



Measles outbreak in a urban locality, Papum Pare district, Arunachal Pradesh, India, 2007

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Introduction

- Measles vaccine coverage in India and Arunachal Pradesh
- Important < 5 health problem
- Vaccine coverage varies from 10-90% in different states
- 2006: Arunachal Pradesh state had a measles vaccine coverage of 38% (NFHS)
- Papum Pare district coverage: 58% (District level survey, 2007)
- Measles vaccine coverage in Itanagar the capital city of Arunachal Pradesh estimated to be above 70%

- Chronology of Events**
 - 18th December 2007: Suspected measles cluster reported from Damsite-Papunalah locality of Itanagar (total population- 7392) by community members
 - 19th December 2007: FETP scholar along with district rapid response team initiated the outbreak investigation
- Objectives of the study:**
 - Estimate the magnitude of outbreak
 - Manage cases
 - Determine the reasons for the outbreak

Methods

Descriptive Epidemiology

- Door to door case search using WHO case definition
- Described the outbreak by Time, Place and Person
- Calculated attack rates by age and sex

Laboratory Investigations

- Tested sera of 9 patients for measles specific IgM antibodies

Analytical Epidemiology

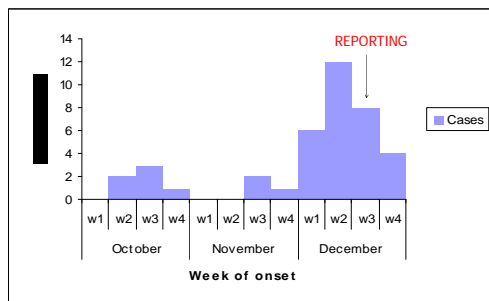
- Retrospective cohort study
- Study population- children aged 10 months to 60 months
- Vaccination coverage (vaccination status based on card and if not then mothers history)
- Data collection by semi-structured questionnaire

Results

Descriptive study

- 40 cases occurred in 33 households (Population of 0-15 years children in the locality: 2084)
- Overall attack rate: 4% and no deaths
- Case patients did not seek medical treatment due to local belief that if medicines are given then the child will surely die
- Median age: 5 years (Range 7 months to 14 years)
- 100% case patients unvaccinated
- 8 of 9 sera samples tested Ig M positive for measles

Time Characteristics: Incidence of measles, by week of onset, Damsite-papunalah, Papum Pare district, Arunachal Pradesh, India, 2007



Person Characteristics: Attack rate of measles by age and sex, Damsite-Papunalah, Papum Pare district, Arunachal Pradesh, 2007

	Cases	Population	Attack Rate
Age(months)	0-9	109	0.9
	10-12	59	8.4
	13-24	7	4.5
	25-60	15	6.5
	61-180	12	0.7
Sex	Male	1071	2.1
	Female	1013	1.7
Overall	40	2084	3.8

Analytical study results

Vaccination coverage survey, cross sectional study, Papum Pare district, Arunachal Pradesh, India, 2007 (n=141)

Reasons for non-vaccination, Damsite-Papunalah, Papum Pare district, Arunachal Pradesh, India, 2007 (n=112)

- Overall vaccine coverage**
 - Fully vaccinated : 20%(29)
 - Partially vaccinated : 28%(39)
 - Not vaccinated at all : 52%(73)
- Individual vaccine coverage**
 - BCG : 56%
 - DPT3 : 31%
 - OPV3 : 39%
 - Measles : 24%

Reasons for Non-Vaccination	%
Unaware of need for vaccination	50%(55)
Fear of side reactions	27%(30)
Mother too busy	14%(15)
No faith in vaccination	6%(6)
Others	3%(5)

Characteristics of unvaccinated population, Damsite-Papunalah, Papum Pare district, Arunachal Pradesh, India, 2007

- Unvaccinated population were mainly migrants to the state capital from other low immunization coverage districts
- Mostly illiterate and refused vaccination during routine immunization campaigns
- Vaccine was refused as they were not aware of need for vaccination and fear of side effects

Conclusion

- Outbreak occurred in a pocket of low immunization due to poor acceptance of vaccines in the community (i.e. Failure to vaccinate)
- Early and effective intervention was delayed due to false beliefs of the community members towards the disease

Recommendations

- Generate awareness for immunization in the community involving their local leaders in these localities
- Strengthen routine surveillance to detect measles outbreak early