

Incomplete Immunization Coverage in Delhi: Reasons and Solutions

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Abstract—

Background: Immunization is considered as a cost-effective public health intervention to reduce the morbidity and mortality associated with infectious diseases. This study was planned with an objective to find the reasons for defaulters of immunization in an urban resettlement area in Delhi.

Methods: The study was conducted over a period of 6 months in four blocks of an urban resettlement colony in Delhi. Children who were not completely immunized as per records were tracked by the research team and caretakers were interviewed to find reasons for incomplete immunization, using a semi structured, pre tested questionnaire.

Results: Out of 87 incompletely immunized children, only 44 could be traced. The reasons reported were non availability of vaccine at the centre, long waiting time and poor awareness of parents about importance of immunization despite the fact that most of the parents were literate and employed. However 22.7% were wrongly classified as their immunisation was not recorded by the health worker in the centre. **Conclusion:** Sustained efforts are required to raise the awareness of community about importance of immunization. Workers need to be trained about need for maintaining appropriate records and use the MCTS system.

Keywords: Defaulters, immunization, Delhi

1. INTRODUCTION

Immunization is considered as a cost-effective public health intervention to reduce the morbidity and mortality associated with infectious diseases. As per estimates, over two million deaths are delayed through immunization each year worldwide [1]. Vaccine preventable diseases put a huge financial and social burden on individuals, families and society. Children who contract these preventable diseases usually suffer from impaired physical growth, cognitive development, emotional development, and social skills [2]. The Sustainable Development Goals' target 3.2 in alignment with WHO global strategy for mother and child 2016-2030 aims to achieve reduction of under-5 mortality to less than 25 per 1000 live births in every country [3,4]. The Government of India

RMNCH+A strategy 2013 mention the adoption of life course approach to bring down under 5 mortality rate in India [5]. About one-quarter, or 25%, of under-5 mortality is due to vaccine-preventable diseases globally [6]. In India, vaccine-preventable mortality was estimated to be that of the 826,000 deaths in children aged 1–59 months, almost three quarters or 604,000 deaths were due to vaccine-preventable diseases including diarrhea, pertussis, measles, meningitis, and pneumonia [7].

India's immunization programme, launched in 1985, is one of the largest health programmes of its kind in the world catering to a birth cohort of 2.7 crore children annually. The programme targets immunization against seven vaccine preventable diseases (diphtheria, whooping cough, tetanus, polio, tuberculosis, measles and hepatitis B) in the country. The programme has been operational for over 30 years and yet only 65% children in India receive all vaccines during infancy. It has been calculated that over 89 lakh children in the country do not receive all vaccines that are available under the immunization programme which is highest compared to other countries in the world [8].

To improve the rate of full immunization coverage, it is important to investigate the reasons for incomplete immunization. This will help to frame future policies to improve immunization services and involve all stakeholders in the planning process. Keeping the above points in view, this study was planned with an objective to find the reasons for defaulters of immunization in an urban resettlement area in Delhi.

2. METHODOLOGY

The study was conducted over a period of 6 months in four blocks of an urban resettlement colony in Delhi which were catered by one Urban Health Centre (UHC). A total of 2605 under 5 children were registered in UHC from all 4 blocks. First, a list of all the defaulters was prepared by the Auxillary Nurse Midwife (ANM) from the records in immunization register at the UHC. From the list, all defaulters were then

segregated block wise. A team of two field investigators, ANM responsible for that block and a field supervisor was constituted under the guidance of medical officer in charge of the centre. Before starting survey, all team members were trained and explained about the purpose of the survey, data collection and interviewing techniques so as to minimize interviewer bias. At the end of the day, all the data collected through questionnaires was analyzed by a senior supervisor. A semi structured, pre tested questionnaire was prepared in local language consisting of items on socio demographic profile like age, gender of the child, education and occupation status of parents. Details of the immunization of the children were assessed. The information was cross checked with immunization card available with the family. All efforts were made to interview mothers as they are the primary caregiver at home. In case, the mother was not available at the time of visit, repeat visits were made later. However, those defaulter families' which were reported to be shifted out of the area were not visited again. At the end of the interview, the mother was explained about the importance of the immunization and was counseled to complete the immunization of her child as soon as possible. The data were fed into Excel sheet and analyzed using SPSS version 17. Errors while entering data and analyzing were minimized by cross checking by the senior supervisor of the team.

3. RESULTS

There were a total of 87 defaulters as per records available (3.4%) Out of 87, only 44 families could be traced, the remaining families could not be traced due to a number of reasons. For 26 families, wrong addresses were found written on records while surveying and rest 17 families were found to have left the areas.

Table 1 shows socio demographic characteristics of study subjects. A majority of subjects were Hindu (95.5%) and non migrant (97.7%). Most of parents were literate and were employed.

Table 1: Demographic characteristics of study subjects

Characteristic	Frequency (N= 44)	Percentage
Religion		
Hindu	42	95.5
Muslim	2	4.5
Education of mother		
Illiterate	3	6.8
Literate	41	93.2
Education of father		
Illiterate	2	4.5
Literate	42	95.5
Occupation		
Unemployed	1	2.3
Employed	43	97.7
Migration status		
Non migrant	43	97.7
Migrant	1	2.3

3.1 Immunization status of children

The number of defaulters approached and interviewed was 44. The investigators went out in the community to survey the defaulters. Out of 44 defaulters, 14 (31.8%) were found to be completely immunized. The reason for misclassification of 10 out of 14 defaulters by ANM was incomplete entry on records. They were completely immunized with correct and complete entry on immunization cards with them. This could be due to the fact that the Mother and Child Tracking System system was operated by a NHRM data entry operator who came on alternate days and the Public Health Nurse at the centre did not inform nor update the records. In the rest 4 out of 14 defaulters, entry was not being made into the card for the vaccine which the mother claimed to have been given to child. The reasons were enquired regarding the card being partially filled. The reasons for card being incompletely filled were non entry by health staff (5.9%) or mistake of not carrying the card along on the day of receipt of vaccination (5.9%).

Only 30(68.2%) children were found to have incomplete immunization. Table 2 shows reasons for incomplete vaccination in study subjects. Factors/ reasons for incomplete (partial) immunization of the children were also assessed.

Table 2: Reason for incomplete immunization

Reason	Frequency (n=30)	Percentage
No need of vaccination	1	3.3
Vaccine not available	3	10.0
Time is not convenient	2	6.67
Long waiting time	1	3.3
Will get the vaccination later	4	13.3
Weather was not good so didn't go and then forgot	1	3.3
Do not know what vaccines are needed and when	6	20
No time to take child for immunization	3	10.0
Do not know where to take child for immunization	1	3.3
Fear of side effects	2	6.67
Services not available when required	6	20

Although all the 44 children surveyed had received immunization from the government primary health centre, 7 had received some of the vaccines from other government and private hospitals as well, whereas 37 had entire immunization from UHC only. Twenty two (50%) subjects reported that they paid more visits than recommended for vaccination. Reasons for same were asked. Non availability of vaccines (27.5%) was the most common reason. Other cited reasons were long waiting line (18.2%) and non availability of service providers (4.5%).

3.2 Beneficiary satisfaction level

Data were collected regarding the beneficiary satisfaction levels and also about the immunization services provided in

UHC. Thirty six (81.8%) were satisfied by services provided there while 7 (15.9%) were dissatisfied from the same and 1 (2.3%) said "cannot say". The reasons for dissatisfaction were also assessed. Long queue and long waiting period (2), insufficient vaccines which finish off before turn come (2) and rough attitude of the staff (3) were reported reasons.

Counseling services are also provided in UHC. Subjects were asked about their perception of counseling services. Forty (90.9%) admitted that side effects of vaccination and their management was explained to them when they went for services. Next visit for immunization was also reported as 41 (93.2%) and instruction to bring immunization card in next visit was told to 41 (93.2%).

About frequency of visits of health workers to the community, it was reported that mostly health workers used to pay visit monthly (36.4%) followed by 2-3 times in a month (22.7%), weekly (15.9%), once in a quarter (4.5%), sometimes (11.4%) and never by (9.1%) subjects. On non reporting on scheduled time for immunization of child, it was revealed by only 21 (47.7%) subjects that health workers paid home visit.

Various sources of information about immunization services were assessed. Anganwadi workers (50%) were most common sources of information. Details are shown in Table 3.

Table 3: Sources of information about immunization

Source	Frequency (n=44)	Percentage (%)
Health worker staff		
1) ANM	6	13.6
2) ASHA	7	16
3) AWW	22	50
4) Doctors in government settings	16	36.3
5) Doctors in private hospitals	1	2.27
Newspaper	1	2.27
Self from hoardings or boards	3	7

4. DISCUSSION

The present study showed that majority of subjects were Hindu, non migrant with literate and employed parents. Reasons for incomplete immunization were related to both health system and social factors. Non entry by health staff in immunization card on the day of vaccination was found. Such misclassification by health centre staff was an important area which should be improved because it will spuriously gives impression of poor immunization coverage. Health centre staff should be sensitized and trained about the importance of accurate record keeping and records should be cross checked by Medical Officer In charge. Similar findings have been previously reported by other authors as well [9]. Other health system related reasons cited were non availability of vaccine at the centre and long waiting time. Convenience of immunization services are known factor which improves

immunization coverage as stated by Mohammed H et al [10]. Similar findings were reported by a study conducted by Lim WY et al where some of the reasons for refusal for immunization of children were long waiting time at the clinic and unsatisfactory services at the clinic [11]. All efforts should be taken to improve vaccine constant availability at the health centres.

Awareness of parents about importance of immunization was found to be inadequate. Parent's lack of awareness about need of timely immunization, place to go for vaccination and fear of side effects were found. These are consistent with results from a study conducted in Aurangabad where lack of motivation and information about immunization were reported [12]. Counselling services provided at the health centre at the time of vaccination should focus on such issues so as to allay the anxiety of parents about side effects of vaccines and importance, place and date of next visit for immunization. Health staff should be trained in counselling to improve the effectiveness. Health workers should approach the families as soon as the child don not turn up for vaccination at due date to ask he reasons for not bringing the child. Most common source of information about immunization services was Anganwadi workers followed by doctors. They should be involved actively in ensuring complete immunization of the children in their area by keeping the record of immunization and bringing them to the health centre for immunization. WHO world immunization week was held in April 2016 with the aim to promote the use of vaccines to protect people of all ages against diseases.

5. CONCLUSION

The reasons for incomplete immunization were mainly lack of awareness of parents and health care system flaws. All efforts should be taken to raise the awareness of community about importance of immunization along with providing complete information about the immunization services being available to them. Intersectoral coordination should be strengthened by participation of Anganwadi workers in providing immunization services. Workers need to be trained about need for maintaining appropriate records and use the MCTS system. Proper data recording and management would reduce these errors and help policy makers designing programmes based on true data.

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