# "NUCHAL CORD AND PERINATAL OUTCOME"

By

**Dr. SHEREEN PRADEEP KUMAR**
**(REG. NO. BJ0109005)**

# Dissertation

**Submitted to the**
**KLE University, Belgaum, Karnataka**

**In Partial Fulfillment**
**of the requirements for the degree of**

**MASTER OF SURGERY**
**in**
**OBSTETRICS AND GYNAECOLOGY**

**Under the Guidance of**

**Dr. KAMAL P. PATIL** MD
**Professor**

**DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY,**
**JAWAHARLAL NEHRU MEDICAL COLLEGE,**
**BELGAUM, KARNATAKA**

**MAY - 2012**

**KLE UNIVERSITY, BELGAUM, KARNATAKA**

# DECLARATION BY THE CANDIDATE

I hereby declare that this dissertation entitled **"NUCHAL CORD AND PERINATAL OUTCOME"** is a bonafide and genuine research work carried out by me under the guidance of **Dr. KAMAL P. PATIL** **MD** Professor, Department of Obstetrics and Gynaecology, Jawaharlal Nehru Medical College, Nehru Nagar, Belgaum - 590 010.

Date:

Place: **(Dr. SHEREEN PRADEEP KUMAR)**
**REG. NO. BJ0109005**

**KLE UNIVERSITY, BELGAUM, KARNATAKA**

# CERTIFICATE BY THE GUIDE

This is to certify that the dissertation entitled **"NUCHAL CORD AND PERINATAL OUTCOME"** is a bonafide research work done by **Dr. SHEREEN PRADEEP KUMAR (REG. NO. BJ0109005)** in partial fulfillment of the requirement for the degree of **MASTER OF SURGERY in OBSTETRICS AND GYNAECOLOGY.**

Date:

Place:

**Dr. KAMAL P. PATIL** **MD**
Professor,
Department of Obstetrics and Gynaecology,
J. N. Medical College,
Nehru Nagar, Belgaum – 10

## KLE UNIVERSITY, BELGAUM, KARNATAKA

## ENDORSEMENT BY THE HOD/PRINCIPAL/ HEAD OF THE INSTITUTION

This is to certify that the dissertation entitled **"NUCHAL CORD AND PERINATAL OUTCOME"** is a bonafide research work done by **Dr. SHEREEN PRADEEP KUMAR (REG. NO. BJ0109005)** under the guidance of **Dr. KAMAL P. PATIL** **MD** Professor, Department of Obstetrics and Gynaecology, Jawaharlal Nehru Medical College, Nehru Nagar, Belgaum-590010.

**Dr. B. R. DESAI** **MD**
Professor and Head,
Department of Obstetrics
and Gynaecology,
J. N. Medical College,
Nehru Nagar, Belgaum – 10

Date:
Place: Belgaum

**Dr. V. D. PATIL** **MD,DCH**
Principal,
J. N. Medical College,
Nehru Nagar, Belgaum – 10

Date:
Place: Belgaum

**KLE UNIVERSITY, BELGAUM, KARNATAKA**

# COPYRIGHT

## DECLARATION BY THE CANDIDATE

I hereby declare that the KLE University, Belgaum, Karnataka shall have the rights to preserve, use and disseminate this dissertation in print or electronic format for academic / research purpose.

Date :

Place :

**Dr. SHEREEN PRADEEP KUMAR**
**(REG. NO. BJ0109005)**

# ACKNOWLEDGEMENT

I feel proud to express the effervescence of my feelings concerning my dissertation.

It has been a great honour, inspiration and privilege to work and carry out this study under the guidance of Dr. Kamal P Patil, Professor, Department of Obstetrics and Gynaecology, J. N. Medical College, Belgaum. I wish to express the deepest gratitude which can hardly be ever conveyed to my guide, for her invaluable help and continuous guidance throughout the course of this study. The perfectionist in herself and ever helping nature made the difference, without which this thesis would not have been imaginable.

I owe immense debt of gratitude to Dr. M. K. Swamy, Professor, Department of Obstetrics and Gynaecology for his priceless suggestions and guidance throughout this study.

It is my humble privilege to acknowledge with gratitude the interest and suggestions rendered to me by Dr. B. R. Desai, Professor and Head, Department of Obstetrics and Gynaecology, J. N. Medical College, Belgaum.

I would also like to thank all the professors and assistant professors of the Department of Obstetrics and Gynaecology for their inputs and suggestions.

I am also very thankful to The Principal Dr. V. D. Patil, J. N. Medical College, Belgaum, for his support and permission to conduct this study.

I extend my grateful thanks to all my colleagues, with whose kind co-operation and backing I was able to complete my study.

I am forever indebted to my parents and sister for their affectionate encouragement, endless love and persistent support for making me who I am. Without their constant support, reviews and suggestions this dissertation would not be complete. Ironically when this topic was approved, I was astonished to hear that I was born with a nuchal cord.

I shall be failing my duty if I do not express my humble thanks to all the patients who co-operated with me in this study.

Thanking all of you and the All mighty.

Date:

Place:

**Dr. SHEREEN PRADEEP KUMAR**
**(REG NO. BJ0109005)**

# LIST OF ABBREVIATIONS USED

| | | |
|---|---|---|
| NICU | - | Neonatal intensive care unit |

# ABSTRACT

**Background and objectives**

It is often assumed that nuchal cord causes cord compression and thus low birth weight as well as intrapartum complications. The exact perinatal effect of presence of nuchal cord in a newborn is still under debate, The present study was taken up to establish the incidence of nuchal cord at delivery in the existing setup, intrapartum complications and the perinatal outcome that occurs in babies born with nuchal cord.

**Methodology**

This was a cross sectional study conducted at KLES Dr.Prabhakar Kore Hospital and Medical Research Centre**,** Belgaum, India, from January 2011 to March 2011.A sample size of 429 was calculated. Informed consent was obtained and eligible women were enrolled .The babies born with a cord around the neck were compared to those without. The particulars noted were age, BMI, parity, loops of cord around the neck (single or multiple), type of loop, mode of delivery, weight of the baby and Apgar score at birth and 5 minutes. The parameters were then compared and statistically analyzed using chi square test.

**Results**

Incidence of nuchal cord at the time of delivery was 13.75% , of which single nuchal cord was highest (76.66%). The study revealed that age, BMI (in $kg/m^2$ ), parity, gestational age and birth weight were not statistically significant to the presence of nuchal cord. Though instrumental deliveries were more in babies with nuchal cord it was not statistically significant (p= 0.932).Meconium

staining of liquor and fetal heart rate irregularities were significant findings in babies with nuchal cord($p<0.05$). Apgar score < 7 at 1 minute was significantly low in nuchal cord group and Apgar score at 5 minutes and admission to neonatal unit was equivalent to those babies born without nuchal cord ($p=0.947$).

**Conclusion and interpretation**

Intrapartum events such as meconium staining of liquor and fetal heart rate irregularities were commonly associated with nuchal cord but this did not affect the mode of delivery and perinatal outcome.

**Keywords**

Cord around neck; Fetal distress; Meconium staining liquor; Nuchal cord;

# *CONTENTS*

# LIST OF TABLES

# LIST OF GRAPHS

# Introduction

# *Objectives*

# *Review of Literature*


# Methodology

# Results

# Discussion

# Conclusion

# Summary

# *Bibliography*

# *Annexure-I*

# Annexure-II

# *Annexure-III*

# *Annexure-IV*

# INTRODUCTION

Entanglement of the umbilical cord around the fetal neck (nuchal cord) is a common finding at delivery, but its clinical relevance is not entirely clear. Several studies have analyzed deliveries with nuchal cords with differing results.[1-5]

Midwives have been taught, for over 200 years, that when the head is born in a vertex presentation, they should feel for the cord around the neck, and, if found, loop it over the head, slip it over the shoulder or severe the cord.[6] These instructions were enforced as several doctors have observed that a tight cord will cause asphyxia to the baby or that it may cause delay in delivery, abruption or even rupture.[5] Foetal asphyxia, deflexion attitudes and malpresentations are the sequel of this complication as seen quoted in literature. Multiple nuchal cords have also been associated with a greater risk of meconium being passed during labour and abnormal fetal heart rate patterns there by increasing the need for operative deliveries.[6]

Nuchal cords have generally been considered to be rather benign.[3,5] Nevertheless, in light of non-reassuring fetal heart rate patterns during labor and increased umbilical artery acidemia in nuchal cords together with decreased birth weight,[6,7] the question needs to be raised of whether detecting of nuchal cord at admission for delivery has to be followed expectantly or whether active planning of delivery strategies in term pregnancies with nuchal cords is reasonable.

It is often assumed that nuchal cord causes cord compression and thus low birth weight as well as intrapartum complications. Ultrasound detected nuchal cords have misguided several obstetricians and this has indirectly increased the rate of patients being operated for elective caesarean sections.[8]

Although the nuchal cord is often blamed for most of the problems encountered during delivery, the actual significance that a nuchal cord has on intrapartum events and perinatal outcome remains controversial. Without prenatal assessment, it would be difficult to identify at delivery if a nuchal cord was tight before the onset of labour.[9]

Considering the above facts the present study was taken up to establish the incidence of nuchal cord at delivery in the existing setup, intrapartum complications and the perinatal outcome that occurs in babies born with nuchal cord.

# OBJECTIVES

**Primary**

To determine the incidence of nuchal cord

**Secondary**

To assess the the intrapartum complications and perinatal outcome that occur in babies born with nuchal cord.

# REVIEW OF LITERATURE

## Historical aspects

In 1962, J. Selwyn Crawford MD from the British Research Council defined nuchal cord as 360 degrees around the fetal neck. Dr Crawford commented “It is all the more remarkable, therefore, that little work has been done to analyze its effects during labor and delivery".[1]

## Overview

Umbilical cord abnormalities are numerous, ranging from false knots to vasa previa, the former which has no clinical significance and the latter which often leads to fetal death. Cord accidents compromise 5-18% of all fatal fetal asphyxia cases and 10% of stillbirths, of which nuchal cord is the one of the most common finding.[2,9]

## Nuchal cord

As previously mentioned a nuchal cord is when the umbilical cord gets wrapped around the neck of an infant. This may affect the infant’s status during labor, at birth and after birth.[1]

Observational studies vary in opinion as to the degree of poor perinatal outcomes. Also not included in these studies is which umbilical cord form (of the eight different possible structures) was in a nuchal cord form. These oversights invalidate any study to date and therefore the impact of nuchal cord on the fetus is unknown.[10]

**Incidence**

Nuchal cords occur in 13% to 30% of births.[1-7] Recent prenatal ultrasonographic evaluation reveals nuchal cords are dynamic in nature, forming and resolving over the course of pregnancy.[11] Even at 10 to 14 weeks' gestation, 8% of fetuses may have nuchal cords. Studies reveal that, at 42 weeks of gestation, 29% of births have nuchal cord, inferring that the occurrence of nuchal cord increases with the gestational age.[11,12]

Nuchal cord is caused by movement of the fetus through a loop of cord. One loop around the neck occurs in approximately 20% of cases,[10] and multiple loops occur in up to 5% of pregnancies.[13]

Nuchal cords occur in about 25% of cases and ordinarily do no harm, but occasionally they may be so tight that constriction of the umbilical vessels and consequent hypoxia result.[14]

Clapp[2] and Larson[12] found that nuchal cords detected during the antenatal period persisted till delivery. The study conducted by Larson involved 13,895 singleton deliveries and he determined that the presence of a nuchal cord linearly increased every week of gestation. He concluded nuchal cord appeared in 6% at 20 weeks to 29.0% at 42 weeks' gestation.[12]

**Nuchal cord and intrapartum events**

Nuchal cord has been associated with labor induction and augmentation, prolonged second stage of labor, and fetal heart rate abnormalities. One report has

described a decrease in umbilical cord pH at delivery with nuchal cord, but the difference found (7.32 vs 7.30) does not appear to be clinically significant.[9]

Retrospective data of over 182,000 births, with the statistical power to determine even mild associations, suggested that a single or multiple nuchal cord at the time of delivery is not associated with adverse perinatal outcomes, is associated with normal birth weights and fewer caesarean sections.[14,15,16]

Although some studies have found that a tight nuchal cord is associated with short term morbidity, it is unclear whether such outcomes are actually a result of the presence of the nuchal cord itself, or as a result of clamping and cutting the cord[17].

Factors, such as amniotic fluid volume, the number of encirclements, presence of knots, and tightness of the cord may influence the impact of nuchal cords on fetuses and newborns. Strong et al.[18] found that oligohydramnios worsened the effect of nuchal cords on fetal status during labor. The same appears to be true of multiple nuchal cord encirclements.[19]

The fetal heart rate variable decelerations which are commonly attributed to cord compression can occur as a result of umbilical vessel occlusion. According to Weiss et al,[20] Doppler studies have demonstrated that, for many variable decelerations, a sharp decrease in umbilical vessel perfusion precedes the drop in the fetal heart rate by a few seconds.[21]

**Detection**

The ultrasound diagnosis of a cord around the neck was first described in 1982.[22] With the help of color doppler ultrasound, nuchal cord can be detected with a sensitivity of over 90%.[23]

A study published in 2004 was done to establish how sensitive ultrasound is in diagnosing a nuchal cord. 289 women were enrolled in the study and after having under gone a trans abdominal ultrasound and doppler imaging they were induced the same day. A nuchal cord was diagnosed if the cord was visualized lying around at least 3 of the 4 sides of the neck. A nuchal cord was actually present at delivery in 52 of the 289 women. Only 35% of the nuchal cords were detected on ultrasound done immediately before delivery, and 65% of nuchal cords were not detected. Of the 237 cases where there was no cord at delivery, ultrasound had false positive results, i.e. diagnosed a cord in 44 of the 237 cases (19%) in which there was no cord present at all. In this study, ultrasound was only 35% accurate at finding a single loop, and only 60% accurate at detecting a nuchal cord wrapped multiple times around the neck.[24]

There is no study which shows that it is possible by ultrasound to distinguish between a loose or a tight cord, although at least 3researchers s attempted to do so. Peregrine[24] concluded that ultrasound diagnosis of nuchal cords will only be useful if it can be predicted which of those fetuses are likely to have a problem during the course of labour.

A recent review by Wilson of the American Academy of Ultrasonography Technicians recommends the documentation of umbilical cord issues.[25]

Standard medical management recommends one attempt to slip the cord over the infant's head just before delivery of the body or, should the cord be too tight, to clamp and cut prior to delivery of the shoulders.[26]

Although most infants appear to tolerate this process with minimal distress, there is evidence that cutting the cord before delivery of the shoulders can result in neonatal morbidity and even mortality.[21] A review of the literature on nuchal cord reveals that it is associated with increased risk for hypovolemia,[27] anemia,[28] and cerebral palsy,[29,30] and even death.[27]

Maintaining the integrity of the nuchal cord as may decrease neonatal risks of hypovolemia,[27] anemia,[28] and hypoxic-ischemic encephalopathy, especially if birth is delayed by even a mild shoulder dystocia. [28]

**Effects of Nuchal Cord**

Nuchal cords rarely cause fetal demise and are not intrinsic reasons for intervention. Given the minor decrease in pH, fetal monitoring in labor would appear to be prudent, but no data are available to address this issue.[13,14,15]

It also necessitates an abrupt, rather than gradual, adaptation to extrauterine breathing.[21,32] An infant who presents with a nuchal cord may already be compromised because of compression of the umbilical cord during contractions, which prevents normal blood flow and correction of acid-base imbalance. If the cord is not cut before or immediately after birth, the infant may be able to equalize these imbalances after birth when the nuchal cord is reduced.[33]

In 1973, a study conducted at Rhode Island reported that tight nuchal cords at birth resulted in neonatal hypovolemia in a case series of 11 infants. Infants requiring cord ligation prior to delivery of the shoulders had a 20% reduction of red blood cell volume after birth. The diminished blood flow to the fetus accounted for a decrease in body iron content, resulting in anemic, pale, and hypotensive infants after birth.[27]

In a case report, Vanhaesebrouck described two term infants who suffered from acute hypovolemic shock resulting from a tight nuchal cord, despite unremarkable pregnancies and labors.[34] Early clamping and cutting of the cords was deemed necessary for delivery because the nuchal cords were too tight to slip over the infants' heads. These infants exhibited pallor, irregular respirations, low Apgar scores, gasping, tachycardia, weak peripheral pulses, hypotension, and acidemia. Resuscitation efforts included intubation and ventilation as well as blood transfusions to restore blood volume. The authors suggested "fetoplacental hemorrhage" due to tight nuchal cord was the cause of the infants' condition.[34]

An observational study by Shepherd examined tight or loose nuchal cord as a potential cause of neonatal anemia in 437 newborns consecutively admitted to the nursery.[28] Anemia was defined as any venous hemoglobin level less than 13.2 g/dL or hematocrit of less than 39.2%. She found that 16% of 57 neonates with a nuchal cord were anemic within the first 24 hours after birth. Three infants in the nuchal cord group developed hypotension requiring blood transfusions, but no anemia was found in the group without a nuchal cord.[28]

Shoulder dystocia occurs in 1.7% of births and is most often an unanticipated event. A few case reports suggest that clamping and cutting the nuchal cord before delivery of the infant's shoulders can influence outcomes after shoulder dystocia. Iffy described several cases of cerebral palsy after nuchal cords were cut, and subsequent shoulder dystocia delayed birth by as little as 3 minutes.[29] All of the fetuses were considered healthy prior to the onset of labor. The infants were all born with low Apgar scores and developed signs of hypoxic-ischemic encephalopathy thus inferring that nuchal cord can cause a severe infant morbidity.[30]

Three studies document reduction in weight of 60 to 80 g in infants after immediate or pre-birth cord clamping, due to either a nuchal cord or immediate clamping during active management of third stage. Records of 10,509 Canadian births were examined and revealed that 25% (2699) of infants born with a nuchal cord had mean weights about 60 g less than infants without nuchal cords (n _ 8710 or 74.3%).[35] This reduction in birth weight is similar to that found in the Hinchingbrooke and Bristol Active Management of Third Stage Trials.[36,37] Though the studies were conducted to analyse the active management of the third stage of labor versus expectant or physiologic management, they also made a note of the presence of nuchal cord and its impact on the birth weight. [36]

The Bristol trial evaluated 1695 women, with 849 randomly assigned to the active management group and 846 in the physiologic management group. The mean birth weight of the babies in the physiologic management group was 85 g higher than that of babies in the active group.[36] The Hinchingbrooke trial involved 748 women in the active management of third stage group and 764

women in the physiologic management group. The infants in the physiologic management group had birth weights that averaged 67 g more than the infants in the active management of the third stage group. The authors attributed the difference to the additional blood that infants receive prior to cord clamping.[37]

**Infant Outcomes**

There are no studies comparing long-term outcomes of differences in cord clamping times. Suggested long-term impact on infants from premature ligation of the umbilical cord at birth or before birth includes anemia and neurodevelopmental delays.[38,39]

Clapp[39] was the only one to conduct a prospective study that followed infants who experienced a nuchal cord at birth until 1 year of age. He enrolled a group of 190 women who had normal pregnancies, attended the births, and completed developmental testing at 1 year of age in all of the infants. Sixty-six (35%) of the women had infants with nuchal cords at birth. Twenty-one (11%) had a nuchal cord at birth as an incidental finding with no signs during labor. However, 24% were symptomatic for nuchal cord during labor, as evidenced by abnormal fetal heart rate patterns during labor or the finding of meconium-stained amniotic fluid at birth. At 1 year, scores on the Bayley Scales of Infant Development were significantly, albeit slightly, lower (116 versus 120 mental, and 101 versus 107 on psychomotor testing; $P$ _ .01) in the infants who had experienced nuchal cords. This difference was more pronounced among the infants who had extreme tightness or multiple loops. No information on the management at birth was offered.[39]

A prospective, cross-sectional, comparative study done at Kathmandu Medical College Teaching Hospital between March 2006 to September 2006 to find out the incidence of nuchal cord at delivery, intrapartum complication and perinatal outcomes in the cases with nuchal cord on 512 deliveries reported that, incidence of nuchal cord at the time of delivery was 22.85%. Incidence of single nuchal cord was highest (18.95%). Intrapartum complications like FHR irregularities and meconium staining of liquor were increased in nuchal cord group but statistically not significant. Instrumental delivery rate was high in nuchal cord group but not significant statistically (0.108). However, caesarean section rate was high in the group without nuchal cord (p=0.029). Apgar score<7 at 1 minute was significantly low in nuchal cord group (p=0.010) but apgar score at 5 minutes and admission to neonatal unit was not more common. The study concluded that, nuchal cord is not associated with adverse perinatal outcome.[40]

Another review conducted between 1990 and 1994 from perinatal database of University of Oklahoma Health Sciences Center, Oklahoma USA to evaluate the outcomes of pregnancies complicated by a multiple (double, triple, or quadruple) nuchal cord entanglement reported that, of the 8565 deliveries, the frequency of two or more cord entanglements at delivery was 3.8%. Compared with a single or no cord entanglement, pregnancies with a multiple entanglement were more likely to exhibit an abnormal fetal heart rate pattern during advanced labor (p<0.001) and to require low or midforceps application (p<0.001). The study infants were also more likely to have meconium (p=0.013), a low 1-minute Apgar score ($p < 0.001$), and an umbilical artery pH $\leq$ 7.10 (odds ratio 2.2, p=0.013) than the controls. Rates of abruptio placentae, cesarean delivery, and 5-

minute Apgar scores < 7 were no more common in the multiple entanglement than the control groups. The study concluded that, a multiple nuchal cord entanglement was associated with a greater risk of meconium, an abnormal fetal heart rate pattern during advanced labor, the need for operative vaginal delivery, and mild umbilical artery acidosis at birth; however, there was no added risk of an adverse neonatal outcome.[19]

The review of literature gives controversial conclusions about the effects of nuchal cord on the mother and fetus and therefore to verify these findings in the present setup up this study was undertaken.

# METHODOLOGY

The present study was conducted in the Department of Obstetrics and Gynaecology, KLES Dr. Prabhakar Kore Hospital and Medical Research Centre, Belgaum during the period of January 2011 to March 2011.

**Study design**

This was a cross-sectional comparative study.

**Study period**

This study was conducted during the period January 2011 to March 2011.

**Source of data**

All women delivering in the labour room of KLES Dr. Prabhakar Kore Hospital and Medical Research Centre, Belgaum during this period.

**Sample size**

A total of 429 pregnant women delivering at labour room, KLES Dr. Prabhakar Kore Hospital and Medical Research Centre, Belgaum were studied.

**Sampling technique**

The sample size was calculated based on the following formula.

$n = 4pq/d^2$

Where p (prevalence) = 22%

q (100- prevalence) = 78%

d (source of error) = 4%

Therefore, n = 429

The prevalence was calculated by taking an average of the lowest (13%) and highest (31%) incidence of nuchal cord in accordance with the review of literature.[1-5]

**Selection criteria**

***Inclusion criteria***

- Singleton pregnancy (Gestational age equal to or more than 28 weeks).
- Umbilical cord forming a loop, around the neck of the baby.

***Exclusion criteria***

- Multiple gestations.

**Procedure**

Ethical clearance was obtained from Institutional Ethics Committee of Jawaharlal Nehru Medical College, Belgaum. Based on the selection criteria women delivering at KLES Dr. Prabhakar Kore Hospital and Medical Research Centre, Belgaum, during the study period were screened for eligibility. A total of 441 women were selected for the study, of which 12 women did not meet the selection criteria and were therefore excluded. These women were briefed about the nature of the study and a written informed consent was obtained (Annexure I). The demographic data and obstetrical history were documented on predesigned proforma (Annexure II).

These women were allowed to follow the course of labour and either delivered vaginally or by caesarean section (wherever indicated). At the time of birth, cord around the neck was noted. In babies with nuchal cord the type of loop that is tight or loose was noted. Nuchal cord was considered to be loose when it could be easily released before delivery of the fetal trunk and tight when it needed to be clamped and cut before delivery of the trunk.Number of loops were also documented.

The cases with nuchal cord at the time of delivery were taken as study group and the cases which did not have nuchal cord served as the comparative group.

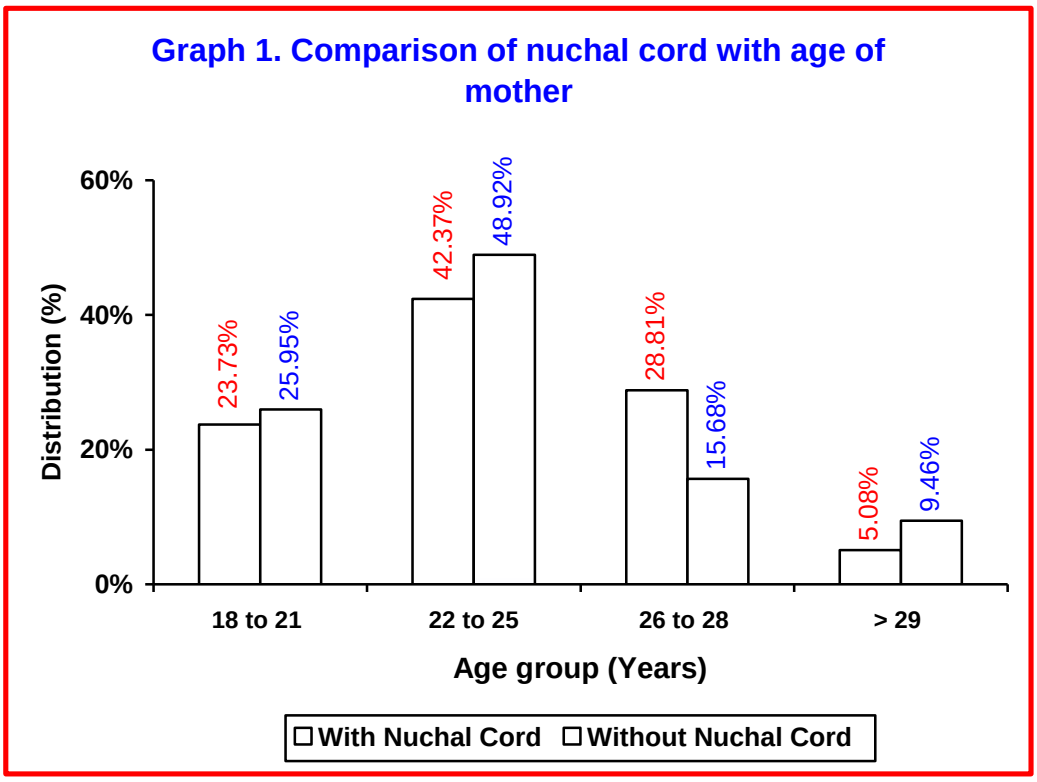
The variables such as instrumental and caesarean section rate, meconium staining of liquor, apgar score at one minute and five minutes and admission to neonatal intensive care unit (NICU) were taken as the outcome variables.

The data obtained was tabulated and analyzed using percentages for the incidence of nuchal cord, type of nuchal cord and the number of loops. The comparison of the demographic data, mode of delivery, birth status, apgar score and neonatal intensive care unit admission was done using chi-square test.

# RESULTS

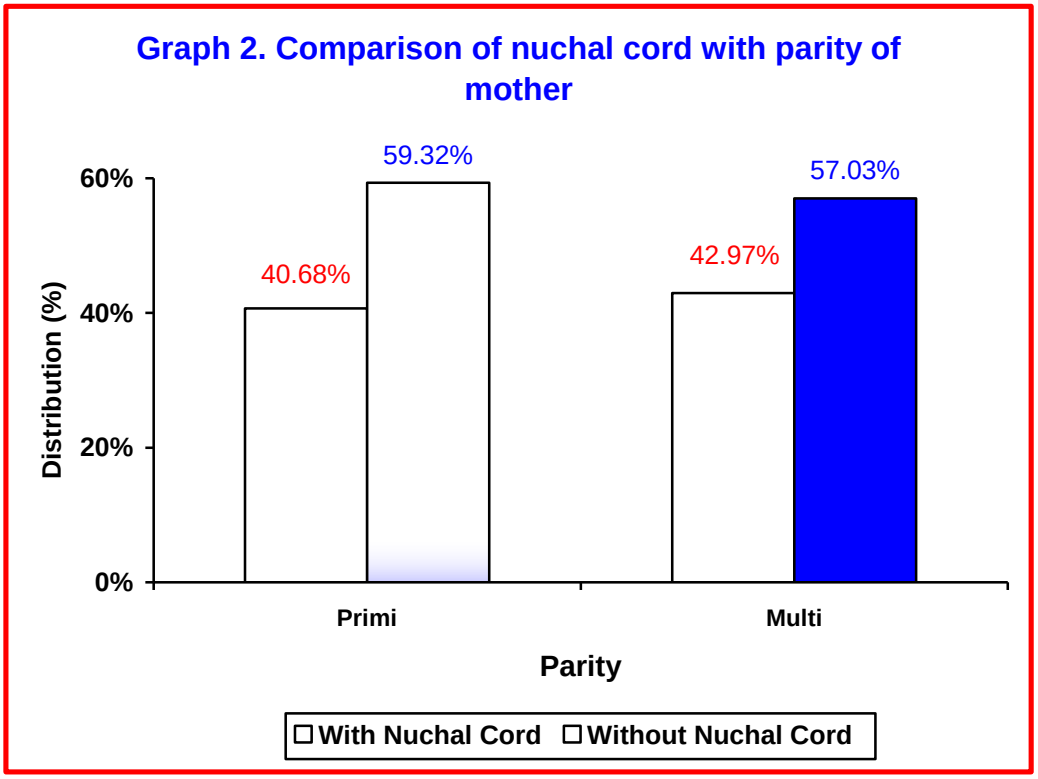
The present study was conducted at KLES Dr. Prabhakar Kore Hospital and Medical Research Centre, Belgaum during the period of January 2011 to March 2011. Based on the selection criteria women delivering at KLES Dr. Prabhakar Kore Hospital and Medical Research Centre, Belgaum during the study period were screened for eligibility. A total of 441 women were selected for the study of which, 12 women were excluded as they did not meet the selection criteria.

The data obtained was tabulated and coded which was expressed in terms of mean and standard deviation. The analysis was done using percentages and comparison was done using chi-square test for discrete variables.




$x^2$= 6.68 DF=3 p=0.083

In this study most (48.02%) of the women had age between 22 to 25 years followed by 18 to 21 years (25.64%), 26 to 28 years (17.48%) and more than or equal to 29 years (8.86%). The mean age of the study population was 23.88 ± 3.38 years with range being 18 to 26 years. However, study revealed that the age of the mother had no significance with the presence of nuchal cords (p>0.05) .




$x^2$= 0.110 DF=1 p= 0.741

In this study 57.34% women were multi parous and 42.66% were primis. The study determined that nuchal cord was independent of the parity of the mother (p> 0.05).

**Table 1. Comparison of nuchal cord with body mass index**

| BMI ($kg/m^2$) | Newborns with nuchal cord (n=59) | | Newborns without nuchal cord (n=370) | |
|---|---|---|---|---|
| | **Number** | **Percentage** | **Number** | **Percentage** |
| < 19 | 0 | 0.00 | 2 | 0.54 |
| 19 to 27 | 48 | 81.36 | 300 | 81.08 |
| > 27 | 11 | 18.64 | 68 | 18.38 |
| **Total** | **59** | **100.00** | **370** | **100.00** |

$x^2$= 0.321 DF=2 p= 0.852

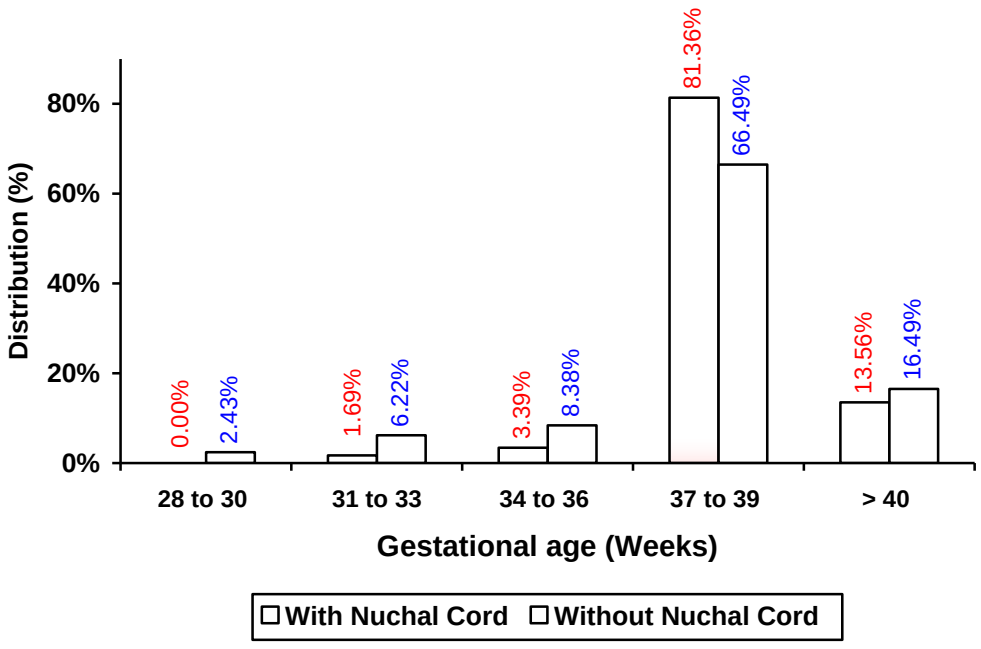
The mean height of the study population was 153.16 ± 4.14 cms with range being 132 to 163 cms. Overall mean weight was 58.11 ± 7.01 kgs with range being 40 to 89 kgs. The body mass index ranged between 18.26 to 36.11 Kg/m2 but, overall mean body mass index was noted as 24.74 ± 2.57 Kg/m2. With a p value of 0.852 it can be deciphered that the BMI is a variable that is independent of the presence of nuchal cord.

**Table 2. Comparison of nuchal cord and gestational age**

| Gestational age (Weeks) | Newborns with nuchal cord (n=59) | | Newborns without nuchal cord (n=370) | |
|---|---|---|---|---|
| | **Number** | **Percentage** | **Number** | **Percentage** |
| 28 to 30 | 0 | 0.00 | 9 | 2.43 |
| 31 to 33 | 1 | 1.69 | 23 | 6.22 |
| 34 to 36 | 2 | 3.39 | 31 | 8.38 |
| 37 to 39 | 48 | 81.36 | 246 | 66.49 |
| > 40 | 8 | 13.56 | 61 | 16.49 |
| **Total** | **59** | **100.00** | **370** | **100.00** |

$x^2$= 6.85 DF=4 p= 0.144

**Graph 3. Comparison of nuchal cord with gestational age**

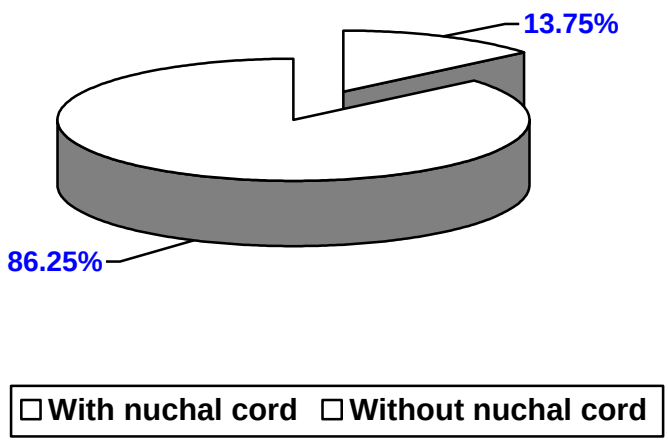


In this study most of the women (68.53%) women had term pregnancy whereas 7.69% had preterm and 16.08% women delivered post term babies. Most of the babies born with nuchal cord were of the gestational age of 37-39 weeks, but this is not statistically significant (p=0.144). Therefore the gestational age had no effect on the presence of nuchal cords

**Table 3. Incidence of nuchal cord**

| Nuchal cord | Distribution (n=429) | |
|---|---|---|
| | **Number** | **Percentage** |
| Present | 59 | 13.75 |
| Absent | 370 | 86.25 |
| **Total** | **429** | **100.00** |

**Graph 4.Incidence of nuchal cord**




Of the 429 deliveries 59 (13.75%) had nuchal cord.

**Table 4. Number of loops**

| Number of loops | Distribution (n=59) | |
|---|---|---|
| | **Number** | **Percentage** |
| One | 47 | 76.66 |
| Two | 9 | 15.25 |
| Three | 3 | 5.08 |
| Total | 59 | 100.00 |

Among them 47 (79.66%) had one loop, nine (15.25%) had two loops and three (5.08%) had three loops. Most of them (52.54%) had tight nuchal cord and in 47.46% it was loose. Single nuchal cords were more common (76.66%) than multiple loops.

**Table 5. Type of Nuchal Cord**

| Type | Distribution (n=429) | |
|---|---|---|
| | **Number** | **Percentage** |
| Loose | 28 | 47.46 |
| Tight | 31 | 52.54 |
| Total | 59 | 100.00 |

Of the type of loops observed, tight loops were slightly more prevalent (52.54%) than loose loops (47.54%).

**Table 6. Comparison of nuchal cord with meconium staining of liquor**

| Meconium staining of liquor | With Nuchal cord (n=59) | | Without Nuchal cord (n=370) | |
|---|---|---|---|---|
| | **Number** | **Percentage** | **Number** | **Percentage** |
| Present | 3 | 5.08 | 86 | 23.2 |
| Absent | 56 | 94.92 | 284 | 76.8 |
| **Total** | **59** | **100.00** | **370** | **100.00** |

$x^2$= 10.2 DF=1 p= 0.001

The study noted that meconium staining of liquor was present in 5.08% of cases with nuchal cord and in 23.2% in the comparative group. The chi square analysis suggests that the presence of nuchal cord is highly associated with meconium stained liquor ($p<0.05$).

**Table 7. Comparison of nuchal cord with Fetal heart irregularities**

| Fetal heart irregularities | With Nuchal cord (n=59) | | Without Nuchal cord (n=370) | |
|---|---|---|---|---|
| | **Number** | **Percentage** | **Number** | **Percentage** |
| Present | 5 | 8.47 | 92 | 24.86 |
| Absent | 52 | 91.53 | 278 | 75.14 |
| **Total** | **59** | **100.00** | **370** | **100.00** |

$x^2$= 7.29 DF=1 p= 0.007

In the present study fetal heart irregularities were seen in 8.47% of babies born with nuchal cord though only 3 of them had proven fetal distress. Similarly 24.86% of babies born without nuchal cord had fetal heart rate irregularities of which 15 had fetal distress. Chi square analysis showed that nuchal cord is responsible for fetal heart rate abnormalities ($p<0.05$) though this did not change the decision on the mode of delivery unless there was fetal distress.

**Table 8. Comparison of single and multiple nuchal cord with Fetal heart irregularities and meconium staining of liquor**

| | Single nuchal cord (n=47) | | Multiple nuchal cord (n=12) | |
|---|---|---|---|---|
| | **Number** | **Percentage** | **Number** | **Percentage** |
| Fetal heart rate irregularities | 4 | 8.51 | 1 | 8.30 |
| Meconium stained liquor | 4 | 8.51 | 1 | 8.30 |

$x^2$= 0.00 DF=1 p= 1.000

In the present study fetal heart irregularities and meconium staining of liquor were independent of the presence of single or multiple nuchal cords.

**Table 9. Comparison of nuchal cord with type of delivery**

| Type of delivery | With Nuchal cord (n=59) | | Without Nuchal cord (n=370) | |
|---|---|---|---|---|
| | **Number** | **Percentage** | **Number** | **Percentage** |
| Normal delivery | 38 | 64.41 | 239 | 64.59 |
| LSCS | 18 | 30.51 | 116 | 31.35 |
| Instrumental | 3 | 5.08 | 15 | 4.05 |
| **Total** | **59** | **100.00** | **370** | **100.00** |

$x^2$= 0.141 DF=2 p= 0.932

In the present study the presence of nuchal cord did not determine the mode of delivery, as p> 0.05, which is not statistically significant.

**Table 10. Comparison of nuchal cord with indications for LSCS**

| Indications | LSCS Newborns with nuchal cord (n=18) | | LSCS Newborns without nuchal cord (n=116) | |
|---|---|---|---|---|
| | **Number** | **Percent** | **Number** | **Percent** |
| Breech | 1 | 5.56 | 5 | 4.31 |
| CPD | 0 | 0.00 | 11 | 9.48 |
| Fetal distress | 3 | 16.67 | 13 | 11.21 |
| Meconium stained liquor | 0 | 0.00 | 3 | 2.59 |
| Non progress of labour | 0 | 0.00 | 7 | 6.03 |
| Not willing for VBAC | 3 | 16.67 | 25 | 21.55 |
| Previous 2 LSCS | 3 | 16.67 | 14 | 12.07 |
| Hypertensive disorders | 1 | 5.56 | 10 | 8.62 |
| Others | 7 | 38.89 | 28 | 24.14 |

$x^2$= 5.62 DF=8 p= 0.690

LSCS was performed only when indicated. The most common indications for LSCS were breech presentation, cephalo pelvic disproportion, meconium stained liquor in early labour, non progress of labour, patients not willing for vaginal birth after cesarean, previous two LSCS and hypertensive disorders including severe pre eclpamsia, imminent ecplampsia, eclampsia and HELLP syndrome. The other indications for LSCS include abruption placenta, placenta previa, macrosomia, transverse lie, short stature, deep transverse arrest,

obstructed labour, HIV in pregnancy, bad obstetric history, IUGR and direct occipito posterior position. Though LSCS was done for fetal distress only 3 babies had nuchal cord, which is not statistically significant ($p<0.05$). of these three babies one baby had 2 tight loops of cord around the neck and the other two had 1 loose loop.

Therefore though LSCS was performed for a valid indication, the presence of a nuchal cord did not influence the decision for the mode of delivery.

**Table 11. Comparison of nuchal cord with indications for instrumental delivery**

| Indications | LSCS Newborns with nuchal cord (n=3) | | LSCS Newborns without nuchal cord (n=15) | |
|---|---|---|---|---|
| | **Number** | **Percentage** | **Number** | **Percentage** |
| Fetal distress | 0 | 0.00 | 2 | 13.33 |
| Meconium stained liquor | 2 | 66.67 | 1 | 6.67 |
| Others | 0 | 0.00 | 1 | 6.67 |
| Prophylactic ventouse | 0 | 0.00 | 2 | 13.33 |
| Poor maternal efforts | 1 | 33.33 | 9 | 60.00 |

$x^2$= 6.72 DF=4 p= 0.151

Ventouse was applied for fetal distress, meconium stained liquor, poor maternal bearing efforts and prophylactically such as in patients with cardiac disease and anemia. Though ventouse was applied more for babies being born with meconium stained liquor (of term gestation), this was not statistically significant enough to conclude that babies with nuchal cord required instrumental delivery

.

**Table 12. Comparison of nuchal cord with birth status**

| Birth status | With Nuchal cord (n=59) | | Without Nuchal cord (n=370) | |
|---|---|---|---|---|
| | **Number** | **Percentage** | **Number** | **Percentage** |
| Alive | 58 | 98.31 | 350 | 94.59 |
| FSB | 1 | 1.69 | 17 | 4.59 |
| MSB | 0 | 0.00 | 3 | 0.81 |
| **Total** | **59** | **100.00** | **370** | **100.00** |

$x^2$= 1.57 DF= 2 p= 0.456

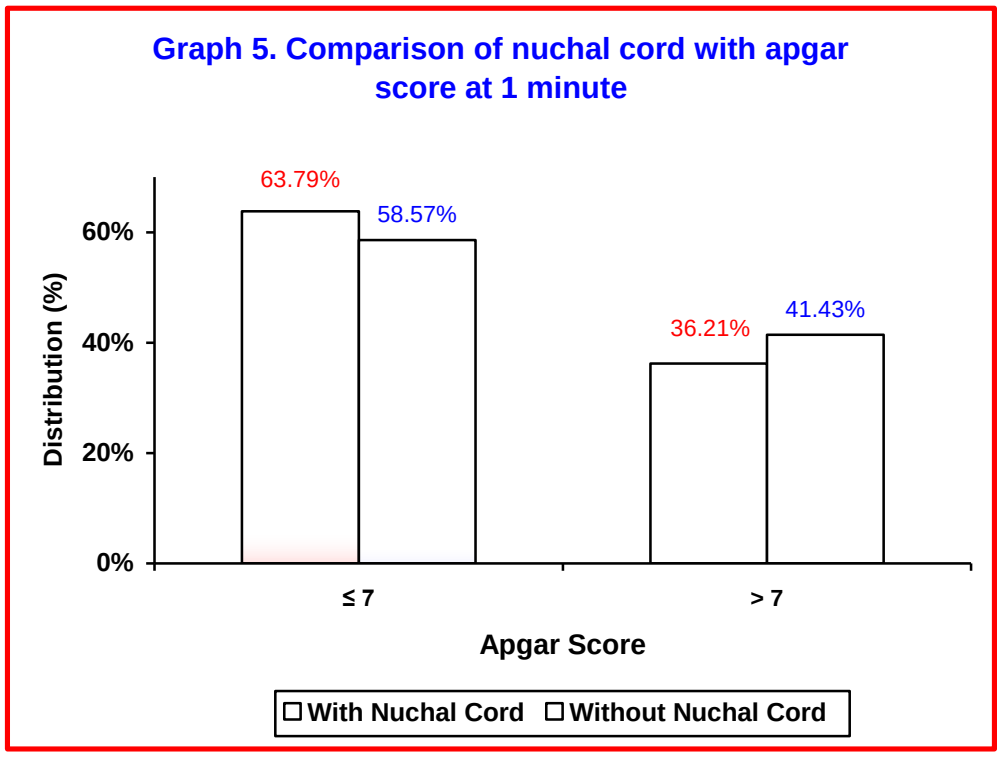
In this study 95.10% were live births whereas, 4.20% were fresh stillbirths and 0.7% were macerated stillbirths. In the present study it was detected that the percentage of babies born alive with nuchal cord was comparable to those without nuchal cord. As p value was <0.05, the birth status of babies born with nuchal cord is not statistically significant.

**Table 13. Comparison of nuchal cord with birth weight**

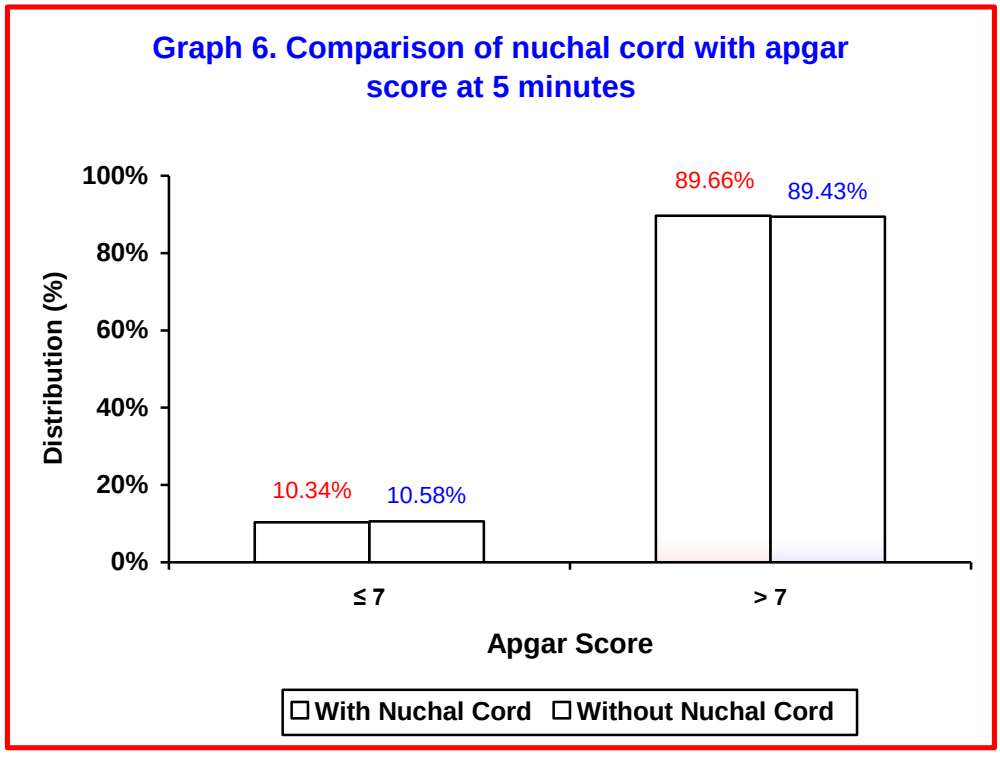
| Birth weight (Kgs) | With Nuchal cord (n=59) | | Without Nuchal cord (n=370) | |
|---|---|---|---|---|
| | **Number** | **Percentage** | **Number** | **Percentage** |
| 500 to 999 | 0 | 0.00 | 3 | 0.81 |
| 1000 to 1499 | 1 | 1.69 | 21 | 5.68 |
| 1500 to 1999 | 3 | 5.08 | 21 | 5.68 |
| 2000 to 2499 | 10 | 16.95 | 50 | 13.51 |
| 2500 to 2999 | 26 | 44.07 | 150 | 40.54 |
| 3000 to 3499 | 17 | 28.81 | 102 | 27.57 |
| 3500 to 3999 | 1 | 1.69 | 19 | 5.14 |
| ≥ 4000 | 1 | 1.69 | 4 | 1.08 |
| **Total** | **59** | **100.00** | **370** | **100.00** |

$x^2$= 4.15 DF= 7 p= 0.762

In this study, most (40.54%) of the neonates had birth weight between 2500 to 2999 gms. Overall mean birth weight was recorded as 2674 ± 601.82 gms with range being 800 to 4500 gms. The present study revealed that babies with nuchal cord, at term, had similar birth weights when compared to those without nuchal cord (p>0.05).Thus inferring that the birth weight of babies is not dependent on nuchal cords.




$x^2$= 0.562 DF=1 p= 0.453

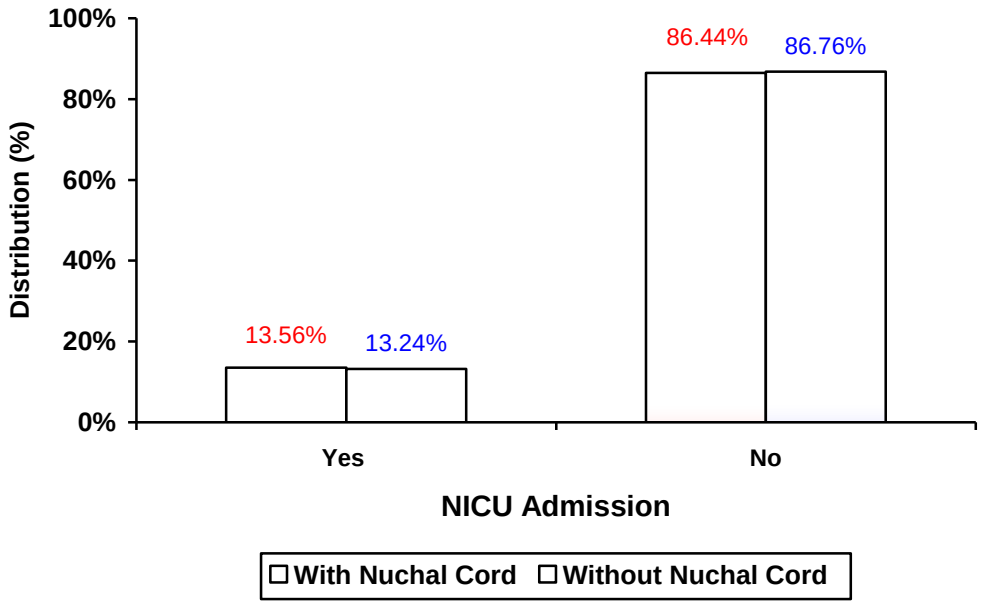



$x^2$=0.271 DF=1 p= 0.958

In this study 57.11% had apgar score between five to seven at one minute whereas in 89.46% neonates the score was more than or equal to eight at five minutes.

In the present study the apgar scores were observed at the end of one minute and 5 minutes. Apgar score less than 7 at one minute was present in 63.79% (n=37) of newborns in study group and 58.57% (n= 205) of newborns in the comparative group. Which was statistically not significant (p=0.45). Five minute apgar score less than seven in study group was 10.34% (n=6) and 10.58% (n=37) in comparative group (p=0.958)

**Graph 7. Comparison of nuchal cord with NICU admission**




$x^2$= 0.441 DF=1 p= 0.947

In this study 13.29% neonates were admitted to NICU. Neonatal intensive care unit admission was needed by 13.56% of newborns in study group and 13.24% in the comparative group, not reaching statistical significance (p=0.947).

**Table 14. Comparison of nuchal cord and NICU admission**

| Reason | Newborns with nuchal cord (n=8) | | Newborns without nuchal cord (n=49) | |
|---|---|---|---|---|
| | **Number** | **Percentage** | **Number** | **Percentage** |
| Low birth weight | 4 | 50.00 | 34 | 69.39 |
| LBW with duodenal atresia | 0 | 0.00 | 1 | 2.04 |
| Low birth weight with IUGR | 0 | 0.00 | 2 | 4.08 |
| Low birth weight with preterm | 0 | 0.00 | 2 | 4.08 |
| LBW with respiratory distress | 1 | 12.50 | 6 | 12.24 |
| Respiratory distress | 3 | 37.50 | 4 | 8.16 |
| **Total** | **8** | **100.00** | **49** | **100.00** |

$x^2$= 6.02 DF=5 p= 0.304

In this study out of 57 babies 66.67% were admitted in NICU due to LBW and 12.28% each due to LBW with respiratory distress and only respiratory distress. Among the other reasons for NICU admission were LBW with IUGR (3.51%), preterm (3.51%) and one baby had a duodenal atresia (1.75%). Therefore it can be inferred that nuchal cord is not responsible for the hypoxia to the baby causing respiratory distress and there by poor perinatal outcomes.

# DISCUSSION

The present study was conducted at, KLES Dr.PrabhakarKore Hospital and Medical Research Centre, Belgaum during the period of January 2011 to March 2011. Based on the selection criteria women delivering at KLES Dr.PrabhakarKore Hospital and Medical Research Centre, Belgaum during the study period were screened for eligibility. A total of 441 women were selected for the study of which, 12 women were excluded as 8 had multiple gestations and the other 4 women had gestational age less than 28 weeks.

In the present study the mean maternal age and parity in both the group were comparable. Mean maternal age of both the groups was 23.88 years. Primigravida accounted for 40.68 % in study group and 57.03 % in comparative group.

The incidence of nuchal cord in this study was 13.75 % of all the deliveries after 28 weeks of gestation. Incidence of multiple nuchal cords (two or more entanglement) was 20.08% in the present study which is significantly more when compared to previous studies.

The study noted that meconium staining of liquor was present in 5.08% of cases with nuchal cord and in 23.2% in the comparative group, and statastical analysis suggested that the presence of nuchal cord is highly associated with meconium stained liquor and fetal heart rate abnormalities ($p<0.05$).

In the present study fetal heart irregularities were seen in 8.47% of babies born with nuchal cord though only 3 of them had proven fetal distress. Chi square

analysis showed that nuchal cord is responsible for fetal heart rate abnormalities ($p<0.05$), though this didn't alter the decision regarding the mode of delivery unless there was fetal distress.

Instrumental delivery rate was statistically not significant ($p = 0.729$). Caesarean section rate was also lower in study group but not statistically significant ($p= 0.937$).

Apgar score < 7 at 1 minute was not significantly more in study group ($p = 0.453$).This signifies that there is no birth asphyxia as a result of cord compression during labour. Theapgar score <7 at 5 minute and admission to neonatal unit was not significantly more which means primary neonatal adaptation is not impaired by nuchal cord compression.

In the present study the maternal age in both groups were comparable. The mean maternal age of the two groups was 23.88 ± 3.38 years. This was slightly less when compared to a western study where the mean age was 29.1±5.5 years, which can probably be attributed to late marriages and delayed conception in developed countries.[14]

Primis accounted for 40.68 % in study group and 57.03 % in comparative group, whereas 59.32 % in study group and 57.03% in control group were multigravida. In a retrospective study conducted at Turkey, it was noted that nuchal cord was seen more frequently in multiparous women when compared to nulliparous women (34.9% vs. 65.1%, $p=0.01$), this was not statistically significant as in accordance with other studies and also the present study.[9,14] The

authors have also mentioned that they could not ascertain the relationship between parity and the presence of nuchal cords.[9]

A cross sectional study conducted during 1995, depicted that the incidence of nuchal cord increases from 5.8% at 20 weeks of gestation to 29% at 42 weeks.[19]The incidence of nuchal cord in this study was 13.75 % of all the deliveries after 28 weeks of gestation. Incidences are comparable in similar studies conducted where the incidence ranges between 14-18%.[6-8] The incidence is less in comparison to 23.7 % as quoted by William F. Miser in his cross sectional study, where 765 deliveries were observed, which could attribute to the higher incidence.[4] Similarly another study claims of nuchal cord incidence of 33% as 11, 748 deliveries were observed over a period of ten years.[9]

The presence of multiple nuchal cords (2 or more loops) is estimated to affect between 2.5% to 8.3% of all deliveries.[19] In this study the incidence of single and multiple nuchal cords (two or more entanglements) was 76.66% and 20.08%, respectively. This was significantly more when compared to other similar studies, where the incidence has been quoted to be 18 - 29 % for single loops and 3- 5% for multiple loops.[14,40] The increased incidence can be attributed to the lesser number of nuchal cords detected in the present study.

In this study it was observed that of the type of loops observed, tight loops were slightly more prevalent (52.54%) than loose loops (47.54%). This is in contrast to a similar cross sectional study where loose loops were more prevalent that tight loops, but a cause for this was not established.[40]

Several studies have been conducted and have analyzed the effect of nuchal cord on intrapartum events and neonatal outcome with controversial results.[12,14,19]

In this study fetal heart irregularities were seen in 8.47% (n=5) of babies born with nuchal cord though only 3 of them had proven fetal distress and Chi square analysis showed that nuchal cord is responsible for fetal heart rate abnormalities ($p<0.05$) though this did not alter the mode of delivery. It was also noted that meconium stained liquor was present in 5.08% of cases with nuchal cord and in 23.2% in the comparative group which suggested that the presence of nuchal cord is highly associated with meconium stained liquor ($p<0.05$). Some authors have reported an increased prevalence of intrapartum fetal heart rate abnormalities, meconium staining and low Apgar scores in fetuses born with nuchal cord.[12,16,19,40] However, when we compared neonates complicated with nuchal cord with the comparative group, it was seen that those babies born with nuchal cords had significantly higher rates of intrapartum abnormalities ($p <0.05$), as suggested by the authors mentioned earlier.[12,16,19,40]

In the present study instrumental delivery rate was statistically not significant ($p = 0.729$) and these findings are in conflict with other similar studies.[2-5,7]The Caesarean section rate however was lower in study group but not statistically significant ( $p = 0.937$).In studies conducted by Sheiner et al and Mastrobattista et al a significantly lower cesarean section rate was seen, in women with nuchal cord.[15,16]

Apgar score < 7 at 1 minute was not significantly more in study group (p = 0.453).This signifies that there is no birth asphyxia as a result of cord compression during labour. Theapgar score <7 at 5 minute and admission to neonatal unit was not significantly more which means primary neonatal adaptation is not impaired by nuchal cord compression. The findings are similar in the other similar studies conducted.[12,19] However in the study by Peregrine et al [24] presence of nuchal cord did not significantly increase the risk of apgar score <7 at 1 minute. In contrast to this, another study conducted, found that 5 minute apgar score was < 7 in significantly more fetus without nuchal cord ( p = 0.004).[40]

**Strengths of the study**

This was a cross sectional study conducted at a tertiary care centre. The demographic variables of the study group and comparative group were well matched.

As antenatal ultrasound was not performed immediately prior to delivery, the treating obstetricians were not biased on the decision about the mode of delivery.

**Limitations of the study**

In this study the newborns were observed only at the time of delivery and the NICU admission was noted. However, the long term effects of nuchal cord on babies needs to be evaluated as literature has quoted the possibility of cerebral palsy, fetal anemia and hypotension. This can be further researched on as the information available is limited.

# CONCLUSION

Entanglement of the umbilical cord around the fetal neck (nuchal cord) is a common finding at delivery, but its clinical relevance is not entirely clear and several studies have analyzed deliveries with nuchal cords with differing results.[1-5]

In the present study the incidence of nuchal cord was 13.75%. When compared to other studies the incidence is slightly less.

Intrapartum events such as meconium staining of liquor and fetal heart rate irregularities were more commonly associated with nuchal cord but it did not affect the perinatal outcome.However the presence of nuchal cord had no statistical significance on the mode of delivery, thereby reducing the morbidity to the mother.

Perinatal outcome of the babies as seen by the apgar score and rate of NICU admission was also not statistically significant.

Hence nuchal cord is not associated with adverse perinatal outcome.

**Recommendations:**

As nuchal cord is not associated with adverse perinatal outcome, if encountered during an ultrasound examination, the obstetrician should not be biased regarding the mode of delivery. This will eliminate un-necessary cesarean deliveries thereby reducing maternal morbidity and prolonged hospital stay.

Further studies and analysis should be done of the babies born with nuchal cord to determine if there are long term complications of nuchal cord on newborns.

Similarly a comparative study can be conducted on the modes of delivery while encountering a nuchal cord with the help of moves such as the somersault maneuver as mentioned in review of literature.

# SUMMARY

The present study was conducted at, KLES Dr. Prabhakar Kore Hospital and Medical Research Centre, Belgaum during the period of January 2011 to March 2011. Based on the selection criteria women delivering at KLES Dr. Prabhakar Kore Hospital and Medical Research Centre, Belgaum during the study period were screened for eligibility. A total of 441 women were selected for the study of which, 12 women did not meet the selection criteria and were therefore excluded

The exact perinatal effect of presence of nuchal cord in a newborn is still under debate, and therefore this study was undertaken to determine the incidence of nuchal cord and to assess the intrapartum complications and perinatal outcome.

In the present study the mean maternal age and parity in both groups were comparable. Mean maternal age of both the groups was 23.88 years. Primigravida accounted for 40.68 % in study group and 57.03 % in comparative group. 59.32 % in study group and 57.03% in control group were multigravida.

The incidence of nuchal cord in this study was 13.75 % of all the deliveries after 28 weeks of gestation. Incidence of single nuchal cord was 79.66% and multiple nuchal cords (two or more entanglement) was 20.08% which is significantly more when compared to previous studies.

In this study fetal heart irregularities were seen in 8.47% of babies born with nuchal cord though only 3 of them had proven fetal distress and Chi square

analysis showed that nuchal cord is responsible for fetal heart rate abnormalities ($p<0.05$). The present study also noted that meconium staining of liquor was present in 5.08% of cases with nuchal cord and in 23.2% in the comparative group which suggests that the presence of nuchal cord is highly associated with meconium stained liquor ($p<0.05$).

Instrumental delivery and caesarean section rate was statistically not significant in this study ($p = 0.729$).

Apgar score < 7 at 1 minute was not significantly more in study group ($p = 0.453$). This signifies that there is no birth asphyxia as a result of cord compression during labour. The apgar score <7 at 5 minute and admission to neonatal unit was not significantly more which means primary neonatal adaptation is not impaired by nuchal cord compression.

Therefore though nuchal cord ,is associated with meconium staining of liquor and fetal heart rate abnormalities, the mere presence of the cord doesn't change the mode of delivery and hence has no adverse perinatal outcome.

# BIBLIOGRAPHY

1. Crawford J S. Cord around the neck. Acta Paediatrica. 1962; 51 (5): 594-603.

2. Clapp JF 3rd, Stepanchak W, Hashimoto K, Ehrenberg H, Lopez B. The natural history of antenatal nuchal cords. Am J Obstet Gynecol 2003; 189: 488-93.

3. Jauniaux E, Ramsay B, Peellaerts C, Scholler Y. Perinatal features of pregnancies complicated by nuchal cord. Am J Perinatol 1995; 12: 255-8.

4. Miser WF. Outcome of infants born with nuchal cords. J Fam Pract 1992; 34: 441-5.

5. Rhoades DA, Latza U, Mueller BA. Risk factors and outcomes associated with nuchal cord: a population-based study. J Reprod Med 1999; 44: 39-45.

6. Chapman E. Improvement of Midwifery. London: 1753. p. 126

7. Weber T. The influence of cord complications on fetal pH, neonatal Apgar score, and the acid base state and oxygenation of the umbilical artery and vein. J Perinat Med 1981; 9: 134-40.

8. Caesarean section for nuchal cord - query bank. May 2009. Royal College of Obstetricians and Gynaecologists. Available from: URL: http://www.

rcog.org.uk/womens-health/clinical-guidance/caesarean-section-nuchal-cord-query-bank-may-2009.

9. Onderoğlu LS, Dursun P, Durukan T. Perinatal features and umbilical cord blood gases in newborns complicated with nuchal cord. Turk J Pediatr. 2008; 50(5): 466-70.

10. Jouppila P, Kirkinen P. Ultrasonic diagnosis of nuchal encirclement by the umbilical cord: a case report. J Clin Ultrasound 1982; 10: 59-62.

11. Collins J. Tight nuchal cord morbidity and mortality. Am J Obstet Gynecol 1999; 180: 251.

12. Larson JD, Rayburn WF, Harlan VL. Nuchal cord entanglements and gestational age. Am J Perinatol 1997; 14: 555-7.

13. Ogueh O, Al-Tarkait A, Vallerand D, Rouah F, Morin L, Benjamin A, et al. Obstetrical factors related to nuchal cord. Acta Obstet Gynecol Scand. 2006;85:810-4

14. Schaffer L, Tilo Burkhardt, Ronald Zimmermann and Juozas Kurmanavicious. Nuchal Cords in Tern and Post term deliveries- Do we need to know? Obstetrics and Gynecology. 2005; 106:23-28.

15. Mastrobattista JM, Hollier LM, Yeomons ER, Ramin SM. Day MC, Sosa A, Gilstrap LC 3rd. Effects of nuchal cord on birth weight and immediate neonatal outcomes. Am J Perinatol. 2005; 22(2): 83-5.

16. Sheiner E, Abramowicz JS, Levy A, Silberstein T, Mazor M, Hershkovitz R. Nuchal cord is not associated with adverse perinatal outcome. Arch Gynecol Obstet. 2006; 274(2): 81-3.

17. Reed R, Barnes M, Allan J. Nuchal cords: Sharing the evidence with parents. Br J Midwifery 2009; 17 (2) 106-9.

18. Strong Jr, T Sarno A, Paul R. Significance of intrapartum amniotic fluid volume in the presence of nuchal cords. J Reprod Med1992;37:718 –20

19. Larson JD, Rayburn WF, Crosby S, Thurnau GR. Multiple nuchal cord entanglements and intrapartum complications. Am J Obstet Gynecol 1995; 173: 1228-31

20. Weiss E, Hitschold T, Berle P. Umbilical artery blood flow velocity waveforms during variable deceleration of the fetal heart rate. Am J Obstet Gynecol 1991; 164: 534-40.

21. Mercer J, Skovgaard R. Neonatal transitional physiology: Anew paradigm. J Perinat Neonatal Nurs 2002; 15: 56-75.

22. Jouppila P, Kirkinen P. Ultrasonic diagnosis of nuchal encirclement by the umbilical cord: a case report. J Clin Ultrasound 1982; 10: 59-62.

23. Aksoy U. Prenatal color Doppler sonographic evaluation of nuchal encirclement by the umbilical cord. J Clin Ultrasound. 2003; 31: 473-7.

24. Peregrine E, O'Brien P, Jauniaux E. Ultrasound detection of nuchal cord prior to labour induction and the risk of caesarean 362 section. Ultrasound Obstet Gynecol. 2006.; 25(2): 160-4.

25. Wilson B. Sonography of the Placenta and Umbilical Cord. Radiologic Technology. 2008; 79: 333S

26. Schorn M, Blanco J. Management of the nuchal cord. J Nurse Midwifery 1991; 36: 131-2.

27. Cashore W, Usher R. Hypovolemia resulting from a tight nuchal cord at birth. Pediatr Res 1973; 7: 399.

28. Shepherd A, Richardson C, Brown J. Nuchal cord as a cause of neonatal anemia. Am J Dis Child 1985; 139: 71-3.

29. Iffy L, Varadi V, Papp E. Untoward neonatal sequelae deriving from cutting of the umbilical cord before delivery. Med Law 2001; 20: 627-34

30. Iffy L, Varadi V. Cerebral palsy following cutting of the nuchal cord before delivery. Med Law 1994; 13: 323-30.

31. Nelson K, Grether J. Potentially asphyxiating conditions and spastic cerebral palsy in infants of normal birth weight. Am J Obstet Gynecol 1998; 179: 507-13.

32. Morley G. Cord closure: Can hasty clamping injure the new- born? Obg Management 1998: 29-35.

33. Mercer JS, Skovgaard RL, Peareara-Eaves J, Bowman TA. Nuchal cord management and nurse mid wifery practices 2005. J. Mid Wifery Womens Health. 2005: 50: 373-9.

34. Vanhaesebrouck P, Vanneste K, De Praeter C, Van Trappen Y, Thiery M. Tight nuchal cord and neonatal hypovolaemic shock. Arch Dis Child 1987; 62: 1276-7.

35. Osak R, Webster KM, Bocking AD, Campbell MK, Richardson BS. Nuchal cord evident at birth impacts on fetal size relative to that of the placenta. Early Hum Dev 1997; 49: 193-202.

36. Prendiville W, Harding J, Elbourne D, Stirrat G. The Bristol third stage trial: Active versus physiological management of third stage of labour. BMJ 1988; 297: 1295-300.

37. Rogers J, Wood J, McCandlish R, Ayers S, Truesdale A, Elbourne D. Active versus expectant management of third stage of labour: The Hinchingbrooke randomised controlled trial. Lancet 1998; 351: 693-9.

38. Rheenen P, Brabin B. Late umbilical cord-clamping as an intervention for reducing iron deficiency anaemia in term infants in developing and industrialised countries: A systematic review. Ann Trop Paediatr 2004; 24: 3-16.

39. Clapp III, J Lopez B, Simonean S. Nuchal cord and neurodevelopmental performance at 1 year. J Soc Gynecol Investig 1999; 6: 268-72.

40. Shrestha NS, Singh N. Nuchal cord and Perinatal outcome. Kathmandu Univ Med J (KUMJ). 2007; 5(3): 360-3.

# ANNEXURE I

**STUDY: NUCHAL CORD AND PERINATAL OUTCOME.**

**Principal Investigator:** Dr. Shereen Pradeep Kumar; Postgraduate Student

**Guide** **:** Dr. Kamal P. Patil, Professor

We request you to be a participant in above said research to be conducted at KLE'S Hospital from January 2011 to March 2011 conducted by Dr Shereen Pradeep Kumar, Postgraduate student in the Department of Obstetrics and Gynecology at Jawaharlal Nehru Medical College, Belgaum. Ph No 99809 59679.

Your participation in this study is your voluntary decision whether or not to participate will not affect your current or future relationship with the KLE'S Dr. Prabhakar Kore Hospital and Medical Research Centre.

**Procedure Involved**

If you agree in this research we will observe the presence of nuchal cord at the time of delivery.

**Risk and benefits**

There are no additional risks involved in this procedure.

**Privacy and Confidentiality**

The only people who will know that you are a research participant are members of the research team. No information about you or provided by you, during the research will be disclosed to others without your written consent. When the results of the research are published or discussed the conferences, no information will be disclosed that would reveal your identity. Any information obtained in connections with this study and that can be identified with you remain confidential and will be disclosed only with your permission.

**Voluntary participation**

Your participation in this study will help us identify whether the presence of nuchal cord should alter the mode of delivery to for better maternal and fetal outcome. You are free to discontinue the participation in the study at any time for any reasons and you will not be paid any reimbursement for participation in the research. If you have any questions about your rights or research as a research participant you may contact Dr. V.D. Patil, Principal JNMC, Belgaum. Phone No 08312473777. You will be given a copy of this form for your information and to keep for your records.

**Statement of Consent**

To voluntarily agree to take part in this study I must sign on the line below: If you chose to take part in this study I may withdraw at any time I am not giving up any of my legal rights, by signing this form. My signature below indicates that I have read or have read to me this entire consent form including

the risks and benefits and had all questions answered, I will be given a copy of this consent form.

Signature of the Subject:

Name: Date:

Signature of the authorized representative:

Name: Date:

Relation to the Subject:

Signature of the witness:

Name: Date:

Signature of the investigator:

Name: Date:

# ANNEXURE II – PROFOMA

1) Name :

2) Date :

3) IP Number :

4) Age : yrs

5) Height: Mtrs Weight: Kgs.

6) Obstetric history : Married life : yrs

Primi ☐

Multi ☐

7) Gestational age :

Term ☐

Pre Term ☐

8) Labour details :

a) Date of delivery of baby : ☐

b) Time of delivery : ☐

c) Mode of delivery :

Vaginal delivery ☐

LSCS ☐

Vaccum/forceps ☐

I ) If LSCS or Instrumental , indication : ☐

d) Cord around the neck : Yes ☐

No ☐

If answer to 6 d) is Yes

e) How many loops of cord were present around the neck :

f) Type Tight ☐

Loose ☐

9) Meconium staining of liquor

Present ☐

Absent ☐

10) Fetal heart rate irregularities

Present ☐

Absent ☐

11) Baby Details :

a) Sex : Male ☐

Female ☐

b) Birth weight (in grams) :

c) Baby status at birth :

Alive ☐

Fresh still birth ☐

Macerated still birth ☐

d) Apgar score at 1 minute :

5. minutes:

i) NICU admission : Yes ☐

# ANNEXURE IV - KEY TO MASTER CHART

| | | |
|---|---|---|
| A | - | Abruption |
| A | - | Alive |
| Ab Pl | - | Abruption placenta |
| AB | - | Absent |
| Assy | - | Assymmetrical |
| BR | - | Breech |
| Cms | - | Centimeters |
| DR | - | Direct |
| DST | - | Diastolic |
| DTA | - | Deep transverse arrest |
| DUD AT | - | Duodenal atresia |
| Ecl | - | Eclampsia |
| ER | - | Early |
| f | - | Female |
| F | - | Forceps |
| FL | - | Failed |
| FSB | - | Fresh macerated stillbirth |
| FT DST | - | Fetal distress |
| GA | - | Gestational age |
| gms | - | Grams |
| HELLP | - | Hemolysis elevated liver enzyme low platelets |
| HIV | - | Human immunodeficiency virus |

| | | |
|---|---|---|
| HYD | - | Hydrocephalus |
| IMM | - | Imminent |
| Ind | - | Induction |
| IUGR | - | Intra uterine growth retardation |
| Kg | - | Kilogram |
| L | - | Loose |
| LBW | - | Low birth weight |
| LSCS | - | Lower segement caesarean section |
| M | - | Male |
| m | - | Meter |
| M | - | Multi |
| MACRS | - | Macrosomia |
| MEC STN LIQ- | | Meconium stained liquor |
| MSB | - | Macerated stillbirth |
| N | - | No |
| NICU | - | Neonatal intensive care unit |
| NO LG ISS | - | No living issue |
| NW | - | Not willing |
| OBSTR LAB | - | Obstructed labour |
| OCC | - | Occiputo |
| OLIG | - | Oligoamnios |
| P | - | Primi |
| PL PRV | - | Placenta previa |
| PME | - | Poor maternal efforts |

| | | |
|---|---|---|
| POST | - | Posterior |
| PR PREG | - | Previous pregnancy |
| PRE | - | Previous |
| PRO SEC STG | - | Prolonged second stage |
| PROM | - | Premature rupture of membranes |
| PROP | - | Prophylactic |
| PT | - | Preterm |
| RD | - | Respiratory distress |
| SCR TEND | - | Scar tenderness |
| SEV | - | Severe |
| SH ST | - | Short stature |
| T | - | Term |
| t | - | Tight |
| TH | - | Thick |
| TRS LIE | - | Transverse lie |
| V | - | Vacuum assisted |
| VBAC | - | Vaginal birth after caesarean |
| VD | - | Vaginal delivery |
| Y | - | Yes |

## ANNEXURE III - MASTER CHART

| Serial Number | In patient Number | Age (Years) | Para | Body Mass Index | | | GA | | Delivery Details | | | | | | | | | Baby Details | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | Mode | | Fetal heart rate | Mec Stn Liq | Nuchal cord | | | Sex | Birth weight (gms) | Status | Apgar Score | | Gestational Age | NICU Admission | |
| | | | | Height (Cms) | Weight (Kg) | BMI (Kg/m$^2$) | Term | GA (Weeks) | Date | Time | Type | Indication | | | Nuchal cord | No. of loops | Type | | | | 1 Minutes | 5 Minutes | | Admission | Reason |
| 1 | 403016 | 23 | P | 158 | 69 | 27.64 | T | 38 | 02.02.11 | 16.25 | LSCS | NPOL | - | + | N | - | - | f | 2700 | A | 8 | 8 | T | N | - |
| 2 | 403333 | 22 | P | 157 | 62 | 25.15 | T | 37 | 03.02.11 | 1.29 | VD | - | - | - | Y | 1 | L | f | 1750 | A | 6 | 9 | IUGR | Y | LBW |
| 3 | 403364 | 25 | P | 146 | 56 | 26.27 | T | 39 | 03.02.11 | 3.43 | LSCS | ECL | + | + | N | - | - | M | 2500 | A | 7 | 9 | T | N | - |
| 4 | 403544 | 22 | P | 158 | 57 | 22.83 | T | 38 | 03.02.11 | 10.53 | VD | - | - | - | N | - | - | f | 2750 | A | 8 | 8 | T | N | - |
| 5 | 403383 | 23 | P | 154 | 60 | 25.30 | PT | 35 | 03.02.11 | 12.55 | LSCS | AB PL | + | - | N | - | - | M | 2200 | A | 7 | 8 | PT | Y | LBW, PT |
| 6 | 403227 | 26 | M | 156 | 62 | 25.48 | T | 40 | 03.02.11 | 16.57 | LSCS | NW VBAC | - | + | N | - | - | M | 2600 | A | 7 | 8 | T | N | - |
| 7 | 403487 | 28 | M | 157 | 55 | 22.31 | T | 37 | 04.02.11 | 0.17 | VD | - | + | - | N | - | - | M | 3800 | A | 8 | 9 | T | N | - |
| 8 | 403455 | 29 | P | 153 | 58 | 24.78 | T | 37 | 04.02.11 | 8.12 | VD | - | - | - | N | - | - | f | 4000 | A | 7 | 7 | T | N | - |
| 9 | 403331 | 19 | P | 152 | 50 | 21.64 | T | 37 | 04.02.11 | 12.46 | VD | - | - | - | N | - | - | M | 3150 | A | 8 | 9 | T | N | - |
| 10 | 403554 | 21 | P | 156 | 66 | 27.12 | PT | 36 | 04.02.11 | 14.19 | VD | - | + | - | N | - | - | M | 2050 | A | 7 | 8 | PT | Y | LBW |
| 11 | 403542 | 24 | M | 155 | 70 | 29.14 | T | 40 | 04.02.11 | 17.35 | VD | - | - | + | N | - | - | M | 3000 | A | 8 | 8 | T | N | - |
| 12 | 403468 | 28 | M | 153 | 59 | 25.20 | T | 38 | 04.02.11 | 18.08 | LSCS | NPOL | - | - | N | - | - | M | 3000 | A | 8 | 8 | T | N | - |
| 13 | 403591 | 32 | M | 152 | 48 | 20.78 | T | 39 | 04.02.11 | 23.28 | LSCS | OLIG | + | - | N | - | - | M | 2600 | A | 8 | 9 | T | N | - |
| 14 | 403618 | 21 | M | 148 | 52 | 23.74 | T | 41 | 05.02.11 | 5.40 | VD | - | - | + | N | - | - | M | 3250 | A | 7 | 9 | T | N | - |
| 15 | 403481 | 27 | P | 154 | 62 | 26.14 | T | 37 | 05.02.11 | 7.46 | VD | - | - | - | Y | 1 | L | M | 2800 | A | 7 | 9 | T | N | - |
| 16 | 403627 | 20 | P | 155 | 67 | 27.89 | T | 38 | 05.02.11 | 9.35 | VD | - | - | - | Y | 1 | L | M | 2500 | A | 7 | 8 | T | N | - |
| 17 | 403523 | 23 | M | 156 | 63 | 25.89 | T | 40 | 05.02.11 | 10.35 | VD | - | - | + | N | - | - | M | 2850 | A | 8 | 8 | T | N | - |
| 18 | 403518 | 26 | P | 157 | 65 | 26.37 | T | 37 | 05.02.11 | 11.38 | V | PME | + | - | N | - | - | f | 2250 | A | 7 | 8 | T | N | - |
| 19 | 403691 | 18 | P | 156 | 54 | 22.19 | T | 37 | 05.02.11 | 23.39 | VD | - | - | - | N | - | - | f | 2200 | FSB | - | - | T | N | - |
| 20 | 403718 | 20 | P | 159 | 65 | 25.71 | T | 41 | 06.02.11 | 1.20 | LSCS | TRS LIE | - | + | N | - | - | f | 2500 | A | 7 | 7 | T | N | - |
| 21 | 401851 | 23 | M | 150 | 56 | 24.89 | T | 37 | 23.01.11 | 0.10 | LSCS | FT DIST | + | - | N | - | - | M | 2400 | A | 7 | 9 | T | N | - |
| 22 | 401411 | 24 | P | 152 | 47 | 20.34 | T | 37 | 23.01.11 | 12.05 | LSCS | SEV PIH | - | - | Y | 1 | L | f | 3000 | A | 8 | 8 | T | N | - |
| 23 | 401900 | 20 | M | 157 | 54 | 21.91 | T | 39 | 23.01.11 | 12.10 | VD | - | + | - | N | - | - | M | 3150 | A | 8 | 8 | T | N | - |
| 24 | 401872 | 20 | P | 160 | 57 | 22.27 | PT | 35 | 23.01.11 | 13.52 | VD | - | - | - | N | - | - | M | 2000 | A | 7 | 9 | PT | Y | LBW, DUD AT |
| 25 | 398531 | 22 | M | 153 | 66 | 28.19 | PT | 36 | 23.01.11 | 14.00 | LSCS | PRE 2 LSCS | - | - | Y | 1 | L | f | 2100 | A | 6 | 6 | PT | Y | LBW, RD |
| 26 | 401898 | 24 | M | 156 | 58 | 23.83 | T | 39 | 23.01.11 | 14.40 | VD | - | - | - | Y | 2 | t | f | 2850 | A | 8 | 8 | T | N | - |
| 27 | 401931 | 21 | M | 147 | 50 | 23.14 | T | 41 | 23.01.11 | 19.53 | VD | - | - | - | Y | 1 | t | f | 3050 | A | 8 | 9 | T | N | - |
| 28 | 401943 | 24 | M | 153 | 60 | 25.63 | T | 38 | 23.01.11 | 22.55 | LSCS | NW VBAC | - | - | N | - | - | f | 3200 | A | 7 | 9 | T | N | - |
| 29 | 401297 | 25 | M | 142 | 42 | 20.25 | T | 37 | 24.01.11 | 9.52 | LSCS | SH ST | + | - | N | - | - | f | 2700 | A | 7 | 8 | T | Y | RD |
| 30 | 401957 | 22 | P | 156 | 50 | 20.55 | PT | 31 | 24.01.11 | 13.25 | VD | - | - | - | N | - | - | f | 1050 | A | 4 | 6 | PT | Y | LBW |
| 31 | 400760 | 28 | M | 151 | 54 | 23.68 | T | 38 | 13.01.11 | 10.50 | VD | - | + | - | N | - | - | f | 2700 | A | 6 | 7 | T | N | - |
| 32 | 400735 | 25 | P | 153 | 55 | 23.50 | T | 37 | 14.01.11 | 11.15 | VD | - | - | - | Y | 1 | L | f | 2300 | A | 7 | 9 | T | N | - |

## ANNEXURE III - MASTER CHART

| Serial Number | In patient Number | Age (Years) | Para | Body Mass Index | | | GA | | Delivery Details | | | | | | | | | Baby Details | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | Mode | | Fetal heart rate | Mec Stn Liq | Nuchal cord | | | | | | | Apgar Score | | | NICU Admission | |
| | | | | Height (Cms) | Weight (Kg) | BMI (Kg/m$^2$) | Term | GA (Weeks) | Date | Time | Type | Indication | | | Nuchal cord | No. of loops | Type | Sex | Birth weight (gms) | Status | 1 Minutes | 5 Minutes | Gestational Age | Admission | Reason |
| 33 | 400254 | 22 | M | 155 | 60 | 24.97 | T | 38 | 14.01.11 | 3.53 | VD | - | - | + | N | - | - | M | 2700 | A | 5 | 6 | T | N | - |
| 34 | 400778 | 25 | M | 154 | 62 | 26.14 | T | 37 | 14.01.11 | 10.39 | VD | - | - | - | N | - | - | f | 2900 | A | 8 | 9 | T | N | - |
| 35 | 400656 | 30 | M | 150 | 64 | 28.44 | T | 38 | 14.01.11 | 11.04 | LSCS | PRE 2 LSCS, PIH | - | - | N | | | M | 2800 | A | 8 | 9 | T | N | - |
| 36 | 400634 | 22 | P | 153 | 55 | 23.50 | T | 39 | 14.01.11 | 20.31 | VD | - | - | - | Y | 1 | t | f | 3200 | A | 5 | 6 | T | N | - |
| 37 | 399719 | 27 | M | 156 | 66 | 27.12 | T | 39 | 14.01.11 | 22.16 | VD | - | - | - | Y | 1 | t | f | 2900 | A | 4 | 5 | T | Y | RD |
| 38 | 400736 | 20 | P | 154 | 58 | 24.46 | PT | 31 | 15.01.11 | 0.06 | VD | - | + | - | N | - | - | M | 1000 | FSB | - | - | PT | N | - |
| 39 | 400844 | 20 | P | 150 | 65 | 28.89 | T | 38 | 15.01.11 | 3.21 | VD | - | - | + | N | - | - | f | 3000 | A | 5 | 6 | T | N | - |
| 40 | 400869 | 20 | M | 148 | 58 | 26.48 | T | 40 | 15.01.11 | 5.30 | VD | - | - | - | N | | | f | 2500 | A | 7 | 9 | T | N | - |
| 41 | 400876 | 23 | P | 153 | 56 | 23.92 | T | 41 | 15.01.11 | 15.44 | VD | - | - | + | N | - | - | M | 2900 | A | 7 | 9 | T | N | - |
| 42 | 400921 | 24 | M | 152 | 56 | 24.24 | T | 39 | 15.01.11 | 8.52 | LSCS | BR | - | - | N | - | - | M | 2500 | A | 8 | 8 | T | N | - |
| 43 | 400930 | 25 | M | 150 | 48 | 21.33 | PT | 32 | 15.01.11 | 10.30 | VD | - | + | - | N | - | - | f | 1250 | MSB | - | - | PT | N | - |
| 44 | 400908 | 25 | M | 151 | 53 | 23.24 | T | 39 | 16.01.11 | 0.47 | VD | - | - | - | N | - | - | f | 2500 | A | 7 | 9 | T | N | - |
| 45 | 400873 | 20 | P | 152 | 58 | 25.10 | PT | 31 | 16.01.11 | 10.37 | VD | - | - | - | N | - | - | M | 1200 | A | 7 | 8 | PT | Y | LBW |
| 46 | 400938 | 22 | M | 155 | 61 | 25.39 | PT | 33 | 16.01.11 | 18.28 | LSCS | FT DIST | + | + | N | - | - | f | 1800 | A | 6 | 7 | PT | Y | LBW |
| 47 | 400984 | 25 | M | 159 | 57 | 22.55 | T | 38 | 17.01.11 | 6.56 | VD | - | - | - | N | - | - | f | 3750 | A | 8 | 9 | T | N | - |
| 48 | 401008 | 20 | P | 150 | 53 | 23.56 | T | 39 | 17.01.11 | 18.34 | VD | - | - | - | Y | 1 | L | f | 2900 | A | 7 | 8 | T | N | - |
| 49 | 401007 | 24 | M | 152 | 58 | 25.10 | PT | 36 | 17.01.11 | 20.53 | VD | - | - | - | N | - | - | f | 2300 | A | 7 | 8 | PT | N | - |
| 50 | 401091 | 20 | P | 150 | 56 | 24.89 | T | 38 | 18.01.11 | 3.07 | VD | - | + | - | N | - | - | M | 2750 | A | 8 | 9 | T | N | - |
| 51 | 401062 | 29 | M | 146 | 52 | 24.39 | T | 37 | 18.01.11 | 7.00 | VD | - | - | - | N | - | - | f | 2750 | A | 7 | 9 | T | N | - |
| 52 | 401056 | 24 | P | 154 | 59 | 24.88 | T | 38 | 18.01.11 | 10.57 | VD | - | - | - | N | - | - | f | 2750 | A | 6 | 7 | T | N | - |
| 53 | 399316 | 23 | P | 154 | 52 | 21.93 | T | 39 | 18.01.11 | 12.11 | LSCS | FT DIST | + | + | N | - | - | f | 2700 | A | 7 | 8 | T | N | - |
| 54 | 401259 | 22 | M | 156 | 61 | 25.07 | T | 38 | 18.01.11 | 16.47 | VD | - | - | - | N | - | - | M | 2300 | A | 7 | 9 | T | N | - |
| 55 | 401125 | 22 | P | 154 | 62 | 26.14 | T | 37 | 18.01.11 | 17.41 | VD | - | - | - | N | - | - | M | 3000 | A | 8 | 8 | T | N | - |
| 56 | 401234 | 35 | M | 156 | 62 | 25.48 | T | 40 | 18.01.11 | 18.11 | LSCS | DTA | - | + | N | - | - | f | 3050 | A | 8 | 8 | T | N | - |
| 57 | 379845 | 21 | P | 157 | 66 | 26.78 | T | 37 | 19.01.11 | 3.59 | VD | - | + | - | N | - | - | f | 2000 | A | 8 | 9 | IUGR | Y | LBW |
| 58 | 401354 | 28 | M | 158 | 60 | 24.03 | PT | 30 | 18.01.11 | 10.08 | VD | - | - | - | N | - | - | f | 1300 | FSB | - | - | PT | N | - |
| 59 | 400195 | 30 | M | 158 | 57 | 22.83 | T | 39 | 19.01.11 | 11.47 | LSCS | NW VBAC | - | - | N | - | - | f | 3300 | A | 8 | 9 | T | N | - |
| 60 | 401454 | 21 | P | 156 | 60 | 24.65 | T | 37 | 20.01.11 | 0.16 | LSCS | TH MEC STN LIQ, ERL LAB | + | + | N | - | - | M | 2450 | A | 7 | 8 | T | N | - |
| 61 | 401483 | 19 | P | 153 | 55 | 23.50 | T | 39 | 20.01.11 | 1.31 | VD | - | - | - | N | - | - | f | 2500 | A | 7 | 9 | T | N | - |
| 62 | 401478 | 24 | M | 153 | 56 | 23.92 | T | 38 | 20.01.11 | 5.47 | VD | - | - | - | N | - | - | M | 3100 | A | 7 | 9 | T | N | - |
| 63 | 401504 | 27 | M | 152 | 60 | 25.97 | T | 40 | 20.01.11 | 11.46 | V | TH MEC STN LIQ | + | + | Y | 1 | t | M | 2850 | A | 8 | 8 | T | N | - |
| 64 | 401502 | 23 | M | 147 | 48 | 22.21 | T | 39 | 20.01.11 | 15.15 | VD | - | - | - | N | - | - | M | 3400 | A | 8 | 8 | T | N | - |

## ANNEXURE III - MASTER CHART

| Serial Number | In patient Number | Age (Years) | Para | Body Mass Index | | | GA | | Delivery Details | | | | | | | | | Baby Details | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | Mode | | Fetal heart rate | Mec Stn Liq | Nuchal cord | | | | | | Apgar Score | | | NICU Admission | |
| | | | | Height (Cms) | Weight (Kg) | BMI (Kg/m$^2$) | Term | GA (Weeks) | Date | Time | Type | Indication | | | Nuchal cord | No. of loops | Type | Sex | Birth weight (gms) | Status | 1 Minutes | 5 Minutes | Gestational Age | Admission | Reason |
| 65 | 401552 | 24 | M | 157 | 50 | 20.28 | T | 38 | 20.01.11 | 15.56 | VD | - | + | + | N | - | - | f | 3150 | A | 5 | 8 | T | Y | RD |
| 66 | 401488 | 26 | M | 152 | 58 | 25.10 | T | 38 | 20.01.11 | 23.48 | LSCS | NPOL | - | + | N | - | - | M | 3000 | A | 9 | 9 | T | N | - |
| 67 | 401644 | 21 | M | 148 | 53 | 24.20 | T | 37 | 21.01.11 | 8.18 | VD | - | - | - | Y | 1 | t | M | 3250 | A | 7 | 8 | T | N | - |
| 68 | 401630 | 26 | M | 158 | 60 | 24.03 | T | 37 | 21.01.11 | 10.18 | VD | - | - | - | N | - | - | M | 2600 | FSB | - | - | T | N | - |
| 69 | 401655 | 21 | M | 154 | 58 | 24.46 | T | 38 | 21.01.11 | 11.22 | LSCS | PRE 2 LSCS | - | - | Y | 1 | L | f | 2900 | A | 7 | 9 | T | N | - |
| 70 | 401647 | 21 | M | 157 | 56 | 22.72 | T | 38 | 21.01.11 | 13.04 | VD | - | - | - | N | - | - | f | 2750 | A | 8 | 9 | T | N | - |
| 71 | 401252 | 22 | P | 153 | 58 | 24.78 | T | 39 | 21.01.11 | 16.46 | VD | - | - | - | N | - | - | f | 3250 | A | 8 | 8 | T | N | - |
| 72 | 401768 | 20 | M | 157 | 58 | 23.53 | T | 37 | 21.01.11 | 22.28 | VD | - | - | - | N | - | - | M | 2800 | A | 8 | 9 | T | N | - |
| 73 | 401565 | 21 | P | 155 | 62 | 25.81 | T | 38 | 21.01.11 | 23.08 | LSCS | DTA | + | - | N | - | - | M | 2900 | A | 9 | 9 | T | N | - |
| 74 | 399908 | 25 | M | 153 | 56 | 23.92 | T | 40 | 21.01.11 | 11.53 | VD | - | - | - | Y | 1 | L | M | 2700 | A | 7 | 8 | T | N | - |
| 75 | 401774 | 32 | M | 154 | 62 | 26.14 | T | 39 | 22.01.11 | 14.34 | VD | - | - | - | N | - | - | M | 2950 | A | 9 | 9 | T | N | - |
| 76 | 401788 | 25 | M | 152 | 57 | 24.67 | T | 38 | 22.01.11 | 15.35 | VD | - | - | - | N | - | - | M | 2500 | A | 7 | 8 | T | N | - |
| 77 | 401763 | 27 | M | 155 | 60 | 24.97 | T | 38 | 22.01.11 | 16.31 | LSCS | MACRS | - | - | N | - | - | M | 4150 | A | 7 | 8 | T | N | - |
| 78 | 401822 | 24 | M | 152 | 73 | 31.60 | T | 37 | 22.01.11 | 20.07 | VD | - | + | - | N | - | - | M | 2750 | A | 9 | 9 | T | N | - |
| 79 | 401727 | 24 | M | 157 | 61 | 24.75 | T | 38 | 22.01.11 | 21.17 | LSCS | NW VBAC | - | - | N | - | - | f | 2650 | A | 9 | 9 | T | N | - |
| 80 | 401292 | 21 | M | 149 | 55 | 24.77 | T | 40 | 22.01.11 | 23.20 | VD | - | - | + | N | - | - | M | 3250 | A | 9 | 9 | T | N | - |
| 81 | 398139 | 28 | M | 152 | 60 | 25.97 | T | 40 | 12.01.11 | 1.40 | LSCS | PRE 2 LSCS | + | - | N | - | - | M | 3500 | A | 7 | 8 | T | N | - |
| 82 | 400482 | 25 | M | 152 | 48 | 20.78 | T | 39 | 12.01.11 | 11.20 | LSCS | NW VBAC | + | - | N | - | - | f | 3200 | A | 8 | 9 | T | N | - |
| 83 | 400471 | 22 | M | 140 | 46 | 23.47 | T | 37 | 12.01.11 | 15.13 | VD | - | - | - | N | - | - | M | 3500 | A | 7 | 9 | T | N | - |
| 84 | 400393 | 20 | P | 153 | 64 | 27.34 | T | 37 | 12.01.11 | 18.33 | VD | - | - | - | N | - | - | M | 3000 | A | 7 | 8 | T | N | - |
| 85 | 400380 | 29 | P | 154 | 50 | 21.08 | T | 37 | 12.01.11 | 21.00 | LSCS | FT DIST, MEC STN LIQ | + | + | N | - | - | M | 4100 | A | 8 | 9 | T | N | - |
| 86 | 400636 | 28 | M | 144 | 40 | 19.29 | T | 39 | 13.01.11 | 7.12 | VD | - | - | - | Y | 1 | t | f | 3100 | A | 7 | 8 | T | N | - |
| 87 | 400326 | 23 | P | 148 | 51 | 23.28 | T | 39 | 13.01.11 | 10.24 | VD | - | - | - | Y | 1 | L | M | 2500 | A | 8 | 9 | T | N | - |
| 88 | 400616 | 26 | M | 147 | 53 | 24.53 | T | 40 | 13.01.11 | 11.15 | LSCS | MACRS | - | - | Y | 1 | t | f | 4500 | A | 8 | 9 | T | N | - |
| 89 | 400386 | 26 | P | 154 | 48 | 20.24 | T | 38 | 13.01.11 | 12.30 | VD | - | + | - | N | - | - | f | 3050 | A | 8 | 9 | T | N | - |
| 90 | 400728 | 23 | M | 155 | 60 | 24.97 | PT | 36 | 13.01.11 | 17.20 | VD | - | - | - | N | - | - | f | 2200 | FSB | - | - | PT | N | - |
| 91 | 400403 | 19 | P | 148 | 53 | 24.20 | PT | 32 | 13.01.11 | 18.23 | VD | - | + | - | N | - | - | M | 1600 | FSB | - | - | PT | N | - |
| 92 | 400762 | 26 | M | 148 | 60 | 27.39 | T | 37 | 13.01.11 | 18.44 | VD | - | + | - | N | - | - | f | 2300 | A | 8 | 9 | T | N | - |
| 93 | 402059 | 25 | P | 155 | 52 | 21.64 | T | 39 | 24.01.11 | 17.16 | LSCS | PL PRV | + | - | N | - | - | M | 2850 | A | 8 | 8 | T | N | - |
| 94 | 401992 | 22 | P | 142 | 45 | 22.32 | PT | 33 | 24.01.11 | 20.56 | VD | - | - | + | N | - | - | M | 1750 | A | 8 | 9 | PT | Y | LBW |
| 95 | 401543 | 22 | M | 148 | 40 | 18.26 | T | 37 | 24.01.11 | 23.37 | LSCS | NW VBAC | - | - | N | - | - | M | 2450 | A | 7 | 8 | T | N | - |
| 96 | 401996 | 26 | P | 152 | 49 | 21.21 | T | 39 | 25.01.11 | 6.03 | V | PME | + | - | N | - | - | f | 2600 | A | 6 | 8 | T | N | - |

## ANNEXURE III - MASTER CHART

| Serial Number | In patient Number | Age (Years) | Para | Body Mass Index | | | GA | | Delivery Details | | | | | | | | | Baby Details | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | Mode | | Fetal heart rate | Mec Stn Liq | Nuchal cord | | | | | | Apgar Score | | | NICU Admission | |
| | | | | Height (Cms) | Weight (Kg) | BMI (Kg/m$^2$) | Term | GA (Weeks) | Date | Time | Type | Indication | | | Nuchal cord | No. of loops | Type | Sex | Birth weight (gms) | Status | 1 Minutes | 5 Minutes | Gestational Age | Admission | Reason |
| 97 | 402150 | 20 | P | 156 | 54 | 22.19 | T | 37 | 25.01.11 | 3.06 | VD | - | - | - | N | - | - | f | 2750 | A | 9 | 9 | T | N | - |
| 98 | 402150 | 30 | M | 152 | 49 | 21.21 | T | 41 | 25.01.11 | 7.09 | VD | - | - | + | N | - | - | f | 3000 | A | 8 | 9 | T | N | - |
| 99 | 402118 | 20 | P | 153 | 52 | 22.21 | T | 37 | 25.01.11 | 13.15 | LSCS | FT DIST | + | + | Y | 1 | t | M | 3000 | A | 8 | 9 | T | N | - |
| 100 | 402169 | 25 | P | 153 | 56 | 23.92 | T | 39 | 25.01.11 | 16.28 | VD | - | + | - | N | - | - | f | 2800 | A | 7 | 9 | T | N | - |
| 101 | 402254 | 20 | P | 158 | 72 | 28.84 | T | 38 | 25.01.11 | 18.56 | VD | - | - | - | N | - | - | M | 2250 | A | 6 | 6 | IUGR | Y | LBW, IUGR |
| 102 | 402070 | 22 | P | 154 | 66 | 27.83 | T | 38 | 25.01.11 | 21.24 | VD | - | - | - | N | - | - | f | 2750 | A | 7 | 9 | T | N | - |
| 103 | 401478 | 23 | M | 152 | 52 | 22.51 | T | 40 | 25.01.11 | 20.10 | VD | - | + | - | N | - | - | M | 2650 | A | 7 | 8 | T | N | - |
| 104 | 402018 | 22 | M | 150 | 47 | 20.89 | T | 40 | 26.01.11 | 10.25 | LSCS | NW VBAC | - | - | Y | 1 | L | M | 2600 | A | 8 | 9 | T | N | - |
| 105 | 402034 | 30 | M | 153 | 54 | 23.07 | PT | 36 | 26.01.11 | 11.45 | LSCS | BR | - | - | N | - | - | M | 2250 | A | 7 | 8 | PT | N | - |
| 106 | 402283 | 21 | P | 155 | 60 | 24.97 | T | 38 | 26.01.11 | 15.09 | VD | - | - | - | Y | 1 | L | M | 2000 | A | 7 | 9 | IUGR | N | - |
| 107 | 402310 | 24 | M | 156 | 52 | 21.37 | T | 39 | 26.01.11 | 15.14 | VD | - | - | - | N | - | - | f | 3000 | A | 7 | 9 | T | N | - |
| 108 | 402309 | 26 | P | 153 | 47 | 20.08 | PT | 35 | 26.01.11 | 16.04 | LSCS | ECL | + | - | N | - | - | M | 2000 | A | 7 | 7 | PT | Y | LBW |
| 109 | 402329 | 25 | M | 154 | 56 | 23.61 | T | 37 | 26.01.11 | 20.50 | LSCS | FT DIST, MEC STN LIQ | + | + | N | - | - | M | 2200 | A | 7 | 9 | IUGR | Y | LBW, IUGR |
| 110 | 402345 | 21 | M | 156 | 60 | 24.65 | T | 38 | 27.01.11 | 5.23 | VD | - | - | - | N | - | - | M | 2900 | A | 8 | 9 | T | N | - |
| 111 | 402317 | 23 | P | 152 | 53 | 22.94 | T | 39 | 27.01.11 | 15.45 | VD | - | - | - | Y | 1 | t | M | 2900 | A | 5 | 9 | T | N | - |
| 112 | 402361 | 27 | P | 147 | 50 | 23.14 | T | 37 | 27.01.11 | 18.24 | LSCS | NPOL | - | - | N | - | - | M | 2900 | A | 7 | 8 | T | N | - |
| 113 | 402454 | 23 | P | 152 | 55 | 23.81 | PT | 35 | 28.01.11 | 1.24 | VD | - | + | - | N | - | - | f | 2200 | A | 7 | 9 | PT | N | - |
| 114 | 402538 | 23 | P | 154 | 50 | 21.08 | T | 38 | 28.01.11 | 11.13 | VD | - | - | - | N | - | - | M | 2700 | A | 7 | 8 | T | N | - |
| 115 | 402620 | 20 | P | 157 | 59 | 23.94 | T | 38 | 29.01.11 | 9.35 | VD | - | - | - | N | - | - | f | 2700 | A | 7 | 8 | T | N | - |
| 116 | 402247 | 28 | M | 154 | 56 | 23.61 | T | 37 | 29.01.11 | 10.14 | LSCS | NW VBAC | + | - | N | - | - | f | 2900 | A | 7 | 8 | T | N | - |
| 117 | 402532 | 23 | M | 148 | 52 | 23.74 | PT | 35 | 29.01.11 | 11.11 | LSCS | PL PRV | - | - | N | - | - | f | 2050 | A | 7 | 9 | PT | Y | LBW |
| 118 | 402751 | 20 | P | 149 | 51 | 22.97 | T | 40 | 29.01.11 | 15.21 | VD | - | - | + | N | - | - | f | 3200 | A | 7 | 9 | T | N | - |
| 119 | 402765 | 25 | P | 153 | 59 | 25.20 | T | 37 | 29.01.11 | 15.30 | LSCS | HIV | + | - | N | - | - | f | 2250 | A | 8 | 8 | IUGR | N | - |
| 120 | 402807 | 27 | P | 146 | 50 | 23.46 | PT | 34 | 29.01.11 | 11.48 | VD | - | - | - | N | - | - | M | 1800 | A | 6 | 6 | PT | Y | LBW |
| 121 | 402637 | 27 | P | 149 | 53 | 23.87 | T | 40 | 30.01.11 | 19.56 | V | PME | - | - | Y | 1 | t | f | 3100 | A | 7 | 8 | T | N | - |
| 122 | 402872 | 21 | P | 153 | 56 | 23.92 | T | 39 | 31.01.11 | 6.17 | LSCS | NW VBAC | - | - | N | - | - | f | 2500 | A | 7 | 9 | T | N | - |
| 123 | 402601 | 24 | M | 146 | 53 | 24.86 | T | 37 | 31.01.11 | 10.00 | LSCS | NW VBAC | + | - | N | - | - | M | 3100 | A | 7 | 9 | T | N | - |
| 124 | 402863 | 25 | P | 157 | 63 | 25.56 | T | 38 | 31.01.11 | 19.36 | LSCS | OBSTR LAB | - | - | N | - | - | f | 3000 | A | 6 | 7 | T | N | - |
| 125 | 402986 | 20 | M | 156 | 53 | 21.78 | T | 39 | 31.01.11 | 20.53 | LSCS | PRE 2 LSCS | - | - | N | - | - | f | 2500 | FSB | - | - | T | N | - |
| 126 | 403035 | 22 | P | 154 | 56 | 23.61 | T | 40 | 31.01.11 | 21.56 | VD | - | + | - | N | - | - | M | 2750 | A | 7 | 9 | T | N | - |
| 127 | 403160 | 24 | M | 155 | 60 | 24.97 | PT | 33 | 01.02.11 | 16.40 | VD | - | - | - | N | - | - | M | 1750 | A | 6 | 7 | PT | Y | LBW |
| 128 | 401480 | 18 | P | 150 | 57 | 25.33 | T | 38 | 01.02.11 | 18.00 | VD | - | - | - | N | - | - | f | 3050 | A | 7 | 8 | T | N | - |

## ANNEXURE III - MASTER CHART

| Serial Number | In patient Number | Age (Years) | Para | Body Mass Index | | | GA | | Delivery Details | | | | Fetal heart rate | Mec Stn Liq | Nuchal cord | | | Baby Details | | | | | | | | NICU Admission | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Height (Cms) | Weight (Kg) | BMI (Kg/m$^2$) | Term | GA (Weeks) | Date | Time | Mode | | | | Nuchal cord | No. of loops | Type | Sex | Birth weight (gms) | Status | Apgar Score | | Gestational Age | | |
| | | | | | | | | | | | Type | Indication | | | | | | | | | 1 Minutes | 5 Minutes | | Admission | Reason |
| 129 | 403104 | 22 | P | 158 | 62 | 24.84 | T | 37 | 01.02.11 | 23.09 | VD | - | + | - | N | - | - | f | 3000 | A | 7 | 8 | T | N | - |
| 130 | 402630 | 21 | P | 157 | 63 | 25.56 | PT | 30 | 02.02.11 | 7.04 | VD | - | + | - | N | - | - | f | 1000 | A | 5 | 7 | PT | Y | LBW |
| 131 | 399352 | 24 | M | 150 | 56 | 24.89 | T | 40 | 04.01.11 | 14.21 | LSCS | PRE 2 LSCS | - | + | N | - | - | f | 3000 | A | 7 | 8 | T | N | - |
| 132 | 39935 | 22 | P | 153 | 54 | 23.07 | T | 40 | 04.01.11 | 1.31 | VD | - | - | - | Y | 2 | L | f | 2700 | A | 8 | 9 | T | N | - |
| 133 | 399396 | 28 | M | 156 | 60 | 24.65 | T | 37 | 04.01.11 | 17.54 | LSCS | PRE LSCS, SCR TEND | - | - | Y | 1 | L | f | 3000 | A | 7 | 9 | T | N | - |
| 134 | 399445 | 22 | P | 154 | 53 | 22.35 | T | 39 | 05.01.11 | 2.10 | VD | - | - | - | N | - | - | M | 2900 | A | 6 | 9 | T | N | - |
| 135 | 399358 | 23 | M | 160 | 70 | 27.34 | T | 37 | 05.01.11 | 2.34 | VD | - | - | - | Y | 3 | t | f | 3500 | A | 7 | 8 | T | N | - |
| 136 | 399258 | 24 | P | 158 | 60 | 24.03 | T | 37 | 05.01.11 | 6.38 | VD | - | - | - | N | - | - | f | 2700 | A | 8 | 9 | T | N | - |
| 137 | 399359 | 20 | M | 156 | 56 | 23.01 | T | 38 | 05.01.11 | 11.15 | LSCS | PREV LSCS, NO LG ISS | + | - | N | - | - | M | 2700 | A | 8 | 9 | T | N | - |
| 138 | 396255 | 24 | M | 152 | 48 | 20.78 | T | 37 | 05.01.11 | 13.10 | VD | - | - | - | N | - | - | M | 2900 | A | 8 | 9 | T | N | - |
| 139 | 399607 | 27 | M | 158 | 60 | 24.03 | T | 39 | 05.01.11 | 23.12 | VD | - | - | - | Y | 1 | L | M | 3100 | A | 8 | 9 | T | N | - |
| 140 | 399609 | 21 | M | 158 | 52 | 20.83 | T | 38 | 05.01.11 | 23.41 | VD | - | - | - | N | - | - | M | 3250 | A | 7 | 9 | T | N | - |
| 141 | 399520 | 22 | M | 157 | 54 | 21.91 | T | 41 | 06.01.11 | 10.19 | LSCS | NW VBAC | - | + | N | - | - | M | 3500 | A | 7 | 8 | T | N | - |
| 142 | 399530 | 24 | M | 159 | 56 | 22.15 | T | 40 | 06.01.11 | 10.00 | LSCS | FL IND | - | + | N | - | - | f | 3000 | A | 8 | 8 | T | N | - |
| 143 | 399650 | 26 | M | 157 | 60 | 24.34 | T | 39 | 06.01.11 | 11.58 | LSCS | OLIG | - | - | N | - | - | M | 3650 | A | 8 | 9 | T | N | - |
| 144 | 399739 | 25 | M | 148 | 46 | 21.00 | T | 38 | 06.01.11 | 17.46 | LSCS | MEC STN LIQ | + | + | N | - | - | M | 2500 | A | 8 | 9 | T | N | - |
| 145 | 399543 | 24 | M | 158 | 56 | 22.43 | T | 41 | 06.01.11 | 1.59 | VD | - | - | + | N | - | - | f | 3200 | A | 7 | 8 | T | N | - |
| 146 | 399797 | 23 | M | 157 | 62 | 25.15 | T | 37 | 07.01.11 | 4.31 | VD | - | + | - | N | - | - | f | 2750 | FSB | - | - | T | N | - |
| 147 | 399610 | 22 | P | 153 | 48 | 20.50 | PT | 31 | 07.01.11 | 6.18 | VD | - | - | - | N | - | - | f | 900 | FSB | - | - | PT | N | - |
| 148 | 399249 | 19 | P | 150 | 46 | 20.44 | T | 39 | 07.01.11 | 8.59 | VD | - | - | - | N | - | - | M | 3500 | A | 8 | 9 | T | N | - |
| 149 | 394328 | 24 | M | 150 | 66 | 29.33 | T | 37 | 07.01.11 | 9.56 | LSCS | BR | - | - | N | - | - | f | 3250 | A | 8 | 9 | T | N | - |
| 150 | 399314 | 23 | M | 154 | 64 | 26.99 | T | 38 | 07.01.11 | 10.55 | LSCS | CPD | - | + | N | - | - | M | 3000 | A | 7 | 8 | T | N | - |
| 151 | 399734 | 21 | M | 149 | 53 | 23.87 | T | 38 | 07.01.11 | 10.21 | LSCS | NW VBAC | + | - | N | - | - | M | 2800 | A | 7 | 8 | T | N | - |
| 152 | 399811 | 22 | P | 157 | 64 | 25.96 | T | 39 | 07.01.11 | 11.43 | VD | - | - | - | N | - | - | f | 2700 | A | 8 | 9 | T | N | - |
| 153 | 399721 | 26 | P | 156 | 66 | 27.12 | T | 40 | 07.01.11 | 12.14 | LSCS | CPD | - | - | N | - | - | M | 3250 | A | 8 | 8 | T | N | - |
| 154 | 399817 | 21 | P | 155 | 64 | 26.64 | T | 39 | 07.01.11 | 12.48 | VD | - | - | - | N | - | - | M | 3200 | A | 8 | 9 | T | N | - |
| 155 | 398845 | 22 | P | 159 | 65 | 25.71 | T | 40 | 08.01.11 | 4.18 | LSCS | FT DIST, MEC STN LIQ | + | + | N | - | - | f | 2700 | A | 7 | 8 | T | N | - |
| 156 | 399966 | 20 | P | 157 | 55 | 22.31 | T | 41 | 08.01.11 | 5.55 | VD | - | + | + | N | - | - | M | 2500 | A | 7 | 8 | T | N | - |
| 157 | 400021 | 18 | P | 157 | 66 | 26.78 | T | 42 | 08.01.11 | 15.35 | LSCS | FT DIST, MEC STN LIQ | + | + | N | - | - | f | 2600 | A | 6 | 8 | T | N | - |
| 158 | 400044 | 20 | M | 151 | 48 | 21.05 | T | 38 | 08.01.11 | 16.42 | VD | - | - | - | N | - | - | f | 3200 | A | 8 | 9 | T | N | - |
| 159 | 398008 | 24 | M | 150 | 51 | 22.67 | T | 42 | 08.01.11 | 22.54 | VD | - | - | + | N | - | - | f | 2500 | A | 8 | 9 | T | N | - |
| 160 | 400019 | 27 | P | 148 | 50 | 22.83 | T | 41 | 09.01.11 | 0.43 | V | MEC STN LIQ | + | + | N | - | - | f | 2500 | A | 6 | 8 | T | N | - |

## ANNEXURE III - MASTER CHART

| Serial Number | In patient Number | Age (Years) | Para | Body Mass Index | | | GA | | Delivery Details | | | | | | | | | Baby Details | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | Mode | | Fetal heart rate | Mec Stn Liq | Nuchal cord | | | | | | Apgar Score | | | NICU Admission | |
| | | | | Height (Cms) | Weight (Kg) | BMI (Kg/m$^2$) | Term | GA (Weeks) | Date | Time | Type | Indication | | | Nuchal cord | No. of loops | Type | Sex | Birth weight (gms) | Status | 1 Minutes | 5 Minutes | Gestational Age | Admission | Reason |
| 161 | 400072 | 22 | P | 157 | 64 | 25.96 | T | 39 | 09.01.11 | 0.26 | VD | - | - | - | N | - | - | f | 2800 | A | 8 | 9 | T | N | - |
| 162 | 398127 | 25 | M | 151 | 55 | 24.12 | T | 38 | 06.01.11 | 23.00 | V | PROP V | - | - | N | | | M | 3500 | A | 7 | 9 | T | N | - |
| 163 | 400109 | 20 | P | 156 | 63 | 25.89 | T | 38 | 10.01.11 | 1.38 | VD | - | + | - | N | - | - | f | 2500 | A | 7 | 9 | T | N | - |
| 164 | 400128 | 19 | P | 162 | 70 | 26.67 | T | 38 | 10.01.11 | 2.10 | VD | - | - | - | N | - | - | M | 3400 | A | 8 | 9 | T | N | - |
| 165 | 400080 | 22 | M | 159 | 50 | 19.78 | T | 38 | 10.01.11 | 2.52 | VD | - | - | - | N | - | - | M | 2500 | A | 8 | 9 | T | N | - |
| 166 | 398754 | 28 | M | 154 | 50 | 21.08 | T | 40 | 10.01.11 | 2.55 | LSCS | NW VBAC | + | + | N | - | - | f | 3200 | A | 8 | 9 | T | N | - |
| 167 | 400205 | 26 | M | 159 | 61 | 24.13 | T | 41 | 10.01.11 | 21.41 | VD | - | - | + | N | - | - | M | 3100 | A | 7 | 9 | T | N | - |
| 168 | 400205 | 27 | M | 147 | 56 | 25.92 | T | 39 | 10.01.11 | 21.41 | VD | - | - | - | Y | 1 | t | M | 2900 | A | 7 | 9 | T | N | - |
| 169 | 400231 | 27 | M | 156 | 58 | 23.83 | T | 39 | 11.01.11 | 2.31 | VD | - | - | - | N | - | - | M | 2750 | A | 8 | 9 | T | N | - |
| 170 | 400334 | 25 | M | 157 | 58 | 23.53 | T | 37 | 11.01.11 | 8.33 | VD | - | + | - | N | - | - | f | 2500 | A | 8 | 9 | T | N | - |
| 171 | 399690 | 31 | M | 157 | 70 | 28.40 | T | 38 | 04.01.11 | 9.48 | LSCS | NW VBAC | - | - | N | - | - | f | 2500 | A | 8 | 9 | T | N | - |
| 172 | 400240 | 25 | M | 161 | 58 | 22.38 | T | 39 | 04.01.11 | 9.56 | LSCS | ASSY IUGR | - | - | N | - | - | f | 2550 | A | 8 | 9 | IUGR | N | - |
| 173 | 398971 | 22 | M | 159 | 60 | 23.73 | T | 39 | 11.01.11 | 11.20 | LSCS | NW VBAC | + | - | N | - | - | f | 3100 | A | 7 | 8 | T | N | - |
| 174 | 400390 | 22 | P | 163 | 60 | 22.58 | PT | 36 | 04.01.11 | 13.30 | VD | - | - | - | N | - | - | f | 2250 | A | 8 | 9 | PT | N | - |
| 175 | 400454 | 31 | M | 157 | 56 | 22.72 | PT | 33 | 11.01.11 | 17.27 | LSCS | PRE 2 LSCS, TRS LIE | - | - | N | - | - | f | 1750 | A | 6 | 6 | PT | Y | LBW |
| 176 | 400207 | 22 | P | 158 | 61 | 24.44 | T | 37 | 11.01.11 | 21.39 | VD | - | + | - | Y | 1 | t | M | 3300 | A | 7 | 9 | T | N | - |
| 177 | 400446 | 35 | M | 154 | 60 | 25.30 | T | 40 | 11.01.11 | 23.23 | V | PME | + | + | N | - | - | f | 2800 | A | 4 | 8 | T | N | - |
| 178 | 400466 | 25 | P | 149 | 53 | 23.87 | PT | 35 | 12.01.11 | 5.50 | VD | - | + | - | N | - | - | M | 2000 | A | 4 | 5 | PT | Y | LBW |
| 179 | 398950 | 20 | P | 156 | 50 | 20.55 | T | 38 | 12.01.11 | 6.50 | VD | - | - | - | N | - | - | M | 2300 | A | 7 | 9 | T | N | - |
| 180 | 4000108 | 30 | M | 160 | 74 | 28.91 | T | 37 | 10.01.11 | 11.38 | LSCS | NW VBAC | - | - | N | - | - | f | 3650 | A | 7 | 8 | T | N | - |
| 181 | 400735 | 25 | P | 148 | 50 | 22.83 | T | 37 | 14.01.11 | 0.15 | VD | - | - | - | Y | 1 | L | f | 2300 | A | 7 | 9 | IUGR | N | - |
| 182 | 400254 | 22 | M | 154 | 56 | 23.61 | T | 39 | 14.01.11 | 3.53 | VD | - | - | + | N | - | - | M | 2700 | A | 5 | 6 | T | N | - |
| 183 | 400778 | 25 | M | 157 | 56 | 22.72 | T | 37 | 14.01.11 | 10.39 | VD | - | + | - | N | - | - | f | 2900 | A | 8 | 9 | T | N | - |
| 184 | 400656 | 30 | M | 153 | 54 | 23.07 | T | 39 | 14.01.11 | 11.04 | LSCS | PRE 2 LSCS | - | - | N | - | - | M | 2800 | A | 8 | 9 | T | N | - |
| 185 | 400634 | 22 | M | 154 | 60 | 25.30 | T | 38 | 14.01.11 | 20.31 | VD | - | - | - | Y | 1 | t | f | 3200 | A | 5 | 6 | T | N | - |
| 186 | 399719 | 27 | M | 155 | 56 | 23.31 | T | 38 | 14.01.11 | 22.16 | VD | - | - | - | Y | 1 | t | f | 2900 | A | 4 | 5 | T | Y | RD |
| 187 | 400736 | 20 | P | 148 | 53 | 24.20 | PT | 30 | 15.01.11 | 0.06 | VD | - | - | - | N | - | - | M | 1000 | FSB | - | - | PT | N | - |
| 188 | 400844 | 20 | P | 156 | 50 | 20.55 | T | 39 | 15.01.11 | 3.21 | VD | - | - | + | N | - | - | f | 3000 | A | 5 | 6 | T | N | - |
| 189 | 400869 | 20 | M | 156 | 70 | 28.76 | T | 37 | 15.01.11 | 5.30 | VD | - | + | - | N | - | - | M | 2500 | A | 7 | 9 | T | N | - |
| 190 | 400876 | 23 | P | 156 | 56 | 23.01 | T | 39 | 15.01.11 | 15.44 | VD | - | - | - | N | - | - | M | 2900 | A | 8 | 9 | T | N | - |
| 191 | 400921 | 24 | M | 148 | 52 | 23.74 | T | 40 | 15.01.11 | 20.52 | LSCS | BR | - | + | N | - | - | M | 2500 | A | 8 | 8 | T | N | - |
| 192 | 400930 | 25 | M | 152 | 48 | 20.78 | PT | 31 | 15.01.11 | 22.30 | VD | - | + | - | N | - | - | f | 1250 | MSB | - | - | IUGR | N | - |

## ANNEXURE III - MASTER CHART

| Serial Number | In patient Number | Age (Years) | Para | Body Mass Index | | | GA | | Delivery Details | | | | | | | | | Baby Details | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | Mode | | Fetal heart rate | Mec Stn Liq | Nuchal cord | | | | | | Apgar Score | | | NICU Admission | |
| | | | | Height (Cms) | Weight (Kg) | BMI (Kg/m$^2$) | Term | GA (Weeks) | Date | Time | Type | Indication | | | Nuchal cord | No. of loops | Type | Sex | Birth weight (gms) | Status | 1 Minutes | 5 Minutes | Gestational Age | Admission | Reason |
| 193 | 400908 | 25 | M | 157 | 60 | 24.34 | T | 41 | 16.01.11 | 0.47 | VD | - | - | + | N | - | - | f | 2600 | A | 7 | 9 | T | N | - |
| 194 | 400873 | 20 | P | 148 | 50 | 22.83 | PT | 30 | 16.01.11 | 10.31 | VD | - | - | - | N | - | - | M | 1200 | A | 7 | 8 | PT | Y | LBW |
| 195 | 400938 | 22 | M | 160 | 64 | 25.00 | PT | 34 | 16.01.11 | 18.28 | LSCS | FT DIST | + | + | N | - | - | f | 1800 | A | 6 | 7 | PT | Y | LBW |
| 196 | 400984 | 25 | M | 156 | 60 | 24.65 | T | 39 | 17.01.11 | 6.56 | VD | - | + | - | N | - | - | f | 3750 | A | 8 | 9 | T | N | - |
| 197 | 401008 | 20 | P | 152 | 48 | 20.78 | T | 39 | 17.01.11 | 7.00 | LSCS | FL IND | - | - | Y | 1 | L | M | 2900 | A | 7 | 8 | T | N | - |
| 198 | 401007 | 24 | M | 156 | 54 | 22.19 | PT | 36 | 17.01.11 | 20.43 | VD | - | + | - | N | - | - | f | 2300 | A | 7 | 8 | PT | N | - |
| 199 | 401091 | 20 | P | 156 | 52 | 21.37 | T | 38 | 18.01.11 | 3.07 | VD | - | - | - | N | - | - | M | 2750 | A | 8 | 9 | T | N | - |
| 200 | 401062 | 29 | M | 156 | 63 | 25.89 | T | 37 | 18.01.11 | 7.01 | VD | - | - | - | N | - | - | f | 2750 | A | 7 | 9 | T | N | - |
| 201 | 401056 | 24 | P | 156 | 57 | 23.42 | T | 38 | 18.01.11 | 10.57 | VD | - | - | - | N | - | - | f | 2750 | A | 6 | 7 | T | N | - |
| 202 | 399316 | 23 | P | 160 | 74 | 28.91 | T | 39 | 18.01.11 | 12.11 | VD | - | + | - | N | - | - | f | 2700 | A | 7 | 8 | T | N | - |
| 203 | 401259 | 22 | M | 155 | 68 | 28.30 | T | 37 | 18.01.11 | 16.47 | VD | - | - | - | N | - | - | M | 3200 | A | 7 | 9 | T | N | - |
| 204 | 401125 | 22 | P | 153 | 55 | 23.50 | T | 38 | 18.01.11 | 17.41 | VD | - | - | - | N | - | - | M | 3000 | A | 8 | 8 | T | N | - |
| 205 | 401234 | 35 | M | 158 | 74 | 29.64 | T | 39 | 18.01.11 | 18.11 | LSCS | DTA | - | - | N | - | - | f | 3050 | A | 8 | 8 | T | N | - |
| 206 | 379845 | 21 | P | 154 | 56 | 23.61 | T | 37 | 19.01.11 | 3.59 | VD | - | - | - | N | - | - | f | 2000 | A | 8 | 9 | IUGR | Y | LBW |
| 207 | 401354 | 28 | M | 157 | 58 | 23.53 | PT | 31 | 18.01.11 | 10.08 | VD | - | + | - | N | - | - | f | 1300 | FSB | - | - | PT | N | - |
| 208 | 400195 | 30 | M | 156 | 60 | 24.65 | T | 37 | 19.01.11 | 4.47 | LSCS | NW VBAC | - | - | N | - | - | f | 3300 | A | 8 | 9 | T | N | - |
| 209 | 401454 | 21 | P | 158 | 68 | 27.24 | T | 37 | 20.01.11 | 0.16 | LSCS | TH MEC STN LIQ, ERL LAB | - | + | N | - | - | M | 2400 | A | 7 | 8 | T | N | - |
| 210 | 401483 | 19 | P | 153 | 61 | 26.06 | PT | 34 | 20.01.11 | 1.31 | VD | - | - | - | N | - | - | f | 2000 | A | 7 | 9 | PT | N | - |
| 211 | 401478 | 24 | M | 154 | 56 | 23.61 | T | 38 | 20.01.11 | 5.47 | VD | - | - | - | N | - | - | M | 3100 | A | 7 | 9 | T | N | - |
| 212 | 401504 | 27 | M | 154 | 57 | 24.03 | T | 39 | 20.01.11 | 11.46 | V | TH MEC STN LIQ | - | + | Y | 1 | t | M | 2850 | A | 8 | 8 | T | N | - |
| 213 | 401502 | 23 | M | 158 | 60 | 24.03 | T | 40 | 20.01.11 | 15.15 | VD | - | - | - | N | - | - | M | 3400 | A | 8 | 8 | T | N | - |
| 214 | 401552 | 24 | M | 156 | 64 | 26.30 | T | 37 | 20.01.11 | 15.56 | VD | - | + | + | N | | | M | 3150 | A | 5 | 8 | T | N | - |
| 215 | 401488 | 26 | M | 158 | 64 | 25.64 | T | 41 | 20.01.11 | 23.48 | LSCS | NPOL | - | + | N | - | - | M | 3250 | A | 7 | 8 | T | N | - |
| 216 | 401644 | 21 | M | 154 | 56 | 23.61 | T | 39 | 20.01.11 | 8.18 | VD | - | - | - | Y | 1 | t | M | 3250 | A | 7 | 8 | T | N | - |
| 217 | 401630 | 26 | M | 156 | 57 | 23.42 | T | 39 | 20.01.11 | 10.18 | VD | - | - | - | N | - | - | M | 2600 | FSB | - | - | T | N | - |
| 218 | 401655 | 21 | M | 156 | 50 | 20.55 | T | 39 | 21.01.11 | 11.22 | LSCS | PRE 2 LSCS | - | - | Y | 1 | L | f | 2900 | A | 7 | 9 | T | N | - |
| 219 | 398881 | 22 | P | 142 | 60 | 29.76 | T | 37 | 01.01.11 | 13.35 | VD | - | - | - | N | - | - | f | 2100 | A | 8 | 8 | IUGR | N | - |
| 220 | 399001 | 21 | P | 152 | 48 | 20.78 | PT | 33 | 01.01.11 | 23.45 | LSCS | SEV PIH | - | - | N | - | - | M | 2000 | A | 7 | 8 | PT | Y | LBW |
| 221 | 399038 | 22 | M | 154 | 62 | 26.14 | T | 40 | 02.01.11 | 9.51 | VD | - | - | + | N | - | - | M | 2800 | A | 8 | 9 | T | N | - |
| 222 | 399058 | 20 | P | 149 | 56 | 25.22 | PT | 35 | 02.01.11 | 16.02 | VD | - | - | - | N | - | - | f | 2200 | A | 8 | 9 | PT | N | - |
| 223 | 399046 | 20 | P | 153 | 55 | 23.50 | T | 41 | 02.01.11 | 19.56 | VD | - | + | + | N | - | - | M | 2950 | A | 8 | 9 | T | Y | RD |
| 224 | 399068 | 22 | M | 154 | 61 | 25.72 | T | 40 | 03.01.11 | 0.41 | VD | - | - | + | N | - | - | M | 2500 | A | 7 | 9 | T | N | - |

## ANNEXURE III - MASTER CHART

| Serial Number | In patient Number | Age (Years) | Para | Body Mass Index | | | GA | | Delivery Details | | | | | | | | | Baby Details | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | Mode | | Fetal heart rate | Mec Stn Liq | Nuchal cord | | | | | Birth weight (gms) | | Apgar Score | | | NICU Admission | |
| | | | | Height (Cms) | Weight (Kg) | BMI (Kg/m$^2$) | Term | GA (Weeks) | Date | Time | Type | Indication | | | Nuchal cord | No. of loops | Type | Sex | | Status | 1 Minutes | 5 Minutes | Gestational Age | Admission | Reason |
| 225 | 399033 | 27 | M | 148 | 46 | 21.00 | T | 38 | 03.01.11 | 0.36 | VD | - | - | - | Y | 3 | t | M | 2800 | A | 7 | 9 | T | N | - |
| 226 | 399091 | 22 | P | 154 | 60 | 25.30 | T | 39 | 03.01.11 | 10.59 | VD | - | - | - | N | - | - | M | 2750 | A | 7 | 8 | T | N | - |
| 227 | 399092 | 25 | M | 152 | 50 | 21.64 | T | 39 | 03.01.11 | 12.20 | VD | - | - | - | N | - | - | f | 2800 | A | 8 | 9 | T | N | - |
| 228 | 399442 | 30 | M | 154 | 56 | 23.61 | T | 38 | 03.01.11 | 22.45 | LSCS | FT DIST, MEC STN LIQ | + | + | Y | 2 | t | M | 2250 | A | 7 | 9 | IUGR | N | - |
| 229 | 399108 | 20 | P | 155 | 56 | 23.31 | T | 38 | 04.01.11 | 0.36 | VD | - | - | - | Y | 2 | L | M | 3200 | A | 7 | 9 | T | N | - |
| 230 | 398047 | 25 | P | 150 | 54 | 24.00 | PT | 31 | 04.01.11 | 9.38 | LSCS | SEV PIH | - | + | N | - | - | f | 1350 | A | 7 | 7 | PT | Y | LBW |
| 231 | 403479 | 28 | M | 150 | 47 | 20.89 | PT | 28 | 06.02.11 | 5.58 | VD | - | - | + | N | - | - | f | 800 | A | 4 | 8 | IUGR | Y | LBW |
| 232 | 403732 | 21 | M | 153 | 52 | 22.21 | PT | 36 | 06.02.11 | 6.06 | VD | - | + | - | N | - | - | f | 2400 | A | 7 | 9 | PT | N | - |
| 233 | 403734 | 22 | M | 159 | 64 | 25.32 | T | 38 | 06.02.11 | 9.37 | VD | - | - | - | N | - | - | M | 3200 | A | 6 | 8 | T | N | - |
| 234 | 402580 | 21 | M | 156 | 74 | 30.41 | T | 38 | 06.02.11 | 0.15 | VD | - | - | - | N | - | - | f | 2500 | A | 7 | 8 | T | N | - |
| 235 | 403310 | 28 | M | 144 | 56 | 27.01 | PT | 31 | 06.02.11 | 16.13 | LSCS | SEV PIH | - | - | N | - | - | M | 1350 | A | 6 | 6 | PT | Y | LBW, RD |
| 236 | 403766 | 31 | M | 153 | 65 | 27.77 | T | 38 | 06.02.11 | 17.10 | VD | - | - | - | Y | 1 | t | M | 3400 | A | 5 | 8 | T | N | - |
| 237 | 403258 | 20 | M | 143 | 47 | 22.98 | T | 38 | 06.02.11 | 18.47 | LSCS | SH ST | - | - | Y | 1 | L | M | 2800 | A | 8 | 9 | T | N | - |
| 238 | 403761 | 23 | M | 147 | 58 | 26.84 | T | 37 | 06.02.11 | 19.59 | VD | - | - | - | N | - | - | M | 3000 | A | 7 | 8 | T | N | - |
| 239 | 403745 | 25 | M | 157 | 64 | 25.96 | T | 39 | 07.02.11 | 0.05 | LSCS | NW VBAC | + | - | N | - | - | M | 2500 | A | 7 | 9 | T | N | - |
| 240 | 403797 | 21 | P | 151 | 63 | 27.63 | T | 37 | 07.02.11 | 6.16 | VD | - | - | - | Y | 1 | t | M | 2400 | A | 7 | 9 | T | N | - |
| 241 | 402642 | 19 | M | 154 | 60 | 25.30 | PT | 32 | 07.02.11 | 8.15 | VD | - | - | - | N | - | - | f | 1200 | A | 7 | 7 | PT | Y | LBW |
| 242 | 403906 | 29 | M | 148 | 56 | 25.57 | T | 41 | 07.02.11 | 16.24 | VD | - | - | + | N | - | - | f | 3000 | A | 8 | 8 | T | N | - |
| 243 | 403820 | 19 | P | 149 | 74 | 33.33 | T | 39 | 07.02.11 | 17.09 | VD | - | - | - | N | - | - | M | 3100 | A | 8 | 9 | T | N | - |
| 244 | 403803 | 25 | M | 132 | 48 | 27.55 | PT | 30 | 07.02.11 | 17.40 | VD | - | + | - | N | - | - | f | 1100 | A | 5 | 6 | PT | Y | LBW, RD |
| 245 | 403933 | 23 | M | 144 | 56 | 27.01 | T | 38 | 07.02.11 | 18.45 | LSCS | NW VBAC | - | - | N | - | - | f | 3400 | A | 7 | 8 | T | N | - |
| 246 | 403940 | 19 | P | 151 | 62 | 27.19 | T | 40 | 07.02.11 | 22.57 | VD | - | - | + | N | - | - | M | 2500 | A | 6 | 9 | T | Y | RD |
| 247 | 403952 | 26 | M | 153 | 69 | 29.48 | T | 37 | 08.02.11 | 3.30 | VD | - | - | - | N | - | - | f | 1500 | A | 7 | 9 | IUGR | Y | LBW |
| 248 | 403971 | 23 | P | 150 | 56 | 24.89 | PT | 32 | 08.02.11 | 4.30 | VD | - | + | + | N | - | - | f | 1000 | A | 4 | 5 | IUGR | Y | LBW, RD |
| 249 | 403975 | 21 | P | 148 | 51 | 23.28 | T | 39 | 08.02.11 | 4.49 | VD | - | - | - | N | - | - | M | 2800 | A | 7 | 8 | T | N | - |
| 250 | 403977 | 22 | M | 151 | 58 | 25.44 | T | 37 | 08.02.11 | 12.43 | VD | - | - | - | N | - | - | f | 2400 | A | 7 | 8 | T | N | - |
| 251 | 403963 | 19 | P | 134 | 53 | 29.52 | T | 37 | 08.02.11 | 14.35 | VD | - | - | - | N | - | - | M | 2300 | A | 7 | 8 | T | N | - |
| 252 | 404097 | 20 | P | 140 | 50 | 25.51 | T | 40 | 08.02.11 | 18.54 | LSCS | CPD | + | + | N | - | - | M | 2700 | A | 7 | 8 | T | N | - |
| 253 | 403843 | 20 | P | 151 | 60 | 26.31 | T | 38 | 08.02.11 | 21.18 | VD | - | - | - | N | - | - | f | 3100 | A | 7 | 9 | T | N | - |
| 254 | 404098 | 28 | M | 143 | 50 | 24.45 | T | 37 | 08.02.11 | 22.07 | VD | - | - | - | N | - | - | f | 2300 | A | 7 | 9 | T | N | - |
| 255 | 404003 | 25 | M | 150 | 64 | 28.44 | T | 40 | 09.02.11 | 0.14 | VD | - | - | + | N | - | - | M | 2750 | A | 8 | 9 | T | N | - |
| 256 | 404153 | 26 | P | 149 | 55 | 24.77 | T | 41 | 09.02.11 | 10.59 | VD | - | + | + | N | - | - | f | 2600 | A | 7 | 9 | T | N | - |

## ANNEXURE III - MASTER CHART

| Serial Number | In patient Number | Age (Years) | Para | Body Mass Index | | | GA | | Delivery Details | | | | | | | | | Baby Details | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | Mode | | Fetal heart rate | Mec Stn Liq | Nuchal cord | | | | | | Apgar Score | | | NICU Admission | |
| | | | | Height (Cms) | Weight (Kg) | BMI (Kg/m$^2$) | Term | GA (Weeks) | Date | Time | Type | Indication | | | Nuchal cord | No. of loops | Type | Sex | Birth weight (gms) | Status | 1 Minutes | 5 Minutes | Gestational Age | Admission | Reason | | |
| 257 | 404056 | 25 | M | 153 | 45 | 19.22 | T | 37 | 09.02.11 | 11.13 | LSCS | CPD | - | - | N | - | - | f | 3400 | A | 8 | 8 | T | N | - | | |
| 258 | 404154 | 23 | M | 155 | 62 | 25.81 | T | 39 | 09.02.11 | 13.28 | VD | - | - | - | N | - | - | M | 3000 | A | 7 | 8 | T | N | - | | |
| 259 | 404193 | 28 | M | 150 | 55 | 24.44 | T | 37 | 09.02.11 | 17.37 | LSCS | IUGR, AB DST FLOW | - | - | Y | 1 | L | M | 1500 | A | 8 | 8 | IUGR | Y | LBW | | |
| 260 | 404268 | 23 | M | 150 | 57 | 25.33 | T | 40 | 09.02.11 | 22.06 | LSCS | NW VBAC | - | - | Y | 2 | L | M | 2750 | A | 8 | 9 | T | N | - | | |
| 261 | 404284 | 23 | M | 152 | 48 | 20.78 | T | 39 | 10.02.11 | 2.50 | LSCS | DTA | - | - | N | - | - | f | 2900 | A | 7 | 8 | T | N | - | | |
| 262 | 404301 | 24 | M | 151 | 56 | 24.56 | T | 38 | 10.02.11 | 9.12 | VD | - | - | - | Y | 1 | t | M | 2700 | A | 7 | 8 | T | N | - | | |
| 263 | 404305 | 24 | M | 152 | 53 | 22.94 | T | 37 | 10.02.11 | 11.25 | LSCS | NW VBAC | + | - | N | - | - | M | 2850 | A | 8 | 9 | T | N | - | | |
| 264 | 404286 | 24 | M | 150 | 47 | 20.89 | T | 40 | 10.02.11 | 13.19 | VD | - | - | + | N | - | - | M | 2950 | A | 5 | 8 | T | N | - | | |
| 265 | 404207 | 24 | P | 153 | 60 | 25.63 | T | 39 | 11.02.11 | 1.06 | VD | - | - | - | Y | 1 | L | M | 2600 | A | 9 | 9 | T | N | - | | |
| 266 | 404288 | 21 | P | 150 | 74 | 32.89 | PT | 36 | 11.02.11 | 7.10 | VD | - | - | - | N | - | - | M | 1900 | FSB | - | - | PT | N | - | | |
| 267 | 404054 | 23 | M | 156 | 70 | 28.76 | T | 37 | 11.02.11 | 14.05 | VD | - | + | - | N | - | - | M | 1900 | A | 7 | 8 | IUGR | Y | LBW | | |
| 268 | 404468 | 30 | M | 150 | 64 | 28.44 | T | 38 | 11.02.11 | 19.29 | VD | - | - | - | Y | 2 | t | M | 2700 | A | 7 | 8 | T | N | - | | |
| 269 | 404524 | 28 | M | 145 | 56 | 26.63 | T | 39 | 11.02.11 | 19.40 | V | PME | - | - | N | - | - | M | 3200 | A | 8 | 8 | T | N | - | | |
| 270 | 404459 | 27 | M | 148 | 55 | 25.11 | T | 40 | 11.02.11 | 7.53 | V | PME | + | + | N | - | - | M | 3400 | A | 8 | 8 | T | N | - | | |
| 271 | 403974 | 26 | M | 151 | 64 | 28.07 | T | 40 | 12.02.11 | 2.40 | VD | - | - | + | N | - | - | M | 3400 | A | 9 | 9 | T | N | - | | |
| 272 | 404563 | 30 | M | 154 | 60 | 25.30 | T | 38 | 12.02.11 | 6.47 | VD | - | + | - | N | - | - | M | 2800 | A | 8 | 9 | T | N | - | | |
| 273 | 404573 | 22 | M | 150 | 60 | 26.67 | T | 37 | 12.02.11 | 10.21 | LSCS | BR | - | - | Y | 3 | t | M | 1450 | A | 4 | 7 | IUGR | Y | LBW | | |
| 274 | 404138 | 20 | P | 152 | 58 | 25.10 | PT | 32 | 12.02.11 | 10.36 | VD | - | - | - | N | - | - | f | 1250 | A | 7 | 8 | PT | Y | LBW | | |
| 275 | 404580 | 27 | M | 146 | 54 | 25.33 | T | 37 | 12.02.11 | 12.41 | VD | - | - | - | N | - | - | M | 3000 | A | 8 | 8 | T | N | - | | |
| 276 | 404960 | 24 | M | 150 | 66 | 29.33 | T | 37 | 12.02.11 | 23.05 | LSCS | PRE 2 LSCS, TRS LIE | - | - | N | - | - | M | 2850 | A | 8 | 8 | T | N | - | | |
| 277 | 404571 | 28 | M | 150 | 60 | 26.67 | T | 39 | 12.02.11 | 14.19 | VD | - | + | - | N | - | - | f | 3700 | A | 7 | 8 | T | N | - | | |
| 278 | 404665 | 24 | P | 152 | 64 | 27.70 | T | 37 | 12.02.11 | 19.18 | VD | - | - | - | N | - | - | M | 2500 | A | 8 | 9 | T | N | - | | |
| 279 | 404686 | 22 | M | 155 | 60 | 24.97 | T | 38 | 13.02.11 | 2.40 | VD | - | - | - | N | - | - | M | 2500 | A | 8 | 9 | T | N | - | | |
| 280 | 404627 | 20 | M | 155 | 62 | 25.81 | T | 39 | 13.02.11 | 2.53 | VD | - | - | - | N | - | - | f | 3200 | A | 7 | 9 | T | N | - | | |
| 281 | 405462 | 24 | P | 157 | 70 | 28.40 | T | 38 | 18.02.11 | 10.52 | V | FT DIST, MEC STN LIQ | + | + | N | - | - | f | 2500 | A | 8 | 9 | T | N | - | | |
| 282 | 405520 | 24 | M | 156 | 65 | 26.71 | T | 37 | 18.02.11 | 11.48 | VD | - | + | - | N | - | - | M | 2250 | A | 8 | 9 | T | N | - | | |
| 283 | 404861 | 24 | M | 157 | 65 | 26.37 | PT | 36 | 19.02.11 | 0.20 | VD | - | - | - | N | - | - | M | 2250 | A | 7 | 9 | PT | N | - | | |
| 284 | 405518 | 25 | P | 149 | 56 | 25.22 | T | 38 | 19.02.11 | 3.28 | VD | - | - | - | N | - | - | M | 3100 | A | 9 | 9 | T | N | - | | |
| 285 | 404885 | 24 | P | 158 | 68 | 27.24 | T | 39 | 19.02.11 | 0.20 | VD | - | + | - | N | - | - | f | 2900 | A | 8 | 9 | T | N | - | | |
| 286 | 405518 | 25 | P | 156 | 74 | 30.41 | T | 38 | 19.02.11 | 10.15 | LSCS | IMM ECL | - | - | N | - | - | M | 3000 | A | 8 | 9 | T | N | - | | |
| 287 | 403869 | 19 | P | 157 | 59 | 23.94 | T | 38 | 19.02.11 | 17.38 | VD | - | - | - | N | - | - | f | 3200 | A | 8 | 9 | T | N | - | | |
| 288 | 405597 | 23 | P | 160 | 65 | 25.39 | T | 39 | 19.02.11 | 21.36 | LSCS | ECL | + | + | N | - | - | M | 3400 | A | 7 | 9 | T | N | - | | |

## ANNEXURE III - MASTER CHART

| Serial Number | In patient Number | Age (Years) | Para | Body Mass Index | | | GA | | Delivery Details | | | | | | | | | Baby Details | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | Mode | | Fetal heart rate | Mec Stn Liq | Nuchal cord | | | | | | | Apgar Score | | | NICU Admission | |
| | | | | Height (Cms) | Weight (Kg) | BMI (Kg/m$^2$) | Term | GA (Weeks) | Date | Time | Type | Indication | | | Nuchal cord | No. of loops | Type | Sex | Birth weight (gms) | Status | 1 Minutes | 5 Minutes | Gestational Age | Admission | Reason |
| 289 | 404781 | 20 | P | 153 | 69 | 29.48 | T | 39 | 19.02.11 | 22.29 | VD | - | - | - | N | - | - | M | 2500 | A | 9 | 9 | T | N | - |
| 290 | 405639 | 25 | M | 157 | 72 | 29.21 | T | 37 | 20.02.11 | 11.30 | LSCS | NW VBAC | - | - | N | - | - | f | 3200 | A | 8 | 9 | T | N | - |
| 291 | 405622 | 19 | P | 155 | 64 | 26.64 | T | 40 | 20.02.11 | 11.33 | VD | - | - | + | N | - | - | M | 2600 | A | 7 | 8 | T | N | - |
| 292 | 405304 | 22 | M | 158 | 64 | 25.64 | T | 39 | 20.06.11 | 13.23 | VD | - | - | - | N | - | - | M | 2800 | A | 8 | 9 | T | N | - |
| 293 | 405638 | 23 | M | 157 | 89 | 36.11 | T | 40 | 21.02.11 | 0.42 | V | PME | + | + | N | - | - | f | 3000 | A | 7 | 9 | T | N | - |
| 294 | 405618 | 33 | M | 160 | 66 | 25.78 | T | 38 | 21.02.11 | 12.22 | LSCS | NW VBAC | - | - | N | - | - | f | 2900 | A | 7 | 8 | T | N | - |
| 295 | 400760 | 28 | M | 156 | 56 | 23.01 | T | 38 | 13.01.11 | 10.50 | VD | - | - | - | N | - | - | f | 2700 | A | 6 | 7 | T | N | - |
| 296 | 404667 | 24 | P | 150 | 62 | 27.56 | T | 39 | 13.02.11 | 3.30 | VD | - | - | - | N | - | - | f | 3300 | A | 7 | 9 | T | N | - |
| 297 | 404692 | 30 | M | 150 | 55 | 24.44 | T | 37 | 13.02.11 | 22.04 | LSCS | FT DIST | + | - | N | - | - | f | 2500 | A | 7 | 9 | T | N | - |
| 298 | 404496 | 23 | M | 148 | 52 | 23.74 | T | 38 | 14.02.11 | 1.03 | VD | - | + | - | N | - | - | f | 3000 | A | 8 | 9 | T | N | - |
| 299 | 404527 | 21 | M | 151 | 56 | 24.56 | PT | 30 | 14.02.11 | 6.48 | LSCS | PL PRV | - | - | N | - | - | M | 1100 | A | 6 | 6 | T | Y | LBW, RD |
| 300 | 404807 | 20 | P | 147 | 50 | 23.14 | PT | 33 | 14.02.11 | 22.44 | VD | - | - | - | N | - | - | M | 1600 | FSB | - | - | PT | N | - |
| 301 | 404025 | 20 | M | 152 | 64 | 27.70 | T | 37 | 14.02.11 | 12.31 | VD | - | + | - | N | - | - | M | 3700 | A | 7 | 9 | T | N | - |
| 302 | 404792 | 20 | P | 147 | 55 | 25.45 | T | 41 | 14.02.11 | 15.29 | VD | - | - | - | N | - | - | M | 3350 | A | 9 | 9 | T | N | - |
| 303 | 404963 | 23 | M | 147 | 55 | 25.45 | T | 39 | 14.02.11 | 19.18 | VD | - | - | - | N | - | - | M | 3100 | A | 8 | 9 | T | N | - |
| 304 | 400569 | 23 | M | 147 | 56 | 25.92 | T | 40 | 15.02.11 | 8.29 | VD | - | + | - | N | - | - | M | 2600 | A | 8 | 9 | T | N | - |
| 305 | 404948 | 24 | M | 152 | 55 | 23.81 | T | 38 | 15.02.11 | 10.18 | LSCS | PRE LSCS, NO LG ISS | - | - | N | - | - | M | 2500 | A | 9 | 9 | T | N | - |
| 306 | 404983 | 24 | P | 152 | 55 | 23.81 | T | 39 | 15.02.11 | 11.34 | VD | - | - | - | N | - | - | f | 2550 | A | 7 | 8 | T | N | - |
| 307 | 405052 | 25 | M | 149 | 57 | 25.67 | T | 40 | 15.02.11 | 20.01 | VD | - | - | + | N | - | - | M | 2800 | A | 8 | 9 | T | N | - |
| 308 | 405007 | 22 | P | 150 | 55 | 24.44 | T | 37 | 15.02.11 | 21.45 | VD | - | - | - | N | - | - | M | 2300 | A | 9 | 9 | T | N | - |
| 309 | 405664 | 19 | M | 147 | 55 | 25.45 | T | 41 | 15.02.11 | 22.19 | VD | - | - | + | N | - | - | M | 2700 | A | 7 | 8 | T | N | - |
| 310 | 405132 | 22 | P | 157 | 55 | 22.31 | T | 38 | 18.02.11 | 0.59 | VD | - | - | - | N | - | - | f | 3100 | A | 8 | 9 | T | N | - |
| 311 | 405137 | 23 | M | 154 | 56 | 23.61 | T | 37 | 16.02.11 | 2.31 | VD | - | - | - | N | - | - | M | 3080 | A | 8 | 9 | T | N | - |
| 312 | 405148 | 24 | P | 155 | 66 | 27.47 | T | 39 | 16.02.11 | 5.30 | VD | - | - | - | Y | 1 | t | M | 3000 | A | 6 | 9 | T | N | - |
| 313 | 405148 | 25 | P | 154 | 65 | 27.41 | T | 39 | 16.02.11 | 6.15 | VD | - | - | - | N | - | - | M | 2900 | A | 9 | 9 | T | N | - |
| 314 | 405148 | 25 | P | 154 | 62 | 26.14 | T | 38 | 16.02.11 | 6.15 | VD | - | - | - | Y | 1 | t | M | 2900 | A | 9 | 9 | T | N | - |
| 315 | 405081 | 23 | M | 156 | 74 | 30.41 | T | 38 | 16.02.11 | 7.20 | LSCS | NPOL | - | + | N | - | - | f | 3250 | A | 7 | 8 | T | N | - |
| 316 | 405147 | 26 | M | 158 | 64 | 25.64 | T | 38 | 16.02.11 | 9.00 | VD | - | - | - | N | - | - | M | 3150 | A | 8 | 9 | T | N | - |
| 317 | 405106 | 20 | M | 150 | 54 | 24.00 | T | 37 | 16.02.11 | 10.01 | LSCS | CPD | - | + | N | - | - | f | 2700 | A | 8 | 9 | T | N | - |
| 318 | 409369 | 24 | M | 148 | 52 | 23.74 | T | 38 | 16.02.11 | 11.07 | LSCS | FL IND | - | - | Y | 1 | L | f | 2700 | A | 7 | 8 | T | N | - |
| 319 | 405084 | 25 | M | 153 | 56 | 23.92 | T | 37 | 16.07.11 | 18.16 | VD | - | + | - | N | - | - | M | 2750 | A | 8 | 9 | T | N | - |
| 320 | 420672 | 24 | P | 155 | 64 | 26.64 | T | 37 | 16.02.11 | 10.09 | VD | - | - | - | N | - | - | M | 1900 | A | 7 | 8 | IUGR | Y | LBW |

## ANNEXURE III - MASTER CHART

| Serial Number | In patient Number | Age (Years) | Para | Body Mass Index | | | GA | | Delivery Details | | | | | | | | | Baby Details | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | Mode | | Fetal heart rate | Mec Stn Liq | Nuchal cord | | | | | | Apgar Score | | | NICU Admission | |
| | | | | Height (Cms) | Weight (Kg) | BMI (Kg/m$^2$) | Term | GA (Weeks) | Date | Time | Type | Indication | | | Nuchal cord | No. of loops | Type | Sex | Birth weight (gms) | Status | 1 Minutes | 5 Minutes | Gestational Age | Admission | Reason |
| 321 | 405265 | 22 | P | 157 | 64 | 25.96 | T | 38 | 17.02.11 | 0.10 | VD | - | - | - | N | - | - | M | 3500 | A | 7 | 8 | T | N | - |
| 322 | 405273 | 24 | M | 156 | 63 | 25.89 | T | 38 | 17.02.11 | 12.17 | VD | - | - | - | N | - | - | M | 3000 | A | 9 | 9 | T | N | - |
| 323 | 405290 | 24 | M | 153 | 60 | 25.63 | T | 37 | 17.02.11 | 4.42 | VD | - | - | - | N | - | - | f | 3000 | A | 8 | 9 | T | N | - |
| 324 | 404706 | 26 | M | 157 | 66 | 26.78 | T | 37 | 17.02.11 | 12.07 | LSCS | FL IND | - | - | N | - | - | f | 3150 | A | 8 | 9 | T | N | - |
| 325 | 405310 | 28 | M | 156 | 69 | 28.35 | T | 38 | 17.02.11 | 19.44 | VD | - | - | - | N | - | - | M | 2500 | A | 6 | 7 | T | N | - |
| 326 | 405401 | 22 | M | 151 | 54 | 23.68 | T | 39 | 18.02.11 | 0.70 | VD | - | - | - | N | - | - | f | 2600 | A | 9 | 9 | T | N | - |
| 327 | 404683 | 20 | P | 157 | 64 | 25.96 | T | 37 | 18.02.11 | 1.32 | LSCS | NPOL | - | - | N | - | - | M | 3000 | A | 9 | 9 | T | N | - |
| 328 | 405339 | 20 | P | 156 | 59 | 24.24 | T | 42 | 18.02.11 | 4.48 | VD | - | - | + | N | - | - | M | 2900 | A | 6 | 9 | T | N | - |
| 329 | 405353 | 22 | M | 157 | 64 | 25.96 | T | 37 | 18.02.11 | 9.55 | LSCS | NW VBAC | - | - | N | - | - | M | 2900 | A | 7 | 9 | T | N | - |
| 330 | 405237 | 20 | P | 154 | 67 | 28.25 | T | 39 | 18.02.11 | 14.56 | V | PME | - | - | N | - | - | M | 3100 | A | 8 | 9 | T | N | - |
| 331 | 405145 | 24 | P | 154 | 59 | 24.88 | T | 38 | 18.02.11 | 16.07 | LSCS | FT DIST | + | + | N | - | - | M | 3100 | A | 7 | 9 | T | N | - |
| 332 | 405326 | 27 | P | 160 | 78 | 30.47 | T | 39 | 18.02.11 | 21.00 | VD | - | - | - | N | - | - | f | 2700 | A | 8 | 9 | T | N | - |
| 333 | 406980 | 24 | P | 156 | 52 | 21.37 | T | 38 | 02.03.11 | 7.21 | VD | - | - | - | N | - | - | M | 3300 | A | 8 | 7 | T | N | - |
| 334 | 406993 | 24 | M | 140 | 48 | 24.49 | T | 38 | 02.03.11 | 7.35 | LSCS | PRE LSCS, SH ST | - | - | N | - | - | M | 2800 | A | 8 | 8 | T | N | - |
| 335 | 407060 | 36 | M | 150 | 68 | 30.22 | PT | 33 | 02.03.11 | 10.50 | VD | - | - | - | N | - | - | f | 1500 | A | 5 | 5 | PT | Y | LBW |
| 336 | 407044 | 24 | P | 150 | 47 | 20.89 | PT | 30 | 02.03.11 | 17.57 | VD | - | - | - | N | - | - | M | 1000 | MSB | - | - | PT | N | - |
| 337 | 403073 | 25 | M | 156 | 50 | 20.55 | T | 38 | 02.03.11 | 18.75 | VD | - | - | - | N | - | - | f | 2700 | A | 8 | 9 | T | N | - |
| 338 | 407140 | 25 | P | 155 | 50 | 20.81 | T | 40 | 02.03.11 | 19.46 | LSCS | FT DIST | + | + | N | - | - | f | 2700 | A | 7 | 9 | T | N | - |
| 339 | 404747 | 32 | P | 148 | 50 | 22.83 | PT | 36 | 03.03.11 | 0.27 | LSCS | PR PREG | - | - | N | - | - | M | 2200 | A | 5 | 8 | PT | Y | LBW |
| 340 | 407154 | 27 | M | 150 | 53 | 23.56 | T | 39 | 03.03.11 | 5.56 | VD | - | - | - | N | - | - | M | 2650 | A | 8 | 9 | T | N | - |
| 341 | 407150 | 21 | P | 156 | 60 | 24.65 | T | 37 | 03.03.11 | 6.22 | VD | - | - | - | N | - | - | M | 2700 | A | 7 | 9 | T | N | - |
| 342 | 407059 | 21 | P | 157 | 56 | 22.72 | T | 38 | 03.03.11 | 6.36 | VD | - | - | - | N | - | - | M | 2600 | A | 7 | 9 | T | N | - |
| 343 | 405470 | 28 | M | 156 | 50 | 20.55 | T | 39 | 03.03.11 | 9.29 | LSCS | PRE 2 LSCS | - | - | N | - | - | M | 3000 | A | 7 | 9 | T | N | - |
| 344 | 406446 | 26 | M | 148 | 50 | 22.83 | T | 37 | 03.03.11 | 9.43 | LSCS | CPD | - | - | N | - | - | M | 2800 | A | 7 | 8 | T | N | - |
| 345 | 406814 | 22 | M | 148 | 50 | 22.83 | T | 39 | 03.03.11 | 10.54 | LSCS | NW VBAC | - | - | N | - | - | M | 2800 | A | 8 | 9 | T | N | - |
| 346 | 407263 | 22 | M | 156 | 54 | 22.19 | T | 40 | 03.03.11 | 7.26 | VD | - | - | - | N | - | - | M | 3700 | A | 7 | 9 | T | N | - |
| 347 | 407308 | 24 | M | 150 | 46 | 20.44 | PT | 33 | 03.03.11 | 22.10 | VD | - | - | - | N | - | - | M | 1800 | A | 7 | 9 | IUGR | Y | LBW |
| 348 | 405030 | 31 | M | 161 | 64 | 24.69 | PT | 36 | 03.03.11 | 13.26 | LSCS | PR PREG | - | - | N | - | - | f | 2450 | A | 7 | 9 | PT | N | - |
| 349 | 407323 | 22 | P | 151 | 54 | 23.68 | T | 37 | 04.03.11 | 7.21 | VD | - | - | - | N | - | - | M | 2700 | A | 8 | 9 | T | N | - |
| 350 | 407332 | 20 | P | 152 | 50 | 21.64 | T | 37 | 04.03.11 | 8.45 | VD | - | - | - | N | - | - | f | 2350 | A | 7 | 9 | T | N | - |
| 351 | 407011 | 22 | M | 147 | 50 | 23.14 | T | 37 | 04.03.11 | 10.07 | LSCS | CPD | - | + | N | - | - | f | 2200 | A | 7 | 9 | T | N | - |
| 352 | 407329 | 28 | M | 150 | 42 | 18.67 | T | 38 | 04.03.11 | 14.44 | VD | - | - | - | N | - | - | M | 2700 | A | 8 | 9 | T | N | - |

## ANNEXURE III - MASTER CHART

| Serial Number | In patient Number | Age (Years) | Para | Body Mass Index | | | GA | | Delivery Details | | | | | | | | | Baby Details | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | Mode | | Fetal heart rate | Mec Stn Liq | Nuchal cord | | | | | | | Apgar Score | | | NICU Admission | |
| | | | | Height (Cms) | Weight (Kg) | BMI (Kg/m$^2$) | Term | GA (Weeks) | Date | Time | Type | Indication | | | Nuchal cord | No. of loops | Type | Sex | Birth weight (gms) | Status | 1 Minutes | 5 Minutes | Gestational Age | Admission | Reason |
| 353 | 407347 | 20 | P | 150 | 48 | 21.33 | T | 39 | 04.03.11 | 20.50 | VD | - | - | - | N | - | - | f | 2800 | A | 8 | 9 | T | N | - |
| 354 | 407183 | 20 | M | 148 | 48 | 21.91 | T | 40 | 05.03.11 | 11.10 | LSCS | CPD | - | + | N | - | - | f | 3200 | A | 8 | 9 | T | N | - |
| 355 | 407552 | 28 | M | 150 | 48 | 21.33 | T | 38 | 06.03.11 | 3.24 | LSCS | SEV PIH, HELLP | - | - | N | - | - | M | 2350 | A | 7 | 8 | IUGR | N | - |
| 356 | 407546 | 20 | P | 152 | 54 | 23.37 | T | 40 | 06.03.11 | 5.40 | V | PME | + | + | N | - | - | M | 3400 | A | 8 | 9 | T | N | - |
| 357 | 407518 | 20 | P | 154 | 55 | 23.19 | PT | 35 | 06.03.11 | 6.46 | LSCS | SEV PIH | - | + | N | - | - | M | 1900 | A | 6 | 8 | IUGR | Y | LBW |
| 358 | 407486 | 22 | P | 150 | 56 | 24.89 | T | 38 | 06.03.11 | 14.40 | LSCS | FT DIST | + | + | N | - | - | M | 2250 | A | 7 | 9 | IUGR | N | - |
| 359 | 407626 | 22 | P | 154 | 62 | 26.14 | T | 38 | 06.03.11 | 22.12 | VD | - | - | - | N | - | - | M | 2850 | A | 8 | 9 | T | N | - |
| 360 | 407450 | 22 | P | 152 | 52 | 22.51 | T | 38 | 06.03.11 | 14.42 | VD | - | - | - | Y | 1 | L | f | 3000 | A | 8 | 9 | T | N | - |
| 361 | 407761 | 26 | M | 150 | 50 | 22.22 | T | 37 | 07.03.11 | 17.01 | LSCS | PRE LSCS, IUGR | - | - | Y | 1 | L | f | 2250 | A | 8 | 9 | IUGR | N | - |
| 362 | 407587 | 19 | M | 154 | 52 | 21.93 | T | 38 | 07.03.11 | 6.00 | VD | - | - | - | N | - | - | f | 3000 | A | 6 | 7 | T | N | - |
| 363 | 407375 | 23 | M | 154 | 52 | 21.93 | T | 37 | 08.03.11 | 1.02 | VD | - | - | - | N | - | - | M | 2700 | A | 8 | 9 | T | N | - |
| 364 | 407680 | 22 | M | 152 | 50 | 21.64 | T | 39 | 08.03.11 | 2.10 | VD | - | - | - | N | - | - | f | 2850 | A | 8 | 9 | T | N | - |
| 365 | 407755 | 21 | P | 154 | 52 | 21.93 | T | 40 | 08.03.11 | 4.46 | VD | - | - | + | N | - | - | M | 2700 | FSB | - | - | T | N | - |
| 366 | 407723 | 27 | P | 154 | 56 | 23.61 | T | 39 | 08.03.11 | 5.06 | VD | - | - | - | N | - | - | f | 2850 | A | 7 | 9 | T | N | - |
| 367 | 407846 | 23 | M | 152 | 53 | 22.94 | T | 39 | 08.03.11 | 7.25 | LSCS | PRE 2 LSCS | - | - | N | - | - | f | 3000 | A | 7 | 8 | T | N | - |
| 368 | 407809 | 20 | P | 152 | 60 | 25.97 | T | 38 | 08.03.11 | 16.54 | VD | - | - | - | N | - | - | f | 2500 | A | 7 | 9 | T | N | - |
| 369 | 405744 | 22 | M | 157 | 66 | 26.78 | T | 37 | 21.02.11 | 15.07 | LSCS | PRE 2 LSCS, PROM | - | - | N | - | - | M | 3450 | A | 8 | 9 | T | N | - |
| 370 | 405783 | 22 | M | 153 | 64 | 27.34 | T | 39 | 21.02.11 | 21.07 | LSCS | PRE 2 LSCS | - | - | N | - | - | f | 3500 | A | 7 | 9 | T | N | - |
| 371 | 405796 | 24 | P | 157 | 67 | 27.18 | PT | 36 | 21.02.11 | 23.20 | VD | - | - | - | N | - | - | M | 2200 | A | 7 | 9 | PT | N | - |
| 372 | 405583 | 28 | M | 154 | 66 | 27.83 | T | 37 | 22.02.11 | 10.15 | LSCS | NW VBAC | - | - | N | - | - | M | 2750 | A | 7 | 8 | T | N | - |
| 373 | 405864 | 24 | P | 157 | 70 | 28.40 | T | 38 | 22.02.11 | 13.07 | VD | - | - | - | N | - | - | M | 2750 | A | 7 | 9 | T | N | - |
| 374 | 405854 | 21 | P | 159 | 66 | 26.11 | T | 37 | 22.02.11 | 13.21 | VD | - | - | - | N | - | - | M | 3100 | A | 7 | 9 | T | N | - |
| 375 | 405967 | 24 | M | 154 | 69 | 29.09 | T | 39 | 22.02.11 | 19.25 | LSCS | PRE 2 LSCS | - | - | N | - | - | M | 2700 | A | 8 | 9 | T | N | - |
| 376 | 405797 | 22 | P | 151 | 66 | 28.95 | T | 40 | 22.02.11 | 20.23 | VD | - | - | - | N | - | - | f | 2800 | A | 7 | 8 | T | N | - |
| 377 | 405801 | 26 | M | 155 | 62 | 25.81 | T | 40 | 23.02.11 | 2.51 | VD | - | - | - | N | - | - | f | 2800 | A | 8 | 9 | T | N | - |
| 378 | 406032 | 22 | P | 156 | 69 | 28.35 | T | 41 | 23.02.11 | 5.25 | VD | - | - | - | N | - | - | M | 3800 | A | 7 | 8 | T | N | - |
| 379 | 406028 | 26 | M | 157 | 72 | 29.21 | T | 38 | 23.02.11 | 6.50 | VD | - | - | - | N | - | - | f | 3500 | A | 7 | 8 | T | N | - |
| 380 | 406019 | 24 | M | 159 | 68 | 26.90 | PT | 33 | 23.02.11 | 10.09 | VD | - | - | - | N | - | - | M | 1750 | A | 7 | 9 | IUGR | Y | LBW |
| 381 | 405895 | 24 | P | 152 | 67 | 29.00 | T | 37 | 23.02.11 | 15.09 | LSCS | FT DIST | + | + | Y | 1 | l | M | 2400 | A | 7 | 7 | T | Y | RD |
| 382 | 406224 | 21 | P | 157 | 59 | 23.94 | T | 37 | 23.02.11 | 23.11 | V | FT DIST | + | + | N | - | - | f | 2500 | A | 6 | 7 | T | N | - |
| 383 | 406224 | 25 | M | 154 | 60 | 25.30 | T | 33 | 24.02.11 | 12.06 | LSCS | Ab Pl | - | - | N | - | - | f | 1900 | A | 7 | 8 | PT | Y | LBW |
| 384 | 405472 | 22 | M | 154 | 62 | 26.14 | T | 39 | 24.02.11 | 12.35 | VD | - | - | - | N | - | - | M | 3100 | A | 7 | 8 | T | N | - |

## ANNEXURE III - MASTER CHART

| Serial Number | In patient Number | Age (Years) | Para | Body Mass Index | | | GA | | Delivery Details | | | | | | | | | Baby Details | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | Mode | | Fetal heart rate | Mec Stn Liq | Nuchal cord | | | | | Birth weight (gms) | | Apgar Score | | | NICU Admission | |
| | | | | Height (Cms) | Weight (Kg) | BMI (Kg/m$^2$) | Term | GA (Weeks) | Date | Time | Type | Indication | | | Nuchal cord | No. of loops | Type | Sex | | Status | 1 Minutes | 5 Minutes | Gestational Age | Admission | Reason |
| 385 | 406183 | 26 | M | 154 | 67 | 28.25 | T | 41 | 24.02.11 | 12.54 | VD | - | - | + | N | - | - | f | 3100 | A | 7 | 9 | T | N | - |
| 386 | 406020 | 21 | P | 152 | 62 | 26.84 | T | 39 | 24.02.11 | 17.20 | VD | - | - | - | N | - | - | M | 3000 | A | 8 | 9 | T | N | - |
| 387 | 406266 | 20 | P | 154 | 69 | 29.09 | PT | 35 | 25.02.11 | 0.36 | VD | - | - | - | N | - | - | M | 1800 | A | 5 | 6 | PT | Y | LBW |
| 388 | 406337 | 22 | P | 156 | 67 | 27.53 | T | 38 | 25.02.11 | 5.58 | VD | - | - | + | N | - | - | M | 2900 | A | 2 | 2 | T | N | - |
| 389 | 406311 | 28 | M | 158 | 64 | 25.64 | T | 37 | 25.02.11 | 7.25 | VD | - | - | - | N | - | - | M | 3300 | A | 7 | 8 | T | N | - |
| 390 | 466417 | 21 | P | 148 | 60 | 27.39 | T | 38 | 25.02.11 | 11.23 | LSCS | CPD | - | - | N | - | - | M | 2600 | A | 7 | 9 | T | N | - |
| 391 | 405308 | 30 | M | 155 | 64 | 26.64 | T | 37 | 25.02.11 | 18.49 | VD | - | - | - | N | - | - | M | 2500 | A | 8 | 9 | T | N | - |
| 392 | 405548 | 27 | M | 156 | 66 | 27.12 | T | 37 | 25.02.11 | 20.05 | VD | - | - | - | Y | 2 | t | f | 2050 | A | 8 | 9 | T | Y | LBW |
| 393 | 403162 | 24 | M | 152 | 60 | 25.97 | T | 38 | 25.02.11 | 21.29 | VD | - | - | - | N | - | - | f | 3050 | A | 8 | 9 | T | N | - |
| 394 | 406321 | 26 | P | 157 | 62 | 25.15 | PT | 35 | 25.02.11 | 0.13 | VD | - | - | - | N | - | - | f | 1900 | A | 7 | 8 | PT | Y | LBW |
| 395 | 406178 | 30 | P | 147 | 54 | 24.99 | T | 37 | 26.02.11 | 1.13 | LSCS | FL IND | - | - | N | - | - | f | 2500 | A | 7 | 8 | T | N | - |
| 396 | 406558 | 31 | M | 157 | 66 | 26.78 | T | 37 | 26.02.11 | 3.12 | LSCS | PRE 2 LSCS | - | - | N | - | - | M | 2300 | A | 7 | 8 | T | N | - |
| 397 | 406496 | 32 | M | 157 | 63 | 25.56 | T | 38 | 26.02.11 | 3.31 | VD | - | - | - | N | - | - | M | 3650 | A | 7 | 8 | T | N | - |
| 398 | 406493 | 21 | P | 156 | 67 | 27.53 | T | 39 | 26.02.11 | 4.10 | VD | - | - | - | N | - | - | M | 4000 | A | 7 | 9 | T | N | - |
| 399 | 406560 | 26 | M | 154 | 66 | 27.83 | T | 39 | 26.02.11 | 4.53 | LSCS | NW VBAC | - | - | Y | 1 | L | M | 3100 | A | 7 | 9 | T | N | - |
| 400 | 406577 | 22 | M | 150 | 53 | 23.56 | T | 39 | 26.02.11 | 7.06 | VD | - | - | - | N | - | - | f | 3200 | A | 7 | 8 | T | N | - |
| 401 | 406581 | 26 | P | 153 | 63 | 26.91 | T | 37 | 26.02.11 | 9.22 | LSCS | BR | - | - | N | - | - | M | 2250 | A | 8 | 9 | T | N | - |
| 402 | 406369 | 20 | P | 151 | 60 | 26.31 | T | 39 | 26.02.11 | 10.37 | LSCS | PR PREG | - | - | N | - | - | f | 3000 | A | 8 | 9 | T | N | - |
| 403 | 406507 | 23 | P | 156 | 63 | 25.89 | T | 39 | 26.02.11 | 12.50 | VD | - | - | - | N | - | - | f | 2600 | A | 6 | 7 | T | N | - |
| 404 | 406584 | 24 | P | 154 | 64 | 26.99 | T | 37 | 26.02.11 | 13.59 | VD | - | - | - | N | - | - | f | 1300 | A | 7 | 8 | IUGR | Y | LBW |
| 405 | 406576 | 20 | P | 155 | 64 | 26.64 | T | 38 | 26.02.11 | 18.20 | V | PME | + | - | N | - | - | M | 2700 | A | 7 | 9 | T | N | - |
| 406 | 406640 | 23 | M | 157 | 69 | 27.99 | T | 37 | 26.02.11 | 18.25 | VD | - | - | - | N | - | - | f | 3100 | A | 7 | 9 | T | N | - |
| 407 | 406696 | 32 | M | 156 | 66 | 27.12 | T | 38 | 27.02.11 | 1.31 | LSCS | CPD | - | + | N | - | - | M | 3200 | A | 7 | 8 | T | N | - |
| 408 | 406706 | 27 | P | 156 | 66 | 27.12 | T | 40 | 27.02.11 | 14.45 | VD | - | - | + | N | - | - | f | 2850 | A | 7 | 9 | T | N | - |
| 409 | 406717 | 24 | M | 158 | 67 | 26.84 | T | 39 | 27.02.11 | 20.00 | VD | - | - | - | N | - | - | f | 3000 | A | 7 | 9 | T | N | - |
| 410 | 406724 | 27 | M | 153 | 65 | 27.77 | T | 37 | 27.02.11 | 8.27 | V | DR OCC POST | - | - | N | - | - | M | 3750 | A | 7 | 8 | T | N | - |
| 411 | 403726 | 21 | P | 158 | 67 | 26.84 | PT | 36 | 28.02.11 | 0.04 | VD | - | - | + | N | - | - | M | 1400 | A | 5 | 5 | IUGR | Y | LBW, RD |
| 412 | 406730 | 27 | P | 146 | 49 | 22.99 | PT | 33 | 28.02.11 | 2.42 | VD | - | - | - | Y | 1 | t | M | 1600 | FSB | - | - | PT | N | - |
| 413 | 406302 | 29 | P | 152 | 56 | 24.24 | PT | 35 | 24.02.11 | 21.50 | LSCS | ECL | + | - | N | - | - | f | 2000 | A | 7 | 8 | PT | Y | LBW |
| 414 | 406853 | 26 | M | 150 | 64 | 28.44 | T | 37 | 28.02.11 | 17.04 | LSCS | NW VBAC | - | - | N | - | - | M | 2040 | A | 8 | 9 | T | N | - |
| 415 | 406887 | 20 | P | 153 | 67 | 28.62 | PT | 30 | 28.02.11 | 19.55 | VD | - | - | - | N | - | - | M | 800 | FSB | - | - | PT | N | - |
| 416 | 406907 | 25 | M | 156 | 48 | 19.72 | T | 39 | 01.03.11 | 11.08 | V | PROP V | - | - | N | - | - | f | 2800 | A | 7 | 9 | T | N | - |

## ANNEXURE III - MASTER CHART

| Serial Number | In patient Number | Age (Years) | Para | Body Mass Index | | | GA | | Delivery Details | | | | | | | | | Baby Details | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | Mode | | Fetal heart rate | Mec Stn Liq | Nuchal cord | | | | | | | Apgar Score | | | NICU Admission | |
| | | | | Height (Cms) | Weight (Kg) | BMI (Kg/m$^2$) | Term | GA (Weeks) | Date | Time | Type | Indication | | | Nuchal cord | No. of loops | Type | Sex | Birth weight (gms) | Status | 1 Minutes | 5 Minutes | Gestational Age | Admission | Reason |
| 417 | 406913 | 22 | M | 148 | 56 | 25.57 | T | 38 | 01.03.11 | 2.01 | LSCS | CPD | - | + | N | - | - | M | 3200 | A | 8 | 9 | T | N | - |
| 418 | 406854 | 26 | M | 157 | 66 | 26.78 | PT | 35 | 01.03.11 | 3.10 | VD | - | - | - | N | - | - | f | 1700 | A | 7 | 8 | IUGR | N | - |
| 419 | 406924 | 23 | P | 154 | 64 | 26.99 | T | 37 | 01.03.11 | 9.14 | VD | - | - | - | N | - | - | M | 3000 | A | 7 | 9 | T | N | - |
| 420 | 406788 | 30 | M | 153 | 64 | 27.34 | T | 37 | 01.03.11 | 11.50 | LSCS | PRE 2 LSCS | - | - | N | - | - | f | 2300 | A | 8 | 9 | T | N | - |
| 421 | 406947 | 18 | M | 155 | 49 | 20.40 | PT | 36 | 02.03.11 | 1.23 | VD | - | - | - | Y | 2 | t | M | 2250 | A | 8 | 9 | IUGR | N | - |
| 422 | 407014 | 24 | M | 154 | 50 | 21.08 | T | 38 | 02.03.11 | 2.50 | VD | - | - | - | Y | 2 | t | f | 2800 | A | 8 | 9 | T | N | - |
| 423 | 406980 | 24 | M | 156 | 54 | 22.19 | T | 40 | 02.03.11 | 7.12 | VD | - | - | + | N | - | - | M | 3300 | A | 8 | 9 | T | N | - |
| 424 | 406993 | 24 | M | 142 | 44 | 21.82 | T | 37 | 02.03.11 | 7.35 | LSCS | SH ST | - | - | N | - | - | M | 2800 | A | 8 | 8 | T | N | - |
| 425 | 407060 | 36 | M | 154 | 57 | 24.03 | PT | 34 | 02.03.11 | 10.50 | VD | - | - | - | N | - | - | f | 1500 | A | 5 | 5 | PT | Y | LBW, RD |
| 426 | 407044 | 24 | P | 153 | 50 | 21.36 | PT | 36 | 02.03.11 | 17.57 | VD | - | - | - | N | - | - | M | 1000 | FSB | - | - | PT | N | - |
| 427 | 403073 | 25 | M | 156 | 52 | 21.37 | T | 37 | 02.03.11 | 18.15 | VD | - | - | - | N | - | - | f | 2700 | A | 8 | 9 | T | N | - |
| 428 | 407140 | 36 | P | 156 | 55 | 22.60 | T | 40 | 02.03.11 | 19.46 | LSCS | FT DIST | + | + | N | - | - | f | 2700 | A | 7 | 9 | T | N | - |
| 429 | 404747 | 32 | P | 153 | 60 | 25.63 | PT | 36 | 03.03.11 | 0.22 | LSCS | PR PREG | - | - | N | - | - | M | 2200 | A | 5 | 8 | PT | Y | LBW, PT |