

# Immunization Status In A Slum In Chandigarh (U.T) India: A Perspective To Enhance The Service

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## Abstract

Globally, around 10 million children die per year and over 27 million infants in the world do not get full routine immunization. Method: All the children aged 0-60 months, residing in a rehabilitation colony were enumerated assessed for immunization. The standard criteria for full partial and no immunization were used.

Results: The overall coverage for various vaccines was BCG 86.5%, DPT1/OPV1 84.2%, DPT2/OPV2 82.2%, DPT3/OPV3 80.7%, DPT Booster 42.9%. A dropout rate (for DPT) of 4.16% was observed in the present study. Conclusion---Rapid growth, high population density and low coverage in urban slums calls for growing emphasis on Immunization coverage.

## INTRODUCTION

Globally, each year 130 million children are born, 91 million of which are in the developing countries. However, around 10 million children under the age of five years die every year and over 27 million infants in the world do not get full routine immunization. The estimate for global child deaths under five years was 10.8 million in 2000. About 41% of these were in Sub-Saharan Africa and 34% in South Asia<sup>1</sup>. So, there is an urgent need to rapidly increase vaccination coverage levels, to improve the quality of services, and achieve self-sufficiency in vaccine production as immunization is one of the most cost effective and easy methods for child survival. The accurate measurement of vaccination coverage is an essential step in determining expected reductions in morbidity and mortality from VPDs. Although Immunization coverage has increased substantially in the recent years, a large number of slum dwelling children remain incompletely immunized<sup>2</sup>. The reported coverage does not provide the true picture. It was observed that amongst the children aged 12-23 months in urban India; only 60% are fully immunized<sup>2</sup>. A recent study by International Institute of Population studies, Mumbai showed that full immunization coverage in majority of 220 districts in India either showed a decline (48.2%) or no improvement (43.2%) between 1998 and 2003<sup>1</sup>. Therefore, the present study was undertaken to assess immunization coverage of the children residing in a rehabilitation colony, situated in a periurban area of Chandigarh city.

## METHOD

For the purpose of study, all the children aged 0-60 months, residing in a rehabilitation colony situated at the border of Chandigarh (U.T) and Mohali (Punjab), were enumerated and then assessed for Immunization. This rehabilitation colony is a part of the field practice area of Rural Health Training Centre Palsora and has a population of approximately 15000. Majority of the people residing here are laborers who have migrated from states like Uttar Pradesh, Bihar, etc. Following criteria for Full, Partial and No immunization was used<sup>2</sup>.

**FULL IMMUNIZATION** – A child who has received three doses of DPT and OPV each, and one dose of BCG and Measles each.

**PARTIAL IMMUNIZATION**- A child who missed any one or more of the above doses.

**NO IMMUNIZATION**- A child who did not receive even a single dose of any vaccine.

**DROP OUT RATE**: =  $\frac{\text{DPT1 coverage} - \text{DPT3 coverage}}{\text{DPT1 coverage}} \times 100$

**LEFT OUT RATE** =  $\frac{\text{Children eligible for DPT1} - \text{Children receiving DPT1}}{\text{Children eligible for DPT1}} \times 100$

Data thus collected was analyzed by EPI INFO Version 3.2.

## RESULTS

1434 children were in the study group. Majority of the children in the study group belonged to the age group of 12-23 months (31.86%) followed by 22.04% in the 24-36 months group. 820 (57.2%) males and 614 females (42.8%) constituted the study group (Table-1).

**Figure 1**

Table 1: Immunization Status Of The Under Five Children

Age group (in months)	Complete Immunization			Partial Immunization			Not Immunized			Total
	Male	Female	Total	Male	Female	Total	Male	Female	Total	
<12 months	2	2	4(2.77%)	56	48	104(72.23%)	19	17	36(25%)	144
12-23	112	93	205(44.85%)	123	71	194(42.45%)	22	36	58(12.69%)	457
24-35	136	94	230(72.78%)	16	16	32(10.12%)	26	28	54(17.08%)	316
36-48	118	92	210(75.81%)	6	6	12(4.33%)	36	19	55(19.85%)	277
49-60	85	55	140(58.34%)	8	3	11(4.58%)	55	34	89(37.08%)	240
Total	453	336	789(55.02%)			353(24.61%)			292(20.36%)	1434

Table 2 shows the immunization coverage of various vaccines among children (%) in comparison to National standards. The overall coverage for various vaccines in the present study was BCG-86.5%, DPT1/OPV1-84.2%, DPT2/OPV2-82.2%, DPT3/OPV3-80.7%, Measles-78.3% and DPT Booster-42.9%.

**Figure 2**

Table 2: Immunization coverage for various vaccines amongst children in the age group 12-23 months (%) in comparison to National Standards.

Vaccine	Present study			India (NFHS-3)
	Male (n=257)	Female (n=200)	Total (n=457)	
BCG	232	163	395(86.5%)	78.0%
DPT1/OPV1	225	160	385(84.2%)	-
DPT2/OPV2	218	158	376(82.2%)	-
DPT3/OPV3	215	154	369(80.7%)	55.0%
Measles	212	146	358(78.3%)	59.0%

**Figure 3**

Table 3: Immunization coverage of various vaccines amongst children in the 12-23 months age group in comparison to studies by various authors:

Vaccine	Present Study (Chandigarh 2006)	Bhatia et al (Chandigarh 2004)	Hindustan Times (December 2006)	Kargil (2005)	Orissa (2006)	MP (1999)	Goa (2001)
BCG	86.5%	93.09%	91.7%	92.5%	59.2%	82.1%	94.7%
DPT1/OPV 1	84.2%	93.97%	-	89%	62.2%	82.7%	96.1%
DPT2/OPV 2	82.2%	90.57%	-	-	41.7%	79.9%	95%
DPT3/OPV 3	80.7%	85.92%	82%	83%	23.6%	75.1%	90.6%
Measles	78.3%	76%	76.4%	65%	15.6%	66.5%	88%

42.07% of the illiterate mothers had completely immunized children (Table-4). 49.71% of the matric and above educated mothers had completely Immunized children, whereas 6.78% of such mothers had non-immunized children.

**Figure 4**

Table 4: Immunization Coverage versus Literacy Status of mothers with children in 12-23 month age group

Immunization Status	Illiterate	Primary & Middle	Matric, HSC, Graduate & above	Total
Complete	77(42.07%)	40(41.24%)	88(49.71%)	205(44.85%)
Incomplete	72(39.35%)	45(46.39%)	77(43.51%)	194(42.45%)
Not immunized	34(18.58%)	12(12.37%)	12(6.78%)	58(12.7%)
Total	183(40.04%)	97(21.23%)	177(38.73%)	457

$$\chi^2 = 12.23, df = 4, p < 0.02$$

## DISCUSSION

In the present study 55% of the children were fully immunized. The RCH report 2006 has put the percentage of fully immunized children in U.T at 51.6% [3], whereas another author [4] reported the immunization status as 26%. In the present study, 44.85% of the children in the 12-23 age group were fully immunized, whereas 12.7% were not immunized. This could be because the parents might be unaware of the importance of complete immunization. One study [5] found 69.3% of children fully immunized and 15.1% not immunized. Another study [6] reported full immunization in 72.23% and 4.64% of non immunized children, whereas other study [2] reported 60% of the children in the age group of 12-23 months as fully immunized. A study on immunization coverage in urban slums of Jamnagar city [7] reported 73.3% children as fully immunized and 2.8% as non-immunized in the age group of 12-23 months. In a similar study in Goa [8] 85.35% and 2.76% of the children in the same age group were fully and

non-immunized respectively. Whereas 60.8% of the children in M.P [ 9 ]were fully immunized and 9.6% were non-immunized.

In the present study, amongst the fully immunized children in the age group of 12-23 months, 54.64 % were males, whereas 62.07 % of the non-immunized children were females. This finding shows the importance given to male children. This is in comparison to a similar study in Kargil [ 10] where coverage rates were similar in boys and girls. The coverage rates for males were higher than female children in Jamnagar [ 7] . A higher number of females were unimmunized in Goa [ 8 ].

A dropout rate for (DPT) of 4.16% was observed in the present study. The dropout rate indicates the systems inability to hold on to child once registered. This dropout rate could be due to migrant nature of this population. The dropout rate was 18% for the country in a reported study [11]. In another study [7], the dropout rate was 15%. A left out rate of 36.1% was observed in the present study.

A recent policy introduced by Chandigarh administration to increase immunization status of children i.e., compulsory possession of Immunization cards for school admission can be taken as appositive approach towards increasing the level of awareness. However, it is against the principles of Sarv Shishksha Abhiyan.

42.07% of the illiterate mothers had completely immunized children (Table-4). 49.71% of the matric and above educated mothers had completely Immunized children, whereas 6.78% of such mothers had non-immunized children. This shows the literacy status of mothers as against their level of awareness as an important factor for determining the Immunization status of their children. This stresses the need for active I.E.C activities. This is in comparison to a study at Goa 8 , where none of the graduate mothers had an unimmunized or partially immunized child. In M.P 9 , 80.2% of the graduate mothers had their children fully immunized.

Rapid growth, high population density and low immunization coverage in urban slums calls for growing emphasis on Immunization coverage in urban poor where spread of infection is faster. Crucial constraints such as inadequate planning for human resource development, lack of managerial skills, lack of adequate supervision and monitoring, inability to address the psychosocial needs of the community about misconceptions, poor facilities at work and lack of adequate skills of health workers are important

barriers among other factors affecting the delivery of effective health care in India.

## CONCLUSION

Immunization programmes in urban areas can exert significant effects on VPD associated mortality by limiting the number of cases, decreasing clustering of cases within households and increasing time lapse between outbreaks. Ensuring adequate human resources, funds, transport, removal of misconceptions prevailing among people, public private partnership, condemnation of old, and non-functioning cold chain equipment are important for the success of routine Immunization in the country.

Strengthening surveillance and monitoring is another step. VPDs and AEFI (Adverse Events following Immunization) surveillance should be made mandatory and should be carried out under the direct supervision of DIO (District Immunization Officer). Vaccine logistics needs to be strengthened by ensuring adequate funds. Vaccine wastage should be reduced.

Training to upgrade the skills of ANMs and CMEs for them on injection safety, record keeping, tracking of DROP Outs, etc. are important measures for strengthening Immunization services. Last but not the least emphasis on IEC and social mobilization especially with help of media should be encouraged.

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## References

1. Editorial. Immunization - The Challenge for Improving Child Health in India. Newsletter. National Institute of Health and Family Welfare 2006 8(1):1-3.
2. Agarwal S, Bhanot A, Goindi G. Understanding and Addressing Childhood Immunization Coverage in Urban Slums. Indian Pediatrics 2005; 42:653-663.
3. HT Chandigarh Live. The Hindustan Times, December 27, 2006. p4.
4. Gupta BB, Kushwaha K.P. Is it Possible to Achieve Hundred Percent Vaccination Coverage below 5 years of Age? Indian Pediatrics. 1999; 36:844-845.
5. Kar M, Reddaiah VP, Kant S. Primary Immunization status of children in slum areas of south Delhi- the challenge of reaching urban poor. Indian Journal of Community Medicine. 2001; 26(3):151-154
6. Bhatia V, Swami HM, Rai S, Gulati S, Verma A, Prashar A, Kumari R. Immunization Status in Children. Indian J Pediatrics. 2004; 71(4):313-315.

7. Yadav S, Mangal S, Padhiyar N, Mehta JP, Yadav B.S. Evaluation of Immunization Coverage in Urban Slums of Jamnagar City. Indian Journal of Community Medicine. 2006;31(4):300-301.
8. Dalal A, Silveria M.P. Immunization Status of Children in Goa. Indian Pediatrics. 2005; 42:401-402.
9. Yadav R.J, Singh P. Immunization Status of Children and Mothers in the State of Madhya Pradesh. Indian Journal of Community Medicine. 2004; 29(3): 147-148.
10. Gaash B, Bhan R. Immunization Status of Infants in Kargil. Indian Pediatrics. 2005; 42:841-842.
11. Suresh K, Deepak S. Trends and Determinants of Immunization Coverage in India. Journal of Indian Medical Association. 2000; 98(1):10-14.

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