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Resident parents and shorter hospital stay

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SUMMARY A total of 586 admissions for 12 medical conditions were reviewed. The stay of children accompanied by a resident parent was 31% shorter than those whose parents were not resident. Resident parents benefit the emotional well being of the child and increase hospital efficiency; accommodation for parents should therefore be an integral part of a unit admitting children.

The number of resident parents in the National Children's Hospital has risen from nine (accompanying 0.4% of admissions) in 1970 to 1527 (accompanying 38.9% of admissions) in 1987. It is generally recognised that children in hospital benefit from the presence of a living in parent.^{1,2} The main emphasis has been on the benefit of the child's emotional well being. The importance of the parent in dealing with the adult world of the hospital on the child's behalf has been stressed.² In addition to these emotional benefits we noted a tendency for children with resident parents to have shorter hospital stays than those whose parents did not live in, but we were unable to find any published record of this observation. We studied the duration of stay of children admitted for a range of medical conditions with and without their parents.

Patients and methods

All admissions to the National Children's Hospital for medical conditions over an eight month period were reviewed. Twelve diagnostic categories were selected in which it seemed possible that a parent's ability to manage a convalescent child would result in a reduction in the hospital stay. Only the primary diagnosis was used in selecting patients. The diagnoses used are given in table 1. As a very prolonged stay might discourage parents from living in, children with a stay of more than 14 days were

excluded. This reduced the study population by 19. The unpaired *t* test and the χ^2 test were used for statistical analysis. As the duration of stay data were skewed a log transformation was used in the analysis.

Resident parents lived in the hospital. Parents who spent the day in hospital but slept elsewhere were not regarded as resident.

ELIGIBILITY GROUPS

The eligibility group gives a measure of the affluence of the family. For the purpose of determining eligibility to health services in the Republic of Ireland patients are assessed according to their family income and social circumstances. The criteria used at the time of this study can be summarised as follows:

Group 1: Unemployed breadwinner; single mother; family income below £90.50 per week (with a £10 allowance for each child under 16 years old). Other social and economic factors are also taken into account.

Group 2: Family income less than £11 000 per annum.

Group 3: Those not falling into groups 1 or 2. Almost all patients in this group were covered by a medical insurance scheme.

Results

A total of 586 admissions were studied; 136 patients were accompanied by a resident parent and had a mean duration of stay of 2.88 days. On 450 admissions a resident parent did not accompany the child and the mean duration of stay was 4.16 days. The difference between these groups was highly significant (table 1). Children of affluent families (group 3) were more likely to be accompanied by a

resident parent ($\chi^2=24.2$, $df=2$, $p<0.0005$). In all eligibility groups children with resident parents had a shorter duration of stay than those without. This difference was only significant for group 2 (ratio of geometric means=1.59, 95% confidence interval 1.29 to 1.96, $df=328$, $t=4.34$, $p<0.001$) and 3 (ratio of geometric means=1.35, 95% confidence interval 1.04 to 1.75, $df=167$, $t=2.28$, $p<0.025$) (table 2).

The mean stay for all children in group 3 was significantly shorter than for group 1 (ratio of

geometric means 1.30, 95% confidence interval 1.07 to 1.59, $t=2.67$, $df=p<0.01$) or group 2 (ratio of geometric means 1.26, 95% confidence interval 1.10 to 1.45, $t=3.29$, $df=473$, $p<0.005$). The difference in mean stay between groups 1 and 2 was not significant.

Children in the 3 to 5 year age group had the highest percentage of resident parents (40.5%) (table 2). This was significantly more than both the younger ($\chi^2=6.3$, $df=1$, $p<0.02$, $diff=0.15$, 95%

Table 1 Mean duration of stay for patients with and without a resident parent in each diagnostic group

Diagnostic group	Mean (SD) days stay without parent	No of children	Mean (SD) days stay with parent	No of children	Difference (days)	Log transformation				
						df	t	Ratio of geometric means	p Value	95% Confidence interval
All groups	4.2 (2.9)	450	2.9 (2.7)	136	1.3	584	5.42	1.51	<0.001	1.30 to 1.76
Upper respiratory tract infection group	3.6 (2.3)	142	2.2 (2.2)	46	1.4	186	4.69	1.72	<0.001	1.37 to 2.16
Lower respiratory tract infection group	5.3 (2.9)	121	3.6 (3.4)	32	1.7	151	4.03	1.8	<0.001	1.35 to 2.40
Upper respiratory tract infection	3.8 (2.3)	112	2.4 (2.4)	35	1.4	145	4.09	1.67	<0.001	1.31 to 2.17
Herpes stomatitis	5.7 (3.0)	9	1.8 (1.0)	4	3.9	11	4.01	3.26	<0.005	1.70 to 6.24
Pneumonia	5.4 (2.7)	61	4.1 (4.0)	18	1.3	77	3.03	1.73	<0.005	1.20 to 2.47
Tonsillitis and croup	3.0 (2.0)	23	1.4 (0.9)	7	1.6	28	2.24	2.02	<0.05	1.06 to 3.86
Bacterial meningitis	10.8 (1.5)	8	8.0 (1.4)	2	2.8	8	2.73	1.35	<0.05	1.05 to 1.72
Bronchiolitis	5.9 (2.9)	49	3.9 (2.7)	7	2.0	54	1.78		NS	
Unspecified viral infection	4.4 (2.4)	22	2.9 (1.7)	13	1.5	33	1.45		NS	
Asthma	3.0 (2.6)	103	2.3 (1.5)	17	0.7	118	0.80		NS	
Febrile convulsion	3.6 (2.5)	34	2.6 (2.0)	17	1.0	49	1.10		NS	
Bronchitis	2.2 (1.8)	11	2.0 (1.5)	7	0.2	16	0.44		NS	
Viral meningitis	5.1 (4.2)	11	6.8 (4.9)	5	-1.7	14	-0.76		NS	
Acute pharyngitis	2.4 (2.2)	7	1.5 (0.6)	4	0.9	9	0.55		NS	

Diagnoses coded according to the *British Paediatric Association Classification of Diseases*³ and the *International Classification of Diseases*⁴: 047.9+049.0, viral meningitis; 054.2, herpetic gingivostomatitis; 079.9, unspecified viral infection; 320.0+320.9, bacterial meningitis; 462.9, acute pharyngitis*; 463.9+464.4, acute tonsillitis and croup*; 465.9, upper respiratory tract infection*; 466.0, bronchitis; 466.1, bronchiolitis†, 485+486, bronchopneumonia and pneumonia†; 493.99, asthma; 780.30, febrile convulsion. *Upper respiratory tract infection group; †lower respiratory tract infection group.

Table 2 Mean duration of stay for patients with and without a resident parent in each eligibility and age group

	No (%) with resident parent	Mean (SD) days stay		Difference (days)	Ratio of geometric means	95% Confidence interval for ratio	p Value
		Without parent	With parent				
Eligibility group:							
Group 1 (n=85)	11 (13)	4.5 (3.1)	3.5 (1.8)	1.0	1.13	0.69 to 1.82	NS
Group 2 (n=332)	63 (19)	4.3 (2.8)	3.0 (2.8)	1.3	1.59	1.29 to 1.96	<0.001
Group 3 (n=169)	61 (36)	3.7 (2.9)	2.7 (2.8)	1.0	1.35	1.04 to 1.75	<0.025
Age group (years):							
0-1 (n=156)	33 (21)	5.2 (3.1)	3.8 (3.0)	1.4	1.41	1.07 to 1.87	<0.02
>1-3 (n=184)	55 (30)	4.0 (2.7)	3.0 (3.1)	1.0	1.49	1.18 to 1.89	<0.005
>3-5 (n=84)	34 (40)	3.9 (3.1)	2.1 (1.5)	1.8	1.66	1.17 to 2.35	<0.005
>5-15 (n=162)	14 (9)	3.6 (2.6)	2.0 (1.2)	1.6	1.67	1.07 to 2.61	<0.025
All ages (n=586)	136 (23)	4.2 (2.9)	2.9 (2.7)	1.3	1.51	1.30 to 1.76	<0.001

confidence interval 0.03 to 0.26) and older children (χ^2 33.7, df=1, $p<0.001$, diff=0.32, 95% confidence interval 0.2 to 0.43). In all age groups the accompanied children had a shorter mean stay than the unaccompanied ones (table 2).

Discussion

Residential accommodation was available to all parents. The age distribution of the accompanied patients agrees well with the general concept that younger children, especially those of toddler age, benefit most from the emotional support of a resident parent. It is surprising that less than 30% of those under 3 years had a resident parent. An important factor may be that there were significantly more children from eligibility groups 1 and 2 in the under 3 year old group than in the older age groups ($\chi^2=6.73$, df=2, $p<0.05$). Almost all of the resident parents were mothers. A major factor in determining whether or not a mother lives in is the number and age of her other children. This is probably a factor influencing the high proportion of resident parents in group 3, as this group tends to have smaller families and may be able to employ help to look after any other children. These parents are also likely to be better informed and so more aware of the emotional benefit to the child of a resident parent. The asthmatic patients had the lowest percentage of resident parents. A total of 80 (67%) of these children were over 5 years old and only three (4%) of them had resident parents. Eight (42%) of the >1 to 3 year group were accompanied by a resident parent, which is above the average for all diagnoses (table 2). The figure for the >3 to 5 year group was six (30%); below the average for all diagnoses. Asthmatic children are likely to have attended hospital before⁵ and so their parents may consider they require less parental support, especially when admitted on a second or subsequent occasion.

Provision of accommodation for parents to live and sleep in hospital not only benefits the emotional well being of the child but by shortening the

patients' hospital stay, increases the hospital's efficiency. Resident parents reduce the workload of hospital staff in some ways but increase it in others. Nurses and doctors spend more time explaining procedures and investigations and answering parents questions. Cleaning, catering, and laundry are all increased. Nurses have to provide far less 'mothercraft care'. Telephone enquiries are much reduced because presumably the parent keeps the family and friends informed. The play therapist's work is reduced for these children as she is able to give guidance to resident parents about facilities and equipment and leave them to play with the children. Over the last five years the number of admissions to this hospital and the proportion of resident parents have both risen, while the number of hospital staff, especially nursing staff, has fallen. Without resident parents an increase in nursing staff would be required to cater for the same number of patients, with a consequent increase in cost. For economic and emotional reasons accommodation for parents should be regarded as an important part of a unit admitting children.

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