WORKING OF A MOTHER AND BABY UNIT

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It has been recognized for some time now that infants avoid cross-infections if they are nursed in single cubicles, that most infants are better if they remain associated with their mothers, and that it is wise, if possible, to take the mothers into hospital with their sick babies.

Since 1952 the new mother and baby unit in the Royal Aberdeen Hospital for Sick Children has been in action, and this article details some of our experiences in its working. The hospital is the only children's hospital in the only large burgh in the North-Eastern Regional Hospital Board area of Scotland—an area that has about half a million inhabitants and around 120,000 infants and children.

The unit is architecturally in two parts—one wing for twelve mothers and their babies, the other for infants without their mothers, this latter portion being in two suites each of ten cubicles, two containing incubators, which can all be seen from the duty room. Off the corridor joining the two halves are doctors' rooms, a lecture room, a visitors' room, and other accommodation. On the approach corridor are three rooms for the registrars and house-physician. Each room for mother and baby measures 12 by 10½ ft. (3.65 by 3.2 m.) and contains a mother's bed, an infant's cot, a built-in wardrobe, a nursing chair, a weighing machine, and a combined type of bath-basin. By a system of bells and lights the mother can get in touch with the nurses' duty room at any time.

There are two bathrooms for mothers and three toilets, each with hand-basin to encourage hand cleanliness. The mothers' dining-room has small tables. Adjacent to it is a small kitchenette equipped with electric cooker and refrigerator where the mothers may prepare extras such as hot beverages when they wish. Their meals are cooked in the main hospital kitchen. The sitting-room is bright, warm, and comfortable, and has a wireless set and bookcases; a terrace outside can be used in the summer-time; there is a private telephone for use by the mothers.

Staffing.—A medical registrar and a house-physician comprise the junior medical staff. The nursing staff for the whole unit includes three sisters, four staff nurses, and 13 nurses in training. We have no difficulties in recruitment of nurses.

Day-to-Day Care

The day-to-day care and nursing of the babies who are accommodated with their mothers is carried out by the parent in close co-operation with the nursing staff. The mother is responsible for cleaning and tidying her room, for making her own and her child's bed, and for washing and drying crockery used for her own meals.

Bottle feeds are prepared by the nursing staff in a separate milk room, but the mother is expected to boil the teats, warm the feeds, feed the baby, and rinse the bottles after

use. The mother carries out the bathing and changing of the baby, and she is responsible to a varying extent for the administration of medicines, and even, after instruction, for the instillation of nose- or eye-drops. Weighing and test weighing are usually supervised.

The duties of the nursing staff are largely supervisory and educative, apart from certain tasks which are not performed by the mother, such as surgical dressings, recording of the temperature and the pulse and respiration rates, the collection of specimens, and the administration of injections. Individual tuition is being continuously given. The mother is shown, if necessary, how to bath the baby, how to care for the skin, how to clothe the child, and numerous other minor points in management. The preparation of the feed is demonstrated when artificial feeding is newly begun, as well as how and why to sterilize teats and bottles. Breast- and bottle-feeding are supervised as necessary. The repeated encouragement and advice from medical and nursing staff do much to make the mothers more confident and contented. A small library in the mothers' lounge contains simple books on infant care as well as a larger selection of fictional and other literature. The possibility of tuition of the mothers by lectures has been considered but has so far not been adopted, the system of individual instruction being thought preferable with a rapidly changing series of pupils.

Social Questions

Social Mixing.—There has been daily visiting in the hospital for the last 10 years at a fixed hour in the afternoon, but the mothers can receive visitors at other times. The fathers often visit their wives in the evenings. The mothers are free to go out at any time, and indeed are encouraged to take some exercise if they are fit—just as they are advised to rest in bed in the afternoon if they are breast-feeding and are feeling tired. Mothers from all social classes come into the ward. Living door to door, conversing together in the lounge, sharing the same table at meals may be the wives of farmers and farm labourers, ministers and parishioners, shipowners and fishermen. Included also are a number of unmarried mothers, and it is surprising how well all these people from varying walks of life and of widely different age and outlook intermingle and share work and worries. The common problem of an ill child provides a very firm bond between the mothers.

Care of the Home.—The absence of the mother from a family, however small, causes a large hiatus which may be filled in various ways. The most simple situation is that where the father is not living at home, being at work elsewhere, such as in H.M. Forces or at sea with the fishing fleet, there being a large fishing industry in Aberdeen and the north-east of Scotland. In this circumstance the mother may find admission to hospital a relief from loneliness and monotony. More often the father is left on his own, when he may obtain his meals from neighbours or relatives or may live entirely with them, or, according to his domestic capabilities, he may fend for himself. When children are left at home the situation is more difficult, but there seems to be no lack in most cases of relatives who are willing to accommodate the children. The grandmother is the person who most frequently fills the breach. Quite often, however, the father copes with the situation himself, usually by taking one or more weeks' holiday from his work; alternatively, he may board out the children with relatives or neighbours during the day, resuming his responsibilities again in the evening.

Survey of Admissions

A brief survey has been carried out of all admissions to the unit since it was opened, the year 1955 being analysed in more detail.

Table I shows the steady rise in total admissions, the increase being due partly to the fact that the unit was not fully functional until October, 1953, but probably also to wider publicity and knowledge of the facilities available. Several mothers were questioned regarding the source from

which they initially learned of the unit, and it was found in most cases that the parents were ignorant of the facilities available until informed at the time of admission by their general practitioner or by the staff of one of the maternity hospitals. A few mothers had noted the press publicity surrounding the opening of the ward or that concerning a visit by Her Majesty the Queen, or had heard broadcasts on the subject in the "Woman's Hour" programme of the B.B.C. Very encouraging is the steady rise in the percentage of babies who are accompanied by their mother, fully one-third now falling into this category.

TABLE I.—Annual Admissions

Year	Total Admissions	Baby Alone	Mother and Baby	
			No.	%
1952	299	234	65	21.7
1953	356	265	91	25.6
1954	524	348	176	33.6
1955	560	358	202	36.1
1956	576	367	209	36.3

Analysis of 1955 Admissions

The total number of admissions to the unit in 1955 was 560, divided into 430 medical cases and 130 non-medical cases, the latter group being mainly surgical. Babies with infantile eczema are usually admitted to a ward with separate cubicles unless the mother is particularly keen to come in with the baby and is prepared for a protracted stay in hospital, but not infrequently these children are admitted in order to give the mother a rest; they are not included in the series.

Of the 430 medical admissions, 155 (36.0%) were accompanied by mother for at least part of the time; 137 babies had their mother with them for the whole period, and 18 for part of the admission. Increasing use is being made of the practice of admitting the mother to the ward for a few days before the baby goes home, especially where there is a feeding difficulty or a nursing problem, perhaps with a technique of surgical dressing or splinting to be learned. Of 108 surgical cases, 30 (27.8%) were accompanied, and 17 (77.3%) of the remaining 22 miscellaneous cases.

The average duration of admissions is shorter in the mothers' end of the ward, so that if we use bed-occupancy as opposed to number of admissions as a guide to the necessary proportion of mothers' beds, we find that we should allow one mother's bed for every 3.5 cots for unaccompanied infants. On the other hand, there is wide fluctuation from time to time in the number of mothers coming in, and it may therefore be advisable to have a slightly higher proportion of mothers' beds.

The type of cases admitted with their mothers may be seen from Table II. The only factors deciding whether the mother accompanies her child are her wishes in the matter and her ability to make arrangements for the care of other members of the family, except that during the puerperium mothers are not admitted until five days after delivery. The cases admitted without mother have not been tabulated but

TABLE II.—Reasons for Admission of Mother and Baby (1955)

Medical Admissions	
Establishment of breast-feeding	42
Feeding difficulty	35
Pyloric stenosis	21
Infections	20
Congenital defects	7
Prematurity (<i>per se</i>)	4
Hiatus hernia	4
Investigation of vomiting	8
Haemolytic disease of the newborn	4
Miscellaneous	10
	155
Non-Medical Admissions	
Surgical:	
Correction of congenital deformity	11
Herniorrhaphy	7
Intussusception	2
Drainage of abscess	3
Miscellaneous	7
Miscellaneous (including 6 ophthalmological)	17
	47

include all the usual reasons for admission of children under 1 year of age.

Geographical Distribution of Patients.—Comparison has been made between the two sections of the ward—namely, mothers' wing and babies' wing—according to whether the family reside in the City of Aberdeen or in the surrounding rural districts. Table III shows that there is no significant

TABLE III.—Geographical Distribution of Patients

	Baby Alone		Mother and Baby	
	City	County	City	County
Medical	148	127 (46.1%)	83	72 (46.5%)
Non-medical	53	30 (36.1%)	32	15 (31.9%)
Total	201	157 (43.8%)	115	87 (43.1%)

difference between the various groups, mothers from the outlying districts being as willing to come into hospital as those from the city, despite the fact that they cannot visit their homes for short periods during the day, that they have less frequent visits from husband and relatives, and that in view of the relative paucity of social services in the country they must have more difficulty in making arrangements for care of the family at home. For those mothers who bring their infants from the far Orkney and Shetland Islands the unit must be a welcome convenience.

Age of Patients.—Table IV shows the total numbers of admissions at various ages in the first year, and the percentages accompanied by mother have been calculated.

TABLE IV.—Age of Patients

Age	Medical		Non-Medical		Total	
	Baby Alone	Mother and Baby	Baby Alone	Mother and Baby	Baby Alone	Mother and Baby
<1 week	57	35	2	1	59	36 (37.8%)
1 week—	34	58	8	9	42	67 (61.5%)
1 month—	85	45	23	17	108	62 (36.8%)
3 months—	38	8	27	9	65	17 (20.7%)
6 months—1 year	61	9	23	11	84	20 (19.2%)

Apart from the first week of life there is a steady fall with increasing age in the percentage of babies accompanied by the mother until after 6 months the figure is under 20%. The lower figure for the first week is because, as mentioned above, mothers are not admitted during the first few days of the puerperium. The later decline must be partly attributable to the lower percentage of breast-fed infants in the older group, but the difference is largely due to the relatively large number of patients in the early weeks who are transferred from the neighbouring maternity hospital for establishment of breast-feeding or admitted from elsewhere because of feeding difficulty.

Number of Other Children in Family (medical cases only).—As would be expected, the mothers with no other live children were most willing to remain with their sick child, but approximately one-third (53 out of 155) of the mothers who were admitted had other children at home (Table V). Of 170 mothers with no other live children, 60% were admitted.

TABLE V.—Number of Live Siblings (Medical Cases Only)

No. of Other Live Children	0	1	2	3	4	5 or More
Baby alone*	68	71	58	30	23	20
Mother and baby	102	30	12	7	2	2

* Information not available in 5 cases.

Age of Mother (medical cases only).—The medical series of cases has been scrutinized to determine whether either the younger or older mothers tended to come readily into hospital (Table VI). As would be expected, there are fewer maternal admissions in the older age groups where there is an increased likelihood of there being other children in the family. There is no indication of an increased willingness of the elderly primipara to enter hospital with her child;

TABLE VI.—*Maternal Age* (Medical Cases Only)*

Age of Mother	No. of Cases	
	Baby Alone	Mother and Baby†
Under 20 years	20	6 (23.1)‡
20-24 " " " " " "	81	73 (47.4)
25-29 " " " " " "	79	44 (35.8)
30-34 " " " " " "	52	19 (26.8)
35-39 " " " " " "	28	5 (15.2)
40 years and over .. .	7	6 (46.2)
Total ..	267	153

* Information not available in 10 cases.

† Numbers in brackets express percentage of total admissions in each age group.

seven (41.2%) of 16 primiparae over 30 years of age did so compared with 95 (61.7%) of 154 primiparae under 30 years.

Breast-feeding (medical cases only).—Of the 275 babies admitted alone, 20 (7.3%) were breast-fed at the time of admission and 8 of these 20 were still breast-fed when discharged home, most of them being city cases where the mother attended hospital several times a day to feed the baby; two others in this group died and eight were artificially fed. In the mother and baby wing 97 (62.6%) were breast-fed on admission and 62 (40%) on discharge. This fall is due mainly to cases admitted as feeding difficulty owing to poor supply, and to failure of establishment of breast-feeding in difficult cases transferred from the neighbouring maternity hospital. Another major cause of failure was found to be pyloric stenosis; of the 21 cases admitted with mother, 15 were initially breast-fed, but the supply failed in hospital in six of these, while a seventh case was only partly breast-fed on discharge and was artificially fed a week later. Thus there was failure of well-established breast-feeding in almost half the cases of pyloric stenosis, a figure not rivalled by any other illness. It is postulated that while maternal anxiety may partly account for this, at least as important is the period of approximately 48 hours during which breast-feeding is discontinued. Failure of breast-feeding was due to:

Failed establishment of breast-feeding	12
Admitted as feeding difficulty with insufficient milk	9
Pyloric stenosis, with failure of milk supply	6
Maternal breast abscess	1
Thrush stomatitis	1
Congenital heart disease	1
Various diagnoses with failure of supply	3
Various diagnoses with breast-feeding discontinued on maternal request	2

Analysis of Cases Transferred from Maternity Hospital for Establishment of Breast-feeding.—Forty cases were transferred from the neighbouring maternity hospital during 1955 for establishment of breast-feeding, either premature babies or full-term infants where difficulty had arisen. Twenty-eight babies were premature and 12 full-term. The mothers from the rural districts seemed to be more willing than the city mothers to spend those extra days in hospital, 12 county and 28 city mothers being transferred compared to the total maternity hospital deliveries of 715 rural and 2,670 city patients—that is, 1.7% of all the rural mothers and 1.1% of all the urban mothers. Breast-feeding was successfully established in 20 premature and 8 full-term babies, an overall success rate of 70%. It is felt that this figure is actually higher than it should be, and that perhaps some of the more difficult cases are not being transferred.

Conclusions

Now that the mother and baby unit has been in use for a number of years, we may survey the advantages and disadvantages. On the credit side there are benefits to the child, to the mother, and to the medical and nursing staff. The child is protected from cross-infection, he is able to continue breast-feeding, and his familiar environment is largely preserved. The mother is able to share the child's illness and to partake of his hospital experience so that when recovery takes place she understands better all that has been involved, and knows that she has played some part in his care. The mothers also learn much about infant management during their stay in hospital, and they benefit from the opportunity to take adequate rest and relaxation.

Doctors and nurses, from close contact with the mothers, learn better to appreciate the outlook of the mothers and to understand their worries and problems. We have gained a greater understanding of the social and emotional aspects of medical practice. Difficulties have been surprisingly few; the main ones have been those of ensuring that the home continues to function while the mother is in hospital, and in this respect we have been assisted greatly by our hospital almoner, who meets all these mothers.

As regards the future, we feel that we would certainly wish as at present to continue admitting the mothers of young babies, but at least as great a need is felt for accommodation for mothers of children of pre-school age.

MEDICAL SCHOOL FOR RHODESIA AND NYASALAND

A medical school should be established at the University College of Rhodesia and Nyasaland, in Salisbury, with the new African hospital at Harari as its teaching hospital. This advice is given to the College by its planning committee in a first report. The committee, which was appointed eighteen months ago under the chairmanship of Mr. L. FARRER-BROWN, director of the Nuffield Foundation, was asked:

"To advise the University College of Rhodesia and Nyasaland on the desirability and practicability of establishing a medical school as an integral part of the College; to prepare proposals for the training curriculum, postgraduate training, the research facilities, the building, equipment, and staffing required, including those required for a suitable teaching hospital, and other centres for clinical facilities; to prepare estimates of the capital and recurrent costs involved and a phased time-table for development; and to make any other proposals and suggestions for the development of medical education and research under the auspices of the College."

The other members of the planning committee, besides the chairman, were Professor W. MELVILLE ARNOTT, professor of medicine, University of Birmingham; Professor T. H. DAVEY, professor of tropical hygiene, University of Liverpool; Professor P. B. MEDAWAR, F.R.S., professor of zoology, University College, London; Professor R. MILNES WALKER, professor of surgery, University of Bristol; Professor A. D. M. GREENFIELD, professor of physiology, Queen's University of Belfast; and Miss HONOR SMITH, reader in medicine, University of Oxford. The committee visited the Federation's three territories last April, and received written and oral evidence from numerous individuals and organizations. The College authorities state that they are now considering the committee's recommendations.

Need to Build Soon

Not only does the planning committee warn the Federation that it will fall behind other comparable communities "unless it includes a medical school in its plans"; the committee recommends that the school should be established soon. There is a need to train doctors locally, states the committee, and also both the need and opportunity for research. Even if a beginning were made at once, it would be ten years before the first students would become registrable as doctors, as building and the recruitment of staff would take at least three years, and the undergraduate course a further six or seven years.

Stressing the importance of high standards, the committee "regards it as axiomatic that the medical school should provide a course of university standard leading to a qualification which is registrable by the General Medical Council." Such a school, with an intake of 25 students a year, would require a capital expenditure of £1m. and an annual recurrent expenditure of £250,000. Although the committee recognizes the choice of Harari Hospital for the school's teaching hospital as not ideal, as the hospital is seven miles (11 km.) outside Salisbury, this is thought preferable to having the hospital at Bulawayo, some 220 miles (354 km.) away from Salisbury and the College.