
**“COMPARISON OF TWO WORLD HEALTH
ORGANIZATION PARTOGRAPHS IN WOMEN WITH
UNCOMPLICATED PREGNANCY: A ONE YEAR
RANDOMIZED CONTROLLED TRIAL”**

By
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Dissertation

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K.L.E. University, Belgaum, Karnataka

In partial fulfillment
of the requirement for the degree of
MASTER OF SURGERY
In
OBSTETRICS AND GYNAECOLOGY

Under The Able Guidance Of

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APRIL-2010

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I hereby declare that this dissertation entitled, “**COMPARISON OF TWO WORLD HEALTH ORGANIZATION PARTOGRAPHS IN WOMEN WITH UNCOMPLICATED PREGNANCY: A ONE YEAR RANDOMIZED CONTROLLED TRIAL**” is a bonafide and genuine research work carried out by me under the able guidance of **Dr. M.K Swamy M.D.**, Professor, Department of Obstetrics and Gynaecology, J.N. Medical College, Belgaum as a part of my postgraduate study in partial fulfillment of the regulations of K.L.E. University, Karnataka, Belgaum, for the award of degree of M.S. (Obstetrics and Gynaecology), examination to be held in April 2010.

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INTRODUCTION

Partograph is a Greek word meaning “Labor Curve”.¹ It is a graphic recording of progress of labor and salient features in the mother and fetus. It has been used since 1970.² It detects labor that is not progressing normally, indicates when augmentation of labor is appropriate and recognises cephalo-pelvic disproportion long before labor becomes “obstructed”. It serves as an early warning system and assists in early decision making on transfer, augmentation and termination of labor.³

All over the world, 210 million women become pregnant each year, of whom 20 million will experience pregnancy related illness and 5,00,000 will die as a result of complications of pregnancy or childbirth.⁴ India has the largest number of births per year (27 million) in the world.⁵ With its high maternal mortality of about 300-500 per 1,00,000 births, about 75,000 to 1,50,000 maternal deaths occur each year in India.^{6,7} This constitutes about 20% of the global burden.⁵ Most of these deaths in India are caused by haemorrhage (29%), anaemia (19%), sepsis (16%), obstructed labor (10%), unsafe abortion (9%) and hypertensive disorders of pregnancy (8%).⁸

Obstructed labor remains an important cause of not only maternal death but also short and long term disability. It has particular impact on population in which mechanical problems during labor are common and where availability of functioning relevant health services are sparse. The major immediate causes of death in obstructed labor are haemorrhage and sepsis from uterine rupture. Obstructed labor is the leading cause of uterine rupture worldwide⁹. Vesico vaginal fistula in reproductive age occurs most commonly as a result of obstructed labor. In population with poor access to obstetric care, obstructed labor leads to maternal dehydration, infection, ketosis and exhaustion. Fetal death from asphyxia is also common.

The number of maternal deaths as a result of obstructed labor vary worldwide.¹⁰ Literature suggests that maternal mortality due to this cause is almost as prevalent today as it was 30 years ago.⁹ In Southern India, obstructed labor accounts 9% of total maternal deaths.¹¹

To reduce the maternal mortality rate, the problem of obstructed labor will need to be addressed effectively. Improved outcome after obstructed labor requires early detection of abnormal progress of labor, which can be easily identified with the use of partograph. Partograph is a simple, inexpensive tool which has been found effective in a variety of different settings (including developed and developing countries).

The development of partograph started, when Emanuel Friedman developed cervicograph for the first time in 1954.¹² The major drawback of this labor curve was that no exclusions were made for malpresentations or multiple pregnancies. Similarly, women receiving oxytocin infusions, caudal analgesia and / or operative delivery were included.⁹

In 1970, Philpott's partograph developed from the original cervicograph of Friedman.¹³ An alert line was placed on cervicograph which was straight, not curved as in Friedman's graph. The next stage in the development of partograph by Philpott and Castle was the introduction of an action line.

What is surprising perhaps is that the use of the partograph itself was only rigorously evaluated 20 years after its introduction.¹⁰ It was only in 1994, that WHO devised the composite partograph. It included a latent phase of 8 hours. It was an adaptation of the one formulated and described by Philpott and colleagues.⁹

Since the first publications on cervicography, the issue of the latent phase has been controversial,¹⁴ as there is always a risk of inappropriate interventions if undue

attention is paid to the latent phase.¹⁵ Subsequently, in 2000 the WHO produced the modified partograph where the latent phase was removed, to make it simpler and easier to use.¹⁶

In India, the use of partograph has not been incorporated and practiced widely, even at the tertiary level. There is very limited data available in Indian literature, comparing the two WHO partographs. Comparison of the two WHO partographs (a composite one with a latent phase and a simplified one without a latent phase) can tell which partograph is associated with better maternal and perinatal outcomes and is more user friendly. Hence, the present study was undertaken to highlight the efficacy of either WHO partograph, so that partograph becomes a routine practice in our setup.

AIMS AND OBJECTIVES

To evaluate the two WHO partographs (the composite partograph with a latent phase and the simplified partograph without a latent phase) on the basis of

- Labor crossing the alert line
- Labor crossing the action line
- Augmentation of labor
- Rate of caesarean sections
- Perinatal outcome
- User friendliness
- Maternal complications

REVIEW OF LITERATURE

History of partograph

E.A. Friedman in 1954¹² was the first obstetrician to describe the progress of labor graphically. He described a normal cervical dilatation pattern, following a study on a large number of women in USA. He divided labor functionally into two parts. The (early) latent phase extends over 8-10 hours and upto 3cm of cervical dilatation. This was followed by an active phase, characterized by acceleration from about 3-10 cm, at the end of which deceleration occurred.² (Figure1). The major criticism of the development of this curve was the fact that no exclusions were made for malpresentations, malpositions or multiple pregnancies. Similarly, women receiving oxytocin infusions, caudal analgesia and/or operative delivery were also included. This work has been the foundation on which many other labor monitoring graphs have been built.²

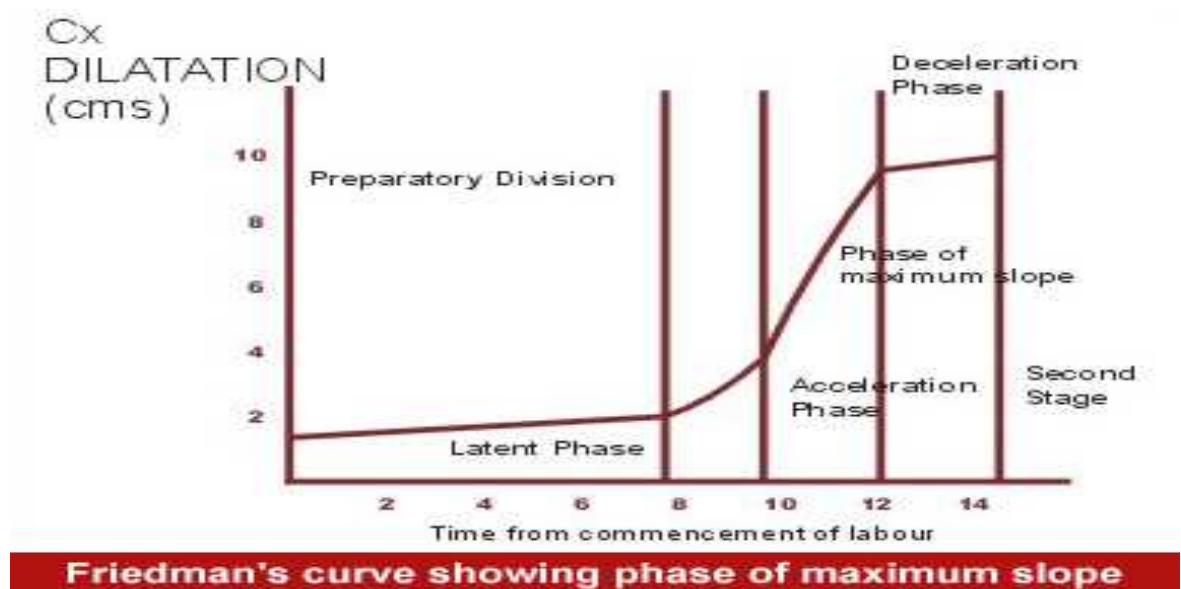


Figure1

In 1969, Hendricks et al. demonstrated that, in the active phase of normal labor, the rate of dilatation of cervix in primigravidae and multigravidae varies little and that there is no deceleration phase at the end of first stage of labor.¹⁷

In 1972, R.H Philpott, at Harare Maternity Hospital, Salisbury studied a composite labor graph, in which the concept of alert and action lines were introduced for the first time. Zero hour was taken as the time of admission to the hospital rather than the time of onset of labor. The purpose of the alert line was to detect the abnormal labor at the earliest possible moment. Action line was drawn four hours to the right of alert line. It was used in the management of both nulligravidae and multigravidae. These graphic recordings greatly improved the management of labor in the individual and the administration of the labor ward as a whole. They were more efficient than lengthy written notes and provided a pictorial display of all the essential features of labor and immediately alert the attendant to abnormal developments.¹³

Studd's labor stencils were introduced in 1972. These stencils predicted the expected pattern of progression of labor based on the extent of dilatation achieved by the time the patient was admitted (zero time). Curves showing the average course of cervical dilatation were constructed for various dilatations on admission. Five separate patterns representing normal labor progression were constructed. The curves were transcribed onto acrylic stencils. On admission in labor, the cervical dilatation was assessed and a stencil was used to draw the relevant pencil line of expected progress on the patient's cervicograph which was then completed. Those crossing the nomogram line were found to have a three fold increase in instrumental delivery (Figure2).¹⁸

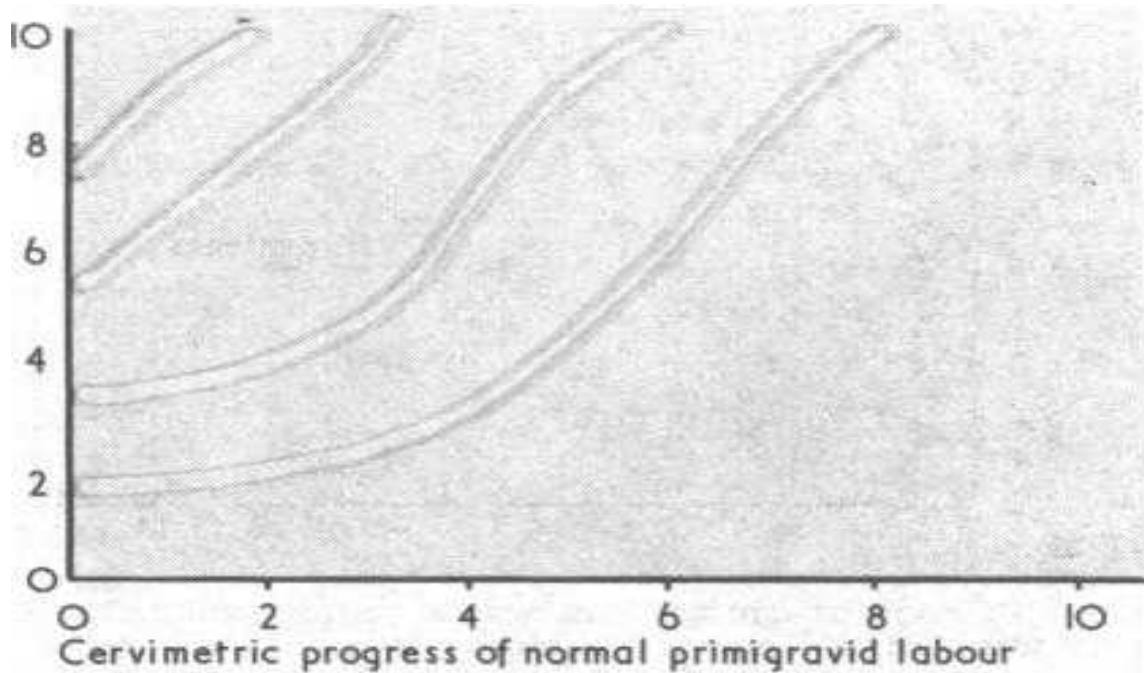


Figure2

What is surprising perhaps is that the use of partograph itself was only rigorously evaluated 20 years after its introduction. The majority of early studies took place in hospital settings. It was not until over two decades after Philpott's reports,^{19,20} that a very large field trial of the partograph was conducted by WHO in 1987.¹⁶ As part of the safe motherhood initiative, the World Health Organization had produced and promoted the composite partograph with a view to improving labor management and reducing fetal morbidity and mortality. This partograph had been tested in a large multicentre trial in South East Asia involving 35,484 women.¹⁰

This composite partograph (Figure3)² had the following salient features:

- A latent phase of labor of upto 8 hours
- An active phase beginning when cervical dilatation reaches 3cms.
- Descent of head was included
- Active phase was provided with an alert and an action line drawn 4 cms. apart on the partograph, as aids to monitoring labor.^{21,22}

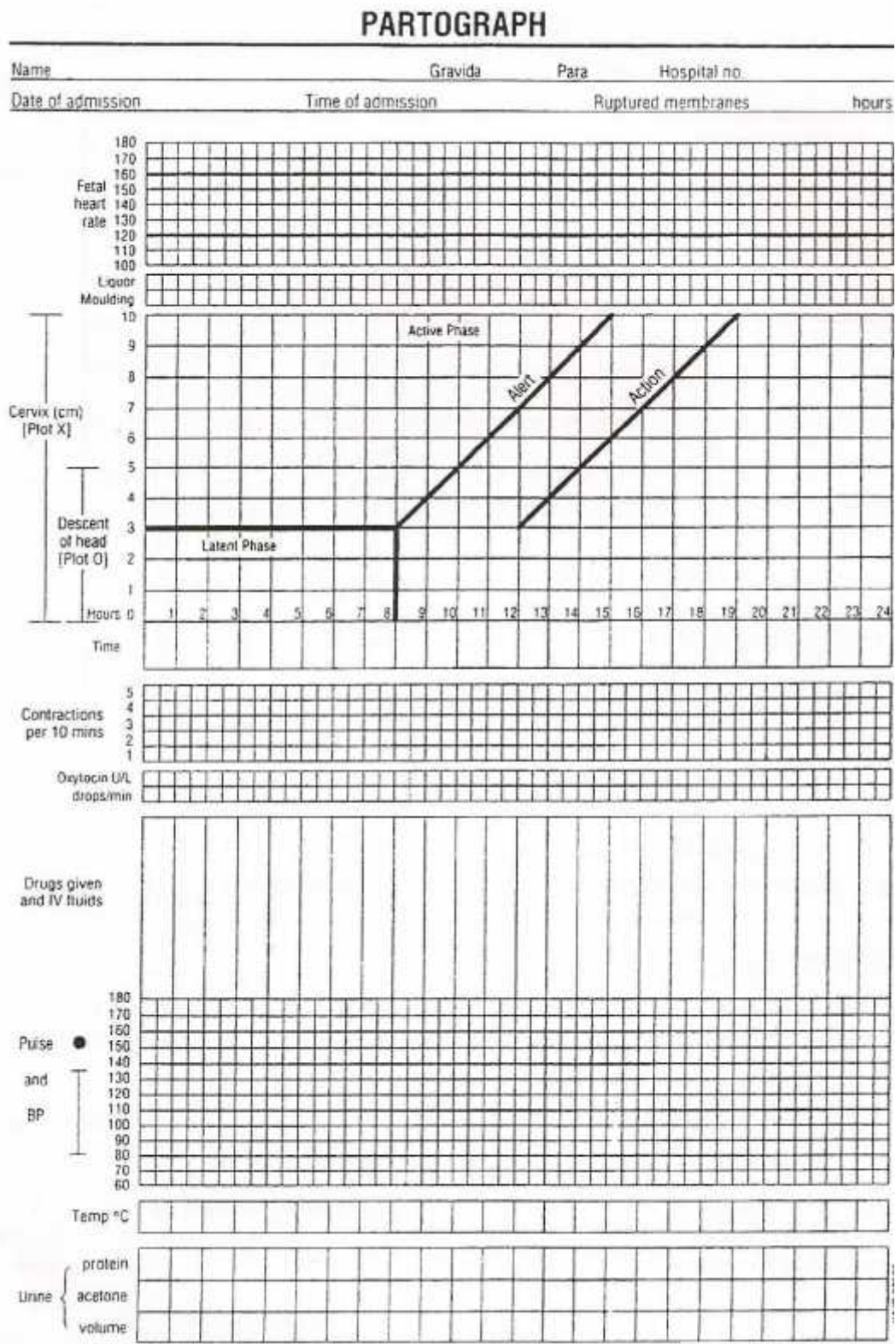


Figure3. The “Composite” WHO Partograph

The inclusion of latent phase in the partograph led to more interventions and the staff using the partograph reported difficulties in transferring the cervical dilatation value to the appropriate place by means of a broken line, when the patient entered the active phase.^{15,23,24} The study also reported that a small number of women experienced a prolonged latent phase (more than 8 hours) and since the prolonged latent phase neither affected the rate of cesarean section¹⁴ nor was associated with poor perinatal outcome, the usefulness of recording the latent phase in the partograph was questioned.

The composite partograph was subsequently modified and in 2000, a new version of partograph was introduced which excluded the latent phase and the recording began with 4cms cervical dilatation. Alert and action lines are similar to those of composite partograph (Figure4).²⁵

Recently, Paperless partograph has been proposed but has not been put into practice. It involves the calculation of ETD - Expected TIME of Delivery (just like calculation of EDD for an antenatal case). It is to be started when the patient is in active phase of labor. So, in effect 'Paperless partograph' and the WHO partograph are one and the same thing minus the graph.²⁶

PARTOGRAPH

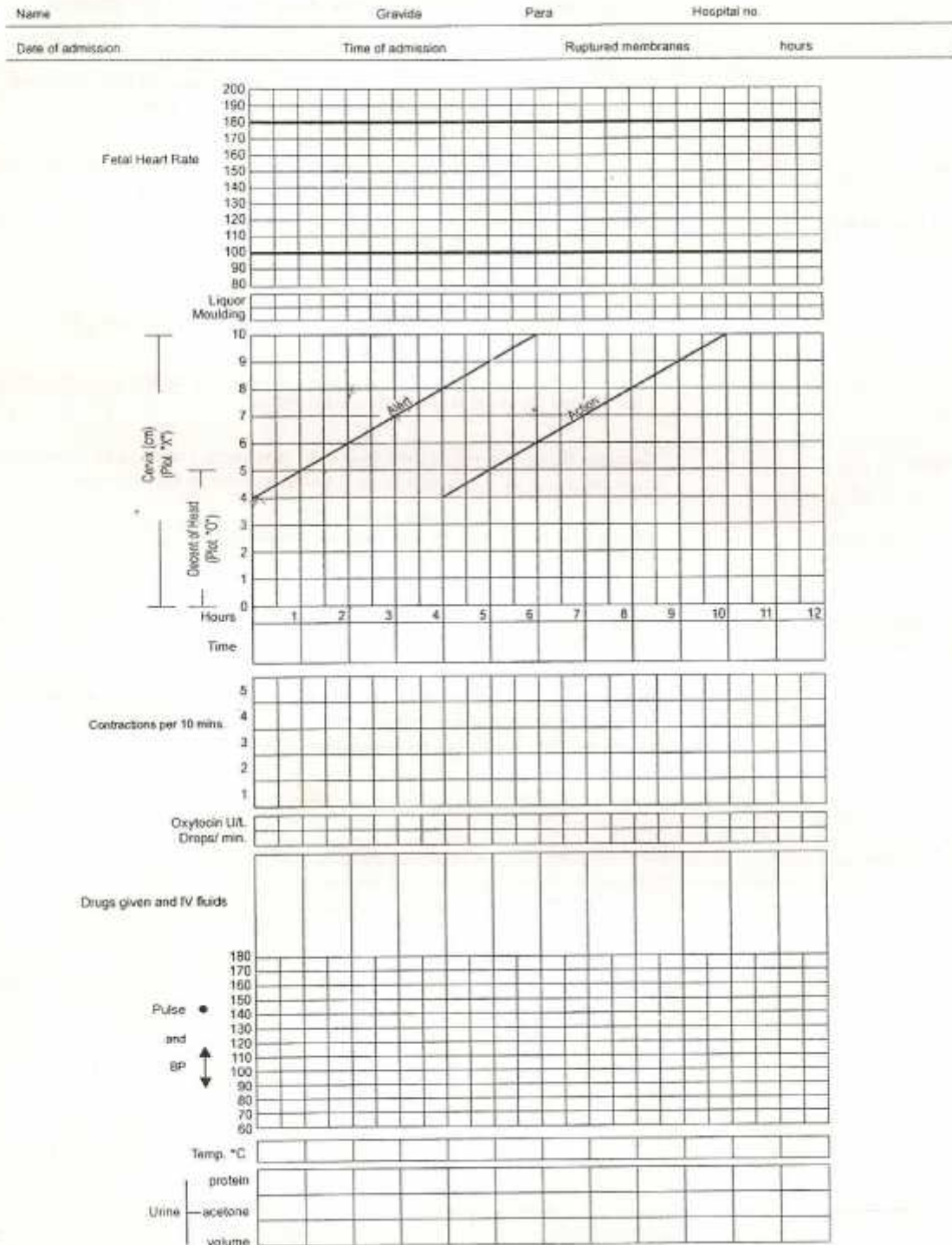


Figure4. The “Modified” WHO partograph

A study was done at tertiary care hospital at Vellore in 2006, in which 2 WHO partographs were compared- a composite partograph including the latent phase with a simplified partograph without a latent phase. One or the other partograph was used in 658 parturients. While most maternal and perinatal outcomes were similar, labor values crossed the action line significantly more often when composite partograph was used and women were more likely to undergo cesarean section. The simplified WHO partograph was more user friendly, was more to be completed than the composite partograph and was associated with better labor outcomes.²⁷

At a study done at Calcutta, India, 430 primigravida at term having single live fetus in vertex presentation were included. The women were randomly subdivided into three groups: Group A (180) women- monitoring of labor was done by WHO modified partograph; Group B (150) women- monitoring of labor was done by WHO original partograph and 100 women in Group C (control), the labor was monitored clinically. The comparison of the results of Group A and B did not reveal any statistically significant difference. The comparison of the results of Group A and C observed that significantly less number of women in Group A (4.44%) was in labor for > 12 hours than in Group C (18%). The number of vaginal delivery was more and cesarean section was less in Group A than Group C ($p < 0.05$). More number of women required augmentation of labor in Group C ($p < 0.001$).¹

As part of the Safe Motherhood Initiative, launched in 1987, the WHO have produced and promoted a partograph with a view to improving labor management and reducing maternal and fetal morbidity and mortality. This partograph has been tested in a multicentre trial in South East Asia involving 35484 women. Introduction of partograph reduced both prolonged labor (8.4% to 3.4%) and proportion of labors requiring augmentation (from 20.7% - 9.1%). Emergency cesarean sections fell from

9.9 to 8.3% and intrapartum stillbirths from 0.5-0.3%. Improvement was seen in both nulliparas and multiparas.¹⁰

A study on 1000 women in labor was carried out in Jinnah Post Graduate Medical Centre from 1st July to 31st December 2002. Five hundred women were studied before and after the introduction of partograph. By using partograph, frequency of prolonged and augmented labor, PPH, ruptured uterus, puerperal sepsis and perinatal morbidity and mortality was reduced.²⁸

53 midwives, working in the maternity unit at Tehran University of medical science participated in a study to determine the effects of education on use of partograph to improve the quality of care provided for mothers. Results indicated that education is effective on enhancing the quality of care offered by midwives and suggests that attention should be given to education on partograph at all levels and it should become part of regular educational programmes.²⁹

56 health workers were trained to use partograph in Nigeria. A total of 242 partographs of women in labor were plotted over a period of 1 year; 76.9% of them were correctly plotted. Inappropriate action based on partograph occurred in 6.6%. It concluded that health care workers can be effectively trained to use the partograph and thus contribute towards improved maternal outcomes in developing countries with scarcity of skilled attendants.³

A study was conducted to assess the effectiveness of promoting the use of WHO partograph in a maternity home at Medan, Indonesia, by comparing outcomes after birth. There were 304 eligible women among 358 laboring women in intervention group and 322 among 363 in control group. Introducing the partograph significantly increased referral rate, reduced the number of vaginal examinations, oxytocin use and obstructed labor. The proportions of cesarean sections and

prolonged labor were not significantly reduced. Apgar score of less than 7 at 1 min. was reduced significantly.³⁰

Dar es Salaam Hospitals at Tanzania conducted a study to assess the quality of partographs used to monitor labor. They reviewed the records of parameters of labor and maternal and fetal conditions in 367 partographs and interviewed 20 midwives. All midwives interviewed had been previously trained to use the partograph. Of all partographs reviewed, 50% had no records of duration of labor. Although cervical dilatation and fetal heart rates were recorded in 97% and 94% of the partographs respectively, 63% and 91% of these were judged to be substandard. Substandard monitoring of fetal heart rates was strongly associated with poor fetal outcome ($P < 0.001$). Blood pressure, temperature and pulse rates were not recorded in 47% to 76% of partographs. These findings reflect poor management of labor and indicate urgent in-service training to address the importance of documentation and regular partograph audit in order to reduce maternal and perinatal deaths.³¹

A cross sectional study assessed knowledge and utilization of the partograph among health care workers in South western Nigeria. Respondents were selected by multi stage sampling method from primary, secondary and tertiary levels of care. 719 respondents comprising of Community Health Extension Workers (CHEWS)- 110(15.3%), Auxillary nurses-148(20.6%), Nurse/Midwives- 365(50.6%), Physicians- 96(13.4%) were selected from primary(38.2%), secondary(39.1%), tertiary(22.7%) levels. Only 32.3% used the partograph to monitor women in labor. Partograph use was reported significantly more frequently by respondents in tertiary level compared with respondents from primary/secondary levels of care (82.4% versus 19.3% $p < 0.0001$). Only 37.3% of respondents who were predominantly from the tertiary level of care could correctly mention at least one component of the partograph ($p < 0.0001$).

The partograph is utilised mainly in tertiary health facilities; knowledge about the partograph is poor. Though affordable, the partograph is commonly not used to monitor the Nigerian women in labor.³²

Bogaert L. J. in 2003 summarized the various studies published on partographs and came to a conclusion that partograph has been subject to change from the time it was conceived. What is important is that it should be used properly, keeping in mind the purpose of its components and their interpretation in context. One should be careful not to misinterpret the significance of latent phase. The action phase has two possible meanings depending on whether it is placed 2 or 4 hours right of the alert (the former means transfer to a facility where appropriate action can take place) . Finally, the slope of the alert and action lines should be borne in mind in order not to over diagnose slow labor.¹⁴

In a baseline clinical audit of intrapartum care at the Tibetan Delek Hospital in Dharamsala, Himachal Pradesh, in 1996, high levels of post partum haemorrhage plus inappropriate transfer of women in labor were observed. The delivery of intrapartum care was modified in two ways: Firstly, nurses, midwives and doctors were re-trained in the active management of the third stage of labor. Secondly, partographs were introduced to help rationalise the management of labor and in particular decisions about when to transfer women in labor. A sustained reduction of approximately 50% in the incidence of post partum haemorrhage was observed and the introduction of the routine use of partographs was associated with a more rational decision making process regarding transfer during labor.³³

A randomized controlled trial of use of the partograph in 1932 primiparous women with uncomplicated pregnancies at term was conducted in Toronto. Patients were randomly assigned to one of two groups: The Standard group, who had the

progress of labor charted in written notes, or The Partograph group, whose progress in labor was recorded using a bedside graphical partograph as well as in written notes. In this study, the use of a partograph without a mandatory management of labor protocol had no effect on rates of cesarean section or other intrapartum interventions in healthy primiparous women at term.³⁴

In a prospective clinical trial in Liverpool Women's Hospital, UK, 928 primigravid women with uncomplicated pregnancies were randomised to have their progress of labor recorded on a partograph with an action line 2, 3 or 4 hours to the right of the alert line. Cesarean section rate was lowest when labor was managed using a partograph with a 4- hour action line.³⁵

An adaptation of Friedman's dilatation-time curve was used in Uganda to help medical students recognize abnormal labour. A printed form allowed all important aspects of labor to be recorded at regular intervals. Students were expected to predict the time of delivery, based on the normal sigmoid curve. At weekly seminars these records were analysed and students learned to detect protracted labor and to determine the cause.³⁶

16 junior obstetricians in St James Hospital, Leeds, UK were asked about how they manage six hypothetical cases of difficult labor. Doctors were more likely to intervene and to intervene more actively if the progress of labor curve appeared flat and if the latent phase was included. The shape and point of origin of the partograph probably influence intervention rates in practice and may partly explain the low rates of cesarean section.¹⁵

Hence, it is evident from the review of literature that partograph has been subject to change from the time it was conceived. What is important is that, it should be used properly in conjunction with definite labor management protocols for better maternal and perinatal outcomes. Partograph should become an integral part of regular educational programmes at all levels.

Health care workers should be effectively trained to use the partograph especially in developing countries with scarcity of skilled birth attendants. The use of partograph should be implemented not only at tertiary level but also at primary and secondary levels of health care for early detection of prolonged and obstructed labor and timely referral.

It is conclusive from various studies all over the world that there was a significant decrease in the rate of prolonged and obstructed labor, augmentation of labor, rate of cesarean sections, postpartum hemorrhage and perinatal morbidity and mortality with the routine use of partograph.

However, since the first publications on cervicography, the issue of the latent phase has been controversial, as the inclusion of latent phase led to more interventions thereby increasing the rates of cesarean section. With the advent of WHO modified partograph, there were less interventions and it was found to be more user friendly as compared to WHO composite partograph which included the latent phase.

Indian scenario reports very few studies on partograph, therefore it is difficult to offer any recommendation on the routine use of partograph or the use of specific type of WHO partograph in our setup.

MATERIALS AND METHODS

SOURCE OF DATA

Population of interest: Women with term, singleton, vertex presentation, in spontaneous labor were included in the study at KLES Dr. Prabhakar Kore Hospital and MRC, Belgaum. Either partograph was used according to computer randomization after taking a valid informed consent.

METHOD OF COLLECTION OF DATA

Study design: Randomized Controlled Trial.

Sample size: All women meeting the inclusion criteria were enrolled in the study.

Duration of study: November 2008 to October 2009.

Inclusion criteria: All women with uncomplicated, singleton, term, vertex presentation, in spontaneous labor and those willing to participate in the study were included.

Exclusion criteria: Women with

- Short stature (<140 cms.)
- Antepartum haemorrhage
- Severe preeclampsia / eclampsia
- Anaemia (haemoglobin<10 gms%)
- Malpresentations
- Multiple pregnancy
- Previous cesarean section
- Preterm labor
- Fetal distress
- Intrauterine death

All pregnant women admitted to KLES Dr. Prabhakar Kore Hospital and M.R.C, who came in spontaneous labor were examined after taking a detailed history. Women fulfilling the inclusion criteria were selected and were allotted either of the two WHO partographs according to computerized randomization after taking valid informed consent.

The partograph was started after establishment of true labor. The criteria^{21,22} used to start the partograph was:

- In latent phase, contractions were 2 or more in 10 minutes, each lasting 20 seconds or more.
- In the active phase, contractions were 1 or more in 10 minutes, each lasting 20 seconds or more.

The plotting on composite partograph was started as soon as the patient was found to be in true labor. But in simplified partograph, plotting was started with cervical dilatation of 4 cm.²⁵ Labor was monitored using the following components (as shown in Figure 3 and 4)

THE FETAL CONDITION^{21,22}

- Fetal heart rate - It was recorded at the top of the partograph, every half hourly with a dot. Each square represented half an hour.
- Membranes and liquor- There were four different ways in which the state of liquor on the partograph was recorded, immediately below the fetal heart rate recordings.
 1. If the membranes were intact : Recorded as letter “ I ”
 2. If membranes were ruptured and liquor was clear : Recorded as letter “ C ”

3. If membranes were ruptured and liquor was meconium stained :Recorded as letter “M”
 4. If membranes were ruptured and liquor was absent : Recorded as letter “ A” .
- Moulding- It showed how adequately the pelvis could accommodate the fetal head. Increasing moulding with the head high in the pelvis was regarded as an ominous sign of cephalopelvic disproportion. There were four different ways of recording moulding on the partograph, (immediately beneath those of the state of liquor).
 1. Bones were separated and the sutures could be felt easily : Recorded as letter “O”
 2. Bones were just touching each other : Recorded as +
 3. Bones were overlapping, still separable : Recorded as ++
 4. Bones were overlapping severely and not separable : Recorded as +++

THE PROGRESS OF LABOUR^{21,22}

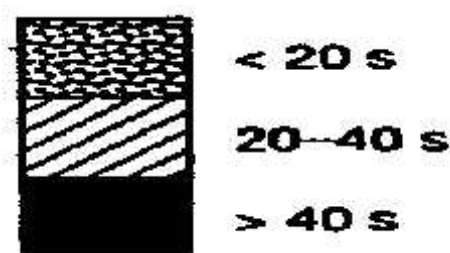
- Cervical dilatation- In the centre of each partograph was a graph. Along the left side were numbers 0-10 against squares: each square represented 1 cm dilatation. Along the bottom of the graph were numbers 0-24: each square represented 1 hour. Dilatation was measured in centimetres. Dilatation of cervix was plotted with an “x”. In simplified partograph, the first marking was on the alert line (Figure 4).

In composite partograph, latent phase was from 0-2cm with a gradual shortening of cervix. The active phase was from 3 cm to 10 cm (full dilatation). When dilatation was 0-2 cm, plotting was started in the latent phase area of the cervicograph. When labor had entered the active phase, plotting was transferred by a broken line to the alert line, leaving the area between the transferred recording blank. The broken transfer line was not part of the process of labor.

In simplified partograph, latent phase was not included. Plotting was started at cervical dilatation of 4 cm.²⁵

Vaginal examinations were made every 4 hours^{21,22,25}. However, in advanced labor, women were assessed more frequently.

- Contractions- Frequency and duration of the contractions were observed. Frequency was assessed by the number of contractions in a 10 min period. Duration of contractions was from the time, the contraction was first felt abdominally, to the time when contraction passed off, measured in seconds. The duration of contractions was shaded in three possible ways.



THE MATERNAL CONDITION^{21,22}

- Drugs and intravenous fluids were charted in the appropriate column just below the area for contractions.
- Pulse rate was recorded every half hourly.

- Blood pressure was recorded and plotted once every 4 hours or more frequently (if indicated).
- Temperature was recorded once every 4 hourly or more frequently (if indicated).

Labor was monitored until delivery. The outcome was mentioned at the bottom of each partograph. Comparisons were done on the basis of labor crossing alert and action line, augmentation of labor, rate of cesarean section, perinatal outcome, user friendliness and maternal complications.

Statistical analysis was done using Chi-square test and p value less than 0.05 was considered significant.

OBSERVATIONS AND RESULTS

679 women who fulfilled the inclusion criteria were enrolled in the study from November 2008 to October 2009. Labor was monitored using either of the two WHO partographs.

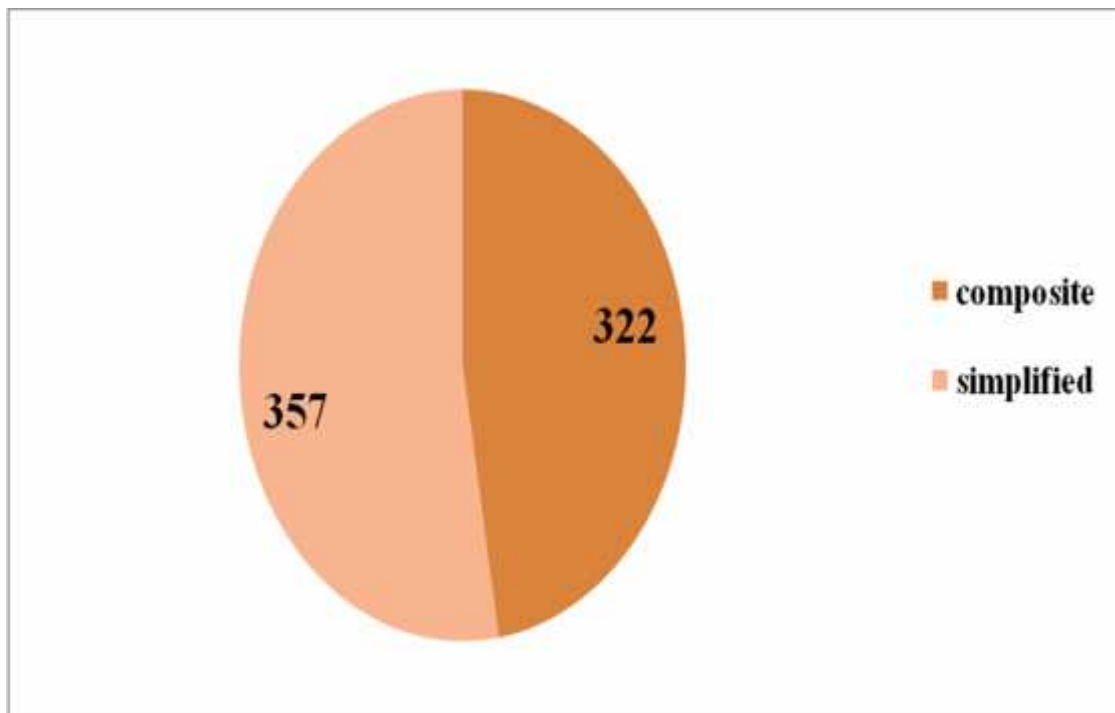


Figure5. Total no. of participants in both the groups (n=679)

Out of 322 patients in composite group, 178 were primigravidae and 144 were multigravidae.

186 primiparous and 171 multiparous were enrolled in simplified partograph group.

Table No. 1: Labor crossing the alert line

	Composite (n=322)	Simplified (n=357)	P value
Labor crossing alert line	n=91	n=49	
Primiparous	58	29	0.0001
Multiparous	33	20	0.0080

In the present study, labor had crossed the alert line in 91 (28.2%) cases monitored by composite partograph and 49 (13.7%) cases monitored with simplified partograph. This difference between the two groups was statistically significant.

Table No. 2: Labor crossing the action line

	Composite	Simplified	P value
Labor crossing action line	n=35	n=7	
Primiparous	25	6	0.005
Multiparous	10	1	0.005

Labor crossing the action line was found in 35 (10.8%) patients for whom composite partograph was plotted whereas in patients monitored with simplified partograph, labor had crossed the action line in 7 (1.96%) cases. This difference was statistically significant.

Table No.3: Augmentation of labor

Augmentation of labor	Composite (n=118)	Simplified (n=60)	P value
Primiparous	71	34	<0.0001
Multiparous	47	26	0.0004

Augmentation of labor was required in 118 (36.6%) cases who were randomized to composite partograph and in 60 (16.8%) patients subjected to simplified partograph. The results were statistically significant.

Table No.4: Vaginal delivery

Vaginal delivery	Composite (n=245)	Simplified (n=321)	P value
Primiparous	121	151	0.0055
Multiparous	124	166	0.0007

Majority of the patients, 245 (76.08%) in composite partograph group and 321 (89.9%) in simplified group delivered vaginally. This was significant statistically.

Out of these, almost similar number of patients 22 (6.8%; $p=0.98$) in composite group and 24 (6.7%; $p= 0.74$) in simplified group had instrumental delivery.

Figure No.6 Instrumental delivery

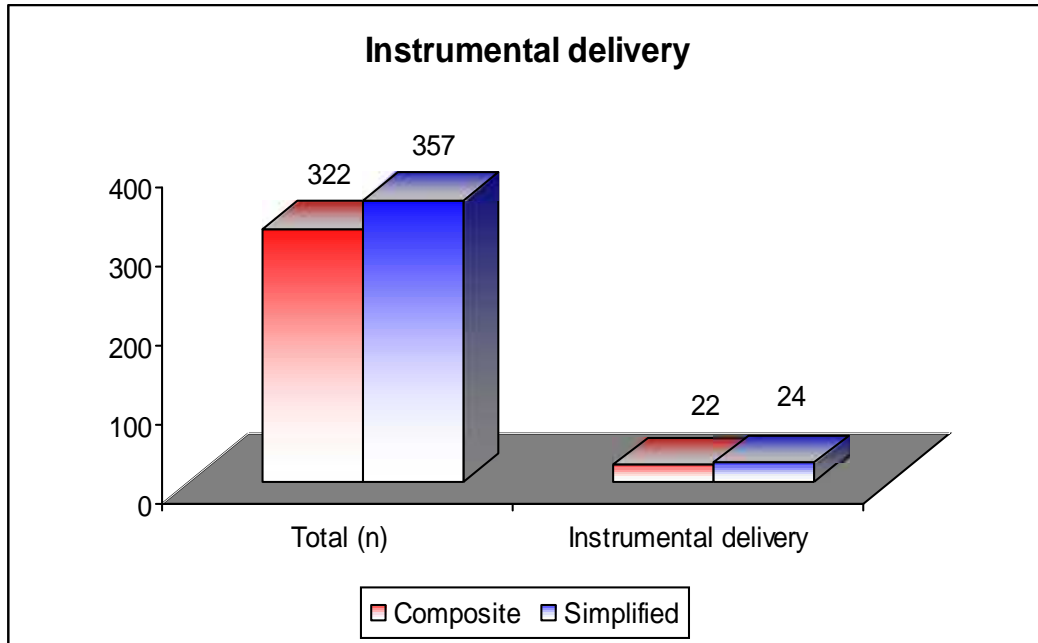


Table No.5: Cesarean Section

Cesarean section	Composite (n=77)	Simplified (n=36)	P value
Primiparous	57	31	0.0010
Multiparous	20	5	0.0007

Of the patients, randomized to composite partograph, 77 (23.9%) underwent cesarean section. In patients with simplified partograph, cesarean section was done in 36 (10.08%) cases. The results were statistically significant.

Table No.6: Indications of Cesarean Section

Indications of C.S.	Composite (n=322)	%	Simplified (n=357)	%	P value
Fetal distress	60	18.6%	14	3.92%	0.001
CPD	1	0.31%	3	0.84%	0.72
Non progress of labor	11	3.41%	9	2.52%	0.68
Deep transverse arrest	3	0.93%	5	1.40%	0.51
Failed ventouse	2	0.62%	5	1.40%	0.43
Obstructed labor	0	0%	0	0%	0.0
Total	77	23.9%	36	10.08%	0.001

Majority of cesarean sections were due to fetal distress. Only 3.4% in composite group and 2.52% in simplified group were due to non progress of labor. These results are not statistically significant ($p>0.005$).

Table No.7: Maternal Complications

	Postpartum hemorrhage	Puerperal sepsis
Composite partograph (n=322)	Primi 1 Multi 0	Primi 0 Multi 0
Simplified partograph (n=357)	Primi 1 Multi 0	Primi 0 Multi 0

Only 1 case in each partograph group was complicated with atonic postpartum hemorrhage, which was not related to prolonged and obstructed labor. No patient in both the groups had suffered from puerperal sepsis.

Table No.8: Admission to NICU

	Composite	Simplified	P value
Admission to NICU	n= 64	n=39	
Primiparous	36	22	0.040
Multiparous	28	17	0.028

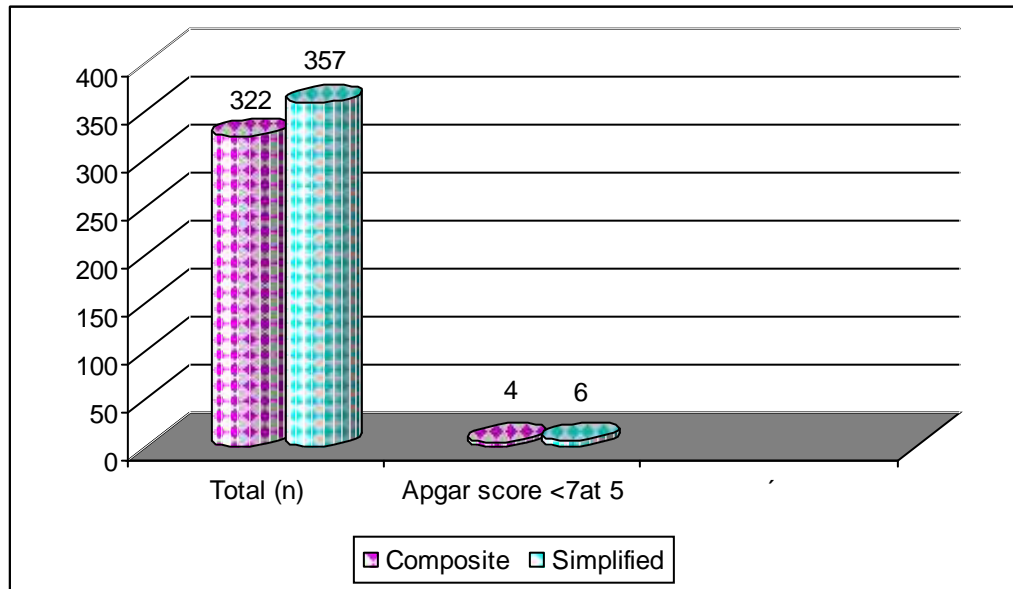
Neonatal intensive care unit admissions were statistically significant in composite partograph group 64 (19.8%) as compared to NICU admissions 39 (10.92%) in group monitored with simplified partograph.

Table No.9: Indications of admission to NICU

Indications of admission	Composite (n=322)	Simplified (n=357)	P value
Hyperbilirubinaemia	27	13	<0.05
Meconium aspiration syndrome	8	3	0.55
Sepsis	5	4	0.64
Asphyxia	1	3	0.57
Low birth weight	13	6	<0.05
Others	10	5	0.05
Total	64	39	0.035

Majority of the admissions to NICU were due to hyperbilirubinaemia and low birth weight. Though the difference between the two groups was statistically significant ($p < 0.05$), it was not related directly to monitoring of labor with composite partograph.

Figure7. Apgar score<7 at 5'



There was statistically no significant difference in Apgar score of <7 at 5 minutes in composite partograph group (n=4; p=0.678) and those subjected to simplified partograph (n=6; p=0.555).

A total of 31 resident doctors working in 12 hour shift at this teaching hospital were instructed to use both the partographs, which they had used according to computer randomization. Participants scored the two partographs for each of the following categories.

**Table No.10: No. of participants in each category using user friendliness score
(Composite partograph)**

Scores	0	1	2	3
Teachability	4	22	5	0
Overall usefulness	10	18	2	1
Interpretation	18	10	3	0
Overall rating	19	12	0	0

**Table No.11: No. of participants in each category using user friendliness score
(Simplified partograph)**

Scores	0	1	2	3
Teachability	0	0	2	29
Overall usefulness	0	0	10	21
Interpretation	0	0	10	21
Overall rating	0	0	13	18

The mean (S.D.) user friendliness score was lower for the composite partograph (2.87 ± 1.86 vs 10.67 ± 1.61 ; p<0.005).

Most participants (93%) experienced difficulty with the composite partograph, but no participant reported difficulty while plotting the simplified partograph.

Table No.12: Difficulty in plotting the partograph

Difficulty in plotting the partograph	Composite	Simplified
Percentage	93%	0%

DISCUSSION

Maternal mortality reduction is one of India's developmental priorities. One of the challenges in this respect is, the quality of obstetric practice and the failure to use the partograph in the monitoring of labor, reflects inadequate process of care. The WHO partographs are the best known partographs in low resource settings¹⁶. In India, partograph is not widely incorporated in our day to day practice as there is lack of awareness and very few reports available comparing the two WHO partographs. Hence, the present study was undertaken to highlight which WHO partograph is associated with better labor outcomes and is more user friendly so that use of partograph becomes a routine practice in all health setups in India.

679 parturient women, who fulfilled the inclusion criteria were enrolled in the study after taking written and informed consent. The following observations were made:

In the present study, labor crossing the alert line was found in 28.2% of patients in composite partograph group and 13.7% of patients in simplified partograph group ($p=0.0001$). The difference between the two groups was statistically significant. Similar study done at Vellore, India reports 17.7% and 15.1% in the two groups respectively.²⁷ A study done at Pakistan showed 11.6% of labors to cross the alert line in simplified partograph group.²⁸ 23.6% of patients crossed the alert line when composite partograph was plotted in a study done at Medan, Indonesia.³⁰

Labor crossing the action line was observed in 10.8% and 1.96% parturients in composite and simplified group respectively ($p=0.005$). This difference was statistically significant. Almost similar observations were made by the study done at Vellore where labor had crossed the action line in 7.0% in composite group as

compared to 1.0% in simplified group.²⁷ Action line was crossed in 38% of cases in composite partograph group at a study done at Liverpool.³⁵

Augmentation of labor in the present series was done with prostaglandins (vaginal PGE2 gel and vaginal PGE1 tablets), oxytocin infusion, ARM or both (which were used in accordance to labor protocols) when the uterine contractions were ineffective or cervical dilatation was arrested. Total number of augmented cases in both the groups were 36.6% and 16.8% respectively ($p < 0.0001$ and $p = 0.0004$ respectively in primigravidas and multigravidas). The results were statistically significant.

Oxytocin was used in 23.2% in composite group and 14.5% in simplified group in the present study. This is in concordance with study done at Vellore, where 23.8% and 21.8% had used oxytocin in their respective groups.²⁷ Contrary to the present study, lower rates of augmentation were observed in a study done at Calcutta, where it was 9.4% and 10.6% in composite and simplified group respectively.¹ The large WHO multicentre trial in South East Asia had augmentations in 10.6% of cases when composite partograph was plotted.¹⁰ Again, in a study done at Indonesia, oxytocin was used in 13.0% of cases in composite partograph group.³⁰ A very high number of patients (41.6%) had their labors augmented with oxytocin in a study done at Liverpool.³⁵

One important association which we found in current study was that augmentation was more in patients in whom labor had crossed the alert and action lines. Similar results were noted in a study done at Belgium where 26% had crossed the action line even after augmentation, when composite partograph was used.³⁷ The

present study was again in accordance to a study done at Leeds, UK where they had intervened actively when the latent phase of partograph was used.¹⁵

The success rate in terms of vaginal delivery in our study was 76.08% in composite group and was 89.9% in simplified partograph group. This was statistically significant. Study done at Calcutta had 80.6% of cases who delivered vaginally in composite group and 82.7% in simplified group.¹

6.8% and 6.7% had instrumental delivery in composite and simplified group respectively, in the present study. The difference was not statistically significant. The cases in both the groups were comparable to the data given by the study at Vellore, where 7% and 9% in both the groups had instrumental delivery.²⁷ The results were similar to the results obtained in the study at Calcutta, where instrumental delivery was experienced by 9.3% and 8.33% of patients in composite and simplified group.¹ On the contrary, 23.5% had instrumental deliveries in a study done at Liverpool.³⁵

23.9% and 10.08% in composite and simplified group respectively underwent cesarean section ($p=0.001$). The results were statistically significant. Study from Calcutta had similar results, where it was 10% and 8.9% in each.¹ Published literature from Dublin, Ireland, highlights 5.4% of patients undergoing cesarean section in composite partograph group.³⁸ But study from Vellore showed only 8.8% and 2.35% of parturients undergoing cesarean section.²⁷

Only 4.6% in composite and 4.7% in simplified group were operated due to non progress of labor. A large multicentre trial done at South East Asia involving 35,484 women observed 3.4% of prolonged labors while using composite partograph.¹⁰ Study done at Medan, Indonesia had similar findings where 3% had

prolonged labors, when composite partograph was plotted.³⁰ 6.1% had failure of progress of labor in a study at Liverpool.³⁵

We also observed that the number of cesarean section were more in primigravidas, irrespective of the partograph used ($p= 0.0010$) in our study.

There were no cases of obstructed labor in the present study in both the groups. This was in accordance with a study done at Calcutta, India where again there were no cases of obstructed labor in both the groups.¹ A study done at Medan, Indonesia, showed that obstructed labor was found in 11 cases when WHO simplified partograph was used.³⁰

Postpartum hemorrhage, defined as blood loss of $>500\text{ml}$ after vaginal delivery and $>1000\text{ml}$ after cesarean section, was observed in 1 case in each partograph group in our study. However, it was not because of prolonged and obstructed labor. The difference in two groups was not statistically significant. The present results varied from the study done at Calcutta, where they had 5 cases of postpartum hemorrhage in composite partograph group and 7 cases in simplified group.¹ There was no similarity with the results provided by study done at Liverpool, where they had observed blood loss $> 500\text{ml}$ in 39 patients.³⁵

Another aspect of the study was to observe the neonates of these parturients. We detected no statistically significant difference in the number of infants with Apgar score <7 at 5 minutes in both the groups where it was 1.24% and 1.68% ($p= 0.678$ and $p= 0.555$ in primigravidas and multigravidas respectively). Study at Vellore had similar results of 2% in each group.²⁷ Liverpool study had 1.6% of cases in composite group.³⁵ But results varied with the study at Indonesia, where Apgar score of <7 at 5 minutes was observed in 7.0% of cases in composite group.³⁰

19.8% and 10.92% of the babies born to mothers monitored by composite and simplified partograph respectively were admitted to Neonatal Intensive Care Unit and this difference was statistically significant ($p=0.035$). Majority of the admissions were due to hyperbilirubinaemia and low birth weight. Though the difference between the two groups was statistically significant, it was not related directly to monitoring of labor with composite partograph. Meconium aspiration syndrome, sepsis and birth asphyxia were other important causes which were not statistically significant. Vellore study had similarity with our results, where the admissions to NICU care were 20% in composite group and 16% in simplified group.²⁷

Puerperal sepsis was not seen in any case in both the groups. This was similar to the study done at Calcutta¹ which showed 1 case of puerperal sepsis in simplified partograph group and no case had suffered from the same in the composite partograph group. The multicentre trial done at South East Asia showed 3 cases of puerperal sepsis when composite partograph was used.¹⁰

93% of participants reported difficulty while plotting the composite partograph in our study. 86% of the maternity staff at a hospital in Germany preferred the simplified partograph because of its time saving and user friendly qualities.³⁹ Most of the participants (83%) had difficulty while plotting composite partograph at Vellore.²⁷ Published literature reports similar findings from a study done at Angola. Simplified partograph was much more user friendly as compared to composite partograph. User friendliness score is more in simplified when compared to composite partograph(10.67 ± 1.61 vs 2.87 ± 1.86 respectively) . Our results are supported by a study done at West Africa.³⁹ Study done at Vellore showed a score of 6.2 ± 0.9 vs 8.6 ± 1.0 in composite and simplified group respectively.²⁷

The WHO simplified partograph represents a synthesized and modified form, which includes the best features of several partographs. It has been found to be inexpensive, effective and pragmatic in a variety of different settings including developed and developing countries. It has shown to be effective in preventing prolonged labor, in reducing operative interventions and in improving the neonatal outcome. Therefore, the need of the hour is to incorporate it in our routine practice and help India reach its Millennium Developmental Goal 5 (MDG 5) by 2015.⁴⁰

CONCLUSION

A picture is worth a thousand words. A partograph provides rapid, comprehensive information about progress of labor, when compared with the review of detailed handwritten notes. The WHO partographs are the best known partographs in low resource settings. As there are limited number of trials comparing the two WHO partographs in Indian scenario, it is difficult to offer any recommendation for the routine use of partograph or the use of specific type of WHO partograph. Hence this study was conducted to compare the two WHO partographs - a composite one with a latent phase and a simplified partograph without latent phase, so that the better partograph can be implemented in our setup and the sequelae of obstructed labor, which are an enormous source of human misery can be prevented.

- ✚ The present study concluded that labor values crossed the alert and the action lines significantly more often when composite partograph was used.
- ✚ Composite partograph led to statistically significant number of augmentations, which was even more when labor had crossed the alert and action lines.
- ✚ The success rate in terms of vaginal delivery were more when simplified partograph was plotted.
- ✚ Rate of cesarean sections fell significantly when simplified partograph was used.
- ✚ There were almost equal number of instrumental deliveries in both the groups.
- ✚ No significant difference was found in terms of postpartum hemorrhage in both the groups.

- ✚ The lower rate of NICU admissions in simplified group again highlights it's significance.
- ✚ Apgar score <7 at 5 minutes in each group was not found to be statistically significant.
- ✚ There was no case of puerperal sepsis in both the groups.
- ✚ The composite partograph scored lower on user friendliness. Most participants experienced difficulty while plotting the composite partograph but none reported difficulty with the simplified partograph.

Hence, WHO simplified partograph is more user friendly and is associated with better maternal and perinatal outcomes. Efforts should be made to implement its routine use at the primary and secondary levels of health care which has even been recommended by Government of India.

SUMMARY

This was a prospective study conducted at KLES Dr. Prabhakar Kore Hospital and Medical Research Centre, Belgaum. It was done on 679 parturient women from November 2008 to October 2009. The objective of the study was to compare the two WHO partographs - a composite partograph with a latent phase and a simplified one without a latent phase, in women with uncomplicated pregnancy. From all eligible women, written and informed consent was taken. Either of the two WHO partographs was used according to computer randomization. Events were recorded on partograph upto delivery.

Labor crossing the alert line was statistically significant in women in whom composite partograph was used ($p=0.0001$ and $p=0.0080$ in primi and multigravidas). Likewise, 10.8% had crossed the action line in composite group as compared to 1.96% when simplified partograph was plotted.

Of the total number of augmented cases (118 in composite and 60 in simplified partograph; $p<0.0001$), oxytocin was used in 23.2% and 14.5% in each group respectively.

Vaginal delivery was successful in 76.08% in composite group and 89.9% in whom simplified partograph was used, with no statistically significant difference in the use of instruments in each group ($p=0.98$). On the other hand, cesarean sections fell from 23.9% to 10.08% when simplified partograph was used ($p=0.001$).

Only 1 patient suffered from atonic postpartum hemorrhage in simplified partograph group.

Neonatal intensive care admissions (19.8%) were significantly more in infants born to mothers monitored using composite partograph. But not much difference was observed in Apgar scores <7 at 5 minutes in both the groups.

The composite partograph scored lower on user friendliness (2.87 ± 1.86 vs 10.67 ± 1.61). Most participants reported difficulty in using the composite partograph (93%) but no participant reported difficulty using the simplified partograph.

There were no cases of puerperal sepsis in both the groups.

In the present study we observed that, labor can be managed without the latent phase being plotted on the partograph. However, a labor management protocol for the latent phase should be instituted with clear guidelines. The interventions were more when the latent phase was included, with more number of cesarean sections. The residents had difficulties in transferring from latent to active phase when composite partograph was used. Our study favours the use of WHO simplified partograph, which should become a routine practice in monitoring labor for better maternal and perinatal outcome.

BIBLIOGRAPHY

1. Alauddin Md., Runa Bal, Arunangsu De, Parthajit Mandal, Mayoukh Chakraborty. Monitoring of labor with WHO modified partogram - A study report. *NJOG* 2008; 3(2):8-11
2. Preventing prolonged labor: A practical guide. The Partograph Part I: principles and strategy. Maternal Health and safe Motherhood programme. Division of family health, WHO Geneva.1994
3. Fatusi A.O, Makinde O.N et al. Evaluation of health workers training in use of the partogram. *International Journal of gynecology and obstetrics* 2008; 100: 41 - 44.
4. Mc Carthy M. What's going on at the World Health Organization? *Lancet* 2002; 360: 1108-10
5. Mavalankar D, Vora K, Prakasamma M. Achieving Millennium Development Goal 5: is India serious? *Bulletin of the World Health Organization* 2008; 86(4)
6. UNICEF: India Statistics.
7. WHO: Maternal Mortality in 2000: Estimates Developed by WHO, UNICEF, and UNFPA.
8. Karl Krupp, P. Madhivanan. Leveraging human capital to reduce maternal mortality in India: enhanced public health system or public- private partnership? *Bio Med Central* 2009; 7:18

9. JP Neilson, T Lavender, S Quenby and S Wray. Obstructed labour. *British Medical Bulletin* 2003; 67: 191-204.
10. World Health Organization. Maternal Health and Safe Motherhood Programme. World Health Organization partograph in management of labour. *Lancet* 1994; 343: 1399-404
11. Registrar General of India, Centre for Global Health Research. Sample Registration System. Maternal Mortality in India. 1997–2003. Trends, Causes and Risk Factors. Registrar General, India, New Delhi. 2003.
12. Friedman E. Graphic analysis of labour. *American journal of Obstetrics and Gynecology*. 1954; 68:1568-75
13. Philpott R.H. Graphic records in labour. *British Medical Journal* 1972; 4:163-165
14. Bogaert L.J. The partogram. *SAMJ* 2003; 93:11
15. Cartmill RSV, Thornton JG. Effect of presentation of partogram information on obstetric decision making. *Lancet* 1992; 339:1520-1522.
16. Matthews Mathai. The partograph for the prevention of obstructed labor. *Clinical Obstetrics and Gynecology* 2009; 52(2):256-269
17. Hendricks C.H, Brenner W.E, Krans G. Normal cervical dilatation pattern in late pregnancy and labour. *AJOG* 1970; 106:1065-1082
18. Studd J. Partograms and Nomograms of cervical dilatation in management of primigravid labour. *British Medical Journal* 1973; 4: 451-455

19. Philpott RH, Castle WM. Cervicographs in the management of labour in primigravidae. I. The alert line for detecting abnormal labour. *J Obstet Gynaecol Br Commonw.* 1972; 79: 592-598.
20. Philpott RH, Castle WM. Cervicographs in the management of labour in primigravidae. II. The action line and treatment of abnormal labour. *J Obstet Gynaecol Br Commonw.* 1972; 79: 599-602.
21. Preventing prolonged labor: A practical guide. The Partograph Part II: User's Manual Maternal Health and safe Motherhood programme. Division of family health, WHO Geneva.1994
22. Preventing prolonged labor: A practical guide. The Partograph Part III: Facilitator's Guide. Maternal Health and safe Motherhood programme. Division of family health, WHO Geneva.1994
23. Dujardin B, De SI, Kulker R, et al. The partograph: is it worth including the latent phase? *Trop Doct.*1995; 25: 43-44.
24. Pettersson KO, Svensson ML, Christensson K. Evaluation of an adapted model of the World Health Organization partograph used by Angolan midwives in a peripheral delivery unit. *Midwifery.*2000;16:82-88.
25. Managing complications in pregnancy and child birth: A guide for midwives and doctors. Geneva, WHO 2003.
26. Debdas et al. Paperless partograph. (Electronic search).
27. Mathews J.E., Rajaratnam A, George A, Mathai M. Comparison of two WHO partographs. *International Journal of Gynaecology and Obstetrics* 2007; 96:147-150

28. Javed Iffat, Bhutta Shereen, Shoaib Tabassum. Role of partogram in preventing prolonged labour. *Journal of Pakistan Medical Association* 2007; 57
29. Modares M, Mirmolae S.T et al. The effects of education on the use of partogram to control the quality of care by midwives. *Research Journal of Biological Sciences* 2009; 4(2):152-156.
30. Mohammad Fahdhy, Virasakdi Chongsuvivatwong. Evaluation of World Health Organization partograph. Midwifery implementation by midwives for maternity home birth in Medan, Indonesia. *Midwifery*, 2005; 21:301-310
31. Nyamtema A.S. et al. Partogram use in the Dar es Salaam perinatal care study. *International Journal of Gynecology and Obstetrics* 2008; 100: 37-40
32. Fawole AO, Hunyinbo KI, Adekanle DA. Knowledge and utilization of the partograph among obstetric care givers in South West Nigeria. *African journal of Reproductive health* 2008; 12:1.
33. Mercer S.W, Sevar K et al. Using clinical audit to improve the quality of obstetric care at the Tibetan Delek hospital in North India: a longitudinal study. *Reproductive health* 2006, 3:4
34. Windrim Rory, Seaward P.G et al. A randomised controlled trial of a bedside partogram in the active management of primiparous labour. *J Obstet Gynaecol Can* 2007; 29(1): 27-34
35. Tina lavender, Zarko Alfirevic, Stephen Walkinshaw. Partogram action line study: a randomised trial. *RCOG* 1998; 105: 976-980.

36. Glick E, Trussell R.R. The curve of labour used as a teaching device in Uganda. *BJOG, Int J O & G*, vol.77, Issue 11, Pg 1003-1006.
37. Dujardin B, De Schamphelre I et al. Value of the alert and action lines on the partogram. *Lancet* 1992; 25: 340(8813):240
38. Impey, Lawrence et al. Graphic analysis of actively managed labor: Prospective study in 500 consecutive nulliparous women in spontaneous labor. *AJOG* 2000; 183(2)
39. Wacker J, Kyelem D et al. Introduction of a simplified round partograph in rural maternity units: Seno province, Burkina Faso, West Africa. *Trop Doct* 1998; Jul 28(3): 146-52
40. Paul VK. Meeting MDG 5: good news from India. *Lancet* 2007; 369:558.

ANNEXURE-I: CONSENT FORM

I.P.NO.

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“Comparison of two World Health Organization partographs in women with uncomplicated pregnancy –A one year Randomized Controlled Trial”

You are invited to participate in a research study being conducted by Obstetrics and Gynaecology Department, JNMC, Belgaum, supervised by Professor Dr. M.K.Swamy.

We would like to learn more about composite and simplified partograph by comparing the two. A Partograph records all important observation regarding the condition of mother, fetus and progress of labor on one chart. Prolonged and obstructed labor which significantly contributes to maternal and fetal morbidity and mortality can be detected earlier and it’s incidence and complications can, not only be reduced but also prevented. The comparison of two WHO partographs can tell which partograph is more user friendly, easier to be completed and is associated with better maternal and perinatal outcome. All women coming to KLES Prabhakar Kore Hospital & MRC free labor room, in spontaneous labor and who fulfill the inclusion criteria will be requested to participate in this study over a period of one year.

Should you choose to participate in this study, a partograph will be chosen for you randomly. Observations will be plotted on it, as and when required, until delivery

of the baby. This will help detect any prolongation or obstruction during your labour and right measures at right time can be taken to avoid any harm to the baby. Serious complications such as ruptured uterus, fetal distress, postpartum haemorrhage or infection can be avoided.

There is no risk involved in the study. The result of you taking part in this research would help in comparison of the two partographs and the better one can be chosen for further deliveries.

If you choose not to participate in this study, it will not affect the care given to you and/or your baby during labor, delivery and thereafter.

Your privacy will be respected & all information collected about you during the course of this study will be kept confidential. Your identity will remain undisclosed. The results may be published for scientific group. Your identity, however will be kept confidential at all times. Only Dr. M.K.Swamy, Professor OBG Department, JNMC, Belgaum and Dr.Tania Gurdip Singh, Post Graduate (OBG), JNMC, Belgaum, will have the access to the information collected.

You shall not be receiving any payment or any financial incentives for participating in this study.

Your participation in the study is voluntary. Your decision whether or not to participate, will neither affect concern for you or your baby at present, nor your future relations with the doctor or the hospital. You are free to discontinue participation in this study at any time & for any reason. In case you need further information regarding your rights as a study participant you may please contact Dr.V.D. Patil, Principal & Chairman, Institutional Ethics Committee on Human Subjects Research, J.N.Medical College, Belgaum.

Annexure-I: Consent Form

I volunteer & consent to participate in this study. I have read the consent or it has been read to me. The study has been fully explained to me and I am given the opportunity to ask questions at any time and receive answers.

Participant's name: _____

Signature/ left thumb impression: _____

Witness name: _____

Signature of witness: _____

Signature of doctor: _____

Date:

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ANNEXURE – II: PROFORMA

“Comparison of two World Health Organization partographs in women with uncomplicated pregnancy- A one year Randomized Controlled Trial.”

Guide: **Dr. M.K Swamy**,
Professor,
Department of Obst. & Gynaec
Belgaum
Student: **Dr. Tania Gurdip Singh**

Case No: IP No: Date:
Name: Age: Sex:
Address:
Time of admission:

Chief complaints

H/O Amenorrhoea:
Fetal Movements:
H/O Pain Abdomen:
H/O P/V Leak or Bleed:
H/O
Pedal Edema:
Blurring of vision:
Epigastric Pain:
Headache:
H/O Fever or Burning Micturition:

Obstetrics History

Married Life:

Gravida:
Parity:
Living:
Abortion:
Death:
First Trimester:
Second Trimester:
Third Trimester:

Registered or Unregistered case:

Menstrual History

Last Menstrual Period:
Expected date of delivery (By dates):
Expected date of delivery (By scan):
Period of gestation (By dates):
Period of gestation (By scan):

Past History

Complication in previous pregnancy (if any):

Significant past history:

Family History:

General Physical Examination

Built:	Nutrition:
PR:	B.P :
Respiratory rate:	Temp:
Pallor:	Icterus:
Edema :	

Systemic Examination

Respiratory system:
Cardiovascular system:
Central nervous system:

Per abdomen:

Per Speculum Examination (if required):

Per vaginum:

Diagnosis:

Outcome

Maternal:

Alert line crossed:

Action line crossed:

Augmentation of labor:

Mode of delivery

 Vaginal:

 Instrumental (indication):

 Cesarean section (indication):

Postpartum complications

 PPH:

 Puerperal sepsis:

Fetal:

Apgar score <7 at 5 min.:

Admission to NICU (indication):

KEY TO MASTER CHART

Alert	-	labor which crossed the alert line
Action	-	labor which crossed the action line
A.S.<7 at5'	-	APGAR score less than 7 at 5 minutes
A	-	abortion
ARM	-	artificial rupture of membranes
C.Section	-	cesarean section
CPD	-	cephalopelvic disproportion
DTA	-	deep transverse arrest
D	-	death
G	-	gravid
Hyperbili	-	hyperbilirubinaemia
IP No.	-	inpatient number
IUGR	-	intrauterine growth retardation
L	-	living
LBW	-	low birth weight
MAS	-	meconium aspiration syndrome
N	-	no
NICU	-	neonatal intensive care unit
Oligo	-	oligohydramnios
Primi	-	primigravida
P	-	para
PPH	-	postpartum hemorrhage
P.S.	-	puerperal sepsis
RDS	-	respiratory distress syndrome
S.No.	-	serial number

COMPOSITE PARTOGRAPH

S.No	IP No.	Parity	Alert	Action	Augmentation	Vaginal delivery	Instrumental delivery	C. Section	Indication for C.S	PPH	NICU admission	A.S. < 7 at 5'
1	303725	G2P1L1	N	N	N	yes	N	N		N	N	N
2	303791	Primi	yes	N	pitocin	yes	N	N		N	N	N
3	303586	G2P1L1	N	N	N	yes	N	N		N	N	N
4	304123	G3P1L1A1	N	N	pitocin	yes	N	N		N	N	N
5	304181	G2P1L1	N	N	N	N	N	yes	fetal distress	N	N	N
6	304317	G3P1L1A1	N	N	N	yes	N	N		N	N	N
7	304330	G2P1L1	yes	yes	cerviprime	yes	N	N		N	N	N
8	304477	Primi	yes	yes	cerviprime	yes	N	N		N	N	N
9	304598	Primi	yes	N	N	N	N	yes	non progress of labor	N	N	N
10	304672	Primi	yes	N	N	yes	ventouse	N		N	N	N
11	304673	G2P1L1	N	N	N	yes	N	N		N	N	N
12	304771	Primi	yes	yes	cerviprime	N	N	yes	non progress of labor	N	N	N
13	305213	G2P1L1	yes	N	N	yes	N	N		N	N	N
14	305455	G2P1L1	N	N	N	yes	N	N		N	N	N
15	305264	G2P1L1	yes	yes	N	yes	N	N		N	N	N
16	305187	G3P2L2	yes	yes	cerviprime	yes	N	N		N	N	N
17	305375	Primi	yes	N	pitocin,ARM	N	N	yes	fetal distress	N	N	N
18	305457	Primi	N	N	N	N	ventouse	yes	failed ventouse	N	N	N
19	305206	G2P1L1	N	N	N	yes	N	N		N	N	N
20	305622	Primi	yes	yes	N	N	N	yes	non progress of labor	N	hyperbili	N
21	305691	Primi	N	N	N	yes	N	N		N	N	N
22	305794	Primi	N	N	N	N	N	yes	fetal distress	N	N	N
23	305920	G2P1L1	N	N	pitocin	yes	N	N		N	N	N
24	305872	Primi	N	N	N	yes	N	N		N	hyperbili	N
25	306026	G2A1	N	N	N	yes	N	N		N	N	N

26	306053	Primi	yes	N	pitocin	yes	N	N		N	N	N
27	306297	Primi	N	N	N	yes	N	N		N	N	N
28	306338	Primi	N	N	N	N	N	yes	fetal distress	N	hyperbili	N
29	306493	G3P2L2	N	N	N	yes	N	N		N	N	N
30	306494	G2P1L1	yes	N	pitocin	yes	N	N		N	N	N
31	306518	Primi	N	N	N	yes	N	N		N	N	N
32	306787	G3P2L2	N	N	N	yes	N	N		N	N	N
33	306801	G2P1L1	N	N	N	yes	N	N		N	N	N
34	307211	G2P1L1	yes	N	pitocin	yes	N	N		N	N	N
35	307381	Primi	N	N	N	yes	N	N		N	N	N
36	307520	G3P2L2	yes	yes	ARM	N	N	yes	fetal distress	N	N	N
37	308044	G2P1L1	N	N	N	yes	N	N		N	N	N
38	308049	G2P1L1	N	N	N	yes	N	N		N	N	N
39	308046	Primi	N	N	cytotec	yes	N	N		N	N	N
40	308079	Primi	N	N	N	yes	N	N		N	N	N
41	308266	G3P2L1	N	N	N	yes	N	N		N	N	N
42	308128	Primi	N	N	N	yes	forceps	N		N	N	N
43	308314	G5P2L1A2	yes	N	ARM	yes	N	N		N	N	N
44	308454	Primi	yes	N	pitocin	yes	ventouse	N		N	N	N
45	308439	G4P2L1D1A1	yes	N	ARM	yes	N	N		N	N	N
46	308588	G3P2L2	N	N	N	yes	N	N		N	N	N
47	308791	G2P1L1	N	N	N	yes	N	N		N	N	N
48	308786	Primi	N	N	N	N	ventouse	yes	failed ventouse	N	N	N
49	308854	G2P1L1	N	N	N	yes	N	N		N	N	N
50	308973	G2P1L1	yes	N	N	N	N	yes	fetal distress	N	N	N
51	308300	G3P2L1D1	yes	yes	pitocin	N	N	yes	non progress of labor	N	N	N
52	308666	G2P1L1	yes	yes	pitocin	yes	N	N		N	N	N
53	309213	G3P1L1A1	N	N	pitocin	yes	N	N		N	N	N
54	308932	Primi	yes	yes	cerviprime	yes	N	N		N	N	N
55	309328	Primi	N	N	N	N	N	yes	fetal distress	N	N	N
56	309446	Primi	N	N	N	yes	N	N		N	N	N
57	309503	Primi	yes	yes	cerviprime	N	N	yes	DTA	N	hyperbili	N
58	309677	G3P2L1	N	N	N	yes	N	N		N	N	N
59	309930	G2P1L1	N	N	pitocin	yes	N	N		N	N	N
60	309937	G2P1L1	N	N	N	yes	N	N		N	N	N

61	309947	G3P2L2	N	N	pitocin	yes	N	N		N	N	N
62	309980	Primi	N	N	N	yes	N	N		N	N	N
63	310179	G3P2L2	N	N	N	yes	N	N		N	hyperbili	N
64	310402	G4P3L0	N	N	N	yes	N	N		N	N	N
65	310474	Primi	N	N	N	yes	ventouse	N		N	N	N
66	310615	G2P1L1	N	N	pitocin	yes	N	N		N	N	N
67	310636	Primi	yes	N	pitocin	yes	N	N		N	N	N
68	310604	G3P2L2	N	N	N	yes	N	N		N	N	N
69	310842	G2P1L1	N	N	N	yes	N	N		N	hyperbili	N
70	310836	Primi	N	N	N	yes	N	N		N	N	N
71	310586	G3P2L2	N	N	N	yes	N	N		N	hyperbili	N
72	311179	G3P2L2	N	N	pitocin	yes	N	N		N	N	N
73	311190	Primi	N	N	N	yes	N	N		N	N	N
74	311115	Primi	N	N	N	N	N	yes	DTA	yes	MAS	yes
75	311077	G3P2L2	N	N	N	yes	N	N		N	N	N
76	311099	Primi	N	N	N	yes	N	N		N	N	N
77	311215	Primi	N	N	N	yes	N	N		N	N	N
78	311299	Primi	N	N	N	yes	N	N		N	N	N
79	311276	Primi	N	N	N	yes	N	N		N	N	N
80	311180	Primi	N	N	cytotec	yes	N	N		N	N	N
81	311347	G3P2L2	N	N	N	yes	N	N		N	LBW	N
82	311375	G3P2L1	N	N	N	yes	N	N		N	N	N
83	311633	G2A1	yes	N	ARM	yes	N	N		N	N	N
84	311730	Primi	N	N	pitocin	yes	N	N		N	N	N
85	311747	G2P1L1	N	N	N	yes	N	N		N	N	N
86	311842	G2P1L1	N	N	N	yes	N	N		N	N	N
87	311879	G3P2L0	N	N	cerviprime	yes	N	N		N	hyperbili	N
88	311823	G2P1L0	N	N	ARM	yes	N	N		N	N	N
89	311791	Primi	N	N	pitocin	yes	N	N		N	N	N
90	311872	Primi	yes	yes	pitocin	N	N	yes	non progress of labor	N	hyperbili	N
91	311921	Primi	yes	yes	pitocin	yes	N	N		N	N	N
92	311972	Primi	yes	yes	N	yes	N	N		N	MAS	yes
93	311982	Primi	N	N	N	yes	N	N		N	N	N
94	312302	Primi	N	N	pitocin	yes	N	N		N	N	N
95	312471	Primi	yes	N	N	yes	N	N		N	N	N

96	312503	Primi	N	N	pitocin	yes	N	N		N	LBW	N
97	312753	Primi	N	N	cerviprime	yes	forceps	N		N	hyperbili	N
98	312402	G2P1L1	yes	N	N	yes	N	N		N	N	N
99	312927	Primi	yes	yes	N	N	N	yes	fetal distress	N	N	N
100	312874	Primi	yes	yes	cytotec	yes	N	N		N	N	N
101	312611	Primi	yes	N	N	yes	ventouse	N		N	N	N
102	312707	Primi	N	N	pitocin	yes	N	N		N	LBW	N
103	311861	G4P3L1	yes	yes	pitocin	yes	N	N		N	N	N
104	312780	G2A1	N	N	N	yes	N	N		N	N	N
105	312709	G2P1L1	N	N	cytotec	yes	N	N		N	hyperbili	N
106	313402	Primi	yes	N	N	yes	N	N		N	N	N
107	313209	Primi	N	N	pitocin	yes	N	N		N	early neonatal sepsis	N
108	313345	Primi	N	N	N	N	N	yes	fetal distress	N	MAS	yes
109	313490	Primi	N	N	N	yes	N	N		N	N	N
110	314342	G2P1L1	N	N	N	yes	N	N		N	N	N
111	314583	G2P1L1	N	N	N	yes	N	N		N	N	N
112	314592	Primi	N	N	N	yes	N	N		N	imperforate anus	N
113	314660	G2P1L1	N	N	N	yes	N	N		N	N	N
114	314714	G2A1	N	N	N	yes	N	N		N	N	N
115	314719	Primi	yes	N	N	yes	N	N		N	N	N
116	314640	Primi	yes	yes	N	N	N	yes	fetal distress	N	N	N
117	314726	G3P2L1	N	N	pitocin	yes	N	N		N	LBW	N
118	314307	Primi	N	N	cytotec	yes	N	N		N	N	N
119	315042	Primi	yes	yes	pitocin	yes	N	N		N	N	N
120	315384	G2P1L0	N	N	pitocin	yes	N	N		N	N	N
121	315398	G2P1L1	N	N	N	yes	N	N		N	N	N
122	315473	Primi	N	N	cytotec	yes	N	N		N	N	N
123	315563	G2P1L1	N	N	pitocin	yes	N	N		N	N	N
124	315448	Primi	N	N	N	yes	N	N		N	N	N
125	315562	G4P2L2A1	N	N	N	yes	N	N		N	N	N
126	315611	Primi	N	N	N	yes	N	N		N	N	N
127	315767	Primi	N	N	pitocin	yes	N	N		N	N	N
128	315774	Primi	N	N	N	yes	ventouse	N		N	N	N
129	315789	Primi	N	N	N	yes	N	N		N	N	N
130	315880	G2P1L1	N	N	pitocin, ARM	yes	N	N		N	N	N

131	315907	G2P1L1	N	N	N	yes	N	N		N	N	N
132	316005	Primi	N	N	N	yes	N	N		N	N	N
133	315900	Primi	yes	N	cytotec	N	N	yes	fetal distress	N	N	N
134	316030	G3P2L2	N	N	N	yes	N	N		N	N	N
135	316087	Primi	N	N	N	N	N	yes	fetal distress	N	N	N
136	316164	Primi	N	N	N	N	N	yes	non progress of labor	N	N	N
137	316220	G2P1L1	yes	N	N	N	N	yes	fetal distress	N	N	N
138	316301	G3P2L2	N	N	N	yes	N	N		N	N	N
139	317038	Primi	N	N	N	yes	N	N		N	N	N
140	317080	G2P1L1	N	N	N	N	N	yes	fetal distress	N	N	N
141	317058	Primi	yes	yes	N	N	N	yes	fetal distress	N	N	N
142	317129	G3P1A1L0	N	N	cytotec	yes	N	N		N	N	N
143	317144	Primi	N	N	N	N	N	yes	fetal distress	N	N	N
144	317138	G5P2L1A2	yes	yes	pitocin	yes	N	N		N	hyperbili	N
145	317153	Primi	yes	N	N	N	N	yes	fetal distress	N	meningomyelocele	N
146	317181	Primi	N	N	N	yes	N	N		N	N	N
147	317162	Primi	yes	yes	pitocin	yes	N	N		N	N	N
148	317367	Primi	yes	N	pitocin	yes	N	N		N	N	N
149	317485	Primi	N	N	cytotec	yes	N	N		N	N	N
150	317687	Primi	N	N	cytotec	N	N	yes	fetal distress	N	hyperbili	N
151	317645	G4P3L3	N	N	pitocin	yes	N	N		N	N	N
152	317782	Primi	N	N	N	N	N	yes	fetal distress	N	N	N
153	317698	Primi	yes	yes	cerviprime	N	N	yes	non progress of labor	N	N	N
154	317842	G2P1L1	N	N	N	yes	N	N		N	N	N
155	317650	Primi	N	N	N	N	N	yes	fetal distress	N	N	N
156	317377	Primi	yes	N	cerviprime	N	N	yes	DTA	N	sepsis	N
157	317338	G2P1L1	N	N	N	N	N	yes	fetal distress	N	N	N
158	317976	G2P1L1	N	N	N	yes	N	N		N	N	N
159	317917	Primi	N	N	N	N	N	yes	fetal distress	N	N	N
160	317647	Primi	N	N	cytotec	yes	N	N		N	N	N
161	317802	Primi	yes	N	N	N	N	yes	fetal distress	N	N	N
162	318012	G2P1L1	N	N	N	yes	N	N		N	N	N
163	318086	Primi	yes	yes	cerviprime	yes	N	N		N	N	N
164	318082	Primi	yes	yes	N	N	N	yes	fetal distress	N	N	N
165	318844	G2P1L1	N	N	cytotec	yes	N	N		N	N	N

166	318812	Primi	N	N	N	N	N	yes	fetal distress	N	N	N
167	318672	G2A1	yes	N	cytotec	N	N	yes	fetal distress	N	N	N
168	318717	Primi	N	N	N	N	N	yes	fetal distress	yes	N	N
169	318906	G3P2L2	yes	yes	pitocin	yes	N	N		N	N	N
170	318535	G2P1L1	yes	N	pitocin, ARM	yes	N	N		N	N	N
171	318795	Primi	yes	N	N	yes	N	N		N	N	N
172	319345	G2P1L1	yes	N	N	yes	N	N		N	N	N
173	319446	G3P2L0	yes	N	N	N	N	yes	fetal distress	N	N	N
174	319778	G5P2L2A2	N	N	N	yes	N	N		N	N	N
175	319782	Primi	N	N	pitocin	yes	N	N		N	N	N
176	319786	G2P1L1	N	N	N	yes	N	N		N	N	N
177	319816	Primi	N	N	pitocin	yes	N	N		N	N	N
178	319844	Primi	N	N	pitocin	yes	N	N		N	N	N
179	319629	G2P1L1	N	N	N	yes	N	N		N	N	N
180	319911	Primi	yes	N	N	yes	N	N		N	N	N
181	319950	G2P1L1	N	N	N	yes	N	N		N	N	N
182	319881	G3P1L1A1	N	N	N	N	N	yes	fetal distress	N	N	N
183	319852	Primi	yes	yes	cytotec	yes	N	N		N	N	N
184	319647	Primi	yes	N	N	N	N	yes	fetal distress	N	N	N
185	320121	Primi	yes	N	cerviprime	N	N	yes	fetal distress	N	N	N
186	320247	Primi	N	N	N	N	N	yes	fetal distress	N	N	N
187	320255	Primi	yes	yes	cerviprime	yes	ventouse	N		N	N	N
188	320643	Primi	N	N	N	yes	ventouse f/b forceps	N		N	hyperbili	N
189	320879	Primi	N	N	pitocin	yes	N	N		N	hyperbili	N
190	320842	G2P1L1	N	N	pitocin	yes	N	N		N	milk aspiration	N
191	320846	Primi	N	N	N	N	N	yes	fetal distress	N	N	N
192	321137	Primi	N	N	pitocin	yes	N	N		N	N	N
193	321047	Primi	N	N	N	N	N	yes	fetal distress	N	N	N
194	321123	Primi	N	N	N	yes	forceps	N		N	N	N
195	320520	Primi	N	N	ARM	yes	N	N		N	N	N
196	321390	G3P2L2	N	N	N	yes	N	N		N	N	N
197	321724	G2P1L0	N	N	N	N	N	yes	fetal distress	N	LBW	N
198	321768	Primi	yes	yes	N	N	N	yes	non- progress of labor	N	N	N
199	322064	Primi	yes	N	cerviprime	yes	N	N		N	N	N
200	322116	G2P1L1	yes	yes	N	yes	N	N		N	N	N

201	322170	G2A1	N	N	cerviprime	yes	N	N		N	LBW	N
202	322372	Primi	N	N	N	yes	N	N		N	N	N
203	322391	Primi	N	N	N	N	N	yes	fetal distress	N	N	N
204	322497	Primi	N	N	pitocin	yes	ventouse	N		N	N	N
205	322451	G3P2L1	N	N	N	yes	N	N		N	hyperbili	N
206	322571	G2P1L1	N	N	N	yes	N	N		N	N	N
207	322621	G2P1L1	yes	N	pitocin	yes	N	N		N	N	N
208	322642	Primi	N	N	N	yes	N	N		N	sepsis	N
209	322721	Primi	N	N	N	yes	N	N		N	N	N
210	322839	Primi	N	N	pitocin	yes	N	N		N	MAS	N
211	323736	G2P1L0	N	N	pitocin	yes	N	N		N	N	N
212	323160	Primi	N	N	pitocin	yes	ventouse	N		N	N	N
213	324070	Primi	yes	N	N	N	N	yes	fetal distress	N	N	N
214	324188	G2P1L1	yes	N	N	yes	N	N		N	LBW	N
215	324190	Primi	N	N	N	yes	N	N		N	N	N
216	324340	G2P1L1	N	N	N	N	N	yes	fetal distress	N	hyperbili	N
217	322816	G3P2L2	N	N	N	N	N	yes	fetal distress	N	MAS	N
218	324534	Primi	N	N	N	yes	N	N		N	milk aspiration	N
219	324626	G2P1L1	N	N	N	yes	N	N		N	N	N
220	324615	Primi	N	N	N	yes	N	N		N	N	N
221	324823	G3P2L1	N	N	piotcin	yes	N	N		N	N	N
222	324848	Primi	N	N	pitocin	yes	N	N		N	N	N
223	324898	Primi	N	N	N	N	N	yes	fetal distress	N	N	N
224	324907	Primi	N	N	N	yes	N	N		N	MAS	N
225	325321	Primi	N	N	cytotec	yes	N	N		N	N	N
226	324268	Primi	N	N	N	yes	N	N		N	N	N
227	325606	G3P2L2	N	N	N	N	N	yes	fetal distress	N	spina bifida occulta	N
228	324700	G3P2L2	yes	N	cerviprime	yes	N	N		N	N	N
229	324359	Primi	yes	N	pitocin, ARM	yes	ventouse	N		N	N	N
230	324855	Primi	N	N	N	N	N	yes	fetal distress	N	sepsis	N
231	324824	G2A1	N	N	N	N	N	yes	fetal distress	N	RDS	N
232	324857	Primi	N	N	cerviprime	yes	N	N		N	N	N
233	324992	Primi	N	N	cytotec	yes	N	N		N	N	N
234	325025	Primi	N	N	N	yes	N	N		N	N	N
235	325035	G2A1	yes	N	pitocin	yes	N	N		N	N	N

236	325861	G3P2L1D1	N	N	N	yes	N	N		N	N	N
237	326243	G2P1L1	N	N	N	yes	N	N		N	N	N
238	326348	Primi	N	N	N	yes	ventouse	N		N	N	N
239	326550	Primi	N	N	N	N		yes	CPD	N	hyperbili	N
240	326436	Primi	N	N	N	N	N	yes	fetal distress	N	N	N
241	326453	Primi	N	N	N	yes	N	N		N	N	N
242	326442	Primi	N	N	N	N	N	yes	fetal distress	N	N	N
243	326066	Primi	N	N	N	N	N	yes	fetal distress	N	LBW	N
244	326027	G2A1	N	N	N	N	N	yes	fetal distress	N	N	N
245	326070	Primi	yes	yes	cytotec	N	N	yes	fetal distress	N	hyperbili	N
246	326510	Primi	yes	N	cytotec	yes	N	N		N	N	N
247	326542	Primi	N	N	cytotec	yes	N	N		N	hyperbili	N
248	326686	G2P1L1	N	N	N	yes	N	N		N	LBW	N
249	310836	Primi	N	N	N	yes	N	N		N	N	N
250	326679	Primi	yes	N	N	yes	N	N		N	LBW	N
251	327018	G2P1L1	N	N	N	yes	N	N		N	N	N
252	326609	Primi	N	N	N	N	N	yes	fetal distress	N	LBW	N
253	327008	Primi	yes	N	N	N	N	yes	fetal distress	N	N	N
254	327047	G2P1L1	N	N	N	N	N	yes	fetal distress	N	N	N
255	327339	Primi	N	N	N	yes	N	N		N	N	N
256	327209	Primi	N	N	N	N	N	yes	fetal distress	N	LBW	N
257	327502	Primi	yes	N	N	N	N	yes	fetal distress	N	N	N
258	327679	G2P1L1	N	N	N	N	N	yes	fetal distress	N	N	N
259	327854	G2P1L1	N	N	N	yes	N	N		N	N	N
260	328435	G5P1L1A3	N	N	N	N	N	yes	fetal distress	N	N	N
261	328389	Primi	N	N	N	N	N	yes	fetal distress	N	N	N
262	328465	Primi	yes	yes	N	N	N	yes	fetal distress	N	N	N
263	328757	Primi	N	N	N	N	N	yes	fetal distress	N	N	N
264	328758	G2P1L1	N	N	N	yes	N	N		N	N	N
265	326480	G2P1L1	N	N	pitocin	yes	N	N		N	term with oligo	yes
266	328845	Primi	N	N	N	yes	N	N		N	sepsis	N
267	328870	G2P1L1	N	N	pitocin, ARM	yes	N	N		N	N	N
268	328982	Primi	N	N	N	yes	N	N		N	N	N
269	328960	G2A1	N	N	N	yes	N	N		N	term with meningocele	N
270	328957	G3P2L2	N	N	N	N	N	yes	non progress of labor	N	N	N

271	328964	G2A1	yes	N	N	yes	N	N		N	N	N
272	328943	Primi	yes	yes	N	N	N	yes	non progress of labor	N	Down's syndrome with RDS	N
273	329161	G2P1L1	N	N	N	yes	N	N		N	LBW	N
274	329352	Primi	yes	yes	pitocin, ARM	N	N	yes	non progress of labor	N	hyperbili	N
275	329388	G3P2L2	N	N	N	yes	N	N		N	hyperbili	N
276	329354	Primi	N	N	pitocin	yes	N	N		N	N	N
277	329021	G2P1L1	N	N	N	yes	N	N		N	hyperbili	N
278	329676	G3P1L1A1	N	N	pitocin	yes	N	N		N	N	N
279	329783	Primi	N	N	pitocin	yes	N	N		N	N	N
280	329998	G2P1L1	N	N	N	yes	N	N		N	N	N
281	330038	G3P2L2	N	N	N	yes	N	N		N	MAS	N
282	330159	Primi	N	N	N	yes	N	N		N	hyperbili	N
283	330409	Primi	yes	N	pitocin	yes	forceps	N		N	N	N
284	329851	Primi	N	N	N	N	N	yes	fetal distress	N	asphyxia	N
285	330750	Primi	N	N	N	yes	N	N		N	N	N
286	331026	G4P2L2A1	N	N	N	yes	N	N		N	N	N
287	330961	Primi	N	N	N	yes	N	N		N	N	N
288	331078	G2P1L1	yes	N	pitocin	yes	N	N		N	N	N
289	331071	Primi	N	N	N	yes	N	N		N	N	N
290	331524	Primi	N	N	N	yes	N	N		N	N	N
291	332548	G2P1L1	N	N	N	yes	N	N		N	N	N
292	332582	Primi	yes	N	N	yes	N	N		N	N	N
293	333665	G2P1L1	N	N	N	yes	N	N		N	N	N
294	333818	G2P1L1	N	N	N	yes	N	N		N	LBW	N
295	333843	Primi	yes	N	pitocin	N	N	yes	fetal distress	N	N	N
296	333912	Primi	yes	yes	pitocin	yes	ventouse	N		N	hyperbili	N
297	334403	Primi	N	N	ARM	yes	N	N		N	N	N
298	334109	Primi	yes	N	pitocin	yes	N	N		N	N	N
299	334226	Primi	N	N	N	yes	N	N		N	N	N
300	334761	G2P1L0	N	N	pitocin	yes	N	N		N	N	N
301	334820	G2P1L1	N	N	N	yes	N	N		N	N	N
302	334714	G2P1L1	N	N	pitocin	yes	N	N		N	N	N
303	334812	Primi	yes	N	pitocin	yes	N	N		N	N	N
304	334822	G5P4L2A2	yes	N	pitocin	yes	N	N		N	N	N
305	335066	G2P1L1	N	N	N	yes	N	N		N	N	N

306	336358	Primi	N	N	N	yes	N	N		N	N	N
307	336351	Primi	N	N	pitocin	yes	N	N		N	N	N
308	336321	G2A1	yes	N	N	yes	N	N		N	N	N
309	336443	G3P1L1A1	N	N	pitocin	yes	N	N		N	N	N
310	336632	Primi	yes	N	pitocin	yes	N	N		N	hyperbili	N
311	336727	Primi	N	N	pitocin	yes	N	N		N	N	N
312	336851	G2A1	N	N	pitocin	yes	ventouse	N		N	N	N
313	336858	G3P2L1	N	N	N	yes	N	N		N	N	N
314	336907	Primi	N	N	pitocin	yes	ventouse f/b forceps	N		N	N	N
315	336922	Primi	N	N	N	yes	N	N		N	N	N
316	337885	Primi	N	N	pitocin	yes	ventouse	N		N	hyperbili	N
317	338033	G3P2L2	yes	N	pitocin	yes	N	N		N	early hemorrhage disease	N
318	338205	G4P1L1A2	N	N	N	yes	N	N		N	N	N
319	338526	Primi	N	N	N	yes	N	N		N	N	N
320	338525	G2P1L1	yes	N	N	yes	N	N		N	N	N
321	337453	Primi	N	N	pitocin	yes	ventouse	N		N	N	N
322	338732	Primi	N	N	pitocin	yes	N	N		N	expired	N

SIMPLIFIED PARTOGRAPH

S.No	IP No	Parity	Alert	Action	Augmentation	Vaginal delivery	Instrumental delivery	C. Section	Indication for C.S.	PPH	NICU admissions	A. S.<7 at 5'	Puerperal sepsis
1	303279	Primi	yes	N	pitocin	yes	N	N		N	N	N	N
2	303237	Primi	N	N	N	yes	ventouse	N		N	N	N	N
3	303404	G2P1L1	yes	N	pitocin	yes	N	N		N	N	N	N
4	303334	G3P2L2	N	N	N	yes	N	N		N	umbilical abscess	N	N
5	303333	G3P3L1	N	N	N	yes	N	N		N	N	N	N
6	303428	G2P1L1	N	N	N	yes	N	N		N	N	N	N
7	303487	Primi	N	N	pitocin	yes	N	N		N	N	N	N
8	303535	Primi	N	N	N	N	ventouse	yes	failed ventouse	N	N	N	N
9	303600	Primi	N	N	N	yes	N	N		N	N	N	N
10	303667	G2P1L1	yes	N	N	yes	N	N		N	N	N	N
11	303705	G3P2L2	N	N	pitocin	yes	N	N		N	N	N	N
12	303870	Primi	N	N	N	yes	N	N		N	N	N	N
13	303924	Primi	N	N	N	yes	forceps	N		N	N	N	N
14	304156	G3P2L2	N	N	N	yes	N	N		N	N	N	N
15	304157	G3P2L2	N	N	N	N	N	yes	non progress of labor	N	N	N	N
16	304102	Primi	yes	N	N	N	N	yes	fetal distress	N	N	N	N
17	304348	G2P1L0	N	N	N	yes	N	N		N	N	N	N
18	304615	G2P1L1	N	N	N	yes	N	N		N	N	N	N
19	304639	Primi	yes	N	N	yes	ventouse	N		N	N	N	N
20	304754	G2P1L0	N	N	N	yes	N	N		N	N	N	N
21	304863	G3A2	yes	N	N	yes	N	N		N	N	N	N
22	305180	Primi	N	N	N	yes	N	N		N	N	N	N

23	305196	Primi	N	N	N	yes	forceps	N		N	N	N	N
24	305162	G2P1L1	N	N	N	yes	N	N		N	N	N	N
25	305307	Primi	yes	yes	pitocin	yes	ventouse	N		N	N	N	N
26	305399	Primi	N	N	N	yes	N	N		N	umbilical bleed	N	N
27	304720	Primi	N	N	N	N	N	yes	fetal distress	N	N	N	N
28	305423	Primi	N	N	N	N	ventouse	yes	failed ventouse	N	hyperbili	N	N
29	305738	G2P1L1	N	N	N	yes	N	N		N	sepsis	N	N
30	305959	G2P1L1	N	N	N	yes	N	N		N	N	N	N
31	305868	G4P3L3	N	N	pitocin	yes	N	N		N	N	N	N
32	306919	Primi	N	N	N	yes	N	N		N	N	N	N
33	306777	Primi	N	N	N	yes	N	N		N	N	N	N
34	306631	Primi	N	N	N	yes	N	N		N	N	N	N
35	306907	G2P1L1	N	N	N	yes	N	N		N	N	N	N
36	307102	Primi	N	N	N	yes	N	N		N	N	N	N
37	307096	Primi	N	N	N	yes	N	N		N	N	N	N
38	307393	Primi	yes	N	pitocin	yes	N	N		N	N	N	N
39	307509	Primi	N	N	N	yes	N	N		N	N	N	N
40	307653	Primi	N	N	N	yes	N	N		N	N	N	N
41	307686	Primi	yes	yes	pitocin	N	N	yes	non progress of labor	N	N	N	N
42	307907	Primi	N	N	N	yes	forceps	N		N	N	N	N
43	308053	Primi	N	N	N	yes	N	N		N	N	N	N
44	308130	G2P1L1	N	N	N	yes	N	N		N	N	N	N
45	308129	G2A1	N	N	N	yes	N	N		N	N	N	N
46	308200	Primi	N	N	N	N	N	yes	fetal distress	N	N	N	N
47	308353	Primi	N	N	N	yes	N	N		N	N	N	N
48	308394	Primi	N	N	N	yes	N	N		N	N	N	N
49	308402	Primi	N	N	N	yes	N	N		N	N	N	N
50	308540	G3P2L2	N	N	N	yes	N	N		N	N	N	N
51	308516	G4P2L1A1	yes	N	pitocin	yes	N	N		N	N	N	N
52	308824	Primi	N	N	N	yes	N	N		N	N	N	N
53	308783	G2P1L1	N	N	N	yes	N	N		N	N	N	N

54	308772	G3P2L2	N	N	N	yes	N	N		N	N	N	N
55	308703	Primi	N	N	N	yes	N	N		N	N	N	N
56	308525	G4P3L3	N	N	N	yes	N	N		N	N	N	N
57	309566	G2A1	N	N	cytotec	yes	N	N		N	hyperbili	N	N
58	309510	G5P4L3	N	N	pitocin	yes	N	N		N	N	N	N
59	309382	G2A1	N	N	pitocin	yes	N	N		N	N	N	N
60	309576	G2P1L1	N	N	N	yes	N	N		N	N	N	N
61	309719	Primi	N	N	N	yes	N	N		N	N	N	N
62	309862	Primi	N	N	N	yes	N	N		N	N	N	N
63	309861	G5P2L2A2	N	N	N	yes	N	N		N	N	N	N
64	309867	G2P1L1	N	N	N	yes	N	N		N	N	N	N
65	309907	G2P1L1	N	N	N	yes	N	N		N	RDS	N	N
66	309602	G2A1	yes	N	N	yes	ventouse	N		N	N	N	N
67	309981	G2P1L1	N	N	N	yes	N	N		N	N	N	N
68	310936	G2P1L1	N	N	N	yes	N	N		N	N	N	N
69	310004	Primi	yes	N	pitocin	yes	N	N		N	N	N	N
70	308627	Primi	yes	N	pitocin	N	N	yes	non progress of labor	N	N	N	N
71	310147	G2P1L1	N	N	N	yes	N	N		N	N	N	N
72	310083	Primi	yes	N	pitocin	N	N	yes	non progress of labor	N	MAS	yes	N
73	310090	Primi	N	N	N	N	N	yes	fetal distress	N	N	N	N
74	310177	G2P1L1	yes	N	cerviprime	yes	N	N		N	N	N	N
75	310197	G2P1L1	yes	N	N	yes	N	N		N	N	N	N
76	310311	G2P1L1	N	N	N	yes	N	N		N	N	N	N
77	310357	Primi	N	N	N	yes	N	N		N	N	N	N
78	310291	G4P2L2A1	N	N	N	yes	N	N		N	N	N	N
79	310089	G2P1L1	N	N	pitocin	yes	N	N		N	N	N	N
80	310640	G2P1L1	yes	N	N	yes	N	N		N	N	N	N
81	310801	G2P1L1	N	N	N	yes	N	N		N	N	N	N
82	310854	G2A1	yes	N	pitocin	yes	N	N		N	N	N	N
83	310865	Primi	N	N	N	yes	N	N		N	N	N	N
84	311193	G2P1L1	N	N	N	yes	N	N		N	N	N	N

85	311108	Primi	N	N	N	N	N	yes	fetal distress	N	N	N	N
86	311289	Primi	N	N	N	yes	N	N		N	N	N	N
87	311324	G3P2L2	N	N	N	yes	N	N		N	N	N	N
88	311283	Primi	N	N	N	yes	ventouse	N		N	N	N	N
89	311483	Primi	N	N	N	yes	N	N		N	N	N	N
90	311413	Primi	N	N	N	yes	N	N		N	N	N	N
91	310810	G2P1L1	N	N	N	yes	N	N		N	N	N	N
92	311629	G2P1L1	N	N	N	yes	N	N		N	N	N	N
93	311626	G3P2L2	N	N	N	yes	N	N		N	N	N	N
94	312543	Primi	N	N	N	yes	N	N		N	N	N	N
95	311616	Primi	N	N	pitocin	yes	N	N		N	N	N	N
96	311821	Primi	N	N	pitocin	yes	forceps	N		N	N	N	N
97	311844	G2P1L1	N	N	N	yes	N	N		N	N	N	N
98	311834	Primi	N	N	N	yes	ventouse	N		N	N	N	N
99	311837	Primi	N	N	N	yes	N	N		N	N	N	N
100	311909	Primi	N	N	pitocin	yes	N	N		N	N	N	N
101	311881	G3P2L2	N	N	N	yes	N	N		N	N	N	N
102	311961	Primi	N	N	N	yes	N	N		N	N	N	N
103	312021	Primi	N	N	pitocin	yes	N	N		N	N	N	N
104	312028	Primi	yes	N	N	yes	N	N		N	N	N	N
105	312205	Primi	N	N	N	yes	N	N		N	N	N	N
106	312208	Primi	N	N	N	N	N	yes	fetal distress	N	N	N	N
107	312116	Primi	N	N	N	yes	N	N		N	N	N	N
108	312204	G2P1L1	N	N	N	yes	N	N		N	N	N	N
109	312297	G2P1L1	yes	N	N	yes	N	N		N	N	N	N
110	312578	Primi	N	N	N	yes	N	N		N	N	N	N
111	312768	G5P4L3	N	N	N	yes	N	N		N	N	N	N
112	312936	Primi	N	N	N	yes	N	N		N	N	N	N
113	311275	Primi	N	N	N	yes	N	N		N	N	N	N
114	312307	Primi	N	N	N	yes	N	N		N	N	N	N
115	312633	G5P2L1A2	N	N	N	yes	N	N		N	N	N	N

116	312623	G2P1L1	N	N	N	yes	N	N		N	N	N	N
117	312890	Primi	N	N	pitocin, ARM	yes	N	N		N	N	N	N
118	313139	G2P1L1	N	N	pitocin	yes	N	N		N	N	N	N
119	313234	Primi	yes	N	N	yes	N	N		N	N	N	N
120	313418	G2P1L1	N	N	N	yes	N	N		N	N	N	N
121	313456	Primi	N	N	N	yes	N	N		N	hyperbili	N	N
122	313467	G2A1	N	N	N	N	N	yes	CPD	N	N	N	N
123	313500	G3P2L2	yes	N	N	yes	N	N		N	N	N	N
124	313502	G2P1L1	N	N	N	yes	N	N		N	N	N	N
125	314016	G3P1L1A1	N	N	N	yes	N	N		N	N	N	N
126	314022	Primi	N	N	N	N	N	yes	DTA	N	hyperbili	N	N
127	314028	G2P1L1	N	N	N	yes	N	N		N	hyperbili	N	N
128	314180	Primi	N	N	N	yes	N	N		N	N	N	N
129	314636	G2P1L1	N	N	N	yes	N	N		N	N	N	N
130	314713	G3P1L1A1	N	N	N	yes	N	N		N	LBW	N	N
131	314756	Primi	N	N	N	yes	N	N		N	N	N	N
132	314917	G2P1L1	N	N	pitocin	yes	N	N		N	N	N	N
133	314392	Primi	N	N	N	yes	N	N		N	N	N	N
134	314741	G2P1L1	N	N	N	yes	N	N		N	N	N	N
135	314732	Primi	N	N	N	yes	N	N		N	N	N	N
136	315018	G1P1L1	N	N	N	yes	N	N		N	N	N	N
137	314827	Primi	N	N	N	yes	N	N		N	N	N	N
138	315060	Primi	N	N	N	yes	N	N		N	N	N	N
139	315116	Primi	N	N	N	yes	N	N		N	sepsis	N	N
140	315169	Primi	N	N	N	yes	N	N		N	N	N	N
141	315195	Primi	yes	N	N	yes	N	N		N	N	N	N
142	315184	Primi	N	N	N	N	N	yes	DTA	N	N	N	N
143	315278	G4P3L3	N	N	N	yes	N	N		N	LBW	N	N
144	315284	Primi	N	N	N	yes	N	N		N	N	N	N
145	315371	G3P1L1A1	N	N	N	yes	N	N		N	N	N	N
146	315425	Primi	N	N	N	N	N	yes	DTA	N	N	N	N

147	315241	Primi	yes	yes	pitocin	N	N	yes	non progress of labor	N	N	N	N
148	315763	Primi	N	N	N	yes	N	N		N	N	N	N
149	316152	Primi	N	N	N	yes	N	N		N	N	N	N
150	316229	Primi	N	N	N	yes	N	N		N	N	N	N
151	316307	Primi	N	N	N	yes	N	N		N	N	N	N
152	316358	G2P1L1	N	N	N	yes	N	N		N	N	N	N
153	316484	Primi	N	N	N	yes	N	N		N	N	N	N
154	316476	G4P2L2A1	N	N	N	yes	N	N		N	N	N	N
155	316468	Primi	N	N	N	yes	N	N		N	N	N	N
156	316925	Primi	N	N	cytotec	yes	N	N		N	N	N	N
157	316868	G2P1L1	N	N	N	yes	N	N		N	N	N	N
158	317380	Primi	N	N	N	yes	N	N		N	N	N	N
159	317382	Primi	N	N	N	yes	N	N		N	N	N	N
160	317661	G3P1L1A1	N	N	N	yes	N	N		N	RDS	N	N
161	317707	Primi	N	N	N	N	N	yes	fetal distress	yes	N	N	N
162	317561	Primi	N	N	N	yes	N	N		N	N	N	N
163	317487	Primi	N	N	N	N	N	yes	non progress of labor	N	MAS	yes	N
164	317087	Primi	N	N	N	yes	N	N		N	hyperbili	N	N
165	316310	G3P2L1	yes	yes	pitocin	N	N	yes	non progress of labor	N	N	N	N
166	317913	Primi	N	N	N	yes	N	N		N	N	N	N
167	317846	Primi	yes	N	pitocin	yes	N	N		N	N	N	N
168	318001	Primi	yes	N	pitocin	yes	N	N		N	N	N	N
169	317960	Primi	N	N	cerviprime	yes	N	N		N	N	N	N
170	318289	G3P2L2	N	N	N	yes	N	N		N	N	N	N
171	318274	Primi	N	N	N	yes	N	N		N	N	N	N
172	318929	Primi	N	N	N	yes	N	N		N	N	N	N
173	318456	G2P1L1	yes	N	N	N	N	yes	fetal distress	N	sepsis	N	N
174	318372	G2P1L1	N	N	N	yes	N	N		N	N	N	N
175	318565	G2A1	N	N	N	yes	N	N		N	N	N	N
176	318991	G3P2L2	N	N	N	yes	N	N		N	N	N	N
177	317918	G2P1L1	N	N	N	yes	N	N		N	N	N	N

178	318884	G2P1L1	N	N	N	yes	N	N		N	N	N	N
179	318922	Primi	N	N	N	N	N	yes	fetal distress	N	hyperbili	N	N
180	318779	Primi	N	N	cerviprime	yes	N	N		N	N	N	N
181	318421	G4P1L1A2	N	N	N	yes	N	N		N	N	N	N
182	318813	Primi	yes	N	N	yes	N	N		N	N	N	N
183	318983	Primi	N	N	N	yes	ventouse	N		N	RDS	yes	N
184	319034	G3P2L2	N	N	N	yes	N	N		N	N	N	N
185	319159	G2P1L1	N	N	N	yes	N	N		N	N	N	N
186	319151	G3P2L2	N	N	N	yes	N	N		N	N	N	N
187	319196	G2P1L1	N	N	N	yes	N	N		N	N	N	N
188	319189	G2P1L1	yes	N	pitocin	yes	N	N		N	N	N	N
189	319200	G2P1L1	N	N	N	yes	N	N		N	N	N	N
190	319190	Primi	N	N	N	yes	N	N		N	N	N	N
191	319358	Primi	yes	yes	N	yes	N	N		N	hyperbili	N	N
192	319373	G3P2L1	N	N	N	yes	N	N		N	N	N	N
193	319372	G2P1L0	N	N	N	yes	N	N		N	N	N	N
194	319008	Primi	N	N	cerviprime	N	N	yes	non progress of labor	N	N	N	N
195	319346	Primi	N	N	N	yes	N	N		N	N	N	N
196	319490	Primi	N	N	N	yes	N	N		N	N	N	N
197	319361	Primi	N	N	N	yes	N	N		N	N	N	N
198	319587	G2P1L1	N	N	N	yes	N	N		N	N	N	N
199	319544	G2P1L1	N	N	N	yes	N	N		N	N	N	N
200	319523	G2P1L0	N	N	N	yes	N	N		N	N	N	N
201	319361	Primi	N	N	N	yes	N	N		N	N	N	N
202	319953	Primi	N	N	N	yes	N	N		N	hyperbili	N	N
203	320058	Primi	N	N	cerviprime	yes	N	N		N	N	N	N
204	320126	G2P1L1	N	N	N	yes	N	N		N	hyperbili	N	N
205	319898	G2P1L1	N	N	N	yes	N	N		N	N	N	N
206	320379	G2P1L1	N	N	N	yes	N	N		N	N	N	N
207	320370	Primi	N	N	N	yes	N	N		N	N	N	N
208	320391	Primi	N	N	N	yes	N	N		N	birth asphyxia	N	N

209	320494	Primi	N	N	N	yes	N	N		N	N	N	N
210	320380	Primi	N	N	N	N	ventouse	yes	CPD	N	RDS	yes	N
211	320692	Primi	N	N	N	N	ventouse	yes	failed ventouse	N	N	N	N
212	320763	G2P1L1	N	N	N	N	ventouse	yes	failed ventouse	N	N	N	N
213	320771	Primi	N	N	N	yes	N	N		N	N	N	N
214	320720	G3P2L2	yes	N	N	yes	N	N		N	N	N	N
215	320780	G2P1L1	N	N	pitocin	yes	N	N		N	N	N	N
216	320798	Primi	N	N	N	yes	N	N		N	N	N	N
217	320819	Primi	N	N	N	yes	N	N		N	N	N	N
218	320817	G2P1L1	N	N	N	yes	N	N		N	N	N	N
219	320881	G2P1L1	N	N	N	yes	N	N		N	N	N	N
220	320892	Primi	N	N	N	yes	N	N		N	N	N	N
221	320849	Primi	N	N	N	yes	N	N		N	N	N	N
222	321069	Primi	N	N	N	yes	N	N		N	N	N	N
223	320972	Primi	N	N	N	yes	N	N		N	N	N	N
224	321087	Primi	N	N	N	yes	N	N		N	N	N	N
225	321299	Primi	N	N	N	yes	N	N		N	N	N	N
226	321139	Primi	N	N	N	N	ventouse	yes	failed ventouse	N	N	N	N
227	321304	Primi	N	N	pitocin, ARM	N	N	yes	fetal distress	N	RDS	N	N
228	321434	G4P3L3	N	N	N	yes	N	N		N	N	N	N
229	321406	G3P1L1	N	N	N	yes	N	N		N	N	N	N
230	321703	Primi	N	N	pitocin	yes	N	N		N	hyperbili	N	N
231	321777	G2P1L1	N	N	N	yes	N	N		N	N	N	N
232	321456	G2P1L1	N	N	pitocin	yes	N	N		N	N	N	N
233	321685	Primi	N	N	N	yes	N	N		N	N	N	N
234	321756	Primi	N	N	N	yes	N	N		N	N	N	N
235	321045	G2P1L0	N	N	N	yes	N	N		N	N	N	N
236	321975	Primi	N	N	N	yes	N	N		N	birth asphyxia	yes	N
237	322066	Primi	N	N	N	N	N	yes	CPD	N	N	N	N
238	322180	G3P2L1	N	N	pitocin	yes	N	N		N	N	N	N
239	322382	G6P3L3	N	N	N	yes	N	N		N	N	N	N

240	322572	Primi	N	N	N	yes	N	N		N	N	N	N
241	322431	Primi	N	N	N	yes	N	N		N	N	N	N
242	322718	Primi	N	N	N	yes	N	N		N	N	N	N
243	323203	Primi	yes	N	pitocin	yes	ventouse	N		N	N	N	N
244	323298	G3P2L2	N	N	N	yes	N	N		N	N	N	N
245	323263	G2P1L1	N	N	N	yes	N	N		N	N	N	N
246	323329	G2P1L1	N	N	N	yes	N	N		N	N	N	N
247	323517	Primi	N	N	N	N	N	yes	fetal distress	N	N	N	N
248	323697	G2P1L1	N	N	pitocin	yes	N	N		N	N	N	N
249	323906	G2P1L1	N	N	N	yes	N	N		N	N	N	N
250	324586	G3P1L1A1	N	N	N	yes	N	N		N	milk aspiration	N	N
251	324469	G2P1L0	N	N	N	yes	N	N		N	N	N	N
252	324429	Primi	N	N	N	yes	N	N		N	N	N	N
253	324366	G2P1L0	N	N	N	yes	N	N		N	N	N	N
254	324355	Primi	N	N	pitocin	yes	N	N		N	N	N	N
255	324232	Primi	N	N	N	N	N	yes	DTA	N	cleft lip with cleft palate	N	N
256	324638	G3P1L1A1	N	N	N	yes	N	N		N	N	N	N
257	324822	G2A1	N	N	N	yes	N	N		N	N	N	N
258	325413	G2P1L1	N	N	N	yes	N	N		N	N	N	N
259	325489	G3A2	N	N	N	yes	N	N		N	birth asphyxia	yes	N
260	325472	Primi	N	N	N	N	N	yes	DTA	N	hyperbili	N	N
261	325569	G5P4L4	N	N	N	yes	N	N		N	N	N	N
262	325576	G2P1L1	N	N	N	yes	N	N		N	N	N	N
263	325600	Primi	N	N	N	yes	N	N		N	N	N	N
264	325645	G2P1L1	N	N	N	yes	N	N		N	N	N	N
265	325376	Primi	N	N	N	yes	N	N		N	N	N	N
266	325802	Primi	N	N	N	yes	N	N		N	N	N	N
267	325840	Primi	N	N	pitocin	yes	N	N		N	N	N	N
268	325656	Primi	N	N	N	yes	ventouse	N		N	N	N	N
269	326363	Primi	N	N	N	yes	N	N		N	N	N	N
270	326274	G2P1L1	N	N	N	yes	N	N		N	expired	N	N

271	326529	G2P1L1	N	N	N	yes	N	N		N	N	N	N
272	326269	G2P1L1	N	N	N	yes	N	N		N	N	N	N
273	326552	Primi	yes	N	N	yes	N	N		N	N	N	N
274	326569	G2P1L1	N	N	pitocin	yes	N	N		N	N	N	N
275	326648	Primi	N	N	N	yes	N	N		N	MAS	N	N
276	326650	G2P1L1	N	N	N	yes	N	N		N	N	N	N
277	326945	G2P1L0	N	N	N	yes	N	N		N	N	N	N
278	327027	Primi	N	N	pitocin	yes	ventouse	N		N	N	N	N
279	327366	G2P1L1	N	N	N	yes	N	N		N	N	N	N
280	327442	G2P1L1	N	N	N	yes	N	N		N	N	N	N
281	327417	G2P1L1	N	N	N	yes	N	N		N	N	N	N
282	327500	Primi	N	N	N	yes	N	N		N	N	N	N
283	327519	G3P2L2	N	N	N	yes	N	N		N	N	N	N
284	328123	Primi	N	N	N	N	N	yes	fetal distress	N	N	N	N
285	328413	G3P2L2	N	N	N	yes	N	N		N	N	N	N
286	328386	Primi	N	N	N	yes	N	N		N	N	N	N
287	328477	Primi	N	N	N	yes	N	N		N	N	N	N
288	328635	G2P1L1	N	N	pitocin	yes	N	N		N	N	N	N
289	328478	Primi	N	N	N	yes	N	N		N	N	N	N
290	328841	G2P1L1	N	N	N	yes	N	N		N	N	N	N
291	329017	G4P2L2A1	N	N	N	yes	N	N		N	N	N	N
292	329538	G2P1L1	N	N	N	yes	N	N		N	N	N	N
293	329622	Primi	N	N	N	yes	ventouse	N		N	N	N	N
294	329702	Primi	N	N	N	yes	N	N		N	N	N	N
295	329855	Primi	N	N	N	yes	N	N		N	hyperbili	N	N
296	329877	G2P1L1	N	N	N	yes	N	N		N	N	N	N
297	330128	G3P2L2	N	N	N	yes	N	N		N	N	N	N
298	330119	Primi	yes	N	N	N	N	yes	fetal distress	N	N	N	N
299	330344	Primi	N	N	N	yes	ventouse	N		N	N	N	N
300	330389	G2P1L1	N	N	N	yes	N	N		N	N	N	N
301	330515	G2P1L1	N	N	N	yes	N	N		N	N	N	N

302	330781	Primi	yes	yes	N	N	N	yes	non progress of labor	N	N	N	N
303	330784	Primi	N	N	N	yes	N	N		N	N	N	N
304	330873	G3P1L1A1	N	N	N	yes	N	N		N	N	N	N
305	330945	G2P1L1	N	N	N	yes	N	N		N	sepsis	N	N
306	330958	G3P1L1A1	yes	N	N	yes	N	N		N	N	N	N
307	330626	Primi	yes	N	N	N	N	yes	fetal distress	N	N	N	N
308	331185	Primi	N	N	N	yes	N	N		N	N	N	N
309	331187	G2P1L1	N	N	N	yes	N	N		N	N	N	N
310	331331	G2P1L1	N	N	pitocin	yes	N	N		N	LBW	N	N
311	331279	Primi	N	N	N	yes	N	N		N	N	N	N
312	331340	G4P2L2A1	N	N	N	yes	N	N		N	LBW	N	N
313	331328	G2P1L1	N	N	N	yes	N	N		N	LBW	N	N
314	331770	Primi	N	N	N	yes	N	N		N	N	N	N
315	331606	Primi	N	N	N	yes	N	N		N	N	N	N
316	331603	Primi	N	N	N	yes	N	N		N	N	N	N
317	331428	G3P2L2	N	N	N	yes	N	N		N	N	N	N
318	331822	Primi	N	N	N	yes	N	N		N	N	N	N
319	331894	Primi	yes	N	N	yes	N	N		N	N	N	N
320	332124	G2P1L1	N	N	N	yes	N	N		N	N	N	N
321	332140	Primi	N	N	N	yes	N	N		N	term IUGR	N	N
322	332192	G3A2	N	N	pitocin	yes	ventouse	N		N	N	N	N
323	332303	G2P1L1	yes	N	N	yes	N	N		N	N	N	N
324	332308	Primi	N	N	N	yes	N	N		N	N	N	N
325	332250	Primi	yes	yes	N	yes	N	N		N	N	N	N
326	332307	G3P2L1	N	N	N	yes	N	N		N	N	N	N
327	333023	G4P3L3	N	N	N	yes	N	N		N	N	N	N
328	333008	Primi	N	N	pitocin	yes	N	N		N	N	N	N
329	333160	Primi	N	N	pitocin	yes	N	N		N	N	N	N
330	333221	Primi	N	N	N	yes	N	N		N	N	N	N
331	333217	Primi	N	N	pitocin	yes	N	N		N	N	N	N
332	333218	G2P1L1	yes	N	N	yes	N	N		N	N	N	N

333	333211	G4P3L3	N	N	pitocin	yes	N	N		N	N	N	N
334	323240	Primi	N	N	pitocin	yes	N	N		N	N	N	N
335	333448	G2P1L11	N	N	N	yes	N	N		N	N	N	N
336	334133	G2P1L1	N	N	N	yes	N	N		N	N	N	N
337	334229	G2P1L1	N	N	N	yes	N	N		N	N	N	N
338	334373	Primi	yes	N	N	yes	N	N		N	N	N	N
339	334419	Primi	yes	N	pitocin	yes	ventouse	N		N	N	N	N
340	334619	Primi	N	N	N	yes	N	N		N	N	N	N
341	334069	Primi	N	N	N	yes	N	N		N	N	N	N
342	335384	G2A1	N	N	pitocin	yes	N	N		N	N	N	N
343	334971	G2P1L0	N	N	N	yes	N	N		N	N	N	N
344	335432	Primi	N	N	N	yes	N	N		N	N	N	N
345	325729	Primi	N	N	N	yes	N	N		N	N	N	N
346	335942	G2P1L1	yes	N	pitocin	yes	N	N		N	N	N	N
347	335797	Primi	yes	N	N	yes	N	N		N	N	N	N
348	335707	G2A1	N	N	N	yes	N	N		N	N	N	N
349	335840	G2P1L1	N	N	pitocin	yes	N	N		N	N	N	N
350	338098	G2P1L1	N	N	N	yes	N	N		N	N	N	N
351	338043	Primi	yes	N	pitocin	yes	N	N		N	N	N	N
352	338250	G3P2L2	N	N	N	yes	N	N		N	N	N	N
253	338432	G4P2L2A1	N	N	N	yes	N	N		N	N	N	N
354	338567	G3P1L1A1	N	N	N	yes	N	N		N	N	N	N
355	338831	G2P1L1	N	N	N	yes	N	N		N	N	N	N
356	338863	G3P2L2	N	N	N	yes	N	N		N	N	N	N
357	338809	Primi	yes	N	cerviprime	yes	N	N		N	N	N	N