Situation of Neonatal Health in Bangladesh

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Introduction
Bangladesh is a small country of 147,570 Square Kilometers with a vast population of 120 million. Remarkable is that about half of the population is under 15 years of age, of which 18.77% are below 5 years. Greater portions of our children are besieged with poverty, diseases and illiteracy. Infant mortality rate is very high (81/1000 live births) in this country. More than two third of this high infant mortality rate accounts for deaths within 1 month of age (Neonatal mortality rate, 58/1000 live births). Total neonatal death 152,000/yr in Bangladesh. Compared to the neonatal deaths of the other countries, it is one of the highest (Japan: NMR 5/1000 live births). Neonatal morbidity is also among the highest in the world (Table 1).

<table>
<thead>
<tr>
<th>Disease</th>
<th>Total Admission</th>
<th>Total Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neonatal Jaundice</td>
<td>278 (30.71%)</td>
<td>*10(6.49%)</td>
</tr>
<tr>
<td>Perinatal asphyxia</td>
<td>199(21.98%)</td>
<td>60(38.96%)</td>
</tr>
<tr>
<td>Low birth weight</td>
<td>120 (13.25%)</td>
<td>32(20.77%)</td>
</tr>
<tr>
<td>Septicaemia</td>
<td>42 (9.06%)</td>
<td>25(16.23%)</td>
</tr>
<tr>
<td>Convulsion</td>
<td>49 (5.45%)</td>
<td>4(2.5%)</td>
</tr>
<tr>
<td>Very severe pneumonia</td>
<td>20 (2.20%)</td>
<td>5 (3.24%)</td>
</tr>
<tr>
<td>Infant of diabetic mother</td>
<td>19 (2.0%)</td>
<td>-</td>
</tr>
<tr>
<td>Haemorrhagic disease</td>
<td>16 (1.7%)</td>
<td>-</td>
</tr>
<tr>
<td>Meconium aspiration syndrome</td>
<td>15(1.65%)</td>
<td>-</td>
</tr>
<tr>
<td>Congenital malformation</td>
<td>15 (1.65%)</td>
<td>-</td>
</tr>
<tr>
<td>Intrauterine growth retardation</td>
<td>10(1.105%)</td>
<td>-</td>
</tr>
<tr>
<td>Others</td>
<td>82 (9.06%)</td>
<td>18(11.64%)</td>
</tr>
</tbody>
</table>

* Mortality associated with infection & low birth weight

Disease Profile
The disease profile among the neonates in Bangladesh is not exactly known as very few data are available from rural Bangladesh. The figures available are mainly hospital based. The commonest illness for which a newborn is admitted in the neonatal ward is neonatal jaundice (30.71%). This includes physiological jaundice, jaundice of prematurity and other conditions like Rh incompatibility, ABO incompatibility & jaundice due to septicaemia. Other causes of neonatal admission include perinatal asphyxia (21.98%), low birth weight (13.25%), septicaemia (9.06%), very severe pneumonia, infant of diabetic mother, haemorrhagic disease of the newborn, meconium aspiration syndrome, congenital abnormalities etc. (Table 2).

Prenatal asphyxia which is a major neonatal health problem in Bangladesh and in this subcontinent is more common in rural areas. About 95% of rural birth and 65% of urban births are attended by untrained personnel. 12 out of 1000 newborns die within few hours of birth. Perinatal asphyxia is common in rural area because antenatal risk factors are not identified. This is because the pregnant mothers are not motivated to attend antenatal care. Therefore hypertension, diabetes, and other maternal illness are not diagnosed in time. Care to overcome the maternal malnutrition during pregnancy is not given.
Mothers in rural areas work very hard during pregnancy which also results in IUGR. When these deliveries are conducted at home by untrained personnel results into perinatal asphyxia in most of the situations.

Low birth weight is a major neonatal health problem. Incidence of LBW is about 30-50% in Bangladesh. This is common due to the same reasons like maternal malnutrition, overwork during pregnancy, uncontrolled hypertension, prolonged UTI & other maternal illness. These babies die because of hypothermia, hypoglycemia and infections.

Septicaemia is the third common cause of neonatal morbidity and mortality which accounts for 13-18% of neonatal death. Common cause for this is poor unsafe delivery, prolonged rupture of membrane and poor hygiene. Septicaemia if not treated in time and adequately will result in high mortality. Congenital abnormality, birth injuries & other causes account for 13-18% of neonatal death. Important social factors for such high neonatal morbidity & mortality are illiteracy, ignorance, poverty, superstition and religious belief.

Causes of Neonatal Deaths
The most important cause of neonatal deaths in Bangladesh is perinatal asphyxia (39%). Other important causes include preterm, low birth weight and IUGR (21%), septicaemia (16%) (Table 3). This figure is obtained from hospital admission.

But the situation in rural community is different. Studies from Matlab, a rural area in Bangladesh shows that the majority of the newborn die due to complications of small size at birth (59%). Pneumonia, diarrhoea, birth trauma are other causes of death (table 4).

Existing Facilities
The existing facilities which are available in Bangladesh for care of newborn is not adequate. This is available mainly in tertiary care hospitals and some of the district hospitals. As such the facilities available are giving service to the urban and peri urban areas. As the vast majority (90%) of population are living in rural areas and most of the deliveries (95%) occurring in rural areas by untrained persons (Table 5), the real break through in neonatal care and reduction in neonatal mortality rate will occur only when neonatal care is provided in rural areas.

<table>
<thead>
<tr>
<th>Table 3 Causes of Neonatal Mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perinatal Asphyxia</td>
</tr>
<tr>
<td>Preterm/LBW/IUGR</td>
</tr>
<tr>
<td>Septicaemia</td>
</tr>
<tr>
<td>Neonatal Jaundice</td>
</tr>
<tr>
<td>Very Severe pneumonia</td>
</tr>
<tr>
<td>Others</td>
</tr>
</tbody>
</table>

Grade III (Level III) and Grade II (Level II) facilities are available only in city hospitals. Grade III facility provides care to very sick newborns that is ELBW, extreme preterm baby, severe perinatal asphyxia and severe respiratory depression due to other causes. The facilities include ventilators, central oxygen supply, closed and open incubators, blood gas analyzer, syringe pump phototherapy unit and arrangement to control room temperature. These facilities are
available in Dhaka Shishu Hospital (DSH) and BIRDEM Hospital (both are autonomous).

Grade II facilities provide all care except ventilator care. This means these units provide care to perinatal asphyxia, LBW, preterm babies, babies with hyperbilirubinemia and septicaemic babies. These facilities are available in Bangabandhu Sheikh Mujib Medical University (BSMMU) all medical College Hospitals (13 Govt. and 7 private), some District Hospitals, Institute of Child and Mother Health (ICMH), and some private Hospitals and Clinics in major cities. Besides the expansion of neonatal care facilities in Government Hospitals, some Private Hospitals and Clinics are also developing neonatal health care facilities now-a-days, which includes both Lever-III and Level-II care.

As a matter of satisfaction, it is worth mentioning that the Govt. of Bangladesh is introducing HPSP (Health and Popular Sector Programme) and under this programme the facilities are being extended in the rural areas.

The Essential Service Package (ESP) under the HPSP for neonatal care includes -

I) Training of Manpower-Doctors, Nurses, Paramedics, FWV, TBA etc.

II) Services in the community a thana, union and village level. Each Community clinic situated in the village will serve 6000 population in the area.

Professional Bodies
Besides the activities of the Government sectors, some professional bodies like Bangladesh Pediatric Association (BPA), Bangladesh Perinatal Society (BPS) and Bangladesh Neonatal Forum (BNF) are working conceitedly to develop manual on “essential care of the newborn” to incorporate this in the Essential Service Package (ESP) of HPSP. This manual is nearly ready for adoption by the Government. These societies have already conducted few training program on “Resuscitation of the newborn” and have organized few seminars and workshops on perinatal care and neonatal care.

This programme is planned as follows:
The ESP operational Plan of the Government’s HPSP has the following components in relation to newborn care:

<table>
<thead>
<tr>
<th>No</th>
<th>Level</th>
<th>Service Provider</th>
<th>Skills Required</th>
</tr>
</thead>
</table>
| A  | community outreach/satellite = "community clinic" | A. HA  
B. FWA  
C. Community midwives  
D. Community volunteers | 1. Umbilical cord care  
2. Health education for mothers on cleanliness  
3. Resuscitation of asphyxiated newborn  
4. Prevention of hypothermia  
5. Initiation of exclusive breast feeding. |
| B  | Union level | 1. FWV  
2. MA  
3. MO  
4. AHI  
5. FPI | 1. Umbilical cord care  
2. Health education for mothers on cleanliness  
3. Resuscitation of asphyxiated newborn  
4. Prevention of hypothermia  
5. Initiation of exclusive breast feeding  
6. Special care of preterm and LBW babies through • nasogastric tube feeding of expressed • breast milk • maintenance of warmth • barrier nursing • hand washing before handling each baby |
| C  | THC/ First Referral level | 1. FWV  
2. MA  
3. MO  
4. AHI  
5. FPI | 1. Umbilical cord care  
2. Health education for mothers on cleanliness  
3. Resuscitation of asphyxiated newborn  
4. Prevention of hypothermia  
5. Initiation of exclusive breast feeding  
6. Special care of preterm and LBW babies through • nasogastric tube feeding of expressed breast milk • maintenance of warmth • barrier nursing • hand washing before handling each baby |

Future of Neonatal Care
Future program for care of newborn in tertiary, secondary and primary levels is expected to be improved. The Ministry of health and FW, Govt. of Bangladesh along with the assistance of WHO, UNICEF and other giving organization is planning to provide level III care in all Medical College Hospitals and post graduate institutes including BSMMU. The HPSP programme is expanding the services of neonatal care up to the community level through community health centers and Union sub-centers. Professional bodies like BPA, BPS, BNF, are also trying to form
Conclusion
The present situation about neonatal care in Bangladesh indicates that much more has to be done to improve the Meconium aspiration situation. This includes:

a. Increased antenatal care especially for the rural population.
b. Safe delivery in hospitals and clinics so that death of the newborn babies due to obstetric causes reduced.
c. Immediate care of the newborn babies like clearing of the mouth cavity, keeping the baby warm by warping with warm clothes, care of the eyes, breast feeding immediately afterbirth for the full term babies and special care for feeding low birth wt, and preterm babies, transferring the risk babies to hospitals where Level -II and Level -III facilities are available.

Cooperation and combined efforts between the countries of the South East Asian region will help each other to improve the over all situation in the region. In this respect experiences of some of the countries who have improved neonatal care to satisfactory level will help other countries of the region. which is very near to India and Bangladesh can be taken as a model of development in child health and neonatal health.

References
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