional 14 babies were of low birth weight (less than 2,500 g) but not premature; these included two sets of twins and one case of Down's syndrome. The presumed cause of low weight in the remaining nine was placental insufficiency.

Twenty-six of the 45 survivors were reared in hospital, 19 at home; all developed normally and 34 of

Table 13. Neonatal morbidity (excluding perinatal deaths).

	1946-50 Number (%)	1951-60 Number (%)	1961-70 Number (%)	Total Number (%)
<i>State at birth</i>				
Apgar 9-10 (normal)	164 (90)	330 (90)	251 (94)	745 (92)
Apgar 5-8, rapid spontaneous recovery	6 (3)	17 (5)	4 (2)	27 (3)
Apgar below 5, needing resuscitation	7 (4)	5 (1)	3 (1)	15 (2)
Apgar below 5, not needing resuscitation	5 (3)	13 (4)	8 (3)	26 (3)
Total babies	182 (100)	365 (100)	266 (100)	813 (100)
<i>Miscellaneous outcomes</i>				
Number breast fed at six weeks	120 (66)	184 (50)	114 (43)	418 (51)
Requiring special care in hospital	1 (1)	13 (4)	7 (3)	21 (3)
Premature and low weight	5 (3)	29 (8)	23 (9)	57 (7)
Congenital abnormalities	2 (1)	13 (4)	5 (2)	20 (3)
Haemolytic disease	1 (1)	0 (0)	0 (0)	1 (-)
Haemorrhagic disease	0 (-)	1 (-)	1 (-)	2 (-)

them were followed up for two years or more. It is curious that the period 1946 to 1950 yielded only 2.7 per cent of premature and low birth weight babies despite 38 per cent of mothers in this period being high-risk cases.

3. Perinatal mortality. The overall rate for the series was 22.8 per 1,000. In Tables 14 and 15 this is broken down to show the influence of various factors and is compared with the 1970 British Births Survey.⁴⁷ The 20 to 30 years age-group was clearly a favourable one, but the usual correlations between mortality and social class or parity were not apparent. Table 16 lists the causes of the 19 stillbirths and neonatal deaths. In the cases of neurological abnormalities, Down's syndrome and haemolytic disease, deaths were inevitable; details of the

remaining nine are given in the Appendix (Cases 1 to 9) and my estimate is that five of these may have been preventable.

Discussion

The age and parity characteristics of this series are similar to those of two recent large-scale studies,^{35,36} except for a rather higher proportion of patients over 35 years old. The unusual social class distribution has already been mentioned. Rates of both booking and delivery in hospital are very low at 13 per cent and 20 per cent respectively; the British Births Survey⁴⁷ quotes an average of 52 per cent hospital deliveries for the same

Table 14. Perinatal mortality.

	1946-50	1951-60	1961-70	Total
<i>Place</i>				
<i>Patient's home</i>				
Total births	110	195	117	422
Rate per 1,000	36.3	20.5	0	18.9
<i>General practitioner maternity unit</i>				
Total births	66	120	51	237
Rate per 1,000	15.1	0	19.6	8.4
<i>All general practitioner cases</i>				
Total births	176	315	168	659
Rate per 1,000	28.4	12.7	5.9	15.2
<i>Hospital</i>				
Total births	11	57	105	173
Rate per 1,000	0	52.6	57.1	52.0
<i>All labours</i>				
Total births	187	372	273	832
Rate per 1,000	26.7	18.8	25.6	22.8
<i>British Births Survey 1970⁴⁷</i>				
Year	1946	1958	1970	Average
Perinatal mortality rates per 1,000	38	33	23	31.3

Table 15. Perinatal mortality by various factors.

Factor	Rate per 1,000 births	
<i>Parity</i>		
0	18.5	
1, 2, 3	28.5	
4+	0	
<i>Age</i>		
Under 21	27.3	
21-29	18.0	
30-39	31.9	
40+	38.4	
<i>Social class</i>		
I	37.0	
II	20.5	
III	44.8	
IV	4.2	
V	26.4	
<i>Place of booking/delivery</i>		
	Rate per 1,000 births	
	Booking	Delivery
Home	19.7	18.9
General practitioner unit	23.7	8.4
Hospital	36.7	52.0

Table 16. Causes of perinatal deaths.

Condition	1946-50	1951-60	1961-70	Total
Severe neurological abnormality	0	3	2	5
Down's syndrome	1	0	0	1
Haemolytic disease	0	2	2	4
Prematurity	0	2	1	3
Intrauterine death, unknown cause	1	0	1	2
Pre-eclampsia (one with birth injury)	1	0	1	2
Antepartum haemorrhage (forceps)	1	0	0	1
Congenital syphilis	1	0	0	1
Total	5	7	7	19

period and other comparable studies show from 29 per cent to 66 per cent.^{12,13,14,29} It is generally thought that the general practitioner should not undertake the care of high-risk cases, though Laurent³⁷ records attendance on 100 cases of which only 30 were suitable under the usual criteria. Tew³⁰ thought that the higher proportion of high-risk cases dealt with in hospitals did not explain the much higher perinatal mortality rates there in comparison with those for general practitioner deliveries. In this series, due to various circumstances, 68 per cent of the high-risk cases were under the general practitioner's sole care and 34 per cent of general practitioner cases were of high risk as compared with 63 per cent of hospital cases.

I found no comparable list of antenatal complications in the literature, but numbers of transfers to consultant care are given in many studies;^{1,4,6,13,38,39,40} transfer rates vary from 1.9 to 26 per cent and tend to increase over the years from 1946 to the present day; in my series the transfer rate was one fifth of that usual today. A high transfer rate and low rate of general practitioner attendance in labour are, surprisingly, cited in one paper as suggesting "a conscientious approach by the general practitioners".⁴⁰

Induction rates have varied widely but 25 to 30 per cent is now usual;⁴¹ induction is sometimes admittedly done for convenience.^{42,43} The rate of 7.3 per cent in this study was low by any standards; one third of these also turned out to have been unnecessary in as much as although they were carried out for supposed post maturity, the infants were found at birth not to be post mature or, in three cases, even premature.

The figure of 85 per cent normal uncomplicated labours is similar to other published figures, which range from 71 to 82 per cent.^{12,13,40,44} Rates for complicated labours show more variation. In the present study eight per cent of labours managed by the general practitioner were complicated; comparable rates vary from three per cent to 23 per cent.^{1,7,9,13,40,44} Looked at in another way, 55 per cent of all the complicated cases

in this series were managed solely by the general practitioner.

At 2.4 per cent, transfers in labour were also low; Barnes¹ had 1.3 per cent but later studies show rates around 14 per cent.^{40,45} The caesarean rate is low (1.6 per cent) compared with the 2.2 to 2.7 per cent in other reports covering the same period; rates for other types of delivery are similar.^{7,12,13,14} Forceps rates now tend to be much higher than the nine per cent of this series, especially since epidural anaesthesia became popular; for example, Chalmers *et al.*³⁶ quote 16.6 per cent and Fedrick and Yudkin³⁵ 18.9 per cent. In 90 per cent of cases under general practitioner care the doctor was present at delivery and there were often additional visits during labour; other papers report rates varying from eight per cent to 95 per cent and it is perhaps not surprising to find that the lowest rates tend to be from general practitioner units attached to specialist units.^{3,6,7,8,10,11,13,14,19,29,40,46,55}

Little factual information has been recorded about prolonged labour, though it is generally considered undesirable.^{33,34,49} Acceleration of labour is now easy but not entirely devoid of risk, and is, in my view, necessary in relatively few cases. In my series the 59 patients having prolonged labours were remarkably free from complications apart from a 29 per cent forceps rate, and only one baby needed resuscitation. The period 1946 to 1950 showed the lowest proportion of long labours despite having the highest percentage of primiparae.

The rate for PPH is almost the same as in two similar studies;^{13,14} other reports concern selected cases and are not comparable. Many writers agree that PPH is often preceded by a normal delivery. Manual removal was performed in three hospital and eight general practitioner cases, but no other comparable series quotes figures; rates in domiciliary or general practitioner unit deliveries vary from 0.7 per cent to two per cent.^{40,42,44} The literature provided no comparable list of postnatal complications nor figures for suture of perineum. However, a recent large-scale study³⁶ gives an episiotomy rate of 47 per cent and total suture rate of 64 per cent against my 11 per cent and 40 per cent respectively.

The literature records many opinions regarding the birth state of babies but not much factual information,^{36,48,50,51} nor could I find statistics of premature and low birth-weight babies with which to make valid comparisons. However, the rate for resuscitation in my series was well below rates or estimates given by other writers, and the overall rate for breast feeding (51 per cent) compares favourably with the national average of 20 per cent quoted by Freedman.⁵⁶ All the relevant papers give perinatal mortality rates, but so many published series have been selective that even these are difficult to compare meaningfully. Rates for domiciliary deliveries can vary from 2.8 (Rutter³) to 47.3 (O'Brien¹⁰) per 1,000; two obvious factors affecting the rate are the number of transfers to hospital and the

number of medical aid calls answered. Rates for general practitioner maternity units also vary widely, for example, Stewart-Hess and Green⁷ (22 per 1,000) and Richmond⁴⁰ (3.9 per 1,000).

Most of the rates shown for specific factors in Table 15 are at variance with those generally accepted; it could be argued that the total numbers are too small to be significant but inferences have often been drawn from even smaller studies. Perinatal mortality rates in all investigations tend to be higher in cities despite proximity to hospital facilities.

Conclusions

Analysis of my records, which I would again stress are totally unselected, has shown the following features:

1. A low rate of both booking and delivery in hospital.
2. A relatively large proportion of high-risk cases under sole general practitioner care.
3. A low rate of transfer from general practitioner to consultant care at all stages.
4. A majority of complicated labours managed by general practitioners.
5. Relatively low induction, caesarean and forceps rates.
6. A low rate for episiotomy and perineal suture.
7. A high rate of attendance by general practitioners at deliveries.
8. A relatively high percentage of mothers breast feeding.
9. Few babies giving cause for concern at birth or needing resuscitation.
10. No evidence of adverse late effects on mothers or babies on follow-up.
11. An overall perinatal mortality rate well below the average for the country as a whole over the same period of time.

There were no special advantages in this group of patients except that of residence in a rural area. If we eliminate from the mortality statistics the five cases of neurological abnormality, the one Down's syndrome (as should now be possible) and the four cases of haemolytic disease which is now easy to prevent, we are left with an overall perinatal mortality rate (in modern terms) of 10.9 per 1,000, yet I used none of the new obstetric and paediatric technology, and often worked in less than ideal conditions.

I would not claim that these results are at all exceptional; many general practitioners working in similar conditions have done better. Nor would I decry the value of the new techniques in the small proportion of abnormal pregnancies and labours that do occur, but I would question current assumptions about the superiority of these methods in all cases. The reaction by many women against this technology is well known and

is acknowledged in a recent article by three experts in different fields.⁵³ I have personal knowledge of two women who in 1980 chose to have their babies at home without adequate medical support. A gap has opened between the consumers and suppliers of maternity services. This is a gap which the general practitioner might have bridged, but, sadly, few now have the confidence, training or wish to carry the responsibility of obstetric work. It is "surely one of the great academic failures of general practice . . . that this is happening without satisfactory scientific evidence."⁵⁴

Appendix

Various case histories

Case 1. Domiciliary booking. Age 27, parity 1, social class II. Spontaneous breech delivery 19 days premature, three and a half hours in labour. Infant 2,500 g, vigorous. Cot death 2nd day. Postmortem examination showed no cause of death.

Case 2. Maternity home booking. Age 35, parity 0, social class III. Premature labour at home at 30 weeks. Infant 1,500 g, vigorous, immediate transfer to hospital with mother. Died 3rd day.

Case 3. Hospital booking. Age 31, parity 0, social class III. Emergency caesarean section for placenta praevia at 32 weeks. Infant 2,100 g, weakly. Died at 12 hours. Cause of death 'atelectasis'.

Case 4. Domiciliary booking. Age 20, parity 1, social class V, poor physique. Unexplained intrauterine death at 39 weeks. Infant stillborn at term, bilateral talipes, weight not recorded, no postmortem.

Case 5. Maternity home booking. Age 34, parity 1, social class II. Unexplained fetal death at 30 weeks. Labour at 38 weeks. Infant stillborn, macerated.

Case 6. Private nursing home booking. Age 24, parity 0, social class II. Sudden onset pre-eclampsia at 39 weeks. After 24 hours rest medical induction. Labour began in four hours and lasted seven hours, spontaneous vertex. Infant 3,000 g, cyanosed, regular respiration established in five to 10 minutes. Died 2nd day with cerebral signs. Postmortem, tentorial tear, prematurity.

Case 7. Domiciliary booking. Age 25, parity 0, social class III. Slight hypertension controlled by rest from 34th week. Admitted hospital. Spontaneous labour at 39 weeks. Infant stillborn, weight not recorded, no postmortem.

Case 8. Domiciliary booking. Age 34, parity 2, social class IV, poor physique. Small APH at 38 weeks, seen by consultant, no action advised. Labour at 39 weeks, lasted six hours, transverse arrest, manual rotation and forceps delivery under light chloroform; two experienced general practitioners present. Infant stillborn, 3,250 g.

Case 9. Domiciliary booking. Age 23, parity 3, social class V, heavy smoker, bad attender. The only patient in the series somehow to escape blood examination. Rapid labour at term. Infant stillborn, macerated, weight not recorded. Mother's blood in puerperium, Kahn + + + +.

Case 10. Hospital booking. Age 41, parity 3, social class V, obese, living in cottage across fields. Regular antenatal examinations normal. At 30 weeks collapsed in night without warning, already dead when seen by me 30 minutes later. Postmortem examination, massive retroplacental clot and 1,500 ml blood in uterus. No external bleeding at all.

Case 11. Domiciliary booking with midwife only. Age 29, parity 2, social class IV, past history and present pregnancy normal. Labour normal and rapid, placenta delivered five minutes after birth, ergometrine given. One hour later I was called and reached patient in 20

minutes, found her pale and pulseless, not bleeding, uterus firm. Room was small and nearly filled by bed, light poor. Husband was sent to phone hospital with urgent request for blood and ambulance, but they would not arrange anything until I had spoken to them personally; valuable time was lost. Meantime attempts to enter collapsed and invisible veins with needle had failed and I cut down on vein, inserted cannula and commenced plasma infusion. Unconsciousness and respiratory failure set in, artificial respiration was tried without response, patient died two and a half hours after childbirth, ambulance arrived with blood five minutes later. Postmortem revealed deep cervical tear. This case was in 1948 and is still painful to recall but it must be described to draw attention to the dangers of birth attended by midwife alone in patient's home. Home conditions would now be considered unsuitable and no doubt hospital delivery could have saved her; but I venture to suggest that she need not have died if a doctor with infusion apparatus had been present at the birth, nor if a 'flying squad' had been available in those days.

References

- Barnes, J. (1969). Domiciliary obstetrics. *Journal of the Irish Medical Association*, **62**, 327-332.
- Coffey, V. P. & Quinn, P. (1968). Perinatal and infant mortality rates. Dublin domiciliary deliveries. *Journal of the Irish Medical Association*, **61**, 9-13.
- Rutter, P. (1964). Domiciliary midwifery: is it justifiable? A review of over 1,000 cases in general practice. *Lancet*, **2**, 1228-1230.
- Hudson, C. K. (1968). Domiciliary obstetrics in a group practice. *Practitioner*, **201**, 816-822.
- Millar, A. P. (1968). General practitioner obstetrics (letter). *British Medical Journal*, **1**, 446-447.
- Galandauer, B. (1960). Midwifery in a general practice. *Medical World*, **93**, 313-316.
- Stewart-Hess, C. H. & Green, T. H. H. (1962). Account of 1,000 consecutive deliveries in a general practice based on a type of maternity unit. *British Medical Journal*, **2**, 1115-1118.
- Rawlings, E. E. (1970). A general practitioner short-stay delivery unit. *Practitioner*, **204**, 825-830.
- Rees, H. G. (1961). A domiciliary obstetric practice, 1948-1958. *Journal of the College of General Practitioners*, **4**, 47-71.
- O'Brien, P. (1964). Obstetrics in a general practice. *Journal of the College of General Practitioners*, **8**, 281-303.
- Boyce, R. McC. (1961). Domiciliary obstetrics. *Journal of the College of General Practitioners*, **4**, 279-287.
- Howard, H. I. (1962). Obstetrics in general practice, a five-year survey. Parts I and II. *Practitioner*, **188**, 239-242, 383-393.
- Bury, J. D. & Garson, J. Z. (1963). Home or hospital confinement? *Journal of the College of General Practitioners*, **6**, 590-605.
- Cookson, I. (1963). Family doctor obstetrics. *Lancet*, **2**, 1051-1054.
- Ministry of Health. (1959). *Report of the Maternity Services Committee*. Cranbrook Report. London: HMSO.
- Butler, N. R. & Bonham, D. G. (1963). *Perinatal Mortality. The First Report of the 1958 British Perinatal Mortality Survey under the auspices of The National Birthday Trust Fund*. Edinburgh: E. & S. Livingstone.
- Butler, N. R. & Alberman, E. D. (Eds). (1969). *Perinatal Problems. The Second Report of the 1958 British Perinatal Mortality Survey, under the auspices of The National Birthday Trust Fund*. Edinburgh: E. & S. Livingstone.
- Department of Health and Social Security Welsh Office. Central Health Services Council, Standing Maternity and Midwifery Advisory Committee. (1970). *Domiciliary Midwifery and Maternity Bed Needs. Report of the Subcommittee*. Peel Report. London: HMSO.
- College of General Practitioners (1956). *Proceedings of a conference on general practitioner obstetrics, 1955*. Supplement to Research Newsletter No. 10.
- College of General Practitioners. North-west England faculty. (1961). Obstetrics in general practice. Symposium held on 16.4.1961 at Manchester. *North-West England Faculty Journal*, Special issue.
- Cookson, I. (1967). The past and future of maternity services. *Journal of the College of General Practitioners*, **13**, 143-162.
- Royal College of General Practitioners (1968). *Obstetrics in general practice—the report of a working party. Reports from General Practice 9*. Edinburgh: E. & S. Livingstone.
- Huygen, F. J. (1976). Home deliveries in Holland. *Journal of the Royal College of General Practitioners*, **26**, 244-248.
- O'Brien, M. (1978). Home and hospital: a comparison of the experiences of mothers having home and hospital confinements. *Journal of the Royal College of General Practitioners*, **28**, 460-446.
- Barry, C. N. (1980). Home versus hospital confinement. *Journal of the Royal College of General Practitioners*, **30**, 102-107.
- Ashford, J. R. & Ferster, G. (1976). A place to be born. Letter. *British Medical Journal*, **1**, 648.
- Dingwall, R. (1976). A place to be born. Letter. *British Medical Journal*, **1**, 396.
- National Childbirth Trust. Members of a study group on home confinement (1976). A place to be born. Letter. *British Medical Journal*, **1**, 279.
- Marsh, G. N. (1977). Obstetric audit in general practice. *British Medical Journal*, **2**, 1004-1006.
- Tew, M. (1977). Obstetric hospitals and general practitioner maternity units—the statistical record. *Journal of the Royal College of General Practitioners*, **27**, 689-694.
- Curzen, P. & Mountrose, U. M. (1976). The general practitioner's role in the management of labour. *British Medical Journal*, **2**, 1433-1434.
- Zander, L. I., Watson, M., Taylor, R. W. & Morrell, D. C. (1978). Integration of general practitioner and specialist antenatal care. *Journal of the Royal College of General Practitioners*, **28**, 455-458.
- O'Driscoll, K., Stronge, J. M. & Minogue, M. (1973). Active management of labour. *British Medical Journal*, **3**, 135-137.
- Studd, J. (1974). The prevention of prolonged labour. *Practitioner*, **212**, 689-695.
- Fedrick, J. & Yudkin, P. (1976). Obstetric practice in the Oxford Record Linkage Study Area, 1965-1972. *British Medical Journal*, **1**, 738-740.
- Chalmers, I., Zlosnik, J. E., Johns, K. A. & Campbell, H. (1976). Obstetric practice and outcome of pregnancy in Cardiff residents, 1965-1973. *British Medical Journal*, **1**, 735-738.
- Laurent, J. M. (1968). One hundred unselected consecutive obstetric cases, 1962-64. *Journal of the Royal College of General Practitioners*, **15**, 456-461.
- 38 & 39. Lloyd, G. (1975). Retrospective normality. A comparison of the outcome of pregnancy booked into a general practitioner maternity unit and a general practitioner obstetric unit. *Practitioner*, **214**, 261-263.
- Richmond, G. A. (1977). An analysis of 3,199 patients booked for delivery in general practitioner obstetric units. *Journal of the Royal College of General Practitioners*, **27**, 406-413.
- British Medical Journal*. (1976). Induction of labour. Editorial, **1**, 729-730.
- Aikman, P. (1973). The general practitioner and the department of obstetrics and gynaecology. *Practitioner*, **210**, 759-763.
- MacFarlane, A. (1978). Variations in number of births and perinatal mortality by day of week in England and Wales. *British Medical Journal*, **2**, 1670-1673.
- Oldershaw, K. L. & Brudenell, J. M. (1975). Use by general practitioners of obstetric beds in a consultant unit: a further report. *British Medical Journal*, **1**, 139-142.
- James, D. K. (1977). Patients transferred in labour from general practitioner maternity units. *Journal of the Royal College of General Practitioners*, **27**, 414-418.
- Banwell, G. S. & Hamilton, I. G. (1970). Use of maternity beds in a new general practitioner unit. *Journal of the Royal College of General Practitioners*, **19**, 282-285.
- National Birthday Trust Fund and Royal College of Obstetricians & Gynaecologists (1975). *British Births, 1970*. Vol. I. The first week of life. London: Heinemann. Ditto (1978). *British Births, 1980*. Vol. II. Obstetric care. London: Heinemann.
- Kerr, M. (1966). Failure to breathe. In Symposium on clinical problems of practice. Report. *Journal of the College of General Practitioners*, **13**, Suppl. No. 1, 62-66.
- Weekes, A. R. L., Makanji, H. H. & West, C. R. (1976).

OCCASIONAL PAPERS

Occasional Papers can be obtained from 14 Princes Gate, Hyde Park, London SW7 1PU. Prices include postage. Payment with order.

No. 4

A System of Training for General Practice (second edition 1979) £3.00

No. 6

Some Aims for Training for General Practice £2.75

No. 7

Doctors on the Move £3.00

No. 8

Patients and their Doctors 1977 £3.00

No. 9

General Practitioners and Postgraduate Education in the Northern Region £3.00

No. 10

Selected Papers from the Eighth World Conference on Family Medicine £3.75

No. 11

Section 63 Activities £3.75

No. 12

Hypertension in Primary Care £3.75

No. 13

Computers in Primary Care £3.00

No. 14

Education for Co-operation in Health and Social Work £3.00

No. 15

The Measurement of the Quality of General Practitioner Care £3.00

- Comparisons of intravenous oxytocin and prostaglandin E₂ for accelerating labour. *British Medical Journal*, 1, 987-988.
50. Beard, R. W. (1976). Maternal and neonatal health—a priority. *British Medical Journal*, 2, 679-680.
51. Dixon, G. (1971). Advances in obstetrics and gynaecology. *Practitioner*, 207, 433-441.
52. *British Medical Journal*. (1977). Perinatal epidemiology. Leading article, 1, 734-735.
53. Chalmers, I., Oakley, A. & MacFarlane, A. (1980). Perinatal health services: an immodest proposal. *British Medical Journal*, 1, 842-845.
54. Gray, D. J. Pereira. (1978). Feeling at home. James Mackenzie Lecture 1977. *Journal of the Royal College of General Practitioners*, 220, 131-139, 145.
55. McGregor, R. M. & Martin, L. V. H. (1961). Obstetrics in a general practice. *Journal of the College of General Practitioners*, 4, 542-551.
56. Freedman, G. R. (1976). Breast feeding—a year's experience of one group practice. *Journal of the Royal College of General Practitioners*, 26, 507-513.
57. Chalmers, I., Lawson, J. G. & Turnbull, A. C. (1976). Evaluation of different approaches to obstetric care: parts I and II. *British Journal of Obstetrics and Gynaecology*, 83, 921-929, 930-933.
58. Tod, E. D. M. (1967). Perinatal mortality. *Practitioner*, 198, 828-832.

Acknowledgements

My grateful thanks are due to Dr Peter Frank of the Manchester Research Unit (RCGP) for reading the first version of this paper and for advice leading to its complete revision; to Mrs Heda Borton, staunch campaigner for natural childbirth, for encouragement and many relevant letters and press cuttings; and to my wife for drawing the figures, for many helpful suggestions and for patient endurance of this project over several years.

PARDALE FOR PAIN RELIEF
PARDALE FOR PAIN RELIEF
PARDALE FOR PAIN RELIEF
PARDALE FOR PAIN RELIEF
PARDALE FOR PAIN RELIEF

**Paracetamol 400mg Codeine Phosphate 9mg
 Caffeine Hydrate 10mg**

Full product information available on request



**Dales
 Pharmaceuticals Limited**

Snaygill Industrial Estate, Keighley Road,
 Skipton, North Yorkshire BD23 2RW
 (Tel: 0756 61311)

PL 0123 5015