Study Of Immunization Status In Children Less Than 5 Years

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***Abstract*—Immunization is a process wherein an individual is made immune or resistant to an infectious, mainly by administering a vaccine. A vaccine stimulates the body's own immune system to protect the person against infectious disease. Varied groups are involved in immunisation and different immunisation records are kept which include community child health records, general health practice record, health visitor record, and the record which is retained by the parent. These sources were examined for the immunisation status of children under 5 years of age. The health visitor's record was the most accurate and comprehensive. There was a remarkable improvement in pertussis vaccine immunity over 3 years review but major lapses were seen in the case of measles vaccines.**

INTRODUCTION

Immunization is an effective tool for controlling and eliminating life-threatening disease It is estimated that it has been possible to avert 2 to 3 million deaths each year. It is cost-effective and more so vaccination does not require any

major lifestyle changes. The most important elements of the immune system which are improved by immunisation are the T cells, B cells and the antibodies that B cells produce. Before the introduction of vaccines, people could only become immune to an infectious disease by contacting it and surviving it. Smallpox (variola) was prevented in this way by inoculation which produces a milder effect than the natural disease. When a system is exposed to molecules that are foreign to a body, the body has the ability to quickly respond to a subsequent encounter because of the immunological memory which is one of the main functions of the adaptive immune system. So when a body is exposed to an immunogen in a controlled way the body learns to protect itself which is called active immunization.

The main purpose of the study was to discover the percentage of children in practice who were immunised. This consisted of identifying children born between 2016 and 2019 and finding out the immunization status from a community child health record, health visitor record and general practice record.

METHOD

The practise which is based in a child health centre was established in 2016 with the list size of 200 patients. One paediatrician is attached to the practice who runs its own children clinic. 3 separate lists of children born between 1st January 2016 and 31st December 2019 were prepared from the record register. The immunization status of the children on these records was for pertussis, polio, tetanus, BCG, and measles. These were reviewed from the general practice record by the paediatrician. All the details of the immunity vaccines, batch number and date of immunization was collected through December 2016.

RESULTS

COMMUNITY CHILD HEALTH RECORD :

The data at the community child health records showed more than 127 children,who were born in the review period of 4 years.The immunization status which was maintained in the community record is shown in table 1. All the relevant data was collected from that record book.Lot of the data was used and a small part was discarded.In a few cases the birth date was not available. Also there were few children who were adopted, so there was no relevant history data for the vaccine status. Apart from polio and Bcg vaccine, the youngest child was best immunized and the oldest was the worst.The possible reason could be explained that the older children were immunized outside the practice. Records of children whose immunization details were transferred didn't have much information as they could have been done elsewhere.Five doses of measles vaccine and seven doses of triple vaccine had been given but were not mentioned in the community health record.

Table 1: Immunization status : Community child health record

Year of birth	No. of children	Diphtheria Tetanus Polio	Pertussis	Measles
2016	12	9	6	9
2017	28	19	13	10
2018	36	10	10	6
2019	51	19	18	8
Total	127	57	37	33

There was no uniform method of recording the immunization on the community child health record and the details were very difficult to locate. Vaccine batch numbers were not recorded for all and the dates on which the vaccines were given was absent in few cases.

GENERAL HEALTH PRACTICE RECORD :

The records in the general health practice record files showed around 122 children on the list. The immunization status of these children is shown in Table 2. All the data was obtained from the records maintained at the general health practice records .Name of the vaccines, it's date and who administered it was noted but there was no mention of batch numbers. At many places the 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 thata data in the file. For children born and immunized outside the practice ,the general health practice record was more complete than the community health records.

Table 2 : Immunization status : General child health practice record

Year of birth	No. of children	Diphtheria, Tetanus Polio	Pertussis	Measles
2016	12	7	6	7
2017	28	16	11	13
2018	36	15	15	13
2019	51	2	2	1
Total	122	40	34	34

HEALTH VISITOR RECORD :

A data of 122 children was obtained from the lis of the health visitort and their immunization status is shown in table 3. The immunization acceptance rates from this source were the highest of all.There was only one discrepancy for diphtheria ,tetanus and polio immunization. The acceptance rate for diphtheria and Bcg were not nearly so high but nevertheless much higher than those from the other 2 sources.The data collected from this source was quite appropriate.

Table 3 : Immunization status : Health visitor record

Year of birth	No. of children	Diphtheria, Tetanus Polio	Pertussis	Measles
2016	12	7	8	7
2017	28	28	13	15
2018	36	36	28	29
2019	51	51	42	21
Total	122	122	91	72

DISCUSSION :

Problem is accurately identifying groups of children in the community having pointed out in other studies. In this study, the immunisation against pertussis, polio and diphtheria was completed except for one transferred child. The immunisation status of children whose name appeared on one list was difficult to determine which may be important since the children who have moved home . Acceptance of the pertussis vaccine changed over the few years reviewed with a rise in its rate. Details could not be assessed for measles immunization as at the time of assessment some of the infants were not due for a vaccine. Gaps could also be seen in children of older age. All three sources agreed about the immunisation history for only ⅓ of the children. Dates were available for most immunisations but batch numbers were available only for a few. The health visitor record was the most comprehensive for the immunisations, the other two lagged behind considerably. Previous studies have revealed deficiencies in community records and general records. Immunisation has been considered valid if any one source recorded it. The validity of such records can be assessed if a more accurate source is available. Parents are not considered to be a good source of information on immunisation status. Indeed conflict between the three sources raised doubts about their validity, for example one record stated that there was a contraindication to immunisation while another record stated that it had been given. It is also analysed that chidren of educated parents were vaccines lot better than the children of uneducated parents.From the data obtained, it is also assessed that vaccination in children of migrant workers is missing.The immunisation vaccines in children under 5 years can be improved if an awareness is created in the society and also if the vaccinations are easily and cheaply accessible.

CONCLUSION:

The general practice and community child health records of immunisation in one practice have been shown to be deficient and the health visitor record data to be most comprehensive. The recording of immunisation in a uniform way in the general practice record would be useful. It is suggested that health visiting records of immunisation would be better than community child health records as a basis for district or area immunisation acceptance rates although the problem of identifying the paediatric population would still affect the result.

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