

OBSTETRICS IN A GENERAL PRACTICE 1949-1963

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THE traditional annual accountancy of maternity hospitals is outstanding in medical literature; this is because pregnancy has a definite outcome and any series of deliveries with its complications and other notable features lends itself readily to statistical analysis. In stressing the value of such reports, the survey of "Maternity in Great Britain, 1946" failed to foresee that general practitioners might have a useful contribution to make in this field. Even as late as 1961, Rees could write "It is a pity that there are not more surveys either by individuals or groups". Yet, in the short time since then such reports have become relatively common. For this we are indebted to the National Health Service which has given us in contractual maternity practice, a stimulus for better antenatal care with improved record keeping. The accumulation of good records has in turn prompted many doctors to publish their results (O'Brien, 1963).

The present survey covers a period of evolution and adjustment, the extent of which is only beginning to be realized. It refutes Bell's (1963) suggestion that "there is little opportunity for general practitioners to give maternity services outside their own practices". It describes a single-handed, maternity practice, within a two-man partnership in a Lancashire industrial town from April 1949 to March 1963. The detailed analysis has been a valuable exercise from which much has been learned. It has given insight into the very personal association between actions, attitudes and standards on the one hand, and environment, training, associations, aspirations and opportunities on the other. All this has helped to point the way towards better results.

In this town, domiciliary delivery is still fairly common, because hospital obstetric beds are relatively scarce. The Cranbrook Report

(Appendix 3) showed that in 1957, 44 per cent of mothers were delivered at home. Since then no new beds have been added; and one twelve-bedded ward has had to be closed recently because of lack of staff. Apart from the main hospital unit, there is a maternity home in another part of the town with 23 beds, ten of which have been set aside since 1957 in which general-practitioners may attend their own patients.

It is not possible to give a clear picture of the population upon which this obstetric practice is based, because many of the mothers (e.g. 26 per cent in 1961 and 1962) were on the list of other doctors not providing obstetric service. In earlier years, they appear as 'medical-aid' cases, but later they are among those booked. This tendency has followed the changing pattern of midwives' practice; at the inception of the National Health Service they were still accepting many cases on their own responsibility, calling in the doctor when difficulties arose, but gradually it became the custom for mothers planning for a birth at home to engage both doctor and midwife. The figure illustrates this evolution.

For returns to the Central Midwives' Board 'Medical-aid' calls include all cases in which some abnormality has necessitated a call for assistance from a doctor. In this series, the category is reserved for cases not having antenatal care from the doctor, to which he was called in an emergency by a midwife. For convenience a small number of cases, in more recent years, is included, in which a call for assistance came from another doctor. These cases which had been almost 15 per cent of those attended in earlier years, dropped to less than three per cent latterly and even this small proportion is inflated by the other doctors' cases. The unbooked cases of earlier years, together with hospital bookings by local authority clinics, which did not always inform the family doctor of the fact or the outcome, raise problems of epidemiology which may be relevant to other practices as well as this.

A detailed review is dependent upon full records; these were

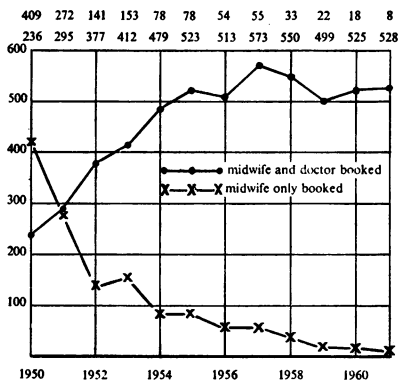


Figure
Domiciliary deliveries, Warrington
County Borough

kept in the obstetric section of the 'Wellcome' diary and on record cards designed by the College of General Practitioners. From these sources, an elaborate system of annual catalogues was built up, which was rather laborious but provided all the essential information.

In table I, the cases are divided into two periods;

(1) Up to the end of 1956 when the majority of those attended were delivered at home.

(2) From 1957 onwards when the general-practitioner maternity unit was in use. In this second period, 26 per cent were delivered in the maternity home, but over 60 per cent were still being delivered at home.

TABLE I
ANALYSIS OF BOOKING AND DISPOSAL

	<i>Booked cases</i>			<i>'Med-aid' calls</i>	<i>Total cases</i>
	<i>Full service</i>	<i>Pt. 1</i>	<i>Pt. 2</i>		
April 1949–December 1956	382	6	1	68	457
Jan. 1957–March 1963	702	26	2	22	752
	1084	32	3	90	1209
	<i>Transfer to hospital</i>		<i>Maternity home cases</i>		
	<i>Booked</i>	<i>Med-aid</i>	<i>Primigrav.</i>	<i>Multiparae</i>	
April 1949–December 1956	26	16	8	4	
Jan. 1957–March 1963	76	1	131	69	
	102	17	139	73	

No continuous record was kept of mothers from the practice being booked for and delivered in hospital, nor was it possible to construct a list of these retrospectively.

Within the later period, changes were still taking place. More primigravidae are now being delivered at home, whereas more of the older mothers and those of higher parity are being persuaded to go into hospital or maternity home. In table II, 1958, the first full year in which the general-practitioner unit was in use, is compared with the last five quarters.

Policy has been changed for both the main hospital maternity department and for the general-practitioner unit regarding the booking of primigravidae. Early application no longer ensures automatic

booking. Those in their twenties with suitable homes are not booked unless there is some medical or obstetrical abnormality. In this way more beds have been freed for older mothers and those with large families. The desirability of delivering these women in hospital has been realized for more than a decade, and has added emphasis in the recently published *Perinatal Mortality Survey*. Nevertheless, Annual Reports from the Ministry of Health show that far too many of these mothers still stay at home. In 1959, of mothers aged 35 years and upwards who had at least four previous babies, 45 per cent were delivered at home, compared with 18 per cent of primigravidae and 36 per cent for all births.

TABLE II
CHANGING PATTERN OF HOME AND INSTITUTIONAL DELIVERY

	<i>Primigravidae</i>		<i>5th baby and upwards</i>		<i>Age 35 and upwards</i>	
	<i>Home</i>	<i>Hospital</i>	<i>Home</i>	<i>Hospital</i>	<i>Home</i>	<i>Hospital</i>
1958	10	26	11	3	20	6
1962-63	22	33	14	13	11	12

In this practice it must be admitted that too many of these older grande multiparae are still being delivered at home, but progress is being made gradually and most are now being persuaded that they will be safer in hospital. As they are usually anxious not to be away from their other children at home, a conditional promise of early discharge sometimes helps to convince. Another change has come about in this practice, with the use of maternity home beds and the policy of leaving more primigravidae at home. A higher proportion of young mothers generally and of first deliveries in particular are now being attended.

Antenatal care

A separate weekly antenatal clinic has been in operation since 1949. Regular appointments are made, hence defaulters can at once be spotted and followed up. It would appear that serial observations by one person give the general-practitioner obstetrician an advantage over the hospital clinic. Open access to the pathology laboratory and x-ray department has ensured that a full range of care can be provided by the family doctor. Consultant advice, is of course, freely available at all times.

Weighing at each examination has been a regular feature in this

clinic since 1955. It has proved its worth not only in the early detection and supervision of pre-eclamptic toxæmia, but also in cases where failure to gain weight has drawn attention to retardation of foetal growth, and in vomiting of early pregnancy where it provides an objective means of assessing severity.

The majority of our patients come for their first consultation before the end of the third month. The aim has been to examine each patient 10 to 12 times. In earlier years with more late bookings, the rate was lower, but in calculating averages a small number of bookings after the 25th week have been excluded. In 1951 and 1955 the average was 6.5 examinations; by 1960 it had risen to 8.15 and in 1960 it was almost 10. Stevenson (1961) has stated that in their practice the aim was 12 to 14 examinations; their average was 9. Most practitioners who have published figures have averages between 7 and 10. In the *Perinatal Mortality Survey* it was found that those mothers making 15 to 24 attendances had the lowest mortality ratio. With intervening examination by the midwife it is probable that most of our patients now have something in the region of 15 examinations.

Anaemia should not present any major problems where adequate diagnostic facilities are provided and used to good advantage. Eradication of anaemia is the best insurance against tragedies due to haemorrhage in childbirth. Most women will respond well to oral iron; a few who are intolerant will require to have it given intravenously and those with a macrocytic tendency require folic acid in addition.

In this practice from the beginning of 1950 to the end of 1961 a haemoglobin level below 70 per cent was recorded in 104 cases, but in only four did it drop below 60 per cent. The lowest level recorded was 43 per cent in a young woman in unfortunate circumstances who neglected to seek antenatal care until complications developed. From the beginning of 1957 to the end of 1961, macrocytic anaemia was diagnosed in ten pregnancies in eight separate women (1 in every 58 pregnancies).

Rhesus negative blood was recorded in the mother in 115 pregnancies out of 849 up to December 1961. Rhesus antibodies were present on nine occasions in three separate women. Hospital delivery was arranged.

Saphenous thrombosis is recorded in five pregnancies (compared with 21 puerperal cases). Thrombosed haemorrhoids provided a problem in six cases in late pregnancy. Relief was provided by

incision with evacuation of the thrombus under local anaesthetic.

Hydramnios was noted in 60 cases (5 per cent). In eight of these glycosuria occurred at some time during the pregnancy; eight babies had congenital abnormalities. In nine cases twins were born; 14 had toxæmia; and in 25 others no particular association was noted.

Diabetes was a complication in only one patient, who was under treatment from childhood. She had two babies in this series. These births are included because although she was under supervision by consultant obstetrician and physician throughout both pregnancies and delivered by caesarean section, part of her antenatal supervision was provided in the practice.

Glycosuria has been a relatively common finding especially since the advent of the very sensitive glucose oxidase strip test. It has, in most cases, been slight, transient and intermittent. In a small series of 75 cases under antenatal care in 1961 and 1962, intensive testing was carried out and glucose was recorded on one or more occasions in 30 of these. This incidence of 40 per cent agrees with Kark's (1960) figures.

No new case of diabetes was diagnosed during pregnancy, but in one woman a diagnosis was made past childbearing, partly on evidence obtained during three of her pregnancies. She was attending with recurrent hordeoli. Repeated tests for glycosuria proved negative, but because she had excreted glucose during pregnancy and three glucose tolerance curves (2 during pregnancies and one at the time of infection) were suspicious, a diagnosis of early diabetes was admitted by a consultant physician. Several other women have interesting records filed for future reference in the same context.

Toxaemia and eclampsia. The label pre-eclamptic toxæmia has been employed for all cases with hypertension or evidence of renal disease. The toxæmic cases were 61 primigravidae (18.4 per cent) and 92 multiparae (10.6 per cent) totalling 153 (12.8 per cent); rather a higher incidence than that reported in the *Obstetric survey* (1957) and rising with age in both primigravidae and multigravidae (table III).

McGregor (1958), criticizing the *Obstetric survey* findings wrote: "The fact that only 34 per cent of cases where hypertension and albuminuria were both present in a primigravida, were referred for specialist opinion is surprising. This may reflect on the competence of the practitioner, but it should be remembered that toxæmia is a major cause of maternal and perinatal mortality". Table IV shows what specialist aid was obtained in my own cases.

TABLE III
INCIDENCE OF TOXAEMIA RELATED TO PARITY, AGE AND PLACE OF DELIVERY

	<i>Home</i>	<i>G.P. unit</i>	<i>Hospital</i>	<i>Total</i>	<i>Rate per cent</i>
Primigravidae					
under 20 ..	1	5	2	8	17
20-34 ..	18	26	6	50	18.3
35 and over ..	—	2	1	3	27
Multiparae					
under 40 ..	65	5	10	80	9.7
over 40 ..	7	2	3	12	21.8
Total	91	40	22	153	
Rate	10.3	19	18.5		12.6

TABLE IV
TOXAEMIA RELATED TO SEVERITY, MANAGEMENT AND PERINATAL MORTALITY

	<i>Treated at home or in G.P. unit without consultant</i>			<i>Treated in G.P. unit with consultant supervision</i>	<i>Referred to consultant —transferred to hospital</i>	<i>Emergency admission to hospital</i>
	<i>Mild</i>	<i>Mod.</i>	<i>Severe</i>			
Booked cases	74	40	—	13	20	1
Med-aid calls	—	2	2	—	—	1
Perinatal deaths	1	2	—	4	3	—

The perinatal mortality in 157 babies was ten (63.7 per thousand) appreciably lower than that of the *Obstetric survey*; corrected to exclude congenital malformation, prematurity and twins, it was four (25.4 per thousand).

In four cases, foetal death might have been avoided. The first patient developed severe toxæmia in the last week of pregnancy and failed to report an antepartum hæmorrhage at a time when transfer to hospital might have saved her baby; stricter control of early toxæmia in primigravidae might have saved one baby (and also a second had it not been deformed); a grande multipara booking late in pregnancy was not recognized as having twins and birth was premature; the fourth was lost between the psychiatric and obstetric departments; she had no antenatal care from the third month, when she cancelled her home booking, until the seventh month. She

developed severe toxæmia and the outcome was a premature still-birth.

Two patients, both with mild toxæmia, had a fit, one in labour and the other after delivery. The former was admitted to hospital where delivery was spontaneous; the latter had a history of childhood fits and was probably not a true eclamptic. The first case serves as a salutary warning that toxæmia must never be taken lightly.

Antepartum hæmorrhage occurred in 31 cases; of these 22 were booked cases; the remainder were emergency 'medical-aid' calls. The latter group were all sent into hospital as were 12 of the former; six others were delivered in the maternity home and four in their own homes. Ten babies were lost; four of them in 'medical-aid' cases. Seven died in hospital, two in the maternity home and one at home.

The baby lost at home died a couple of hours after birth due to prematurity. Labour occurred at 31 weeks following two small bleeds in the previous week. The mother was advised to rest at home. Had she been in hospital, birth might have been postponed until the baby was more mature. In the other cases delivered at home, one had a small bleed at the onset of labour which ceased with fixing of the head. One had two small bleeds in the last month of pregnancy. As hospital beds were fully occupied at the time, it was agreed with the consultant to supervise her at home and send her in immediately should there be any further hæmorrhage. However, the head fixed at term, the cervix was ripe and the membranes were ruptured; a normal delivery followed. The last patient had a brisk hæmorrhage at about 20 weeks; she was admitted to hospital in another town and sent home after a week. There was no further bleeding and the incident was almost forgotten until it was found after normal delivery that a vasa prævia was present, fortunately this did not tear during labour.

In the two cases where a baby was lost in the maternity home, both mothers were advanced in labour on admission and not then bleeding. The first baby died from prematurity, the second was stillborn (the case previously mentioned of severe toxæmia developing in the last days of pregnancy). In the remaining maternity home cases, bleeding preceded admission and was not reported. In each, labour was established, the head was fixed and all went well.

In the 21 cases admitted to hospital four babies were stillborn; one was anencephalic and the others premature. Three born alive died within a few days of atelectasis or prematurity. One other hospital case is of particular interest.

The mother was 36 years and expecting her second baby. She bled repeatedly between the 12th and the 30th week. She was admitted to hospital about the 20th week, but allowed home again after a week or so, although there was still some bleeding. She remained in bed at home and was visited at least once a week for a routine antenatal check. Bleeding ceased at 30 weeks and did not start again until 37 weeks when she was admitted to hospital. She was found to be in labour and had a normal delivery followed by a brisk postpartum hæmorrhage. In this case supervision had been carried on at home throughout the greater part of a very trying pregnancy by the general practitioner on behalf of the hospital. Great care was taken to ensure that a high hæmoglobin level was maintained.

The birth

In this series 1,209 cases are reviewed. Pregnancies terminating before 28 weeks are not included. Thirty-two were provided with antenatal care during part of their pregnancy, being eventually delivered out of the district or having transferred to hospital because of adverse social conditions. In 1,084 cases a contract was made for full maternity services. In 90 cases an emergency call was received to attend a patient for whom antenatal care had not been provided, who was in labour or had already been delivered. One hundred and nineteen patients were transferred to hospital when labour was established or imminent, or at some earlier stage in pregnancy for a variety of reasons. Two hundred and eleven were attended in a general-practitioner maternity unit. Many women were attended on several occasions, including two who were attended seven times.

Place of birth. Almost three-quarters of the deliveries have been in the mother's own home; consequently the practice has had to be organized to deal with a large number of domiciliary cases. Conditions have improved greatly in the district during the period under review. Most homes have now got a bathroom and indoor lavatory which many lacked in the earlier years; hot water is on tap and facilities for sterilizing instruments are adequate. All have got electric light; this may not be well placed or bright enough in some instances, so a small portable anglepoise lamp is carried to ensure good light for suturing the perineum and for various other procedures.

To overcome the handicap of the low modern bed, a set of stout wooden blocks (10" x 6" x 6") is carried in the boot of the car, and also a portable obstetric table with detachable lithotomy poles which provides firm and dependable support in cases where instrumental delivery is necessary.

Attendance. It has been a constant aim to be present at some stage of labour in as many cases as possible. In 665 cases from 1957 to 1962, this has been achieved in 434 (66 per cent). Separate figures for presence at the actual delivery have only been kept for 1962, when this was achieved in 39 cases (35 per cent).

Executive council returns for Warrington from 1949 to 1961 show that in 6,422 cases where a doctor was booked to provide full maternity service, he was "present at the confinement" in 3,476 (54 per cent). Midwives' returns to the medical officer of health for 1953 to 1961 show that in 4,602 cases where a doctor and midwife were both booked, the doctor was present at the delivery in 945

(20.5 per cent). It is not always appreciated that these two different sources of information exist, which are complementary; an impression has sometimes been created in the past that doctors and midwives' returns conflict.

Normal cases. The majority of mothers have normal deliveries, but it is well recognized that normality cannot be predicted as anything more than a probability. The doctor must aim to be master of the normal delivery if he is to give a worth-while service. He must be with his patient from time to time during her labour, and at the moment of birth when possible. He must conduct a normal delivery on occasions, in order to maintain a high level of technique, knowing it can happen that he must carry on in the absence of a midwife. The doctor must step warily so that the midwife does not feel she is being placed in the inferior position of maternity nurse. He should ask to conduct the delivery as a favour; the courtesy will be appreciated and a good team spirit is fostered.

In areas such as this, where there is a "Part 2" training school for midwives, it is a privilege for the doctor to be able to take part in the teaching of pupils. If he is an experienced practitioner, he can demonstrate many valuable points in obstetric craft, and it is important to remember that this will have particular value for foreign girls passing through our schools. Most of them will be returning to practise in primitive communities where they must of necessity assume greater responsibility than our own nurses, as for instance in performing episiotomies and suturing the perineum. For the doctor, such opportunities to impart knowledge prove a stimulus which sharpens the wit and improves technique.

Malpresentation. The malpresentation which occurs most often is breech. This has been avoided, when possible, by the practice of external version. Reviewing the cases in the present series, however, it appears that on occasions this manoeuvre has been left too late. Forty-nine babies have presented as a breech in 47 labours. The presentation was found in 165 other cases; in 131 spontaneous version took place; in 38 external version was performed successfully but four reverted. Twenty-four of these versions were performed before 36 weeks, 11 in the 37th week and three others later.

Among the breech deliveries, four out of 35 mature babies were lost. In two cases (1950 and 1953) this was apparently due to intracranial haemorrhage, in one it was due to prolapsed cord and in the last case there was gross congenital malformation. Fourteen babies were premature, of these nine were lost; one being anencephalic;

one was killed *in utero* when the mother had a fall at 35 weeks, and the remainder were due to prematurity, complicated in four cases by toxæmia in the mother. Among primigravidae in this group, five were delivered by caesarean section. In 10 the after coming head was delivered with forceps. In 21 cases of uncomplicated breech delivery, one baby was lost; this occurred in a 'medical-aid' case in 1950, with a hurried delivery in unfavourable conditions. On rare occasions, in more recent years, when a breech delivery has been undertaken in the patient's home, the portable lithotomy frame has proved a boon. Among the babies which survived, the only injury was one fractured clavicle.

Persistent occipito-posterior presentation occurred in 21 cases. In two of these, both primigravidae, there was disproportion; after trial of labour in the maternity home, under consultant supervision, they were transferred to hospital for caesarean section. Eight were delivered with forceps, without attempting rotation, as recommended by Williams (1953). The remainder delivered spontaneously. There were no losses.

Placenta praevia was present in 21 cases (six 'medical aid'). Sixteen of these were delivered in hospital, caesarean section being performed in seven instances. Four births took place at home and one in the maternity home. These were cases where labour occurred spontaneously and progressed rapidly with bleeding only at or before the onset of contractions. There were four stillbirths and three neonatal deaths; five of these babies were premature, one was anencephalic, and one of those born in hospital was a small post-mature baby who died from atelectasis due to inhaled meconium.

Multiple pregnancy. There have been 16 sets of twins. Twenty-three of the babies were premature and there were nine perinatal deaths. Five of these were stillbirths and the other four died on the day following birth. In addition, there were two which died later in their first year. In seven diagnosis was established before birth. Three were 'medical aid' cases, in which, together with six booked cases, a diagnosis was not made until the mother was in labour. Eight births took place at home, five in the maternity home, and three in hospital.

Of the nine perinatal deaths, six were to be expected, either because of congenital anomalies or because the foetus was already dead *in utero*. Two of the three which died within 24 hours and the two which died later, might have been saved by earlier diagnosis and better management. Two of these mothers, however, did not provide much

opportunity as they only booked late in pregnancy. In both cases diagnosis was obscured by obesity and hydramnios, although the latter features should have aroused suspicion.

Half the cases of twin pregnancy occurred in two years (1958 and 1959), six being in one of those years. This illustrates the fallacies that may occur in drawing conclusions from any small series of cases. A chance happening such as multiple pregnancy will influence various other occurrences such as prematurity and perinatal deaths, with an obvious effect on the statistics.

Forceps deliveries. Table V shows the number of forceps deliveries and the place of delivery.

TABLE V
FORCEPS DELIVERIES

	<i>Home</i>	<i>Mat. home</i>	<i>Hospital</i>	<i>Total</i>	<i>Percentage incidence</i>
Primigravidae	25	28	8	61	18.4
Multigravidae	17	7	2	26	2.9
<i>Total</i>	42	35	10	87	7.1

Since the maternity home became available, more forceps deliveries have been carried out there, because a high proportion of primigravidae and high-parity patients were admitted. Nevertheless, since 1957 there have been 16 of these deliveries in the patient's home. My policy has been to encourage the mother to deliver herself, if she can do so within a reasonable time. In some cases expulsion has been stimulated by 'ironing-out' the perineum (O'Brien, 1953). For most of the transverse and occipito-posterior cases Kielland's forceps was used, for most of the remainder an axis-traction or small outlet forceps was preferred.

The indications for forceps delivery (some cases having more than one indication) are shown in table VI.

TABLE VI
INDICATIONS FOR FORCEPS DELIVERY

Inertia or outlet delay	..	..	..	..	42
Transverse arrest or P.O.P.	..	..	..	..	36
Foetal distress	..	..	..	..	9
Maternal distress	..	..	..	..	7
Breech	..	..	..	..	9

There were three perinatal deaths, the forceps probably being responsible in one. This was a 'medical-aid' case in which a very long cord had prolapsed during the second stage in spite of vertex presentation and a big baby; it was extracted quickly and the heart was beating but it did not breathe. A rushed delivery probably caused intracranial haemorrhage. The two deaths for which forceps were not responsible were in premature babies, one having a meningocele and the other a breech delivery with forceps to the aftercoming head. Morbidity from forceps consisted of two cases of transient facial palsy and one with cephal-haematoma which resolved by the third week.

There was one maternal death after a forceps delivery. The mother, aged 43, was having her second baby in the maternity home. The baby weighed 10½ lb., delivery was difficult and manual removal of the placenta followed. After her episiotomy had been sutured, she collapsed due to extensive concealed haemorrhage into the broad ligament. The knowledge that there had been little external haemorrhage and that the body of the uterus was intact gave a false sense of security; the 'flying-squad' was called and blood was given, but not soon enough. The baby survived with only transient superficial damage.

Morbidity. Two patients had postpartum haemorrhage following forceps delivery at home.

One was given a small blood transfusion by the 'flying-squad'. Five mothers had pyrexia. In two this occurred during the second week and was not related to the delivery. In three cases, it appeared early, but none of them was seriously ill. As it has not been my practice to give antibiotic drugs prophylactically other cases have not been masked. In two cases, mild cystitis followed instrumental delivery with catheterization.

Anaesthesia. In earlier years general anaesthesia was employed, sometimes without a second doctor. Chloroform was used for induction, followed by ether or trilene. In rare cases where we employ a general anaesthetic now, another doctor is always present. In recent years, local anaesthesia has been used for the majority of patients, with considerable satisfaction. The effect of this is enhanced by pre-medication with pethilorfane intravenously coupled with promazine or promethazine. This is of great value in the apprehensive patient. A state described by Crawford (1958) as hypo-aesthesia is induced. Coxon (1961) and O'Sullivan (1962) are among others who have advocated this type of medication and reported larger series.

Repair of the perineum. Episiotomy has been employed in nearly all forceps deliveries. In the series as a whole lacerations have been repaired in 218 cases; in 28 others a small tear was noted which did not require suturing. Episiotomy was performed in 101 cases. Recently the ratio has improved; in the last 15 months of the survey, 25 women had an episiotomy and 25 others had a laceration.

From the *Obstetric survey* it appears that episiotomy is seldom employed in domiciliary practice: only 47 per cent of primigravidae having a forceps delivery at home had an episiotomy; for breech delivery the rate was 1 in 43. Most of the remainder had a tear. It

would undoubtedly bring about some improvement if midwives were encouraged, instead of prohibited by their controlling authority, to do episiotomies where necessary. This idea has recently been endorsed by the Maternity Services Emergency Informal Committee.

In the majority of my cases, the repair has been with plain catgut throughout (deep tissues, mucosa and skin). This has two advantages for the patient. It is more comfortable for sitting up and there are no stitches to come out.

Third stage of labour

When I am present at delivery, ergometrine is given intravenously as the head is delivered. This has undoubtedly lessened the incidence of P.P.H. In two cases retained placenta has ensued necessitating manual removal, but even if this has been *propter hoc* it is considered a small price to pay for the overall reduction in blood loss. A second injection, intramuscularly, before the midwife leaves the house, preferably of a preparation containing ergometrine with a small dose of the longer acting pitocin (e.g. syntometrine) is desirable. For delivery of the placenta controlled cord traction (Spencer, 1962; Bonham, 1963) is favoured. It is more efficient and less distressing for the patient than the more traditional method.

Manual removal of the placenta has been performed in 17 cases. In six of these it followed forceps delivery, in the remainder retained placenta followed a spontaneous delivery. Only once was it necessary to send the patient into hospital because of failure to deliver the placenta at home. This girl had a firm contraction ring. In ten cases the procedure was carried out in the patient's home, and in five others in the maternity home. A second case occurred in hospital, where admission had been arranged because of foetal distress. Five patients required blood transfusion, two of them being at home.

Postpartum haemorrhage. It is difficult to be accurate about this condition, especially in domiciliary practice. Most of us probably make the diagnosis when loss of blood and the patient's condition are causing some concern.

Thirty-five cases in this series should probably be included (2.9 per cent); two were in 'medical-aid' cases; five were sent into hospital; six required blood transfusion. Delayed haemorrhage, which can be very worrying, was a feature in eight cases. In six of these the bleeding occurred within 24 hours. In two others it was in the second week of the puerperium. Neither had pyrexia, nor was shocked, and the bleeding, which stopped spontaneously, was not

repeated. All these patients were given iron by mouth or intravenously until the haemoglobin level was restored to normal.

Delayed maternal deaths. McKelvey (1955) pointed out that in assessing maternal mortality, if we are to be strictly honest "we must be prepared to consider the remote effects of pregnancy and its complications". In the present series, there are five mothers who have subsequently died at an early age. In three of these, there was toxæmia in the last and also in earlier pregnancies. Two of them ('medical-aid' cases), whose home conditions were bad and who did not have antenatal care, in any true sense, in the last pregnancy, were dead with renal disease within a couple of years. The third, who spent a couple of months in hospital before her last baby was born and was delivered there, died about five years later with Addison's disease. The fourth had a carcinoma of the cervix which developed during her pregnancy. Following a haemorrhage at 26 weeks, she was in hospital until delivered by caesarean section at term. Hysterectomy was followed by radiotherapy but she only survived about seven months. The fifth died suddenly, a couple of years after her last delivery, of natural causes which did not appear to have any relation to childbearing.

Induction of labour

Induction of labour has been freely employed in this practice; it can be shown that it has been used with benefit and without prejudicing the outcome for mother or baby in any case. Apart from procedures such as the administration of castor oil, an enema or a membrane sweep, a deliberate policy of induction has been pursued in 148 cases (12.2 per cent). In three (before 1955) the attempt was unsuccessful, but pitocin only had been used and the eventual outcome was not prejudiced. In seven cases the induction followed admission to hospital; in the remainder the patient was at home or in the maternity home.

A variety of methods has been employed. Pitocin by intramuscular injection has been given in earlier years, but has been abandoned because of its dangers. Membranes have been ruptured, using a Drewe-Smythe catheter, but this too has been abandoned in favour of forewater rupture. In recent years pitocin has been given by intravenous drip. Five of these patients were in the maternity home and seven were at home. In this last small group it was considered necessary to remain with the patient throughout the time the drip was in use and until the delivery was complete.

The reasons for induction have not always been single, but the

primary indication has been: postmaturity (55), toxæmia (53), early signs of parturition without established labour (23), possibility of disproportion later (7), maternal illness or distress (10).

Morbidity. In this series of inductions there has been no perinatal death, and only in two cases has there been puerperal pyrexia which could be attributed to the induction. In one of these, in earlier years, maturity had been misjudged, and membranes were ruptured for three days before delivery. The other mother had a forceps delivery following induction. One primigravida, of low stature, had a caesarean section following induction and a trial labour at home. In eight cases the induction-delivery interval was over 48 hours. In four of these postmaturity was a misdiagnosis, the babies being between $5\frac{3}{4}$ and $6\frac{3}{4}$ lb.

' Medical-aid calls '

Medical-aid calls belong to an era that is past. There are 90 cases in this series, but a small number of these were not midwives' calls, as already mentioned. There were 55 calls from midwives in the first four years and in the next nine there were 24. The biggest single group of cases—37—were lacerations which required to be sutured, but among the others were true emergencies, which often occurred in patients who had little or no antenatal care: 20 calls were for malpresentation or interia; 15 had hæmorrhage or retained placenta; four had toxæmia. Fourteen were sent into hospital. It should have been more but for lack of time, and an advanced stage of labour in other cases. As might be expected, the perinatal mortality was high, 16 of the babies being lost (ten still-born), but there were only two instances where it was felt that the baby might have lived. One was a premature baby of over 5 lb., the other was a breech mentioned earlier. Both apparently died from intracranial damage.

Cases sent into hospital

Many patients of the practice, especially in earlier years, were delivered in hospital as a result of arrangements made through the local authority clinics. A record of all these cases was not kept; hence this section deals only with those booked in the practice, or 'medical-aid' cases, transferred to hospital. Some were transferred during pregnancy on social grounds, but the majority were sent because some complication developed. One hundred and sixteen mothers went in during pregnancy or in labour with four more

after the baby was born. Particulars of many of these have already been given.

The haemorrhages make up the largest group (23) with the highest perinatal losses (7). Toxaemia accounted for 17 with two premature stillbirths; eight appeared to have disproportion, of whom six had a caesarean section and of nine with breech presentation, five required caesarean section. Five with inertia accounted for two more sections. There were 22 perinatal deaths (18 stillbirths) in this whole group.

Postnatal care

A set pattern has not been followed in postnatal visiting, but most patients have been visited at least five times and some much more often. Relations with the midwives are excellent and most of them can be relied on to report immediately any deviation from the normal course, which may be noted on a day that the doctor does not visit.

Breast feeding is no more popular here than in many other civilized places. Since 1957, particulars have been recorded in all mothers attending for postnatal examination. One hundred and fifty-three mothers (27.7 per cent) were breast feeding at six weeks out of a possible 551. Following delivery, 15 mothers developed mastitis; six went on to abscess formation and required incision.

Puerperal pyrexia is the simplest index of morbidity in the puerperium. The official definition is now weakened by the fact that early diagnosis and treatment will frequently arrest the rise in temperature before it reaches the specified level of 100.4° F. Thus, a true case of puerperal sepsis, may no longer be notifiable whereas a febrile coryza may be. Patients with a lower temperature are reviewed here if it seemed that it would have risen higher without treatment.

Twenty-seven cases occurred in the first week after delivery and ten in the second. Eleven appeared to be due to puerperal sepsis, although swabs were not taken in most of them. In four of these there had been a forceps delivery and in two a surgical induction; seven had mastitis, 13 had infections of the respiratory tract and, in three others, there was no obvious cause. An antibiotic or sulphonamide was employed in most cases where the temperature rose, but 12 had no specific drugs. No patient was seriously ill, and all recovered rapidly.

Urinary tract infection occurred six times in the puerperium, compared with 28 during pregnancy. In two other patients it was present both before and after delivery. In the postnatal cases; two

followed forceps delivery and three followed induction. Catheterization is avoided as far as possible except in forceps cases.

Postnatal examination. During the period of this survey 853 postnatal examinations were carried out. One hundred and fifty-three patients were considered ineligible, because of delivery elsewhere or in a few cases at their own expressed wish. The remaining 203 did not attend in spite of being reminded at least twice. Thus 80.8 per cent of those eligible were examined.

Rates for this examination have varied considerably in the published results. In the *Obstetric survey* 85 per cent were examined; Rees (1961) examined 97 per cent, visiting them for the purpose in their own homes. At the William Budd Health Centre in Bristol, Howard's (1962) rate was 63 per cent.

Abnormal findings should be few in these days of greatly improved obstetric care. This is borne out in the present series: only three women (0.35 per cent of those examined) had prolapse of a degree requiring treatment. These were all cases where damage had occurred in earlier deliveries, outside this series. Another 46 (5.4 per cent) had some laxity of the perineum, vaginal walls or abdomen. This is not a high rate, and probably no more than would be expected, allowing for variations in physique of the population. One hundred and seven women (12.5 per cent) had a retroversion. Of these 87 (81.3 per cent) were corrected at the time of examination. Examination with a speculum was a routine in earlier years, but is employed now only in selected cases. Many cervical erosions were noted, the majority of which healed spontaneously.

From experience, it is felt that this examination is worth undertaking in spite of the fact that any serious damage is rare. It gives reassurance to the mother and provides her with an opportunity to seek advice on relevant problems. To the doctor it gives an opportunity to review the results of his attention; in particular, he will soon discover whether his perineal repairs have been efficient (Chassar Moir, 1961). Regular review stimulates interest and tends to bring about improvements in technique.

The baby

Having reviewed results as they concern the mother, her offspring must now be considered; taking first the perinatal mortality, then the hazards of birth from prematurity, asphyxia and congenital anomalies.

In this series of 1,225 births, there have been 57 perinatal deaths.

At 47.3 per thousand, this rate is high by today's standards; some factors have already been mentioned which in part explain, though they cannot justify, this rate. However, the study of this series and of the relevant literature which has been spread over a period of three years appears to have influenced the outcome during that time; in the last 200 cases there have only been three babies lost (15 per thousand). Chance will of course have played its part, as for instance in the fact that there have been no multiple births in that time, but the numbers would seem sufficiently large to justify a claim that chance has not been the only relevant factor. In all three the birth was in hospital; one baby was anencephalic; one was a stillborn premature baby in a mother with severe antepartum haemorrhage due to central placenta praevia; and the third was a stillborn premature in a mother with severe toxæmia for whom antenatal care had only been provided early in her pregnancy and before complications arose.

'Medical-aid' cases produced a high rate of loss as might be expected; 14 babies died, half of them being born in hospital and the remainder at home because labour was already too far advanced for transfer (if it would have been appropriate). Among the booked cases, 11 had been transferred to hospital care during pregnancy, while the foetus was living. In nine cases with complications arising during pregnancy, responsibility was shared with a consultant obstetrician; among these three births took place at home and three in the maternity home. In four, gestation was only just about 28 weeks and there was some doubt as to whether they should have been included.

Prematurity was responsible for the foetal loss in 16 cases; congenital anomalies in 17, A.P.H. (8), prolapsed cord (4), toxæmia (4), birth trauma (4), pneumonia in the newborn (2), atelectasis (1), and erythroblastosis (1) (total 57).

All the cases have been carefully reviewed to assess whether the outcome might have been different. In 29 cases it would appear that there was little hope of survival; in seven the mother's own negligence was the main determining factor; in ten a better doctor might have achieved a more satisfactory result; in four cases the midwife was at fault; and in four it seemed that the hospital might have done better.

Premature births

Prematurity is one of the major problems in obstetrics today. In this series 66 babies in 58 confinements are recorded as premature

(5½ lb. or less; births premature by date but above the critical weight are not included). There is the anomaly that in five sets of twins, one was premature and the other not.

The premature birth rate for the whole series is 5.4 per cent; this is appreciably lower than the rate for England and Wales in 1959 which was 7.7 per cent. The perinatal mortality among the premature babies was 33. At 50 per cent this compares favourably with the rate of 61.7 per cent given by Crosse (1957) for Birmingham. To offset this, only 73.3 per cent of the live-born premature babies survived the first month compared with 86 per cent for England and Wales. Of the 33 lost around birth, 17 weighed 2½ lb. or less; only three of these were born alive. Of 58 labours yielding premature babies, seven were in 'medical-aid' cases; in these only two babies survived out of nine. Thirty premature babies were born at home, mostly in earlier years, with 14 perinatal deaths. Latterly, every effort was made to avoid premature births at home.

Congenital anomalies

Congenital malformations are recorded in 32 cases. Fifteen of these had defects of the central nervous system; only one of them is surviving; she is a child with spina bifida, a lumbar meningocele which was successfully closed and a unilateral 'flail leg'. Six were stillborn, four died in the first week, and four later.

Four cases had a cardiac anomaly, and only one of these, with a minor defect is surviving. Among the remaining, less severe and non-lethal conditions, there is one instance of a metabolic defect, a baby with galactosaemia and two were of interest because of heredity. In the case of one baby with a cystic lung, it was found that the mother had the same condition; and one little boy with syndactyly and polydactyly is in the sixth recorded generation with the defect in his family. Five previous generations were recorded by Manson (1915).

Asphyxia neonatorum

Troublesome asphyxia at birth has been encountered on a number of occasions but the fact has not always been recorded. In two cases where a mother towards the end of her labour had been left by the midwife, the baby, in the absence of any skilled attention, did not survive. Apart from these, no baby was lost from asphyxia alone, but only where it was secondary to intracranial damage.

Various methods of artificial respiration and resuscitation have been employed, but without doubt the most reliable has been

mouth-to-mouth respiration; this has revived several babies. It enjoys the support of Crosse (1957) and other authorities.

Idiopathic epilepsy has been recorded in three babies. In two of these there was a clear history of temporary asphyxia at birth.

In one, the midwife allowed the baby's head to remain much too long on the perineum (without informing the doctor) in order to avoid a tear. A timely episiotomy would probably have prevented cerebral damage. In another, the patient was left by the midwife towards the end of labour; the baby was born before she returned and was only revived with great difficulty. In the third case there was no asphyxia at birth and the epilepsy did not appear until after an operation for congenital pyloric stenosis. It is possible that there may have been anoxia at some time during the anaesthetic for this operation.

In considering the damage which may result from anoxia in the baby at birth, we can ill afford to forget the lessons which were taught over a century ago by Little (1862) and Kennedy (1836); the central nervous system is most vulnerable at the moment of birth when the major switch over from foetal to neonatal circulation is taking place.

Summary

This survey, based on a detailed analysis of results in the obstetric practice of one family doctor over a period of 14 years has yielded much information; not all of it flattering. At times it would appear that enthusiasm has outstripped skill and good judgment. An endeavour has been made to report objectively all that the records show, in the hope that others too may derive some benefit from the exercise.

On the credit side, it can be claimed that the practice was well organized; this has facilitated antenatal care especially in making it easy to spot and deal with defaulters who form a notoriously high-risk group. Toxaemia must always give cause for anxiety, but it need not be a problem whose management is beyond the skill of the general practitioner; in fact, reports from quite a number of doctors now go to show that they have much to offer in the handling of this problem. Anaemia is another hazard calling for constant vigilance; with direct access to a laboratory it need present no insuperable difficulties. When anaemia becomes a rare occurrence, as it should be, the haemorrhages of pregnancy lose much of their terror; they must never be treated lightly, however, since in this context problem very quickly becomes emergency.

Results in breech presentation have sometimes been disappointing in the past, but in recent years with better facilities for delivery, they have improved. Induction of labour has frequently been resorted to;

no serious ill effects have accrued, but it is a procedure which must be watched carefully lest abuse should arise (Wrigley, 1962). Careful perineal repair repays the time spent because it is good preventive medicine and spares much gynaecological disorder in future years. Morbidity following delivery both for mother and baby has for the most part been little and mild.

Incidence of premature birth has been below the national average but foetal loss among those infants has been high. Overall the perinatal mortality has been high and in quite a number of cases foetal loss might have been avoided. Certain factors have been adduced which tended to increase this rate, especially in the earlier years, although they do not exculpate. It is gratifying to be able to report a marked improvement in foetal survival over the last couple of hundred cases; any satisfaction however is offset by the fact that a maternal death has occurred.

Analysis of these cases and a study of the literature which has been combined with it over the past three years, has given much insight into factors and motives which are operating within this practice and in obstetrics throughout general practice. It would appear that there is still an important role for the family doctor to play in this sphere, providing he takes trouble to know what he is and should be doing, to organize his practice efficiently, and to know the rules which he must keep if mothers and their babies are to remain safe in his care.

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Value of the general practitioner's letter. R. DE ALARCON and MARK J. HODSON. *Brit. med. J.* 1964. **2**, 435.

This paper falls into two parts. In the first, the replies of a number of consultants on their impressions of, and requirements from, general practitioners' letters of referral are analysed. Forty-five per cent did not find general practitioners' letters satisfactory, and the commonest fault was failure to mention drugs and treatment the patient was having. In the second part an analysis of some 500 letters from general practitioners shows that there is substance in this criticism, as only 22 per cent of general practitioners mentioned previous treatment. Really 'bad' letters of the 'please see and treat' variety were extremely rare. An interesting side-light on this study in medical communications is that only thirty-eight of the seventy specialists approached replied to the authors' questionnaire.