



# Determinants of complete childhood Immunization, Papum Pare district, Arunachal Pradesh, Northeast India, 2008

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## Introduction

### Childhood vaccination - Global Scenario

- 1.4 million deaths <5yrs preventable by routine immunization using EPI vaccines
- Inadequate levels of immunization against childhood diseases remain a significant public health problem
- India has the largest number of unvaccinated children in the world. Only 44% of children fully vaccinated (National Family Health Survey-3, India, 2006)

### Low vaccination coverage in Arunachal Pradesh: Need to understand reasons

- Vaccination coverage in Arunachal Pradesh: 28% (NFHS-3, 2006)
- Vaccination coverage in Papum Pare district: 21% (District level household survey, India, 2004)
- Evaluation of immunization Programme in district identified provider related issues for low coverage:
  - 72% health sub centers & 34% Primary Health centers not conducting routine vaccination,
  - No cold chain equipment in 1/3 of health centers and inadequate funds for routine immunization
- Need to understand beneficiary related factors associated with vaccine uptake
- Objectives of the study:
  - Estimate vaccination status of children for six primary vaccine preventable diseases
  - Identify factors associated with complete vaccination

## Methods

- **Study design:** Cross-sectional survey
- **Study population:** Children aged 12-23 months, resident of Papum Pare district
- **Data collection:** Mothers' interview to collect information regarding
  - socio-demographic characteristics,
  - Knowledge, attitudes and practices of parents regarding vaccination, vaccination status of six primary vaccines (BCG, DPT, OPV and measles) and reasons for non/partial vaccination

- **Sample size and sampling procedure:** 697 children from 41 clusters using Right Size software, Cluster sampling using population proportional to size (PPS)
- **Human subject protection**
  - Study protocol approved by ethics committee of the National Institute of Epidemiology, Chennai
  - Informed consent from parents
  - Proactively vaccinated partial and unvaccinated children
  - Counselling of parents of non/ partial vaccinated children
- **Data analysis using epi-info software**
  - General characteristics of families
  - Vaccination coverage
  - Vaccination status according to selected characteristics

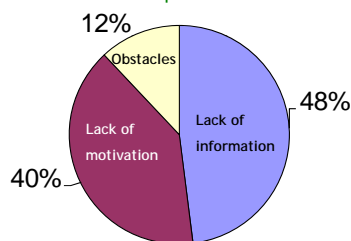
## Results

- **Overall Vaccination coverage:**
  - Fully vaccinated : 55% (95% CI-48-62)
  - Partially vaccinated : 26% (CI-19-33)
  - Never vaccinated : 19% (95% CI-12-26)
- **Vaccination coverage of individual vaccines:**
  - BCG-77%,
  - DPT1-75%,
  - OPV1-73%,
  - DPT3-64%,
  - OPV3-66%
  - Measles-58%

### Vaccination coverage according to selected characteristics, Papum Pare district, 2008

Variables	COR	AOR	95% CI
<b>Knowledge</b>			
Primary immunization essential below 1 year	4.2	1.3	0.7-2.1
Know names of six vaccine preventable diseases	2.4	0.6	0.1-1.8
Not taking vaccines can lead to complications	3.1	0.8	0.4-1.3
Health worker informed about next due date	7.7	2.8	1.2-6.1
That government provides free of cost	4.4	1.5	0.7-2.7
<b>Attitude</b>			
Thinks that immunization is useful	2.8	0.9	0.4-1.7
Discussed regarding immunization with others	3.3	1.1	0.6-1.8
<b>Practices</b>			
Possessing immunization cards	34.4	13.4	6.4-28.1
Went for antenatal check up at least once	7.6	2.6	1.3-4.7
Mother who went for hospital delivery	4.4	1.9	1.1-3.1
Motivated someone to immunize her child	6.8	1.9	1.1-3.3
Reading immunization card at least once	6.6	1.4	0.7-2.7
<b>Others</b>			
Literacy level of mother (literate Vs illiterate)	4.1	1.7	0.9-2.8
Literacy level of father (literate Vs illiterate)	2.4	0.9	0.4-1.5
Own radio or TV	2.8	1.6	0.8-2.6
Area having all season road	3.2	1.7	0.7-3.4

### Reasons for partial/non vaccination



## Limitations

- Vaccination history of one fourth of children based on mothers history due to absence of cards
- Minimized the recall bias by cross checking mothers history with local health center immunization registers wherever possible

## Conclusion

1. Vaccination coverage was very low in Papum Pare
2. Lack of information about vaccination main reason for partial or non-vaccination
3. Mothers who attended antenatal clinics, had institutional delivery, possessed immunization card were more likely to vaccinate their children fully
4. Knowledge of mothers about next due date of vaccination after being informed by health workers was associated with complete vaccination

## Recommendations

1. Efforts to further increase the ANC registration and institutional delivery during which importance of complete vaccination is stressed
2. Health workers to clearly remind mothers about next due date of vaccination. Also advise for safekeeping of vaccination cards and motivate them for completing the vaccine schedule
3. Targeted IEC for parents to increase vaccine demand
4. All health facilities should be made functional for conducting fixed day immunization sessions