

Presentation to Global Health Council Auxiliary Meeting

Helping Babies Breathe

Prof. Mohammad Shahidullah

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Bangladesh: System of Care

Pre-Pregnancy

- **Interventions**
 - Education for risk factors
 - Screening for risk conditions
 - Iron/folate/ TT immunization for adolescent girls

During Pregnancy

- **Antenatal Care**
 - 4 ANC visits preferably completed at facility
 - Basic ANC at home and facility
 - Comprehensive ANC at facility

Bangladesh: System of Care

During Childbirth (Delivery and Newborn Care)

- **Community/home delivery care**
 - Presence of skilled birth attendant
 - Presence of trained newborn attendant at delivery to assess newborn
- **Facility level delivery care**
 - Emergency obstetric and neonatal care
 - Antibiotics for premature rupture of membranes
 - Management of neonatal complications

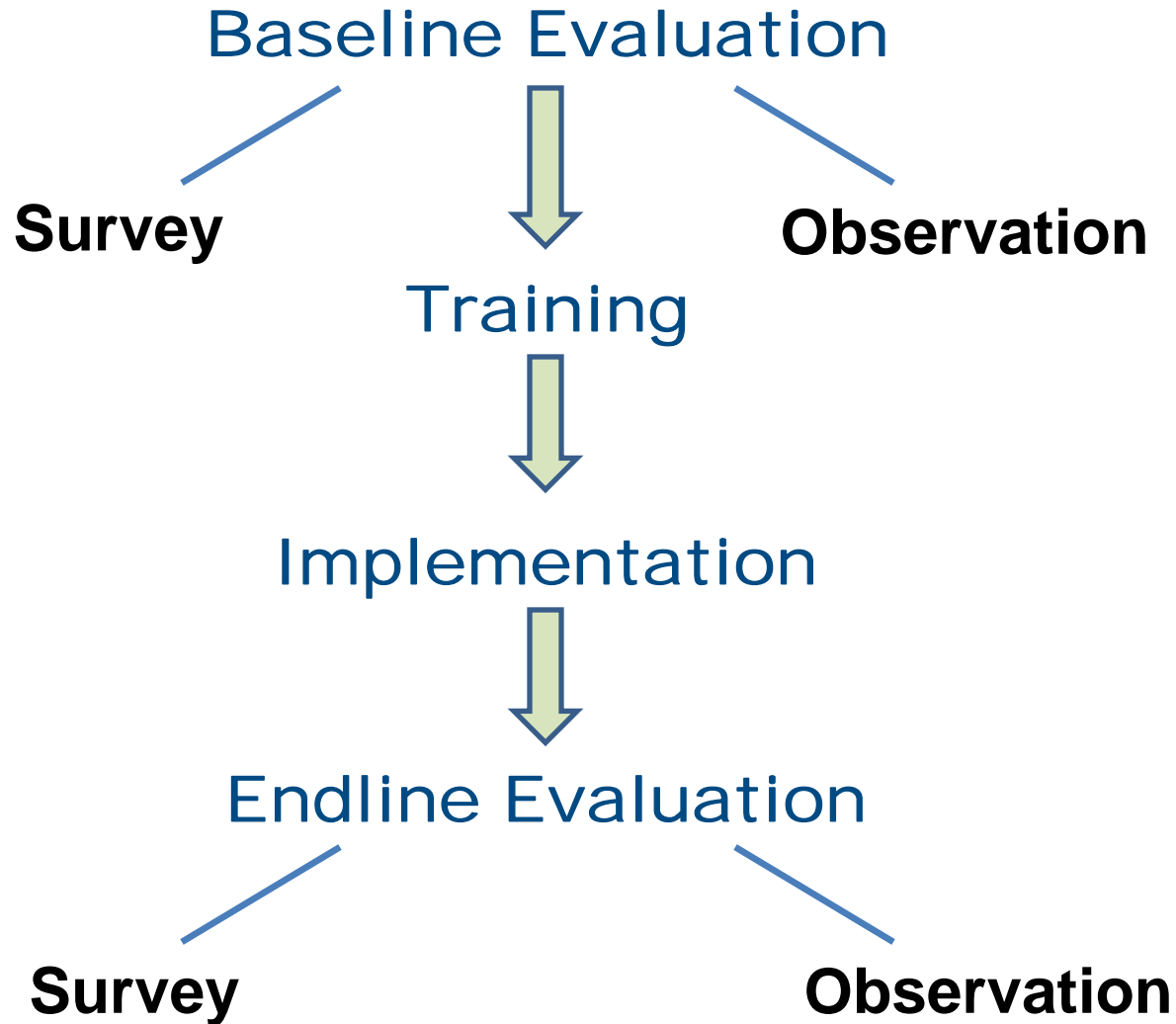
After Delivery

- 4 postnatal visits: within 24 hours, on 3rd day, between 7-14 days, and within 42 days
- Birth registration
- Postnatal care for mother and newborn
- Management of maternal complications

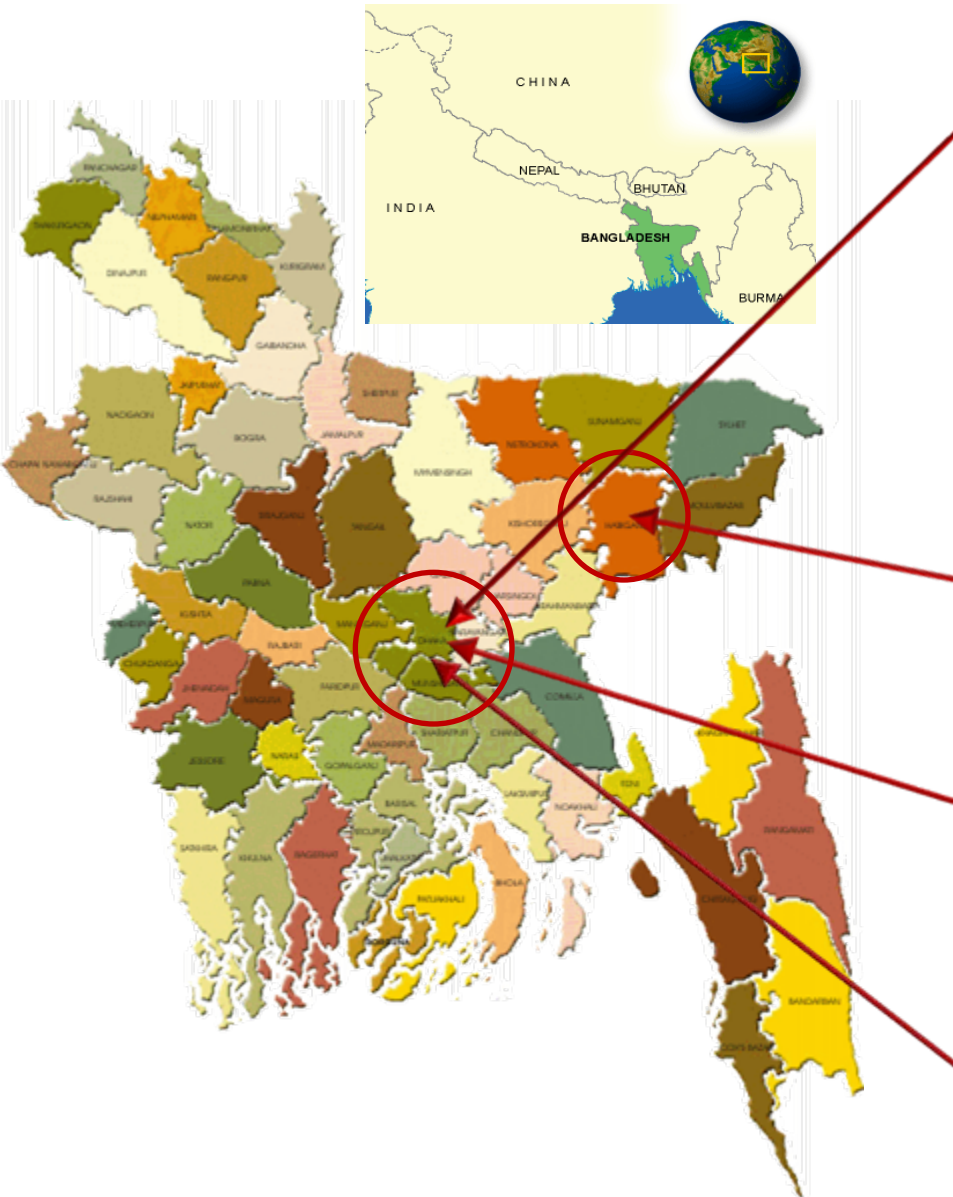
Bangladesh: Neonatal Mortality

- Delivery at health facility -15%
- Delivery attended by a skilled provider -18%
- Neonatal mortality rate: 37/1000 live births
- Neonatal death per year is 120,000
- Neonatal deaths - 57% of all <5 deaths
- Birth asphyxia accounts for 21% of neonatal deaths

HBB: Study design



Site Description



BSMMU:

- ~160 deliveries/month
- Neonatology Dept – 1 Professor, 2 Assoc Professors, 2 Asst Professors, 2 MOs, 13 HMOs, 14 Residents.
- Gyn & Obs Dept - 6 Professors, 9 Assoc Professors, 21 Asst Professors, 8 Consultants, 52 MOs, 37 HMOs

Habigonj-MCWC:

- ~70 deliveries/month
- 1 MO, 5 FWVs

UPHCP:

- ~190 deliveries/month
- 9 Consultants, 12 Paramedics/Nurses

MCHTI:

- ~315 deliveries/month
- 9 Consultants, 22 MOs

Milestones

- Submission of proposal – April, 2009
- Approval of grants – Nov, 2009
- Training of 2 Master Trainers in India – Nov, 2009
- Availability of grants – March, 2010
- Recruitment of project staffs – March, 2010
- Launching program – March, 2010
- Orientation on questionnaire – March & April, 2010
- Baseline data collection – March, 2010 and onwards
- Training of Trainers – March, 2010
- Refresher training for trainers – April, 2010
- Added an Observation Checklist – May, 2010
- Training: Batch 1 – May, 2010
- Training: Batch 2 – May, 2010

Present Status

Data Collection & Processing:

| | Data collected | Data entry done |
|---------------------------------------|----------------|-----------------|
| Baseline data | 224 | 155 |
| Observation checklist (Pre-training) | 34 | 28 |
| Observation checklist (Post-training) | 2 | 0 |

Post-training baseline data collection has started, yet to be processed/entered

Training:

| | BSMMU | MCHTI | UPHCP | Habigonj | Other | Total |
|-----------------|-------|-------|-------|----------|-------|-------|
| Master Trainers | 2 | 1 | 0 | 0 | 0 | 3 |
| Trainers | 6 | 1 | 1 | 1 | 11 | 20 |
| SBA Batch-1 | 20 | 0 | 0 | 0 | 0 | 20 |
| SBA Batch-2 | 15 | 0 | 5 | 0 | 0 | 20 |
| SBA Batch-3 | 15 | 0 | 5 | 0 | 0 | 20 |

HBB Training Program



Findings-Training Program

Knowledge Test:

| Training Program | Pre-Training | | Post-Training | |
|-----------------------|--------------|------|---------------|------|
| | Score | % | Score | % |
| Training of Trainers* | 13.2 | 82.2 | 15.9 | 99.4 |
| SBA Batch-1* | 12.9 | 80.6 | 15.7 | 98.1 |
| SBA Batch-2** | 13.8 | 80.9 | 16.7 | 98.2 |
| SBA Batch-3** | 14.5 | 85.0 | 16.9 | 99.1 |

* Out of 16 marks

** Out of 17 marks

20 people per batch

Findings-Training Program

Bag & Mask Skill

| | Batch-1 | | Batch-2 | | Batch-3 | |
|------------------------------------|---------|----------|---------|----------|---------|----------|
| | Pre | Post | Pre | Post | Pre | Post |
| Check equipment; select mask | 3 (15) | 19 (95) | 2 (10) | 18 (90) | 4 (20) | 18 (90) |
| Apply the mask to make a firm seal | 4 (20) | 20 (100) | 3 (15) | 20 (100) | 8 (40) | 19 (95) |
| Ventilate at 40 breaths per minute | 6 (30) | 18 (90) | 4 (20) | 18 (90) | 2 (10) | 19 (95) |
| Look for chest movement | 5 (25) | 19 (95) | 10 (50) | 17 (85) | 10 (50) | 18 (90) |
| Reapply mask and reposition head | 5 (25) | 20 (100) | 3 (15) | 18 (90) | 8 (40) | 20 (100) |
| Clear secretions; open the mouth | 0 (0) | 18 (90) | 0 (0) | 20 (100) | 2 (10) | 20 (100) |
| Squeezes the bag harder | 0 (0) | 19 (95) | 3 (15) | 18 (90) | 1 (5) | 19 (95) |

Data are: Number (%)

20 people per batch

Findings-Training Program

OSCE Station-A

| | Batch-1 | | Batch-2 | | Batch-3 | |
|--|---------------|----------------|--------------|----------------|--------------|----------------|
| | Pre | Post | Pre | Post | Pre | Post |
| * Dries the baby thoroughly | 18 (90) | 20 (100) | 14 (70) | 20 (100) | 17 (85) | 20 (100) |
| * Recognizes baby is not crying | 11 (55) | 17 (85) | 7 (35) | 20 (100) | 6 (30) | 19 (95) |
| * Positions and clears airway | 7 (35) | 17 (85) | 6 (30) | 20 (100) | 3 (15) | 20 (100) |
| Successfully Completed the Skills | 3 (15) | 15 (75) | 0 (0) | 19 (95) | 0 (0) | 19 (95) |

Data are: Number (%)

20 people per batch

Findings-Training Program

OSCE Station-B

| | Batch-1 | | Batch-2 | | Batch-3 | |
|--|--------------|----------------|--------------|----------------|--------------|-----------------|
| | Pre | Post | Pre | Post | Pre | Post |
| * Recognizes baby is not breathing | 3 (15) | 18 (90) | 10 (50) | 19 (95) | 6 (30) | 20 (100) |
| * Ventilates at 40 breaths per minute | 8 (40) | 19 (95) | 7 (35) | 19 (95) | 6 (30) | 20 (100) |
| * Looks for chest movement | NA | NA | 8 (40) | 18 (90) | 5 (25) | 20 (100) |
| * Improves ventilation | 0 (0) | 15 (75) | 7 (35) | 17 (85) | 0 (0) | 20 (100) |
| Successfully Completed the Skills | 0 (0) | 11 (55) | 1 (5) | 13 (65) | 0 (0) | 20 (100) |

Data are: Number (%)

20 people per batch

Findings- Baseline Observation Checklist

Preparation for birth

| Characteristics | Completely Done (N=3) | Partially done (N=18) | Not done (N=7) |
|--|-----------------------|-----------------------|----------------|
| Washes hands ^a | 3 (10.7) | 18 (64.3) | 7 (25.0) |
| Followed steps of hand washing ^b | 3.0 (1.9; 0-6) | | NA |
| Makes a plan with a helper ^a | 2 (7.1) | | 26 (92.9) |
| Checks equipments ^a | 0 (0.0) | 24 (85.7) | 4 (14.9) |
| Number of equipments checked ^b | 5.0 (1.7; 2-8) | | NA |
| Selects an area for ventilation ^a | 9 (32.1) | | 19 (67.9) |

^a = number (percent)

^b = mean (SD; range)

Findings- Baseline Observation Checklist

Drying and Wrapping

| Steps | Done | Not done |
|--|-----------|----------|
| Dries the baby thoroughly | 26 (92.9) | 2 (7.1) |
| Removes wet linens | 20 (71.4) | 8 (28.6) |
| Covers the baby with a warm, dry cloth | 23 (82.1) | 5 (17.9) |
| If meconium stained, clears airway before drying | 0 (0.0) | 2 (7.1) |

Data are number (percent)

Recommended modifications to HBB

- Handwashing: should be washed up to the elbows
- Suction in case of meconium stained liquor: order needs to be changed
- Five inflation breaths: subsequent actions need to be clarified
- Improve ventilation: order needs to be changed
- APGAR score: should only be applicable for doctors; not for paramedics/nurses
- Position skin to skin: clarify instructions for caesarian section newborn
- Cord cutting: instructions need to be modified
- Evaluation: Baseline survey questionnaire was not sufficient; an observation checklist had to be added

Next steps

- Develop consensus in Bangladesh on action steps required to scale up strategies to prevent and manage birth asphyxia as per National Neonatal Health Strategies and Guidelines
- Stakeholders meetings (TAG and extended)
- Costed action plan
- Dialogue with Line Directors, Project Preparation Cell
- Inclusion in the sector program proposal, PIP and respective AOPs.



Thank You