Expanded Programme of Immunization in Karachi

Pages with reference to book, From 34 To 37

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Abstract

Immunization status of children and their mothers and reasons for their failure to be immunized were studied. The study lasted for two months, i.e., August and September, 1993 at the Paediatric Outpatient Department of Civil Hospital, Karachi. Three groups of patients were targeted. Six hundred and twenty-four children under 1 year of age, 955 children between the ages of 1 to 5 years and 1579 mothers were registered. These women were questioned regarding their immunization status and that of their children. In the group below 1 year of age, BCG, DPT and polio (3 doses) and measles were given to 75%, 35% and 23% respectively. Tetanus toxoid (2 doses) was given to 47% of their mothers. In the group of children between 1-5 years, BCG, DPT and polio 3 doses and measles were given to 84%, 63% and 58% respectively. Tetanus toxoid (2 doses) were given to 64% of their mothers. The main reasons for not vaccinating were lack of infonnation and lack of motivation (JPMA 45: 34, 1995).

Introduction

Expanded programme of immunization (EPI) was initiated by the World Health Assembly in 1974[1]. It was hoped thatby the year 2000, "Health for All[2]" would become a reality for children of the developing countries. Targets for vaccine coverage were set, so that infectious diseases responsible for mortality of children would eitherbe eradicated or eliminated. Periodic assessment was essential to detennine the success of EPI. Determination of vaccination coverage is an important aspect of monitoring activity. Despite favourable reports of extremely high coverage from government source, we continue to see patients who are either unimmunized, partially immunized orcany a high burden of preventable communicable disease. This study was undertaken to evaluate the immunization status of children and their mothers seeking medical care at the Civil Hospital and their reasons for failure to be immunized.

Patients and Methods

This was a prospective descriptive study conducted from 1st August to 30th September, 1993 at the out-patient department of the Paediatric Unit of Civil Hospital, Karachi. During this period, a total of 13.394 patients were registered. This included 6,647 boys and girls and their 6,647 mothers. Mothers of every third child in the age group of 0-11 months and eveiy fifth child in the age group 1-5 years was interviewed by a doctor. The questionnaire included patient identification, details of immunization status and reasons for failure to immunize. Proof of immunization was sought such as the immunization card, if available and BCG scar. In cases where such tangible evidence was not available, the study had to accept the mother's recall of vaccination history. One thousand eight hundred and seventy-two children registered were in the age group 0-11 months (group A) and 4,775 between 12 months to 5 years (group B). Three hundred and fifty-four boys and 270 girls from group A and 534 boys and 420 girls from group B were selected for the study. Three hundred and seventy (63%) of children belonged to Karachi South and 16% to Karachi Central (Table I).

Table I. Residential areas of patients interviewed.

District	Group A		Group B	
	Total number	%	Total number	%
South Karachi	370	59.3	605	63
Central Karachi	101	16.2	150	16
East Karachi	84	13.4	107	11
West Karachi	60	9.6	63	7
Outside Karachi	9	1.4	30	3

The results of the questionnaire were tabulated and the frequencies presented.

Results

During the two months period the number of children registered in the Paediatric Outpatient Department who were less than five years were 6,647. Mothers of 1,579 (24%) patients below five years that were questioned (Table II).

Table II. Random selection of patients for filling questionnaire.

Groups	Total number of patients	Total number of patients selected	% of total patients questioned
A Children 0-11 months	1872	624	9
B Children 12-16 months	4775	955	14
Both	6647	1579	24

In group A BCG was given to 75% and 3 doses of DPT/oral polio vaccine to 35% (Table III).

Table III. Immunization status of children 0-11 months of age.

Vaccine	Number of patients vaccinated	% of patients vaccinated in group A
BCG	470	75
BCG scar present	396	63
OPV zero	470	75
DPT/OPV 1	400	64
DPT/OPV 2	333	53
DPT/OPV 3	217	35
Measles	144	23

OPV = Oral polio vaccine.

In group B, 84% were given BCG. BCG scar was present in only 73%. Fifty-eight percent were vaccinated against measies anu i97o naci tirst booster dose of DPI/oral polio vaccine (Table IV).

Table IV. Immunization status of children 12 months - 5 years of age.

Vaccine	Number of patients vaccinated	% of patients vaccinated in group B
BCG	807	84
BCG scar present	698	73
OPV zero	807	84
DPT/OPV 1	739	77
DPT/OPV 2	698	73
DPT/OPV 3	599	63
Measles	550	58
DPT/OPV booster 1	376	39

OPV = Oral polio vaccine.

Forty-seven percent mothers of children below the age of 1 year had two doses of tetanus toxoid (Table V).

Table V. Immunization status of mothers of children <5 years.

Total number of mothers registered				6647
No. of mothers selected of children 0-11 months			Group C	624
No. of mothers selected of children 12 months to 5 years			Group D	955
Vaccine	Group C	% of group C	Group D	% of group D
Tetanus toxoid 1	307	41.2	646	68
Tetanus toxoid 2	296	47.4	610	64
Tetanus toxoid 3	185	29.6	337	35
Tetanus toxoid 4	118	18.9	276	29
Tetanus toxoid 5	98	15.7	237	25

The reasons for failure to immunize the children were lack of motivation in 20% cases in group A and 27% in group B and lack of information in 54% cases in group A and 42% in group B (Table VI).

Table VI. Reasons cited by patient's mother for failure to vaccinate child or herself.

Reasons	Group A (%)	Group B (%)
Did not know	54	42
Facility for immunization too far	6	9
No time/busy in other chores*	5	9
Forgot*	8	11
No finances for travel	3	4
Vaccinator did not visit home	4	4
Vaccinator/vaccine not available at facility	4	4
Vaccination refused by facility	3	3
Unwilling*		
(a) Because of family tradition	3	5
(b) Forbidden to vaccinate by relatives		
Complication of previous vaccination*		
(a) Same child		
(b) Other child	3	2
No reason given	6	5

*Lack of motivation

Discussion

The Expanded Programme of Immunization was launched in Pakistan in 1978 with the goal that all imrnunizable diseases wouldbe controlled till they would be eliminated or eradicated completely. Initially, it was envisaged that by 1990 this target would be achieved. However, by late 1980s it was decided to extend the final date to the year 2000 and to be more realistic, only a few diseases, i.e., polio, neonatal tetanus and measles were to be eradicated. As a part of the ongoing process of assessment of EPI activities, UNICEF has published the following figures for vaccination coverage for Pakistan for the year 1990-91 of children at 1 year of age. BCG 91%, DPT/oral polio vaccine 3 doses 81%, measles 77%, tetanus toxoid (2 doses) to 42% mothers[3]. The targeted age group for EPI in children is under 1 year. There is small likelihood of values ofcovcrage obtained at 1 year, changing considerably in the community at large, even if, age of children in the alore-mentioned UNICEF publication is increased to 5 years. However, in our study, which is hospital based, we decided to include children till 5 years because the Child Survival Programme of Pakistan has kept this as the age

limit, since there is increased vulnerability of children to mortality and morbidity below the age of five years. Monitoring of vaccination programmes requires that "an ongoing systematic collection, analysis and interpretation of health data essential to the planning, implementation and evaluation of public health practice be made". We advise that children be vaccinated at whatever age they may come. Sentinel systems, in which reports are accepted from selected providers in a general community, such as large. hospitals are important sources of information[5] for the EPI. Ourstudy may therefore, be considered as a sentinel report and a comparison may be made by having similar studies conducted all over the country where there are large children hospitals. The inherent bias in our study is that we were likely to see more unvaccinated cases than perhaps present in the community.

In our study, measles coverage of <11 months and 1-5 years is 23% and 58% respectively and in the UNICEF report it is 79%. The marked discrepancy is reflected also in the fact that we continue to see measles cases frequently with a wide range of complications including subac4te scierosing panencephalitis. Equally disturbing is the continuing appearance of new cases of paralytic poliomyelitis. The 0-11 months and 1-5 years coverage of three doses of DPT/polio is 35% and 63% respectively as compared to UNICEF coverage values of 81%. The increase in values in group B in our study may be due to the fact that as a hospital practice we advise that children be vaccinated at whatever age they may come, specially if under 5 years and complete their vaccination series. In contrast, our figures for tetanus toxoid (2 doses) are 47% and 64% and for 5 doses (rendering life long immunity) are 16% and 25% for mothers with children in groups AandB respectively, whereas the UNICEF figure is 42% for 2 doses. The reason may be that women in our study had greater access to hospital antenatal services. The awareness about tetanus toxoid increases with each pregnancy as at antenatal examinations, pregnant women are advised to get themselves vaccinated. We have seen cases of women wlo report getting 2 doses of tetanus toxoid in each pregnancy, even as many as 10 doses. As a general observation we would add that the number of cases of neonatal tetanus coming to the hospital from South Karachi district where most of our patients resided have decreased. However, from Central Karachi, the number of cases of neonatal tetanus is high as compared to total patient load that we drew in this EPI appraisal. A healthy trend noted is a high coverage for tetanus toxoid in our study than has been reported by the UNICEF All women questioned had been administered the toxoid during pregnancy. None of these had been administered even one dose prior to pregnancy. There are a number of studies proving that the second dose of tetanus toxoid injection given atleast 20 days before delivery provides significant protection[6]. There is ample proof too that women of child bearing age should be protected by mass immunization[7]. This is an area that we must now concentrate on, for eradication of neonatal tetanus, so that every girl and woman coming in any contact with a health provider should be viewed as a potential recipient of tetanus toxoid. Only then may we hope to increase the coverage to maximum. In United States, vaccination levels have been assessed at school entry with written records of vaccination. The advantage of this approach is that coverage levels arebased on records rather than parental recall, the latter proôedure giving higher results than the former. If we applied this approach in Pakistan, we would get lowerbut possibly more accurate data in a restricted population that had access to primary schools. Although the year 1990 was chosen as the first target date for EPI[1], the targetdate has now become the year 2000 and using a more realistic approach special efforts for eradication of 3 diseases have been decided upon, i.e., neonatal tetanus, polio[8] and measles[9]. Immunization status of 3 diseases has already been discussed. The BCG coverage by immunizationandby appearance of BCG scar shows a discrepancy of almost 10% in each age group. None of these children were revaccinated, because checking for the BCG scar is apparently not a routine practice of vaccinators. This should be remedied. The reasons for failure to immunize were in a majority of cases, lack of information. Children in this series had high coverage for BCG given at birth and poor coverage of other vaccines. Vaccinators must make health education a part of their routine while immunizing even on the first visit. In those centres where patient attendanceis high, more staff should be provided for immunization

activities. Multiple visits are required for vaccinations and distance from residences is an important factor in high coverage. Commitment of health staff is a reflection of both the community pressure as well as the level of work ethics in that society. Performance of immunization programmes should also be assessed at each vaccination post. Stricter measures of monitoring, so that falsification of statistics does not occur, requires involvement of higher authorities at grass roots level.

Some factors for inadequate coverage noted by others[10] have also been observed in this study, i.e., lack of supervision of personnel, low work ethics of health workers, difficulties in following-up mothers and children and lack of community involvement in the knowledge and decision to implement immunization programmes. Success in immunization requires developing an adequate and factually correct information base[5]. Form filling should not be regarded as tedious and sentinel reports must be given due importance because viewed in aggregate, there are significant measures that could be taken to eliminate disease.

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