

# Risk Factors for Childhood Immunization Incompletion in Ethiopia

Sharmily Roy, MPH, CHES Georgia State University

## Immunization in Ethiopia

- The under 5 mortality rate in Ethiopia is 118/1000, which is 30 times the rate of Western Europe. (UNICEF, 2009)
- Global goal of childhood immunization coverage is 80%
- Ethiopia's immunization rate is 61-75%
- In country regional coverage ranges between 4-92%



Source: www.ethiopia.gov.et

Ethiopian Health Administration

EPI Schedule of Vaccination, 2005\*

Vaccine	Diseases	Age
BCG	Tuberculosis	At Birth
DPT	Diphtheria, Pertussis, Tetanus	6, 10, 14 weeks
OPV	Polio	At Birth*, 6, 10, 14 weeks
Mecodes	Mecodes	9 months

\* The EPI schedule for developing countries was updated in 2007 to include a pertussis-containing formulation of DPT and Hepatitis B. Hepatitis B is recommended but not needed for protection.

### Drivers of Routine & Supplemental Immunization

PUSH	PULL
<b>Ministry of Health efforts</b> <ul style="list-style-type: none"> <li>Location of healthcare facilities</li> <li>Adequate healthcare workers</li> <li>Timely and effective vaccines available at immunization sites</li> </ul>	<b>Parents demand for vaccines</b> <ul style="list-style-type: none"> <li>Community education</li> <li>Vaccine promotion campaigns</li> <li>Parents and caregivers' ability to travel to immunization sites</li> </ul>

## Objectives

### Research Questions

- What are some characteristics of parents and caregivers associated with no or incomplete vaccination in Ethiopia?
- Are groups with high vaccination and groups with low vaccination significantly different from each other?
- Are there identifiable differences between rates of children who have not received some but incomplete vaccination?

## Methods & Results

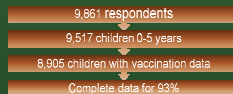
### Data Source

- Secondary analysis using cross-sectional data from 2005 Ethiopia Demographic and Health Survey ([www.measuredhs.com](http://www.measuredhs.com) - Funded by USAID)
- Enumeration area similar to US census developed at the Woreda/Wereda level
- Oversampling for households with young children



### Data Analysis

- SPSS 17 statistical software used for analysis
- Descriptive analysis was conducted to explore the population
- Chi-square analysis was conducted to examine association of vaccination status with various characteristics identified as risk factors during the literature review
- Multivariate logistic analysis was then conducted to further explore adjusted relationship of these risk factors for incomplete vaccination



Vaccination Status (N=8905)		
	Frequency	Percentage
No Vaccine	2984	29.3%
Partial Vaccine	4651	47.2%
Completed EPI Vaccination	1360	13.8%

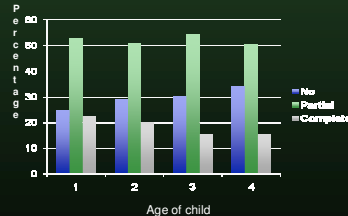
### Independent variables

- Birth Order
- Type of residence\*
- Region\*
- Wealth Index\*
- Mother's education
- Father's education
- Mother's age
- Father's age
- Religion

- Dependent variables
  - Vaccination status for Routine Immunization (None/Partial, Complete)

\*OR Significant

### Vaccination Status



## Findings

### Vaccination Completion Profile

- Highest likelihood of vaccination completion was for an urban child from Tigray, who is also from the richest quintile of the society
- Lowest likelihood of vaccination completion was for a child who happens to be 7th or higher numbered child of the family and is from the poorest rural family in Somali
- Parents' education, age and religion were not significant

## Implications

- More children start, but do not finish Routine Immunization than those who receive no immunization
- Due to access issues, the cost of immunization is higher for lower income families from rural settings than other groups
- Facilitating access to immunization can increase vaccine demand from parents and caretakers

## Recommendations

- Strategies for reaching isolated Kebeles during both dry and wet seasons consistently will allow children to finish their RI
- Impact RI coverage by increasing both the number of health posts and outreach workers
- Mobilize pastoralists in Somali and Afar to seek vaccination for their children can increase uptake in this population
- Policy analysis of the impact of global influences on family behavior around vaccination will improve international efforts

## Study Limitations

- This study did not examine health system influences on child immunization
  - Household survey data cannot give a complete picture of parents decision-making
- This study analyzed secondary data
  - Misclassification and self-reporting bias
  - Decisions during data analysis can vary results

## Acknowledgements

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Contact: sharmily.roy@gmail.com