

**A COMPARATIVE STUDY BETWEEN WHO
MODIFIED PARTOGRAM AND PAPERLESS
PARTOGRAM IN THE EFFECTIVE MANAGEMENT
OF LABOUR**

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CERTIFICATE

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ABBREVIATIONS

WHO	-	World Health Organisation
LMP	-	Last Menstrual Period
ARM	-	Artificial Rupture of membranes
ETD	-	Expected time of delivery
OR	-	Odds Ratio
PV	-	Per vaginal
LSCS	-	Lower Segment Caesarean Section
NICU	-	Neonatal Intensive Care Unit
RDS	-	Respiratory Distress Syndrome
ROM	-	Rupture of Membranes.
ROS	-	Reactive Oxygen Species.

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Introduction

INTRODUCTION

The partogram more commonly called partograph is a printed paper that is kept available in labour rooms, and in this the observations of labour are noted. It was designed with the aim to provide at a glance a pictorial representation of labour, in order to sensitise obstetric care providers to deviations in the normal process and course of labour at an initial state and thereby make necessary arrangements for transfer to a tertiary care centre if required.

The active management of labour has always stimulated a lot of debate. Despite extensive research particularly in the 1970s, the active management of labour remains a topic of controversy. Obstetrical practices differ extensively across the world and also within individual health systems. This disparity exists even though we still have a background of alarmingly high maternal mortality rates throughout most of the developing world and a rising caesarean section rate in the developed world, but with little evidence that fetal outcome is better for it.

It is estimated that more than half a million antenatal patients succumb to the pregnancy complications and the majority of them are from countries with inadequate resources. Studies have shown that on the whole, about 500 women die for every one lakh births. India striving to make

a mark on the obstetric platform has many patients facing life threatening complications with obstetric blood loss in the immediate postpartum period being the most common but the most feared misfortunes namely obstructed labor and the rupture of the uterus contributes to over two third maternal losses in neglected labour.

Most of the deaths are theoretically preventable and many die as a result of inappropriately timed referral to an obstetric unit due to prompt lack of identification of deviations from the normal course of labour and poor management within obstetric units. For those who survive, the sequelae of difficult labour (anaemia, infertility through puerperal infection and vesico-vaginal fistulae) may be devastating. Fetal outcome in such cases is also poor. Hence it is a must that we realise that early detection of abnormal progress of labour and the prevention of prolonged labour would significantly reduce the risk of postpartum haemorrhage and sepsis, and eliminate obstructed labour, uterine rupture and its sequelae .

Here comes the role of skilled management of labour using a partograph, a simple chart for recording information about the progress of labour and the condition of a woman and her baby during labour, is key to the appropriate prevention and treatment of prolonged labor and its complications. The partograph serves as an "early warning system" and assists in early decision on transfer, augmentation and termination of

labour. The WHO approved and encouraged the universal use of the partograph during the Safe Motherhood Initiative Nairobi Conference after which it came into routine use.

The partograph gained popularity and has been in use in number of countries. It has been found to be inexpensive, effective and practical and also user friendly in a variety of different settings including developed and developing countries. It has shown to be effective in preventing prolonged labor, in reducing operative intervention and in improving the neonatal outcome^(11,12,13,14,15,16).

What we have to face is the fact that even though the WHO simplified the partograph model with an attempt to make it more user-friendly in 2000, obstetric units rarely use it in low-resource areas. Sometimes it is plotted but the interpretation is incorrectly understood⁽¹⁷⁾. Dr. Debdas came with the argument that the WHO's partograph fails to meet the very purpose and the aim of its introduction is defeated. The partograph does not seem to adapt to local needs, it is found to be cumbersome for those who use it, and cannot be used given the limited resources especially with shortage of manpower. Dr. Debdas believes the partograph takes a strain on the user as it takes a lot of time to plot. Given the extensive workload of our clinicians and also the diligence it requires to plot for the local skilled birth attendants in primary health centres, as most

of them have not received higher education. Thus arose the solution to this and he suggested a new, low-skill method for easy labour monitoring and preventing prolonged labor—the paperless partogram. This novel partogram takes only 20 seconds, and it required only basic addition and the knowledge to read the clock. Its greatest benefit is its ability to help the user effectively mobilise clinicians to prevent prolonged labor, and make necessary arrangements, appropriate on all counts ⁽¹⁸⁾.

This prolonged labour prevention strategy promises to make the plotting cheap and easy even for the local dais and health workers who have not received much formal education. The simplicity of this model also makes the paperless partogram an effective hand-over tool especially when attending doctors change shifts, so that the monitoring of the labouring women is not interrupted and it make sure that they receive unflinching support and care of the obstetric team. The paperless partogram illustrates the potential for about 20 seconds and two time stamps to help save the lives of mothers and babies (19).

Our study aimed at comparing the WHO partograph with the paperless partograph in women delivering at Institute of Obstetrics and Gynaecology and Institute of Social Obstetrics Kasturba Gandhi Hospital with a view to determine the efficacy of both the partographs.

Review of Literature

REVIEW OF LITERATURE

Partograph was a term that originated from the Greek literature - "Labour curve"(20). It is a pictorial representation of labour progress and vital parameters of both the parturient and her fetus, which helps to decide when it is required to augment labour. It helps the clinician to promptly identify CPD much before the woman goes in for obstructed labour. Thus it serves as an "early warning system" and aids in early decision making on the shifting and transport of patients who need to be referred to a higher unit for specialised health care. It improves the diligence of accurate marking and recording of the obstetric cases to give a comprehensive description of the mother and the foetus and availing options for the treatment if any abnormality is noted. ⁽²¹⁾.

Physiology of progress of labour:

Labor is defined as the culmination of cascading events that result in the expulsion of the fetus from the uterus.

Normal labor is the process by which a fetus between 37 completed weeks to 42 weeks is delivered by vertex presentation within 18hrs from the onset of true uterine contractions by vaginal route with minimal aid and without any maternal or fetal complication.

Abnormalities of labour such as protracted labour or disorders of arrest of either dilatation or descent lead on to a further distressing situation if left unidentified. About one fourth of labour falls into this category.

First stage : (Stage of cervical dilatation) It is from the onset of the true uterine contractions to the complete dilation of the cervix. In a primi it is between 12-14 hrs and in a Multi it is between 6-8 hrs.

Second stage : (Stage of fetal expulsion) – It is from the full dilatation of the Cervix to the complete expulsion of the fetus. In a primi it is 1-2hrs and in a Multi it is 30-60 minutes.

Third Stage : (Stage of placental expulsion- Placenta and Membranes) It is from the time of delivery of the fetus to the time until the placenta is fully delivered along with membranes intoto. Its duration is about 5-15 minutes in both Primi and Multi.

Fourth Stage: (Stage of retraction) :It is for 2 hrs following the IIIrd stage of labour wherein uterine retraction would be maintained and one needs to observe for any complications ⁽²²⁾.

Labour has been identified to have two different phenomenons: one is called phase and the other is called stage. First stage is split into two phases, namely latent and active. The latent phase of labour is the time from

when the process of labour commences to the time until it becomes active. Latent phase is seen to be having contractions that are irregular and more or less perceived as mild pains by the mother with the changes in cervical dilation occurring at less than one cm per hour. This phase is not influenced by maternal age, birth weight, or obstetric abnormalities.

	Nulliparous	Multiparous
Latent phase	6.4 h	4.8 h
Abnormal	20 h	14 h

Active labour requires >80 percent effacement and >4cm dilatation of cervix. Active phase is subdivided into three additional phases:

- Acceleration phase
- Phase of maximum slope
- Deceleration phase.

Active phase -begins at 4 centimetres when cervical dilatation is plotted against time: this is the beginning of the active phase characterised by painful contractions of increasing frequency, intensity, and duration accompanied by more rapid (usually >1 cm /h) cervical change.

The determination of whether a woman is in labour is made within one hour of admission. Diagnosis of labour is made only when painful contractions are accompanied by any one of the following :

Bloody show Rupture of the membranes

Full cervical effacement.

The correct diagnosis of labour is considered to be the single most important determination in the management of labour because an incorrect diagnosis of active labor will lead to inappropriate interventions and an increased likelihood of cesarean delivery.

PREPARATION OF THE PATIENT:

Recent evidences seem to go against the popular belief of having to shave the patient regularly as it may aggravate the microbial infection.

Adequate hydration by drinking plenty of oral fluids is advised. As regards to diet it is never advisable to keep the woman in starvation but on the other hand a full stomach is strongly condemned.

Antibiotic prophylaxis : may not be routinely recommended as it predisposes to antibiotic resistance in patients where it is not required. However preterm rupture of membranes warrants the administration of intravenous antibiotics especially if it is more than 24 hours. This is done

with the aim to prevent maternal infection and also sepsis to the newborn. Ampicillin is the preferable antibiotic used.

The education of the patient about the normal course and complications of labour should be done.

Ambulation in the first stage is allowed. Mobilisation of the patient is encouraged and she may use the restroom at her will during the first stage of labour. The only fear being that some reluctant patients do not void and may have a full bladder at the commencement of second stage and that may hinder progress of labour.

Monitoring during labour — All women in labour need surveillance which includes monitoring of vital signs and FHR since one fourth of neonatal complications seem to occur in pregnancies with no prior risk factors. It is mandatory to have a skilful knowledge of the adequacy of uterine contractions. It must be borne in mind that most of the clinical information about the labouring women is given by per abdomen examination.

Per vaginal examinations should be done only when absolutely necessary. Generally we perform vaginal examinations:

On admission to check if patient has entered active phase of labour

At rupture of membranes to evaluate for cord prolapse.

Prior to intrapartum administration of analgesia.

If the fetal heart deceleration occurs, to evaluate for cord prolapse or uterine rupture. It refers to active control, rather than passive observation, over the course of labour by the obstetrical provider.

The active management of labour is generally limited to women who meet the following criteria:

- Nulliparous
- Term pregnancy
- Singleton infant in cephalic presentation
- No pregnancy complications .

It includes three essential elements :

- Careful diagnosis of labour by strict criteria ,
- Constant monitoring of labor with specific standards for normal progression ,
- Prompt intervention (eg: amniotomy, high dose oxytocin) according to established guidelines if progress is unsatisfactory .

Nulliparous women generally tend to have failure of progression. Administration of oxytocin, sometimes at high dosages, is one of the interventions involved in active management.. This is safer primigravida than in a scarred uterus which is more prone to rupture as a result of manipulation or previous surgery.

Other methods of augmentation of labour include routine amniotomy. Rupture of the fetal membranes provides information about fetal status, but does not appear to significantly accelerate labour .There is limited evidence to show any advantage over routine amniotomy and oxytocin augmentation when compared with conservative management of labour. In a normally progressing labour, there is no need for routine amniotomy. similarly oxytocin acceleration is not indicated in place of adequate uterine contractions. And therefore interventions with amniotomy and/or high dose oxytocin are initiated only if progress does not proceed according to the defined standards.

In the Dublin protocol, amniotomy is done and absence of meconium in amniotic fluid is confirmed before oxytocin acceleration. Rupture of membranes artificially is performed to assess the condition of the fetus especially if placement of a scalp electrode is required or in some centres where they would place a catheter to know the intrauterine pressure.

However the pitfalls of early amniotomy include cord prolapse and complete loss of amniotic fluid which might lead to dry labour. If without the knowledge we tend to artificially rupture the membranes in cases of polyhydramnios especially when the head is not fixed, we must keep in mind to do a controlled rupture to avoid inadvertently inducing iatrogenic cord prolapse. This “controlled amniotomy” permits emergency cesarean delivery in the event of an umbilical cord prolapse. Artificial rupture of membranes is avoided in those having active genital infections to prevent dissemination and ascend into the fetal membranes. In the absence of medical contraindications, labour that fails to progress is augmented with oxytocin.

Active phase arrest is diagnosed when a protraction disorder persists despite oxytocin therapy to achieve ≥ 200 Montevideo units for greater than two hours; cesarean delivery is typically performed at this point.

Hypocontractile uterine activity - is the most common cause of protraction or arrest disorders in the first stage of labour. This refers to uterine activity that is either not sufficiently strong or not appropriately coordinated to dilate the cervix and expel the fetus. It occurs in 3-8 % of parturient and can be quantified as uterine contraction pressures less than 200 Montevideo units. The National Institute for Health and Clinical Excellence (NICE) also recommended starting oxytocin and monitoring the

progress of labour over the next four hours. If less than 2 cm of cervical dilatation occurred, they recommended consideration of cesarean delivery.

The other cause of dystocia is cephalopelvic disproportion -A disproportion between the size of the fetus relative to the mother . This can lead to slow or arrested labor during the active phase. However, it is usually due to fetal malposition (eg, extended or asynclitic fetal head) or malpresentation (mento- posterior, brow) rather than a true disparity between fetal and maternal pelvic dimensions. In such cases oxytocin augmentation is detrimental.

Fetal heart rate monitoring:

The American College of Obstetricians and Gynecologists suggests that electronic fetal monitoring tracings to be reviewed :

	First stage	Second stage
Low risk	30 min	15 min
High risk	15 min	5 min

In general, continuous intrapartum FHR monitoring is suggested for high-risk patients and when FHR below 110 or over 160 bpm. Otherwise intermittent auscultation of the fetal heart will suffice in a low risk mother.

Once a woman is in established active labour, intermittent auscultation of the fetal heart after a contraction should be continued. Intermittent auscultation can be undertaken by either Doppler ultrasound or Pinard stethoscope.

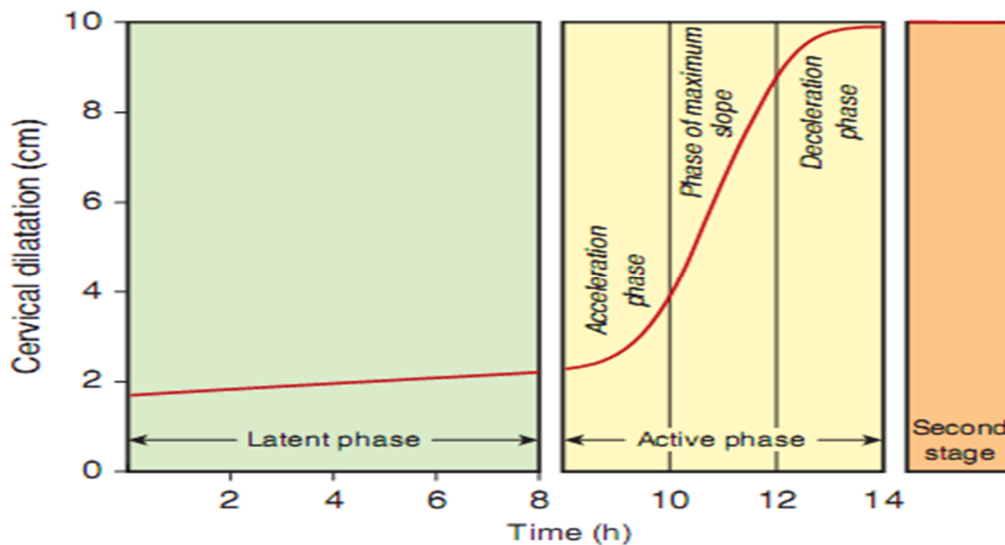
However no established consensus exists regarding indication for augmentation and amniotomy. Hence there is a need for a easily understandable and reproducible methodology for labour monitoring. Here comes the role of a partograph.

History of partograph

Friedman has the honour of first describing the progress of labour graphically. He has published studies on the rate of change of dilatation of the cervix. He then marked these findings as changes of dilatation in centimetres every hour and found that the curve came out to be shaped like a S(23,24,25).

The first stage of labour has been subdivided by Friedman into three phases based on the rate of cervical dilation. The latent phase is defined as the period between the onset of labour and a point at which a change in the slope of the rate of cervical dilation is noted. Next comes the active phase which is associated with a greater rate of cervical dilation and usually begins at around 2 to 3cm dilation. The active phase is further subdivided

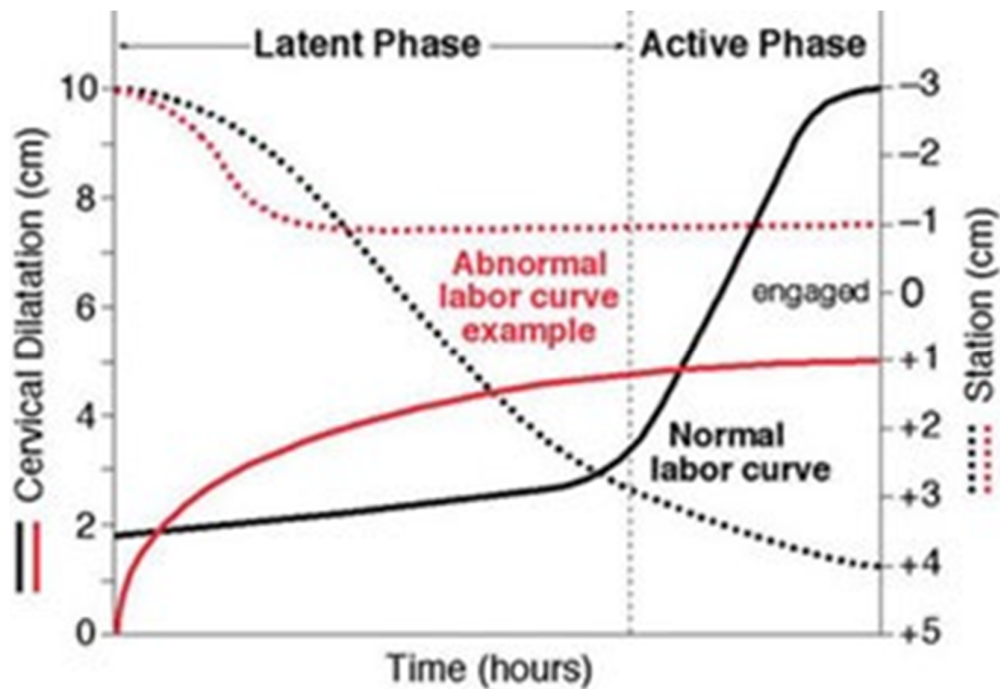
in to an acceleration phase, a phase of maximum slope, and a deceleration phase. A descent phase was described in the original manuscript that usually coincides with the second stage of labour.



Friedman (1972) subdivided active phase problems into protraction and arrest disorders. Protraction includes slow rate of cervical dilatation or descent, which is defined for nulliparous as less than 1.2 cm dilatation per hour or less than 2cm descent per hour .Arrest of dilatation was defined as two hours with no cervical change, and arrest of descent as one hour without fetal descent. Factors contributing to both disorders are excessive sedation, epidural analgesia and fetal malposition ⁽²⁶⁾.

Philpott who did extensive studies on this particular area began to implement the use of a new method and devised the cervicograph.He improvised on this and created the paragraph as a means of being able to

plot all the necessary information in one sheet. He went on to include an “alert line”.The significance of this line is that it marks the expected progress of labour at a rate if the cervix dilates at 1cm/hour,so that it serves “to aid the midwife in a peripheral unit , or a general practitioner to detect at the earliest possible moment the abnormal labour”.



What was added next was the inclusion of an “action line” that was kept four hours from the alert line and parallel to it. This allowed “time to transfer the patient without impairing the success of the essential active management”, and also allowed “many normal patients to deliver vaginally without active intervention”⁽²⁷⁾.

Hendricks et al ⁽²⁸⁾ came out with the proposal that it is important to note the time at which the patient reports to the obstetric department of the hospital in spite of noting down the time when she enters active phase of labour. This suggestion has been welcomed and implemented in most commonly used partographs. Various meta centric studies conducted all over the world have proven that there does not exist any differences in the response of the cervix to the biological mechanisms that initiate its ripening and dilation based on race and so this innovative tool came into use throughout the world⁽²⁹⁾.

DIFFERENT AVAILABLE PARTOGRAPHS:

Many different varieties of the labour chart are present. Each partogram possess its own merits and demerits. The clinician understands the significance of adhering to the standard practises followed for the charting of each partogram. This may change the course of action and the plan of management depending on the changes occurring during the marking of the graph. Flattening of the curve calls for interventions and cautions the care providers that the progress is not satisfactory ⁽³⁰⁾.

The WHO model of the partograph was designed by an informal working group, by evaluating most of the available published data on partographs and their pattern. It represents an compromise albeit an calculated one, which includes the best features of several partographs

.WHO (composite partograph) has a duration of the latent phase amounting to 8 hours. The commencement of active phase is taken as 3 cm of cervical dilatation, which is when the marking of the corresponding “alert line” is done. After this was done the next line which is the “action line” is done 4 hours to the right of the first and goes parallel to it. Marking of parameters such as the descent of the fetal head, vitals of the mother and heart rate of the foetus and the administration of drugs has been provided with.

The rate at which the cervix dilates is charted down at the time of every p/v which is to be kept at a minimum and done only once in 4 hours. At the time of admission if found that the dilatation of cervix is not enough, being less than 3cm then it is recorded as 0 hour. Only after the cervix is dilated to 3cm the subsequent plotting is carried out in the alert line as long as the progress goes according to the normal pattern and if any faltering occurs due to failure of normal progress then it is noted accordingly. The joining between the two points is done with the help of broken lines that shows the shift from latent and entry into active phase.

The modified WHO partogram meant to be used in hospitals came to vogue in 2000(32). The latent phase was not included in this partograph. The active phase starts at 4 cm dilatation. The other features are similar to the composite WHO partograph. The latent phase was excluded because staff tended to intervene early and found it difficult to avail commutation at

the shift from latent into active phase. It was then suggested that we universally use the start of active labour as the time of 4cm dilatation as it would eliminate unnecessary intervention especially in multipara who may have a patulous os and have not yet started the process of labour. Case reports from Nigeria reported no difference in progress of labour for nulliparous and multiparous when monitored with the modified partograph (35).

Colour coding of the WHO partogram using the appropriate colours was brought in so that the use of partograms is not only for clinicians but can also be extended to the trained dais and other health care workers of low resource setting. If the plotting goes along the left of the alert line then it falls in the green zone area, which assures that the progress is satisfactory. However if the plotting extends to fall beyond the right side of action line then it certainly is an announcement to the care giver that the patient is heading towards danger zone. If the tracings are found to be in between the two then we would find it to lie in the area of amber that should arouse the physician towards a more cautious delivery.

Cross sectional analysis study from vellore reports the comparison of the original WHO and the simplified WHO partographs. This study revealed that the original partogram was reported to be more complex and was shown reluctance to use by the clinicians and inadequate understanding by

unskilled care givers. What was even more significant was the fact that an alarming increase of those crossing the “action line”. Significant differences were not demonstrated in the outcomes relating to augmentation or perinatal outcomes except for a considerable increase in the rate of caesarean section. On the other hand the WHO modified partogram was more acceptable to use and was more reliable since the involved physicians were ready to imbibe this as a tool of their labour monitoring.

Developed in Seno province , Burkina Faso was a round partogram and was compared with WHO version.(38). The changes it introduced was its attempt to eliminate the mistakes of the previous partograph which were the inaccurate readings done at the commencement and also at the time of shift from latent to active phase .But this partogram did not gain popularity.

Yet another partograph which plots the second stage of labour is also in vogue. This was designed to mark the fetal head position and descent. Standardised normograms were devised separately for both the primi and multi. It was shown that most favourable outcomes were achieved in those with LOA presentation and when the station of the head is below 1+. Thus with higher scores achieved at the start of second stage, the woman increases her chance of spontaneous vaginal delivery. Recently efforts have been made to introduce a partograph that would work electronically.

Conventional partogram is an “inappropriate” technology

The conventional Partogram is an excellent concept, BUT it is Technologically Inappropriate

According to WHO for a technology to be appropriate ,the methods; procedures and equipments used should be valid when evaluated scientifically, adjustable to local needs ;and acceptable to the users within the affordable range of target community.

The conventional partogram IS CLEARLY an inappropriate based on these 3 “reality” parameters . It has therefore miserably failed.

- i)** As it CANNOT be “adapted to local needs”.
- ii)** And therefore NOT “acceptable to those who use them”
- iii)** It CANNOT “be maintained and utilized with resources the community and country can afford”. Dr. Debdas by introducing the paperless partogram has removed the unnecessary complexity from partogram while keeping the original concept intact. Hence ensuring acceptability from everyone as they have nothing new to learn. ⁽⁴⁰⁾

Aims & Objectives

AIMS & OBJECTIVES

To compare WHO modified Partograph and Paperless Partogram in the effective management of labour on the basis of

1. Labour crossing the Alert Line/ Alert ETD
2. Labour crossing the Action Line/ Action ETD
3. Rate of caesarean section
4. Perinatal outcome
5. Maternal complications

Materials & Methods

MATERIALS AND METHODS

This is an observational study which was conducted among 200 singleton pregnant women delivering at Institute of Social Obstetrics Kasturba Gandhi Hospital and Institute of Obstetrics and Gynaecology Egmore.

INCLUSION CRITERIA:

- Any parturient irrespective of age and parity in established labour (1 contraction in 10 min or more frequently) with cephalic presentation, irrespective of whether the membranes are intact or ruptured.
- Onset of labour has to be spontaneous (not induced)
- The parturient must be atleast 4cm or more dilated at the point of inclusion.
- Gestational maturity should be 37 completed weeks or more.

EXCLUSION CRITERIA:

- Induced labour
- Previous caeserean
- Multiple pregnancy
- Pregnancy Induced Hypertension
- Antepartum hemorrhage
- Presence of any severe complications

METHOD OF COLLECTION OF DATA

A total of 200 pregnant women with singleton pregnancies meeting the inclusion criteria and delivering at Institute of Obstetrics and Gynaecology and Institute of Social Obstetrics Kasturba Gandhi Hospital were recruited after obtaining informed voluntary consent. The participants were interviewed on admission to labour room ward using predesigned proforma .The recruited women were categorised into 2 groups 100 for WHO Partograph and 100 for Paperless Partograph .

Management will be according to the discretion of managing clinician . Recruited women were admitted in labour room for monitoring and conduct of labour. A detailed history was taken regarding period of amenorrhea, onset of labour pains , leak or bleeding per vagina, presence or loss of fetal movements and other associated symptoms .

Pertaining obstetrical history was also obtained including marital life, consanguinity, gravidity, parity, age at first childbirth. The relating significant clinical events in previous pregnancies in terms of full term deliveries, preterm deliveries, abortions either at home or hospital and the number of living children were noted. Features of previous pregnancies like pregnancy loss, lower segment caesarean section, fetal anomaly, Pregnancy

Induced Hypertension, eclampsia, blood transfusion, third stage complications were noted. Details of the index pregnancy including antenatal visits, history of immunisation, iron and calcium supplements received and complications in any of the trimesters were questioned. The complications of present pregnancy like anaemia, preeclampsia, intra-uterine fetal demise were taken down .

The detailed menstrual history regarding previous menstrual cycles either regular or irregular was noted. Gestational age was determined by means of last menstrual period(LMP) using Naegle's formula, obstetric ultrasonography (in cases where LMP was unknown or cycles were irregular) or both.

Medical history of illnesses that have implications for maternal outcomes, such as diabetes mellitus, cardiac disease, hypertension, epilepsy and asthma will also be obtained. Any surgical procedure undergone by the parturient will be noted. Significant family history in terms of medical illness, multiple pregnancy and congenital malformations will be obtained.

Maternal assessment was done including general physical examination, systemic examination including per abdomen and per vagina examination. A thorough general physical examination was done with due

importance to pallor, icterus, cyanosis and pedal edema. The respiratory and the cardiovascular systems examination were done.

In obstetrical examination the fundal, lateral and pelvic grips were performed to know the lie, presentation, attitude and position of the fetus. The symphysio-fundal height will be noted and estimated fetal weight calculated by Johnson's formula. The fetal heart sound was located and the rate tone and regularity recorded. Also the state of the uterus whether acting, relaxed, tender and the amount of liquor was observed. Per speculum examination was done for those patients with a history of leak per vaginum. Pelvic examination was done to know the stage of labour by assessing cervical dilatation and effacement, presence of intact membranes, the presenting part and its station. The pelvis assessment was done to rule out cephalopelvic disproportion.

Routine investigations (Haemoglobin, Urine Routine, Blood Group and Rh type, HIV, HBsAg and VDRL) were taken for all cases. Additional biochemical, serological and ultrasonographic evaluation were done if indicated. Recruited women were monitored non invasively for maternal and fetal status. Fetal monitoring was done by Cardiotocography(CTG) and by intermittent auscultation.

Plotting of WHO partograph:

- Plotting the partograph starts only at the time of labouring woman entering into active labour and does not have complication which necessitates immediate delivery.
- All the observations are recorded in the corresponding sections of partograph.
- The dilatation of cervix is plotted with 'X'.
- The level of head (5th of head felt above brim by abdominal palpation is plotted) is plotted with 'O'.

Name	Gravida	Para	Hospital number
Date of admission	Time of admission		Ruptured membranes
			hours
Fetal heart rate	[Grid for plotting fetal heart rate from 60 to 200]		
Amniotic fluid moulding	[Grid for plotting amniotic fluid moulding]		
Cervix (cm) [Plot X]	[Grid for plotting cervix dilatation from 0 to 10]		
Descent of head [Plot O]	[Grid for plotting descent of head from 0 to 10]		
Alert	[Diagonal line from 4 to 10]		
Action	[Diagonal line from 4 to 10]		
Contractions per 10 mins	[Grid for plotting contractions from 0 to 5]		
Oxytocin Lit. drops/min	[Grid for plotting oxytocin from 0 to 5]		
Drops given and IV fluids	[Grid for plotting drops given and IV fluids]		
Pulse and BP	[Grid for plotting pulse and BP from 60 to 180]		
Temp °C	[Grid for plotting temperature from 60 to 100]		
Urine { protein, acetone, volume	[Grid for plotting urine parameters]		

- When the patient is admitted in active phase of labor, the dilatation of cervix is plotted on alert line and the time noted directly under the 'X' in space for time.
- Vaginal examination should be done every 4hr after admission unless specifically indicated eg:at Rupture of membranes.
- If cervicogram moves to the right of alert line, it indicates prolonged labor and the patient should be reassessed by senior resident.
- At action line, the woman must be carefully reassessed for reason of lack of progress and decision made on further management.
- The time of fetal heart abnormality and rupture membranes and its color should be highlighted, using the following abbreviations:

Amniotic fluid


I	-	Intact membranes
C	-	Membranes ruptured; clear fluid
M	-	Meconium stained liquor
B	-	Blood stained liquor

- Moulding is graded as follows:
 - Grade 1 – sutures apposed
 - Grade 2 – sutures overlapped but reducible
 - Grade 3 - sutures overlapped and not reducible

- Complete details of the patient on the partograph
- Chart PR and fetal heart rate every half hourly, BP 4hrly(in normotensive cases) and temperature 12hrly (more frequently if abnormal)
- Contractions are recorded every half hourly – frequently (contractions per 10min), intensity and duration.

Less than 20 seconds: 

Between 20 and 40 seconds: 

More than 40 seconds: 

- ARM if done indication should be mentioned – note colour of liquor.
- Oxytocin if used, record the amount of oxytocin in mU/min
- Drugs and Iv fluids if administered are recorded
- I/O chart is maintained

Plotting of Paperless partogram

" PAPERLESS PARTOGRAM "
Single Sheet - 'at a glance' Graphpaperless Partogram

Reg. No. _____ Date _____
Name _____ Age _____ Para _____ Wk of gest _____

PELVIS Adequate / Not Adequate RISK FACTOR (if any) _____

ALERT.ETD. ACTION.ETD. (4 Hrs.)

(Write in RED)

(For use in 'Active phase' of labour - from 4 cm dilatation of cervix onwards)

Nursing Observations											Doctor's		
TIME (Check Hourly)	T/P	BP	IVs	Utr's output	FHR	Micr/Liquor Thin - 1 Thick - 2	No. of Contr. per 10 min.	Oxytocin/Miso dose	Analgesic given Time/Dose	Dilatation (in cm)	Expected	Actual	LAG

RULE OF SEVEN (7) FOR SLOW CLATORS

I - Slow dilatation between 4-7cm dilatation range
(Slow dilatation rate)
Probable cause - Inadequate contraction
Management - Oxytocin after excluding mechanical hindrance

Time of Rupture of Membranes
6-9 Chart - for family planning later

II - Slow dilatation between 7-10cm dilatation phase
(Slowly dilatation rate)
Probable cause - Mechanical hindrance
Plan for management - According to cause found in:
= Power = Passage = Passenger

Time	Descent	Depth of Caput (cm)	Degree of moulding

REMARKS :

In the paperless partogram, clinicians calculate two times, an ALERT ETD (estimated time of delivery) and an ACTION ETD. The ALERT ETD calculation is based on Friedman's most accepted formula that the rate of cervical dilatation occurs at 1cm per hour once the woman enters into active labor. The clinician has to count another six hours to this time at which the woman begins to have 4 cm of cervical dilatation, so that it gives the

“ALERT ETD” which is when the cervix would be fully dilated. From this time we would count another four hours in order to obtain the “ACTION ETD”. In the obstetric record case sheet of the patient we note down both ETDs in bold letters on the front page ,using blue ink for alert estimated time and the ACTION ETD is to be circled in red ink.

Once the alert estimated time of delivery has been reached, it should caution the care giver that progress is not adequate if she is still not nearing delivery. If that particular hospital does not have facilities for emergency caesarean section then the attending doctor or the midwife needs to make the required arrangements for commutation to a hospital which has the scope for emergency obstetric care. Further if the delivery does not occur by the time action estimated time of delivery is reached ,it should be understood that this particular patient may land up in prolongation of labour and requires immediate delivery by either appropriate medical or instrumental or emergency caesarean section. All along the course of active labour, this new paperless partogram helps easy monitoring and aids in the prevention of prolonged labour. It makes doctors decide on the management and plan suitable outcome based on the fact that they can use this expected time as a platform to work towards the timing of delivery. For instance, if uterine contractions are found to be inadequate close to the ALERT ETD, clinicians need to augment labour by administration of oxytocin to bring about more effective contractions. However if found that the labouring

woman faces any adverse outcomes before any ETD, doctors need to plan for suitable course of action in the best interests of the patient and her foetus healthy irrespective of ETD.

‘ETD’ (Expected ‘Time’ of Delivery)” is a tool that permits calculation in the mind in order to predict delivery time instantly. In order to use this tool more efficiently at the first per vaginal examination which is to be done at the commencement of 4cm dilatation the, 2 ETDs must be calculated ,which does not take more than 20 seconds. Calculation that does not require great skills such as the addition of either six or four hours to attain the alert and action time of delivery respectively does not involve much effort.This simple calculation can be done even as the clinician begins his clinical examination by doing pv to eliminate CPD or any variations in presentation of the fetus,variations in fetal heart rate patterns are to be determined and if found to be present the change of management line gauged accordingly.

The effectiveness of using-ETD

Once the appropriate timing has been determined it is easier to gauge if progress happens satisfactorily or the labour is heading towards the possibility of obstructed or prolonged labour.Also the recurring doubt coupled with the uncertainty of the progress is removed.If we adhere to this

regular easy practise of calculating the predicted time which gives the condition of the progress at glance rather than the need to have knowledge to read the graphs and note down the minute boxes of the graphs used in WHO partogram.,it is inferred and proved by studies that it makes it to be routinely used in labour rooms.

DISTINCT BENEFIT OF PAPERLESS PARTOGRAM:

This study was proposed bearing in mind the benefit that the paperless partogram would be requiring only minimal time to plot and the obstetric case record will always be available with the patient so that marking it in the first page would naturally provoke all the attending doctors to look at the timing of expected delivery at a glance.Hence not only the attending physician needs to monitor the progress all alone by himself or herself but the whole team in labour room can understand the course without having to do unnecessary repeat examinations. So this ensures that the patient gets optimal care even in midst of a busy day with postgraduates not being able to devote all their time solely to one patient at a busy set up like a tertiary institute.Not only is the physician reassured but it helps to allay they anxiety of the patients who is in pain and is unsure of when she should bear down.Suggesting this time gives her reassurance that she is safely monitored,helping to avoid undue stress. There is also no need to fake

any findings and even the clear transparent method is seen in this. The reluctance to plot is overcome.

There is a 3 step rule to provide better monitoring which are:

C-1 : Care for the mother by monitoring of her vital parameters.

C-2 : Care of fetus - which is done by monitoring of FHR patterns and the occurrence of meconium.

C-3 : Contractions (say 3) per 10 minutes and how long each of it lasts in seconds (say 30). This is written as 3/10/30.

Thus at a glance the whole status of the patient is known to those verifying the case sheet. Any changes or unexpected findings in vital should be looked into with more caution.

SIGNIFICANCE OF TWO ETD.

Alert ETD - Once the woman reaches 'Alert ETD' time and shows no signs of immediate delivery then it is mandatory to inform a senior consultant to reassess the situation. If more professional help is not available at that centre, such as a rural area which is isolated then the health worker needs to arrange for shifting to a more equipped centre. Thus this gives an advantage of having four more hours at hand by when she would be safely in the hands of an institute or a district hospital. Thus gained the name

Transfer ETD as it is the leeway time given before immediate active intervention.

Action ETD - On finding that the any patient does not seem to have birth immediately it calls for active intervention by appropriate.

BETTERMENT OF USAGE:

It is most suited for –

- Antenatal women who do not have complications and this contributes to over two third of women in our nation.
- Those entering 4cm of cervical dilatation with adequate uterine contractions.
- Cephalic presentation which comes to be around 95%.
- Situations where the latent phase is not in excess of over 8 hours.

Note

1. If a patient has already been diagnosed to have a protracted course of latent phase then it should be understood they have already crossed alert line so that they have already been placed in the high risk category and they require monitoring and management different from the normal patients.
2. This partogram was deigned for first stage of labour and not for those who have been admitted with full cervical dilatation.

Many workers have described that mostly around two thirds of women in first pregnancy would deliver without the need for any oxytocin to augment labour before they cross the first mark that is determined at the time of first vaginal examination. Usually women with higher order births deliver faster than this. ^[1,2,3].

This is why the entire set up has been based on the sole factor of rate of cervical dilatation .

The dilatation of cervix has proven to be the arbitrary factor not influenced by any variables by most study groups ^[1,3,4,5]. If the clinician finds that the rate of cervical dilatation is in accordance with the normal course then the rest of the variables would be assumed to be working in unison to bring about effective delivery. This as said earlier should be atleast 1cm/hr .The beneficial time of a good six hours is gained before the woman reaches her first mark and so the possibility of missing out a caput succedaneum or protracted labour would be considerably minimised. If this is not missed then worse complications like moulding would also not be missed.

TOTAL AMOUNT OF PER VAGINAL EXAMINATIONS

RECOMMENDED:

First at active labour we perform a per vaginal examination and then it is recommended to withhold unnecessary pv to prevent sepsis to the mother and the foetus. Once the calculation of the Alert time has been made then the subsequent pv is to be done at 3 hours later and the next is done when she reaches the alert time to determine her chances of immediate delivery and to evaluate the need for augmentation of labour. Only one third of patients would not have delivered vaginally by now and so these few patients will be examined after 3 hours which is the time of most important assessment. In spite of our best efforts and continuous monitoring if the woman is still in labour after the action mark then it is time to intervene by doing an emergency section or application of outlet forceps. Keeping the vaginal examinations to a minimum gives more sterile delivery practises and also relieves the stress and anxiety of the woman in labour.

Observation & Analysis

OBSERVATION AND RESULTS

Two hundred cases of women entering active phase of labour were included in this study and were assigned to two groups of 100 each randomly.

Group A:

Number of patients: 100

Modified WHO partogram was used in the monitoring of active phase of labour.

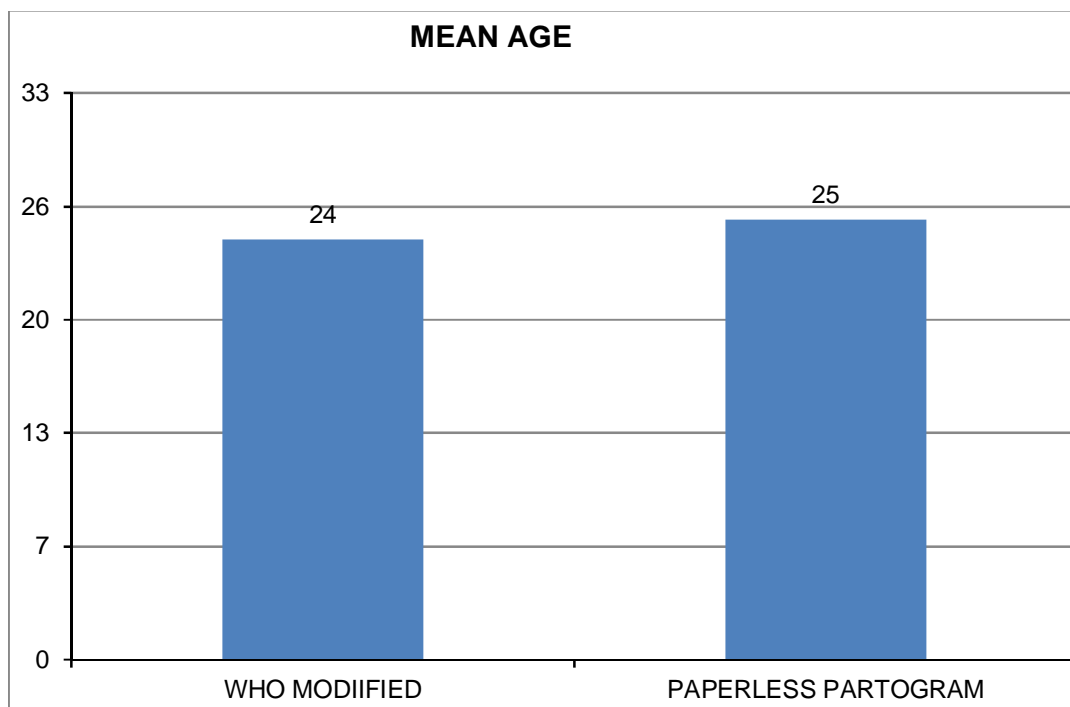
Group B:

Number of patients: 100

Paperless partogram was used in the monitoring of active phase of labour.

AGE

		N	Mean	Std. Deviation	Std. Error Mean
AGE	WHO MODIFIED	100	24.09	3.85886	.38589
	PAPERLESS PARTOGRAM	100	25.23	3.82140	.38214



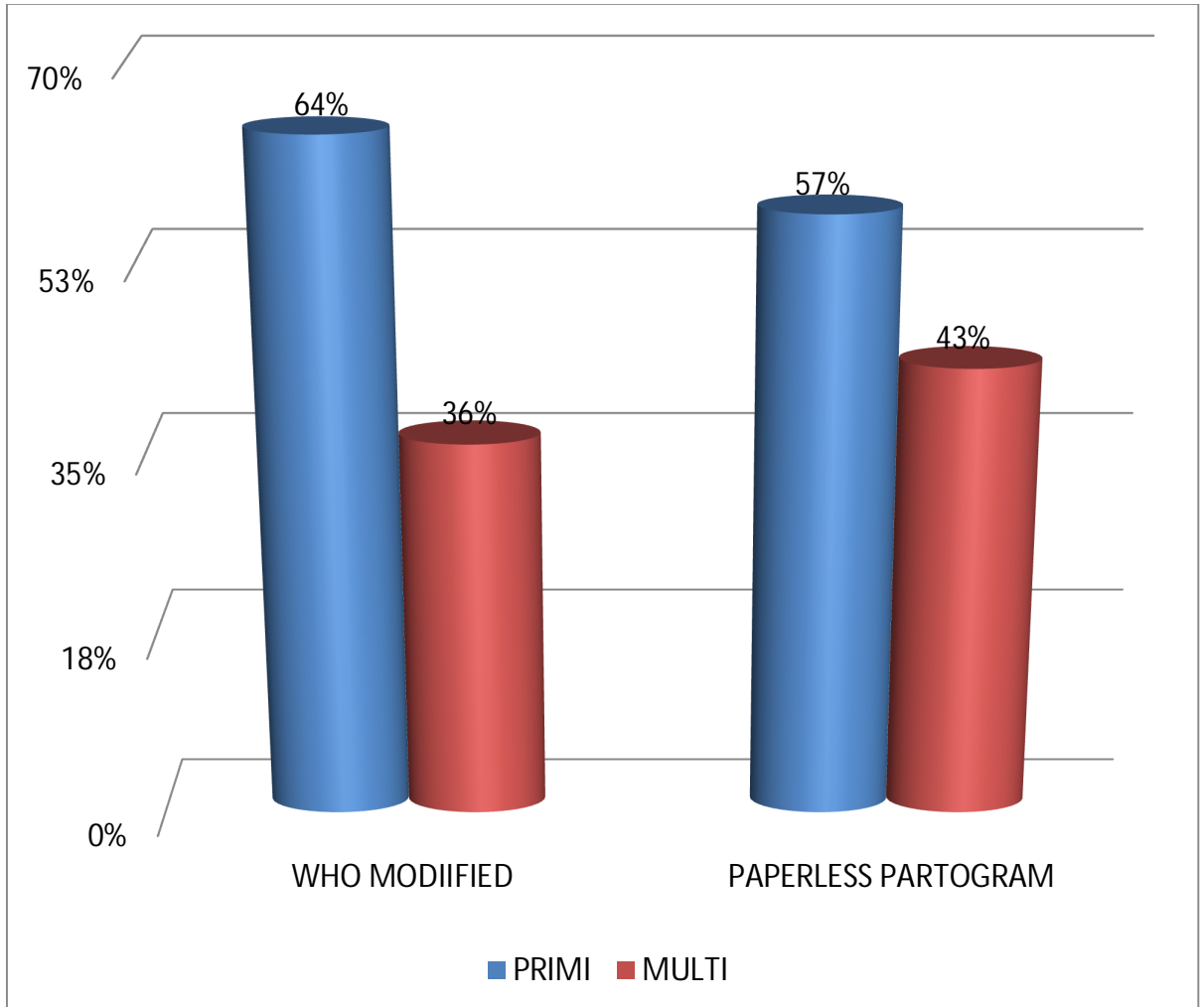
The mean age in WHO modified partogram is 24.09 and in paperless partogram it is 25.23. It was found that most women in this study belonged to the age group of 21-26 years.

PARITY

		WHO MODIFIED	PAPERLESS PARTOGRAM	Total	Chi-Square	p value
PARITY	PRIMI	64	57	121	1.025 ^a	.311
	MULTI	36	43	79		
Total		100	100	200		

Among all the patients studied, in Group A 64% of the patients were primigravida and in Group B 57% of the patients were primigravida. In Group A 36% of the patients were multigravida and in Group B 43 % of the patients were multigravida. This was not found to be statistically significant. Most of the patients in both the group were primigravida. Among multigravid women most of the patients were second gravida.

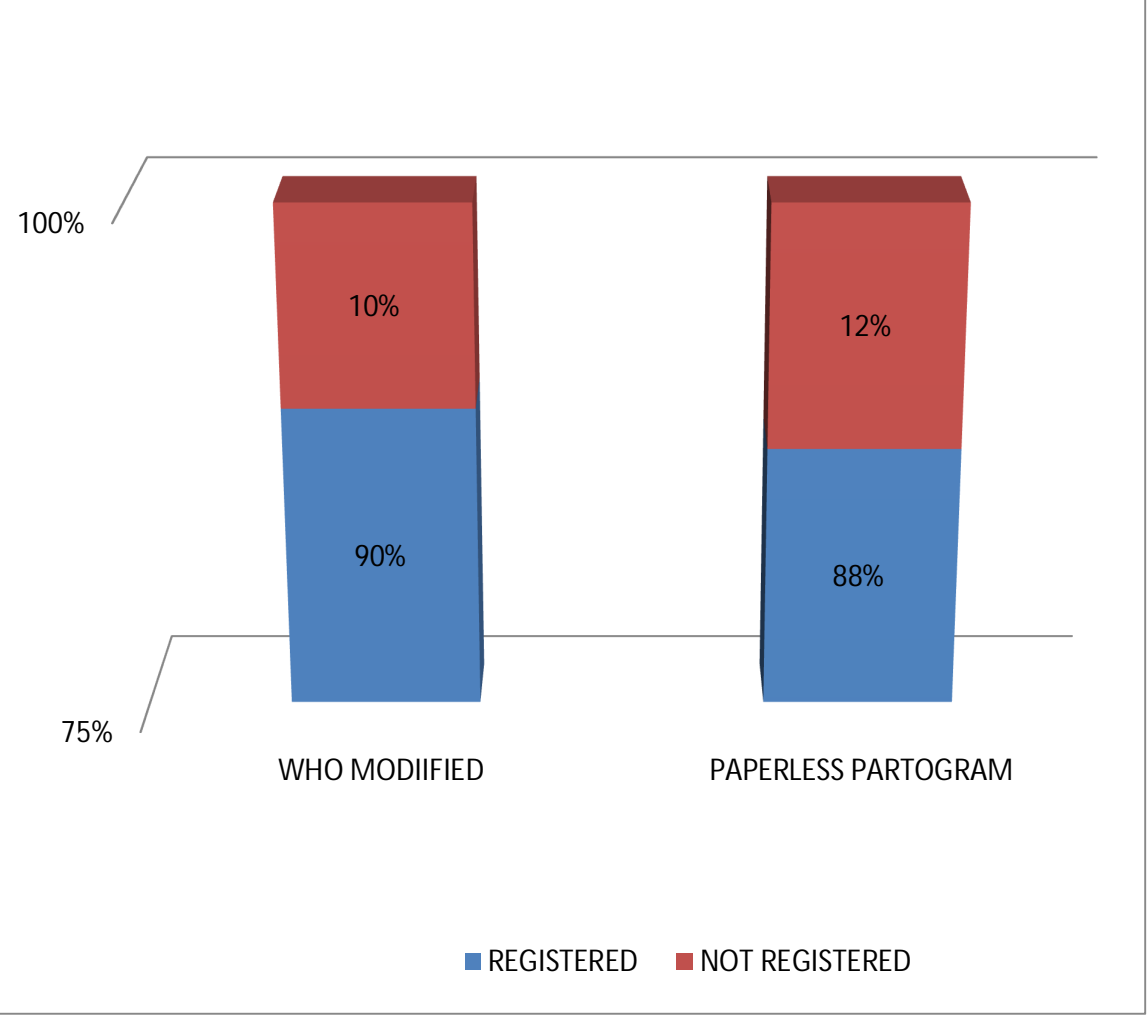
PARITY



REGISTRATION

	WHO MODIFIED	PAPERLESS PARTOGRAM	TOTAL
REGISTERED	90	88	178
NOT REGISTERED	10	12	22
Total	100	100	200

Among all the patients studied, in Group A 90% of the patients were registered and in Group B 88% of the patients were registered. Thus most of the patients were booked and immunised and had received regular antenatal care.



GESTATIONAL AGE

		GESTATIONAL AGE		Total	Chi-Square	p value
		WHO MODIFIED	PAPERLESS PARTOGRAM			
GA	36-37 WEEKS	8	19	27		
	37-40 WEEKS	87	77	164	5.202 ^a	.074
	40-42 WEEKS	5	4	9		
Total		100	100	200		

		N	Mean	Std. Deviation	Std. Error Mean
GA	WHO MODIIFIED	100	38.1830	1.02347	.10235
	PAPERLESS PARTOGRAM	100	37.8700	1.07830	.10783

GESTATIONAL AGE

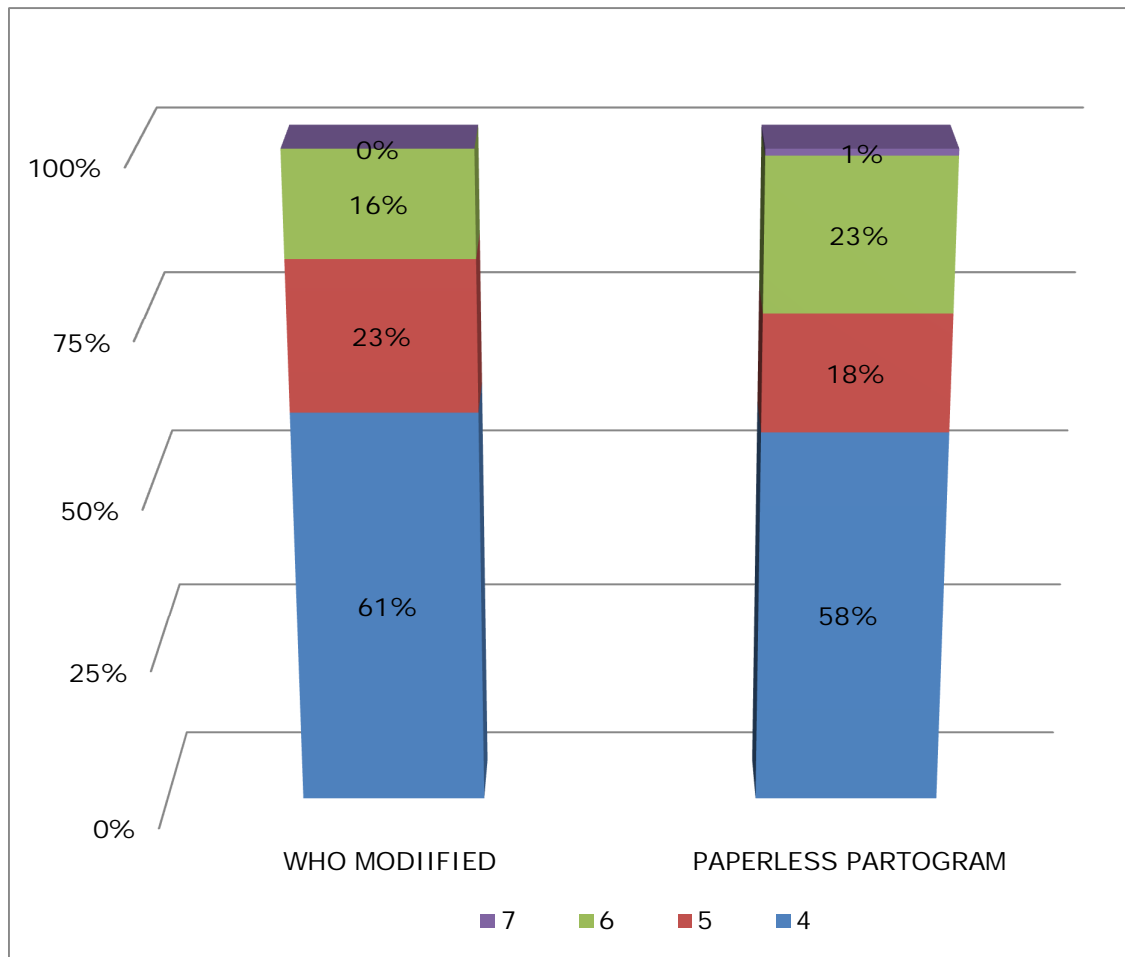
Among the patients studied the gestational age were between 36 and 42 weeks. The mean gestational age was 38.13 weeks (Standard Deviation 1.02) and 37.87 weeks (Standard Deviation 1.07) in Group A and in Group B respectively.



CERVICAL DILATATION

DILATATION								
GROUP		DILATATION_CM				Total	Chi-Square	P Value
		4.00	5.00	6.00	7.00			
WHO MODIFIED	Count	61	23	16	0	100		
	% within DILATATION	61 %	23 %	16 %	.0%	100%		
PAPERLESS PARTOGRAM	Count	58	18	23	1	100		
	% within DILATATION_CM	58 %	18 %	23 %	1%	100%	2.942	.401
Total	Count	119	41	39	1	200		
	% within DILATATION_CM	60%	21%	20%	1%	100.0 %		

CERVICAL DILATATION

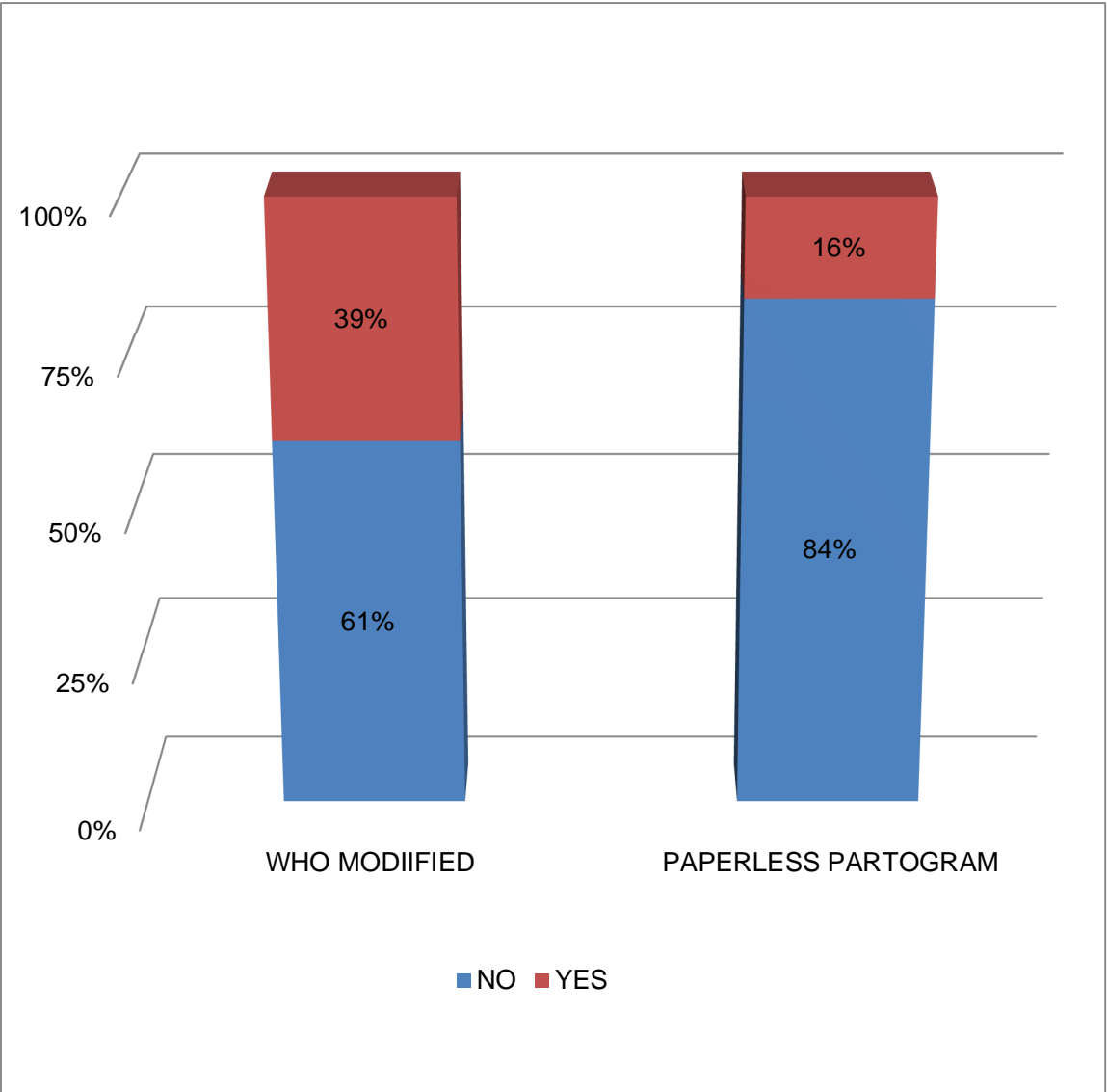


61% and 58% of patients entered the study at 4cm of cervical dilatation in group A and B respectively .5cm dilatation was found in 23% group A and 18% group B.16% in Group A and 23% in Group B entered the study at 6cm dilatation.Only one patient of Group B entered the study at 7cm dilatation.

OXYTOCIN AUGMENTATION

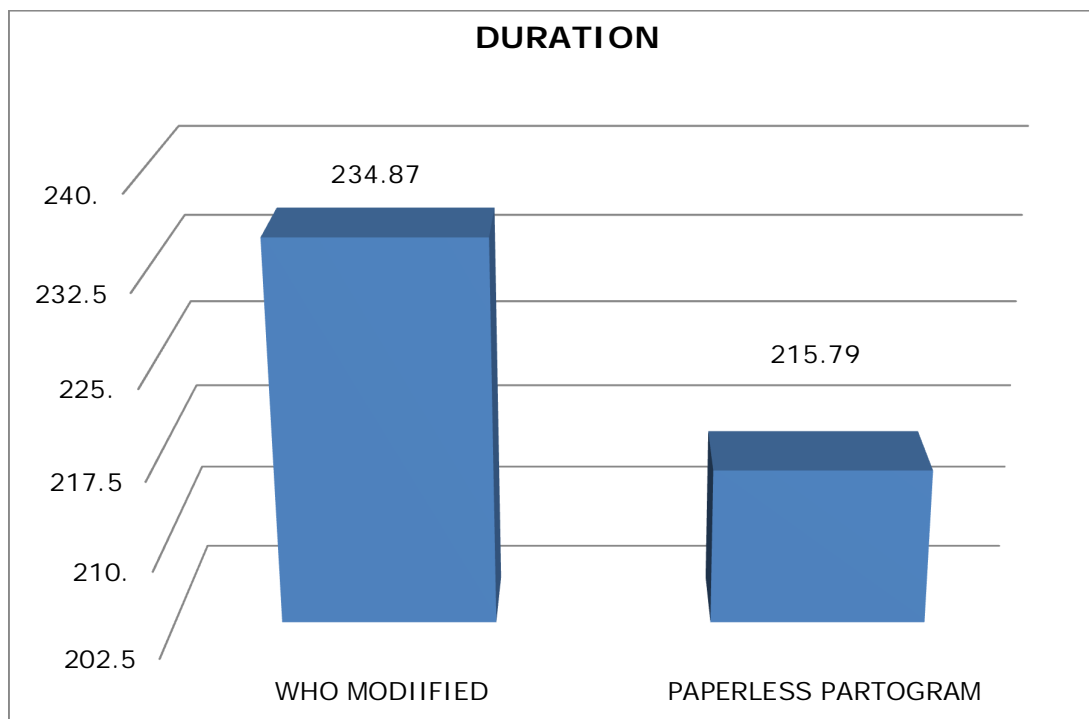
OXYTOCIN						
GROUP		OXYTOCIN		Total	chi square	p value
		NO	YES			
WHO MODIFIED	Count	61	39	100		
	% within group	61.0%	39.0%	100.0%		
PAPERLESS PARTOGRAM	Count	84	16	100	13.266*	p<0.001
	% within group	84.0%	16.0%	100.0%		
Total	Count	145	55	200		
	% within group	72.5%	27.5%	100.0%		

39% of patients in Group A were given oxytocin for augmentation of labour whereas in Group B only 16% were given oxytocin for augmentation of labour. This was statistically significant , p value <0.001.



DURATION

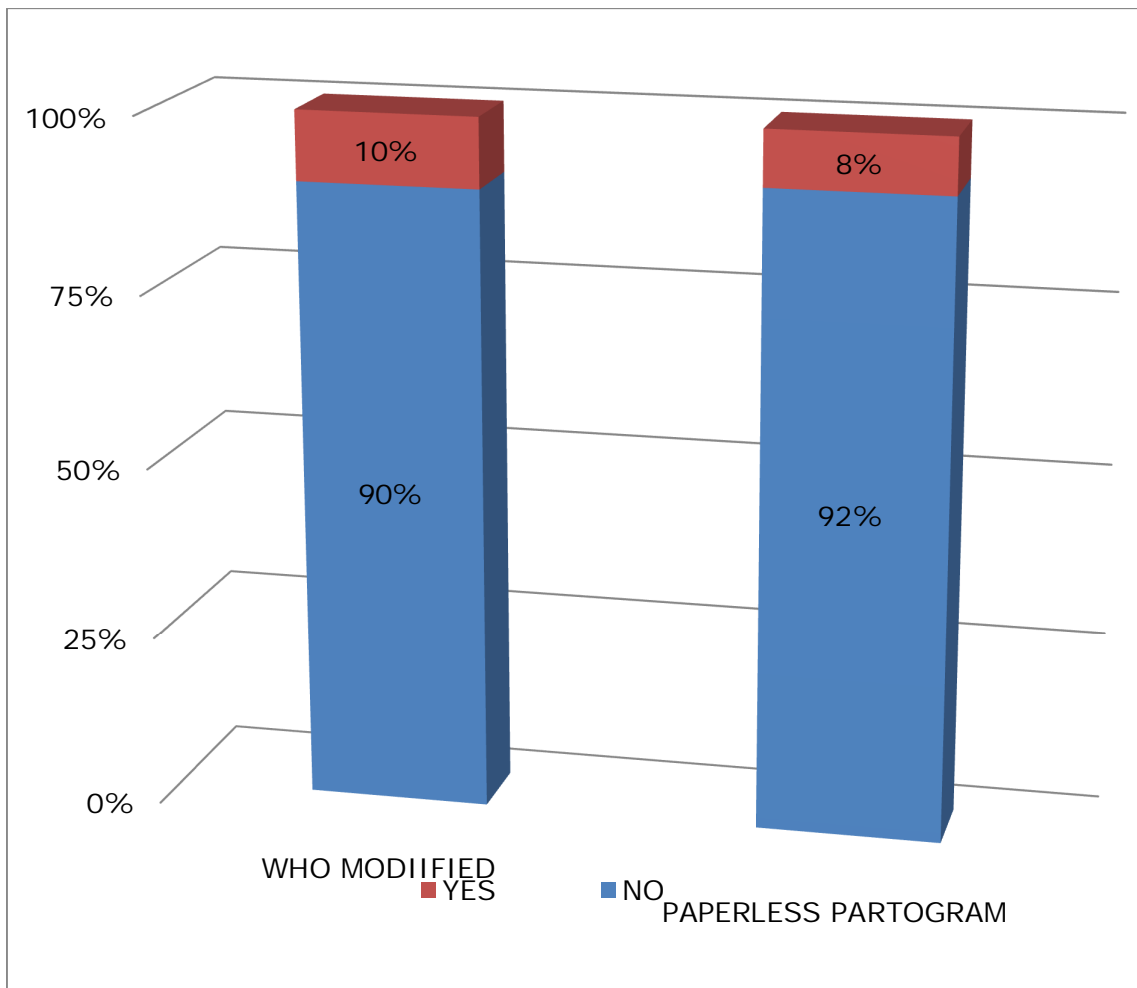
DURATION					
	group	N	Mean	Std. Deviation	Std. Error Mean
DURATION	WHO MODIIFIED	100	234.8720	73.65549	7.36555
	PAPERLESS PARTOGRAM	100	215.7900	80.69500	8.06950



The mean duration was 234.87minutes (Standard Deviation 73.65) and 215.79(Standard Deviation 80.69) in Group A and in Group B respectively.

CROSSING ALERT LINE

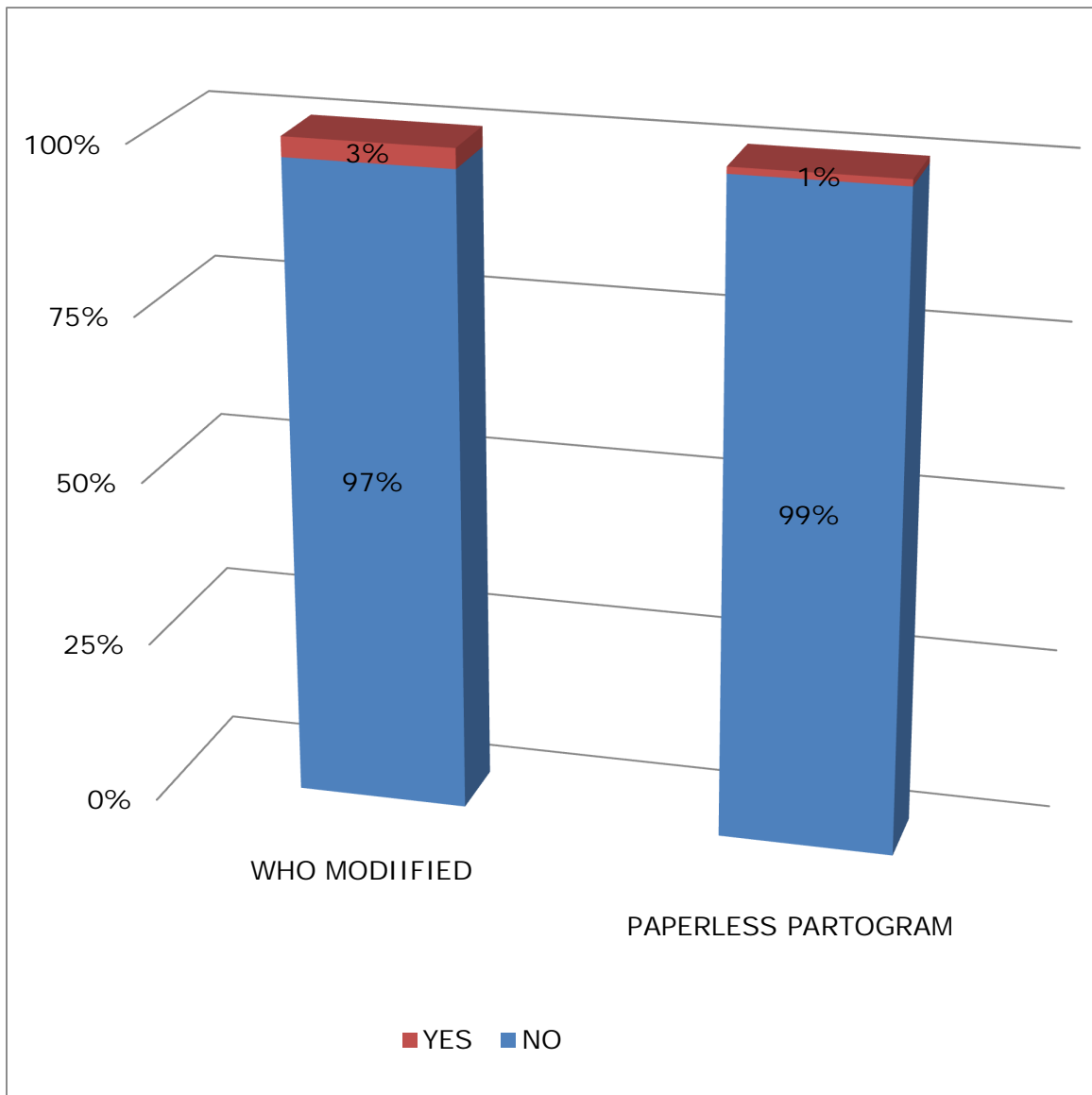
GROUP		ALERT_ETDLINE		Total	Chi-Square	P VALUE
		NO	YES			
WHO MODIFIED	Count	90	10	100		
	% within ALERT_ETDLINE	90%	10%	50.0%	0.244	0.621
PAPERLESS PARTOGRAM	Count	92	8	100		
	% within ALERT_ETDLINE	92%	8%	50.0%		
Total	Count	182	18	200		



10% had crossed alert line in group A and 8% had crossed alert line in group B. This was not statistically significant.

CROSSING ACTION LINE

Crossing Action Line						
GROUP		ACTION_ETD		Total	Chi-Square	P VALUE
		NO	YES			
WHO MODIFIED	Count	97	3	100		
	% within ACTION_ETD TIME	97%	3%	100%		
PAPERLESS PARTOGRAM	Count	99	1	100	1.020	0.312
	% within ACTION_ETD TIME	99%	1%	100%		
Total	Count	196	4	200		
	% within ACTION_ETD TIME					



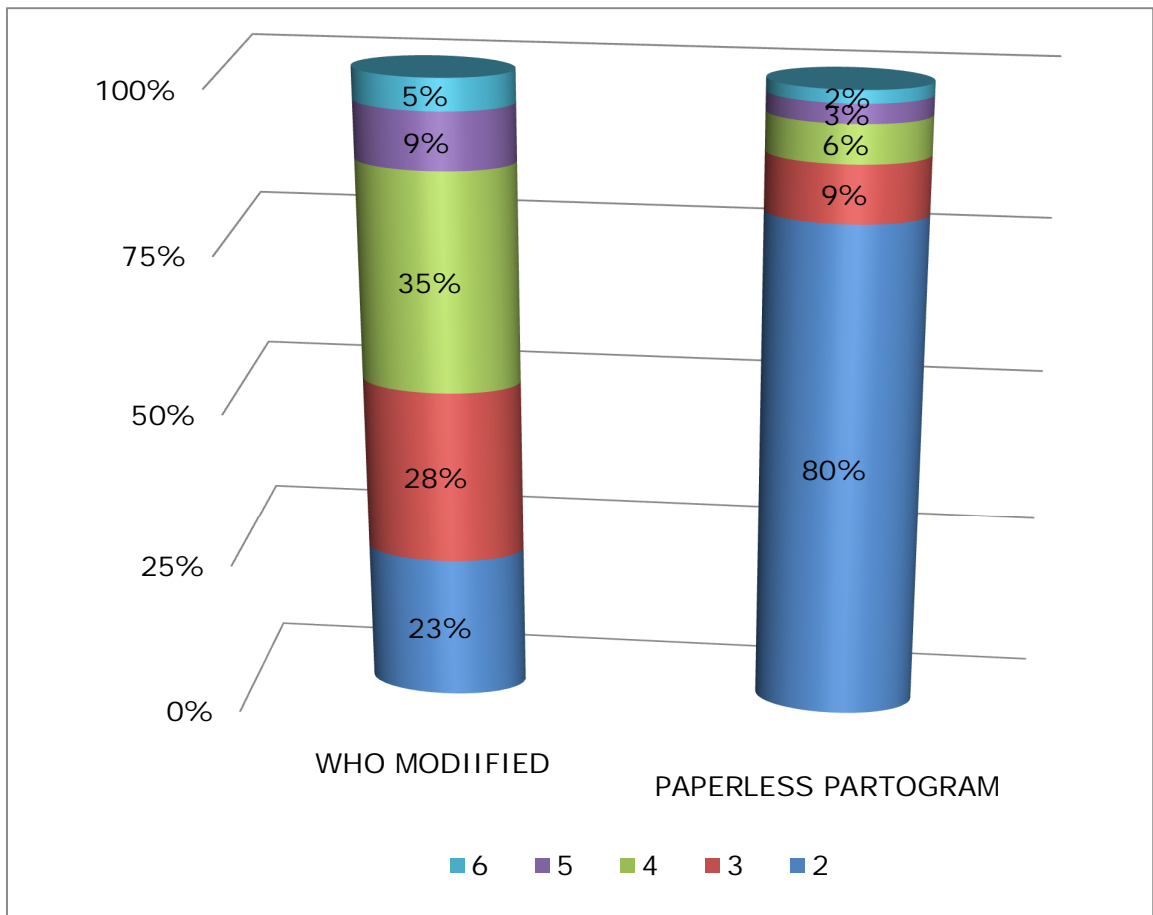
3% had crossed alert line in group A and 1% had crossed alert line in group B. This was not statistically significant.

AVERAGE PV

AVERAGE_PV									
		AVERAGE_PV					Total	chi square	p value
		2.00	3.00	4.00	5.00	6.00			
WHO MODIFIED	Count	23	28	35	9	5	100		
	% within group	23.0%	28.0%	35.0%	9.0%	5.0%	100.0%		
PAPERLESS PARTOGRAM	Count	80	9	6	3	2	100	66.098 ^a	.001
	% within group	80.0%	9.0%	6.0%	3.0%	2.0%	100.0%		
Total	Count	103	37	41	12	7	200		
	% within group	51.5%	18.5%	20.5%	6.0%	3.5%	100.0%		

80% of patients in Group B required only 2 per vaginal examinations whereas only 23% had 2 per vaginal examinations in Group A. This was statistically significant. 28% and 9% required 3 PV respectively. 4 PV were done in 35% and 6%..5 PV were done in 9% and 3% respectively in group A and B each. However 6 PV were done in 5% of group A and 2% of Group B patients

AVERAGE PV

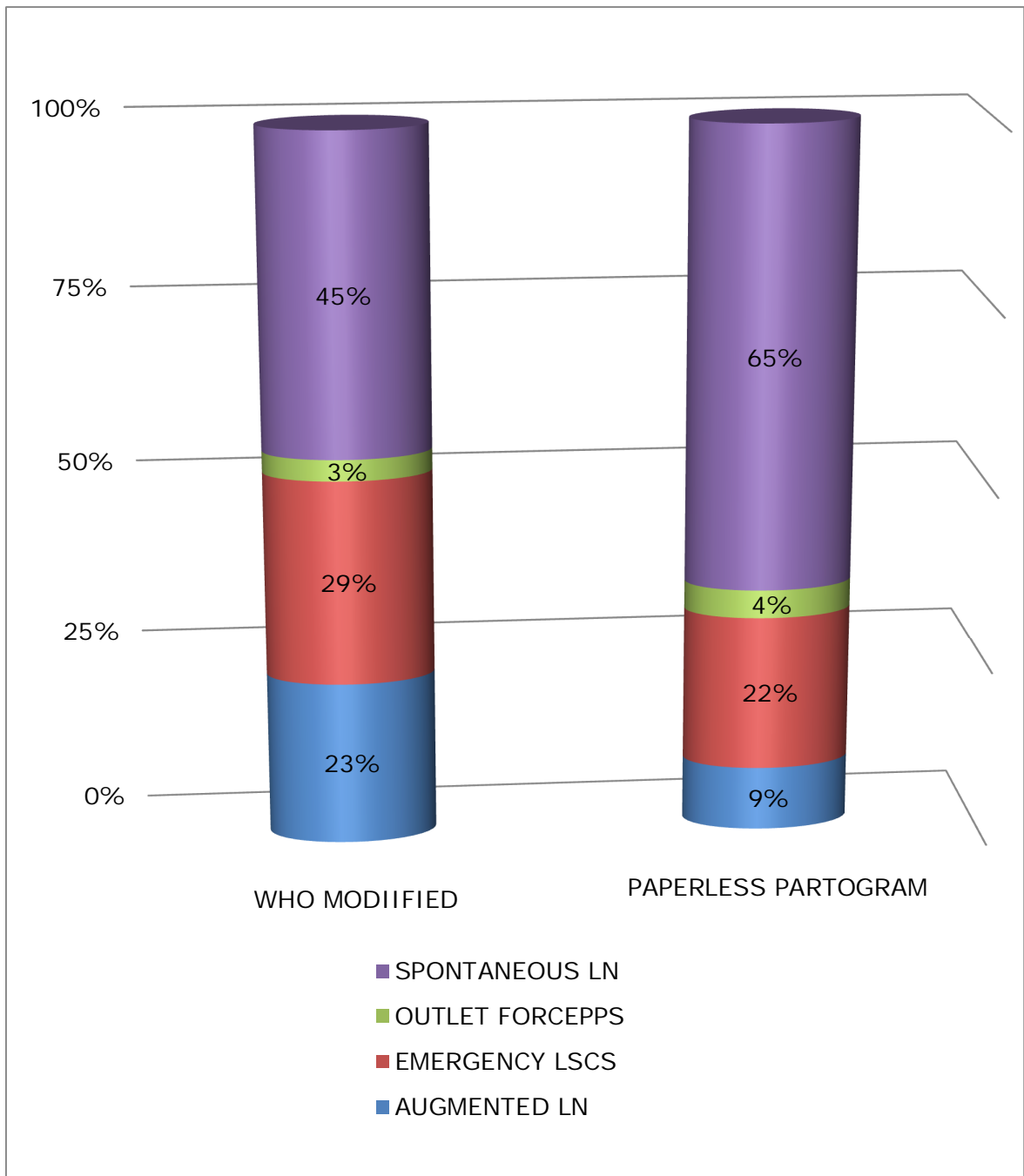


MODE OF DELIVERY

		MODE				Total	chi square	p value
		AUGMENTED LN	EMERGENCY LSCS	OUTLET FORCEPPS	SPONTANEOUS LN			
WHO MODIFIED	Count	23	29	3	45	100	10.865*	0.012
	% within group	23.0%	29.0%	3.0%	45.0%	100.0%		
PAPERLESS PARTOGRAM	Count	9	22	4	65	100		
	% within group	9.0%	22.0%	4.0%	65.0%	100.0%		
Total	Count	32	51	7	110	200		
	% within group	16.0%	25.5%	3.5%	55.0%	100.0%		

45% and 65% had spontaneous delivery in group A and B respectively which was statistically significant. 23% and 9% were augmented with oxytocin in Group A and B respectively. 29% and 22% of patients were taken up for emergency lscs in Group A and B respectively. Outlet forceps application was done in 3% of Group A and 4% of Group B patients.

MODE OF DELIVERY

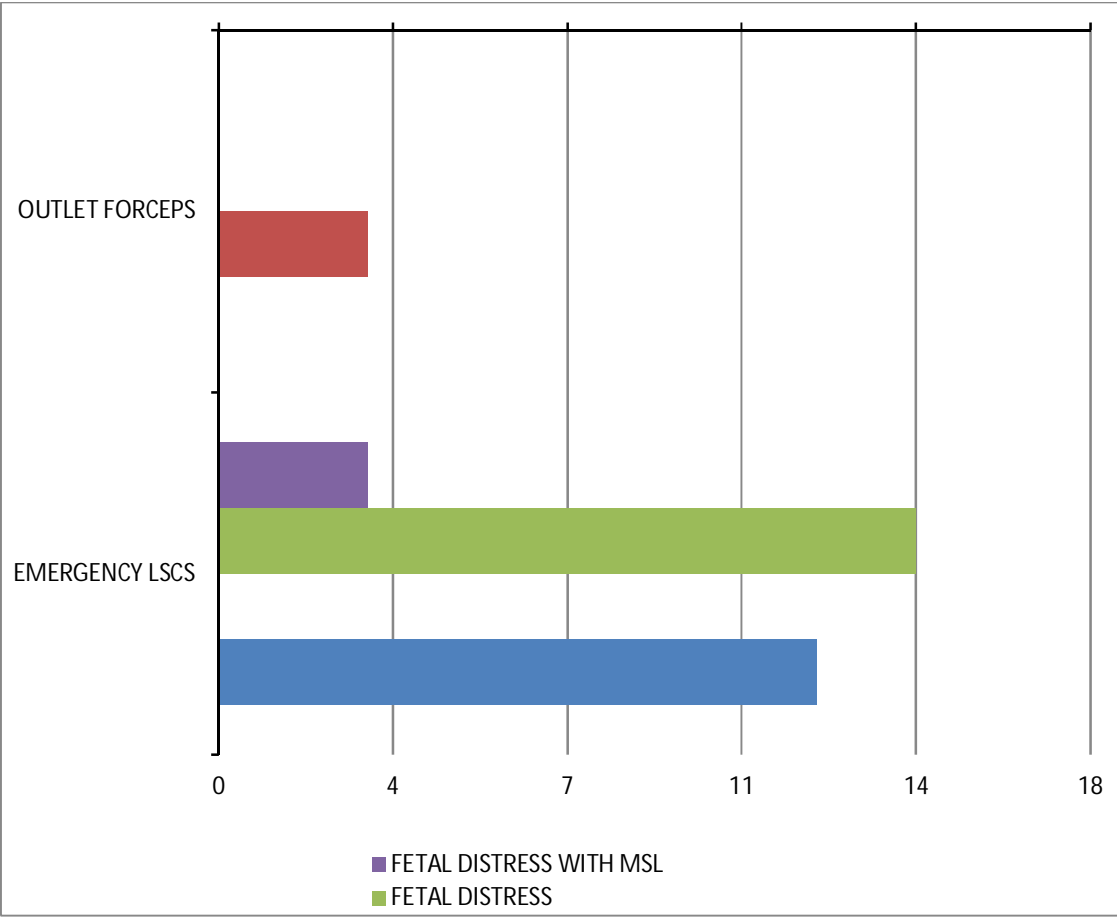


INDICATION

WHO MODIFIED					
		INDICATION			
		CPD	FAILURE OF SECONDARY MATERNAL EFFORTS	FETAL DISTRESS	FETAL DISTRESS WITH MSL
MODE	EMERGENCY LSCS	12	0	14	3
	OUTLET FORCEPPS	0	3	0	0

WHO Modified Partogram of the patients who underwent emergency lscs,12 were due to cephalopelvicdisproportion,14 were due to fetal distress and 3 were due to metal distress with meconium stained liquor.Outlet forceps was applied due to failure of secondary maternal efforts.

INDICATION

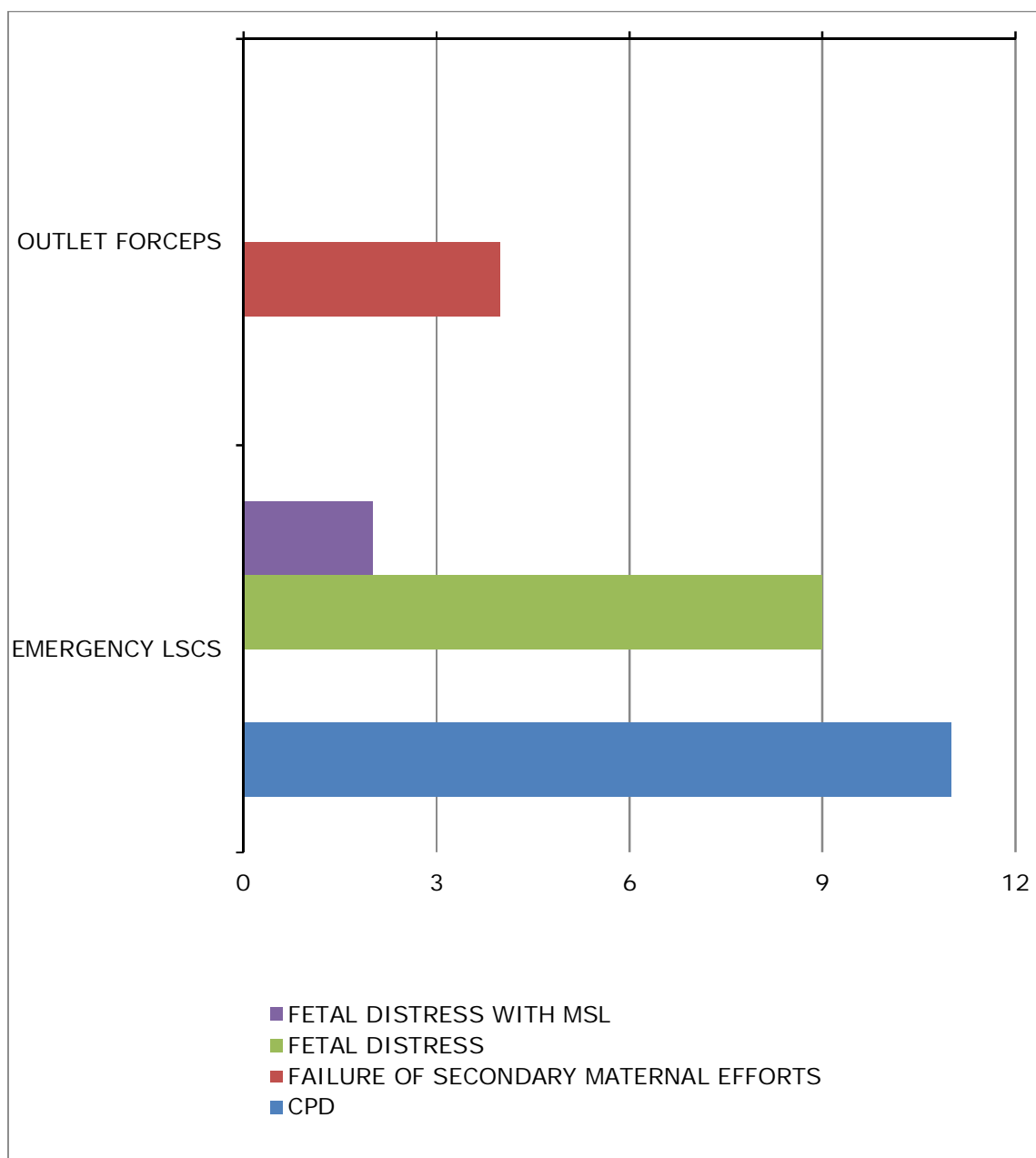


INDICATION

PAPERLESS PARTOGRAM				
MODE	INDICATION			
	CPD	FAILURE OF SECONDARY MATERNAL EFFORTS	FETAL DISTRESS	FETAL DISTRESS WITH MSL
EMERGENCY LSCS	11	0	9	2
OUTLET FORCEPPS	0	4	0	0

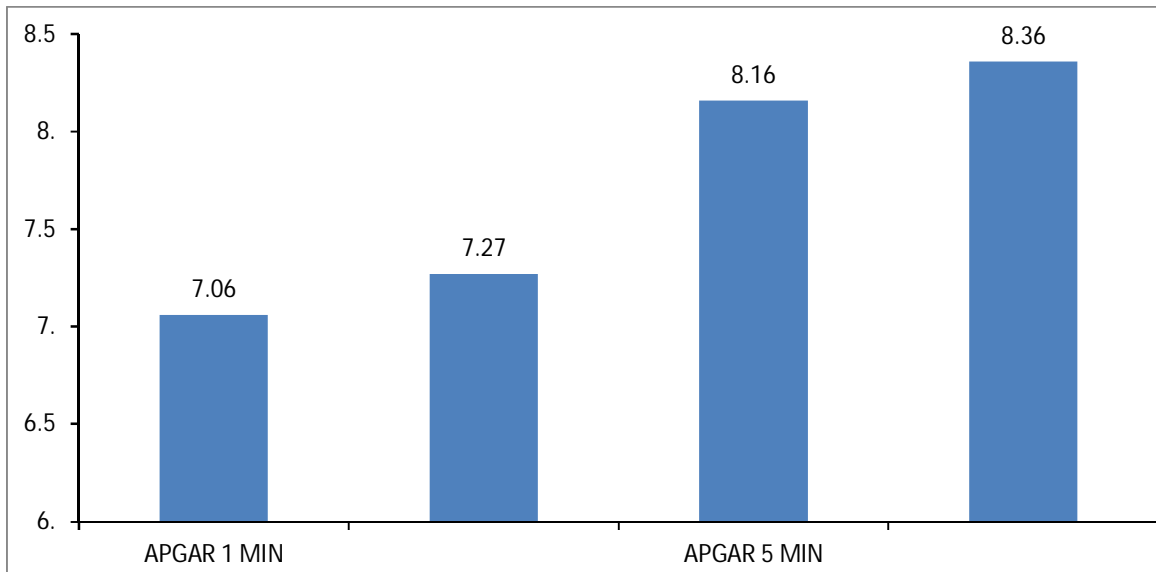
Paperless partogram of the 24 patients taken up for emergency lscs, 11 patients had cephalopelvic disproportion, 9 had fetal distress and 2 patients had fetal distress with meconium stained liquor.

INDICATION



APGAR

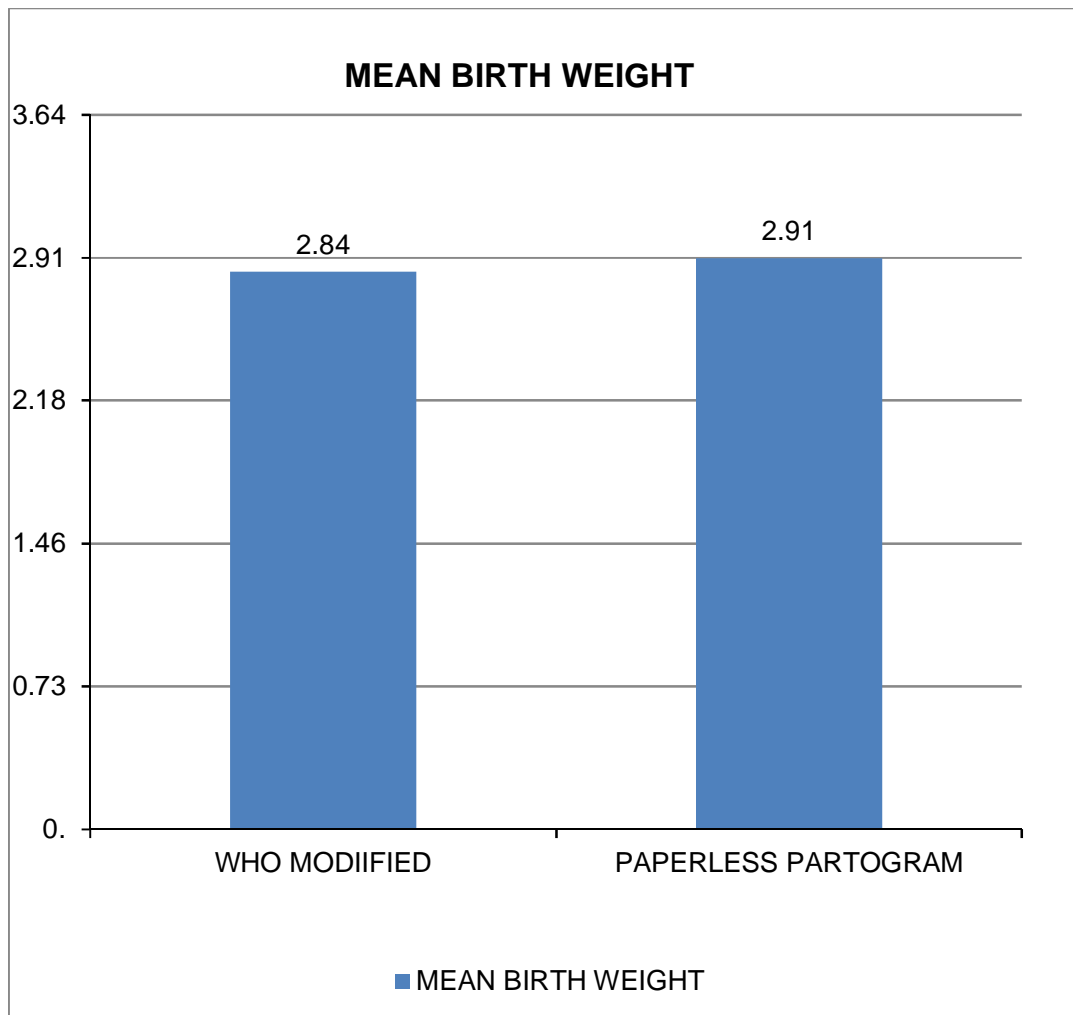
Group Statistics					
	group	N	Mean	Std. Deviation	Std. Error Mean
APGAR 1 MIN	WHO MODIIFIED	100	7.0600	.91916	.09192
	PAPERLESS PARTOGRAM	99	7.2727	.99814	.10032
APGAR 5 MIN	WHO MODIIFIED	100	8.1600	.86129	.08613
	PAPERLESS PARTOGRAM	100	8.3600	.91585	.09159



The mean 1 minute apgar in group A was 7.06(Standard deviation 0.9) and in group B was 7.27(Standard deviation 0.9)..The mean 5 minute apgar in group A was 8.16(Standard deviation 0.86) and in group B was 8.36(Standard deviation 0.91)

BIRTH WEIGHT

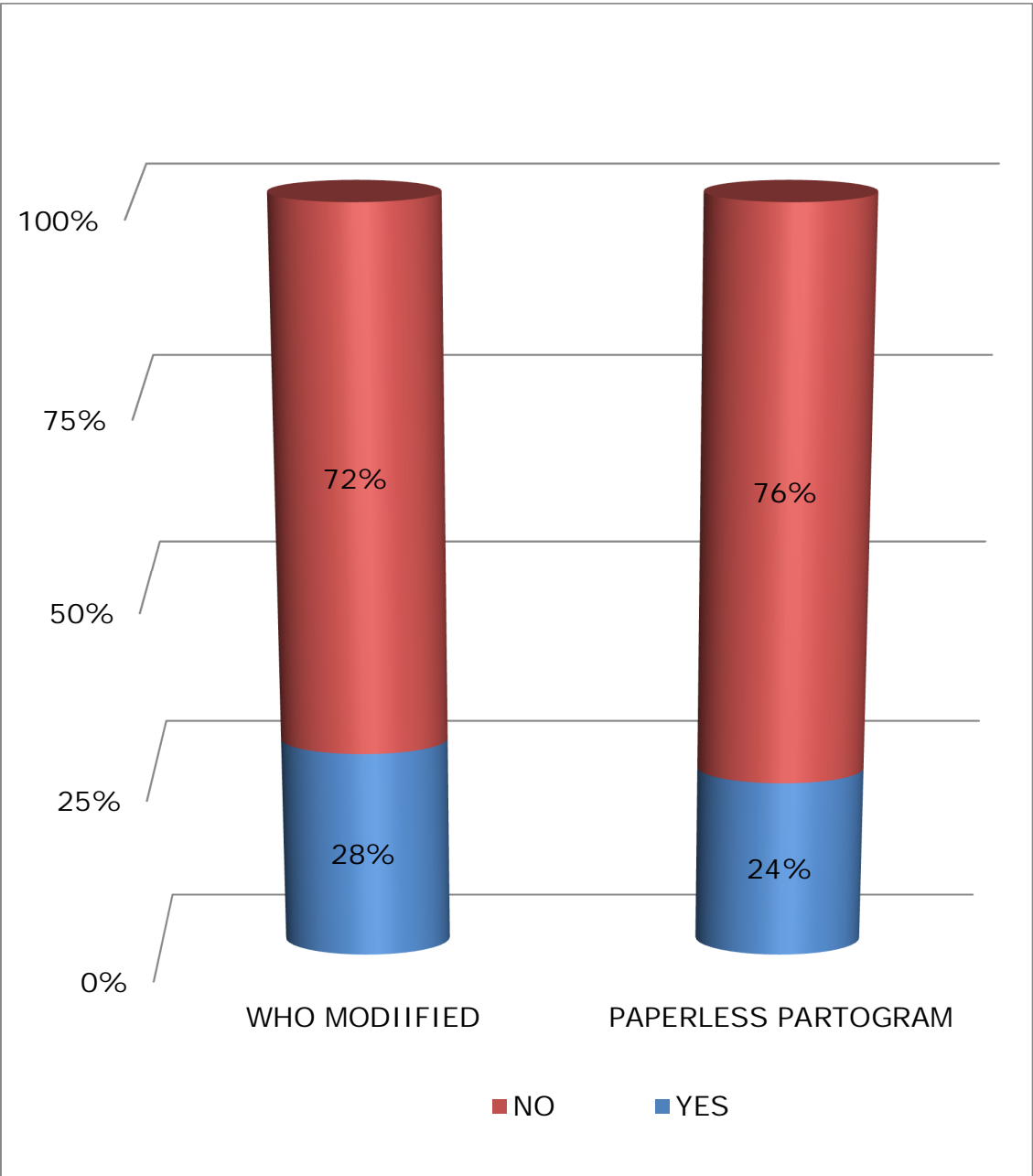
BIRTH WEIGHT							
	Group	N	Mean	Std. Deviation	Std. Error Mean	T VALUE	P VALUE
BIRTH_WEIGHT	WHO MODIFIED	100	2.8376	.50820	.05082	1.144	0.254
	PAPERLESS PARTOGRAM	100	2.9162	.46210	.04621		



Mean birth weight in group A was 2.84(Standard deviation 0.50) and group B was 2.91(Standard deviation 0.46)

NICU ADMISSION

NICU ADMISSION						
					CHI SQUARE	P VALUE
		GROUP		Total		
		WHO MODIFIED	PAPERLESS PARTOGRAM			
NICU	YES	28	24	52		
	NO	72	76	148	0.4158.	51904.
Total		100	100	200		



Discussion

DISCUSSION

E.A, Friedman in 1954 following a study on a large number of women in the USA, described a normal cervical dilatation pattern. Philpott in extensive studies of primigravidae in Central and Southern Africa constructed a partogram for cervical dilation in his population and was able to identify deviations from the normal and provide a sound scientific basis for early intervention leading to the prevention of prolonged labour (24). The WHO model of the partograph was designed as a simplified format including the best features of several partographs (25,38). With the institution of partograph there is a decrease in perinatal mortality.

Although the WHO[31] recommended universal application of the partogram. Although the WHO modified partogram was introduced with the aim to achieve universal usage as it promised to alleviate the need for complex charting ,many institutions fail to use it in the right way.Many attendants are not willing to come forward and make this practise universal since they feel that it is an unnecessary cumbersome process.. Debdas[39] believes that the “partograph is simply too time-consuming for overburdened clinicians and too complicated for many skilled birth attendants — many of whom have not received higher education”. This is a novel

comparison between two partograms and no current studies are available to compare .

AGE OF THE PATIENT:

The mean age of the patient in WHO group was 24.09(Standard deviation 3.85) and 25.23(Standard deviation 3.82) in Paperless partogram group. These results are similar to studies conducted by Gitanjali et al of Gauhati medical college.

PARITY :

Among all the patients studied, in Group A 64% of the patients were primigravida and in Group B 57% of the patients were primigravida. In Group A 36% of the patients were multigravida and in Group B 43 % of the patients were multigravida. This was not found to be statistically significant. Most of the patients in both the group were primigravida. Among multigravid women most of the patients were second gravida. Study published by Prakash et al 2014 had 74% of primigravida in cases for paperless partogram and 54% of cases in control of WHO partogram

REGISTRATION :

Among all the patients studied, in Group A 90% of the patients were registered and in Group B 88% of the patients were registered. Thus most of the patients were booked and immunised and had received regular antenatal care.

GESTATIONAL AGE :

Among the patients studied the gestational age were between 36 and 42 weeks. The mean gestational age was 38.13 weeks (Standard Deviation 1.02) and 37.87 weeks (Standard Deviation 1.07) in Group A and in Group B respectively. Studies by Gitanjali et al had a mean gestational age of 37.6 \pm 1.04 in Group A and 37.7 \pm 0.78 in Group B.

CERVICAL DILATATION :

61% and 58% of patients entered the study at 4cm of cervical dilatation in group A and B respectively .5cm dilatation was found in 23% group A and 18% group B.16% in Group A and 23% in Group B entered the study at 6cm dilatation.Only one patient of Group B entered the study at 7cm dilatation.This is in accordance to results of the study conducted by Prakash et al of Burla.

OXYTOCIN AUGMENTATION:

Out of 200 participants, labor was augmented in 16% of cases in paperless partogram and 39 % of the cases in WHO group .This was statistically significant with a p value <0.001 it has the advantage of promoting normal course of labour and less interventions.Comparable results were reported by papers published in a study centre at Belgium. ⁽⁴³⁾

DURATION:

Mean duration is found to be 234.87minutes (Standard Deviation 73.65) and 215.79(Standard Deviation 80.69) in Group A and in Group B respectively.

CROSSING ALERT LINE:

In my, labor crossing the alert line was found in 10% WHO group and 8 % in Paperless group . There was one study reported by Kenchaveeriah et al (40) who showed that about 29% of patients in group A and 14% of group B patients had crossed the first mark which was statistically significant. Similar study done at Vellore there was one report giving 18% and 16% in first and second group respectively.,

CROSSING ACTION LINE:

Labor crossing the action line was observed in 1% and 3% in Paperless and WHO group in my study. Gitanjali et al reported 12% and 2% parturients in the first and second group respectively which was significant. Studies done by Prakash et al showed no significant differences between the two groups however.

AVERAGE PER VAGINAL EXAMINATIONS:

80% of patients in Group B required only 2 per vaginal examinations whereas only 23% had 2 per vaginal examinations in Group A. This was statistically significant. 28% and 9% required 3 PV respectively. 4 PV were done in 35% and 6%. 5 PV were done in 9% and 3% respectively in group A and B each. However 6 PV were done in 5% of group A and 2% of Group B patients

MODE OF DELIVERY:

The outcome by normal vaginal delivery in our study is 65 and 45% in Paperless and WHO groups which is statistically significant. Kenchaveeriah et al reported 77% in the composite group and 90% in the simplified partograph group. Gitanjali et al reported similar results.

The caesarean section rate in Paperless & WHO partograms was 29% and 22% respectively. There is one paper from Kolkatta which shows

an lscs rate of 10% and 8% in each group. Dublin study centre shows,6% of patients taken up for emergency lscs..In present study Outlet forceps application was done in 3% of Group A and 4% of Group B patients.

APGAR:

The mean 1 minute apgar in group A was 7.06(Standard deviation 0.9) and in group B was 7.27(Standard deviation 0.9).The mean 5 minute apgar in group A was 8.16(Standard deviation 0.86) and in group B was 8.36(Standard deviation 0.91).

MEAN BIRTH WEIGHT:

Mean birth weight in group A was 2.84(Standard deviation 0.50) and group B was 2.91(Standard deviation 0.46).Study conducted by Prakash et al had majority of the babies between the weight 2.5 to 3.5 Kg in both case & control.Lowest Birth weight of the series – 1600 gm.Highestbirth weight of the series – 3900 gm.

NICU ADMISSION:

The NICU admissions 28 and 24 in WHO and paperless partograms respectively which were not statistically significant . Kenchaveeriah et al reported 19.4%and 8.9 % in their composite and simplified groups respectively .Prakash et al had results with 24% admission of the group a and 18% admission from group b.

Summary

SUMMARY

OUTCOME	GROUP A	GROUP B
OXYTOCIN AUGMENTATION	39%	16%
DURATION(MINUTES)	234	215
CROSSED ALERT LINE	10	8
CROSSED ACTION LINE	3	1
MODE OF DELIVERY		
SPONTANEOUS	65	45
AUGMENTED	39	16
EMERGENCY LSCS	29	22
OUTLET FORCEPS	3	4
APGAR	7.06	7.27
BIRTH WEIGHT	2.84	2.91
NICU ADMISSION	28	24

This comparative study was done in the Department of Obstetrics and Gynaecology, Institute of Obstetrics and Gynaecology, Madras Medical College.

A total of 200 patients with gestational age 36 to 42 weeks pregnancy entering active phase of labour were included in this study and were assigned to two groups of 100 each randomly.

- In this observational study comparing WHO and paperless groups mean age is 24.09 ± 3.85 and 25.23 ± 3.82 respectively.
- 64% primis and 57% primis were included in WHO and paperless partographs respectively. 36% multis in WHO and 43% multis in paperless group were included.
- Mean gestational age in WHO and paperless was 38.13 ± 1.02 and 37.87 ± 1.07 respectively. All parameters were comparable in both the study groups
- Most of the subjects 61% and 57% entered the study at 4cm dilatation in WHO and paperless respectively.
- Alert ETD was crossed in 10% WHO group and 8% in paperless group. Action ETD was crossed in 3% WHO and 1% in paperless group

- In WHO partograph 66 women required more than 2 pervaginal examinations, and 4 of them even required 6PVs. In paperless partograph 87 required only 2 pervaginal examinations, none of them required more than 3PVs.
- Oxytocin was used for augmentation in 39% of cases in WHO group, but only 16% cases required oxytocin in paperless group. In spite of increased usage of oxytocin mean duration of active phase (234.87 vs 215.79) was comparable in both the study groups.
- 65% of subjects in paperless partograph had spontaneous vaginal delivery, whereas in WHO partograph only 45% had spontaneous vaginal delivery, but the difference in the rate of instrumental delivery (3% and 4%) and c-section (29% and 22%) were not statistically significant in both the study groups.
- Admissions to NICU in both groups (28% and 24%) were similar in both groups.

Conclusion

CONCLUSION

We found that Paperless partogram was user friendly because it was easy to use as it did not require a graph paper, needed much less time and one man single handed monitoring and bypasses the effort to understand the tracing of a graph

It was found that there was a significant reduction in the total amount of pervaginal examinations in paperless partogram in comparison to the WHO partograph inspite of efforts to be aseptic and reduce the amount of vaginal examinations. This would naturally have an impact on the rise of intrapartum infections. Thus we can eliminate one known cause of maternal mortality and morbidity which is sepsis.

Injudicious usage of oxytocin was cutdown in paperless partograph compared to WHO. Oxytocin usage had not accelerated the labour instead it had reduced the chance of spontaneous vaginal delivery significantly. However WHO had not significantly increased the instrumental delivery rate.

Our study has highlighted the fact that this is an advantage but we need to have more multi centric trials to prove the benefits in aspects of vaginal examinations and unnecessary augmentation.

As partograph is utilized mainly in tertiary health facilities and knowledge about partograph among peripheral workers is poor hence further research in this field and training of personnel is mandatory . This paperless partograph is very simple to understand and implement even in rural setup and by midwives with minimal training .The appropriate time of referral needs more emphasis in continuing education and partograph should be promoted for use by midwives and MBBS doctors who care for labouring women in primary health care centers

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Annexures

PROFORMA

A COMPARATIVE STUDY BETWEEN WHO MODIFIED PARTOGRAM AND PAPERLESS PARTOGRAM IN THE EFFECTIVE MANAGEMENT OF LABOUR

Name of the patient: Reg/ Unreg:

Age : OP/IPNo:

Date: Unit:

Address:

Socio economic status:

Phone No:

Educational status

Amenorrhea:

Perception of fetal movements:

Chief Complaints:

Pain abdomen :

Bleeding PV :

Leak PV :

Obstetric History:

Married life : Consanguinity :

Sl No	Year	Place of delivery	Pregnancy Event	Delivery outcome	Outcome of the baby

Present pregnancy:

ANCs : Hospital/Doctor
Trained ANMs

Menstrual history : LMP
EDD
Gestational age

Past history :

Family History :

General physical examination

Built	Nourishment		
Pallor	Edema	Icterus	Clubbing
Lymphadenopathy	Cyanosis		

Pulse :

Blood pressure :

CardioVascular System

Respiratory System

Central Nervous System

Abdomen

Height of uterus

Contractions

Liquor

Fundal height

EFW

FHR

Per Vaginal examination

Dilatation

Effacement

Presentation

Station

Membranes

Caput

Moulding

Pelvis

Diagnosis:

Investigations

Hb%

Urine Routine

Blood group & Rh typing

HIV

HbsAg

VDRL

OGCT

CTG:Category I

Category II

Category III

Treatment given:

Nature of delivery:

Induction - Indication
Method

Spontaneous

Mode of delivery:

Vaginal

Normal

Instrumental

Indication

Caeserean

Indication

Neonatal outcome

Gestational age

Birth Weight

Date of birth

Time of birth

APGAR- 1'

5'

Maternal complications

Plotting of WHO partograph:

Name	Gravida	Para	Hospital number	
Date of admission	Time of admission		Ruptured membranes	hours
Fetal heart rate				
Amniotic fluid Moulding				
Cervix (cm) [Plot X]				
Descent of head [Plot O]				
Contractions per 10 mins				
Oxytocin U/L drops/min				
Drugs given and IV fluids				
Pulse and BP				
Temp °C				
Urine { protein, osmole, volume				

" PAPERLESS PARTOGRAM "

Single Sheet - 'at a glance' Graphpaperless Partogram

Reg. No. _____ Date _____
 Name _____ Age _____ Para _____ Wk of gest _____

PELVIS Adequate / Not Adequate **RISK FACTOR** (if any) _____

ALERT ETD

ACTION ETD (4 Hrs.)

(Write in RED)

(For use in 'Active phase' of labour - from 4 cm dilatation of cervix onwards)

Nursing Observations										Doctor's		
TIME (Check Hourly)	T/P	BP	I/Vs	Uts output	FHR	Muc/ Liquor Tilt - 1 Tilt - 2	No. of Contra in 30 min.	Oxytocin/ Misc dose	Analgesic given Time/Dose	Dilatation (in cm)		
										Expec ted	Actual	LAG

RULE OF SEVEN (7) FOR SLOW LABOR

I - Slow dilatation between 4-7cm dilatation range
(Slow dilatation 1st)
 Probable cause - inadequate contraction
 Management - Oxytocin after excluding mechanical hindrance

II - Slow dilatation between 7-10cm dilatation phase
(Slow dilatation 2nd)
 Probable cause - Mechanical hindrance
 Plan for management - According to cause found in:
 * Power * Passage * Passenger

Time of Rupture of Membranes _____

d-3 Chart - for timing epidural analgesia

Time	Descent	Depth of Cephal (cm)	Degree of moulding

REMARKS :

WHO MODIFIED PARTOGRAM

S. NO	IP NO	NAME	AGE	PARITY	R/UR	GA	TIME	DILAT ATION (CM)	ALERT ETD/LINE	CROSSED ALERT LINE	ACTION ETD/TIME	CROSSED ACTION LINE	OXYTOCIN	AVERAGE PV	TIME	DURATION	MODE	INDICATION	BIRTH WEIGHT	APGAR 1 MINUTE	APGAR 5 MINUTE	NICU/MOTHE R	MATERNAL SEPSIS	FEATAL SEPSIS
1	29845	JAYANTHI	22	G2P1L1	R	37W5D	10PM	6	2AM	NO	6AM	NO	YES	5	1.12AM	3HRS12MINS	AUGMENTED	-	3.045	8/10	9/10	MOTHER	-	-
2	29878	SELVI	21	PRIMI	R	38W2D	12AM	4	6.00AM	NO	10.00AM	NO	YES	2	4.35AM	4HR35MIN	EMERGENCY LSCS	FETAL DISTRESS	2.665	6/10	7/10	MOTHER	-	-
3	29636	KANAGAVALLI	23	PRIMI	R	37W3D	8.20PM	4	2.20AM	NO	6.20AM	NO	YES	3	11.35PM	3HRS15MIN	AUGMENTED LN		2.21	7/10	8/10	MOTHER	-	-
4	29885	NAGACHAKRAM	25	G2P1L1	R	38W3D	7.15AM	6	11.15AM	NO	3.15PM	NO	NO	2	10.32AM	3HRS17MINS	SPONTANEOUS LN		2.4	7/10	8/10	MOTHER	-	-
5	10267	MALLIGA	23	PRIMI	UR	37W4D	6.10AM	4	12.10PM	YES	4.10PM	NO	NO	3	12.13PM	6HRS3MINS	SPONTANEOUS LN		2.7	7/10	8/10	MOTHER	-	-
6	10285	VENBU	19	PRIMI	R	37W6D	3.10PM	4	9.10PM	NO	1.10AM	NO	NO	3	7.30PM	4HRS20MIN	EMERGENCY LSCS	CPD	3.5	8/10	9/10	MOTHER	-	-
7	10337	SARANYA	21	PRIMI	R	37W 2D	10.15PM	4	4.15AM	NO	8.15AM	NO	NO	2	2.12AM	3HRS57MINS	SPONTANEOUS LN		2.1	7/10	8/10	MOTHER	-	-
8	10408	RANJITHA	23	G3P2L1	R	39W	12PM	5	5PM	NO	9PM	NO	NO	2	2.35PM	2HRS35MINS	SPONTANEOUS LN		3.1	7/10	8/10	MOTHER	-	-
9	9557	SANGEETHA	20	PRIMI	R	37W2D	6PM	5	11PM	YES	3AM	NO	YES	4	11.06PM	5HRS6MINS	AUGMENTED LN		2.25	7/10	8/10	MOTHER	-	-
10	10439	YUVASHREE	23	G2P1L1	R	38W5D	11.40PM	5	4.40AM	NO	8.40AM	NO	NO	2	2.55AM	3HRS15MIN	SPONTANEOUS LN		3	7/10	8/10	MOTHER	-	-
11	10564	VINOTHINI	20	PRIMI	R	36W5D	4.10AM	4	10.10AM	NO	2.10PM	NO	YES	2	9.38AM	5HRS28MINS	OUTLET FORCEPPS	FAILURE OF SECONDARY MATERNL EFFORTS	2.25	7/10	8/10	MOTHER	-	-
12	10619	EMILA	19	PRIMI	R	37W1D	10.20AM	4	4.20PM	YES	8.20PM	NO	YES	6	4.36PM	6HRS16MINS	EMERGENCY LSCS	FETAL DISTRESS	2.43	7/10	8/10	MOTHER	-	-
13	10501	SARITHA	32	G2P1L1	R	38W2D	2.50PM	5	7.50PM	NO	11.50PM	NO	NO	3	5.06PM	2HRS16MINS	SPONTANEOUS LN		2.4	8/10	9/10	MOTHER	-	-
14	10618	SATHYA	20	PRIMI	R	36W	5.10PM	4	11.10PM	NO	3.10AM	NO	YES	4	8.37PM	3HRS27MINS	AUGMENTED LN		2.4	8/10	9/10	MOTHER	-	-
15	10659	RAMYA	20	PRIMI	R	42W	7.10PM	4	1.10AM	NO	5.10AM	NO	YES	3	11.37PM	4HRS27MINS	EMERGENCY LSCS	FETAL DISTRESS WITH MSL	2.92	6/10	8/10	NICU(OBS)	-	-
16	10583	SHRAVANYA	27	G3P1L1A1	R	37W	3.10PM	6	7.10PM	NO	11.10PM	NO	NO	3	6.16PM	3HRS6MINS	SPONTANEOUS LN		2.55	8/10	9/10	MOTHER	-	-
17	10747	SHARMILA	24	PRIMI	R	36W2D	10.15PM	4	4.15AM	NO	8.15AM	NO	YES	3	2.32AM	4HRS17MINS	EMERGENCY LSCS	FETAL DISTRESS WITH MSL	2.9	4/10	6/10	NICU(FETAL DISTRESS)	-	-
18	10759	PRIYA	33	G2P1L1	R	38W5D	1.30AM	4	7.30AM	NO	11.30AM	NO	YES	4	5.26AM	3HRS56MINS	AUGMENTED LN		3	8/10	9/10	MOTHER	-	-
19	10761	JAYANTHI	30	G2P1L1	R	37W	8.30AM	6	12.30PM	NO	4.30PM	NO	NO	2	10.46AM	2HRS16MINS	SPONTANEOUS LN		2.5	7/10	8/10	MOTHER	-	-
20	10685	SHAMINI	23	G2P1L1	R	39W1D	11.00AM	4	5.00PM	NO	9.00PM	NO	NO	3	2.28PM	3HRS28MINS	EMERGENCY LSCS	CPD	3.6	7/10	8/10	MOTHER	-	-
21	10844	DEVI	25	G2P1L1	R	39W1D	7.10PM	6	11.10PM	NO	3.10AM	NO	NO	3	10.36PM	3HRS26MINS	SPONTANEOUS LN		2	6/10	7/10	NICU(OBS)	-	-
22	10863	REKA	21	PRIMI	R	38W6D	7.20AM	4	1.20PM	NO	5.20PM	NO	YES	4	11.28AM	4HRS8MIN	AUGMENTED LN		2.8	8/10	9/10	MOTHER	-	-
23	10951	PAVITHRA	20	PRIMI	UR	37W3D	2.00AM	5	7.00AM	NO	11AM	NO	YES	4	6.21AM	4HRS21MINS	EMERGENCY LSCS	FETAL DISTRESS	2.875	6/10	9/10	NICU(OBS)	-	-
24	11074	BINDHU	22	PRIMI	R	38W	9.00PM	6	1AM	NO	5AM	NO	NO	3	12.17AM	3HRS17MINS	SPONTANEOUS LN		2.58	7/10	8/10	MOTHER	-	-
25	11073	RAMILA	23	PRIMI	R	37W2D	9.00AM	5	2.00PM	YES	6.00PM	NO	YES	5	2.21PM	5HRS21MINS	OUTLET FORCEPPS	FAILURE OF SECONDARY MATERNL EFFORTS	2.8	5/10	9/10	NICU(FETAL DISTRESS)	-	-
26	11076	MANIMALA	20	PRIMI	R	36W6D	10.20AM	4	4.20PM	NO	8.20PM	NO	YES	2	3.30PM	5HRS10MINS	AUGMENTED LN		1.75	7/10	8/10	NICU(LBW)	-	-
27	11090	PISTAKUMARI	24	G3P2L1	R	39W	2.40PM	5	7.40PM	NO	11.40PM	NO	NO	2	4.59PM	2HRS19MINS	SPONTANEOUS LN		2.4	7/10	8/10	MOTHER	-	-
28	11097	KEERTHANA	21	PRIMI	R	38W4D	11.10PM	4	5.10AM	YES	9.10AM	NO	NO	3	5.28AM	6HRS28MINS	EMERGENCY LSCS	CPD	3.95	8/10	9/10	MOTHER	-	-
29	11105	HEMALATHA	23	G2P1L1	R	39W4D	7PM	4	1AM	NO	5AM	NO	YES	3	12.06AM	5HRS6MINS	AUGMENTED LN		2.9	7/10	8/10	MOTHER	-	-
30	11109	DURGADEVI	24	PRIMI	R	37W4D	8.10PM	4	2.10AM	NO	6.10AM	NO	YES	3	12.22AM	4HRS12MINS	EMERGENCY LSCS	FETAL DISTRESS	3	5/10	7/10	NICU(FETAL DISTRESS)	-	-
31	11113	MAHESHWARI	21	PRIMI	R	37W5D	11.40PM	6	3.40AM	NO	7.40AM	NO	NO	3	2.59AM	3HRS19MINS	EMERGENCY LSCS	CPD	2.7	7/10	8/10	MOTHER	-	-
32	11196	JAYAPRIYA	23	G2P1L1	UR	38W2D	3.15AM	4	9.15AM	NO	1.15PM	NO	NO	3	7.20AM	4HRS5MINS	SPONTANEOUS LN		2.1	7/10	8/10	NICU(OBS)	-	-
33	11203	BHAVANI	30	PRIMI	R	39W4D	6.10PM	4	12.10AM	NO	4.10AM	NO	NO	3	9.44PM	3HRS34MINS	SPONTANEOUS LN		2.35	7/10	8/10	NICU(OBS)	-	-
34	11124	HAMEEDA	23	PRIMI	R	38W5D	6.00PM	4	12AM	NO	4AM	NO	NO	4	11.12PM	5HRS12MINS	SPONTANEOUS LN		3.2	7/10	8/10	NICU(FETAL DISTRESS)	-	-
35	11251	DHANALAKSHMI	32	PRIMIB	R	37W3D	8.20PM	2	2.20AM	NO	6.20AM	NO	NO	3	1.40AM	5HRS20MINS	EMERGENCY LSCS	FETAL DISTRESS	2.875	6/10	7/10	NICU(FETAL DISTRESS)	-	-
36	11746	ALAMELU	23	PRIMI	R	38W4D	6.05PM	5	11.05PM	YES	3.05AM	NO	NO	3	11.08PM	5HRS3MINS	SPONTANEOUS LN		2.1	7/10	8/10	MOTHER	-	-

37	11751	LAKSHMI	23	PRIMI	UR	39W4D	11.05AM	4	5.05PM	NO	9.05PM	NO	NO	3	2.20PM	3HRS15MINS	SPONTANEOUS LN		3.3	7/10	8/10	MOTHER	-	-
38	11805	SANGEETHA	32	G2P1L1	R	38W5D	8PM	5	1AM	NO	5AM	NO	NO	3	11.06PM	3HRS6MINS	SPONTANEOUS LN		3.25	8/10	9/10	MOTHER	-	-
39	11799	RAJESWARI	23	PRIMI	R	38W3D	7.30PM	5	12.30AM	NO	4.30AM	NO	YES	3	10PM	2HRS30MINS	EMERGENCY LSCS	CPD	3.68	6/10	8/10	NICU(OBS)	-	-
40	11833	SENTAMILSELVI	30	G3P2L2	R	39W2D	2.10AM	6	6.10AM	NO	10.10AM	NO	YES	2	5.45AM	3HRS35MINS	AUGMENTED LN		3.4	7/10	8/10	MOTHER	-	-
41	11835	VIJAYALAKSHMI	29	G3P1L1A1	R	38W1D	3.05AM	4	9.05AM	NO	1.05AM	NO	NO	3	6.20AM	3HRS15MINS	SPONTANEOUS LN		3	7/10	8/10	MOTHER	-	-
42	11822	SUMITHRA	23	G2P1L1	R	38W4D	7.15AM	6	11.15AM	NO	3.15PM	NO	NO	3	10.19AM	3HRS4MIN	SPONTANEOUS LN		3	8/10	9/10	MOTHER	-	-
43	11742	SHYAMALA	24	G3P2L1	R	38W6D	10AM	6	2PM	NO	6PM	NO	NO	3	1.10PM	3HRS10MINS	SPONTANEOUS LN		2.5	8/10	9/10	MOTHER	-	-
44	11556	NIRMALA MARY	20	PRIMI	R	38W	7AM	4	1PM	YES	5PM	NO	YES	5	1.12PM	6HRS12MINS	EMERGENCY LSCS	CPD	4.25	6/10	7/10	NICU(OBS)	-	-
45	11991	DIVYA	24	PRIMI	R	37W2D	6.30AM	4	12.30PM	YES	4.30PM	NO	NO	4	12.40PM	6HRS10MINS	SPONTANEOUS LN		2.1	7/10	8/10	NICU(OBS)	-	-
46	12066	SARANYA	25	PRIMI	R	37W6D	7.30AM	5	12.30PM	-	4.30PM	YES	YES	6	4.34PM	9HRS4MINS	AUGMENTED LN		2.5	8/10	9/10	MOTHER	-	-
47	12165	MUTHULAKSHMI	20	PRIMI	R	38W3D	9AM	4	3PM	-	7PM	YES	YES	6	7.08PM	10HRS8MIN	AUGMENTED LN		1.6	7/10	8/10	NICU(LBW)	-	-
48	12003	SWAATHI	25	PRIMI	R	38W5D	12.10AM	4	6.10AM	NO	10.10AM	NO	NO	4	5.12AM	5HRS2MINS	OUTLET FORCEPPS	FAILURE OF SECONDARY MATERNL EFFORTS	3	7/10	8/10	NICU(OBS)	-	-
49	12199	PRIYA	20	PRIMI	R	39W2D	1.10AM	6	5.10AM	NO	9.10AM	NO	NO	4	5.03AM	3HRS53MINS	SPONTANEOUS LN		2.9	8/10	9/10	MOTHER	-	-
50	12268	KODIVELAKANI	26	PRIMI	R	39W1D	2.05PM	5	7.05PM	NO	11.05PM	NO	NO	4	5.37PM	3HRS32MINS	EMERGENCY LSCS	FETAL DISTRESS	2.48	6/10	7/10	NICU(FETAL DISTRESS)	-	-
51	12287	REVATHY	24	G2P1L1	R	40W	11PM	6	3AM	NO	7AM	NO	NO	3	2.54AM	3HRS54MINS	SPONTANEOUS LN		3	7/10	8/10	MOTHER	-	-
52	12191	SUDHA	25	PRIMI	R	40W2D	1PM	4	7PM	NO	11PM	NO	NO	5	4.53PM	3HRS53MINS	SPONTANEOUS LN		2.66	8/10	9/10	NICU(OBS)	-	-
53	12324	DEEPA	22	PRIMI	R	40W	9.20PM	4	3.20AM	NO	7.20AM	NO	NO	4	12.35PM	3HRS15MINS	SPONTANEOUS LN		3.3	4/10	6/10	NICU(FETAL DISTRESS)	-	-
54	12325	MONISHA	19	PRIMI	R	39W1D	1.15PM	4	7.15PM	NO	11.15PM	NO	NO	3	5PM	3HRS45MINS	EMERGENCY LSCS	FETAL DISTRESS	2	5/10	6/10	NICU(FETAL DISTRESS)	-	-
55	12276	KANAGA	22	G2P1L1	R	38W5D	2AM	4	8AM	NO	12PM	NO	YES	3	6.38AM	4HRS38MINS	AUGMENTED LN		3.25	7/10	8/10		-	-
56	12270	JAYASHREE	26	PRIMI	R	37W1D	10.15PM	4	4.15AM	NO	8.15AM	NO	NO	2	2.30AM	4HRS15MINS	SPONTANEOUS LN		2.7	7/10	8/10	MOTHER	-	-
57	12434	MAHALAKSHMI	30	PRIMI	R	40W2D	3.10PM	4	9.10PM	NO	1.10AM	NO	NO	3	7.20PM	4HRS10MIN	SPONTANEOUS LN		3.5	7/10	8/10	MOTHER	-	-
58	12329	UMAMAHESHWARI	25	G2P1L1	R	37W4D	12PM	5	5.00PM	NO	9.00PM	NO	NO	2	2.45PM	2HRS45MINS	EMERGENCY LSCS	FETAL DISTRESS WITH MSL	1.71	6/10	7/10	NICU(FETAL DISTRESS)	-	-
59	12449	SEETHA	20	PRIMI	R	37W6D	6PM	5	11PM	YES	3AM	NO	YES	4	11.32PM	5HRS32MINS	EMERGENCY LSCS	FETAL DISTRESS	3.05	8/10	9/10	MOTHER	-	-
60	12452	SARITHA	32	PRIMI	R	37W	11.40PM	4	5.40AM	NO	9.40AM	NO	NO	2	3.47AM	4HRS7MINS	SPONTANEOUS LN		2.5	8/10	9/10	MOTHER	-	-
61	30284	KAVITHA	23	PRIMI	UR	39W2D	4.10AM	4	10.10AM	NO	2.10PM	NO	YES	4	9.38AM	5HRS28MINS	AUGMENTED LN		2.85	8/10	9/10	MOTHER	-	-
62	29886	SUMATHI	25	PRIMI	R	38W3D	11.10PM	6	3.10AM	NO	7.10AM	NO	YES	2	2.30PM	3HRS20MIN	AUGMENTED LN		2.67	8/10	8/10	MOTHER	-	-
63	30360	PREETHI	21	PRIMI	R	37W3D	4.10AM	4	10.10AM	NO	2.10PM	NO	YES	4	9.20AM	5HRS10MINS	AUGMENTED LN		2.56	7/10	8/10	MOTHER	-	-
64	30386	SHRUTHI	19	PRIMI	R	40W1D	5.10PM	4	11.10PM	NO	3.10AM	NO	NO	4	9.45PM	4HRS45MINS	EMERGENCY LSCS	FETAL DISTRESS	2.7	5/10	6/10	NICU(FETAL DISTRESS)	-	-
65	30385	PRIYA	20	PRIMI	R	37W1D	3.05AM	4	9.05AM	NO	1.05PM	NO	YES	4	7.10AM	4HRS5MINS	EMERGENCY LSCS	CPD	4.1	7/10	8/10	NICU(OBS)	-	-
66	30377	JAYAKODI	27	G2P1L1	R	38W2D	6.05PM	4	10.05PM	NO	2.05AM	NO	YES	5	8.50PM	2HRS45MINS	AUGMENTED LN		2.66	7/10	8/10	MOTHER	-	-
67	30421	SHYAMALA	29	G3P2L1	R	39W1D	5.20PM	6	9.20PM	NO	1.20PM	NO	NO	4	7.34PM	2HRS14MINS	SPONTANEOUS LN		3.2	8/10	9/10	MOTHER	-	-
68	30423	VIGNESHWARI	32	G2P1L1	UR	37W	8.50PM	4	4.50AM	NO	8.50AM	NO	NO	4	11.55PM	3HRS5MINS	SPONTANEOUS LN		2.9	7/10	8/10	MOTHER	-	-
69	30443	KRISHNAPRIYA	33	G3P1L1A1	R	38W2D	11.10AM	4	5.10PM	NO	9.10PM	NO	NO	2	2.30PM	3HRS20MINS	SPONTANEOUS LN		3.24	8/10	8/10	MOTHER	-	-
70	30520	SOUBAKHIYA	30	G2P1L1	R	39W5D	1.10PM	5	6.10PM	NO	10.10PM	NO	YES	2	4.29PM	3HRS19MINS	AUGMENTED LN		3.1	7/10	8/10	MOTHER	-	-
71	30502	DURGA	24	PRIMI	R	37W2D	9.15AM	4	3.15AM	NO	7.15AM	NO	YES	5	1.37AM	4HRS22MINS	AUGMENTED LN		2.9	7/10	8/10	MOTHER	-	-
72	30507	SUGANTHI	22	PRIMI	R	38W1D	4.25AM	5	9.25AM	NO	1.25PM	NO	NO	4	6.45AM	3HRS20MINS	SPONTANEOUS LN		2.45	8/10	9/10	MOTHER	-	-
73	30615	KALAVANI	19	PRIMI	R	37W 2D	7.30AM	4	1.30PM	NO	5.30PM	NO	NO	4	12.03PM	4HRS33MINS	EMERGENCY LSCS	CPD	3.7	7/10	8/10	MOTHER	-	-
74	30630	GOMATHY	18	PRIMI	R	38W5D	12.30PM	4	6.30PM	NO	10.30PM	NO	YES	4	5.34PM	5HRS4MINS	AUGMENTED LN		2.5	7/10	8/10	MOTHER	-	-
75	30626	KALAVATHI	24	G2P1L1	UR	38W6D	5PM	4	11PM	NO	3AM	NO	NO	2	8.03PM	3HRS3MINS	SPONTANEOUS LN		2.8	8/10	9/10	MOTHER	-	-
76	30723	LATHA	22	PRIMI	R	37W2D	1.10AM	6	5.10AM	YES	9.10AM	NO	NO	4	6.06AM	4HRS56MINS	SPONTANEOUS LN		3.2	7/10	9/10	MOTHER	-	-
77	30726	PALLAMA	26	G3P1L1A1	R	37W5D	1.20PM	5	6.20PM	NO	10.20PM	NO	NO	2	3.43PM	2HRS23MINS	SPONTANEOUS LN		3.4	8/10	9/10	MOTHER	-	-
78	30730	GEETHAMANI	21	PRIMI	R	38W	7PM	4	1AM	NO	5AM	NO	YES	4	11.22AM	4HRS22MINS	AUGMENTED LN		3.3	7/10	8/10	MOTHER	-	-
79	30736	SITRA	20	PRIMI	UR	39W	3.10AM	4	9.10AM	NO	1.10PM	NO	NO	4	6.52AM	3HRS42MINS	EMERGENCY LSCS	FETAL DISTRESS	3.4	6/10	7/10	NICU(FETAL DISTRESS)	-	-

80	30773	GOWTHAMI	30	G3P2L2	R	40W1D	4PM	4	10PM	NO	2AM	NO	NO	2	5.16PM	1HR16MINS	SPONTANEOUS LN		3.1	7/10	9/10	MOTHER	-	-
81	30780	RAJUBU	23	PRIMI	R	40W	4.20AM	4	10.20AM	NO	2.20PM	NO	YES	4	8.56AM	4HRS36MINS	EMERGENCY LSCS	FETAL DISTRESS	2.6	6/10	6/10	NICU(FETAL DISTRESS)	-	-
82	30877	KANAGA	32	PRIMI	R	37W4D	7.40PM	5	12.40AM	NO	4.40AM	NO	NO	4	11.54PM	4HRS14MINS	SPONTANEOUS LN		2.4	7/10	8/10	MOTHER	-	-
83	30872	ELAVARASI	24	G2P1L1	UR	37W3D	5.10PM	5	10.10PM	NO	2.10AM	NO	NO	2	7.33PM	2HRS23MINS	SPONTANEOUS LN		2.8	7/10	9/10	MOTHER	-	-
84	30288	RAJESHWARI	24	PRIMI	R	37W6D	1AM	4	7AM	NO	11AM	NO	YES	4	3.32AM	2HRS32MINS	EMERGENCY LSCS	CPD	3.8	8/10	9/10	MOTHER	-	-
85	30755	LAKSHMI	23	G3P1L1A1	R	37W1D	12.10PM	4	6.10PM	NO	10.10PM	NO	NO	2	2.13PM	2HRS3MINS	SPONTANEOUS LN		2.6	7/10	9/10	MOTHER	-	-
86	31014	LAKSHMI	25	PRIMI	R	38W1D	2.40PM	5	7.40PM	NO	11.40PM	NO	NO	4	6.51PM	4HRS11MINS	SPONTANEOUS LN		2.7	8/10	9/10	MOTHER	-	-
87	31034	CHARULATHA	27	PRIMI	R	38W5D	3.05PM	4	9.05PM	NO	1.05AM	NO	NO	5	7.13PM	4HRS8MINS	EMERGENCY LSCS	CPD	3.8	7/10	8/10	NICU(OBS)	-	-
88	30989	DEEPA	29	G2P1L1	R	37W 2D	12.10PM	4	6.10PM	NO	10.10PM	NO	YES	4	5.06PM	4HRS56MINS	AUGMENTED LN		2.6	8/10	9/10	MOTHER	-	-
89	30827	SURYA	23	G2P1L1	R	37W6D	11.10PM	6	3.10AM	NO	7.10AM	NO	NO	4	3.04AM	3HR54MINS	EMERGENCY LSCS	FETAL DISTRESS	2.6	5/10	5/10	NICU(FETAL DISTRESS)	-	-
90	30821	AMUDHA	24	G2P1L1	R	37W5D	9.15AM	4	3.15PM	NO	7.15PM	NO	NO	5	12.18AM	3HRS3MINS	SPONTANEOUS LN		2.9	7/10	8/10	MOTHER	-	-
91	31066	RAMYA	25	G3P1L1A1	R	38W1D	6.10PM	4	12.10AM	NO	4.10AM	NO	YES	4	10.14PM	4HRS4MINS	AUGMENTED LN		2.8	8/10	9/10	MOTHER	-	-
92	31203	DEEPA	20	PRIMI	R	38W6D	2.40PM	4	8.40PM	NO	12.10AM	NO	NO	4	5.37PM	3HRS17MINS	EMERGENCY LSCS	CPD	3.5	8/10	9/10	MOTHER	-	-
93	31212	GOMALA	19	PRIMI	UR	37W4D	3.05PM	5	8.05PM	NO	12.05AM	NO	NO	4	5.12PM	2HRS7MINS	EMERGENCY LSCS	FETAL DISTRESS	2.6	8/10	9/10	MOTHER	-	-
94	31182	PREETHA	20	PRIMI	R	37W4D	7.15AM	4	1.15PM	NO	5.15PM	NO	NO	2	11.23AM	4HRS8MINS	SPONTANEOUS LN		2.8	8/10	9/10	MOTHER	-	-
95	31215	ALPHONSA MARY	20	PRIMI	R	38W3D	4.35PM	4	10.35PM	NO	2.35AM	NO	YES	6	7.53PM	3HRS18MINS	EMERGENCY LSCS	FETAL DISTRESS	2.9	6/10	7/10	NICU(FETAL DISTRESS)	-	-
96	30996	SARANYA	24	PRIMI	R	37W5D	5.15AM	5	10.15AM	NO	2.15PM	NO	NO	2	9.42AM	4HRS27MINS	SPONTANEOUS LN		2.5	8/10	9/10	MOTHER	-	-
97	31139	ANITHA	26	PRIMI	R	38W3D	10.15PM	4	4.15AM	NO	8.15AM	NO	NO	4	2.12AM	3HRS57MINS	SPONTANEOUS LN		2.5	8/10	9/10	MOTHER	-	-
98	30930	KAVITHA	26	PRIMI	R	39W	8.40AM	4	2.40PM	-	6.40PM	YES	YES	6	6.51PM	10HRS11MIN	AUGMENTED LN		2.9	8/10	9/10	MOTHER	-	-
99	31331	SUGANYA	30	G2P1L1	R	39W2D	3.45PM	5	8.45PM	NO	12.45AM	NO	NO	5	8.34PM	4HRS49MINS	SPONTANEOUS LN		3.2	8/10	9/10	MOTHER	-	-
100	31336	DURGA	28	PRIMI	R	39W2D	2.10PM	4	8.10PM	NO	12.10AM	NO	YES	4	6.33PM	4HRS23MINS	EMERGENCY LSCS	CPD	3.6	7/10	8/10	MOTHER	-	-

PAPERLESS PARTOGRAM

S. NO	IP NO	NAME	AGE	PARITY	R/UR	GA	TIME	DILAT ATION (CM)	ALERT ETD/LINE	CROSSED ALERT LINE	ACTION ETD/TIME	CROSSED ACTION LINE	OXYTOCIN	AVER AGE PV	TIME	DURATION	MODE	INDICATION	BIRTH WEIGHT	APGAR 1 MINUTE	APGAR 5 MINUTE	NICU/MOTHE R	MATERNAL SEPSIS	FEATAL SEPSIS
1	28227	ZAMSHATH	24	G2P1L1	R	37W4D	9.45PM	4	3.45AM	NO	7.45AM	NO	YES	4	3.06AM	5HRS21MINS	AUGMENTED LN	-	3.045	8/10	9/10	MOTHER	-	-
2	28886	JANSI	22	PRIMI	R	37W5D	1.10PM	4	7.10PM	NO	11.10PM	NO	NO	2	4.35PM	3HRS25MINS	SPONTANEOUS LN		3.1	8/10	9/10	MOTHER	-	-
3	28940	KAMATHCHI	25	PRIMI	R	39W	7.20AM	4	1.20PM	YES	5.20PM	NO	YES	5	2.24PM	7HRS4MINS	AUGMENTED LN		2.65	7/10	8/10	MOTHER	-	-
4	28987	PADMA	26	G2P1L1	R	38W3D	3.15PM	4	9.15PM	NO	1.15AM	NO	NO	2	6.07PM	2HRS52MINS	SPONTANEOUS LN		3.2	8/10	9/10	MOTHER	-	-
5	29027	VELLANKANI	22	G3P1L1A1	UR	39W1D	4.40AM	4	10.40AM	NO	2.40PM	NO	NO	2	6.03AM	2HRS23MINS	SPONTANEOUS LN		2.75	7/10	8/10	MOTHER	-	-
6	29048	LATHA	19	PRIMI	R	37W6D	1.10AM	4	7.10AM	NO	11.10AM	NO	NO	3	4.32AM	3HRS22MINS	SPONTANEOUS LN		3.1	8/10	9/10	MOTHER	-	-
7	28999	REKHA	21	PRIMI	R	38W1D	12.10PM	5	5.10PM	NO	9.10PM	NO	NO	2	2.27PM	2HRS17MINS	EMERGENCY LSCS	CPD	3.9	8/10	9/10	MOTHER	-	-
8	29140	PUSHPA	26	G3P2L1	R	39W2D	3.10AM	4	9.10AM	NO	1.10PM	NO	NO	3	6.14AM	3HRS4MINS	SPONTANEOUS LN		2.8	8/10	9/10	MOTHER	-	-
9	29141	NADHIYA	22	PRIMI	R	38W5D	2.10AM	4	8.10AM	YES	12.10PM	NO	YES	6	8.23AM	6HRS13MINS	AUGMENTED LN		2.6	7/10	8/10	MOTHER	-	-
10	29229	MOHANA	21	G2P1L1	R	37W2D	6.20PM	4	12.20AM	NO	4.20AM	NO	NO	2	8.57PM	2HRS37MINS	EMERGENCY LSCS	FETAL DISTRESS	2.95	5/10	6/10	NICU(FETAL DISTRESS)	-	-
11	29254	ARIVUKARASI	25	PRIMI	UR	36W4D	3.15PM	6	7.15PM	NO	11.15PM	NO	NO	2	6.48PM	3HRS33MINS	SPONTANEOUS LN		2.4	8/10	9/10	MOTHER	-	-
12	29256	THABASINI	20	PRIMI	R	37W	4.45PM	4	10.45PM	NO	2.45AM	NO	NO	2	9.57PM	5HRS13MINS	SPONTANEOUS LN		2.75	8/10	9/10	MOTHER	-	-
13	29329	KUMARI	30	G2P1L1	R	40W3D	3.10AM	5	8.10AM	NO	12.10PM	NO	NO	2	5.26AM	2HRS16MINS	SPONTANEOUS LN		3.2	9/10	9/10	MOTHER	-	-
14	29328	PARAMESHWARI	22	PRIMI	R	39W6D	2.30AM	4	8.30AM	YES	12.30PM	NO	YES	4	8.43AM	6HRS13MINS	OUTLET FORCEPPS	FAILURE OF SECONDARY MATERNAL EFFORTS	3.3	6/10	8/10	NICU(OBS)	-	-
15	29332	SASIKALA	23	PRIMI	UR	41W3D	3.20PM	4	9.20PM	NO	1.20AM	NO	NO	2	5.58PM	2HRS38MINS	SPONTANEOUS LN		2.1	8/10	9/10	NICU(LBW)	-	-
16	29440	DEVI	29	G3P1L1A1	R	37W3D	4.50AM	4	10.50AM	NO	2.50PM	NO	NO	3	6.58AM	2HRS8MINS	SPONTANEOUS LN		2.85	7/10	9/10	MOTHER	-	-
17	29433	MALLIGA	22	PRIMI	R	36W7D	12.30AM	4	6.30AM	NO	10.30AM	NO	YES	3	3.32AM	3HRS32MINS	EMERGENCY LSCS	FETAL DISTRESS WITH MSL	3.2	5/10	6/10	NICU(FETAL DISTRESS)	-	-
18	29446	DEVIKALA	29	G2P1L1	R	37W6D	1.15AM	5	6.15AM	NO	10.15AM	NO	NO	4	3.43AM	2HRS28MINS	SPONTANEOUS LN		2.5	8/10	9/10	MOTHER	-	-
19	29413	DIVYA	29	G2P1L1	R	37W4D	6.30PM	6	10.30PM	NO	2.30AM	NO	NO	2	8.52PM	2HRS22MINS	SPONTANEOUS LN		2.9	8/10	9/10	MOTHER	-	-
20	29488	ARASAKUMARI	23	G2P1L1	R	38W2D	3.50PM	4	9.50PM	NO	1.50AM	NO	NO	2	6.12PM	2HRS22MINS	SPONTANEOUS LN		3.2	7/10	8/10	MOTHER	-	-
21	29246	MANIMEGALAI	24	G2P1L1	R	39W3D	5.20PM	4	11.20PM	NO	3.20AM	NO	NO	2	7.53PM	2HRS33MINS	EMERGENCY LSCS	FETAL DISTRESS	2	6/10	7/10	NICU(LBW)	-	-
22	29348	VUJAYALAKSHMI	20	PRIMI	R	40W2D	6.10AM	4	12.10PM	NO	4.10PM	NO	YES	2	8.26AM	2HRS16MINS	EMERGENCY LSCS	CPD	4.2	7/10	9/10	NICU(OBS)	-	-
23	29494	VAIRALAKSHMI	20	PRIMI	UR	36W5D	4.00AM	5	9.00AM	NO	1PM	NO	NO	3	6.29AM	2HRS29MINS	EMERGENCY LSCS	FETAL DISTRESS	2.875	4/10	6/10	NICU(FETAL DISTRESS)	-	-
24	28914	KOKILA	24	G3P1L1A1	R	36W4D	7.20PM	4	1.20AM	NO	5.20AM	NO	NO	2	9.23PM	2HRS3MINS	SPONTANEOUS LN		2.8	7/10	8/10	MOTHER	-	-
25	29608	SELVI	19	PRIMI	R	37W4D	5.50AM	4	11.50AM	NO	3.50PM	NO	YES	4	9.56AM	4HRS6MINS	AUGMENTED LN		2.4	7/10	9/10	MOTHER	-	-
26	29435	KUSHBOO	24	PRIMI	R	36W6D	8.10PM	4	2.10AM	YES	6.10AM	NO	NO	2	3.30AM	7HRS20MINS	OUTLET FORCEPPS	FAILURE OF SECONDARY MATERNAL EFFORTS	3.3	8/10	9/10	MOTHER	-	-
27	29343	MAMTHADEVI	26	G3P2L1	R	39W1D	4.10AM	5	9.10AM	NO	1.10PM	NO	NO	2	6.38AM	2HRS28MINS	SPONTANEOUS LN		2.6	8/10	9/10	MOTHER	-	-
28	29715	BHAVANI	25	PRIMI	R	38W6D	3.30AM	4	9.30AM	NO	1.30PM	NO	NO	2	8.48AM	5HRS18MINS	EMERGENCY LSCS	CPD	4.2	8/10	9/10	NICU(OBS)	-	-
29	29682	PANKAGINI	21	G2P1L1	R	37W 2D	4PM	4	10PM	NO	2AM	NO	YES	3	7.09PM	3HRS9MINS	SPONTANEOUS LN		2.4	7/10	8/10	MOTHER	-	-
30	29767	LALITHA	22	PRIMI	R	37W3D	1AM	4	7AM	-	11AM	YES	YES	6	11.10AM	10HRS10MINS	AUGMENTED LN		3.2	7/10	9/10	MOTHER	-	-
31	29878	SELVI	21	PRIMI	R	38W1D	1.20PM	4	7.20PM	NO	11.20PM	NO	YES	3	5.32PM	4HRS12MINS	EMERGENCY LSCS	CPD	3.7	8/10	9/10	MOTHER	-	-
32	29637	GANGA	25	G2P1L1	UR	36W4D	3.15AM	4	9.15AM	NO	1.15PM	NO	NO	2	5.33AM	2HRS18MINS	SPONTANEOUS LN		2.6	8/10	9/10	MOTHER	-	-
33	29887	MUTHUMARI	31	PRIMI	R	40W	4.10PM	4	10.10PM	NO	2.10AM	NO	YES	3	7.32PM	3HRS22MINS	EMERGENCY LSCS	FETAL DISTRESS WITH MSL	2.55	4/10	6/10	NICU(FETAL DISTRESS)	-	-
34	29610	LALITHA	29	PRIMI	R	36W4D	4.00PM	4	10PM	NO	2AM	NO	NO	4	8.40PM	4HRS40MINS	EMERGENCY LSCS	CPD	3.7	7/10	8/10	MOTHER	-	-
35	29934	RAMYA	33	G3P1L1A1	R	37W1D	3.10PM	5	9.10PM	NO	1.10AM	NO	YES	3	6.43PM	3HRS33MINS	AUGMENTED LN		2.5	8/10	9/10	MOTHER	-	-
36	29963	PREMAVATHY	26	PRIMI	R	38W2D	7.05AM	4	1.05PM	YES	5.05PM	NO	YES	2	1.10PM	6HRS5MINS	OUTLET FORCEPPS	FAILURE OF SECONDARY MATERNAL EFFORTS	3.5	8/10	9/10	NICU(OBS)	-	-

37	29952	SUMATHY	27	PRIMI	UR	39W	2.10PM	6	6.10PM	NO	10.10PM	NO	NO	2	4.33PM	2HRS23MINS	SPONTANEOUS LN			3	8/10	8/10	MOTHER	-	-
38	30035	NITHYA	32	G2P1L1	R	37W5D	3.25PM	4	9.25PM	NO	1.25AM	NO	NO	2	7.36PM	4HRS11MINS	SPONTANEOUS LN			3.25	8/10	9/10	MOTHER	-	-
39	30003	BHARATHI	19	PRIMI	R	36W2D	4.20AM	6	8.20AM	NO	12.20PM	NO	NO	2	6.32AM	2HRS12MINS	EMERGENCY LSCS	CPD		3.7	8/10	9/10	MOTHER	-	-
40	30139	AMBIKA	33	G3P2L2	R	36W4D	5.10AM	6	9.10AM	NO	1.10PM	NO	NO	2	6.24AM	1HR14MINS	SPONTANEOUS LN			2.85	8/10	8/10	MOTHER	-	-
41	30114	SELVI	30	G3P1L1A1	R	38W2D	7.10AM	4	1.10PM	NO	5.10PM	NO	NO	2	8.46AM	1HR36MINS	SPONTANEOUS LN			3.2	7/10	8/10	MOTHER	-	-
42	30152	MANJULA	29	G2P1L1	R	37W4D	4.40AM	6	8.40AM	NO	12.40PM	NO	NO	2	7.52AM	3HRS12MINS	SPONTANEOUS LN			2.6	8/10	9/10	MOTHER	-	-
43	28130	RASOOLBEE	30	G3P2L1	R	37W1D	3.40PM	4	9.40PM	NO	1.40AM	NO	NO	2	5.47PM	2HRS7MINS	SPONTANEOUS LN			2.7	8/10	9/10	MOTHER	-	-
44	30210	REVATHY	21	PRIMI	R	36W3D	6.20AM	4	12.20PM	NO	4.20PM	NO	NO	2	10.24AM	4HRS4MINS	EMERGENCY LSCS	CPD		3.75	7/10	9/10	MOTHER	-	-
45	12155	REVATHY	25	G2P1L1	R	38W4D	5.10AM	4	11.10AM	NO	3.10PM	NO	NO	2	9.13AM	4HRS3MINS	SPONTANEOUS LN			2.4	8/10	9/10	MOTHER	-	-
46	12503	MUTHULAKSHMI	28	PRIMI	R	38W3D	4.50PM	4	10.50PM	NO	2.50AM	NO	NO	2	10.02PM	5HRS12MINS	SPONTANEOUS LN			2.7	8/10	9/10	MOTHER	-	-
47	12119	VINOLIYAMARY	21	PRIMI	R	37W 2D	2.50AM	6	6.50AM	YES	10.50AM	NO	NO	4	7.08PM	4HRS18MINS	SPONTANEOUS LN			2.1	7/10	8/10	NICU(LBW)	-	-
48	12546	AMALA	27	PRIMI	R	37W4D	3.40AM	4	9.40AM	NO	1.40PM	NO	NO	2	6.56AM	3HRS16MINS	SPONTANEOUS LN			3.25	8/10	9/10	MOTHER	-	-
49	12598	MARISELVI	22	PRIMI	R	38W6D	4.20AM	4	10.20AM	NO	2.20PM	NO	NO	2	9.53AM	5HRS33MINS	SPONTANEOUS LN			2.9	8/10	9/10	MOTHER	-	-
50	12615	VAITHEESHWARI	28	PRIMI	R	40W2D	5.10PM	5	10.10PM	NO	2.10AM	NO	NO	2	8.38PM	3HRS28MINS	SPONTANEOUS LN			2.6	8/10	9/10	NICU(OBS)	-	-
51	12588	PRIYA	26	G2P1L1	R	38W2D	6.20AM	5	11.20AM	NO	3.20PM	NO	NO	2	8.44AM	2HRS24MINS	SPONTANEOUS LN			2.9	7/10	8/10	MOTHER	-	-
52	12678	MEENA	26	PRIMI	R	36W2D	8.10PM	4	2.10AM	YES	6.10AM	NO	YES	5	2.20AM	6HRS10MIN	AUGMENTED LN			3.7	8/10	9/10	NICU(OBS)	-	-
53	12723	SARASU	21	PRIMI	R	39W2D	9.20AM	4	3.20PM	NO	7.20PM	NO	NO	2	12.35PM	3HRS15MINS	EMERGENCY LSCS	FETAL DISTRESS		2.8	4/10	6/10	NICU(FETAL DISTRESS)	-	-
54	12652	KAVITHA	20	PRIMI	R	37W3D	10.40PM	4	4.40AM	NO	8.40AM	NO	NO	2	3.40AM	5HRS	SPONTANEOUS LN			3	7/10	8/10	MOTHER	-	-
55	12738	DEVI	27	G2P1L1	R	36W4D	12.50AM	6	4.50AM	NO	8.50AM	NO	NO	2	3.02AM	2HRS12MINS	SPONTANEOUS LN			2.2	8/10	8/10	MOTHER	-	-
56	12312	GURUPRIYA	25	PRIMI	R	38W2D	2.20PM	4	8.20PM	NO	2.20AM	NO	NO	2	7.33PM	5HRS13MINS	EMERGENCY LSCS	FETAL DISTRESS		3	5/10	6/10	NICU(FETAL DISTRESS)	-	-
57	12828	INDRA	29	PRIMI	R	39W2D	3.40AM	5	8.40AM	NO	12.40PM	NO	NO	2	8.20AM	4HRS40MIN	OUTLET FORCEPPS	FAILURE OF SECONDARY MATERNAL EFFORTS		3.5	7/10	8/10	NICU(OBS)	-	-
58	12701	PRAVEENA	32	G2P1L1	R	36W4D	4.50PM	4	10.50PM	NO	2.50AM	NO	NO	2	7.06PM	2HRS16MINS	SPONTANEOUS LN			2.5	7/10	8/10	MOTHER	-	-
59	12921	UTHRA	22	PRIMI	R	38W4D	5.20AM	6	9.20AM	NO	1.20PM	NO	NO	2	9.10AM	3HRS50MINS	SPONTANEOUS LN			3.2	6/10	7/10	NICU(OBS)	-	-
60	12949	ANITHA	26	PRIMI	R	38W	6.40PM	4	12.40AM	NO	4.40AM	NO	NO	2	10.47PM	4HRS7MINS	SPONTANEOUS LN			2.6	8/10	9/10	MOTHER	-	-
61	12951	JAYAPRADHA	22	PRIMI	UR	38W3D	7.40AM	5	12.40PM	NO	4.40PM	NO	NO	2	9.43AM	2HRS3MINS	EMERGENCY LSCS	CPD		3.85	8/10	9/10	NICU(OBS)	-	-
62	12979	PANCHAMI	21	G3P2L1	R	37W2D	2.30PM	6	6.30PM	NO	10.30PM	NO	NO	2	4.52PM	3HRS23MINS	SPONTANEOUS LN			3.1	7/10	8/10	MOTHER	-	-
63	13088	MUTHULAKSHMI	26	PRIMI	R	36W4D	3.10PM	5	8.10PM	NO	2.10AM	NO	NO	2	7.14PM	4HRS3MINS	SPONTANEOUS LN			2.6	7/10	8/10	MOTHER	-	-
64	13062	SHAMILA	19	PRIMI	R	39W2D	4.20PM	4	10.20PM	NO	2.20AM	NO	YES	2	9.46PM	5HRS26MINS	AUGMENTED LN			2.9	6/10	7/10	NICU(OBS)	-	-
65	13093	SHAKILA	22	PRIMI	R	38W2D	6.50PM	4	12.50AM	NO	4.50AM	NO	NO	2	11PM	4HRS10MINS	SPONTANEOUS LN			2.8	7/10	8/10	MOTHER	-	-
66	13146	KAMALI	28	G2P1L1	R	37W2D	7.20PM	6	11.20PM	NO	3.20AM	NO	NO	2	10.34PM	3HRS14MINS	SPONTANEOUS LN			2.7	7/10	8/10	MOTHER	-	-
67	13165	MAHESHWARI	28	G3P2L1	R	37W2D	4.10PM	5	9.10PM	NO	1.10AM	NO	NO	2	7.42PM	3HRS32MINS	SPONTANEOUS LN			2.9	8/10	9/10	MOTHER	-	-
68	13199	VALARMATHY	31	G2P1L1	UR	37W6D	8.10AM	4	2.10PM	NO	6.10PM	NO	NO	2	11.53AM	3HRS43MINS	SPONTANEOUS LN			3	7/10	8/10	MOTHER	-	-
69	13215	YASMIN	32	G3P1L1A1	R	36W5D	9.10PM	4	3.10AM	NO	7.10AM	NO	NO	2	2.23AM	5HRS13MINS	SPONTANEOUS LN			3.1	8/10	9/10	MOTHER	-	-
70	13193	SHAHEENA	32	G2P1L1	R	39W1D	10.20AM	6	2.20PM	NO	6.20PM	NO	NO	2	1.54PM	3HRS34MINS	SPONTANEOUS LN			2.9	7/10	8/10	MOTHER	-	-
71	13233	RANJITHA	26	PRIMI	R	40W	2.40AM	4	8.40AM	YES	12.40PM	NO	NO	5	8.50AM	6HRS10MINS	SPONTANEOUS LN			2.9	7/10	8/10	MOTHER	-	-
72	13234	KANCHANA	24	PRIMI	R	37W5D	8.10PM	6	12.10AM	NO	4.10AM	NO	NO	2	10.42PM	2HRS32MINS	EMERGENCY LSCS	CPD		3.65	8/10	9/10	MOTHER	-	-
73	13201	PRAVALIKA	20	G2P1L1	R	38W2D	9.20AM	4	3.20PM	NO	7.20PM	NO	NO	2	12.03PM	2HRS33MINS	SPONTANEOUS LN			2.8	7/10	8/10	MOTHER	-	-
74	13276	REKA	24	PRIMI	R	36W4D	1.40PM	5	6.40PM	NO	10.40PM	NO	NO	2	5.34PM	4HRS54MINS	SPONTANEOUS LN			2.5	7/10	8/10	MOTHER	-	-
75	13110	PRAMILA	26	G2P1L1	UR	37W2D	2.40PM	4	8.40PM	NO	12.40AM	NO	NO	2	5.46PM	3HRS6MINS	SPONTANEOUS LN			2.4	8/10	9/10	MOTHER	-	-
76	13333	AMULU	21	PRIMI	R	37W5D	3.50AM	6	7.50AM	NO	11.50AM	NO	NO	2	6.52AM	3HRS2MINS	EMERGENCY LSCS	CPD		3.8	7/10	9/10	MOTHER	-	-
77	13290	VIJAYA	29	G3P1L1A1	R	37W3D	4.50PM	5	9.50PM	NO	1.50AM	NO	NO	2	6.02PM	1HR12MINS	SPONTANEOUS LN			2.7	8/10	9/10	MOTHER	-	-
78	13335	ROJA	26	PRIMI	R	39W	2PM	4	8PM	NO	12AM	NO	NO	2	6.52PM	4HRS52MINS	SPONTANEOUS LN			2.5	7/10	8/10	MOTHER	-	-
79	13332	VENNILA	22	PRIMI	UR	38W1D	8.10AM	4	2.10PM	NO	6.10PM	NO	NO	2	12.52PM	4HRS42MINS	EMERGENCY LSCS	FETAL DISTRESS		2.3	6/10	6/10	NICU(FETAL DISTRESS)	-	-
80	13287	KALAISELVI	32	G3P2L2	R	37W6D	5.10PM	6	9.10PM	NO	1.10AM	NO	NO	2	6.11PM	1HR1MIN	SPONTANEOUS LN			3.1	7/10	9/10	MOTHER	-	-
81	13298	ESWARI	26	PRIMI	R	38W2D	4.50AM	4	10.50AM	NO	2.50PM	NO	NO	2	8.42AM	3HRS2MINS	SPONTANEOUS LN			2.9	7/10	8/10	MOTHER	-	-
82	13388	DHARANI	31	PRIMI	R	37W4D	6.30AM	6	10.30AM	NO	2.30PM	NO	YES	2	9.32AM	3HRS2MINS	AUGMENTED LN			2.8	7/10	8/10	MOTHER	-	-

83	13423	NITHYA	26	G2P1L1	UR	37W6D	6PM	5	11PM	NO	3PM	NO	NO	2	8.58PM	2HRS58MINS	SPONTANEOUS LN		3	7/10	9/10	MOTHER	-	-
84	13428	ARANGANAYAGI	22	PRIMI	R	38W	7.10PM	4	1.10AM	NO	5.10AM	NO	NO	2	12.38AM	5HRS28MINS	SPONTANEOUS LN		3.2	8/10	9/10	MOTHER	-	-
85	13419	GOWRI	26	G3P1L1A1	R	39W1D	1.10PM	6	5.10PM	NO	9.10PM	NO	NO	2	3.22PM	2HRS12MINS	SPONTANEOUS LN		2.4	7/10	9/10	MOTHER	-	-
86	13429	YASHODAKUMARI	22	PRIMI	R	38W3D	3.40PM	4	9.40PM	NO	1.40AM	NO	NO	2	7.49PM	4HRS9MINS	EMERGENCY LSCS	FETAL DISTRESS	2.7	5/10	6/10	NICU(FETAL DISTRESS)	-	-
87	13433	FARSANABEGUM	24	PRIMI	R	37W2D	5.10PM	6	9.10PM	NO	1.10AM	NO	NO	2	8.52PM	3HRS42MINS	SPONTANEOUS LN		2.9	7/10	8/10	NICU(OBS)	-	-
88	13461	SIVASAKTHI	30	G2P1L1	R	38W	1.20AM	5	6.20AM	NO	10.20AM	NO	NO	2	5.48AM	4HRS28MINS	SPONTANEOUS LN		2.6	8/10	9/10	MOTHER	-	-
89	13517	SHALINI	28	G2P1L1	R	38W2D	3.10PM	6	7.10PM	NO	11.10PM	NO	NO	2	5.53PM	2HRS43MINS	SPONTANEOUS LN		3.1	7/10	8/10	NICU(OBS)	-	-
90	13490	DIVYA	26	G2P1L1	R	36W3D	9.20PM	6	1.20AM	NO	5.20AM	NO	NO	2	12.42AM	3HRS22MINS	SPONTANEOUS LN		2.5	8/10	9/10	MOTHER	-	-
91	13475	UMARANI	27	G3P1L1A1	R	38W	6.20PM	4	12.10AM	NO	4.10AM	NO	NO	2	10.44PM	4HRS24MINS	SPONTANEOUS LN		2.7	8/10	9/10	MOTHER	-	-
92	13520	MAHALAKSHMI	22	PRIMI	R	39W1D	7.10PM	6	11.10PM	NO	3.10AM	NO	NO	2	10.47PM	3HRS47MIN	EMERGENCY LSCS	CPD	3.7	8/10	9/10	MOTHER	-	-
93	13469	SAHAYAMARY	20	PRIMI	UR	36W6D	9.20AM	5	2.20AM	NO	6.20AM	NO	NO	2	1.43PM	4HRS23MINS	SPONTANEOUS LN		3.2	8/10	9/10	MOTHER	-	-
94	13453	SUMAIYAFATHIMA	22	PRIMI	R	37W6D	10.40AM	7	1.40PM	NO	5.40PM	NO	NO	2	12.53PM	2HRS13MINS	SPONTANEOUS LN		2.4	8/10	9/10	MOTHER	-	-
95	13788	ASHAPRIYA	23	PRIMI	R	37W5D	11.20PM	4	5.20AM	NO	9.20AM	NO	NO	2	2.48AM	3HRS28MINS	SPONTANEOUS LN		3.1	8/10	9/10	NICU(OBS)	-	-
96	13762	INDHUMATHY	25	G3P2L2	R	37W1D	11.50PM	5	4.50AM	NO	8.50AM	NO	NO	2	2.14AM	2HRS24MINS	SPONTANEOUS LN		2.2	8/10	9/10	MOTHER	-	-
97	13782	SARANYA	28	PRIMI	R	38W	1.50AM	4	7.50AM	NO	11.50AM	NO	NO	2	6.53AM	5HRS3MINS	EMERGENCY LSCS	FETAL DISTRESS	2.95	8/10	9/10	MOTHER	-	-
98	12986	REVATHY	29	PRIMI	R	39W1D	1.10PM	6	5.10PM	NO	9.10PM	NO	NO	2	4.31PM	3HRS21MINS	SPONTANEOUS LN		2.3	8/10	9/10	MOTHER	-	-
99	13906	INDHUMATHY	33	G2P1L1	R	37W5D	3.40PM	6	7.40PM	NO	11.40PM	NO	NO	2	6.57PM	3HRS17MINS	EMERGENCY LSCS	FETAL DISTRESS	2.75	5/10	6/10	MOTHER	-	-
100	14002	SARITHA	26	PRIMI	R	38W3D	4.10PM	4	10.10PM	NO	2.10AM	NO	NO	2	9.46PM	5HRS36MINS	SPONTANEOUS LN		2.3	8/10	9/10	MOTHER	-	-

**INSTITUTIONAL ETHICS COMMITTEE
MADRAS MEDICAL COLLEGE, CHENNAI-3**

EC Reg No.ECR/270/Inst./TN/2013
Telephone No. 044 25305301
Fax : 044 25363970

CERTIFICATE OF APPROVAL

To
Dr. B. Nithya Chandika
Postgraduate in M.S. (Obstetrics & Gynaecology)
Madras Medical College
Chennai 600 003

Dear Dr. B. Nithya Chandika,

The Institutional Ethics Committee has considered your request and approved your study titled **"A COMPARATIVE STUDY BETWEEN W.H.O MODIFIED PARTOGRAM AND PAPERLESS PARTOGRAM IN THE EFFECTIVE MANAGEMENT OF LABOUR"** No. 30112015.

The following members of Ethics Committee were present in the meeting held on 03.11.2015 conducted at Madras Medical College, Chennai-3.

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|---|---------------------|
| 1. Prof.C.Rajendran, M.D., | : Chairperson |
| 2. Prof.R.Vimala, M.D., Dean, MMC, Ch-3 | :Deputy Chairperson |
| 3. Prof.Sudha Seshayyan, M.D., Vice-Principal
MMC, Ch-3 | : Member Secretary |
| 4. Prof.B.Vasanthi, M.D., Professor Pharmacology, MMC | : Member |
| 5. Prof.P.Ragumani, M.S., Professor, Inst.of Surgery, MMC | : Member |
| 6. Prof.Md.Ali, M.D., D.M., Prof. & HOD of Medl.G.E., MMC | : Member |
| 7. Prof.Baby Vasumathi, Director, Inst.of O&G, Ch-8 | : Member |
| 8. Prof.K.Ramadevi, Director, Inst.of Biochemistry, MMC | : Member |
| 9. Prof.Saraswathy, M.D., Director, Inst. Of Pathology, MMC | : Member |
| 10. Prof.Srinivasagalu, Director, Inst.of Inter Med. MMC | : Member |
| 11. Tmt. Rajalakshmi, Jr. Administrative Officer | : Lay Person |
| 12. Thiru S.Govindasamy, B.A., B.L., | : Lawyer |
| 13. Tmt.Arnold Saulina, M.A., MSW., | : Social Scientist |

We approve the proposal to be conducted in its presented form.

The Institutional Ethics Committee expects to be informed about the progress of the study and SAE occurring in the course of the study, any changes in the protocol and patients information/informed consent and asks to be provided a copy of the final report.


Member Secretary, Ethics Committee

MEMBER SECRETARY
INSTITUTIONAL ETHICS COMMITTEE
MADRAS MEDICAL COLLEGE
CHENNAI-600 003

INFORMATION SHEET

We are conducting a study on “**A comparative study between WHO modified partogram and paperless partogram in the effective management of labour**” among patients attending Kasturba Gandhi Government Hospital, and Institute of Obstetrics & Gynaecology, Egmore, Chennai.

Participants :

The study is to be conducted in Institute of Social Obstetrics, Kasturba Gandhi Hospital and Institute of Obstetrics & Gynaecology, Egmore.

We are selecting certain patients and if you are found eligible, we may use your clinical details in away that does not affect your final report or management.

Based on the information provided you may choose to participate or opt out of this study. You may clarify any doubts regarding this study we have obtained the approval of Institutional Ethics Committee for this study.

Purpose of the Study:

To compare between WHO modified partogram and paperless partogram in the effective management and progress of labour.

Benefits of Study:

Better monitoring of intrapartum women that allows easy identification of slow progress of labour thus preventing prolonged and obstructive labour.

The privacy of the patients in the research will be maintained throughout the study. In the event of any publication or presentation resulting from the research, no personally identifiable information will be shared.

Taking part in this study is voluntary. You are free to decide whether to participate in this study or to withdraw at any time; your decision will not result in any loss of benefits to which you are otherwise entitled.

The results of the special study may be intimated to you at the end of the study period or during the study if anything is found abnormal which may aid in the management or treatment.

Signature of investigator

Signature of participant

Date :

சுய ஒப்புதல் படிவம்

ஆய்வு தலைப்பு :

நிறைமாத கர்ப்பிணி பெண்களுக்கு பிரசவ வலி ஏற்படும் போது அந்த பிரசவத்தை கண்காணிப்பதற்காக உலக சுகாதார அமைப்பின் பிரசவ முன்னேற்ற வரைபடம் (WHO Partogram) அல்லது காகிதம் இல்லாத (Paperless Partogram) கண்காணிக்கும் முறை, ஆகிய இரண்டு முறைகளையும் வைத்து பிரசவத்தின் முன்னேற்றத்தை ஒப்பிட்டு கண்டறிவது பற்றிய ஆய்வு.

பெயர் :

வயது :

தேதி :

..... என்பவராகிய நான் இந்த ஆய்வின் விவரங்களும் அதன் நோக்கங்களும் முழுமையாக அறிந்து கொண்டேன். எனது சந்தேங்கள் அனைத்திற்கும் தகுந்த விளக்கம் அளிக்கப்பட்டது. இந்த ஆய்வில் முழு சுதந்திரத்துடன் மற்றும் சுயநினைவுடன் பங்கு கொள்ள சம்மதிக்கிறேன்.

எனக்கு விளக்கப்பட்ட விஷயங்களை நான் புரிந்து கொண்டு நான் எனது சம்மதத்தைத் தெரிவிக்கிறேன். இச்சுய ஒப்புதல் படிவத்தை பற்றி எனக்கு விளக்கப்பட்டது.

இந்த ஆய்வினை பற்றிய அனைத்து தகவல்களும் எனக்கு தெரிவிக்கப்பட்டது. இந்த ஆய்வில் எனது உரிமை மற்றும் பங்கினை பற்றி அறிந்து கொண்டேன்.

இந்த ஆய்வில் பிறரின் நிர்பந்தமின்றி என் சொந்த விருப்பத்தின் பேரில் தான் பங்கு பெறுகிறேன் மற்றும் நான் இந்த ஆராய்ச்சியிலிருந்து எந்நேரமும் பின் வாங்கலாம் என்பதையும் அதனால் எந்த பாதிப்பும் ஏற்படாது என்பதையும் நான் புரிந்து கொண்டேன்.

இந்த ஆய்வில் கலந்து கொள்வதன் மூலம் என்னிடம் பெறப்படும் தகவலை ஆய்வாளர் இன்ஸ்டிடியூசனல் எத்திக்ஸ் கமிட்டியினரிடமோ, அரசு நிறுவனத்திடமோ தேவைப்பட்டால் பகிர்ந்து கொள்ளலாம் என சம்மதிக்கிறேன்.

இந்த ஆய்வின் முடிவுகளை வெளியிடும்போது எனது பெயரோ, அடையாளமோ வெளியிடப்படாது என அறிந்து கொண்டேன். இந்த ஆய்வின் விவரங்களைக் கொண்ட தகவல் தாளைப் பெற்றுக் கொண்டேன். இந்த ஆய்விற்காக இரத்தப் பரிசோதனை செய்துக் கொள்ள சம்மதிக்கிறேன்.

இந்த ஆய்வில் பங்கேற்கும் பொழுது ஏதேனும் சந்தேகம் ஏற்பட்டால், உடனே ஆய்வாளரை தொடர்பு கொள்ள வேண்டும் என அறிந்து கொண்டேன்.

இச்சுய ஒப்புதல் படிவத்தில் கையெழுத்திடுவதன் மூலம் இதிலுள்ள அனைத்து விஷயங்களும் எனக்கு தெளிவாக விளக்கப்பட்டது என்று தெரிவிக்கிறேன் என்று புரிந்து கொண்டேன். இச்சுய ஒப்புதல் படிவத்தின் ஒரு நகல் எனக்கு கொடுக்கப்படும் என்று தெரிந்து கொண்டேன்.

பங்கேற்பாளர் /பாதுகாவலர் கையொப்பம்

தேதி :

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INTRODUCTION

The partogram more commonly called partograph is a printed paper that is kept available in labour rooms and in this the observations of labour are noted. It was designed with the aim to provide at a glance a pictorial representation of labour, in order to sensitise obstetric care providers to deviations in the normal process and course of labour at an initial state and thereby make necessary arrangements for transfer to a tertiary care centre if required.

The active management of labour has always stimulated a lot of debate. Despite extensive research particularly in the 1970s, the active management of labour remains a topic of controversy. Ob-

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stetrical practices differ extensively across the world and also within individual health systems. This disparity even though we still have a background of alarmingly high maternal mortality rates throughout most of the developing world and a rising caesarean section rate in the developed world, but with little evidence that fetal outcome is better for it.

It is estimated that more than half a million antenatal patients succumb to the pregnancy complications and the majority of them are from countries with inadequate resources. Studies have shown that on the whole about 500 women die for every one lakh births. India striving to make a mark on the ob-



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ABBREVIATIONS:

WHO - World Health Organisation
LMP -Last Menstrual Period
ARM: -Artificial Rupture of membranes
ETD - Expected time of delivery
OR - Odds Ratio
PV - Per vaginal
LSCS - Lower Segment Caesarean Section
NICU -Neonatal Intensive Care Unit
RDS -Respiratory Distress Syndrome
ROM -Rupture of Membranes.
ROS - Reactive Oxygen Species.

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