

# Assessment of the immunization status of practice children under five years of age

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**SUMMARY.** Many professional groups are involved in immunization, and four different immunization records may be kept—the general practice record, the community child health record, the health visitor record and a record retained by the parent. The first three of these sources were examined for the immunization status of children under five years of age in a practice. The health visitor record was the most comprehensive. There was a remarkable improvement in pertussis vaccine acceptance over the four years reviewed but there were gaps in the uptake of measles vaccine.

## Introduction

**P**REVENTION is a topic which is easier to talk about than to practise. One major drawback with prevention is the uncertainty about the effectiveness of many preventive measures.<sup>1</sup> Immunization against infectious diseases is one form of prevention where the value is more certain. It is therefore important to assess immunization coverage. Many professional groups are involved in the immunization programme, including general practitioners, health visitors and clinical medical officers, and there is a danger that the prevention which is supposed to be everybody's business is nobody's.<sup>2</sup>

The purpose of this study was to discover the percentage of children in a practice (in four consecutive birth-year cohorts) who were immunized.<sup>3</sup> This consisted of identifying the practice population of children born between 1978 and 1981 and finding out their immunization status from general practitioner, health visitor and community child health records.

## Method

The practice, based in a health centre in an urban area, was established in 1977 with an NHS list size of slightly less than 2,000 patients. One health visitor is attached to the practice, which runs its own well baby clinic.

Three separate lists of children born, between 1 January 1978 and 31 December 1981, were prepared from the practice age-sex register, the Tayside Master Patient Index<sup>4</sup> and from the health visitor record. The immunization status of the children on these lists for diphtheria, tetanus, pertussis and measles was assessed by reviewing the general practice record, the health visitor record and the community child health computer file. Information on the vaccine, the batch number and date of immunization was gathered where available throughout November 1982.

The children listed and their immunization data from each of these three sources were analysed and compared. Diphtheria, tetanus and polio immunizations were considered together as these vaccines are rarely administered separately.

## Results

### General practice record

The practice age-sex register revealed that 83 children had been born in the four-year period under review. Their immunization status, according to the general practice record, is shown in Table 1. Apart from measles immunization, the youngest cohort was the best-immunized and the oldest was the worst. This result was probably due to a greater proportion of children in the older groups having been born and immunized outside the practice. Transferred children's records rarely carried any immunization information even though this could have been recorded on the outside of the envelope. Five doses of measles vaccine

**Table 1.** Immunization status: general practice record. (Percentages in parentheses.)

Year of birth	Number of children	Completed courses		
		Diphtheria, tetanus and polio	Pertussis	Measles
1978	17	9 (53)	6 (35)	9 (53)
1979	22	19 (86)	13 (59)	10 (45)
1980	20	10 (50)	10 (50)	6 (30)
1981	24	19 (79)	18 (75)	8 (33)
Total	83	57 (69)	47 (57)	33 (40)

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**Table 2.** Immunization status: community child health record. (Percentages in parentheses.)

Year of birth	Number of children	Completed courses		
		Diphtheria, tetanus and polio	Pertussis	Measles
1978	16	7 (44)	6 (38)	7 (44)
1979	21	16 (76)	11 (52)	13 (62)
1980	19	15 (79)	15 (79)	13 (68)
1981	23	2 (9)	2 (9)	1 (4)
Total	79	40 (51)	34 (43)	34 (43)

**Table 3.** Immunization status: health visitor record. (Percentages in parentheses.)

Year of birth	Number of children	Completed courses		
		Diphtheria, tetanus and polio	Pertussis	Measles
1978	15	14 (93)	11 (73)	13 (87)
1979	21	21 (100)	13 (62)	15 (71)
1980	20	20 (100)	18 (90)	15 (75)
1981	23	23 (100)	21 (91)	10 (43)
Total	79	78 (99)	63 (80)	53 (67)

and seven doses of triple vaccine which, according to the other two sources, had been administered in the practice, were not noted on the general practice record. There was no uniform method of recording immunization on the GP A4 record and thus immunization details were difficult to locate. Batch numbers were only recorded for 24 per cent of immunizations and the date was absent for 10 per cent.

#### Community child health record

There were 79 names on this list. The immunization status of these children is shown in Table 2. This information was obtained from community clinic returns and GP73 forms. The vaccine, the date and the giver were recorded but not batch numbers. There were a number of places where this source conflicted with the other two as to whether triple vaccine or only diphtheria and tetanus vaccines had been given. There was a considerable delay between the date of immunization and recording on this file, as evidenced by the apparently low rate of immunization in the 1981 cohort. (It is at the end of the child's second year that district and area rates are compared.) For children born and immunized outside the practice the community child health record was more complete than the general practice record.

#### Health visitor record

There were 79 children in this list and their immunization status is shown in Table 3. The immunization acceptance rates from this source were the highest of all.

**Table 4.** Immunization status: all records. (Percentages in parentheses.)

Year of birth	Number of children	Completed courses		
		Diphtheria, tetanus and polio	Pertussis	Measles
1978	14	13 (93)	10 (71)	13 (93)
1979	20	20 (100)	13 (65)	15 (75)
1980	18	18 (100)	16 (89)	16 (89)
1981	21	21 (100)	20 (95)	9 (43)
Total	73	72 (99)	59 (81)	53 (73)

There was only one discrepancy for diphtheria, tetanus and polio immunization and this related to a child transferred from outside Tayside who might well have been immunized. The acceptance rates for pertussis and measles immunization were not nearly so high but nevertheless much higher than those from the other two sources.

#### All records

The immunization status of the 73 children common to all sources is given in Table 4.

#### Discussion

Problems in accurately identifying groups of children in the community have been pointed out in other studies.<sup>5</sup> In this study the immunization against diphtheria, tetanus and polio was complete except for one transferred child. The high coverage is interesting since there are a number of contraindications to immunization and yet none was applicable to this group of 73 children. The immunization status of children whose names appeared on only one list was difficult to determine, which may be important since the children who have moved home or practice may be at greater risk.

Acceptance of the pertussis vaccine clearly changed over the four years reviewed, with a rise between the rates for the 1979 and 1980 cohorts. This increased uptake occurred after the 1978-79 whooping cough epidemic in the UK, which may have been a factor responsible for this change. There were four children in the older group in the practice who had commenced a course of monovalent pertussis vaccine.

The 1981 cohort could not be assessed for measles immunization as, at the time of assessment, some of the infants were not due for the vaccine. There were also gaps in the older age cohorts, six accounted for by children contracting measles before they were due for immunization.

All three sources agreed about the immunization history for only one third of the children. Dates were available for most immunizations but batch numbers were available for only a few. The health visitor record was the most comprehensive source for immunizations,

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the other two lagged considerably behind. Previous studies have revealed deficiencies in general practice and community records<sup>6</sup> and problems in communication;<sup>7</sup> they have also shown that the health visitor record is a better source of immunization information.<sup>8</sup> Prevention has been viewed as the *raison d'être* of health visiting.<sup>9</sup> Immunization has been considered valid if any one source recorded it. The validity of such records can only be assessed if a more accurate reference source is available. (Parents are not considered to be a good source of information on immunization status.) Indeed, conflicts between the three sources used do raise doubts about their validity. For example, for two of the children, one record stated that there was a contraindication to immunization while another record stated that it had been given. However, this was not considered a major problem.

### Conclusion

The general practice and community child health records of immunization in one practice have been shown to be deficient and the health visitor record to be the most comprehensive. These findings are supported by other studies. The recording of immunization in a uniform way in the general practice record would be useful. It is suggested that health visiting records of immunization would be better than community child health records as a basis for district, area and national immunization acceptance rates although the problem of identifying the paediatric population would still affect the result.

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