

# Assessing the Demand for the Pneumococcal Vaccine in Dhaka, Bangladesh

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## INTRODUCTION

Pneumococcal disease is estimated to cause 800,000 and 1.2 Million childhood deaths per year, the majority of which occur in low and middle income countries.



Dhaka is the capital and the major city of Bangladesh with roughly 11 million population.

In Bangladesh, pneumonia is the leading cause of mortality amongst children under five years of age.

The pneumococcal vaccine has yet to be introduced in countries like Bangladesh

Introduction of this vaccine in Bangladesh would greatly contribute to the achievement of Millennium Development Goal 4, reduction of childhood mortality

## METHODS

A contingent valuation survey was conducted in urban Dhaka amongst 3131 randomly selected households with children less than 5 years old.

One under-five child was randomly selected for the subject of the survey.

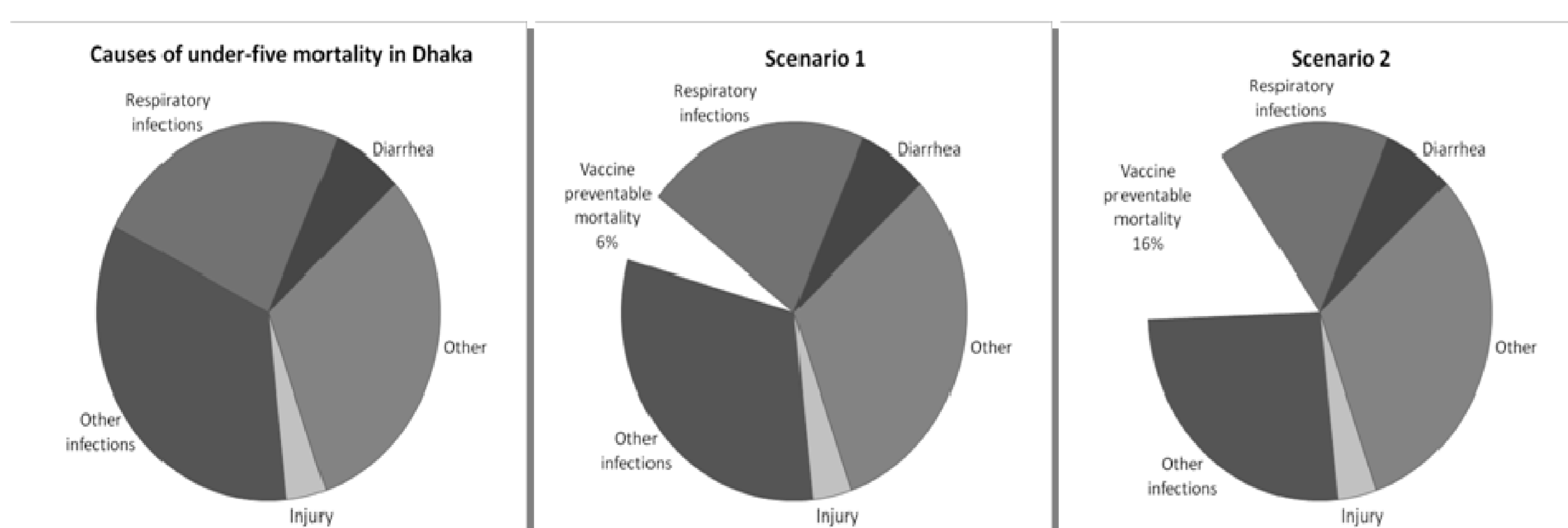
Respondents were asked whether they would purchase a pneumococcal vaccine in 1 of 2 randomized vaccine impact scenarios at 1 of 9 randomized starting price points (Insert 1).

A bidding question format was then used to follow-up the respondent's response.

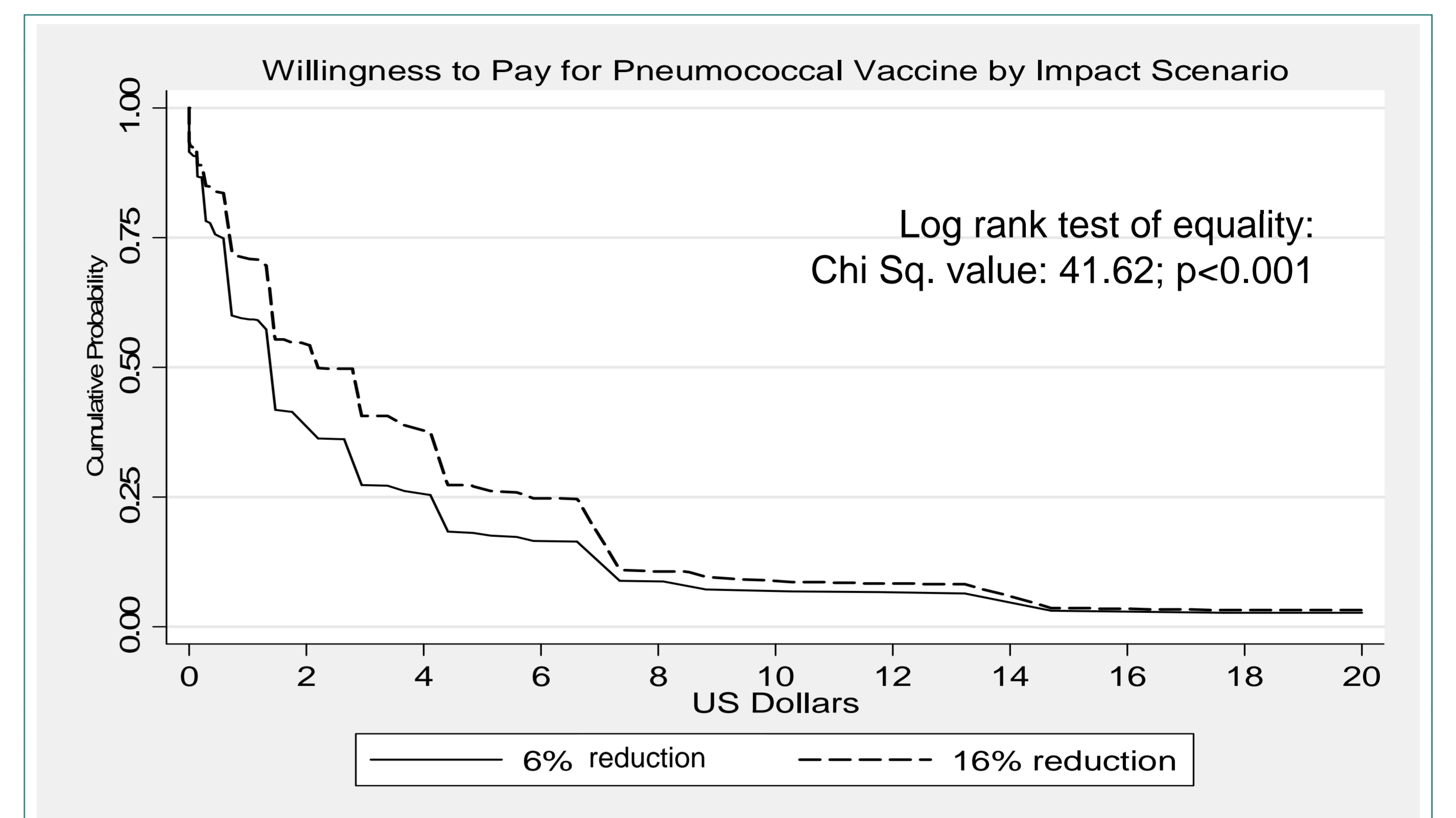
The methodology was used to elicitate the value of a vaccine that would reduce overall child mortality by 6% and one that would reduce the overall mortality by 16%.



## INSERT 1



## INSERT 2



## RESULTS

### DESCRIPTIVES:

The majority of the respondents were female, 95% in the 6% reduction group and 95% from the 16% reduction group. The mean age of the respondents was 28 years in both groups and the mothers of 16% and 17% of the children had no education, respectively.

The mean family size was 4.9 persons and 5.0 persons and the median monthly income was US \$147 and \$176, respectively.

The children were on average 26.5 ( $\pm 15$ ) and 26.3 ( $\pm 15$ ) months, in the 6% and 16% vaccine impact scenario. 52.3% and 51.6% were Female, respectively.

### MAIN RESULTS:

Results show strong household demand for a pneumococcal vaccine. The two demand curves for the pneumococcal vaccine at two vaccine impact scenarios shown in the Insert 2.

For scenario 1: Pneumococcal vaccine that would reduce child mortality by 6%, 50% of households were be willing to pay \$1.47 or more per dose.

For scenario 2: Pneumococcal vaccine that would reduce child mortality by 16%, 50% of the households would be willing to pay \$2.20 or more per dose of a pneumococcal vaccine in a three dose series.

A log-linear regression analysis was used to examine the determinants of willingness to pay.

Strong predictors included (p-value less than 0.05):

- the interaction between mother's education and income
- the gender of the child
- previous family experience with meningitis
- the interaction between the child rank and the total number of children
- between the two vaccine impact scenarios

Of the sample, 3.2% refused to vaccinate their child even if the vaccine were free and 4.3% would vaccinate their child only if the vaccine were free.

## CONCLUSIONS

There is strong household demand for a pneumococcal vaccine in Dhaka, Bangladesh.

When implementing a new vaccination program in low-income countries, this study highlights addressing issues such as low socio-economic status, lack of education and gender preference.

It is also important to recognize the disparity that exists in urban areas of low-income countries; our study observed a wealthy and educated population that is demanding life saving vaccines for their children.

This is the first household level WTP survey to our knowledge, conducted in a low income country to assess pneumococcal vaccine demand.

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