

# ADMISSION OF CHILDREN TO HOSPITAL

By **C. M. B. FIELD, M.D., D.C.H., F.R.C.P.Ed.**  
and **SHEILA MILLAR, S.R.N., S.C.N., Dip.Soc.St.**  
Belfast City Hospital

STUDIES on the admission of children to hospital (Taylor and Davidson, 1959; Illingworth and Knowelden, 1961; and Apley, 1961) have shown that the numbers requiring admission appear to be increasing year by year despite improvements in the standard of living and the widespread use of antibiotics. Criteria for hospital admission are as difficult to generalise for children as they are for adults but two additional factors have to be taken into account. One is the possible psychological trauma caused by separation of young children from their parents where admission of mother with child is not possible and the second is the greater hazard of cross infection in infants' wards. Since these factors weigh against admission the assessment of the reasons for admission assume increased importance. It seems to us that a decision to admit depends on two main sets of circumstances – the severity or potential severity of the illness and the conditions in the home. At one extreme, serious illness requires admission regardless of home conditions and at the other extreme where home conditions are very bad, admission may be required for even trivial disorders. In this hospital it has been accepted that the general practitioner had knowledge both of the child's illness and the home background and was therefore the person best qualified to decide whether admission to hospital was necessary. Therefore, children referred for admission are accepted if beds are available. However, it seemed to us that an increasing number of infants with only minor illnesses were being admitted to the wards and it was decided to try and evaluate the medical and social reasons for admissions of a sample of infants and children under five years during the winter of 1967/68.

## METHOD

Two samples, one of a hundred infants of one week to two years and one of fifty infants between two and five years was chosen successively from the acute admissions to the children's medical wards of the Belfast City Hospital in the winter of 1967/68.

The first three admissions from the Belfast urban area in the age and type category were selected by the social worker each week day on which she was available for visiting. On some days less than three admissions fell into the appropriate category but there was no evidence that the method of choice of sample produced a bias. These children received normal investigations and treatment during their stay in hospital and normal records were kept. The medical staff were not aware of which cases had been included in the sample. Concurrently the social worker visited the child's mother at home and assessed the housing conditions, the standard of cleanliness and the capability of the mother. These were recorded on a form. Copies of this can be obtained from the authors.

The home records were subsequently matched with the medical records and the medical member of the team attempted to make an objective allocation of all the children to one of two categories. The first group consisted of those who required

hospital admission, the second those children who could have been nursed safely at home with a daily visit from their general practitioner.

In every case an attempt was made to justify admission.

TABLE I

	<i>Number</i>	<i>Admission Necessary</i>	<i>Admission Unnecessary</i>
Infants 0-2 years	100	60	40(40%)
Infants 2-5 years	50	37	13(26%)
Total	150	97	53(36%)

Table I gives the results of the assessment as to whether the infants required hospital care. A much higher percentage of the admissions in the 0-2 year age group (40%) were thought to be unnecessary than in the 2-5 year group (26%).

The home conditions were on average worse in the children whose admission was necessary. There was no direct correlation as this group not only included those children who required admission because of their poor home conditions but also many infants with excellent home conditions but with serious illnesses.

Forty-three per cent of the houses visited had no separate bathroom. This agrees with the 1961 census figures which recorded 47.7 per cent of all Belfast houses as having no fixed bath. Overcrowding was present in thirty-one homes, that is 20 per cent of all the houses visited. By this is meant more than two persons per room. The 1961 census gives a figure of 2.2 per cent for overcrowding, so that this would appear to be an important factor in infant morbidity.

In seventeen of the houses the conditions were so appalling that admission was obviously required for any complaint. The comment on the back of one form was as follows. "This home is literally filthy. The parents are in poor health and in debt and a police case is pending regarding the child of eight who was cut in the face with a milk bottle during a fight in the street. The house itself is crumbling with rotten floor boards, broken windows and rain coming through the ceilings. The children have no bedding except rags but the carry-cot in the kitchen is reasonably clean". Another comment was, "A mill cottage in disrepair and decay. Furniture consists of a chair, a card table and three beds for a family of eight, Mrs. G. had just delivered herself of a baby during the night".

Table II gives the diagnosis and from this it can be seen that respiratory infections were present in 80 per cent of those infants not requiring admission.

Table III separates the patients into three groups according to whether they were admitted by their general practitioner, the contactor's bureau (a locum supplying agency) or a hospital casualty department. The percentage of unnecessary admissions from each group was very similar.

Mothers were asked if they could have nursed their baby at home with additional help, and 60 per cent expressed a desire to do so. Sixteen per cent of mothers said they would be able and willing to go into hospital with their baby.

TABLE II

<i>Diagnosis</i>	<i>Admission Necessary</i>	<i>Admission Unnecessary</i>
Bronchitis	17	21
Pneumonia	19	0
U.R.T.I.	1	13
Bronchiolitis	13	3
Bronchial spasm	3	5
Influenza	5	1
Febrile convulsion	16	0
Pyelonephritis	3	0
Meningitis	2	0
Vomiting	2	1
Hypocalcaemia	2	0
Skin rashes	1	5
Congenital laryngeal stridor	0	1
Croup	1	1
Epilepsy	0	1
Herpes Simplex	0	1
Bad home conditions alone	2	0
Miscellaneous	10	0

TABLE III

<i>Admission arranged by</i>	<i>Number</i>	<i>%</i>	<i>Admission Unnecessary</i>	<i>%</i>
General Practitioner	110	73	39	35
Contactors' Bureau	23	15	7	30
Hospital Casualty Extern	17	11	7	41

## COMMENTARY

If one accepts the validity of these assessments it would appear that in this series 30 per cent of admissions were unnecessary, the percentage of unnecessary admissions being similar whether the admitting doctor was the general practitioner, a doctor from an agency or a house physician in the casualty department of a hospital. Infants who are admitted to hospital not only run the risk of acquiring a hospital infection but may also suffer considerable psychological stress. If some of them could be nursed at home it would obviate these risks and would also relieve the chronic shortage of infants cots for those whose admission to hospital was essential.

The reasons for these unnecessary admissions are difficult to define but they would certainly be decreased by an increased confidence on the part of both parents and doctors in the accuracy of the diagnosis and the efficiency of the treatment. In this respect an extension of paediatric teaching at both undergraduate and post-graduate levels specifically designed to increase knowledge and experience of the small infant would be of value. The formation of group practices where one member had a special interest and experience in paediatrics would also help. A more

immediate solution might be the formation of a home care paediatric team whereby the general practitioner is assisted by a paediatrician and nurse in the day to day care of infants who might otherwise have been admitted to hospital. A scheme of this nature has been run by St. Mary's Hospital Medical School for the past fifteen years.

#### SUMMARY

The circumstances surrounding the admission of one hundred and fifty infants to hospital have been investigated. On the basis of these findings it was decided that 36 per cent of these admissions could have been safely nursed at home. Some measures have been suggested which might enable more of these infants to remain in their own homes.

#### REFERENCES

APLEY, J. (1961). *Lancet*, **1**, 1171.

ILLINGWORTH, R. S. and KNOWELDEN, J. (1961). *Lancet*, **1**, 877.

TAYLOR, M. and DAVIDSON, G. (1959). *Lancet*, **2**, 453.

The following papers are relevant to discussion of the development of home nursing services in paediatrics.

BERGMAN, A. B., STRAND, H. and OPPE, T. E. (1965). *Paediatrics*, **36**, 314 .

KARLSTROM, F. (1961). *Helvet. Paed. Acta.*, **16**, 175.

McCLURE, C. R. (1960). *Public Health*, 313.

STRAND, H. and LIGHTWOOD, R. (1964). *Courrier*, **14**, 353.