



## NEONATAL RESUSCITATION; FACILITIES AND PRACTICE IN DIFFERENT HEALTHCARE CENTERS OF MULTAN.

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**ABSTRACT... Introduction:** The need for neonatal resuscitation is usually unexpected and approximately 10% infants require some assistance at birth to begin breathing. We conducted a study to know the facilities and practice of neonatal resuscitation among healthcare providers at different healthcare centers of Multan. **Study Design:** A cross sectional descriptive epidemiological study. **Setting:** Different Health Care Centers providing Gynecological and Obstetrical Care in different areas of Urban Multan. **Period:** 15-08-2016 to 30-08-2016. **Method:** A questionnaire-type survey on neonatal resuscitation was performed at 69 different health care facilities of Multan. Data were analyzed using SPSS version 17.0 for windows. The results are presented using tables. **Results:** Out of 69 healthcare facilities, 50 (72.5%) were private hospitals. Majority of the center were run by doctors (52.2%). Ambu-bags were present in 83% centers, bulb sucker 68%, foot sucker 62% and electric sucker in 75% of healthcare centers. Routine delivery room care like drying, warmth and wrap were given in 70%, 74% and 48% centers respectively. Most common way of resuscitating the baby was suction 74%. Post resuscitation referrals in cases needing special care to other facility were made by 88% centers. New born resuscitation courses had been attended by only 36% of healthcare providers. **Conclusion:** Basic neonatal resuscitation facilities were available at most of the health facilities. There is increased need of new born resuscitation courses attended by the healthcare providers.

**Key words:** Neonatal Resuscitation, Ambu-bag, Suction, Bag and Mask ventilation.

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## INTRODUCTION

Over 5 million neonatal deaths are reported each year worldwide and failure to establish breathing at the time of birth is responsible for 19% of the deaths.<sup>1</sup> Neuro-developmental problems like cognitive impairment, cerebral palsy, epilepsy and other chronic diseases are closely associated with birth asphyxia.<sup>2</sup> It is estimated that newborn outcomes might be improved in more than 1 million infants per year if proper resuscitative techniques are implemented.<sup>1,3</sup> and if basic resuscitation is done correctly.<sup>4</sup> A standardized approach to newborn resuscitation in the delivery room is described in the international clinical guidance on resuscitation practices and equipment by World Health Organization,<sup>5</sup> International Liaison Committee on Resuscitation (ILCOR),<sup>6</sup> American Heart Association (AHA)<sup>7</sup> and UK Resuscitation Council(UKRC).<sup>8</sup>

Neonatal resuscitation ranges from simple stimulation to assisted ventilation.<sup>9</sup> About 90% of the neonates require basic degree of resuscitation, while others may undergo skilled resuscitation including endotracheal intubation.<sup>2</sup> Basic newborn resuscitation equipment are not available everywhere and inadequate training of health workers make it more difficult.<sup>4,10</sup> Marked variation is found in newborn resuscitation practice in developed and developing countries whereas it is evident that newborn resuscitation in developing countries is not up to the required standards.<sup>11-14</sup>

Pakistan could not achieve Millennium Development Goal 4 by year 2015 as perinatal morbidity and mortality rate is not decreasing mainly due to birth asphyxia.<sup>15</sup> It was believed that neonatal resuscitation was complex and required expensive technology but evidences suggest

that resuscitation should be utilized without compromise.<sup>4</sup> The purpose of this study was to assess the practice of neonatal resuscitation by healthcare providers at the different healthcare centers in Multan.

## METHODS

A survey of 69 different health care facilities like private hospitals, private clinics and home centers in different areas of Multan was done. A questionnaire was designed and the in-charge of the relevant place was interviewed by authors. This survey was focused regarding the facilities and practice of neonatal resuscitation among healthcare providers at different healthcare centers of Multan. In the practical test performance, evaluation was done in 4 parts:

- Preparation of personnel, equipment and supplies.
- Initial steps of resuscitation.
- Positive pressure ventilation.
- Chest compression.

It was also evaluated that how many of the healthcare providers had ever attended a newborn resuscitation course. Data was entered and analyze through SPSS version 17 and frequency and percentages were calculated.

## RESULTS

Out of total 69 healthcare facilities surveyed 50 (72.5%) were private hospitals. Majority of the center were run by doctors (52.2%). Ambu-bags were present in 83% centers, bulb sucker 68%, foot sucker 62%, electric sucker 75%, mask 80%, air way 64%, laryngoscope 59%, ETT 44%, oxygen 78%, overhead radiant warmer 48%, resuscitation trolley 55%, drugs (soda bicarbonate, adrenaline, nalaxone) 57%, umbilical catheter 36%, scalpel 30% and butterfly needles 54%. Routine delivery room care like drying in 70%, warming in 74% and wrapping in 48% of centers. Majority of the centers were assessing babies at birth by Apgar score i.e. color 90%, breathing 90%, tone 85% and heart rate 84%. Most common way of resuscitating the baby were suction 74%. Other methods of resuscitation are shown in Table-III. Post resuscitation referrals in cases needing special care to other facility were made by 88% centers. New born resuscitation courses were

attended by only 36% healthcare providers.

Provider	Healthcare	No. (%)
Pediatricians		16 (23.2%)
Gynecologist		24 (34.8%)
General Practitioner		06 (8.7%)
LHV		10 (14.5%)
Dai		01 (1.4%)
Theater Assistant		01 (1.4%)
Trained Nurse		11 (15.9%)
<b>Healthcare Facility</b>		
Hospital		50 (72.5%)
Clinic		15 (21.7%)
Home		04 (5.8%)

**Table-I. Types of Healthcare Providers and Healthcare Facilities**

Delivery Room Care	No. (%)
Drying of the baby	48 (69.6%)
Warming of the baby	51 (73.9%)
Wrapping of the baby	33 (47.8%)
<b>Assessment at the time of birth (APGAR SCORE)</b>	
Color	62 (89.9%)
Tone	59 (85.5%)
Breathing	62 (89.9%)
Heart Rate	58 (84.1%)
Reflex Response	48 (69.6%)

**Table-II. Delivery of Routine Delivery Room Care**

Resuscitation Method	No. (%)
Suction	51 (73.9%)
Jaw Thrust and Chin Lift	15 (21.74%)
Bag and Mask	4(5.8%)
Mouth to Mouth Breathing	2 (2.9%)
ETT	3 (4.35%)
IV Fluid	2 (2.9%)
Drugs	2 (2.9%)

**Table-III. Resuscitation Methods**

## DISCUSSION

Our study represents survey regarding facilities and practice of neonatal resuscitation in different healthcare centers of Multan. A survey in 2011 highlighted that 56% of Pakistani population visit private clinics. In our study, majority of the healthcare facilities in our area were private hospitals/clinics and run by doctors.<sup>16</sup> The neonatal resuscitation evaluation and intervention are more synchronized when more than one resuscitator is present.<sup>17</sup>

The majority of the infants need basic maneuvers to help them start breathing. Palme-Kilander C showed a small number of infants require intubation and ventilation<sup>18</sup>, and the need for chest compressions, and medications is very uncommon.<sup>19</sup> Our survey showed that bag-and-mask ventilation was used by 5.8% of healthcare centers whereas majority of the centers 74% were using suction as a preferred method of resuscitating the newborn.

We also noted the initial assessment practice and found that the majority of the centers were assessing babies at birth by Apgar score i.e. color 90%, breathing 90%, tone 85% and heart rate 84%. Reducing newborn mortality, whilst obviously depending on improved management of pregnancy and labour, therefore also requires that birth attendants should be able to provide basic newborn resuscitation.<sup>20</sup> For small number of babies a self inflating bag and mask is life saving and most newborns can be successfully resuscitated without the use of bag and mask with or without oxygen.<sup>21</sup>

In our study, it was found that newborn resuscitation courses were attended by only 36% healthcare providers. Neonatal resuscitation training in facilities reduces term intrapartum-related deaths as was found by a meta analysis conducted by Anne, et al.<sup>22</sup> Almost 98% intrapartum-related deaths occur in the first 7 days.<sup>23,24</sup> Such newborn may need resuscitation. It has been observed that the neonatal resuscitation training amongst healthcare providers can reduce the early neonatal mortality up to 38%.<sup>25,26</sup>

## CONCLUSION

Basic neonatal resuscitation facilities were available at most of the health facilities. There is increased need of new born resuscitation courses attended by the healthcare providers.

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
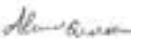
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3	Dr. Nazia Fatima	Discussion	
4	Dr. Imran Iqbal	Final reding + result + discussion	