

# A Survey of Neonatal Resuscitation Facilities in the Urban Setting of Lahore

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**Objectives:** To assess the status of basic facilities and equipment required for neonatal resuscitation and the level of training in neonatal resuscitation of personnel attending neonates at the time of delivery at different health care centers in Lahore. **Study design:** A cross sectional descriptive epidemiological study. **Place and duration:** The study was conducted at different health care centers providing obstetrical care in different areas of urban Lahore from February to May 1998. **Subjects & Methods:** A survey of about 51 different health care facilities like Private hospitals ,private clinics and MCH centers in different areas of Lahore was done. Based on a preset questionnaire the in charge of the relevant place was interviewed regarding availability of requisite equipment and level of training of their staff in neonatal resuscitation. **Results:** A total of 51 centers in Lahore were surveyed. Out of them 36 were private clinics, 11 private hospitals and 4 MCH Centers. These centers were run by doctors (65%), LHV's (23%) and nurses (6%),mid wife, dai, dispenser (2%) each. Most of these centers did not have all the required resuscitation equipment, for instance the space for resuscitation was available with 50%, warmers were present 24%, blankets 60%, bulb sucker 49%, electric suction machine 31%, oxygen 51%, bag & mask 20% and intubation equipment 16% were available. The referral transportation was not available in 75%. Regarding training level of the personnel present at the time of delivery 80% did not have any newborn resuscitation training and only Out of the rest only 8 personnel knew how to intubate the newborn. **Conclusion:** Most of the centers lack requisite equipment needed for neonatal resuscitation and there is a need for the staff to under go training in neonatal resuscitation.

**Key words:** asphyxia, neonatal resuscitation, training

Birth asphyxia is still one of the commonest causes of morbidity and mortality in newborns. Over 5.5million babies are born annually in the country. Nearly 270,000 babies die before one month of age<sup>10</sup>. Estimates of the perinatal mortality rate in Pakistan range from 54/1000 births in Karachi to 82/1000 births in Faisalabad<sup>11</sup>. This percentage is 10 times higher than developed countries. Out of these nearly 60% die during first few days of life<sup>9</sup>. The risk factors are, deliveries by unskilled attendants, birth interval <24 months, number of pregnancies 6/woman and maternal or paternal illiteracy.

The major causes of neonatal mortality in Pakistan include birth asphyxia 8-28%, low birth or prematurity 14-26% tetanus 9-17% and other infections 21-43%. Birth asphyxias can lead to neurological problems ranging from feeding difficulties to seizures, hearing and visual impairment, paraplegia, quadriplegia, learning disabilities etc.

The aim of conducting the study was to assess the availability of basic facilities and equipment required for neonatal resuscitation and to find out how well trained the obstetrical staff was in neonatal resuscitation.

## Methodology

The study was conducted from February to May 1998. It was a cross sectional descriptive epidemiological study in different health care facilities of urban Lahore to find out about the availability of requisite equipment for neonatal resuscitation and level and knowledge of neonatal resuscitation of the staff involved in handling the new born after delivery. To ensure uniformity, data was collected on

a specially designed questionnaire. About 51 randomly selected health care centers that deal with obstetrical care and deliveries were visited by a doctor. He/she interviewed the health facility owner/ in charge regarding availability of basic neonatal resuscitation facilities, equipment and level of training and staff available in neonatal resuscitation. The information provided was verified.

## Results:

A total of 51 centers were visited in different areas of Lahore. Private hospitals, MCHC and private clinics dealing with obstetrical care were included in the study (Table-1)

Table 1: Health care facilities (n=51)

Centers	n=
Private Clinics	36
Private hospitals	11
MCHC	04

Information about the in charge of obstetrical facility (Table 2). This table shows that not only doctors but LHV, midwives, dai & dispenser are also running these centers.

Table 2. In charge of facility:

Personnel	n=	%age
Doctor	33	65
LHV	12	23
Nurses	03	6
Midwife	01	2
Dai	01	2
Dispenser	01	2

Table -3 shows the basic facilities and equipment available for neonatal resuscitation in various centers. It also shows the discrepancy between reported and actual number of the available facility.

Table-3: Information about equipment available for neonatal resuscitation:

Facility and equipment	No. centers reported	%age	No. of centers actually present	%age
Space	39	76	27	53
Warmer	38	75	12	24
Blanket/sheets	34	67	30	59
Bulb sucker	36	71	25	49
Electrical suction	24	47	16	31
Oxygen	33	65	26	51
Bag and Mask	22	43	10	20
Functional Intubation equipment	15	29	8	16

The next question asked was whether separate personnel for neonatal resuscitation were available at delivery time or not. Out of 51 centers 44 centers reported to have someone present for neonatal resuscitation while 7 centers did not have such a person available for resuscitation.

The next question asked was, whether available staff got any training in neonatal resuscitation. Table 4 shows out of 51 centers the staff in 34 centers did not receive any training in neonatal resuscitation. Ten centers claimed to have properly trained staff, though only in 8 centers, staff could intubate the baby.

Table-4: Resuscitation training

Personnel present for Resuscitation	Resuscitation training	%age
34	Untrained	80
10	Trained	20

The last question was regarding availability of transportation for emergency referral. (Table-5)

Table-5. Referral transportation

No. of Centers	Availability of transportation	%age
13	Yes	25
38	No	75

### Discussion

It was observed in this study that in urban Lahore 35% of obstetrical care is provided by paramedics which includes LHV's, nurses, midwife, dai and dispenser in private sector, rest of the private hospitals and clinics were run by doctors. It shows that maternal health care is being provided by not only doctors but also paramedics. In a survey done by Reproductive Health Services Project in Haripur District In NWFP TBAs provide a majority (63%) of the delivery care<sup>1</sup>. In another analysis of health Care system it was reported that in 1993 untrained dais conducted the majority of deliveries (63%), government health care personnel conducted 20% and other people conducted 11.5% of the deliveries. Of these 90.5% were

conducted at home, 5% at private hospitals, 2% at government hospitals and 1% at rural health centers<sup>2</sup>.

Our study shows that basic equipment and facilities required for resuscitation of new born range from 16% to 71% Table-2. Simple and inexpensive things like Space for neonatal resuscitation (53%), blankets (59%), bulb sucker (49%), Electrical suction machine (31%) and Oxygen (51%) were available in almost 50% of these centers expensive things or the ones that require special training for use like over head warmer (24%), bag and mask (20%) and intubation equipment (16%) were not present in majority of these centers. It is obvious from this study that essential equipment required for neonatal resuscitation is not available in almost half to two thirds of these centers. As sizeable proportion of birth asphyxia is unanticipated so it is important that the staff dealing with obstetrical care should be well trained in neonatal resuscitation and the requisite equipment should be available. A survey carried out in Sindh in collaboration with UNICEF revealed that less than half of the secondary care facilities had resuscitation equipment and few had basic neonatal resuscitation drugs<sup>3</sup>. The results of our study are in agreement with the above mentioned study carried out in Sind. Our survey showed that 80% of the centers had staff that has never received any proper neonatal resuscitation training .Out of the remaining, 10 centers (20%) had the staff experienced in resuscitating newborns but only 8, had the skill to intubate new born if required. The study has highlighted the fact that 65% centers run by doctors do not have any training in neonatal resuscitation. The situation in this regards is highly unsatisfactory, as basic neonatal resuscitation training to nurses, doctors and paramedics is not given as part of their under graduate training nor is provided later. In a study again from Sind out of 302 doctors and nurses, nearly half of them were not aware of the existence of an ambu bag and only 12% had access to it<sup>4</sup>. It indicates lack of knowledge and neonatal resuscitation skills even in health care professionals confronted with birth asphyxia every day or on regular basis<sup>5</sup>.

Timely referral of asphyxiated newborns is important. This should be done after initial stabilization to a center which is equipped to handle such babies. In this study only 13(25%) had readily available transport and 38(75%) did not have such facility. Based on limited data, Pakistan has the 2<sup>nd</sup> highest number of neonatal deaths and 4<sup>th</sup> highest neonatal mortality rate. In one reported discussion about preliminary assessment of priorities in prenatal and neonatal care in Pakistan, it was specifically stated that much work is needed for community based perinatal and newborn care (ref7).In another report from save the children NGO, it was reported that Pakistan still does not have skilled TBAs at community level<sup>8</sup>.

A study was carried out in periurban area in New Delhi India. In this study it was found out that 60% of deaths occur within 24 hours of recognition of illness, 40%

did not seek any outside advice. 70% of care was sought from private health care providers, half of these providers had no medical education and failed to refer 70% of newborns who eventually died<sup>9</sup>.

Another study carried out in Maharashtra state, India, promising results were shown. In this study a field trial of home based neonatal care intervention was devised from 1993-1998. These interventions were through trained community health care workers. They were able to reduce perinatal mortality by 71% and neonatal mortality by 62% compared to control area<sup>10</sup>.

All of above mentioned studies show that in order to improve neonatal and perinatal mortality rate we have to train our TBAs as well as other personnel involved in neonatal resuscitation at time of delivery and newborn care.

Pakistan is still one of those countries that has very high incidence of neonatal mortality. Birth asphyxia is one of the common and preventable causes of neonatal mortality. Although many NGOs and International Organizations like Save the Children are trying to improve current situation but there is still more to do. This is the time to initiate efforts at local level and join hands with others to improve the current situation.

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