Incidence of contraindications to immunisation

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SUMMARY A cohort of 522 children entering primary school were reviewed for contraindications to immunisation. Every child in the group would have been eligible to receive diphtheria, tetanus, polio, and measles immunisation if the current (1988) Department of Health and Social Security (DHSS) guidelines had been followed. Only 2.5% of the cohort met the DHSS contraindications to pertussis immunisation.

An effective immunisation programme must be a major aim of any public health organisation. For those vaccines which are currently used in this country there are recognised contraindications which are published by the DHSS.¹ Previously published contraindications have often been misinterpreted.^{2,3}

All the vaccines protect the individual but pertussis, polio, and measles immunisation offer further protection by reducing the circulation of the infecting organism in the community. In an attempt to increase this 'herd immunity' the European Regional Committee of the World Health Organisation has recommended a target of a 90% uptake of primary immunisations for all children under 2 years by the year 1990.⁴

There remains, however, a paucity of data as to the possibility of achieving these goals in the face of published guidelines. This study looked at a cohort of children to find the prevalence of DHSS contraindications to immunisation within the normal school population.

Subjects and methods

All children entering state education with Hampshire Education Authority are offered a preschool entrance medical. This follows a similar format to those outlined elsewhere⁵ and takes place between the ages of 4 and 6 years.

Those children entering normal primary school in two areas of the education authority were included in the study. All were born between August 1980 and July 1981 and started school over a three term period. Children who attended schools for special education outside the area were not included.

The interview with the parents sought contraindications to immunisation and these histories were then compared against the newly published DHSS contraindications to immunisation.¹ With respect to pertussis it was assumed that those children with 'problem histories' would have been advised against immunisation. The immunisation status of the child was checked against centrally held computer data.

For those children who failed to receive their immunisations the reasons given were divided into recognised DHSS contraindications, inaccurate contraindications, and 'parental refusal' (no further details provided).

Results

A total of 554 children were expected to enter primary school education. Twenty two parents were unavailable for interview and a further 10 children did not have their immunisation status recorded on the central computer. These children were therefore excluded from the study leaving a cohort of 522.

The percentage uptake rates for the cohort were comparable for the published data for the whole health authority for the year 1981 (figures in parentheses). The rates were diphtheria, tetanus, and polio 97.3% (93.0%), pertussis 73.5% (74.7%), and measles 84.8% (83.1%).

No child in the cohort had a recognised DHSS contraindication to diphtheria, tetanus, polio, or measles. Only 12 children (2.3%) would have been excluded from the pertussis immunisation if the current guidelines were used.

'Parental refusal' accounted for the non-vaccination of 2.6% of the cohort for diphtheria, tetanus, and polio, 5% for measles, and 10.7% for pertussis.

Inaccurate contraindications to pertussis and measles were present in 13.4% and 7.5% of the group, respectively. No child failed to receive the other vaccinations on the grounds of inaccurate contraindications. Details of the inaccurate reasons given are provided in tables 1 and 2. The reasons for omitting pertussis which could be accepted using the current guidelines include 'epilepsy' in siblings (n=4), 'epilepsy' in parents (n=4), a reaction to first injection (not defined) (n=3), and an intraventricular haemorrhage in the neonatal period.

Table 1 Details of reasons given by parents for omitting pertussis immunisation

Reason	No
Fits in distant relatives	20
Family history of atopy	18
Homoeopathic methods used	7
Mental retardation in relative	7
Administrative error	3
Admission to neonatal intensive care	3
Febrile convulsion in sibling	3
Child adopted	2
Other	7
Total	70

Table 2 Details of reasons given by parents for omitting measles immunisation

Reason	No
Previous diagnosis of measles	11
Administrative error	11
Family history of atopy	7
Fits in relative	4
'Allergic to eggs'	3
Homoeopathic methods used	2
Other	1
Total	39

Discussion

Eradication of diphtheria, tetanus, polio, and measles from our society is dependent upon many factors, one of which is the comprehensive use of available vaccines.

If we are to achieve effective protection of our population then it is important that a high immunisation uptake rate is achieved and we consequently provide an adequate level of 'herd immunity'. This study shows that if the present DHSS guidelines are correctly applied then less than 3% of children would be excluded from pertussis immunisation and practically none from measles, polio, diphtheria, and tetanus immunisations.

Other workers have attempted to assess the feasibility of improving uptake figures for immunisa-

tion. One group found that 7% of children had DHSS contraindications to pertussis and that if parental refusal was taken into consideration an 80% uptake of pertussis immunisation could be achieved.⁶ Another study looked at factors which could influence measles uptake and concluded that a 90% uptake was achievable.³ Neither study obtained their information by direct interview with the parents in the manner encountered in clinical practice.

Inevitably some parents will be antagonistic to the use of any vaccines and so refuse them. Even allowing for this factor this study suggests that it would be possible to achieve uptake rates of 97% for diphtheria, tetanus, and polio, 95% for measles, and 87% for pertussis. It is important to note, however, that the number of children with inaccurate contraindications for both pertussis and measles exceeds the number where parents refused the immunisation. Many of these inaccurate contraindications were ascribed to health professionals.

The reduction in mortality and morbidity from diphtheria, pertussis, tetanus, polio, and measles must continue to be a goal for all involved in the care of children. Uptake figures in excess of those recommended by the World Health Organisation are attainable within the confines of the current DHSS recommendations and contraindications. This, however, is dependent upon a coherent and unified stance on advice and guidance by all health professionals.

References

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Accepted 29 November 1988