

II—THE AGE OF ADMISSION TO HOSPITAL OF SEVERELY SUBNORMAL CHILDREN

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Introduction

In considering the need for residential care for subnormal children, both the mental and chronological age are relevant to the staffing and organisation required.

This paper considers some factors associated with the chronological age at which the admission of severely subnormal children to residential care is required. These may have predictive value in formulating the total programme for an individual child. It may also indicate whether the age of admission is likely to alter in the future, when the services in the community are fully developed.

Material and Methods

The records of 285 mentally retarded children admitted to Queen Mary's Hospital for Children during a three-year period have been studied, and their age on admission has been related to various known facts. For some items information was incomplete, so the totals vary slightly. Just over half the children came in for short term care—i.e., eight weeks or less—but there were no significant differences between the short term care children and the long term care children (who were in hospital for a year or longer), so the group has been treated as one whole.

Results

Of the 285 severely subnormal children admitted, 58% received short term care and 42% received long term care. The age range on admission is shown in Table I.

TABLE I
Type of Care at Different Ages

Age on Admission	Short term care		Long term care		Total	Percentage
	No.	%	No.	%		
Under 1 year	21	13	17	14	38	13
1y.—4y.	75	46	50	41	125	44
4y.—7y.	35	21	25	21	60	21
7y.—10y.	15	9	24	20	39	14
10y.—13y.	18	11	5	4	23	8

The proportionate distribution between the two types of care shows that up to the age of seven years the need for both forms of care was similar.

The reason that 57% of the admissions were under 4 years is probably that this particular hospital is known for its ability to accept the youngest or most handicapped children, whereas other hospitals serving the same region accept more readily children over the age of 5 years.

1. Diagnosis

(a) **Epilepsy** (N=101). 50% of the children admitted under the age of one year had overt epilepsy, but this was not a significantly greater proportion than the proportions admitted in the older groups.

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(b) **Down's Syndrome** (N=43). One-third of those admitted under the age of one year had Down's syndrome, which is a significantly higher proportion than in the 1—4 year group ($\chi^2=7.58$, $p<0.01$). The subsequent admission age groups all showed similar lower proportions of between 10% and 17%.

(c) **Microcephaly** (N=54). The proportion of the under 1 year-olds with microcephaly was not significantly greater than the proportion of the 1—4 year-olds ($\chi^2=2.85$, $p>0.05$). It is probable that the diminishing proportions of Down's Syndrome and microcephaly are due to the high mortality in the first few years of life in these conditions. However, these diagnoses are highly related to permanent and severe retardation in the lay mind, and this may have tended to earlier admission.

(d) **Cerebral Palsy** (N=119). One-half of those children admitted under the age of one year had cerebral palsy, most of whom—100 out of 119—were spastic. The proportion of children with cerebral palsy in subsequent age groups was not significantly different from the proportion in the under 1 year group ($\chi^2=2.94$, $p>0.05$). Although cerebral palsy is a static lesion, the associated deformities may be progressive, and thus dressing, toileting or locomotion increasingly difficult, and therefore result in a higher proportion of the children admitted in the older age group having cerebral palsy.

2. Age Abnormality Suspected (N=293, plus 2 unknown).

The age accepted was that when the parents definitely felt their child was abnormal whether or not at this time they obtained medical confirmation of their fears, because it would be at this age that their subsequent attitudes began to take shape. In many cases, the time of suspicion and confirmation coincided, but months or sometimes a year or longer passed before the parents felt that they had made their medical adviser admit that there was something seriously amiss with their child. Of the children whose abnormality was suspected by 2 weeks of age (N=98), a significantly greater number were admitted by the age of 1 year than at any later age ($\chi^2=10.8$, $p<0.05$). Similarly a significantly greater proportion of the under 1 year admissions were suspected by 2 weeks than were suspected between 2 weeks and 3 months—N=48—($\chi^2=4.79$, $p<0.05$), and this was also seen in the 1—4 years admissions—N=53—($\chi^2=5.88$, $p<0.05$) but not subsequently. Only about 10% of each age of admission group after the first year were suspected between 12—24 months (self-evidently the under 1 year-olds are excluded), although of those suspected over 2 years the proportion admitted in each age group gradually increased from 5% in the 1—4 years group to 22% in the 10—13 years group. This indicates the need for adequate parental guidance in the neonatal period, since rejection is more likely to occur then than at any later age.

3. Medical Condition

(a) **General Health.** On examination approximately three-quarters of the children (N=213) in every age group were in good general condition, and correspondingly approximately one-quarter (N=72) of each age group were in fair or poor condition. This indicates that it is not any decline in the general physical health of severely subnormal children which causes their parents to require hospital care, and also that it is only a minority at any age who need medical attention which could not be provided in their own homes.

(b) **Height and Weight.** Approximately one-half of the children (N=110) from the under one year group to the 7—10 year group inclusive were below the third percentile (using the norms of Tanner and Whitehouse). Approximately one-third (N=99) in each of these age on admission groups were less than the third percentile for weight. Therefore the slow growth of the children was apparent from very early in their lives, and did not become progressively more marked as they grew older. Only minorities of the children at any age were above the 50th percentile either in

height (N=49) or weight (N=60). But the similarity of the proportions in every admission age group indicates that continued failure to achieve the normal gains in height and weight did not cause such anxiety to the parents as to lead to their seeking hospital care on this account.

4. Psychological Assessment.

For various reasons 26 children did not have formal assessments. The predictive value of psychological assessment is less accurate early in life than later, although the more gross the degree of retardation the more accurate it is. A clearer picture may be seen if the profoundly and severely retarded are grouped together in contrast to the moderately or mildly retarded. It then emerges that with increasing chronological age on admission the proportion who were profoundly retarded rises from 62% of under 1 year-olds to 75% of 1—4 year-olds, then to 89% of the 4—7 year-olds and thereafter declines a little, with 79% of the 7—10 year-olds and 84% of the 10—13 year-olds being profoundly retarded. Since the proportions with physical handicaps were not increased in the later admission groups nor was the proportion who failed to attain some functional independence or speech, it is not these correlates of the degree of mental defect which lead parents to seek hospital admission as the child becomes older. Although medical difficulties with the child and medical advice to hospitalise the child occurred twice as frequently in the 10—13 year-old group as in the under 4 year group, at the most they were relevant to only one-fifth of the 10—13 year-old admissions or to 13% of the total group (N=37).

5. Sex of Patient (Males=168, Females=117)

In all the age groups there was a slight preponderance of males, but this was not significantly greater at any one particular age.

6. Functional Attainments

(a) **Walking** (N=129). The older the child on admission the greater the chance that he could walk unaided, although there was not a steady increase from the 1—4 year group up to the 10—13 year group as might have been anticipated. The proportion of the 4—7 year-olds who could walk was not significantly greater than the proportion of the 1—4 year-olds, neither was there a significant difference between the proportions of the 4—7 year-olds and the 7—10 year-olds.

(b) **Feeding** (N=103). While only one-quarter of the children admitted between 1—4 years could feed themselves with a spoon and cup, by 10—13 years this had risen to over two-thirds of the admissions. However, as with walking, there was no significant difference in the proportion of 4—7 year-olds and the proportion of 7—10 year-olds who could feed themselves.

(c) **Dressing** (N=65). There was a steady increase in the proportion of children who could pull on simple garments so that by the 10—13 year admission group 48% were able to help dress themselves. Here again, the proportionate increase between the 4—7 and 7—10 year-olds, or between the 4—7 and 10—13 year-olds was not significant.

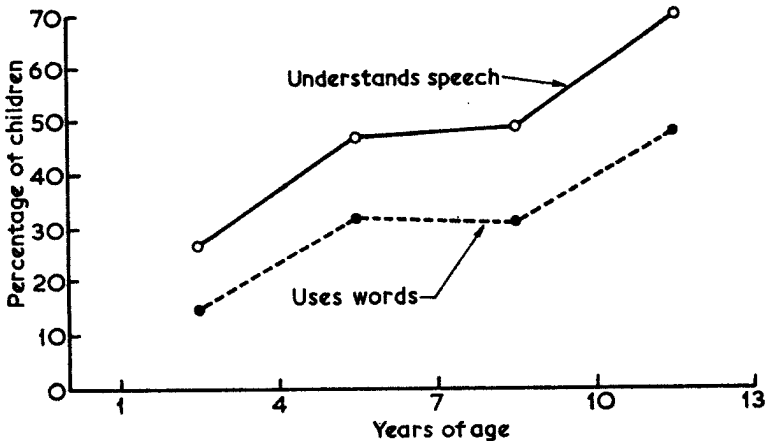
(d) **Toilet Training** (N=61). While only one-tenth of the 1—4 year-old admissions responded to regular potting, two-fifths of the 4—7 and subsequent age groups were able to do so. The proportion of 4—7 year-olds responding to potting was significantly greater than the proportion of 1—4 year-olds ($\chi^2=22.58$, $p<0.01$). However, there was no significant difference in the proportion (40%) of 4—7 year-olds, and the proportion (44%) of 7—13 year-olds who could respond. This seemed to be the function which was most difficult to attain, and no more (i.e., 44%) of the 10—13 year-olds than of the 7—10 year-olds (i.e., 44%) accomplished it.

7. Speech

(a) It had seemed possible that persistent failure to understand speech or to use any words might be discouraging to parents and so would tend to admission, but in fact the proportion of children who could understand some speech on admission rose steadily, so that while only 27% of the 1—4 year-olds understood speech, 70% of the 10—13 year-olds could do so (total $N=92$). 47% of the 4—7 year-olds could understand some speech, and this is significantly greater than the 27% of the 1—4 year-olds ($\chi^2=4.58$, $p<0.05$). However, 16 of the 10—13 year-olds compared with 28 4—7 year-olds understood speech, though this is not significant.

(b) The ability to use at least two words meaningfully followed the same pattern, although only 61 children could use words, compared with 92 who were able to understand them. 15% of the 1—4 year-old admissions used meaningful speech compared to 48% of the 10—13 year-old group. A significantly greater proportion of the 4—7 year-olds than of the 1—4 year-olds could use words ($\chi^2=5.35$, $p<0.05$). There was no significant difference between the proportions of 4—7 year-olds and 10—13 year-olds using words. Figure 1 shows how similar was the rate of increase in receptive and executive speech. Although there was no perceptible increase between 4—7 and 7—10 years, thereafter further progress in both understanding and using speech occurred, although the proportion of the children who were profoundly retarded was similar in both groups.

Fig. 1. Proportion of children in each age group able to understand speech or use words.



8. Medical Difficulties (N=35)

Medical difficulties with the child were closely connected with advice to hospitalise the child ($N=37$), and these were relevant in approximately one-tenth of the children up to 4 years, and this then gradually rose to one-fifth from admission at 7 years onwards.

9. Social Factors

(a) **Illegitimacy** ($N=45$). As our wards do not accept newborn babies, illegitimate children rejected at birth are necessarily excluded from our group. Of those who remained after birth with their families, the need for hospital care on account of illegitimacy was most apparent between the ages of 1—4 years. There was no signi-

ficant difference between the illegitimate proportion (25%) of the 1—4 year-olds and the illegitimate proportion (15%) of the 4—7 year-olds. In the 7—10 year age group the proportion (8%) was the same as the national average and there were no illegitimates in the 10—13 group. This suggests that where illegitimacy is relevant, it will lead to hospitalisation early in life.

(b) **Patient's Place in Sibship at Home.** It was decided to consider only those siblings who were alive and resident at home at the time their subnormal sib was hospitalised. At all ages the least proportion of the admissions was the eldest child at home (between 3% and 13%), and the highest proportion of the admissions was the third eldest (between 31% and 45%). However, there was no significant relationship between the age of admission and the patient's place in his sibship at home.

(c) **Social Class.** Social Classes I and II formed higher proportions of the later admission age groups—26% of the 7—10 year-olds and 39% of the 10—13 year-olds, in contrast to Social Classes IV and V who formed only 8% of the 7—10 and 18% of the 10—13 year-olds. Converseley, IV and V contributed a higher proportion of the under 1 and 1—4 year-old groups. However, statistically there is no significant relationship between the age of admission and the family's social class. There was no significant difference in the proportion of Class III who came in between 1—4 years (43%), and after 7 years (25%), these proportions being intermediately placed between the proportions of I and II and IV and V.

10. Parental Factors

(a) **Age at Child's Birth.** In every age admission group the distribution of the mother's age at birth was similar—i.e., the fewest mothers (N=13) were under 20 years, and approximately one-third (N=149) of the mothers in each group were 20—29 years, followed by approximately one-quarter (N=59) being 30—34 years. This was somewhat against expectation as it had seemed probable that the mother's age when faced with this serious problem might have influenced her ability to cope with it. The father's age at child's birth pattern is similar to the mother's.

(b) **Maternal Illness.** Physical illness (N=97) appeared almost equally important in every age admission group, being relevant to approximately one-third of all the cases. Mental illness (N=37), however, was most relevant in the under 1 year-old admissions (21%), although the frequency of occurrence in the under 1 year-old admissions was not significantly greater than the frequency (14%) in the 4—7 year-olds.

Neither paternal physical or mental illness (N=17) was as important as in the mother, although a similar pattern was seen, as paternal physical or mental illness was relevant in more of the under 1 year-old admissions as in subsequent age admission groups. Direct rejection by the father (N=28) as by the mother (N=35) was also most influential in the under 1 year-old admissions, and over the age of 1 occurred in minorities of the groups. Of the children who came in by 1 year, a significantly higher proportion (29%) were associated with maternal rejection than in any subsequent age group ($\chi^2=10.82$, $p<0.01$). Paternal rejection similarly showed a significant positive relationship with very early admission (32%) of the 0—1 year admissions ($\chi^2=22.65$, $p<0.01$).

11. Child Centred Problems

129 (45%) of the total group were reported to have difficulties of management, but the percentage of these children coming in at each age range was very similar to the percentage of the total group coming in at each age. For example, 44% of the 129 with management difficulties came in between 1—4 years (as did 44% of

of the total 285 children), 17% came in between 4—7 years (21% of total group), 16% between 7 and 10 years (14% of total group), and 8% of both the 129 and the 285 came in between 10 and 13 years. So that although the precise nature of the management difficulties must change with increasing age, their contribution to the need for hospital placement does not.

Although among the under 1 year-olds, 11—i.e., 29%—caused management problems (usually feeding), and among the 1—4 year-olds the proportion increases to 61—i.e., 49%—there is no significant difference statistically between the two groups ($\chi^2=2.60$).

At all ages social difficulties (such as neighbours' complaints of excessive noise, taking the child out shopping or on public transport) were relevant in less than 10% of each group, and there was no apparent increase with age.

Conclusions

In attempting to assess the factors which were associated with the age at which 285 mentally handicapped children were admitted to hospital for either long or short term care, the following were found.

1. Among the children who were under 1 year old on admission:
 - (a) A significantly higher proportion had been suspected at or within 2 weeks of birth rather than between 2 weeks and 3 months or at any later time.
 - (b) The proportion of babies with Down's syndrome was significantly higher than in any later admission group.
 - (c) Overt paternal or maternal rejection was significantly more frequent.
2. There was a trend for the proportion of children who were profoundly retarded ($IQ < 20$) on admission to increase with increasing age, although this was not significant.
3. The proportion of the 4—7 year-old admissions who could understand speech or use meaningful words was significantly greater than the proportion of the 1—4 year-olds, but although this trend continued, it was not thereafter significant.
4. Although a trend towards increasing functional independence was seen, there was no significant difference in the proportion of the 7—10 year-olds when compared with the 4—7 year-olds who could walk unaided, feed themselves or help in dressing themselves to a useful degree. While a significantly greater number of the 4—7 year-olds when compared with 1—4 year-olds could respond to regular potting, there was no significant difference between the 4—7 year-olds and the 7—13 year-olds.
5. The following factors were found not to be significant in relation to the age at which the child came into hospital:
 - (a) The diagnosis of cerebral palsy, microcephaly or overt epilepsy.
 - (b) The sex, height, weight or general condition of the child.
 - (c) Social aspects such as illegitimacy, social class, the patient's place in his sibship at home.
 - (d) Parental aspects such as their age at the patient's birth, paternal or maternal physical or mental illness.
 - (e) Child-centred difficulties, whether medical, social or management.

Summary

A comparison has been made of the frequency of certain medical and social variables in mentally retarded patients admitted between the ages of 8 months and 13 years to a children's hospital, to determine whether any of the variables were associated with earlier or later admission. Although some of the factors considered did not show a statistically significant increase relating to particular age groups, certain trends were seen and three significant factors concerning the 38 under 1 year-old admissions were observed.

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