



## Newborn Care Scenario in the slums of Meerut, Uttar Pradesh: Implications for Program & Policy

India witnesses an overall neonatal mortality rate (NMR) of 39 per 1000 live births<sup>1</sup>; these deaths account for about a quarter of global neonatal deaths<sup>2</sup>. NMR varies substantially across different states of India. Uttar Pradesh (UP) has a high NMR of 47.6/1000 live births. Although urban UP has a lower NMR of 40.7/1000 as compared to the state average, the vulnerability of the urban poor in the state is evident from the fact that the NMR among them is as high as 50.0/1000 live births<sup>3</sup>.

The main causes of neonatal deaths include pre-term birth, infections (sepsis, pneumonia, tetanus, and diarrhea), and birth asphyxia<sup>4</sup>. Poverty, poor living conditions, and lack of awareness about health care needs and services result in inadequate care during pregnancy, delivery and postnatal period.

Most newborn morbidity and mortality could be averted if mothers and newborns receive appropriate care during pregnancy, child birth and in the post partum period along with extra care of low birth weight newborns. The essential newborn cares include thermal care, exclusive breastfeeding, and clean cord and eye care. In addition, resuscitation of neonates with asphyxia and prevention and early treatment of infections can save many newborns lives<sup>5</sup>.

### Background of the study

In order to assess the status of maternal, neonatal, child and reproductive health in the urban slums of Meerut city, Uttar Pradesh<sup>a</sup>, Urban Health Resource Center (UHRC) conducted a study in collaboration with the Johns Hopkins Bloomberg School of Public Health, USA and Chatrapati Sahuji Maharaj Medical University, Lucknow. The study included use of both qualitative and quantitative methods. A household survey was conducted between October 2007 and March 2008. The survey covered 15,025 women who had a live or still birth in the three year preceding the survey. Hereafter, these women are referred to as "recently delivered women (RDW)" and were drawn from 44,888 households across 45 slums within the city<sup>b</sup>. The scope of the survey was very similar to the Demographic Health Survey (DHS)/ National Family Health Survey (NFHS) except we collected more detailed information on newborn care and was adapted to capture information specific to the urban slum context.

### What did the survey find?

The NMR in the surveyed slums was 38.5/1000 live births. The survey revealed poor knowledge and practices of essential newborn care including immediate drying and wrapping, delayed bathing, immediate and exclusive breast feeding, clean cord and eye care. Lack of use of these recommended practices during the postnatal period predisposes the newborn to hypothermia

and infections.

### *Cord care of the newborns was poor*

- Only 50% of the newborns received complete cord care (new blade, new thread and nothing applied to the cord)
- Almost all (93%) mothers reported that the cord was cut only after the placenta was delivered.
- In around 62.0% cases, a new blade and thread from home and in about 33.0% cases, a new blade and thread from Disposable Delivery Kit (DDK) was used to cut and tie the umbilical cord.
- In 5% of the cases the instrument and thread used to cut and tie the cord was not boiled.
- In 37.9% of the cases something was applied on the umbilical cord immediately after cutting and tying. The most commonly used substance was pure *ghee* (25.0%) followed by some kind of antiseptic like 'dettol' or 'savlon' (7.9%), mustard oil (5.0%), talcum powder (4.7%) and Neosporin powder (4.1%).
- It was believed that application of these substances hastened the drying and falling off of the cord and protected it from infection.

One essential newborn care practice is optimal timing of umbilical cord clamping. The optimal time to clamp the umbilical cord for all newborns is when the circulation in the cord has ceased, and the cord is flat and pulseless (approximately 3 minutes or more after birth)<sup>6</sup>. After the infant is delivered and dried with a clean dry cloth, a fully reactive infant may be placed on the maternal abdomen and covered with a warm dry blanket until cord pulsations cease and the cord is clamped and cut. The placenta is then delivered by controlled cord traction<sup>7</sup>. Slight delay of about 2-3 minutes in cutting the cord helps boost the iron reserves in infants, and is consistently associated with reduced risk of iron deficiency anemia in childhood<sup>8</sup>.

It is important that the instruments, gauze and ties for cutting the cord should be sterile. Nothing should be applied either to the cutting surface or to the stump. The stump should be left uncovered to dry<sup>9</sup>. Risk of infection to mothers and newborns can be reduced by keeping the birth attendant's hands and all contacts with the umbilical cord clean<sup>10, 11</sup>. Clean delivery and clean cord care can be ensured by using a DDK for home deliveries<sup>12</sup>.

- Meerut was selected for the study, in view of presence of large urban slum population (highest among cities in Uttar Pradesh). Situation analysis of the slums revealed existence of unlisted slums, pockets of underserved slum population and underutilization of existing health services.
- The indexed women were the one who had a live birth during the last 36 months preceding the survey

### ***Adherence to Practices relevant to thermal protection for the newborn was poor***

- Only 0.6% of the newborns received complete thermal care (*drying and wrapping the newborn before the placenta is delivered and delaying the newborn's first bath after six hours of birth*)
- Half of the mothers (51.7%) reported placing the baby on the cot before the placenta was delivered. In 26.5% cases the child was placed next to the mother.
- Approximately 12% reported placing the newborn on the floor, thereby increasing the risk of hypothermia.
- Only in 4.0 % cases the newborn was placed on the mother's abdomen, which is a recommended newborn care practice.
- Only 23.5% babies were dried immediately/before the placenta was delivered. Almost 68.9% of the newborns were dried within one hour after the placenta was delivered.
- A similar trend could be seen in case of wrapping the baby. Only 18.8% of the babies were wrapped immediately/before the placenta was delivered, whereas 71.5% of them were wrapped within one hour after the placenta was delivered.
- Almost 77.8% of the newborns were bathed within six hours of birth; 37.2% were bathed immediately after birth and another 40.5% within six hours of birth. In only 22.2% cases bathing was delayed to after six hours.

The newborn is most sensitive to hypothermia during the stabilization period in the first 6 - 12 hours after birth. Hypothermia can easily occur if a newborn is left wet and unprotected from cold while waiting for the placenta to be delivered. Recommended practice is to give the newborn to the mother as soon as possible. Early skin-to-skin contact in the initial hours after birth not only provides warmth to the baby and prevents hypothermia but also enables early breastfeeding and prevents hypoglycemia<sup>13</sup>.

### ***Initiation of breastfeeding was delayed***

- Most of the mothers (96.0%) reported to have ever breastfed the baby. However, only about 4.4% initiated breastfeeding before placenta was delivered.
- Only 4.6% of women put the infant to the breast within the first hour after delivery. A third of the women (31.2%) initiated breastfeeding within one to five hours of birth, while more than half of the women (58.1%) delayed breastfeeding by as much as one day or later after birth.
- Only 53.5% of the newborns were fed colostrum that contains large quantities of protective substances and promotes growth and development of the newborn. In most cases, the colostrum was discarded because it was considered heavy on the newborn's stomach and might cause diarrhea.
- Almost all the mothers (93.6%) gave the newborn some prelacteal feed before starting breastfeeding. The most common prelacteal given were *ghutti* or herbal concoction (48.1%), black tea (46.7%), honey (16.9%), plain water (4.5%) or sugar water (4.8%).

- The most common reason for giving a prelacteal was to clear up the newborn's stomach and to avoid indigestion by immediate feeding of breast milk.



Breast milk provides optimal nutrition and promotes the child's growth and development especially during the first few months of life. By breast-feeding, a mother begins the immunization process at birth and protects her child against a variety of viral and bacterial pathogens before the acquisition of active immunity through vaccination. Early contact (immediately after birth) between the mother and the baby has a beneficial

effect on breast-feeding. Early suckling provides the baby with colostrum that offers protection from infection and provides important nutrients for optimal development<sup>14</sup>.

### ***Postnatal Preventive care of newborn was low in the slums***

- Only about a third of the mothers (32.5%) reported that their newborn received a postnatal check up. Among those who received a check up, 45.7% received the check up within 24 hours of delivery and 72.1% received the check up within 48 hours of delivery.
- Only 23.2% of the newborns were weighed of which 95.1% of the babies were weighed within 24 hours of birth.
- Approximately 54.0% of newborns, who received a post natal check up, were delivered in the home. Of these 64.7% newborns were checked by an unqualified practitioner (AWW, TBA, unqualified doctor, homeopath, spiritual healer or pharmacist).

Postnatal care for all newborns include immediate and exclusive breastfeeding, warming of the infant, hygienic care of the umbilical cord and timely identification of danger signs with proper treatment and referral<sup>15</sup>. Low birth weight can be a serious threat to newborn survival. It is important to assess the weight of the newborn, soon after birth, in order to identify high-risk babies in need of extra care. A postnatal contact with a trained health care provider or trained health worker within 48 hours can significantly reduce the risk of death of a newborn<sup>16</sup>. Postnatal care provided by skilled or trained health workers can help in the assessment of danger signs, if any; promote exclusive breastfeeding; counsel on hygiene and cord care practices and encourage and refer for routine immunization.

### ***Health Problems of Newborns (in the 1st month) and Care Seeking Behavior***

- The common health problems among newborns as reported by mothers included cold (13.1%), fever (10.5%), jaundice (6.1%), vomiting (4.7%), skin pustules/rashes (2.3%), umbilical redness/discharge (1.6%), diarrhea (12.6%) and respiratory problems (11.3%). Treatment seeking was found to be high with more than 90.0% mothers reporting to have sought treatment for the newborn.
- Around 63.5% of the mothers who sought care for the sick neonate reported availing treatment from an unqualified private provider. Less than 1.0% mothers sought care from the public sector.

- The local unqualified private health care providers were frequently consulted because of proximity to the home and flexibility to pay later. Only upon referral from the unqualified practitioner, extended duration of illness and considerable increase in perceived severity of illness was the infant taken to a qualified provider.

Early identification and referral in case of danger signs can save the newborn in the event of life threatening complications. Timely health seeking behavior from qualified medical practitioners can significantly reduce neonatal mortality<sup>17, 18</sup>.

### Implications of the findings for urban health program in UP and India

The findings of the newborn care component of the Meerut study highlight widely prevalent sub-optimal practices pertaining to immediate care of the newborn after delivery among the slum women. This could be attributed to lack of awareness of essential newborn care practices and deep rooted cultural practices that have been passed on for years. Delayed or no contact of the newborn with a qualified or trained service provider was highly prevalent. Postnatal checkup by local qualified/trained healthcare providers can help in early detection and prevention of possible newborn ailments. Additionally, health education messages to enable mother's recognition of newborn danger signs and to encourage appropriate care-seeking practices can save many newborn lives. Relevant program strategies in terms of both technical and operational interventions that could ensure quality care of newborns are described below.

Technical interventions include promoting essential newborn care practices at the household and community level in the slums.

***Need to improve thermal care and cord care in the newborns immediately after delivery:*** The study showed that dry cord care<sup>19</sup> was practiced in only 50% of these births. Over 12% newborns were placed on the floor of the room and 37.2% of the newborns were given a bath immediately after birth. Thermal care (drying and wrapping the newborn before the placenta was delivered and delaying the newborn's first bath for at least six hours after birth) was received by less than 1.0% of the newborns. It is crucial to address community's beliefs through regular, persuasive and well supervised antenatal and postnatal home and group counseling by trained health workers/volunteers<sup>20</sup>. Although emphasis should be given on institutional delivery, since majority of births take place at home, training of slum-based *dais* in clean delivery and essential newborn care should be an immediate priority. The training should include correct practice of cord care, postponing bathing, drying and wrapping of the newborn. This is crucial for minimizing risk of neonatal morbidity and mortality among births assisted by them.

***Promoting early initiation and exclusive breastfeeding at household and community level:*** The findings highlighted that only 4.6% of the mothers initiated immediate breastfeeding within one hour of delivery and 31.2% did so within one to five hours. Only half of the mothers fed colostrum to their newborn. There is an urgent need to address this practice. It is important to create awareness among the mothers and the elderly women in the family and community to practice early and exclusive

breastfeeding. Mothers should be educated on the benefits of breast milk and its nutritive content. This will dispel the misconceptions related to inadequate water content in the breast milk and the need of prelacteals. Since majority of deliveries are conducted by *Dais*, they are the first contact person for the mothers. Therefore it is important to sensitize them regarding the importance of early breastfeeding and colostrum feeding. Proper and regular counseling by *dais* and slum based health volunteers can help improve breastfeeding practices.

***Need to facilitate early identification and prompt treatment of danger signs in the newborns:*** The care seeking behavior among the mothers underline an urgent need to generate awareness among them to be able to recognize the danger signs in the newborns. Although care seeking for newborn danger signs was high among the slum women, more than 60% sought care from unqualified service providers after home remedies failed to show any improvement. Mothers should be made aware of the danger signs associated with common newborn illnesses like fever, cold, diarrhea and respiratory problems. Early identification of any danger signs of illness can ensure that mothers approach the health facility in time. It is also important that the mothers approach qualified health providers for treatment. Slum based health volunteers can play an effective role as a link worker between the newborn and the health facility.

Operational interventions include promoting behavior change among the community to avail newborn care services and building linkages with health facilities.

***Influencing behavior change through appropriate IEC/BCC strategies and counseling:*** High prevalence of harmful practices with regard to newborn care as revealed by the findings reflects upon the deep rooted culturally influenced harmful practices which ultimately put the survival of the newborn at risk. In this context suggested operational interventions would focus on behavior change through appropriate IEC and BCC strategies<sup>21</sup>, which include:

- Counseling through group meetings as well as on an individual basis highlighting correct practices with regard to newborn care is a useful instrument for influencing behavior change. Key target groups include mothers, key decision makers in the family and elderly women in the community.
- Take-home pictorial cards, street shows, puppet shows, etc reinforces the message to adhere to recommended essential newborn care practices including cord care, thermal protection, early breastfeeding and colostrum feeding to the newborn.
- Local radio stations / cable services can communicate messages on the relevance and benefits of good practices such as thermal protection for the newborn, early initiation of breastfeeding and feeding of colostrums to infant.

***Need to enhance competence of slum dais (local birth attendants) and unqualified private providers:*** The study showed that 40% of the home deliveries in the slums were conducted by untrained local *dais*. It also highlighted that majority of the newborns received post natal check up and treatment from unqualified practitioners. Care seeking from untrained *dais* and unqualified practitioners can have serious implications on

the health of the newborn. Therefore, there is an urgent need to complement the efforts to encourage hospital deliveries with training and competence enhancement of slum dais and local practitioners to provide essential newborn care. They should be skilled to identify signs of illness and complications, provide timely treatment and appropriate referral<sup>22</sup>.

**Capacity building of the existing health staff on clinical and supervisory skills to ensure appropriate treatment and referral:** Capacity building of the existing health and paramedical staff on essential newborn care practices including cord care, thermal protection and detection of danger signs and timely treatment of the newborn should be a regular event. The staff should be trained at the facility and community level to follow recommended guidelines under Integrated Management of Newborn and Childhood Illnesses (IMNCI)<sup>c</sup>. Only 0.5% of the mothers availed newborn care from public health facility. These health service providers should be sensitized to communicate compassionately with the poor to help the latter overcome their reservations of availing services of the government health facility.

**Capacity building of slum-based health volunteers:** Slum based health volunteers are crucial agents for influencing

community health behaviors, for providing home-based health advice and for building linkages of the community to health facilities. Therefore a key program component should be appropriate training with regular refreshers as well as supportive supervision of these workers in newborn care. This would enable them to inform the community about correct practices and also to detect newborns with high-risk of hypothermia and other complications and refer them to appropriate medical care.

**Generating community demand and building linkages with local health facilities:** Slum based health volunteers can create awareness among women regarding the need to contact health service providers to ensure healthy newborn. This would create demand for the services in the slums. They are also instrumental in facilitating the provision of existing benefits like Janani Suraksha Yojana and encourage the women to deliver at a facility. It is also important to build their linkages with affordable public/private facilities for appropriate treatment and timely referral. Similar approaches have been proposed in the Government of India's upcoming National Urban Health Mission (NUHM). These volunteers can thus be instrumental in helping the community reach the facilities.

**Subsidized treatment options for the poor:** Survey results highlight that one important limitation to seek treatment is financial constraint. In order to expand access and reach of these slum women to institutional healthcare it is essential that subsidized treatment options be made available to them. This can be achieved through public-private partnership approaches such as tie-up with local NGOs to provide healthcare in slums and partnership with Government/private health facilities to provide subsidized healthcare and outreach services to slum dwellers.

c. Under Reproductive and Child Health (RCH II) program of GOI, the Integrated Management of Newborn and Childhood Illnesses (IMNCI) package has been adapted from WHO/UNICEF's Integrated Management of Childhood Illnesses (IMCI). Since newborn care is an important issue for bringing down the infant mortality rate in India, this aspect has been included in the package adapted by India. This package includes interventions for the care of newborns and young infants (infants under 2 months) by keeping the child warm, initiation of breastfeeding immediately after birth and counseling for exclusive breastfeeding and non-use of pre lacteal feeds, cord, skin and eye care, recognition of illness in newborn and management and/or referral, immunization, home visits in the postnatal period.

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