

THE POSITION OF GENERAL PRACTITIONER MIDWIFERY.*

By W. HAMILTON, M.C., M.B., Ch.B.

It is my privilege to-night to submit a paper entitled "The Position of General Practitioner Midwifery," and it is my desire in doing so to place on record the conditions under which general practitioner midwifery is carried out, to give some account of its results, and to assess the part it is at present playing and should play in future in the midwifery practice of Scotland.

The problems of maternal mortality and morbidity are constantly and increasingly under discussion, and I do not think that general practitioners either as individuals or as an organised body are making an adequate contribution to that discussion. This is an unfortunate fact in view of the belief fairly widely diffused in certain sections of the profession and of the educated public, that the general practitioner through negligence or incompetence is responsible for a large proportion of maternal mortality and morbidity. While preparing this paper I read books on Maternal Mortality and Morbidity by Dr Henry Jellett and Prof. Munro Kerr. The main conclusion reached by both these obstetricians appeared to be, that a large part of the problem of maternal mortality and morbidity would be solved, if only the general practitioner could be eliminated from the practice of midwifery.

Obstetrical data in great quantity are available from the side of hospital midwifery, but very little information is available in regard to the midwifery of general practice. The activities of the general practitioner are very varied, and amidst the strains and stresses of his life the keeping of records is no easy matter. Further, to amass any considerable volume of data takes a large part of a professional lifetime. I personally, however, am able to draw data from a partnership practice in a district where approximately 97 per cent. of the midwifery cases are attended by doctors and about 3 per cent. go to maternity hospitals for social reasons. There are no midwives' cases. I am able therefore to present a true sample of Scottish

* Read at a Meeting of the Edinburgh Obstetrical Society, 10th January 1934.

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midwifery practice. The death-rate in my series was 6.5 per 1000, which corresponds very closely to the general Scottish death-rate of 6.3 in 1932. The cases analysed are 1409 confinements after the seventh month attended between May 1919 and September 1933—in the first six years by myself as a junior partner and in the last nine years by myself, my partner Dr Gunn, and occasional assistants.

Nature of Nursing Assistance.—A negligible proportion of the cases have been attended in nursing homes or with a private nurse in the patient's home. In perhaps 20 per cent. the doctor has had the help of a district nurse. In the great majority of cases the doctor has had the assistance of untrained handywomen of very varying capacity. In 5 to 10 per cent. of cases no assistance has been available save that of a wholly inexperienced female relative.

The Economic Basis.—Midwifery is at once the most onerous and the most poorly paid work of the general practitioner. In my own case with a normal working class fee of £1, 10s. the net return is less than 5s. The normal fee in the industrial counties is £1, 1s., with an extra of 5s. for anæsthesia, but I know practices where the fee is 15s. or 10s. It is obvious that a considerable part of the general practitioner midwifery of Scotland is being carried out on a basis which leaves the practitioner actually out of pocket. The position is becoming worse in respect that the range and quality of service are improving while the fee does not alter. This is recognised by Dr Jellett, who says "public opinion is compelling him to add the additional burden of antenatal care without, I fancy, an additional fee."¹ Opinions no doubt vary as to what provision is necessary for a woman during pregnancy, labour and the puerperium, but even the modest standard, which I as a general practitioner would ask for, is economically impossible for a considerable proportion of the working class population.

Services Actually Rendered.—A large proportion of pregnant women are seen from an early date in pregnancy. This is specially true of primigravidæ. There are few pregnant women who do not require treatment for minor ailments at some stage of pregnancy. Examination of urine is carried out from the sixth or seventh month—if necessary, at very frequent intervals. Pelvic examination is made at 7½ or 8 months. No pelvimetry is practised.

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In the earlier years many pregnant women scoffed at the idea of antenatal supervision and the mere suggestion of vaginal examination was violently resented. Now as the result of persistent effort antenatal care is welcomed by the great majority of women. In 1933, well over 90 per cent. of women had adequate antenatal supervision. Antenatal care is a very interesting part of the work of general practice. A great deal can be done to prevent or diminish illness during pregnancy. In a proportion of cases steps can be taken which will result in easier labour. I am, however, definitely of opinion that the most adequate antenatal supervision will only contribute in a very slight degree to the reduction of maternal mortality.

The doctor is called to every case but not usually till late in labour. Approximately 22 per cent. of primigravidæ and 33 per cent. of multiparæ are delivered before the doctor's arrival.

Miscellaneous duties have sometimes to be performed, e.g. catheterisation, attendance on cases of ophthalmia and even rousing and transporting a handywoman.

Some Points in Technique—Anæsthesia.—Every woman practically without exception gets chloroform whether delivery is spontaneous or operative. Except in a few cases where difficulty is anticipated the accoucheur also gives the anæsthetic.

Twilight sleep in the form of heroin and hyoscine is used to a considerable extent in the case of primigravidæ but only rarely in the case of multiparæ.

Pituitrin has been a very great boon. It is used in fully one-third of all cases but more in the case of multiparæ (42 per cent.) than of primigravidæ (34 per cent.). It is given in small doses especially in the case of primigravidæ. I have never seen any bad consequences. Amongst the advantages are that it permits a more free use of anæsthesia without compelling recourse to delivery by forceps, that it diminishes the forceps rate amongst multiparæ, and that it secures early expulsion of the placenta. In delay in the third stage an injection of pituitrin has nearly invariably effected a rapid expulsion of the placenta. In 1409 confinements only on three occasions has manual removal of the placenta been required. Pituitrin has also been used as a means of inducing premature labour and with a fair measure of success.

Antiseptics.—Lysol alone is used. Perchloride and biniodide of mercury are not safe under the conditions of domiciliary practice and in any case are unnecessary. If lysol is valueless

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as is sometimes stated on experimental grounds, my inference is that any antiseptic other than soap and water is unnecessary.

Dressings.—A 1 lb. roll of cotton wool is usually provided. At the best one can personally remove it from its wrappings. Often it has been exposed on a dirty table. The only possible approximation to sterilising it is to immerse it in a solution of lysol.

Gloves.—It is nearly impossible to use gloves. The practitioner has to act as accoucheur and anæsthetist and sometimes also as nurse. He personally has to clean and sterilise and dry the gloves.

Preparation of the Parturient Woman.—No shaving of the vulva has ever been carried out. The perineum before examination or delivery is sponged with swabs and lysol solution. At the onset of labour castor oil is administered. Enemas are scarcely ever given, even when a nurse or midwife is in attendance.

Examination of the Parturient Woman.—A vaginal examination is always made, unless delivery is obviously at hand. Examination per rectum is undesirable and even dangerous in the conditions of domiciliary practice.

Forceps Delivery.—The forceps are sterilised after use. They are then wrapped in a towel that is clean in a domestic, but not in a surgical sense. They are placed in a surgically clean steriliser and before use are immersed for ten minutes in a strong solution of lysol in boiling water. My partner sterilises his forceps by boiling them immediately before use.

Patient's Bedding.—At the best one gets in domiciliary midwifery a bed that is thoroughly clean domestically, a clean mackintosh, and a large square of clean but unsterilised gamgee. In the majority of cases there is a reasonably clean bed with mackintosh and a clean half or quarter sheet. In a large proportion of cases the patient is lying on brown paper or newspaper, which may or may not be clean. In a small proportion of cases conditions as regards cleanliness are extremely bad.

General Survey of Technique.—I have given you a brief sketch of the conditions under which the midwifery of general practice is carried on. I have also given a brief indication of the methods used. The methods used are the resultant of various factors—the standards and energies of the practitioner, the nursing assistance available, and what is economically and

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domestically practicable. Methods, which may seem inadequate from the point of view of hospital midwifery, nevertheless may be the result of strenuous and persevering effort on the part of the practitioner. If the results of domiciliary midwifery compare unfavourably with those of hospital midwifery, the inevitable technical deficiencies of domiciliary midwifery may be the responsible factor. If, on the other hand, the results compare favourably, then it would appear that the technique of hospital midwifery is unnecessarily elaborate, and that there is no positive correlation between elaborate technique and the prevention of maternal morbidity.

Report on 1409 Consecutive Cases of Midwifery from 1919 to 1933.—For the sake of brevity and clearness I have embodied the facts in a series of tables which I am able to present in the form of slides.

Table I. shows the relative incidence of various emergencies of practice. Three thousand patients per doctor is quite a common number in the Scottish industrial counties. Private patients, insured patients and their dependents, and all other classes of patients are included.

TABLE I.

Obstetrics contrasted with Emergencies in General Practice.

Period 1925-1933. Estimated population 6500.

Type of Case.	Number.	Deaths.
Perforated peptic ulcer and operation	15	1
Acute appendicitis and operation	116	6
Diphtheria (proved cases only)	75	4
Abortions	81	1
Confinements	1079	7

Table II. shows visits paid to obstetrical cases. Attendances at the doctor's surgery and visits paid by the doctor prior to the eighth month are not included. The number of antenatal visits is still rising.

TABLE II.

Attendance given to Obstetric Cases.

Based on 588 consecutive cases 1926-1930.

Visits per patient during eighth and ninth months	3.6
Visits on day of confinement	1.8
Visits during first month after delivery	7.0
Total visits per patient	<u>12.4</u>

Table III. shows how ascertained pregnancies terminated. We are familiar with the varying estimates of the proportion of abortions to pregnancies and live births.

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TABLE III.

Termination of Pregnancies, 1925-1933.

Therapeutic abortion	2	(in 1 case 1 twin only was lost).						
Abortion	81	(including one or two cases of fleshy mole).						
Hydatidiform mole	1							
Ectopic gestation	2							
After seventh month	1079	<table style="display: inline-table; vertical-align: middle; border-left: 1px solid black; border-right: 1px solid black; border-collapse: collapse;"> <tr> <td style="padding: 0 5px;">monsters</td> <td style="padding: 0 5px;">4</td> </tr> <tr> <td style="padding: 0 5px;">still-births</td> <td style="padding: 0 5px;">30</td> </tr> <tr> <td style="padding: 0 5px;">live births</td> <td style="padding: 0 5px;">1066</td> </tr> </table>	monsters	4	still-births	30	live births	1066
monsters	4							
still-births	30							
live births	1066							
Total pregnancies	1164	live births 1066						
Abortions = 7 per cent. of pregnancies.								
" = 7.6 per cent. of live births.								

These figures, I believe, represent the existing position with nearly complete accuracy. In my district venereal disease is rare. Attempts to induce abortion instrumentally are unknown. No doubt pills which are alleged to have an abortifacient action are sometimes used.

Table IV. shows the method of delivery of 1434 fetuses. Almost exactly 17 per cent. were delivered operatively.

TABLE IV.

Domiciliary Operations in 1409 Confinements, 1919-1933, and Nature of Delivery.

Presentation or Position.	Number.	Spont.	Forceps.	Version.	Extract.
Occipito-anterior	1288	1094	193	3 (a)	...
Persistent occipito-posterior (c)	38	14	24	2 (a)	...
Breech	40	22	1 (b)	...	17
Face	1	1	...	...	...
Transverse	1	1 (b)	...	...	...
Twins (46 children)	23	39	4	1	2
Monsters	4	4	...	...	...
Complicated cases in hospital	1395	1175	222	6	19
	14				
	1409				

(a) Twice after forceps failed.

(b) After antenatal rectification.

(c) The term persistent occipito-posterior is here used to include all cases born in that position whether spontaneously or operatively. and also those cases which were rotated manually and delivered by forceps. Cases originally occipito-posterior, in which forward rotation had begun before the application of forceps, were classed as occipito-anterior cases.

Table V. shows the operations required in cases sent to hospital.

TABLE V.

Maternity Hospital Operations in 1409 Confinements.

Cæsarean section	5	<table style="display: inline-table; vertical-align: middle; border-left: 1px solid black; border-right: 1px solid black; border-collapse: collapse;"> <tr> <td style="padding: 0 5px;">contracted pelvis</td> <td style="padding: 0 5px;">1</td> </tr> <tr> <td style="padding: 0 5px;">complications</td> <td style="padding: 0 5px;">4</td> </tr> </table>	contracted pelvis	1	complications	4
contracted pelvis	1					
complications	4					
Craniotomy	1	(after failure with forceps)				
Forceps	2					

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Table VI. shows the incidence of laceration in the confinements of primigravidæ. The figures indicate the high incidence of operative delivery in persistent occipito-posterior cases and breech cases and the higher incidence of laceration.

TABLE VI.
Injury to Mothers during Labour (Primigravidæ).

	Number.	Percentage of Total.	Percentage Unlacerated.	Percentage Severe Laceration.
Occipito-anterior	333	...	...	...
delivery spontaneous	223	67	54	0.4
low forceps	69	33	45	2.7
mid forceps	41			
high forceps	0			
Persistent occipito-posterior	17	...	...	...
delivery spontaneous	2	12	0	0.0
low forceps	7	88	20	6.7
mid forceps	7			
high forceps	1			
Breech.	14	...	...	...
spontaneous	8	57	50	0.0
extraction.	6	43	0	67.0

TABLE VII.
Injury to Mothers during Labour (Multiparæ).

	Number.	Percentage of Total.	Percentage Unlacerated.	Percentage Severe Laceration.
Occipito-anterior	955	...	...	...
delivery spontaneous	872	91.3	77.2	0
low forceps	43	8.7	79.5	1.2 †
mid forceps	29			
high forceps	11			
Persistent occipito-posterior	21	...	...	...
delivery spontaneous	12	57.0	83.0	0
low forceps	5	43.0	89.0	0
mid forceps	3			
high forceps	1			
Breech.	26	...	...	...
spontaneous	14	54.0	64.0	0
extraction.	12*	46.0	50.0	0

* One mid forceps case.

† One case complete tear of perineum at second confinement after complete tear at first confinement.

Table VII. shows the results in the case of multiparæ. There is a lower incidence of operative delivery. Laceration

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is much less frequent than in the case of primigravidæ. Severe laceration did not occur save in one exceptional case.

Table VIII. shows result of delivery to the fœtus. Cases delivered in hospital are included.

TABLE VIII.

Results to the Fœtus (including hospital cases) in 1409 Confinements.

Single pregnancies	1384
Twin pregnancies (25)	50
Total	— 1434
Anencephalic monsters	4
Antenatal deaths	27
Intranatal deaths—	
Prolapse of cord	5
Dystocia, O.A. spontaneous	1
" " forceps	3
" O.P. forceps	3
" breech, extraction	2
Breech (no skilled attendance)	2
Unexplained	2
	— 18
	— 49
	<hr style="width: 10%; margin-left: auto; margin-right: 0;"/>
Babies born alive	<u>1385</u>

Table IX. shows amount and principal causes of neonatal death.

TABLE IX.

Children surviving Neonatal Period.

Live births in 1409 confinements	1385
Neonatal deaths—	
Spina bifida	5
Other deformities	2
	— 7
Prematurity (twins, 8)	19
Unexplained at full time—	
After spontaneous birth	5
Forceps delivery	6
Miscellaneous	3
	— 40
	<hr style="width: 10%; margin-left: auto; margin-right: 0;"/>
Children surviving neonatal period	<u>1345</u>

Table X. presents an analysis of risks to the fœtus by parity and presentation or position. The greater danger of

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persistent occipito-posterior positions and breech presentations is obvious.

TABLE X.
Risks of Delivery to Children.

Presentation and Parity.	Cases.	Deaths.	Percentage of Deaths.
Occipito-anterior—			
primigravidæ	333	12	3·6
multiparæ	955	6	0·63
Persistent occipito-posterior—			
primigravidæ	17	4	23·5
multiparæ	21	1	5·0
Breech—			
primigravidæ	14	2 *	14·3
multiparæ	26	3 *	11·3

* Including in each case a child lost through absence of doctor or nurse.

Note.—All intranatal deaths are included and all neonatal deaths actually or possibly due to dystocia.

Tables XI. and XII. show the distribution of puerperal pyrexia in the principal groups of cases. As regards occipito-anterior cases it is clear that there have been fewer cases of puerperal pyrexia amongst the cases delivered instrumentally than in those delivered spontaneously, and amongst the cases with varying degrees of laceration than in those which escaped laceration altogether.

TABLE XI.
Puerperal Infection analysed by Parity, Presentation and Nature of Delivery.

	Spon- taneous.	Pyrexia.	Per cent.	Opera- tive.	Pyrexia.	Per cent.
Occipito-anterior, prim. . .	223	9	4·0	110	2	1·8
" mult.	872	20	2·3	83	0	0·0
Total	1095	29	2·7	193	2	1·0
Occipito-posterior, prim. . .	2	0	0·0	15	3	20·0
" mult.	12	0	0·0	9	1	11·1
Total	14	0	0·0	24	4	16·7
Breech, prim.	8	0	0·0	6	5	83·3
" mult.	14	0	0·0	12	1	8·3
Total	22	0	0·0	18	6	33·3

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TABLE XII.

Puerperal Pyrexia analysed by Parity, Presentation and Laceration.

	Unlacer- ated.	Pyrexia.	Per cent.	Lacer- ated.	Pyrexia.	Per cent.
Occipito-anterior, prim.	171	12	7.0	162	5	3.1
" mult.	739	13	1.8	216	1	0.46
Total	910	25	2.7	378	6	1.6
Occipito-posterior, prim.	5	0	0.0	12	3	25.0
" mult.	18	1	5.6	3	0	0.0
Total	23	1	4.3	15	3	20.0
Breech, prim.	4	0	0.0	10	5	50.0
" mult.	15	1	6.7	11	0	0.0
Total	19	1	5.3	21	5	23.8

These facts are difficult to explain and are certainly contrary to what one would expect. The figures are sufficiently numerous to exclude the possibility, that inadequacy of the data is responsible. In the case of persistent occipito-posterior positions and breech presentations, the risk of infection is obviously greater in the operative deliveries and where there has been some degree of laceration. In these two groups, however, as contrasted with occipito-anterior cases operative delivery is a more severe and protracted process later in labour and the degree of laceration is distinctly greater.

Table XIII. shows for all spontaneous and operative deliveries the incidence of puerperal pyrexia and of puerperal fever of varying degrees of severity. While there is a higher percentage of infections amongst the operative than amongst the spontaneous cases, yet severe infections occurred largely and fatal infections entirely amongst spontaneously delivered cases.

TABLE XIII.

All Cases of Fever in Puerperium.

	Spontaneous.	Operative.
Number of cases	1155	240
Pyrexia (non-puerperal)	5	0
Puerperal pyrexia	12	8
Puerperal fever, slight	5	4
" severe	3	1
" fatal	5	0
All cases of fever in puerperium	30	13
Morbidity rate per cent.	2.6	5.4

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In domiciliary midwifery it is impossible to have the temperature of the puerperal woman ascertained as often and as systematically as in hospital practice. The handywoman does not possess and probably cannot use a thermometer. The doctor does not attend twice daily save in abnormal cases. My own practice is to take the temperature only if the patient has a rapid pulse or appears less well than normal. The more serious cases are of course under closer observation than the others. In estimating the incidence of pyrexia during the puerperium, cases of mastitis alone have been excluded. All other cases occurring during the first month of the puerperium have been included. All cases where the temperature has reached 100° on two occasions have been included, some where a high temperature has been recorded only on a single occasion, and all cases of phlegmasia, although some of these were apyretic.

Table XIV. shows all maternal deaths occurring in and referable to this series of cases.

TABLE XIV.

Obstetrical Deaths in 1409 Cases.

Puerperal infection—	Deaths.
in 1155 spontaneous deliveries at home	5
„ 240 operative „	0
„ 14 spontaneous and operative deliveries in hospital	0
after incomplete abortion	1
	— 6
Eclampsia	2
Ante- and post-partum hæmorrhage	1
	—
Total deaths	9

Death-rate per 1000 live births (live births, 1385)—Puerperal infection, 4.3; other causes, 2.2—total, 6.5.

Puerperal Pyrexia and Puerperal Fever.—The factors in the production of puerperal sepsis are grouped under the heads of contagion, trauma and auto-infection. This is necessary for the purpose of analysis, but it is probable that as a general rule more than one of these factors has operated. I infer, however, purely on clinical grounds, that over and above the three factors mentioned the factor of the resistance of the individual woman to infection is of the very greatest importance.

Dr James Young,² in a very valuable paper read to this Society on 9th May 1928, analysed the influence of the factors of

contagion, trauma and auto-infection, and reached the conclusion that trauma is the most important cause, contagion a secondary cause, and autogenous infection a minor cause of fatal sepsis. His conclusions are based upon an analysis of a great mass of data derived from institutional indoor and outdoor records. I think his conclusions represent the average opinion of specialist obstetricians, and particularly so in regard to the very minor importance of autogenous infection.

Trauma and Infection.—In this series of cases minor degrees of laceration played no part in the causation of infection. In 1409 cases there were 7 cases of complete rupture of the perineum and 3 of severe vaginal tearing. Of these 10 cases 1 was a moderate case of puerperal fever and only 1 other had a slight but notifiable pyrexia. Of 5 fatal cases of septicæmia following childbirth all had been spontaneously delivered without laceration.

Contagion and Infection.—In the 43 cases of puerperal pyrexia which occurred, only on three occasions did febrile cases attended by the same doctor occur within a week of each other. Of 5 fatal cases 3 had been examined vaginally during labour, one had had delivery of membranes assisted by fingers in the vagina, and one had had no intravaginal manipulation at all.

Autogenous Infection—Individual Factors.—Two of the fatal cases were very cachectic women. One—a stranger to me—had taken no steps to obtain assistance during pregnancy; the other, who was well known to me, had concealed her pregnancy because she was underfed and in poverty. I arrived immediately after delivery in both cases and in both gave a serious prognosis from the beginning. The other three cases occurred in thoroughly healthy women. Two women figured twice each on my list of puerperal infections. One woman, who figured once, had a history of puerperal pyrexia at a previous confinement in another district. One woman, who had her perineum completely ruptured on two occasions, and who healed perfectly on each occasion without pyrexia, at a subsequent confinement developed a mild puerperal septicæmia following a forceps delivery without any laceration.

Puerperal Infection in General Practice.—Contagion is rarely a factor. It is limited by the separation of the general practitioner's cases in space and time. There is no evidence that minor degrees of trauma are a factor in causing puerperal

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infection. In regard to major degrees of trauma the evidence points only to these being contributory and not causative factors. It is difficult to attach importance to digital introduction of infection. In operative deliveries the chance of carrying in infection must be fifty or one hundred times greater than where there is a simple vaginal examination, yet in my series of cases deaths from puerperal infection have been confined to cases spontaneously delivered without laceration and sometimes without previous vaginal examination.

In some cases the cachectic condition of the patient was obviously a contributory cause. One patient had phlegmasia after a spontaneous second confinement, when her health was poor; she had a normal puerperium after her third delivery, which was a difficult forceps case, and died of puerperal infection following a spontaneous fourth delivery when she was in a cachectic condition.

From my experience in general practice I am compelled to conclude that factors depending on the woman herself are the chief factors in causing or permitting the occurrence of puerperal infection. I am forced also to the conclusion that under the conditions of general practice an elaborate technique is by no means an absolute pre-requisite for the safe performance of operative midwifery.

Cases needing Treatment in Hospital.—The British Medical Association estimate³ is that 3 to 5 per cent. of women required hospital treatment during pregnancy or in labour. Most obstetricians consider this far too low. Professor Munro Kerr estimates for the population of densely industrialised areas that 6 to 8 per cent. require hospital treatment during pregnancy and 8 to 12 per cent. in labour—a total of 14 to 20 per cent.

Our experience in 1409 cases was:—

	Per cent.	
Antenatal cases admitted . . .	17 or 1·2	} 3·6 per cent.
Intranatal cases admitted . . .	34 or 2·4	
Puerperal cases admitted . . .	19 or 1·3	
Total cases admitted . . .	<u>70</u> or <u>5·0</u>	

These figures are low yet they are absolutely complete, for cases admitted to all types of hospital are included. For example, the antenatal admissions included cases of appendicitis

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operated on in surgical wards, cases treated operatively in gynecological wards for displacements and other miscellaneous cases. While the puerperal cases included one or two cases of syphilis, which were sent to special hospitals as soon as convalescence from labour was complete. I think our figures are of interest in view of the fact that this series of cases is a true sample of childbearing women.

The Failed Forceps Case.—This type of case figures largely in assessments of general practitioner midwifery. Professor Munro Kerr analyses 214 cases received into the Maternity Hospitals of seven British cities in 1931. The maternal mortality rate was 12 per cent.

In 1409 cases there have been 10 failed forceps cases. Four of these were delivered by version with two living children and two dead—the latter in persistent occipito-posterior cases in primigravidæ, where first forceps and then manual rotation and forceps had been tried. The remaining six were sent to hospital, where one was delivered by craniotomy, one by forceps, two spontaneously, and two either spontaneously or by forceps. There was no maternal mortality or notifiable morbidity. Most of the hospital cases were home on the ninth day and none later than the eleventh. The mortality and morbidity recorded in failed forceps cases must frequently be the result of very bad practice. My experience proves that if the cervix be fully dilated, forceps delivery can be attempted with as little risk in cases where the attempt at delivery fails, as in the cases where the attempt at delivery succeeds.

Obviously in some of my cases failure could have been avoided by waiting longer. That, however, is being wise after the event. The small minority of cases in which the practitioner fails to deliver with forceps, are essentially similar to the majority which he delivers successfully. It is impossible to forecast exactly what degree of difficulty will be experienced. It is impossible to send to maternity hospitals all the cases which in the conditions of general practice are delivered by forceps. If there was an adequate supply of nursing assistance, a nurse might be left in charge of these cases till forceps delivery might be more easily possible at a later period. Unfortunately the practitioner has to do the best he can, usually without an anæsthetist and skilled nursing assistance.

(To be continued.)

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(Continued from p. 56.)

II. The Problem of Maternity Services in Scotland.

The Registrar-General for Scotland sums up the vital statistics of the country under the three main headings of:—

Large Burghs over 20,000. Small Burghs. Landward Areas.

The following table is part of his Table XXVII. in the Report for 1932.

	Births.	Death Rate per 1000 Births.		
		Puerperal Sepsis.	Other Puerperal Conditions.	All Puerperal Conditions.
Scotland	91,000	2·7	3·7	6·3
Landward	27,289	2·3	3·7	6·0
Small Burghs	12,477	1·8	3·4	5·3
Large Burghs	51,234	3·1	3·7	6·8
Edinburgh	6,960	2·2	3·2	5·3
Glasgow	22,732	3·6	4·3	7·9

These figures are corrected for transfers. They show that for 1932 pregnancy and childbirth were somewhat safer in the small burghs and in the landward areas than in the large burghs, and just as safe in the group of small burghs as in the city of Edinburgh.

The figures for 1931 also show that in the small burghs pregnancy and childbirth exact a smaller toll than in the large burghs. In the landward areas the death rate from sepsis was lower than in the large burghs, but the death rate from other causes was higher. Now I do not wish to stress these figures too highly, or to use them as proof of the correctness of any assertion; but I do suggest that they must be met by those who advocate the policy of eliminating the general practitioner from the practice of midwifery. Broadly speaking the rural areas, where midwifery is mostly carried out in the homes of the patients and by the family practitioner, have a lower maternal mortality rate than the large towns, where midwifery is carried out in great part in institutions and by midwives. This is true in spite of the lack of trained nursing assistance and deficiencies of equipment.

Maternity Hospitals.—Whatever views we hold as to the desirability of hospitalisation of maternity cases, we must recognise that it is economically impossible to provide hospital accommodation for all parturient women. There is no doubt that all cases of major complications and difficulty should be treated in hospital, but I think it is probable that normal cases and cases of minor difficulty can be more safely treated at home. This should become more definitely the case when the conditions of domiciliary midwifery are improved. It is quite clear that there is a greater risk of contagion in hospital practice. This is confirmed by the general attitude of specialist obstetricians to booked and emergency cases respectively.

It is unfortunate that the function of maternity hospitals relatively to the needs of the community is not more precisely defined. At present maternity hospitals are serving a double function. They are admitting women whose need is medical and obstetrical, but they are also admitting women whose need is merely a social one. The former are usually emergency and unbooked cases, the latter are usually booked cases. An unfortunate tendency has shown itself of recent years amongst the staffs of obstetrical hospitals to distinguish between these two types of cases. The emergency cases having been examined and perhaps treated outside are to be regarded as potential sources of infection. I very much doubt if the relative incidence of puerperal infection in the general practitioner's unselected cases and in the booked cases of maternity hospitals justifies this distinction. It is, I regret to say, stated explicitly and in italics in Professor Munro Kerr's book that "the expectant mothers, who intimate pregnancy early and put themselves to the trouble of attending an antenatal clinic deserve the greatest consideration."⁴ I do not understand how any general practitioner can fail to regard this view as being definitely anti-social. It means that cases sent in for definite obstetrical reasons by general practitioners are to receive less favourable treatment than the booked cases who have passed through the antenatal department of a maternity hospital or associated clinic and a large proportion of whom are presumably normal cases. In my opinion the duty of the maternity hospital is in the first place to those women whose need for admission is based on obstetric reasons, and in the second place and after a long interval to those whose need is merely a social one.

The Registered Midwife.—The handing over of the great bulk of midwifery practice to the registered midwife is to-day

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advocated nearly universally by specialist obstetricians. It is a counsel of despair—a despair that happily is unnecessary, because it is based on a wholly erroneous view of the results of general practitioner midwifery. Jellett, for instance, compares the maternal mortality rates of the British Empire with those of Holland and Scandinavia⁵ over series of several millions of births, and ascribes the much lower rate in Holland and Scandinavia to the fact that in these countries maternity practice is largely in the hands of midwives. The Report of the Departmental Committee of the Ministry of Health also refers to the part played by the midwife in the maternity practice of Holland.⁶ It is wholly unsafe to argue that what is apparently a successful type of practice in Holland would be equally successful in Scotland. The conditions are fundamentally different. There is not in Holland any parallel to the industrial concentration of population in the Clyde area, or to the sparseness and remoteness of rural populations in the Highland and even the Lowland counties. Those who advocate this policy seem to ignore almost every practical consideration.

In Scotland parturient women, as a matter of long tradition, expect to be protected against pain by the use of anæsthetics and against unduly protracted labour by the use of the obstetric forceps. If the practitioner is displaced in favour of the registered midwife, all that the latter can offer is indefinite waiting on spontaneous delivery without the relief afforded by hypnotics or anæsthetics. Is it reasonable to expect parturient women to accept the proposed change? I do not think so. It appears to me that there are theoretical grounds for believing that there is greater risk of infection through midwives than through doctors. A doctor looking after a population of 3000 people has at most 60 confinements per annum. After labour is over it is a very rare thing indeed for him to touch or examine the puerperal woman locally. On the other hand, the registered midwife of the Departmental Committee's dreams may be attending 200 cases per annum. If so she will on several days attend three or four actual births, and at the same time she will be attending several women in various stages of the puerperium. To my mind that type of practice is wholly indefensible, yet it is the ideal held out to us by obstetricians generally and in the report of the Departmental Committee (1924).⁷ Considerations of geography and population render it impossible that the registered midwife can ever be a foundation for the maternity services of Scotland.

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The Departmental Committee reporting in 1924 considered that 200 cases per annum were within the power of an active woman in the larger industrial areas. No figure is given for rural areas.⁷ Consider what 200 cases mean. They mean the whole maternity practice of a population of 10,000. Half the counties of Scotland do not have a town of that size. In 1932 three counties had less than 200 births and five had from 200 to 300. Can any of us imagine one midwife doing all the midwifery of a county or even of a town of 10,000 people? I do not think so.

Even if we turn to the cities we find that in Glasgow,⁸ in 1932, 201 midwives attended only an average of 39 cases each (live births only) and only 20 attended more than 100 cases. In Dundee⁹ the average cases per midwife were 53 and in Edinburgh¹⁰ 20.

The proportion of births attended by midwives in 1932 was in Edinburgh 4 per cent., Glasgow 35 per cent., Dundee 29 per cent., Aberdeen 19 per cent. The proportion of births attended by midwives acting independently is low and tends steadily to fall. This fact is regretted by the Medical Officers of Health of Glasgow and Dundee. In Glasgow the fall is ascribed to displacement of the registered midwife by district nurses acting under medical supervision. In Dundee it is ascribed to financial stringency. The part played by the independent midwife in the maternity services of Scotland is a relatively small one and is diminishing. There is the further fact that in a steadily increasing proportion of her cases does the midwife call in medical assistance. It is true not only for Scotland, but for England and Wales, and also for Holland.

Professor Munro Kerr,¹¹ reviewing the maternity service provided in England and Wales by the Queen's Institute of District Nursing, says: "Here we find the fatalities are steadily rising. . . . This, associated with a progressive rise in recent years in the call for assistance from doctors, is suggestive." Professor Munro Kerr does not say of what it is suggestive. It ought to suggest an incidental increase of serious complications. It is apparent from the content that Professor Munro Kerr thinks it is suggestive of failure on the part of the doctors. On the same page he quotes Fairbairn as saying "The steadily increasing rate of sending for the doctor shows no corresponding improvement in the maternal mortality rate." Is it to be expected that there should be an improvement in the maternal mortality rate, while the need for medical assistance is con-

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tinuing to increase amongst the cases undertaken by the nurses of the Queen's Institute of District Nursing? Professor Munro Kerr, commenting on the increased calls by midwives in Holland for medical assistance, says: "It will be interesting to note the effect on the death rate!"¹² This sentence is italicised and is provided with an exclamation mark. These quotations indicate what an extreme bias is exhibited by certain distinguished obstetricians in their attitude to general practitioner midwifery.

The proportion of all pregnant and parturient women who require not merely supervision but treatment for various complications usually of a minor nature but sometimes of a more serious nature, renders it desirable that the person responsible throughout should be a medical practitioner. It is not sufficient that a midwife or nurse however highly trained should have charge of the pregnant and parturient woman, subject only to an obligation to call for medical assistance when *she* thinks it necessary. I have no objection to leaving cases in labour to a nurse, but it ought to be done solely when in the *doctor's* judgment it is permissible in the interests of the parturient woman. The distinction is vital.

In Scotland to-day the position as between doctor and midwife is as follows. Parturient women want to be attended by doctors; nurses and midwives are to an increasing extent assisting doctors instead of taking independent charge; midwives in their diminishing number of independent cases are calling for medical assistance in an increasing proportion; the family practitioner is as willing as ever to practise midwifery. All these tendencies are converging in one direction. On the other hand, independent practice by midwives is advocated only by specialist obstetricians, medical officers of health, and members of departmental committees, none of whom have had any intimate experience of family practice and domiciliary midwifery.

The General Practitioner.—In my opinion the general practitioner is in a better position than any other agency to supervise and treat the child-bearing woman from conception till the end of the puerperium. He can give continuity of service as no other agency can. In maternity hospital practice one officer may make the antenatal examinations, whilst another may be in charge of the confinements. Municipal clinics may provide antenatal supervision, but the woman in labour has to make her own arrangements for getting help at her confinement.

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Publications of the Department of Health, of the Ministry of Health, and articles by leading obstetricians usually convey the view that the general practitioner is largely responsible for maternal morbidity and mortality. At the best only the most cursory notice is taken of the limitations under which he has to work. Suggestions are made for the improvement of the medical services of the country, but no suggestion is made for the improvement of the conditions under which the general practitioner works. Yet his work is compared with that of agencies, where such questions as economic difficulties, lack of nursing assistance, pressure of time and personal fatigue do not enter.

In spite of all these extrinsic difficulties the results of general practitioner midwifery are good. The great reduction of general practitioner midwifery in certain areas has not resulted in a progressive fall of maternal mortality in these areas, nor has it procured for these areas a lower maternal mortality rate than that of areas where general practitioner midwifery still predominates. The general practitioner is doing good work and with proper support from the community, the Department of Health and the Public Health authorities could do better work still, but as a result of ignorance and prejudice that support has been refused and continues to be refused.

Nursing Assistance for the General Practitioner.—In my opinion the practitioner should have the assistance of a trained nurse in every case. So far as the working class population is concerned, trained nursing assistance can only be obtained from nurses of the Queen Victoria Jubilee Institute of District Nursing. These nurses are drawn from a different class than the registered midwives and have the very great advantage of a general training. The nurse should do general nursing as well as midwifery. In many districts population and resources are so small that only one nurse would be needed. Even if a district can maintain two or more nurses, each should be doing maternity nursing. The only exception is where a nurse is attending septic cases. In such a case in one-nurse areas an additional nurse should be sent from county headquarters. There should be one district nurse to less than 2000 of population. Thus no district nurse would attend 40 confinements per annum. This with her other work would be possible. The district nurse must have adequate time to spend with the parturient woman, especially if the latter is a primigravida, for in these cases the need for moral support is very great. The substitution of the district nurse midwife for the handywoman

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or bona fide registered midwife will only be effected with difficulty and by making payment of maternity benefit conditional on attendance at the confinement by the district nurse.

The Future of General Practitioner Midwifery.—General practitioner midwifery is in no danger of dying out entirely even in the cities, but in the less populous areas it will continue to flourish because there is no possible alternative. It is the duty of all of us to make it as effective as possible. I have stressed the need for adequate nursing assistance, and merely mention in passing the need for provision of dressings, equipment, facilities for sterilisation, etc., but the essential thing is that the services of a family practitioner should be made available on an economically practicable basis to every pregnant and parturient woman, if she wishes. The principle of National Health Insurance is established in the life of nearly every civilised nation. In this country it applies only to manual workers and other workers below an income level of £250. No provision is made for dependants, but the inclusion of dependants has been frequently advocated, *e.g.* by the Scottish Conference of Insurance Committees. If such provision were made, antenatal supervision could be one of the stipulated benefits.

Under Public Medical Service schemes and Colliery and Public Works Medical schemes organised for the benefit of workmen's dependants many of us are giving antenatal supervision now. There is publicity for antenatal clinics of local authorities and for the antenatal departments of maternity hospitals. There is no corresponding publicity for general practice, and consequently the erroneous idea becomes prevalent that there is something wonderful in antenatal practice and that it is beyond the scope of the general practitioner.

In 1694 Hugh Chamberlen the Elder published a medical work entitled *A Few Queries relating to the Practice of Physick, etc.*, says Dr Herbert Spencer in his *History of British Midwifery*,¹³ at the end of which he brings forward a health insurance scheme for all—rich as well as poor—the insured to be attended by approved skilful physicians and surgeons and furnished with necessary medicines in all diseases except the pox, midwifery and cutting for the stone; for the “last three calamities” a small additional allowance may be settled—the reason in the case of midwifery being that “deliveries require mighty pains and unreasonable hours.”

I suppose it is true to say that the results of midwifery practice are at least as good now as they have ever been. They

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are far from being as good as we all desire. The Golden Age of Midwifery is still in the fairly remote future, but there will be no Golden Age unless the general practitioner is an active participant.

REFERENCES.—¹ Jellett, *Maternal Mortality and Morbidity*, p. 15. ² Young, *Edin. Med. Journ.*, September 1928, p. 138. ³ *Brit. Med. Journ.* (Supp.), 26th June 1929, p. 260. ⁴ Munro Kerr, *Maternal Mortality and Morbidity*, p. 270. ⁵ Jellett, *Maternal Mortality and Morbidity*, p. 21. ⁶ Ministry of Health Depart. Comm. Report, 1932, chap. v. ⁷ Department of Health Depart. Comm. Report, 1924, para. 60, p. 18. ⁸ M.O.H. Glasgow 1932 Report, p. 73. ⁹ M.O.H. Dundee 1932 Report, p. 147. ¹⁰ M.O.H. Edinburgh 1932 Report, p. 60. ¹¹ Munro Kerr, *Maternal Mortality and Morbidity*, p. 247. ¹² Munro Kerr, *Maternal Mortality and Morbidity*, p. 303. ¹³ Spencer, *History of British Midwifery*, Introduction, p. xix.

DISCUSSION.

The President said they had listened to a most interesting paper by an able general practitioner, who evidently had kept careful and detailed notes of all his midwifery cases over a number of years. One realised the enormous amount of labour involved in doing this; but it was well worth while, for it had enabled Dr Hamilton to draw certain conclusions of a most interesting and somewhat remarkable, not to say unexpected character. Over forty years ago he, the President, conducted a very similar type of midwifery practice in Fife, and although he had not kept full notes of all his cases, he must admit that he found himself in entire agreement with almost everything Dr Hamilton had said.

His opinion of the general practitioner was a very high one, and he felt strongly that, for all sorts of reasons, the pregnant woman should be attended in her own house by her own family doctor. He agreed with Dr Hamilton's remarks in regard to midwives, and was quite opposed to the midwifery of general practice drifting into their hands. The doctor himself should attend the case and the mother should then be looked after by a type of nurse who could see her safely through the puerperium, and at the same time attend to the affairs of the household, including possibly other children. This last duty of a nurse was, in his opinion, of vast importance, for extra work, worry, and loss of sleep might seriously endanger the life of the mother. As the discussion was one which should be entered into by general practitioners, he would not say any more.

Dr Somerville said he agreed with Dr Hamilton in his conclusions about the handywomen; in fact the less she did the better she was and the more she did the worse she was. The contrast between her and the trained nurse was tremendous. What a general practitioner

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needed in maternity work was first and foremost the help of a trained nurse, and second, that the expectant mother should have the proper appliances. In his opinion he thought that the maternity benefit should not be paid into the hands into which it was paid at present, because it was spent on all sorts of things and not on maternity benefit. It was absurd to call it maternity benefit; it was just an extra source of money at that time and was not being spent as it ought to be. Dr Somerville disagreed with Dr Hamilton that one nurse should do both kinds of work, midwifery and ordinary medical work at the same time. He thought the two should be separate. If the nurse was to be with the woman through the first part of labour for moral support and to relieve the doctor's mind, she could not go round looking after septic fingers, bad legs, etc. There should be a trained nurse for each class of work. Dr Somerville said the ideal way was where a nurse was provided from a nursing home for a very small fee. She stayed with the woman at the birth and remained with her through the puerperium and looked after the house as well as doing the nursing. That was the ideal in his mind, but how that was to be brought about he did not know; it wanted someone with Dr Hamilton's capabilities to take the matter up. The next best plan was two Queen's nurses, the one doing the maternity work and the other doing the medical work, because if the nurse was sitting with a patient all night at the confinement she was not fit to do general work during the following day.

Dr Maitland Moir said he was particularly interested in Dr Hamilton's failed forceps cases. He himself had had a good lesson many years ago in a nursing home case. He was told the woman had been a long time in labour, here were forceps, gloves, chloroform all ready. He applied the forceps but they slipped off the head. He reapplied them with the same result. He then examined and found the case was one of P.O.P. The shoulder was easily pushed round and the child delivered with forceps. He then and there made a solemn vow never again to apply forceps without first making certain of the presentation and position with the whole hand in the vagina feeling the ear. This vow stood him in good stead as he had had no failed forceps cases since. Dr Moir was very glad that Dr Hamilton had proved that confinements should be carried out in the patient's own home and not in a hospital. His own cases proved this point also. He himself had only had three cases of puerperal fever in 276 cases; all recovered in the City Hospital. He had been fortunate in having no maternal deaths, but the conditions in Currie and Balerno district were better than in that of Dr Hamilton, and he had an excellent district nurse to help in most cases. Chloroform was always administered when there was time.

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SUMMARY OF CASES.

Total 276

Abnormalities.

Occipito-posterior positions—

Spontaneous rotation	39
Manual rotation	17
Born face to pubis	4
Breech	9
Shoulder	1
Face	1
Twins	3
Hydrocephalus	1

Operations—

Manual removal of placenta	1
Forceps	43
Puncture hydrocephalus	1

Morbidity and mortality—

Puerperal sepsis	3
Maternal deaths	0
Still-births	7

Cases sent to hospital for delivery—

Contracted pelvis	3
Heart disease	1
Albuminuria	1
Gonorrhœa	1
Ante-partum hæmorrhage	1
Placenta prævia	1

Dr Wilkie Millar said it was interesting to see these tables of figures of the work done, because he himself had noticed, without being able to verify it, that it was not the patient whose labour was complicated and required forceps who got puerperal pyrexia, but rather she who delivered herself spontaneously or with very little trouble. He was in entire agreement with all *Dr Hamilton's* remarks. He thought that what *Dr Hamilton* suggested as ideal was exceedingly sound; that midwifery should be in the hands of general practitioners supported by a good nursing service. The comparison of past with recent years showed how much that meant. In Edinburgh we were fortunate in that we had the Queen's nurses. Such an efficient nursing service made midwifery much safer and relieved the doctor of much of the tedium of midwifery.

Dr Huskie said it was rather difficult to compare his practice with *Dr Hamilton's* because his was so entirely rural. *Dr Huskie* said he did not seem to have had as many morbid cases as *Dr Hamilton*, but his being such a different class of practice it was very difficult to

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draw a comparison. One point on which he rather disagreed with Dr Hamilton was in regard to the Cottage Hospital. In his opinion it was much better for the patient to be in hospital where she could be well looked after night and day by a good nurse, and it made a great difference to the doctor at the time of delivery and much less risk was incurred.

Dr Haultain was glad to hear that Dr Hamilton did not use forceps unless they were really required, but on the other hand did use them for what might be termed "humane" reasons. In Dr Haultain's opinion, especially in institutions, forceps were often not applied even after many hours in the second stage. He thought this was a cruel treatment for the patients, and he was sure that the after-results when forceps were applied justifiably would be better than for cases of spontaneous delivery who had undergone a prolonged second stage due primarily to muscular rigidity or defect of the expulsive forces. He agreed entirely with Dr Hamilton that antenatal care was essentially the general practitioner's affair. He had no doubt in his mind that the antenatal care should be carried out by the doctor who was going to look after the case, and at present there was far too much divorcement taking place contrary to this opinion. The antenatal centres at the Maternity Hospital and at other clinics should be in the first place for cases who were going to be attended by the hospital or clinic, and in the second place, as a consultant department for difficult cases for which the practitioner wanted help and advice: cases would therefore be sent by individual practitioners to those centres for an obstetrical opinion, just as gynæcological cases were sent up for an opinion to the gynæcological wards at the present time. These clinics, of course, must be under the care of a specialist in obstetrics, and not under the care of Public Health medical officers who have little or no experience in obstetrics, and rarely if ever see the labours of the patients they examine antenatally. In Edinburgh, however, we were fortunate, because all the antenatal clinics were run by men and women who specialised in the work, and therefore these centres would be able to give help to any practitioner who desired it.

Dr Haultain was sorry that Dr Hamilton had misapprehended the term "potentially septic cases" which were delivered in a separate labour ward from the cases which had been looked after antenatally and in labour entirely by the Maternity Hospital. "Potentially septic" was a name that might cause misapprehension and was not really a satisfactory nomenclature. What it was intended to convey was that one could not be certain that these cases were clean. Many cases came into hospital who had had many vaginal examinations, perhaps forceps had been applied and failed and they had been bruised before admission. During transit these bruises might multiply germs quickly, and such cases were potential sources of infection even if they were not

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in themselves definitely infected. It might be said that at the Simpson Maternity Hospital our own district cases if admitted in labour for some complication or other to hospital, were treated also as "potentially septic." The majority of these cases run a smooth convalescence and showed that no sepsis had occurred; but one could never be sure, and the majority of the patients for which the hospital was responsible must be protected. There was no doubt that the morbidity rate of the hospital had decreased markedly since the separation of outside cases and booked cases both in the labour and lying-in wards. He hoped that Dr Hamilton would now agree with this point of view and not feel offended when any of his cases were sent to the labour ward for so-called potentially septic cases.

Dr Fahmy said Dr Hamilton's figures regarding the proportion of women presenting themselves for antenatal supervision was extraordinarily high as compared with that obtaining generally in the country. It was interesting to find, however, that such increase of antenatal care had had no impression on the rate of mortality and morbidity. Dr Fahmy thought he was right in saying that some Public Health authorities had stated recently that there was much disappointment in finding that supervision in pregnancy did not yet give the results which had been expected. The question of anæsthesia in labour is one which still required much investigation. There was considerable evidence to show that the prevalent use of anæsthesia in labour was leading to detrimental results in so far as instrumental deliveries were increasing in number. The recent report of the New York Maternal Mortality Committee states that the increasing use of anæsthesia in labour was an important factor in increasing the maternal mortality rate.

Dr Langwill also spoke.

Dr Hamilton (in reply) said he was afraid that Dr Haultain had not altogether satisfied him in regard to that distinction between cases which had had preliminary examination and treatment outside. He thought that cases whose admission was based on serious obstetrical necessity had a claim to preferential treatment, as compared with those cases which were admitted for merely social reasons. He thought that was an extremely important point. He said that although the figure of well over 90 per cent. with adequate antenatal supervision applied to 1933, a distinctly lower figure applied to the years immediately after the War, because during these years he had had to overcome a serious amount of apathy and even of active opposition. He thought that the most adequate and careful antenatal supervision would effect only a very limited reduction in the incidence of maternal mortality, and that that reduction would be almost confined to the eclamptic cases.