

Parents' attitudes to measles immunization

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SUMMARY. *A study of a cohort of children in Maidstone Health Authority examined the reasons for the failure to achieve targets for the uptake of measles immunization. Parents were interviewed before they were notified about measles immunization to determine their attitudes, beliefs and intentions regarding measles immunization and a further review was held with those whose child had no record of the immunization by the age of 20 months. The initial interview showed that most parents have a favourable attitude to measles immunization. However, many lacked knowledge, especially about valid contraindications, and claimed not to have received advice from a doctor or health visitor. The most common reasons for non-uptake of measles immunization were: the child had already had measles, concern about contraindications and delay owing to illness. This points to the importance of increasing doctors' and health visitors' knowledge of Department of Health and Social Security guidelines regarding valid contraindications and to the role of health visitors in promoting uptake. However there is also evidence that the gap between actual and target levels of uptake may be less than official figures suggest.*

Introduction

A SAFE and effective immunization providing lasting immunity against measles has existed in the UK since 1968. However in England in 1984 only 63% of children under three years of age had been immunized against measles compared with rates of around 85% for diphtheria/tetanus and poliomyelitis, and 60% for whooping cough.¹ Measles thus remains a common serious illness and was the cause of 270 deaths in Britain between 1970 and 1983, with 53% of deaths occurring among children who were previously healthy.²

There is national concern to increase rates of uptake of measles immunization, with a target of 90%, commonly regarded as the level required to achieve herd immunity, for the 15-month age group. Rather than introducing a compulsory immunization policy as practised in the USA, reliance is being placed on persuading and encouraging parents to have their children immunized.³ This raises the questions 'Why are parents failing to take up measles immunization?' and 'How can immunization targets be achieved?'

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This study examines a number of possible explanations for failure to take up measles immunization: (1) parents' dissatisfaction with or problems of access to child health services; (2) parents' general attitudes to and knowledge about measles immunization and their perception of the seriousness of the disease; (3) the role of doctors, health visitors, and relatives and friends in encouraging or discouraging immunization and; (4) specific problems which result in delay or non-uptake. The study is based on a cohort of children in Maidstone Health Authority, which is a mixed urban and rural district in the South East Thames Regional Health Authority. Although Maidstone had the highest rate of uptake of measles immunization in Kent in 1982 (71%) this was still far short of the target of 90%.

Method

The South East Thames Regional Health Authority computer centre identified 539 children who would reach the age of 13 months during the time allocated for interviewing parents. From this list a random sample of 199 children was selected. These children were divided into birth week groups and the parents of 174 (87%) were successfully interviewed at home during a week when the children were 13 months old. The interview consisted of a mixture of precoded and open-ended questions, and was designed and introduced as a survey of parental views of community health services. Questions relating to measles thus formed just part of the interview schedule, so as not to unduly influence subsequent behaviour. One month after the interview the parents received notification of measles immunization schedules in the normal way.

Information on immunization uptake by the age of 20 months was obtained from the computer records for all the children on the initial list. This allowed a comparison to be made between the rate of uptake of the 174 children whose parents were interviewed and the 'control' group of 340 non-interviewed parents.

The children in the interview group who had no record of measles immunization by the age of 20 months were followed up and the parents interviewed to determine the reasons for non-uptake.

Results

The majority of the 174 initial home interviews (98%) were held with the mother. Only 1% were held with another female relative and 1% with the father. The families interviewed were allocated to the Registrar General's 1980 social class classification on the basis of the occupation of the chief wage earner. In 93% of cases this was the child's father or male guardian. Forty-four per cent of the sample were in the non-manual classes, a further 34% were classified as skilled manual and 19% as semiskilled and unskilled, with 3% being unclassified. This social class distribution is almost identical to that for married men aged 20-44 years in Great Britain in 1980, which is the closest comparison available.⁴

Use of medical services

General practitioners played a major role in providing childhood immunizations, with 17% of the 174 parents interviewed taking their child to their own general practitioner for regular vaccinations and 43% taking their child to a child health clinic run by general practitioners, while 39% attended a health authority clinic. In contrast, routine medical checks were largely provided by health authority clinics (76%), with only 18% of parents taking their child to a general practice health clinic and 5% taking their child to their own doctor.

Access and attitude to medical services

Of the parents interviewed 19% regarded getting to their general practitioner as 'difficult' or 'very difficult', and 11% had difficulty getting to their child health clinic (health authority or general practice clinic), mainly owing to problems of transport in rural areas. However, parents generally expressed a positive attitude to the child health services, with 93% regarding the regular medical checks provided as 'important' or 'quite important', and only 7% seeing them as 'not very important'.

Attitudes to and knowledge of immunization and the disease

Parents made a clear distinction between the different types of immunization (Table 1). In the case of the diphtheria/tetanus and polio vaccination, 99% of parents described their general attitude as favourable, and only 1% expressed concern about possible side effects. In contrast, 53% of parents expressed concern about the possible side effects of the whooping cough immunization, with many mentioning the dangers of brain damage. In the case of measles immunization, 25% of parents mentioned side effects but this mainly took the form of raising questions as to whether there might be side effects. In a few cases possible contraindications were identified, such as the experience of allergies or fits, or an adverse reaction to previous immunizations. A high proportion of parents also commented on their lack of knowledge about the measles immunization or the disease itself (Table 1). This may reflect the fact that these questions were asked about two months before the baby was old enough to receive the measles immunization but old enough to receive the other immunizations. However, parents with older children should previously have been exposed to information on measles.

Despite these worries and uncertainties 93% of parents were in favour of their child receiving the measles vaccination. Just over 3% of parents described their attitude to the vaccination as neutral, apparently because they had not made up their mind about its value, while 3% described their attitude as unfavourable. Two of the five respondents whose attitude was unfavourable had received discouraging advice from the doctor or health visitor because the child in question or a sibling had experienced convulsions. The three other respondents whose attitude was unfavourable had doubts about the value of the vaccine.

Parents generally thought their child would be quite likely to get measles if not immunized. In addition, 76% of parents regarded measles as a 'quite serious' or 'very serious' illness, while nearly half the parents volunteered comments about possible complications of measles — mainly eye problems (particularly blindness) and ear problems (most commonly deafness). Many parents also commented on the unpleasantness of the illness itself, although often noting that the effects and experience of measles vary according to its severity.

Analysis of responses by social class showed there to be little difference between the manual and non-manual classes in their attitudes to measles immunization or in their perceptions of the seriousness of the disease.

Advice received

At the time of the interview, few parents had received advice from health professionals about the measles vaccination. However, the advice that had been received was generally encouraging (Table 2). Few parents had discussed their child receiving the measles vaccine with relatives or friends but parents generally believed their attitude would be favourable or neutral.

Uptake of immunization

The computer records indicated that 129 (74%) of the 174 children whose parents had been interviewed had received measles immunization by the time they were 20 months old

Table 1. Parents' comments in response to the question: 'Can you tell me what you think about your baby receiving ... vaccination?' Many respondents made more than one comment.

Types of comment	Percentage of parents (n = 174)		
	Diphtheria/ tetanus and polio	Whooping cough	Measles
Lack of knowledge of vaccine or disease	—	1	65
Inappropriate — family's or child's medical history	—	9	3
Unnecessary — child has had disease already	—	—	4
Doubts about value of vaccine	—	—	6
Concern about side effects	1	53	25

Table 2. Advice about measles immunization received by parents from professionals.

Advice given	Percentage of parents receiving advice (n = 174)		
	GPs	Health visitors	Child health clinic
Encouraging advice	8	15	6
Discouraging advice	3	2	1
No advice given	89	83	93

(Table 3), with two further children recorded as being immunized after the age of 20 months. This was similar to the rate of uptake among the control group of children (73%) and indicates that the interviews had not significantly influenced the behaviour of parents. It should be noted that for the small group of 25 parents who could not be interviewed, immunization status was unknown in two cases, and the uptake rate was 57% for the remaining 23 — this may be largely accounted for by movement out of the area.

The 43 parents in the interview group whose child was not recorded as having received a measles immunization were followed up. Contact was made or the whereabouts ascertained for all but three of the parents. Ten parents had moved, most out of the area, and one had died. A further nine parents said their child had been immunized for measles, although this was not recorded on the computer by the time the child was aged 20 months. The reported ages at immunization of these children ranged from 17 to 22 months.

Of the 20 parents who acknowledged that their child had not been immunized against measles seven said they had decided against the immunization, with the main reasons being problems of fits in the family, the child's medical problems (generally an egg allergy or eczema) or because the child had already had measles. This group included most of those originally reporting an unfavourable or neutral attitude to the immunization.

The remaining 13 parents who had not had their child immunized originally reported a favourable attitude to measles immunizations. They stated that their non-uptake was due to 'delay' mainly caused by their child having an illness (colds or ear infection) at the time the immunization was due but they also mentioned worries, such as the harmful effects of the vaccine. It could not be determined whether all those parents delaying would eventually present their child for immunization.

Table 3. Actual and potential rates of uptake of measles immunization.

	Percentage immunized	
	All survey children (n = 174)	Survey children excluding movers (n = 163)
Uptake at age 20 months based on computer records	74	79
Uptake based on computer records and follow-up interview	80	86
Potential uptake ^a	90	96

^aIncludes 13 children whose parents were delaying immunization and three who had already had measles and whose parents had decided against immunization.

Of the 20 parents who acknowledged that their child had not been immunized seven said they had not received any information about measles immunization from either a doctor or health visitor. However, non-uptake owing to an egg allergy or the child having had measles generally appeared to be based on advice given by professionals.

Information from the computer records and follow up interviews combined indicated that 80% of the 174 survey children had received immunization for measles. The corresponding figures were 86% for non-manual and 74% for manual classes. The lower uptake rate among manual families appeared to be due to slightly larger numbers moving out of the area, as well as a greater tendency to delay or decide against having their child immunized.

As Table 3 shows, the target level of 90% uptake could be achieved by including those children whose parents were delaying and those who had already had measles and whose parents had decided against immunization, which are groups whose behaviour is likely to be readily influenced by professional advice encouraging measles immunization. The rates of uptake for the cohort were even higher if those who moved out of the district are excluded from the denominator.

Discussion

Parents and their relatives and friends generally viewed measles immunization favourably, suggesting there is little need for programmes aimed at changing attitudes. Access to health services and relationships with professionals also did not appear to form an important cause of non-uptake. Instead a major reason for non-uptake was parents' beliefs that immunization was contraindicated because of their family's or child's medical history (mainly convulsions or egg allergy) or unnecessary because their child had experienced measles already. This has been noted in other studies carried out in different parts of the country.⁵⁻⁷ However DHSS guidelines state that an egg allergy only forms a contraindication where there is a history of an anaphylactoid reaction.⁸ Children with a personal history of convulsions are recommended to receive measles vaccine but should be given a simultaneous dose of human immunoglobulin. Immunization is also recommended for children having had measles when they were less than two years old.

The proportion of parents receiving professional advice about measles immunization generally appears to be low.⁶ In the present study one third of the parents who were delaying or had decided against immunization reported receiving no professional advice. In addition, in some cases doctors and health visitors discourage measles immunization in situations where DHSS guidelines recommend uptake.^{6,7,9,10} This divergence between professional beliefs and practices and official policy was demonstrated in a parallel study of health professionals in Maidstone and Canterbury Health Authorities.¹¹ Thus it should

be ensured that health professionals' knowledge about contraindications conform to DHSS guidelines, and that doctors and health visitors play a greater role in advising parents of the importance of measles immunization.

A further major reason for failure to take up measles immunization was that parents were delaying, often because of their child being ill. This indicates the importance of monitoring uptake and suggests that health visitors could play an important role in following up those parents who have delayed immunization to ensure that these children are eventually protected against measles. The effectiveness of personal contact by health professionals in increasing the uptake of measles immunization was demonstrated in a campaign run by a group of general practitioners in Reading in which a member of the health team visited families with a non-immunized child.¹² As a result many parents reconsidered their original decision and consented to measles immunization, which had the effect of increasing the uptake rate from 84% to 96%.

The general problems of a lack of knowledge about measles immunization and worries about contraindications were found among all social groups in this study. However, there was some evidence of the traditional social class pattern in the use of preventive services, with children from manual classes being at slightly greater risk of not receiving a measles immunization than those from non-manual classes. Differences may be greater in more deprived areas, thus increasing the importance of the role of doctors and health visitors in encouraging and monitoring uptake. Although there was scope for increasing the level of take up of measles immunization in the district studied there was also some indication that the level of take up may be underestimated as a result of delays in immunization and in recording this information on the computer records. Allowance also needs to be made for movement out of the district prior to the time when immunization is due. The inclusion of such people in the present cohort reduced apparent immunization rates by 5-6%.

References

1. Department of Health and Social Security. *On the state of the public health for the year 1984*. London: HMSO, 1986.
2. Miller CL. Deaths from measles in England and Wales, 1970-83. *Br Med J* 1985; **290**: 443-444.
3. Noah N. Measles eradication policies. *Br Med J* 1982; **284**: 997-998.
4. Office of Population Censuses and Surveys. *Census 1981: economic activity — Great Britain*. London: HMSO, 1984.
5. Blair S, Shave N, McKay J. Measles matters, but do parents know? *Br Med J* 1985; **290**: 623-624.
6. Kemple T. Study of children not immunised for measles. *Br Med J* 1985; **290**: 1395-1398.
7. Adjaye N. Measles immunisation: some factors affecting non acceptance of vaccine. *Public Health* 1981; **95**: 185-188.
8. Joint Committee on Vaccination and Immunisation. *Immunisation against infectious disease*. London: HMSO, 1984.
9. Carter H, Jones IG. Measles immunisation: results of a local programme to increase vaccine uptake. *Br Med J* 1985; **290**: 1717-1719.
10. Berkeley MI. Measles — the effect of attitudes on immunisation. *Health Bull (Edinb)* 1983; **41**: 141-147.
11. Lakhani A, Morris R, Morgan M, *et al.* *Report of an investigation of the low uptake of measles immunisation in Maidstone Health Authority*. Department of Community Medicine, St Thomas's Hospital, 1986.
12. MacKenzie A. Children not immunised. *Br Med J* 1985; **290**: 1717-1719.

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