

Coverage of Optional Vaccines in 3-6 Year Olds in an Urban Setting, in Vellore, Tamil Nadu



Sneha K., Malini E.G., Karen D.S., Bitsy R. B., Chandra. S. P., Creeper E., Daphne J. V., Devashish K.C., Dorene J.S, Jessica S., Joanna E., Sampri D.,Michelle C.G., Erika D., Emily I.M . Kiran K, Cheryl T, Archana, Bhagya B, Jacob J

Christian Medical College Vellore, India

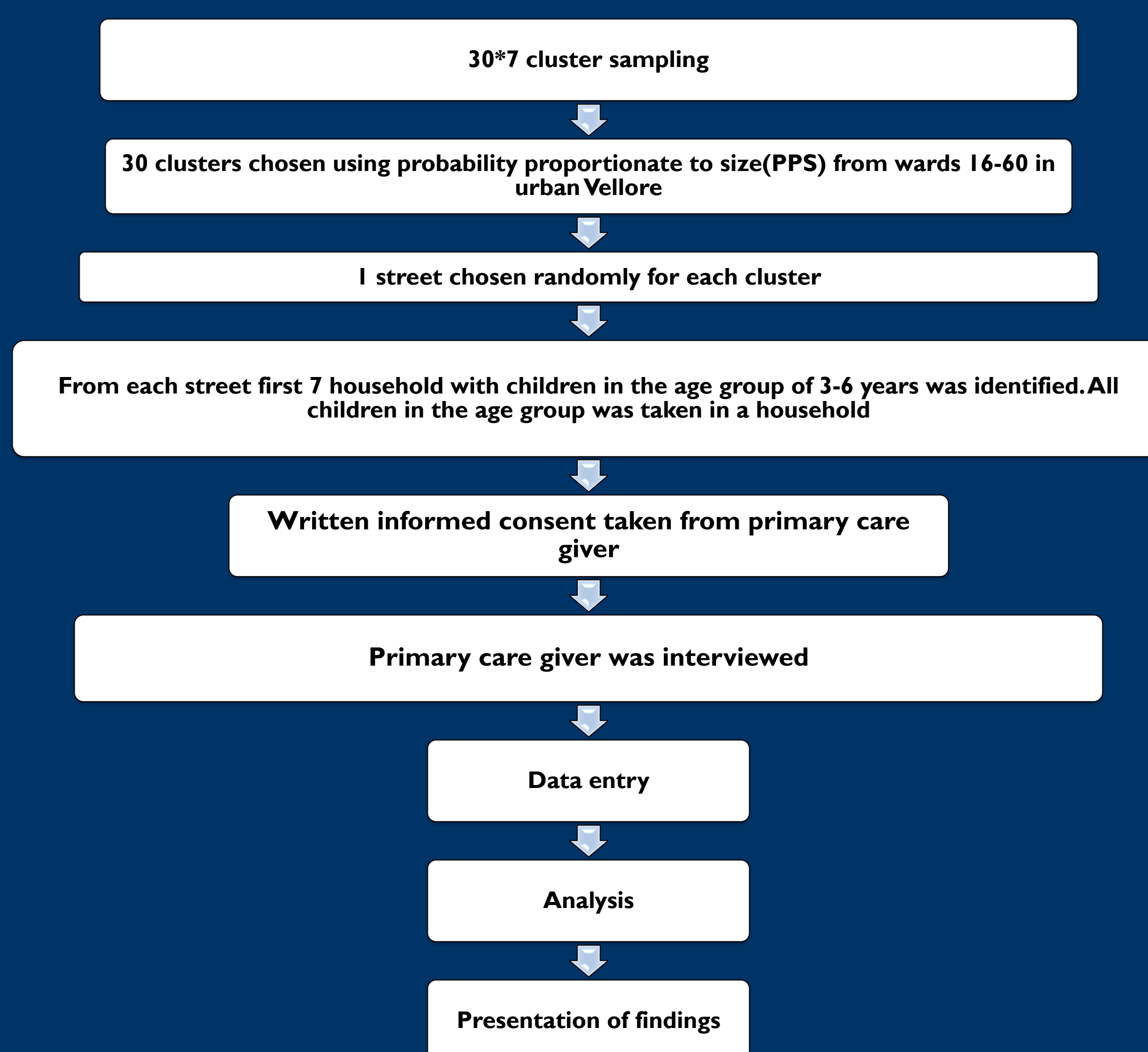


INTRODUCTION

- Essential vaccines: Includes BCG, polio, DPT, measles, tetanus, hepatitis B, H influenza B, and in a few states, Japanese encephalitis. These are included in the Universal Immunization Program (UIP) and under this program no child can be denied immunization.
- Optional Vaccines: Vaccines that are not included in the Indian National Immunization Programme and given on an optional paid basis. They prevent common causes of morbidity and mortality in the Indian population.
- Optional vaccines included for the study are Hepatitis A vaccine, Pneumococcal vaccine, MMR vaccine, Rabies vaccine, Seasonal Influenza vaccine, Typhoid Vaccine, Varicella vaccine.
- Even though there are effective optional vaccines which prevent them, these diseases are highly prevalent in the study area and form a major bulk of diseases affecting children.
- Despite their proven efficacy and safety, the uptake of optional vaccine has been low since their introduction^(10,11,12)
- No study has been done before to analyse the coverage of optional vaccines in the study area.
- NFSH studies have shown drop in routine immunization rates in the state of Tamil Nadu over the years.
- Factors affecting vaccine uptake has to be studied

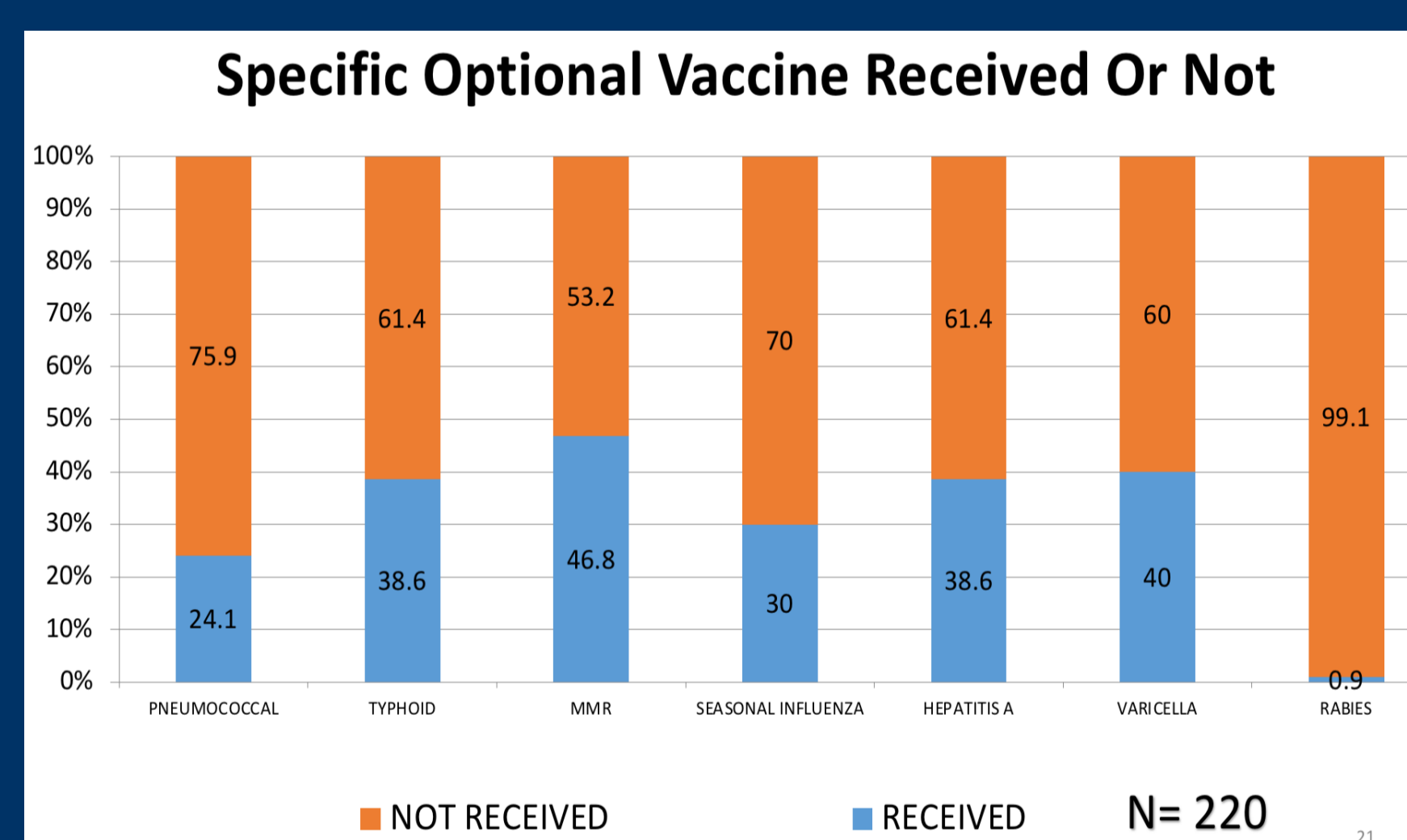
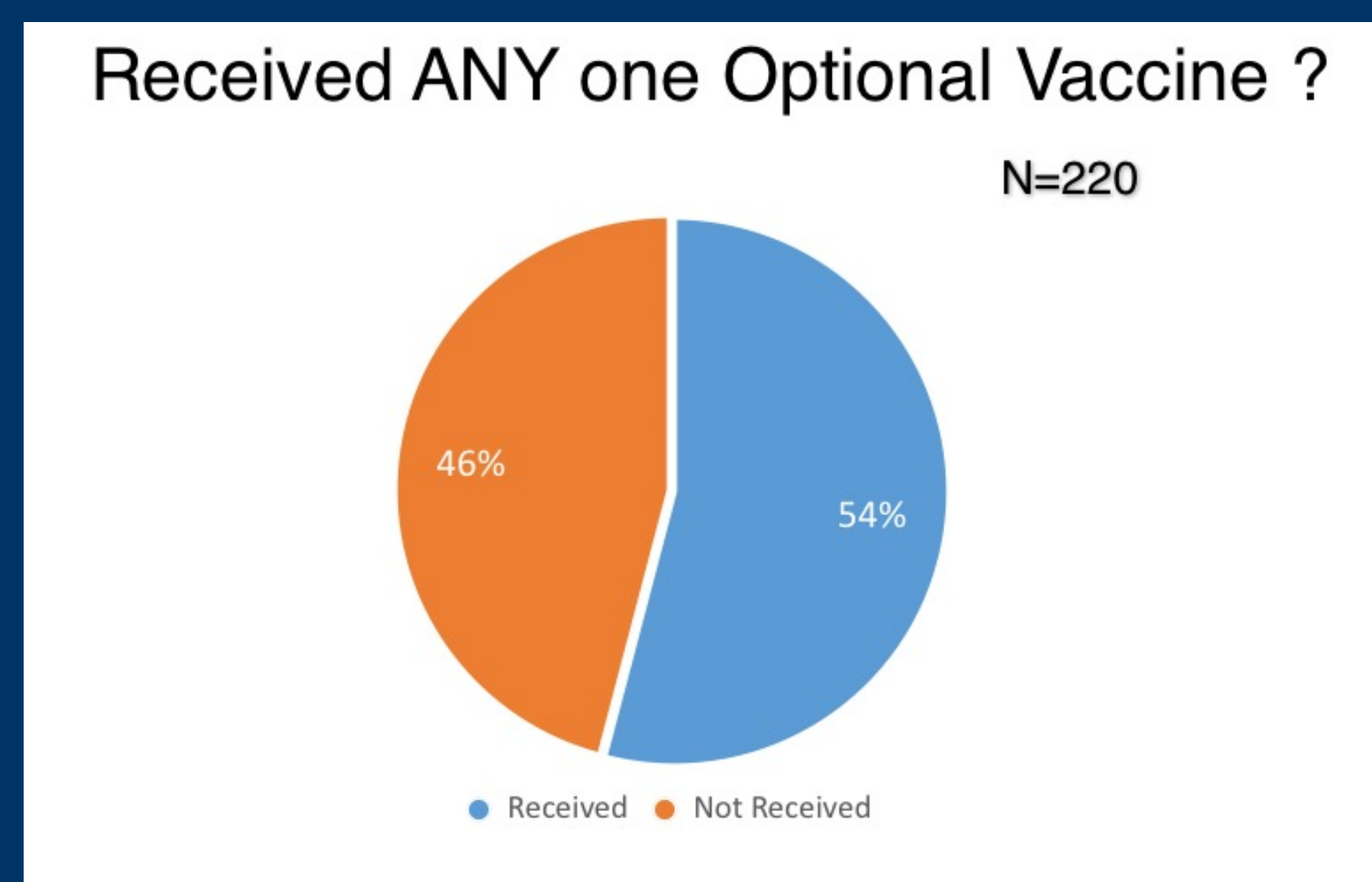
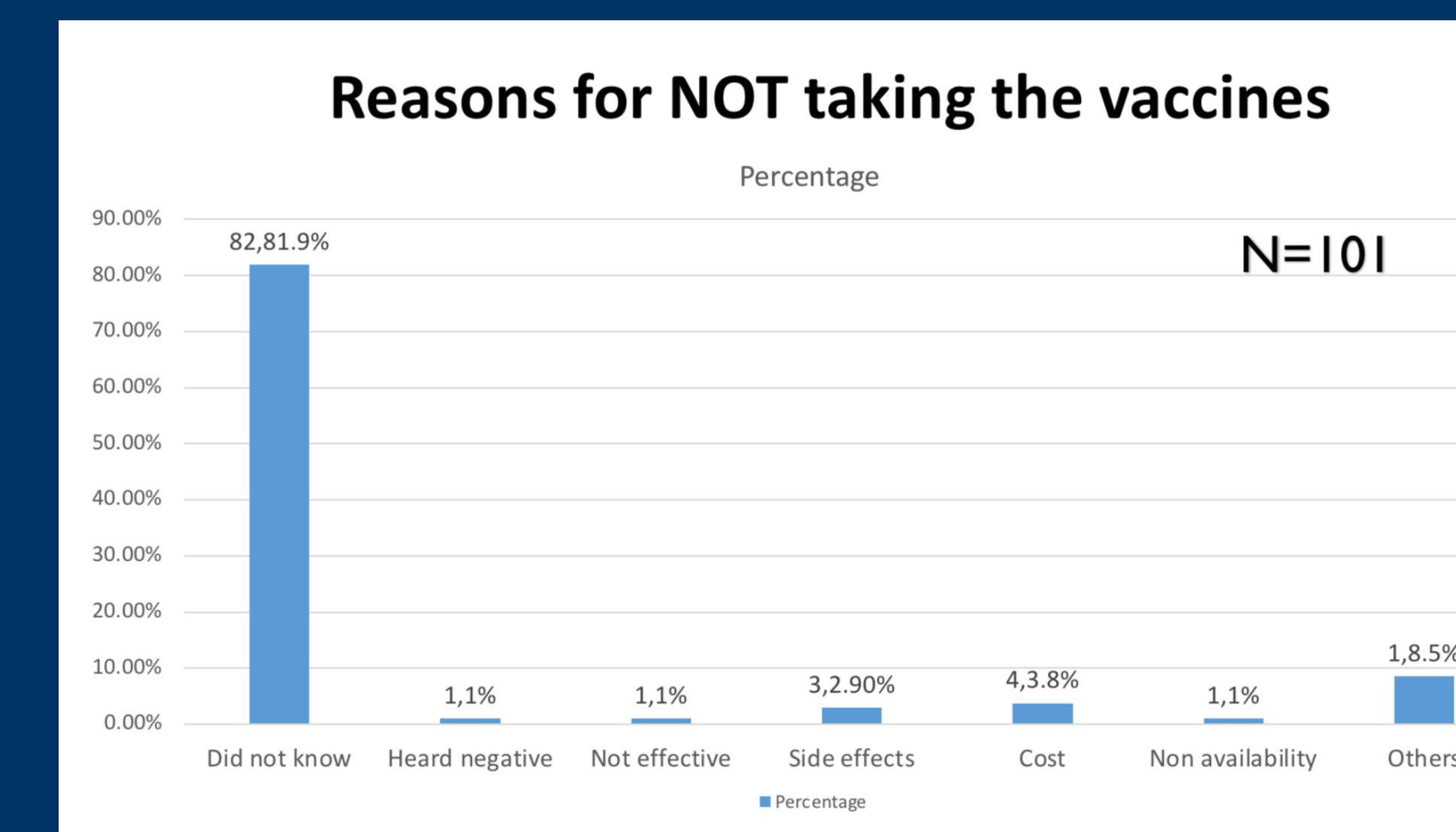
METHODOLOGY

- Study Design : A community based Cross Sectional Study
- Setting Of The Study: The study was conducted in the urban population of the Vellore town (Wards 16-60, situated south of the Palar River).
- Study Population : Children in the age group of 3-6 years
- Inclusion criteria : Children in the age group of 3-6 years residing in (Wards 16-60) Vellore Town, all children in a household
- No exclusion criteria
- Period of the study: 2 weeks (14TH March – 24th March '18).
- Sample size 210 households



RESULTS

- A total of 220 children from 210 households were included in the study, of which 46% (101) had not received any optional vaccine.
- The individual vaccine coverage were ranged from 0.9% for Anti Rabies vaccine to 46.8% for MMR Vaccine.
- High socioeconomic status ($p < 0.001$), high maternal educational level ($p < 0.001$), health professional's advice ($p < 0.001$), access of caregiver to smart phones ($p < 0.001$), and birth in a private hospital ($p < 0.001$) were found to be predictors of good vaccine uptake.
- The barriers to vaccine coverage observed were lack of knowledge, cost of the vaccine, non-availability and false knowledge of apparent insufficiency.



CONCLUSION

The coverage and awareness of select optional vaccines among children aged 3-6 yrs in urban setting:

	coverage	awareness
1.Hepatitis A	38.6%	40%
2.Anti-rabies vaccine	0.9%	16.8%
3.MMR vaccine	46.8%	48.2%
4.Typhoid vaccine	38.6%	55.9%
5.Seasonal influenza	30%	39.1%
6.Pneumococcal vaccine	24.1%	35%
7.Varicella vaccine	40%	56.4%

Factors associated with vaccine uptake:

Promotes Uptake	Barriers for Uptake
Socioeconomic Status	Lack of Awareness
Caregivers education	Heard it was inefficient
Health Professional Advice	Relatively expensive
Smart phone use	Lack of availability

Recommendations:

- To encourage medical practitioners and other health care providers to give counselling regarding the uptake of optional vaccines.
- Since mobile phone is an important source for dissemination of health education, it must be utilised to create more awareness among the public.
- To educate of the primary care giver regarding optional vaccines
- Anti-rabies vaccine uptake should be encouraged as rabies is the most lethal disease.

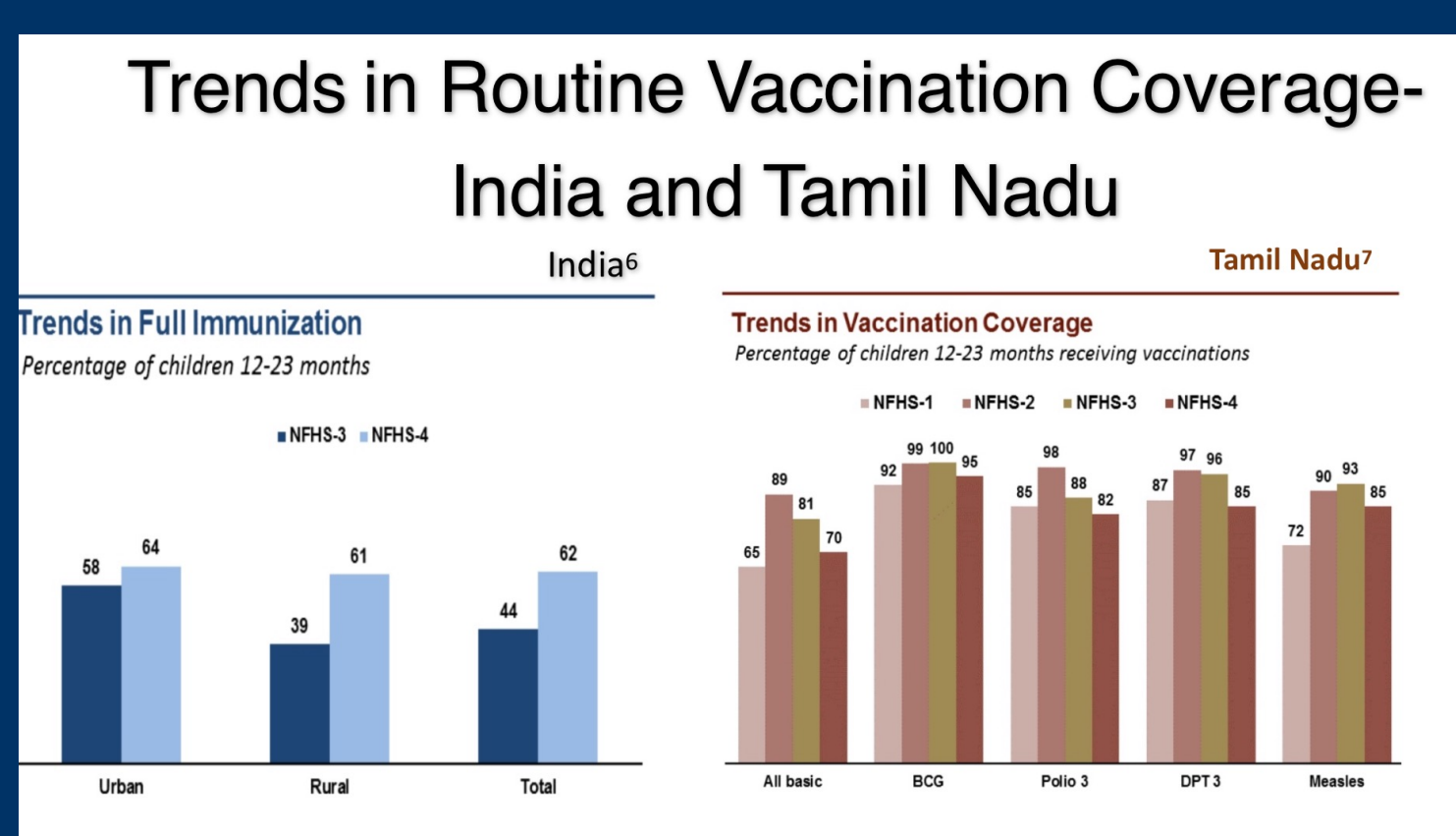
REFERENCES

- Seroprevalence of HAV infection in different age groups of children Y.K.Verma, N Rajput, S.R. Rajput(2014)
- Human rabies in India: a problem needing more attention. Alakes Kumar Kole, Rammohan Roy & Dalia Chanda Kole.WHO Report (2013)
- IAP position paper on Burden of Mumps in India and Vaccination strategies.(2013)
- Causes of Death in India - Centre for Global Health Research
- Chakravarti A, Jain M. Rubella prevalence and its transmission in children. Indian J Pathol Microbiol. 2006;49(1):54-6
- Assessment of burden of seasonal influenza in India and consideration of vaccination policy Mahima Venkatesh*1, Charles R Doorn 2 , Mark Steinhoff 3 , Jun Ying 4
- The Burden of Typhoid and Paratyphoid in India: Systematic Review and Meta-Analysis. John. Jacob, Carola J. C. Van Aart and Nicholas C. Grassly. (2018)
- Indian Pediatr. 2000 Jul;37(7):714-9. Age related seroprevalence of antibodies to varicella in India. Lokeshwar MR1, Agrawal A, Subbarao SD.
- Burden of Severe Pneumonia, Pneumococcal Pneumonia and Pneumonia Deaths in Indian States:Habib Farooqui ,Mark Jit, David L. Heymann, Sanjay Zodpey(2015)
- Asit Kumar Mishra et al Socio-demographic factors affecting immunization status of pre-school children in Jamshedpur International Journal Of Current Medical And Pharmaceutical Research(june 2017) Vol. 3, Issue, 06, pp.1845-1848
- Ambike D, Tambade V, Paker F, Ahmed K. Parental knowledge on the optional vaccines and the barriers in their use: A rural hospital based study. Indian J Child Health. 2017; 4(1):88-90.
- Manthiram et al Predictors of optional immunization uptake in an urban south Indian population Vaccine 2014 Jun 5;32(27):3417-23

ACKNOWLEDGEMENT

Community Medicine Department, CMC Vellore

Contact : dr.kurian.sneha@gmail.com



Disease	Supporting facts
Hepatitis A	In India, it was found that there is 93% seroprevalence in children aged 4 years to 8 years.(1)
Rabies	India has about 18000 to 20000 cases a year and accounts for 36% of total world deaths.(2)
Measles	India accounted for 50% of global deaths in 2013.(globally 0.14 million)(3)
Mumps	36,352 cases reported in SE Asia region of WHO in 2013 with an incidence of approximately 1000 cases per 100000.(4)
Rubella	Approximately 130000 cases reported in India since 2012(5)
Seasonal Influenza	Worldwide 3 to 5 million cases with 2.5 to 3 lakh deaths(6)
Typhoid Fever	Prevalence of lab-confirmed hospital cases is approximately 10% in India.(7)
Varicella infection	An overall seropositivity rate of >70% was reached between the ages of 11-15 years which increased to nearly 90% at the age of 30 years. (8)
Pneumococcal infection	13.6% children aged 1 to 59 months die of pneumonia. India accounts for 23% of global pneumonia burden(9)

OBJECTIVES

- To estimate the coverage of select optional vaccine among children in the age group 3-6 years in an urban setting of the Vellore district.
- To explore barriers and facilitators towards uptake of select optional vaccines among caregivers to children of age 3-6 in an urban setting of the Vellore district.

- Study Tool :Semi-structured, pilot tested, interviewer based questionnaire
- Data Entry using Epidata v 3.1
- Analysis using SPSS v 25
- Univariate analysis
 - Vaccine coverage – as Proportion
 - Continuous variable – measures of central tendency
 - Categorical variable – as frequency and percentage

- Bivariate analysis
 - Pearson's Chi Square test
- Multivariate analysis
 - Logistic regression analysis

