

**Study on Child Immunization Coverage: Determinants and  
Barriers in Urban Area of Surendranagar District**

**Internship Training  
at  
National Urban Health Mission  
Gujarat**

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**TO WHOMSOEVER MAY CONCERN**

This is to certify that **Dr. Hirkani Subhash Madnaik** Student of Post Graduate Diploma in Hospital and Health Management (PGDHM) from Institute of Health Management Research, Jaipur has undergone internship training at **District Urban Health Unit, Surendranagar** (National Urban Health Mission, Gujarat) From February 7<sup>th</sup> 2014 to May 7<sup>th</sup> 2014.

The Candidate has successfully carried out the study designated to her during internship training and his approach to the study has been sincere, scientific and analytical.

I wish her all success in all her future endeavours



**Dr. Ashok Kaushik**

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**Prof. Seema Mehta**

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This certificate is awarded to

**Dr Hirkani Subhash Madnaik**

In recognition of having successfully completed her Internship in

**District Urban Health Unit, Surendranagar**

And has successfully completed her project on

**Study on Child Immunization coverage: Determinants and barriers in urban area of  
Surendranagar District.**

**Date - May 21th 2014**

Organization

**National Urban Health Mission, Gujarat**

She come across as a committed, sincere and diligent person who has a

Strong drive and zeal for learning

We wish her all the best for future endeavours.



**Dr S. M. Dev**

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**CERTIFICATE BY SCHOLAR**

This is to certify that the dissertation titled Study on coverage of child immunization: Determinants and Barriers in urban area of Surendranagar district and submitted by **Dr Hirkani Subhash Madnaik** Enrolment no.1317 for award of Postgraduate Diploma in Hospital health Management of the Institute carried out during the period from July 2012 to June 2014 embodies my original work and has not formed the basis for the award of any degree diploma associate ship, fellowship titles in this or any other institute or other similar institution of higher learning.

*H.S. Madnaik*  
Signature

(Dr. Hirkani Madnaik)

## **Abstract**

### **Introduction-**

Child Immunization is most important public health intervention. Vaccination has reduced the burden of infectious disease. Immunization is most cost effective measure in order control and reduces child morbidity and mortality due to infectious disease.

In 1985 government of India started Universal Immunization Programme to control six major vaccine preventable disease namely are Tuberculosis, Polio, Diphtheria, Pertussis, Tetanus and Measles,

As per NFHS 3 there was only 43.5 percent of children were fully immunized, so for poor coverage there are many factors playing major role in it, such as socio-cultural, demographical, economical, services provider related factors, geographical factors, knowledge, attitude of parents towards immunization.

### **Objective-**

- To assess the immunization coverage of child of age between 12 months to 24 months in slum and non slum of urban area of Surendranagar district.
- To identify determinants and barriers for immunization of child of age between 12 months to 24 months in urban area of Surendranagar district.
- To assess level knowledge of mothers about child immunization.

### **Research Methodology**

Type of study- Cross sectional household survey conducted

Study Area- Three cities of Surendranagar district in Gujarat.

#### **Sampling Procedure**

Cluster sampling method was used; total 13 clusters were selected by simple random method from three cities. 15 respondents per cluster in surendrangar (5 cluster), 10 respondents per cluster in wadhwaan(4 cluster) and 8/9 respondents per cluster in Dhrangdhra (4 cluster) were selected.

Sample size-150 mother were interviewed who had child of age between 12 months to 24 months

## **Result –**

Total 150 mothers were interviewed in slum and non-slums of urban area of Surendranagar district. Out of 150 children 97 children (64.7%) received complete immunization. while 5.3 percent were not immunised with single vaccine and remaining 30 percent children were partially immunised

Immunization coverage was lesser in slums (57%) than that of non slums (70%)

Dropout rate from BCG to DPT3 vaccine was 20.78, and from BCG to measles was 19.6 percent.

Major reasons identified for partially immunised and un-immunised children are parents preoccupied with work (30%), fear about post vaccination complication or child had post immunization complication (43%), Lack of knowledge (26%) restriction from family members (20.3) , mothers not getting properly informed by ASHA /FHW(15%).

Other factors are like children of mothers with poor knowledge about immunization less likely got complete immunization, two –third children who were born at institution received complete immunization, while 61 percent of total children born at home were not received complete immunization. 82 percent out of all first children were received complete immunization.

## **Conclusion**

Coverage of immunization was satisfactory in comparison with state average of immunization coverage. But still it far away from universal immunization.

Children whose mother having poor knowledge about immunization were less likely got complete immunization Mother Education has positive relation with immunization

Children who were delivered in institution were more likely completed their all vaccination.

Birth order was negative in association with complete immunization of child.

## **Acknowledgement**

Keeping up with the tradition of torch bearer of nation, I would like to express my special gratitude and appreciation to all those who gave me the possibility to complete this report.

I owe my sincere gratitude and humbleness to my respected guide Prof. Seema Mehata IHMR, Jaipur for her able guidance and useful suggestions, which helped me in completing the project work. I would also like thank my institute and faculty members without whom this project would have been a distant reality.

I would like to special thanks to Urban Health Officer of all five urban health centre of Surendranagar district, also I am grateful to all Female Health worker, Public health Nurse of respected Urban Health Centre

At last I would like to thank all the ASHA workers in UHC for co-operating with me and given their valuable time from their busy schedule.

Finally I would like to special thanks to all parents who participate in this study for their co-operation and giving their valuable time for conducting their interview.

Dr Hirkani Subhash Madnaik

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## A. List of Symbols and Abbreviations

|        |                                         |
|--------|-----------------------------------------|
| ANM    | Auxiliary Mid-Wife                      |
| ASHA   | Accredited Social Health Activist       |
| AW     | <i>Anganwadi</i>                        |
| AWC    | <i>Anganwadi</i> Centre                 |
| AWW    | <i>Anganwadi</i> Worker                 |
| BCG    | Bacille Calmette-Guérin                 |
| DPT    | Diphtheria, Pertussis and Tetanus       |
| EPI    | Expanded Program of Immunization        |
| FHW    | Female Health Worker                    |
| MAS    | Mahila Arogya Samiti                    |
| MOHFW  | Ministry of Health and Family Welfare   |
| NFHS   | National Family Health Survey           |
| NGO    | Non-Governmental Organization           |
| NRHM   | National Rural Health Mission           |
| NUHM   | National Urban Health Mission           |
| OPV    | Oral Polio Vaccine                      |
| PHN    | Public Health Nurse                     |
| RI     | Routine Immunization                    |
| TT     | Tetanus Toxoid                          |
| UFWC   | Urban Family Welfare Centre             |
| UHC    | Urban Health Centre                     |
| UHP    | Urban Health Post                       |
| UHO    | Urban Health Officer                    |
| UIP    | Universal Immunization Program          |
| UNICEF | United Nations Children's Fund          |
| U-ASHA | Urban accredited social Health Activist |

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## **Chapter 1 - Introduction**

India has been facing issues with child survival and health since long. The country contributes 1.95 million of the global burden of 9.2 million under-five child deaths, which is the highest for any nation in the world. Tragically, more than half of these deaths are preventable with existing tools and interventions. Alone existing vaccines can prevent estimated 25 percent child mortality so researchers predict globally about 6 million child deaths per year can be prevented using existing intervention. Fourth Millennium development goal promote reducing child mortality by two third by 2015. Child Immunization is most important public health intervention. Vaccination has reduced the burden of infectious disease. Immunization is most cost effective measure in order control and reduces child morbidity and mortality due to infectious disease. Effective implementation and achieving maximum coverage of small pox vaccination in Year 1977 India became small pox free country.

So after successfully eradicating small pox, In 1985 government of India started Universal Immunization Programme to control six major vaccine preventable disease namely are Tuberculosis, Polio, Diphtheria, Pertussis, Tetanus and Measles, later on Hepatitis B, Influenza, Japanese Encephalitis vaccines also added into this programme. After introduction of immunization programme it was seen that there was sharply decline in incidence of these infectious disease in childhood.

Even though there is decrease in disease burden of vaccine preventable disease, still the common cause of childhood mortality are VPD especially in rural areas and slums in urban area. Coverage of immunization shows increasing trend, but still it is far away from achieving universal immunization Nowadays It is big challenge for public health service provider to achieve universal coverage.

Rural area shows lesser coverage of vaccination than that of urban area, while in urban area slums, migrating population, and other vulnerable population are also shows very poor numbers of immunization coverage compared to that of non slums and developed urban areas.

Government of India launched Universal immunization programme with main objective that 85percent of total children fully immunized against six vaccine preventable diseases by 1990 coverage by year but As per NFHS 3 there was only 43.5 percent of children were fully immunized, so for poor coverage there are many factors playing major role in it, such as socio-cultural, demographical, economical, services provider related factors, geographical factors, knowledge, attitude of parents towards immunization.

## **Chapter 2- Literature Review**

The vaccination of children against six major vaccine preventable diseases namely Tuberculosis polio, diphtheria, pertussis, tetanus and measles has been important step towards reducing child mortality, morbidity and disability due to above mentioned diseases. Previously government of India launched Expanded Immunization Programme in 1978 to reduce burden of these six vaccines preventable diseases. Later on as part of national health policy Universal immunization Programme was initiated in 195 with main objective about 100 percent of child immunization coverage.

There were different studies conducted to assess coverage of immunization and also to assess determinants and barriers for immunization coverage. National family health survey shows results that only 44 percent of children between age group 12months to 23 months were fully vaccinated while 5 percent have not received any vaccinations, coverage of BCG, DPT and polio are much higher than for all vaccination, only 36 percent were fully vaccinated before at their first birthday. Major determinants and barriers indentified in this study. Relationship between birth order is consistently negative for all vaccinations, another major variable is mother education and vaccination of child. Mothers with poor education qualification were less likely completes their child vaccination.

UNICEF conducted coverage evaluation survey in year 2009 shows important findings regarding child immunization, According to this study, 61 percent children are fully vaccinated. 86 percent children were vaccinated with BCG vaccination. The analysis showed that 14.7 percent children, who received BCG vaccine, did not get all vaccines till Measles. Around 17.7 percent children dropped out between BCG and DPT3, 10.3 percent between DPT1 and Measles and 13.3 percent between DPT1 and DPT3. Full immunization coverage was lower among children of illiterate mothers (45.3 percent) compared with children of mothers who had completed at least higher secondary (76.6 percent). Only 47.3 percent of children from lowest quintile households were fully immunized compared with 75.5 percent of children from highest quintile households.

Around 28 percent of mothers, whose child received partial or no immunization, did not feel the need of adhering to the schedule of immunization. Twenty six percent did not know what vaccines were needed and when; and about 10.8 percent did not know the place of immunization.

There are many studies conducted in different state of India and also in different countries, Factors like sex of child, birth order, mother's education, economical condition, age of mother, religion, knowledge of mother about immunization, attitude of family members towards vaccination of child are identified as major determinants and barriers for child immunization.

## ***Chapter 3***

### **3.1 Research Question**

- What is level of coverage of immunization in urban area of Surendranagar district?
- What are determinants and barriers of immunization of child of age between 12 months to 24 months in urban area of Surendranagar district?

### **3.2 Objective**

- To assess the immunization coverage of child of age between 12 months to 24 months in slum and non slum of urban area of Surendranagar district.
- To identify determinants and barriers for immunization of child of age between 12 months to 24 months in urban area of Surendranagar district.
- To assess level knowledge of mothers about child immunization.

## Chapter 4 - Methodology

### 4.1 Type of study

Cross-sectional analytical study design used in this study; this study involves quantitative techniques of data collection.

### 4.2 Study Area

This study carried in both slums and non- slums of urban area in district Surendranagar of Gujarat state. Three major cities namely Surendranagar, Wadhwan, Dhragndhra of Surendranagar district selected. These cities have total individual population more than 50,000 and included under National Urban Health Mission. Total Urban population is 3, 28,789 having approximately 7100 children of age between 12 month to 24 months completed.

**Table no.1 City-wise population distribution of urban area of Surendranagar district.**

| Name of City  | Name of Urban Health centre | Total population | Slum population | Ward no.    |
|---------------|-----------------------------|------------------|-----------------|-------------|
| Surendranagar | UHC- Laxmipara              | 57851            | 23500           | 1,2,7,8,9   |
|               | UHC- Vepari Mandal          | 59000            | 24000           | 4,5,6,9,10  |
|               | UHC- Joravernagar           | 61000            | 25000           | 11,12,13,14 |
| Wadhawan      | UHC-Wadhawan                | 75755            | 30302           | 1 to 13     |
| Dhangdhra     | UHC- Dhangdhra              | 75133            | 30053           | 1 to 13     |
|               | Total                       | 328789           | 132855          |             |

### 4.3 Study subjects.

Couple having at least single child of age between 12 months to 24 months during study period were be selected for this study. Only one couple will be chosen from each household. Either mother or father of child was eligible for interview.

### 4.4 Sampling procedure

This study was conducted in three cities of Surendranagar district. Cluster sampling method was used; clusters were formed as per existing municipal corporation wards. Non-slum and slum clusters selected from each city randomly, so total 13 clusters were selected by using simple random sampling.

In city Surendranagar there are two slum clusters and three non-slum clusters were selected, While in Wadhwan and Dhrangdhra city two slum clusters and two non-slum clusters were selected.

**Table no.2 Cit wise randomly chosen clusters and no. of respondents**

| Sr. No. | Name of City  | Ward no.        | No. of respondents |
|---------|---------------|-----------------|--------------------|
| 1       | Surendranagar | 1, 4, 8, 11, 12 | 75                 |
| 2       | Wadhwan       | 1, 2, 4, 8,     | 40                 |
| 3       | Dhrangdhra    | 1, 4, 7, 11     | 35                 |

#### 4.5 Sample size

Mother of child of age between 12 months to 24 months were key respondents for this study. In Surendranagar From each cluster 15 respondents were selected randomly in five randomly selected clusters. Total 75 respondents were interviewed in Surendranagar. 10 respondents in Wadhwan and 8-9 respondents in Dhrangdhra randomly chosen from each cluster for interview, so total 40 and 35 respondents were interviewed in these two cities respectively. Total 150 respondents were interviewed.

#### 4.6 Data collection

Data was collected visiting households which were full-fill selection criteria, for Data collection semi structured questionnaire was prepared keeping in mind objective of this study. Interview with 150 respondents conducted in different cities as mentioned above by using semi structured questionnaire.

#### 4.7 Ethical considerations

Informed written consent obtained from the either mother or father of child study participant from each household. Confidentiality of data was be maintained throughout the study period and during analysis.

## Chapter 5- Result

### 5.1 Background profile of Parents and child

As mentioned in methodology part this conducted in three major cities of Surendranagar district. Each city has population more than 50000. As shown in table no 5.1.1 different background characteristics were captured during this study

Total 150 mothers who have at-least single child of age 12 month to 24 month were participated in this study. Out of total respondents 45 percent respondents live in different slums of city.

Every second respondents have age between 21 to 25 years. 31 percent mothers have age between 26 to 30 year. While 46 percent fathers fall in age group 26 to 30 years. Almost two-third mothers have completed secondary education; twenty-one percent respondents were illiterate

On analysis of data shows results that half of families (51%) have monthly income from Rs.5001 to Rs. 10000. Thirty –two percent families have monthly income less than Rs. 5000. As shown in following table there 47 percent mothers have female child.

**Table no 5.1.1 Background profile of Parents and child (N=150)**

| Sr. No.  | Characteristics           | Percentage |
|----------|---------------------------|------------|
| <b>1</b> | <b>Area of Living</b>     |            |
| 1.1      | Slum                      | 45.3       |
| 1.2      | Non-slum                  | 54.7       |
| <b>2</b> | <b>Mother's Age</b>       |            |
| 2.1      | Less than 20years         | 6          |
| 2.2      | 21 to 25 years            | 54         |
| 2.3      | 26 to 30 years            | 30.7       |
| 2.4      | 31 years and above        | 9.3        |
| <b>3</b> | <b>Father's Age</b>       |            |
| 3.1      | less than 20years         | 0.7        |
| 3.2      | 21 to 25 years            | 26.7       |
| 3.3      | 26 to 30 years            | 46.7       |
| 3.4      | 31 years and above        | 26         |
| <b>4</b> | <b>Mother's Education</b> |            |
| 4.1      | Illiterate                | 21         |
| 4.2      | Primary Education         | 5.3        |
| 4.3      | Secondary Education       | 64.7       |
| 4.4      | 11th to graduation        | 8.7        |
| <b>5</b> | <b>Father's Education</b> |            |
| 5.1      | Illiterate                | 8.7        |

|           |                                 |      |
|-----------|---------------------------------|------|
| 5.2       | Primary Education               | 4    |
| 5.3       | Secondary Education             | 68   |
| 5.4       | 11th to graduation              | 19.3 |
|           | <b>Monthly Income</b>           |      |
| 6.1       | Less than Rs.5000               | 32.7 |
| 6.2       | Rs. 5001 to Rs. 10000           | 50.7 |
| 6.3       | Rs. 10001 to Rs. 15000          | 12.7 |
| 6.4       | Rs 15001 and above              | 4.0  |
| <b>7</b>  | <b>Gender of child</b>          |      |
| 7.1       | Female                          | 47.7 |
| 7.2       | Male                            | 52.3 |
| <b>8</b>  | <b>Age of child (in months)</b> |      |
| 8.1       | 12 months to 18 months          | 57.3 |
| 8.2       | 19 months to 24 months          | 42.7 |
| <b>9</b>  | <b>Birth of child</b>           |      |
| 9.1       | Home delivery                   | 13   |
| 9.2       | institution Delivery            | 87   |
| <b>10</b> | <b>Birth Order of child</b>     |      |
| 10.1      | 1                               | 37.3 |
| 10.2      | 2                               | 37.3 |
| 10.3      | 3                               | 18   |
| 10.4      | 4 and above                     | 7.3  |

More than half no of children included in this study have age between 12 to 18 months and also almost more than four-fifth children were born into institution while 13 percent children were delivered at home. Thirty seven percent children were of first birth order, same no .of children were of second birth order too.

## 5.2 Immunization of child

### 5.2.1 Immunization card

**Table no. 5.2.1 Immunization Card**

| Immunization card                  |                                 |         |
|------------------------------------|---------------------------------|---------|
| Sr. No                             | Having immunization card(N=150) | Percent |
| 1                                  | Yes                             | 79.3    |
| 2                                  | No                              | 18.7    |
| Reasons for not having card (N=28) |                                 |         |
| Sr no.                             | Reasons for not having card     | Percent |
| 1                                  | Lost the immunization card      | 32.1    |
| 2                                  | Not aware of immunization card  | 21      |

|   |                                                        |      |
|---|--------------------------------------------------------|------|
| 3 | Card was completely damaged                            | 19.8 |
| 4 | Health personnel (ASHA/FHW) Carries immunization card. | 14   |
| 5 | Not provided by service provider.                      | 3.75 |
| 6 | Other                                                  | 9    |

As shown in Table no 5.2.1 eighty percent mothers have immunization card of their child while reasons given by remaining mother for not having card that they lost immunization card (32%) immunization card was completely damaged (19.8%), some mothers were not aware of immunization card.

### 5.2.2 Place of immunization

**Table no. 5.2.2 Place of Immunization**

| Sr. no. | Place of immunization (N=142)  | Percent |
|---------|--------------------------------|---------|
| 1       | Public health Centre /Hospital | 41      |
| 2       | Private clinics/Hospitals      | 29.3    |
| 3       | Mamata session                 | 42      |
| 4       | other                          | 1.3     |
|         |                                |         |

Table no 5.2.2 shows that Almost Equal no of children (42 percent) received their immunization at both Public health Hospitals, Mamata session. About thirty percent children get immunised from private clinic. Other children got immunised at camp held in slums.

### 5.2.3 Status of child's Immunization

Table no 5.2.3 shows that immunization coverage rates for each type of vaccination percentage of children got different vaccines. Following table shows that BCG has highest coverage that is about 90 percent, with increase in age of children there is decreasing coverage for further vaccines except measles vaccine has more coverage than that of previous vaccine DPT3 and OPV3. Table also shows that each vaccine has lesser coverage in slum area than that of non-slum area.

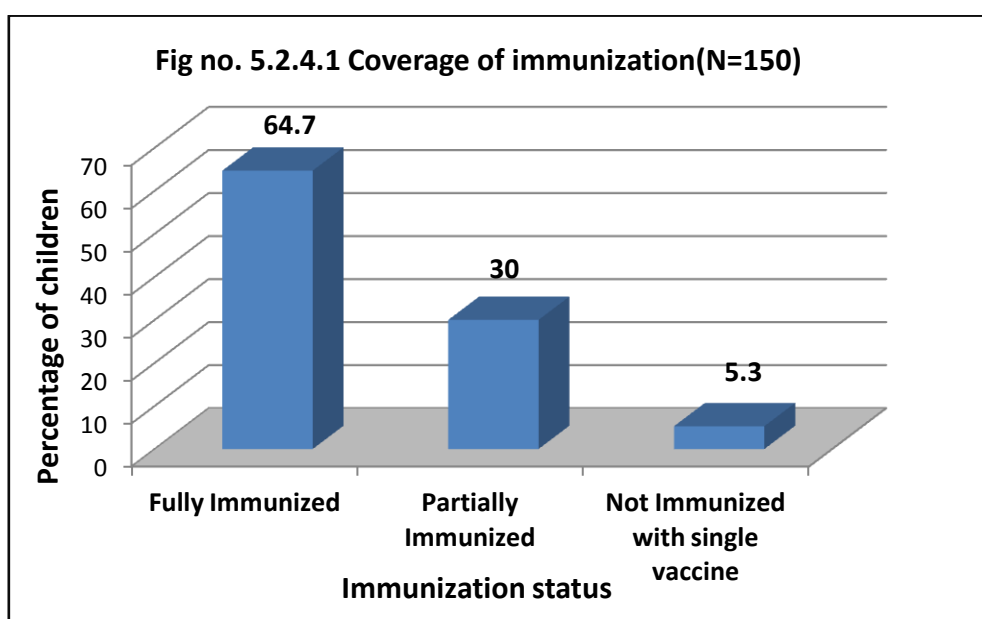
**Table no. 5.2.3 Child's immunization status**

| Sr. no | Name of vaccine | Percentage of children immunized |          |       |
|--------|-----------------|----------------------------------|----------|-------|
|        |                 | Slum                             | Non-slum | Total |
| 1      | BCG             | 88.2                             | 91.5     | 90    |
| 2      | OPV 0           | 85.3                             | 92.7     | 89.3  |
| 3      | DPT 1           | 80.9                             | 95.1     | 88.7  |
| 4      | DPT 2           | 73.5                             | 89       | 82    |

|   |                                                             |           |           |            |
|---|-------------------------------------------------------------|-----------|-----------|------------|
| 5 | <b>DPT 3</b>                                                | 61.8      | 79.3      | 71.3       |
| 6 | <b>OPV 1</b>                                                | 75        | 89        | 82.7       |
| 7 | <b>OPV 2</b>                                                | 70.6      | 84.1      | 78         |
| 8 | <b>OPV 3</b>                                                | 61.8      | 78        | 70         |
| 9 | <b>Measles</b>                                              | 67.6      | 78        | 73.3       |
|   | <b>Total no of children of age between 12 to 24 months.</b> | <b>82</b> | <b>68</b> | <b>150</b> |

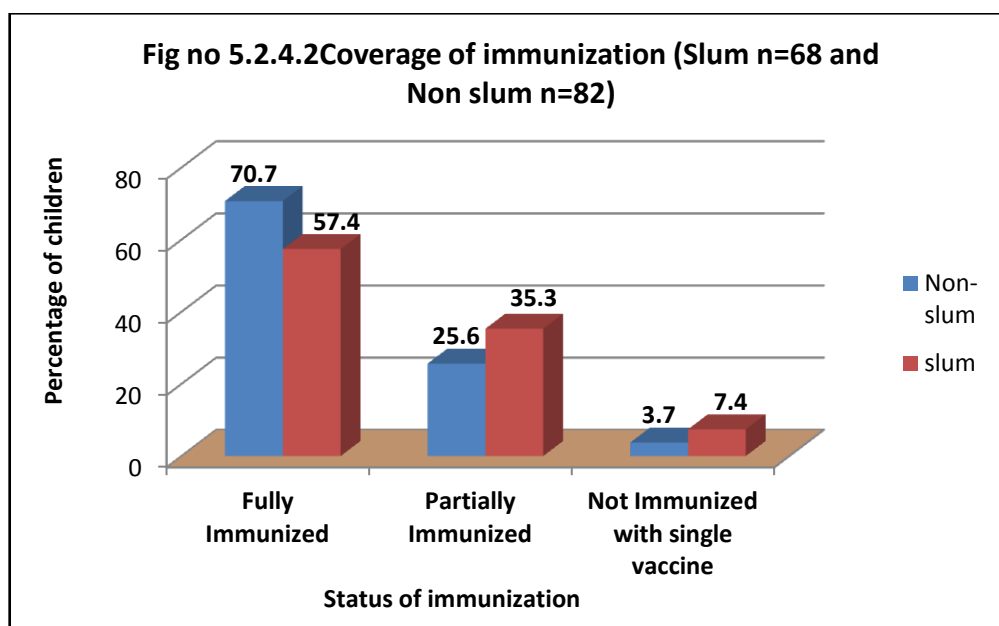
#### 5.2.4 Coverage of immunization

In this study full immunised child defined as when child received all single dose of BCG, three doses of DPT, four doses of OPV and single doses of measles then that child considered as full immunised. Fig no 5.3.4.1 shows that in urban area of Surendranagar 64.7 percent were fully immunised, while 30 percent children were partially immunised and only 5.3 percent children were not immunised with single vaccine.



(**Note**-Fully immunized children are those who received BCG, OPV 0, three doses of DPT, three doses of Polio, Measles.)

Fig. N.5.2.4.2 shows coverage of immunization for slum and non-slum area. There was 57 percent children were fully immunised in slum area but coverage of immunization in non slum area was higher (70%), while percentage of partially immunised and completely unimmunised children was much higher for slum area compared to non slum area



### 5.2.5 Dropout rate

Table no 5.3.4. Shows result of dropout rates between different vaccines. Dropout rate from BCG to DPT1 was much lesser (1.44%), while Dropout rate between BCG to DPT3 was 21 percent. It was also observed that dropout rate between DPT3 to measles was negative, reason indentified increase in percentage of children who received measles vaccine after DPT3. Reasons for negative value of dropout rate between DPT3 to Measles were more emphasis given by health worker for measles vaccination after completion of 9 months. Dropout rate was higher in slums it was almost 30 percent between BCG to DPT3

**Table no. 5.2.4 Dropout rates**

| Sr. No. | Dropout rate     | Slum  | Non-slum | Total |
|---------|------------------|-------|----------|-------|
| 1       | BCG to DPT1      | 8.28  | -3.93    | 1.44  |
| 2       | BCG to DPT3      | 29.93 | 13.33    | 20.78 |
| 3       | BCG to Measles   | 23.36 | 14.75    | 18.56 |
| 4       | DPT 1 to DPT3    | 23.61 | 16.61    | 19.62 |
| 5       | DPT1 to Measles  | 16.44 | 17.98    | 17.36 |
| 6       | DPT 3 to Measles | -9.39 | 1.64     | -2.81 |

(**Note-** Calculation of Dropout rate for ex-Dropout rate from BCG to Measles is coverage of BCG minus coverage of measles divided by coverage of BCG)

### 5.2.6 Reasons for Partial and zero immunization of child.

Table no 5.3.6 shows major reasons given by mother for not immunizing child or partially immunizing child. Main reasons for child not immunised with single vaccine or child get partially immunised are fear about post vaccination complication or child has serious post vaccination complication during previous vaccination, about 43.4 percent mothers gives this reason for not completing immunization of child.

Some of mothers were could not go for vaccination because they were preoccupied with their work (30.2%), lack of knowledge is also important reasons told by mothers for not immunizing child, about 20 percent mother have given reason that their in-laws or family members or Husband not allow to get their child immunised.

Other reasons like FHW or ASHA didn't properly informed mother about child immunization(15%), some mother missed their child's immunization date so didn't know when to visit next time(20.75%), some mothers didn't know about site/place of immunization and also time & day of immunization in their area(13.2%)

**Table no 5.2.5 Reasons for Zero and Partial immunization of child**

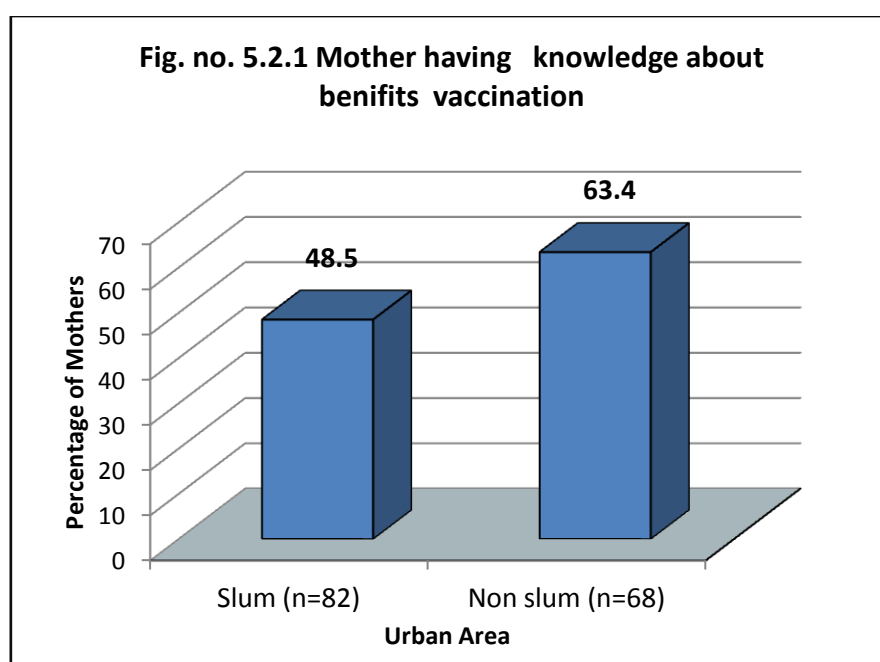
| Sr.no | Reasons                                                                           | Percentage of children who not received single Vaccine | Percentage of children which are partially immunised | Total |
|-------|-----------------------------------------------------------------------------------|--------------------------------------------------------|------------------------------------------------------|-------|
| 1     | Fear of post vaccination complications /Child had post immunization complications | 62.5                                                   | 40                                                   | 43.4  |
| 2     | Pre-occupied with work                                                            | 37.5                                                   | 28.9                                                 | 30.2  |
| 3     | Lack of Knowledge                                                                 | 75                                                     | 17.7                                                 | 26.2  |
| 4     | Child was ill                                                                     | 0                                                      | 26.67                                                | 22.64 |
| 5     | Husband or in laws does not allow to get child immunized                          | 37.5                                                   | 17.78                                                | 20.75 |
| 6     | Missed date of vaccination                                                        | 0                                                      | 24.44                                                | 20.75 |
| 7     | Not properly informed by FHW ASHA                                                 | 0                                                      | 17.78                                                | 15.09 |
| 8     | Don't know about site/place and time of vaccination                               | 25                                                     | 11.1                                                 | 13.2  |
| 9     | Don't feel it is necessary                                                        | 25                                                     | 4.4                                                  | 7.5   |
| 10    | Health worker behaviour not good.                                                 | 0                                                      | 2.2                                                  | 3.7   |
| 11    | Don't have belief on service                                                      | 25                                                     | 0                                                    | 3.7   |

|    |                   |      |      |      |
|----|-------------------|------|------|------|
|    | provider          |      |      |      |
| 12 | Cost is much high | 0    | 2.2  | 1.8  |
| 13 | Religion          | 12.5 | 0    | 1.8  |
| 14 | Other             | 0    | 8.89 | 7.55 |

(Note- children - not immunised with single vaccine n=8, partially immunised children n=45, Total N=53)

### 5.3. Knowledge about immunization

#### 5.3.1 Mother's knowledge about immunization



In this study mother knowledge about immunization was also assessed, study results shows 55 percent women knew about benefits of immunization. Percentage of mothers having knowledge about benefits of immunization was higher in non slum area than that of slum area.

This study also capture knowledge of mother about different vaccines their doses and right age for different vaccination

Table no 5.3.1A shows that percentage of mother having knowledge about vaccines was higher in non slum area than slum area. About more than half no of women didn't know about DPT vaccine, 15 percent mothers voluntarily and 55 percent mothers after probing told about polio vaccine.

**Table no 5.3.1 –A Mother’s knowledge about vaccines given to child in 0 to 12 month.**

| Sr. No | Name of Vaccine | Slums  |               |            | Non-Slums |               |            | Total  |               |            |
|--------|-----------------|--------|---------------|------------|-----------|---------------|------------|--------|---------------|------------|
|        |                 | Volunt | After probing | Don't know | Volunt    | After probing | Don't know | Volunt | After probing | Don't know |
| 1      | BCG             | 10.3   | 32.4          | 57.4       | 22        | 46.3          | 31.7       | 16.7   | 40            | 43.3       |
| 2      | Polio           | 10.3   | 47.1          | 42.6       | 19.5      | 62.2          | 18.3       | 15.3   | 55.3          | 29.3       |
| 3      | DPT             | 7.4    | 14.7          | 77.9       | 13.4      | 47.6          | 39         | 10.7   | 32.7          | 56.7       |
| 4      | Measles         | 14.7   | 32.4          | 52.9       | 26.8      | 43.9          | 29.3       | 21.3   | 38.7          | 40         |
| 5      | Hepatitis B     | 2.9    | 4.4           | 92.6       | 13.4      | 20.7          | 65.9       | 8.7    | 13.3          | 78         |

**(Note-** Volunt.- Voluntarily, Slum n=68, Non slum n=82, Total N=150)

Table no 5.3.1-B capture mother’s knowledge about doses of vaccine. In this too mothers living in non slum area were more knowledgeable about no of vaccine doses than mothers living in slums area one fourth mothers have knowledge about doses of BCG vaccine.16 percent mothers responded correctly doses of measles vaccine .

**Table no 5.2.1-B Mother’s knowledge about no. of doses of vaccines given to child in 0 to 12 month**

| Sr. no | Name of Vaccine | Slum | Non-slum | Total |
|--------|-----------------|------|----------|-------|
| 1      | BCG             | 16.2 | 30.5     | 24    |
| 2      | Polio           | 1.5  | 7.3      | 4.7   |
| 3      | DPT             | 5.9  | 14.6     | 10.7  |
| 4      | Measles         | 13.2 | 19.5     | 16.7  |
| 5      | Hepatitis B     | 0    | 4.9      | 2.7   |

**(Note-** for Slum n=68, Non slum n=82, total N=150)

Table no 5.2.1-C shows that about 22 percent mothers mentioned correct age for BCG vaccination, while 11.3 percent mothers knows about right age of measles vaccine.

**Table no 5.2.1-C Mother’s knowledge about right age for different vaccination given to child in 0 to 12 month**

| Sr. No. | Name of Vaccine | Slum | Non-slum | Total |
|---------|-----------------|------|----------|-------|
| 1       | BCG             | 16.2 | 28       | 22.7  |
| 2       | Polio           | 0    | 3.7      | 2     |
| 3       | DPT             | 4.4  | 7.3      | 6     |
| 4       | Measles         | 10.3 | 12.3     | 11.3  |
| 5       | Hepatitis B     | 0    | 1.2      | 0.7   |

(Note- Slum n=68, Non slum n=82, Total N=150)

### 5.2.2. Source of information about immunization

More than half no of respondents got information about immunization from doctors, 40 percent and 35 percent mothers received information from ASHA and Anganwadi worker respectively. Other sources of information for mothers were female health worker, family members, friends and neighbours.

One more important fact found out was 6 percent mothers responded that they didn't get information from anybody.

**Table no. 5.2.2 Source of information regarding immunization.(N=150)**

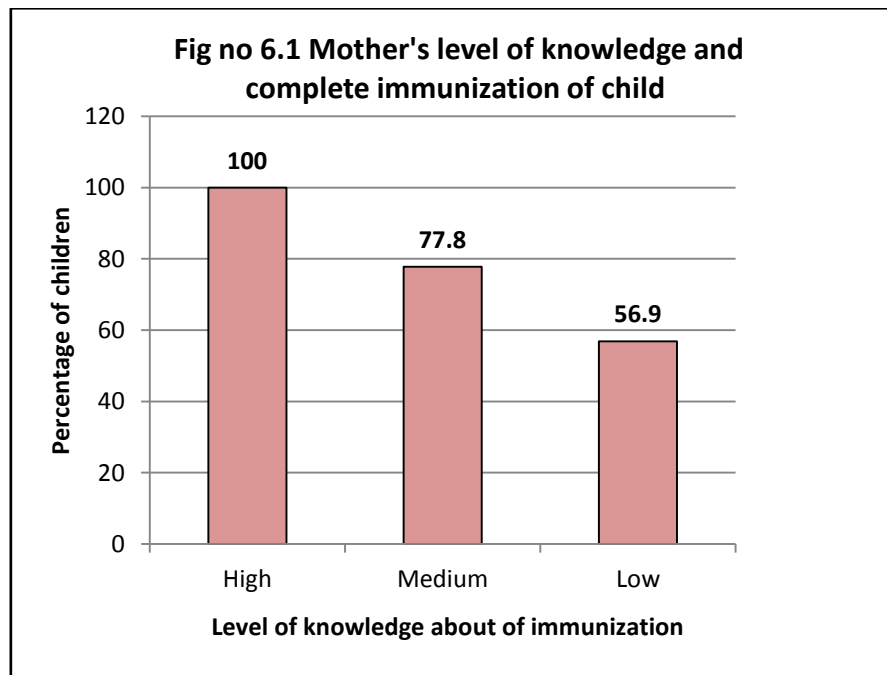
| Sr. No | Source of information about immunization                            | Percent* |
|--------|---------------------------------------------------------------------|----------|
| 1      | Doctor                                                              | 54.7     |
| 2      | PHN                                                                 | 0.7      |
| 3      | FHW                                                                 | 11.0     |
| 4      | ASHA                                                                | 40.0     |
| 5      | Anganwadi worker/ Helper                                            | 35.0     |
| 6      | Family members                                                      | 19.3     |
| 7      | Friends /Neighbours                                                 | 3.3      |
| 8      | Television/Radio                                                    | 3.3      |
| 9      | News paper                                                          | 1.3      |
| 10     | Others                                                              | 7.3      |
| 11     | Not get any information from any source /person about immunization. | 6.0      |

(Note-\* Multiples response allowed)

## 6.0 Factors influencing immunization of child.

### 6.1 Mother's Level of Knowledge about immunization

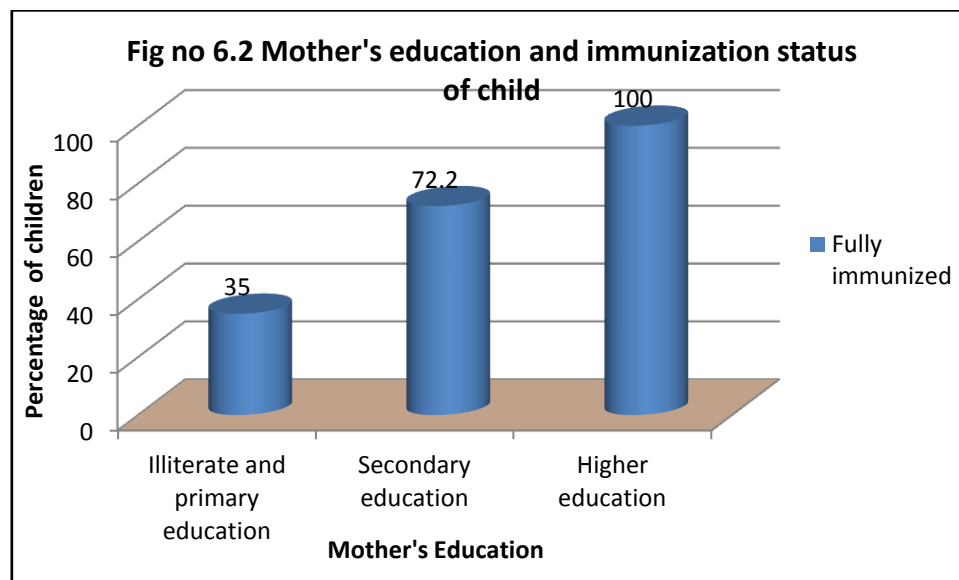
Mother's knowledge has major influence over coverage of child immunization as shown in fig 6.1 mothers who have higher level of knowledge about immunization most likely their child got complete immunization. While 57 percent children whose mothers have low level of knowledge about immunization received complete immunization.



(Note – High level of knowledge n=14, medium level n= 27, low level n=109)

## 6.2 Mother's education and immunization status of child

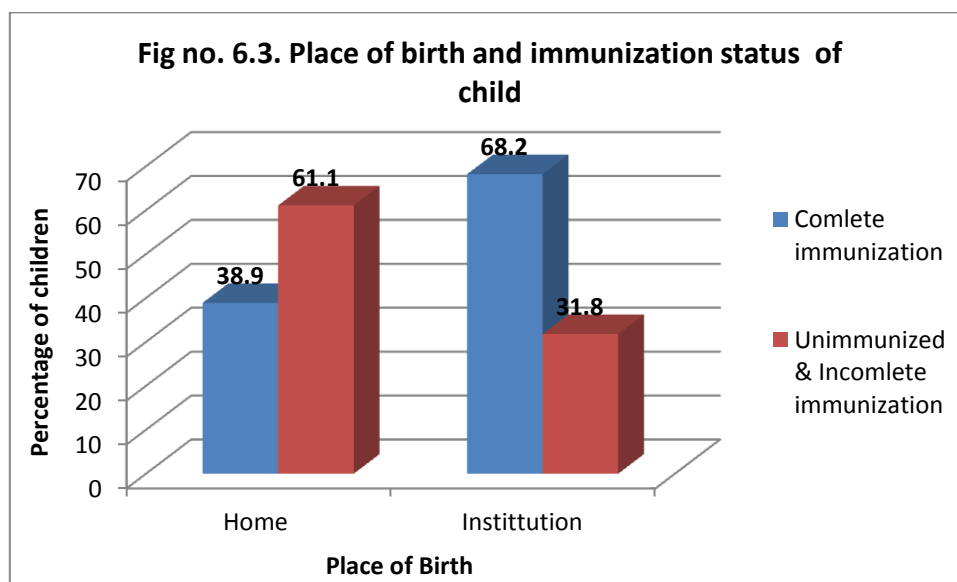
As shown in fig no. 6.2 mother with higher education more likely their child received all vaccination, while 65 percent children whose mothers were illiterate or have primary education were unimmunised or partially immunised



(Note- Illit. and prim. education n=40, sec. Education n=97, High. Education n=13)

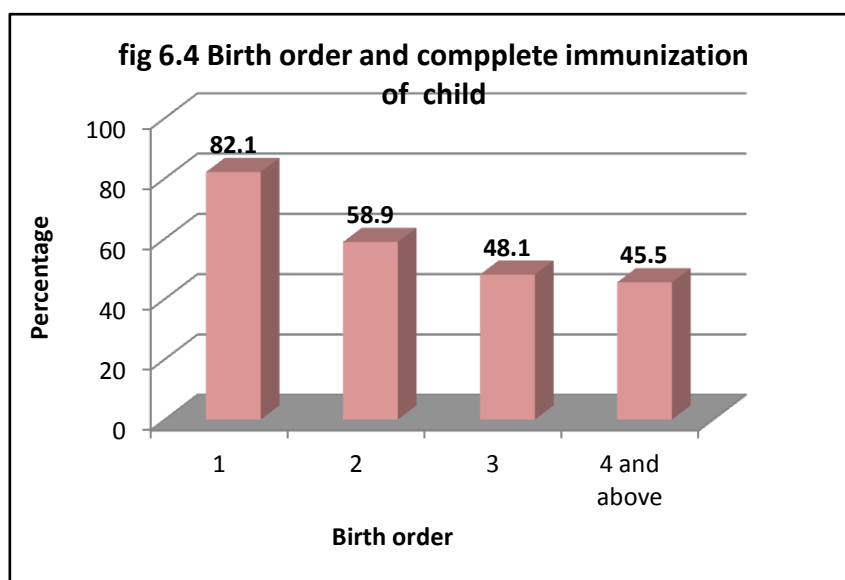
### 6.3 Place of birth and Immunization status of child

Fig no 6.2 reveals that about two-third children who born in institution /hospital were received complete immunization. On other hand only 39 percent children who born at home completed their immunization.



(Note- Home delivery n=18, Institutional delivery n=132)

### 6.4 Birth order and immunization status of child



(Note First order n=56, Second order n=56, third order n=27, Fourth and above n=11)

Birth order has negative relation with complete immunization with increasing birth order of child there was decrease in percentage of child who received complete immunization,

As shown in fig 6.4 82 percent children who are first child received all immunization. Children having birth order four and more were less likely received their all vaccination

## Conclusion

This study covers both urban slum and non slum area. In this study total 150 mother were participated out of which 68 were from slum and remaining from non slum area,

Total coverage of immunization in urban area of Surendranagar district was 64.7 percent which close to Gujarat state average of immunization o coverage. But it is still far away from universal immunization. There was requirement of special attention for urban slum which has poor coverage than that of non slum.

Mother's knowledge about immunization has great influence over coverage of immunization, in this study it seems those children who have a mother having knowledge about immunization more likely got immunised. As study reveals that in urban slums mother's poor knowledge about immunization was important reasons for poor lesser coverage of vaccination.

Education of mother was also factor influence complete immunization, education has positive elation with child immunization children having mother with higher education were more likely to get complete immunization.

It also seen that there was continently decrease in percentage of child with increasing birth order of child. Study shows results that 100 percent coverage in case of respondents who have single child.

Reasons for child not getting full immunization were parents of child were preoccupied with other work, some of them have fear about post immunization complications, some of these mothers not get permission from husband or family member, some of them lacks of knowledge about when and which vaccines should be given to child.

## Annexure

### 1.0 Instrument- Questionnaire

|                                                     |
|-----------------------------------------------------|
| <b>Confidential</b><br><b>Research purpose only</b> |
|-----------------------------------------------------|

Coverage of child immunization: Determinants and Barriers of child immunization in urban area of Surendranagar district.

|                     |  |
|---------------------|--|
| <b>Name of City</b> |  |
|---------------------|--|

|                     |  |
|---------------------|--|
| <b>Name of Area</b> |  |
|---------------------|--|

|                |  |  |  |  |
|----------------|--|--|--|--|
| <b>Sr. No.</b> |  |  |  |  |
|----------------|--|--|--|--|

|                 |  |  |
|-----------------|--|--|
| <b>Ward No.</b> |  |  |
|-----------------|--|--|

#### Informed Consent

Namaste, my name is Dr. Hirkani Madnaik. I am student of India Institute of Health Management and Research, Jaipur. I am conducting a research on Immunization coverage: Determinants and Barriers in Urban area of Surendranagar district of Gujarat under NHM Gujarat. During this study I will ask you few questions regarding Immunization of Child Participation in this research study is voluntary and you may choose not to answer any question or all of the questions at any point of time. If you have queries you are free to ask questions to make an informed decision. However, we want you to participate in the study, since your participation is valuable for us. Your answers will be clubbed in the data which will be used for research purpose only. You will not be penalized in any way if you choose not to participate or to withdraw. As part of this effort, your identity will not be revealed in any publications that result from this study. The information in the study records will be kept strictly confidential. Individual data will be stored securely and will be made available only to persons conducting the study. No reference will be made in oral or written reports that could link you to the study

Signature of Respondent

Signature of Interviewer

Date:

Place:

## Section-A

| Sr. No. | Questions              | Response                  |
|---------|------------------------|---------------------------|
| 1.1     | Name of Mother         |                           |
| 1.2     | Age                    |                           |
| 1.3     | Education              |                           |
| 1.4     | Occupation             |                           |
| 1.5     | Cast                   |                           |
| 1.6     | Religion               |                           |
| 2.1     | Name of Father         |                           |
| 2.2     | Age                    |                           |
| 2.3     | Education              |                           |
| 2.4     | Occupation             |                           |
| 2.5     | Monthly Income         |                           |
| 3.1     | Name of child          |                           |
| 3.2     | Birth date             |                           |
| 3.3     | Age of child in months |                           |
| 3.4     | Gender of child        | 1. Male<br>2. Female      |
| 3.5     | Place of Birth         | 1. Home<br>2. Institution |
| 3.6     | Birth order            |                           |

## Section-B

| Q. no | Question                                                                                                                  |             | Response                                  |            |              | Skip                              |
|-------|---------------------------------------------------------------------------------------------------------------------------|-------------|-------------------------------------------|------------|--------------|-----------------------------------|
| 4.1   | Do you know what benefits of immunization are?<br>(Expected answer- protects child from different communicable diseases ) |             | -----<br>-----<br>-----<br>-----<br>----- |            |              |                                   |
| 4.2   | Do you know what vaccines child should get before his first birthday                                                      |             | 1. Yes<br>2. No                           |            |              | ➔ If no then skip to next section |
| 4.3   | Name of Vaccine                                                                                                           | Voluntarily | After Probing                             | Don't Know | No. of Doses | Right Age for vaccination         |
| 4.3.1 | BCG                                                                                                                       |             |                                           |            |              |                                   |
| 4.3.2 | Polio                                                                                                                     |             |                                           |            |              |                                   |
| 4.3.3 | DPT                                                                                                                       |             |                                           |            |              |                                   |
| 4.3.4 | Measles                                                                                                                   |             |                                           |            |              |                                   |
| 4.3.5 | Hep B                                                                                                                     |             |                                           |            |              |                                   |
| 4.3.6 | Any other-----                                                                                                            |             |                                           |            |              |                                   |

## Section-C

| Q.no. | Question                                                                  | Response                                                                                                                                                                                                                        | Skip to                     |                                                                                 |
|-------|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------------------------------------------------------------------|
| 5.1   | Have your child received any vaccination?                                 | 1. Yes<br>2. No                                                                                                                                                                                                                 | → If no then Skip to Q5.6   |                                                                                 |
| 5.2   | Where your child did received vaccination?                                | A. Public health centre/ hospitals<br>B. Private Clinic/hospitals<br>C. Mamata Sessions<br>D. other (specify)                                                                                                                   |                             |                                                                                 |
| 5.3   | Do you have Immunization card?                                            | 1. Yes<br>2. No                                                                                                                                                                                                                 | → If yes then skip to Q.5.5 |                                                                                 |
| 5.4   | If Not What are reasons for not having immunization card?                 | 1. Lost the Immunization card<br>2. Not Given by FHW /ASHA.<br>3. Card was completely damaged<br>4. FHW/ASHA/Health personal carries immunization card with her<br>5. Not aware of immunization card<br>6. Other (specify)..... |                             |                                                                                 |
| 5.5   | Please tick if child vaccinated with following vaccines                   | Mentioned on card                                                                                                                                                                                                               | After probing               | → If child has not received any one of the mentioned vaccine then skip to Q.5.7 |
| 5.5.1 | BCG<br>(Given on left arm at birth and leaves scar on arm after few days) |                                                                                                                                                                                                                                 |                             |                                                                                 |
| 5.5.2 | OPV 0<br>(Drops of vaccines given orally with BCG at birth )              |                                                                                                                                                                                                                                 |                             |                                                                                 |
| 5.5.3 | DPT1 /Pentavalent 1<br>( Given in thigh or buttock at 6 weeks)            |                                                                                                                                                                                                                                 |                             |                                                                                 |
| 5.5.4 | DPT2 / Pentavalent 2<br>( Given in thigh or buttock at 10 weeks)          |                                                                                                                                                                                                                                 |                             |                                                                                 |
| 5.5.5 | DPT3 / Pentavalent 3<br>( Given in thigh or buttock at 14 weeks)          |                                                                                                                                                                                                                                 |                             |                                                                                 |
| 5.5.6 | OPV 1<br>( Given two drops of vaccine with DPT1)                          |                                                                                                                                                                                                                                 |                             |                                                                                 |
| 5.5.7 | OPV2<br>( Given two drops of vaccine with DPT2)                           |                                                                                                                                                                                                                                 |                             |                                                                                 |
| 5.6.8 | OPV3<br>( Given two drops of vaccine with DPT3)                           |                                                                                                                                                                                                                                 |                             |                                                                                 |

|              |                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  |
|--------------|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| <b>5.6.9</b> | Measles<br>(Given in right arm after completing 9 months.)             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  |
| <b>5.6</b>   | <b>What are reasons that your child not received any immunization?</b> | A. Preoccupied with work<br>B. Don't feel it is necessary<br>C. Lack of knowledge about what and when vaccines should be given to child.<br>D. Don't know about site/ place, time and day of immunization session held.<br>E. Fear of post vaccination side effects<br>F. Session Time is not suitable<br>G. Session place not convenient<br>H. Cost is much high<br>I. Health worker behaviour not good.<br>J. Don't have belief on service provider.<br>K. Husband or in laws does not allow to get child immunized<br>L. Religion<br>M. Other (specify).....                                                            |  |  |
| <b>5.7</b>   | <b>What are reasons that your child not fully immunized?</b>           | A. Preoccupied with work.<br>B.. Don't feel it is necessary<br>C. Not properly informed by FHW or ASHA/ health personal about on which date next vaccine should be given.<br>D. Missed a date of vaccination so didn't go for vaccination.<br>E. During previous vaccination child had serious side effects.<br>F. Session Time is not suitable<br>G. Session place not convenient<br>H. Cost is much high.<br>I. Health worker behaviour not good.<br>J. Don't have belief on service provider.<br>K. Family members didn't allow to get child immunized<br>L. Don't know about what and when vaccines should be given to |  |  |

|  |  |                                                                                                                        |  |
|--|--|------------------------------------------------------------------------------------------------------------------------|--|
|  |  | child.<br>M. Don't know about site/ place,<br>time and day of immunization<br>session held.<br>N. Other (specify)..... |  |
|--|--|------------------------------------------------------------------------------------------------------------------------|--|

## Section D

| Sr. No. | Question                                                                            | Response                                                                                                                                                                                  | Skip to |
|---------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| 6.1     | How much far away a place of immunization from your place of resident?              | 1. Less than 2 km<br>2. more than 2 km                                                                                                                                                    |         |
| 6.2     | How much time required to reach immunization session by walking?                    | 1. Less than half hour<br>2. More than half hour                                                                                                                                          |         |
| 6.3     | From whom or where did you get information regarding immunization?                  | A. Doctor<br>B. PHN<br>C. ANM<br>D. ASHA<br>E. Anganwadi worker<br>F. Friends or Neighbours<br>G. Family members<br>H. Television /Radio<br>I. News paper.<br>J. Others<br>(specify)..... |         |
| 6.4     | Did ASHA or FHW visit your home to remind you to bring your child for immunization? | 1. Yes<br>2. No                                                                                                                                                                           |         |
| 6.5     | Who motivated you to get your child immunized?                                      | A. Doctor<br>B. PHN<br>C. ANM<br>D. ASHA<br>E. Anganwadi worker<br>F. Friends or Neighbours<br>G. Family members<br>H. Self motivated.<br>I. Other.....                                   |         |

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