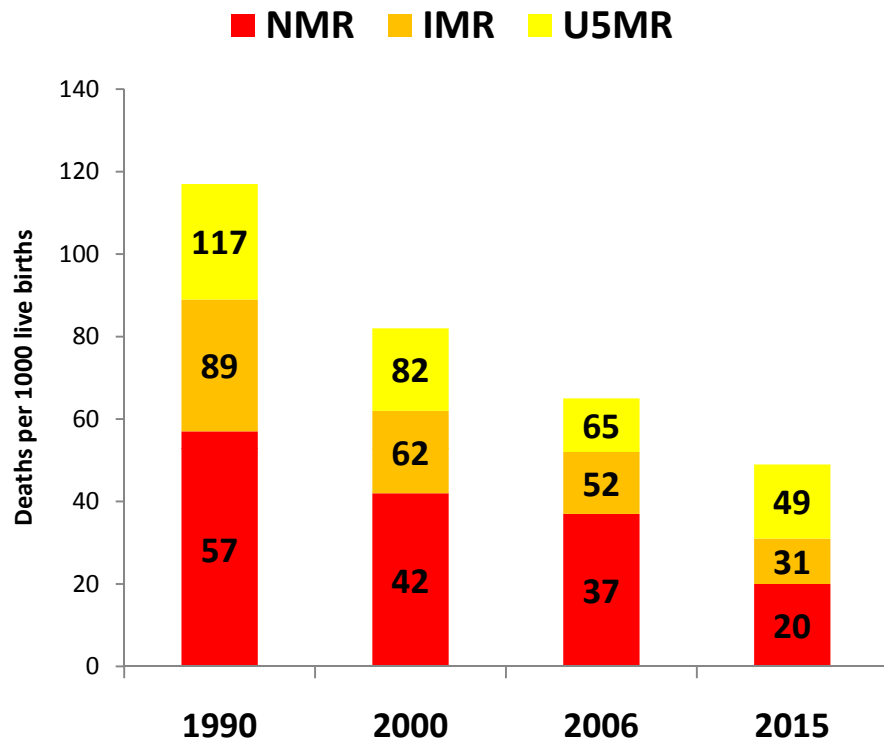


June 2011

# Pilot for testing Delivery Mechanisms for Newborn Vitamin A Supplementation (NBVAS) in Bangladesh

June 2010- September 2011





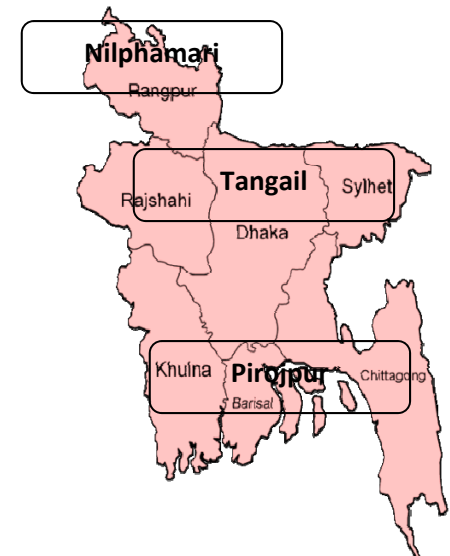
## Sites of Randomized Trials in S Asia

JiVITA in north west Bangladesh

- 15,937 newborns received 50,000 IU vitamin A or placebo within 24 hrs of birth and followed through 6 months of age
- **reduced infant mortality by 15%**

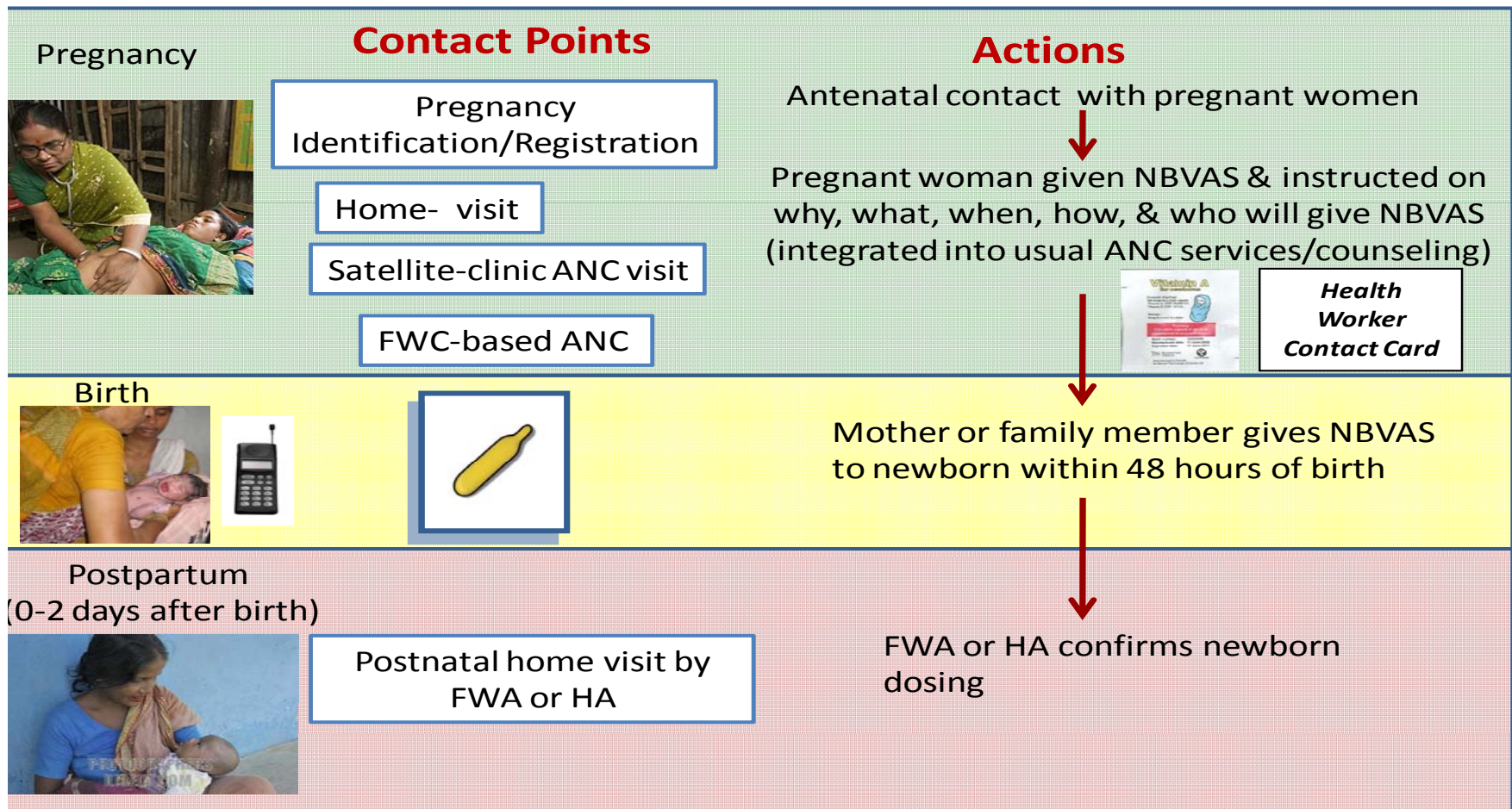
## Objective

- To compare the feasibility of NBVAS delivery via 2 CHANNELS, integrated within existing community-based maternal and newborn services.

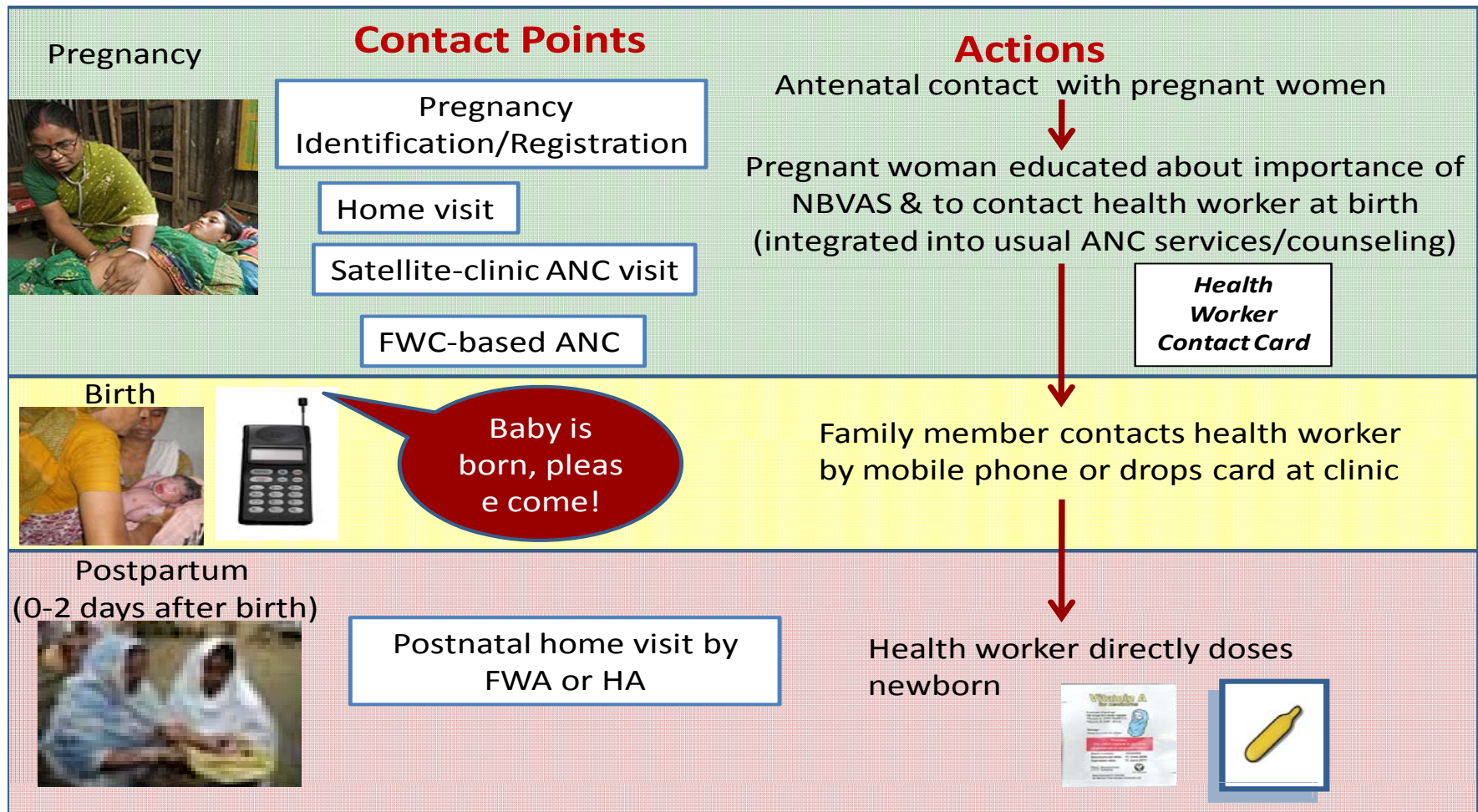


**1. “Revitalization of Community Health Care Initiative in Bangladesh” (RCHCI,B) Project**  
**2. Directorate General of Family Planning (DGFP)**

# Model 1: Mother Family Member Dosing Model



# Model 2: Health Worker Dosing Model



# Master trainers



Directors from  
MOHFW  
Civil surgeon  
Directors from Family  
Planning  
UHFPO Sub district  
managers  
UFPO  
RMO  
MOMCH

# Field implementation

## Activity

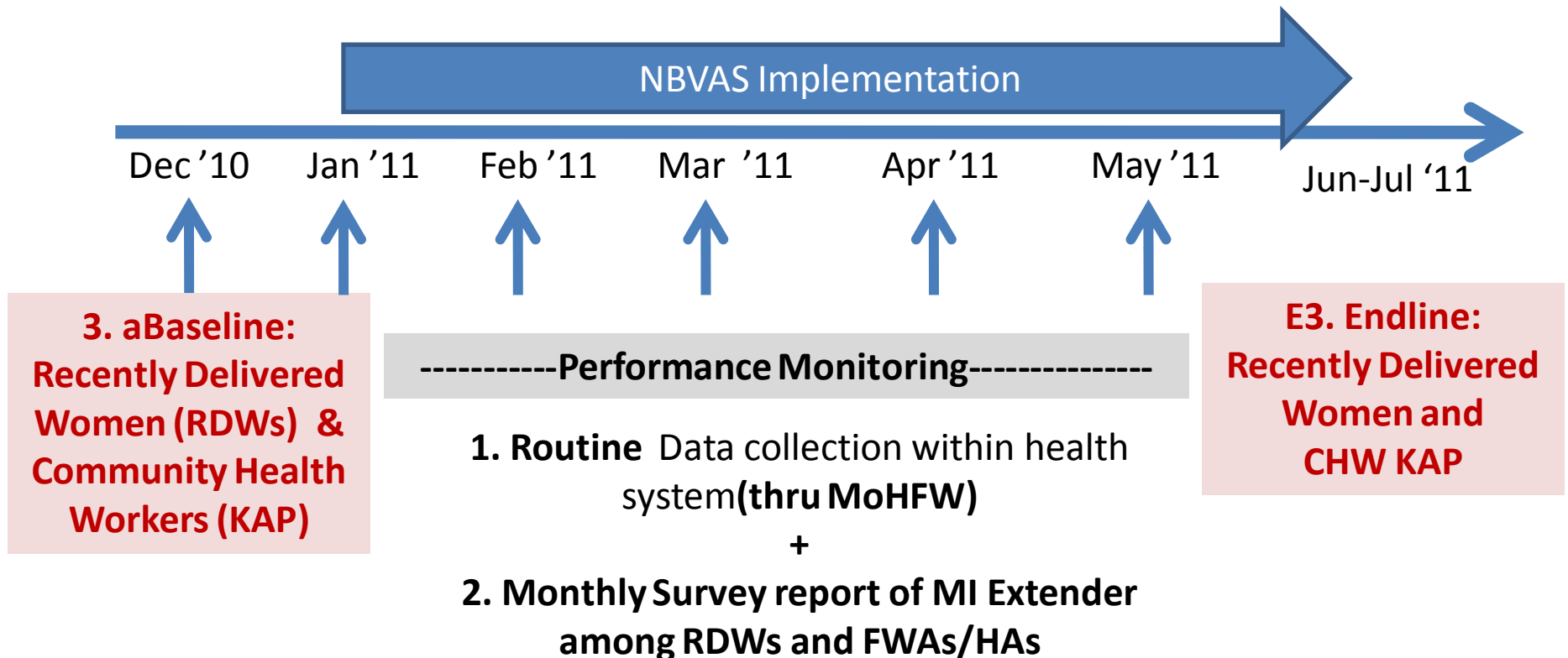
Sub-district advocacy and planning meeting.

Preparation of Training manual and Communication materials

Health workers training with good post scores

Administration of low dose vitamin A (50,000 IU) specially prepared for the new born within 48 hours.

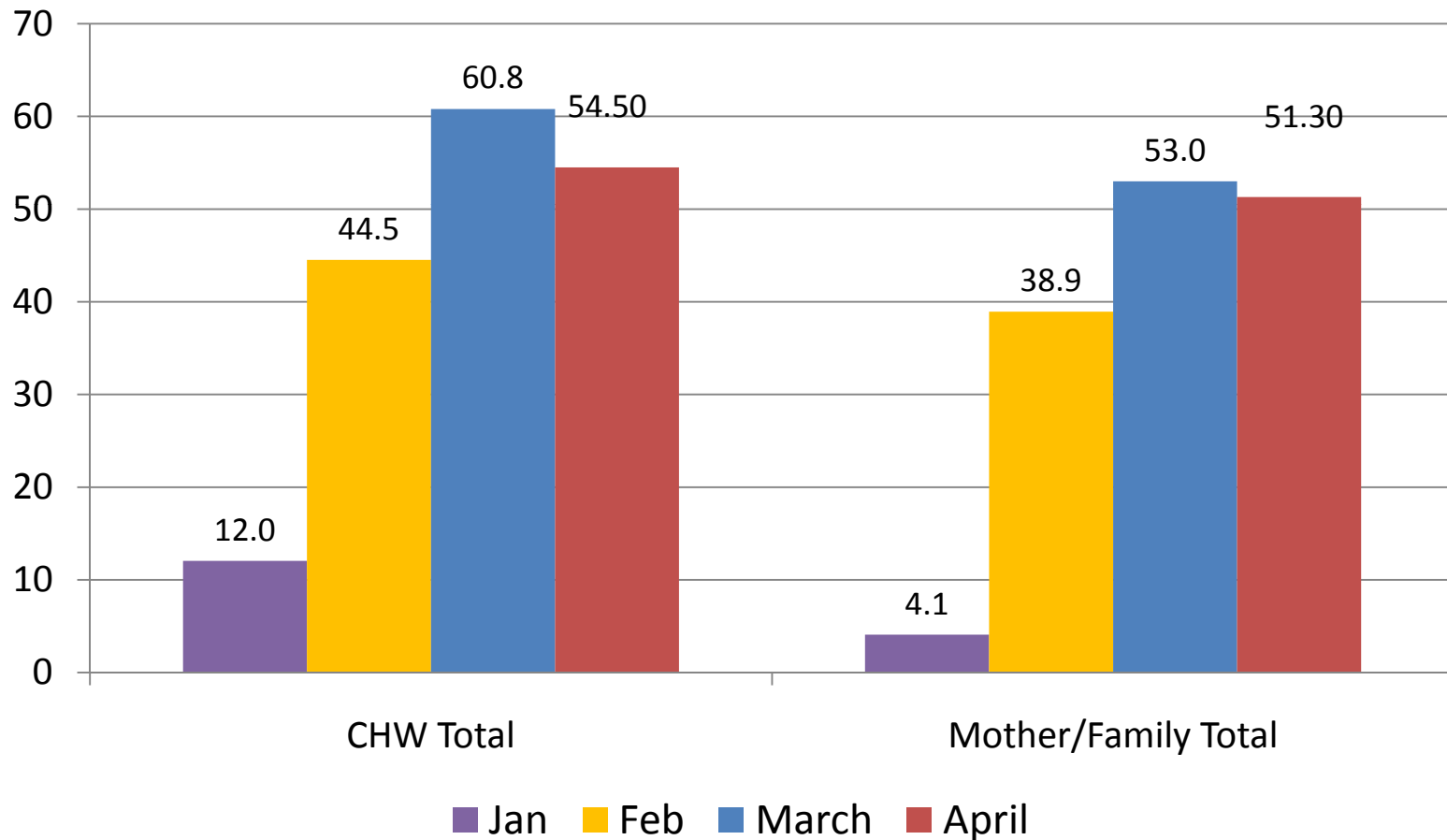
# NBVAS M&E Design



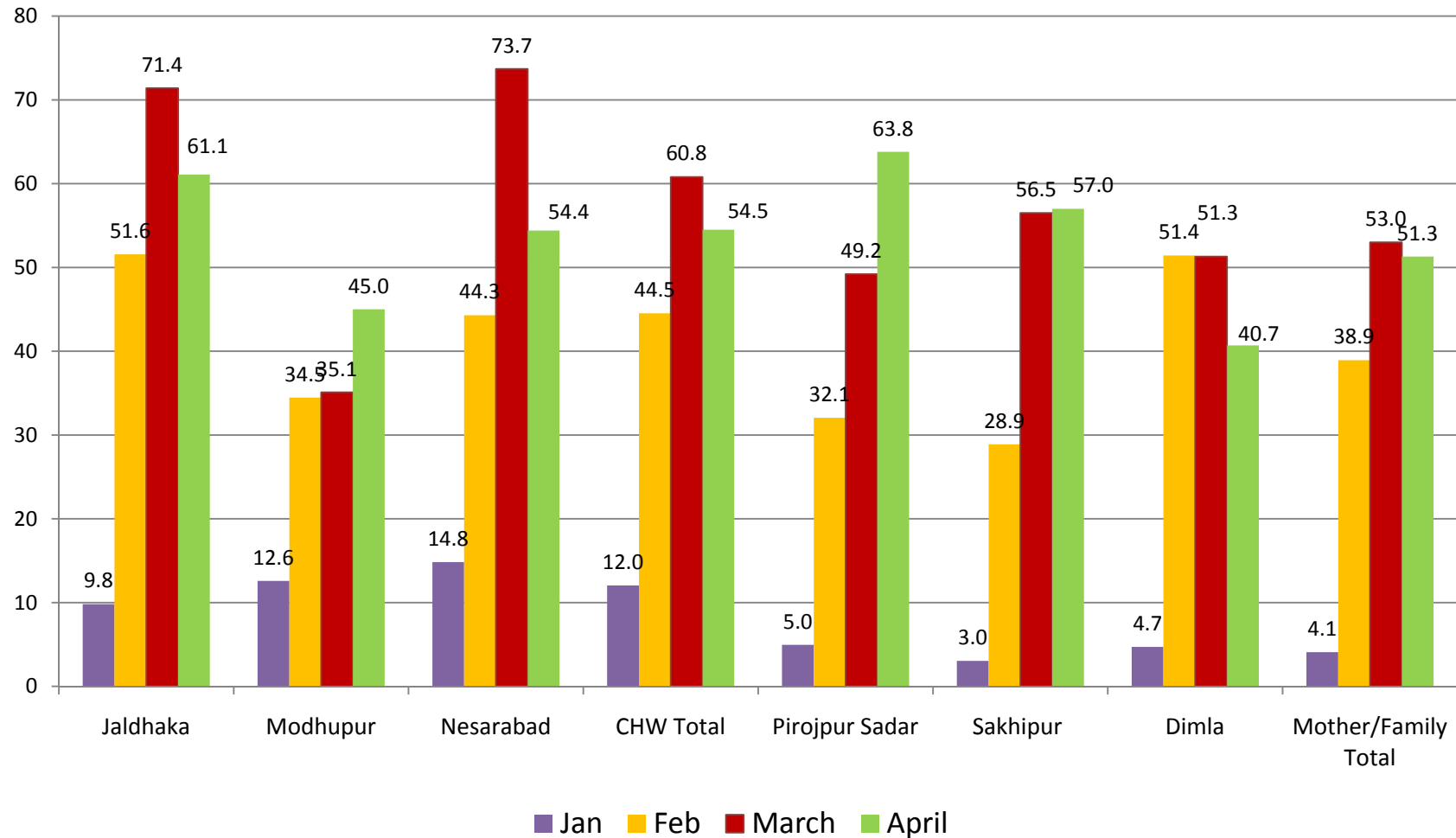


## Results from the monitoring data of the NBVAS Pilot Program

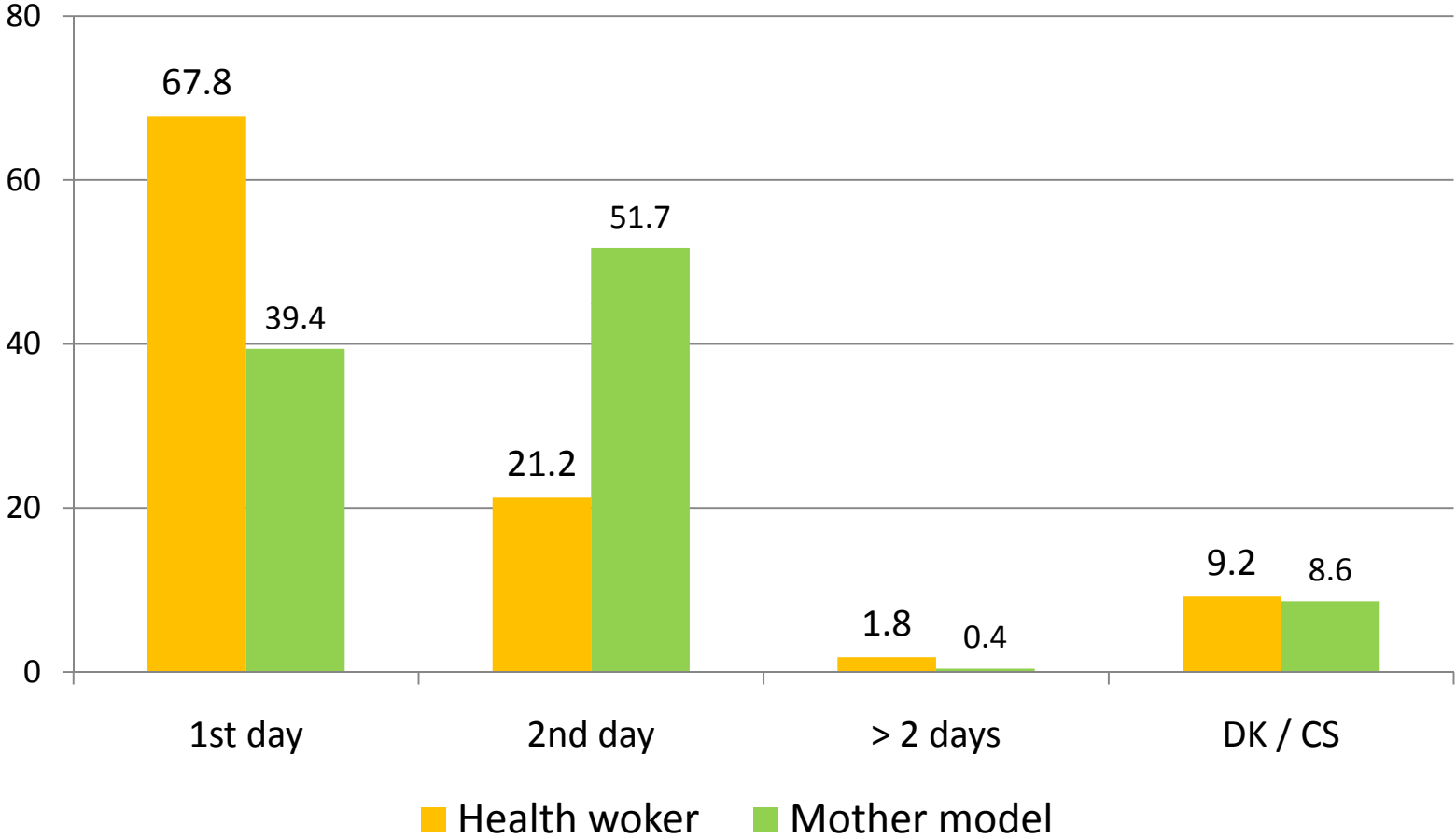
# Coverage of NBVAS based on expected live births by program area, Jan- April, 2011



# Coverage of NBVAS based on expected live births

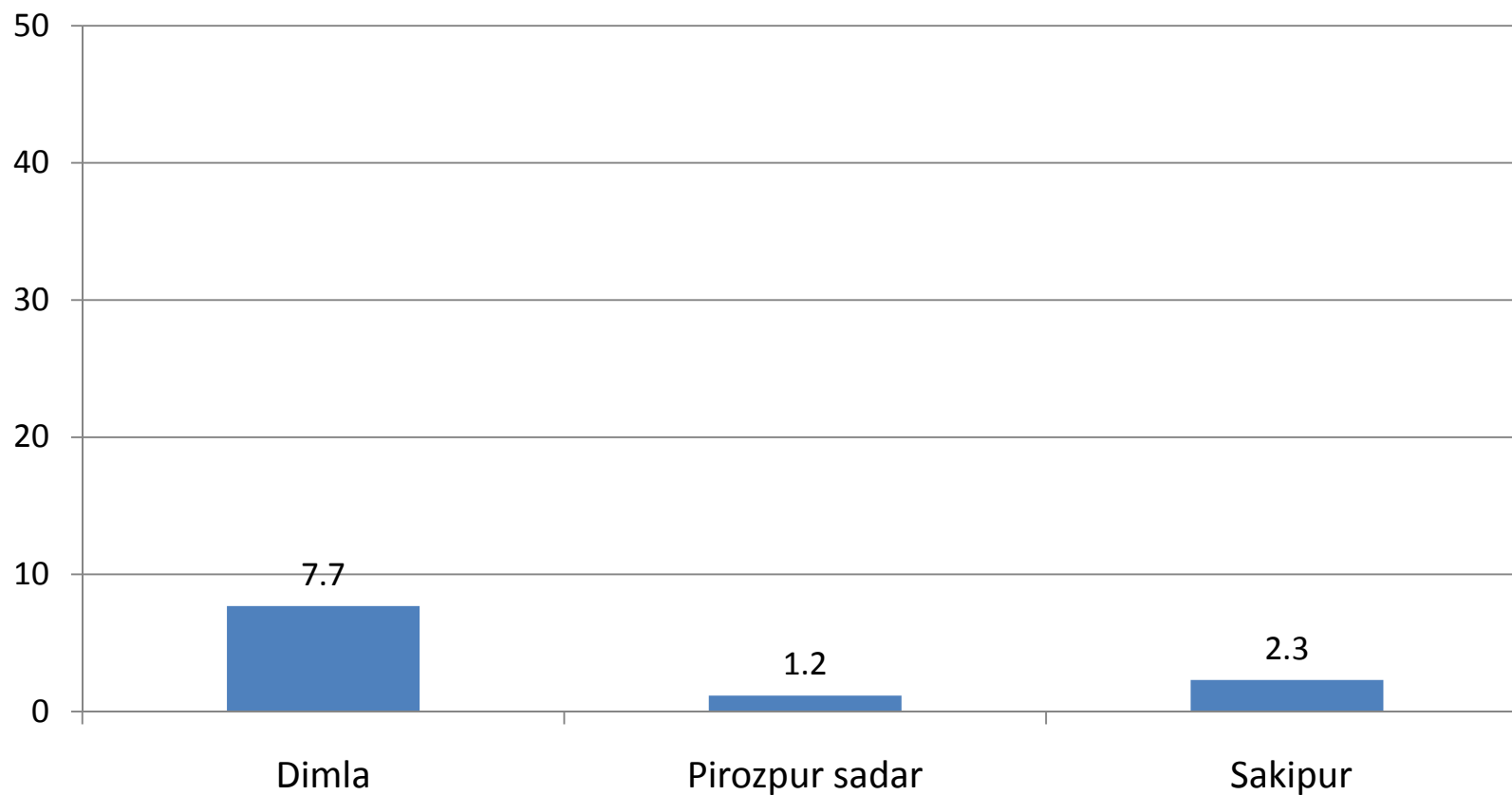


# Timing of NBVAS dosing by model



Source : Extender Surveys

# Proportion of mothers reporting problems in dosing NBVAC



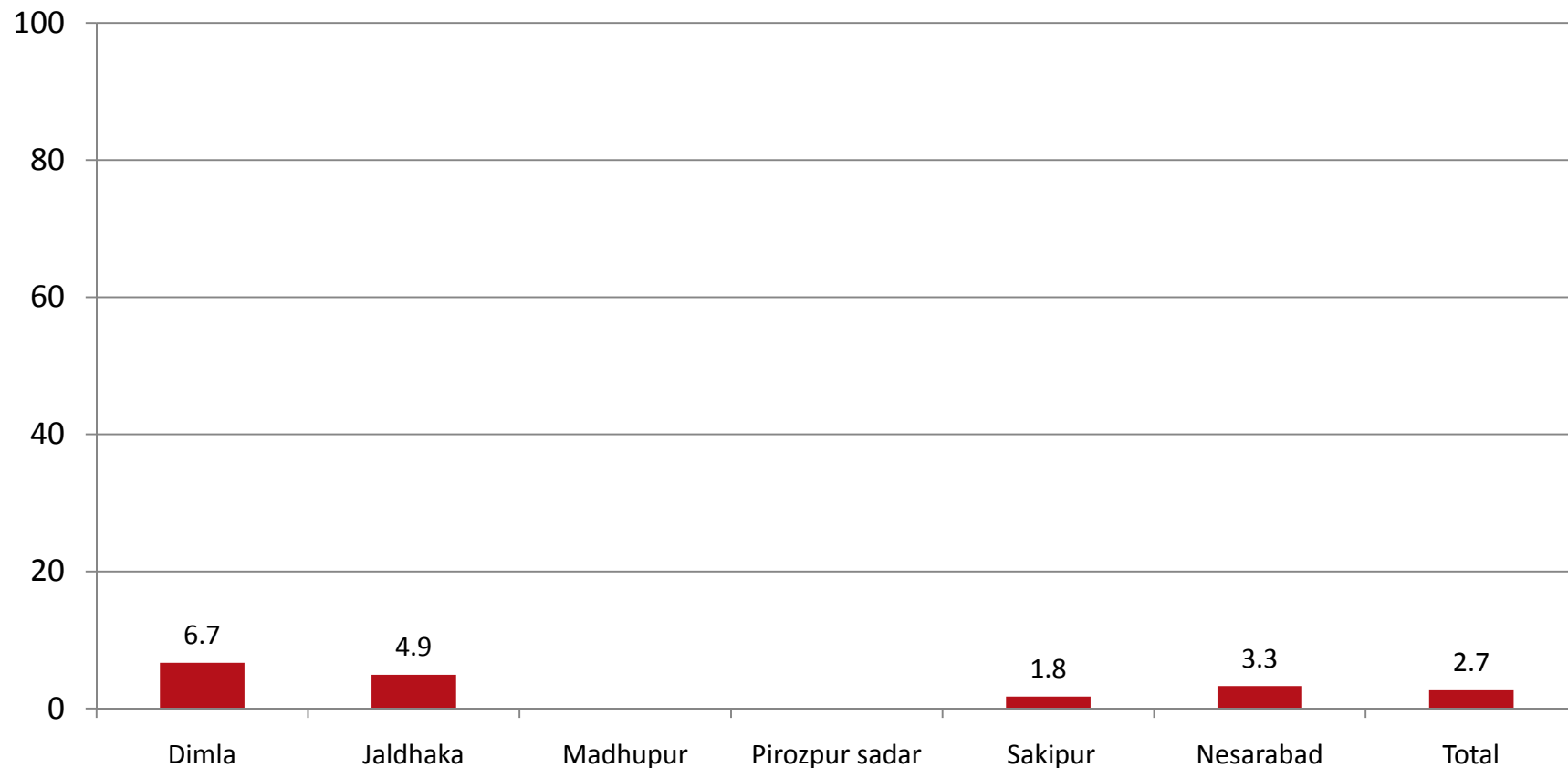
Source : Extender Surveys

**85% were fully satisfied and 12% moderately more than 90% of Health Workers reported correct knowledge of NBVAS program**

	Timing of NBVAS	Content of Retinol	NBVAS not a stand alone program	NBVAS same as preschool Vit A	No of capsules to be provided	N
Dimla	100.0	98.3	91.7	100.0	96.7	60
Jaldhaka	100.0	100.0	100.0	100.0	100.0	61
Madhupur	100.0	98.5	93.9	100.0	87.9	66
Pirozpur sadar	76.1	69.0	98.6	97.2	95.8	71
Sakipur	96.5	96.5	100.0	100.0	94.7	57
Nesarabad	95.1	93.4	83.6	96.7	96.7	61
<b>TOTAL</b>	<b>94.1</b>	<b>92.0</b>	<b>94.7</b>	<b>98.9</b>	<b>95.2</b>	<b>376</b>

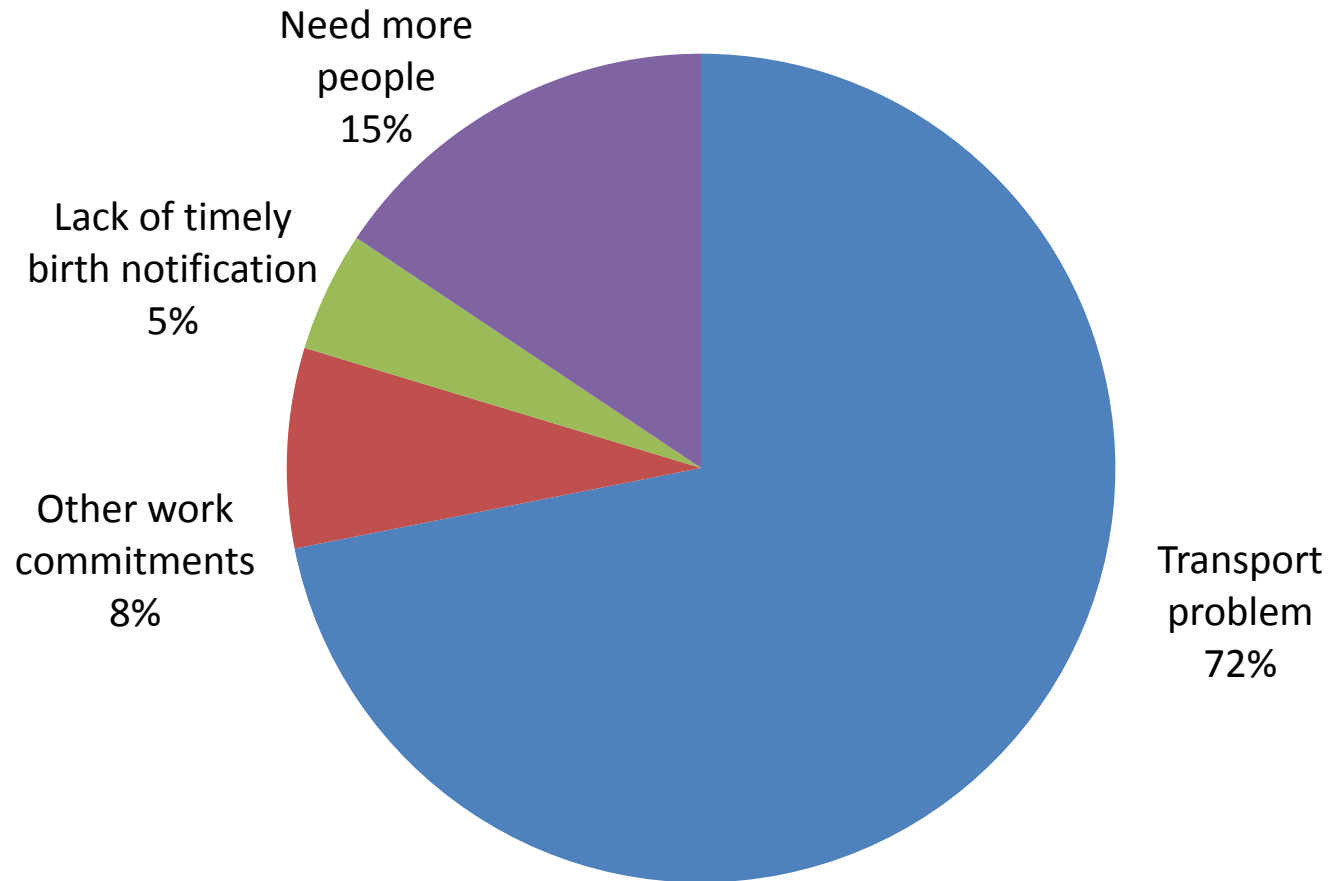
Source : Extender Surveys

# Percent of health workers who faced trouble in replenishing supplies



Source : Extender Surveys

# Problems faced by 30% health workers in reaching household within 2 days



Source : Extender Surveys

## Number of Health Workers Reporting Adverse Event after NBVAS dosing

Upazila	No. of health workers reporting adverse event	Total Number of Health Workers Interviewed
Sakhipur	0	57
Dimla	2	60
Pirojpur Sadar	1	71
Modhupur	2	66
Jaldhaka	2	61
Nesarabad	0	61
<b>TOTAL</b>	<b>7</b>	<b>376</b>

**Source : Extender Surveys**

# Major Findings

- No difficulty in dosing and recording NBVAS within 48 hours of birth as more than 40% were dosed.
- Use of Mobile/cell phones effective in increasing coverage
- Effective Training and advocacy program.
- All protocols followed during dosing including breast feeding and cutting capsules. However, hand washing seems to be an issue.
- Very few adverse events noted. Not clearly attributable to NBVAS.
- Passive impact of this program on ANC and PNC coverage

# Lancet Series on Undernutrition-January 2008

## Maternal and Child Undernutrition 3



### What works? Interventions for maternal and child undernutrition and survival

Zulfiqar A Bhutta, Tahmeed Ahmed, Robert E Black, Simon Cousens, Kathryn Dewey, Elsa Giugliani, Batool A Haider, Betty Kirkwood, Saul S Morris, H P S Sachdev, Meera Shekar, for the Maternal and Child Undernutrition Study Group\*

We reviewed interventions that affect maternal and child undernutrition and nutrition-related outcomes. These interventions included promotion of breastfeeding; strategies to promote complementary feeding, with or without provision of food supplements; micronutrient interventions; general supportive strategies to improve family and community nutrition; and reduction of disease burden (promotion of handwashing and strategies to reduce the burden of malaria in pregnancy). We showed that although strategies for breastfeeding promotion have a large effect on survival, their effect on stunting is small. In populations with sufficient food, education about complementary feeding increased height-for-age Z score by 0.25 (95% CI 0.01–0.49), whereas provision of food supplements (with or without education) in populations with insufficient food increased the height-for-age Z score by 0.41 (0.05–0.76). Management of severe acute malnutrition according to WHO guidelines reduced the case-fatality rate by 55% (risk ratio 0.45, 0.32–0.62), and recent studies suggest that newer commodities, such as ready-to-use therapeutic foods, can be used to manage severe acute malnutrition in community settings. Effective micronutrient interventions for pregnant women included supplementation with iron folate (which increased haemoglobin at term by 12 g/L, 2.93–21.07 g/L) and zinc (which reduced the risk of low birthweight at term by 16% (relative risk 0.84, 0.74–0.95). Recommended complementary feeding interventions for children included strategies for supplementation of vitamin A (in the neonatal period and late infancy), preventive zinc supplements, iron supplements for children in areas where malaria is not endemic, and universal promotion of iodised salt. We used a cohort model to assess the potential effect of these interventions on mothers and children in the 36 countries that have 90% of children with stunted linear growth. The model showed that the best interventions that were designed to improve nutrition and prevent related disease could reduce stunting at 36 months by 36%; mortality between birth and 36 months by about 25%; and disability-adjusted life-years associated with stunting, severe wasting, intrauterine growth restriction, and micronutrient deficiencies by about 25%. To eliminate stunting in the longer term, these interventions should be supplemented by improvements in the underlying determinants of undernutrition, such as poverty, poor education, disease burden, and lack of women's empowerment.

#### Introduction

Of an estimated 178 million children aged younger than 5 years who are stunted (ie, have a height-for-age Z score of less than  $-2$ ),<sup>1</sup> most live in sub-Saharan Africa and south-central Asia. 160 million (90%) stunted children live in just 36 countries, and make up 46% of the 348 million children in those countries. About 55 million children are wasted (ie, have a weight-for-height Z score of less than  $-2$ ), of whom 19 million have severe wasting (weight-for-height Z score of less than  $-3$ ) or

severe acute malnutrition (weight-for-height Z score of  $-3$  or lower or associated oedema).

Although the prevalence of maternal undernutrition—assessed by low body-mass index—varies, fetal undernutrition or intrauterine growth restriction is common, with the highest prevalence in south-central Asia.<sup>1</sup> The association between undernutrition and child mortality is strong,<sup>2</sup> but evidence for the contribution of intrauterine growth restriction to mortality of neonates and children younger than 5 years has been less robust.<sup>3</sup>

Sufficient evidence for implementing neonatal vitamin A supplementation in Asia

Published Online

January 17, 2008

DOI:10.1016/S0140-6736(08)61616-6

ISSN 0140-6736

This is the third in a Series of five papers about maternal and child undernutrition

\*For a full list of authors, see the end of this article

Correspondence to: Prof Zulfiqar A Bhutta, Aga Khan University, Pakistan

(Prof Z A Bhutta PhD); Center for Health and Population Research, Dhaka, Bangladesh

(Prof R E Black MD); London School of Hygiene and Tropical Medicine, London, UK

(Prof K Dewey PhD); Federal University of Rio Grande de Sul, Brazil

(Prof H P S Sachdev); and World Bank, Washington DC, USA

(M Shekar PhD)

Correspondence to: Prof Zulfiqar A Bhutta, Aga Khan University, Karachi, Pakistan

zulfqar.bhutta@aku.edu.pk

zulfqar.bhutta@aku.edu.pk

zulfqar.bhutta@aku.edu.pk

zulfqar.bhutta@aku.edu.pk

zulfqar.bhutta@aku.edu.pk

zulfqar.bhutta@aku.edu.pk

zulfqar.bhutta@aku.edu.pk

zulfqar.bhutta@aku.edu.pk

zulfqar.bhutta@aku.edu.pk

zulfqar.bhutta@aku.edu.pk

zulfqar.bhutta@aku.edu.pk

zulfqar.bhutta@aku.edu.pk

zulfqar.bhutta@aku.edu.pk

zulfqar.bhutta@aku.edu.pk

zulfqar.bhutta@aku.edu.pk

zulfqar.bhutta@aku.edu.pk

zulfqar.bhutta@aku.edu.pk

zulfqar.bhutta@aku.edu.pk

zulfqar.bhutta@aku.edu.pk

zulfqar.bhutta@aku.edu.pk

zulfqar.bhutta@aku.edu.pk

zulfqar.bhutta@aku.edu.pk

#### Key messages

- Effective interventions are available to reduce stunting, micronutrient deficiencies, and child deaths. If implemented at sufficient scale, they would reduce DALYs (all child deaths) by about a quarter in the short term
- Of available interventions, counselling about breastfeeding and fortification or supplementation with vitamin A and zinc have the greatest potential to reduce the burden of child morbidity and mortality
- Improvement of complementary feeding through strategies such as counselling about nutrition for food-secure populations and nutrition counselling, food supplements, conditional cash transfers, or a combination of these, in food-insecure populations could substantially reduce stunting and related burden of disease
- Interventions for maternal nutrition (supplements of iron folate, multiple micronutrients, calcium, and balanced energy and protein) can improve outcomes for maternal health and births, but few have been assessed at sufficient scale
- Although available interventions can make a clear difference in the short term, elimination of stunting will also require long-term investments to improve education, economic status, and empowerment of women

## Challenges for Newborn vitamin A Delivery in Bangladesh

- > 8,000 births/subdistrict/year<sup>1</sup>
- >90% of births occur in the home<sup>2</sup>
- 12% of births attended by health professional<sup>2</sup>
- 48% of women have  $\geq 1$  antenatal care visit<sup>2</sup>
- Deaths of > 200,000 infants/ year

<sup>1</sup>UNICEF, State of the Worlds Children, 2008

<sup>2</sup>Bangladesh Maternal Health Services and Maternal Mortality Survey, 2001

IN CONCLUSION USING THE DELIVERY STRATEGIES TESTED IN BANGLADESH, NBVAS APPEARS TO BE A FEASIBLE INTERVENTION

More than 15% of 200,000 deaths infants/ year prevented

“Introducing birth dose of vitamin A into the essential newborn care package”