COLLEGE OF MEDICINE AND HEALTH SCIENCES

SCHOOL OF HEALTH SCIENCES

INCOMPLETENESS OF PARTOGRAM IN MATERNITY WARD OF BYUMBA DISTRICT HOSPITAL

A dissertation submitted in partial fulfillment of the requirements for award of Master of Hospital and Healthcare Administration (MHA)

BY

UWIMANA Beatrice (RN: 216341485)

Supervisor: Dr. NTAKIRUTIMANA Theoneste

Co-supervisor: RUBEGA Lauben

Kigali, April 2017

DECLARATION

I, Beatrice UWIMANA, hereby declare that this Capstone dissertation project entitled **Incompleteness of partogram in maternity ward of Byumba District Hospital** is my original work. It contains no materials previously published or written by other persons, nor materials which to a substantial extent has been accepted for the award of any other degrees at any other educational institutions except where due acknowledgement is made. Any contributions made by other researchers are explicitly acknowledged in this report.

Signature: _____ Date: _____

DEDICATION

This capstone Dissertation is dedicated to:

My Husband Ignace NDAGIJIMANA

My Daughter Eunice KALIZA

My Son Yanice KALISA

ACKNOWLEDGEMENTS

In the first place, I extend special thanks to my supervisors Dr. Theoneste NTAKIRUTIMANA and Mr. Lauben RUBEGA for their technical support in terms of guidance, remarks and encouragement offered to me all the time in the process of writing this research report.

I would also express my sincere gratitude to the University of Rwanda for having provided me a scholarship to study courses of MHA-Program. More so, I extend my appreciation to the Byumba District Hospital Management for their commitment and support in the course of conducting this final project and team of midwives from maternity department.

I acknowledge the support availed to me by MHA-Program Lecturers particularly Dr. Egide NTAGUNGIRA KAYONGA and Mr. Dawit BISRAT and Mrs. Florence G. MUKAKABANO among others in terms of training and motivation which contributed to my success.

I owe special thanks to my husband Mr. Ignace NDAJIMANA who was always there to provide me moral and financial support.

I would like to convey my sincere appreciation to all who in one way or another have contributed to the success of this study report especially students of Cohort three, MHA- Program.

ABSTRACT

There is a low rate of partogram completeness in maternity ward at Byumba District hospital. The partogram is a tool developed by WHO to be used by midwives for decision making during labor. If properly filled in all maternity ward it can play an important role in saving women's lives and babies. It is an effective clinical guideline used during labor surveillance for early diagnosis of complication including reduction of cesarean sections during delivery.

The objective of the study was to increase the completeness of partogram in maternity ward at Byumba District Hospital from 15% to 50% in November, 2016 to April, 2017.

Pre interventional survey was carried out where Two hundred partograms was purposively taken, audited and evaluated to measure the magnitude of the problem. The process to identify the root cause was also done by a team

Post intervention was followed based on identified root causes. The intervention included, recruitment of two more staff, increasing vital sign equipment as well as establishing supervision plan.

Two hundred partograms were audited in pre and post interventions and the overall completion rate was increased significantly from 15% to 90% with P<0.001. In identification part, the rate increased from 54% to 90%, with .P<0.001 with P< 0.001, The last part was postpartum and rate increased from 64.5% to 97%, with P<0.001.the completion rate was statistically significant Others parts were not analyze because had low rate of incompleteness of partograms.

With the help of strategic problem solving, a pre and post intervention study on increasing completeness of partogram was conducted successfully. The intervention included the recruitment of two more staff in Maternity department, purchasing extra three electronic blood

pressure machines, four thermometers and establishment of supervision plan. The completeness of partogram in maternity department of Byumba District Hospital increased considerably from 15% to 90%. It is strongly recommended that Hospital Management ensure the continuity of supervising completeness of partogram for the sustainability of the project

Key words: completeness, partogram, Maternity department, labor monitoring, Byumba District Hospital.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS AND ABBREVIATIONS

CDC: Control Disease Center

COAG: Cooperative Agreement

WHO: World Health Organization

APGAR: Activity, Pulse, Grimace, Appearance, Respiratory

FHR: Foetal heart rate

CHU: Center of University Teaching Hospital

MHA: Master of Hospital and Healthcare Administration

SMT: Senior Management Team

DEFINITION OF KEY TERMS

Partogram: It refers to a tool which guiding monitoring of labor during the period of giving birth thus play an import ant role in progression of labor and saving women's lives and babies

Midwife: He or she is a person who has successfully completed a midwifery education program, has Essential Competences in helping a woman to deliver. The midwife has to be registered and/ or legally licensed to practice in the country.

Obstetric labor: It is a physiological process whereby the conceptus is expelled out from the uterus and delivered.

Fishbone: It is also called a cause and effect diagram or Ishikawa diagram, is a visualization tool for categorizing the potential causes of a problem in order to identify its root causes.

Strategic problem solving: It is a systematic process to identify a challenge or barrier to high quality care and implement and evaluate measurable solutions to the identified problem

CHAPTER ONE: INTRODUCTION

1.1 Background

Byumba District Hospital was built in 1947 during the colonial era by Belgians and full owned by Rwanda government until update. However in recent couple of years ago, the hospital had partnership with Control Disease Center and cooperative agreement (CDC-COAG), Global fund, and Rwandan Government to enhance capacity building. It has the capacity of 238 beds. It transfers severe cases of patients to Kigali University Teaching Hospital where there is a distance of 60 kilometers, and sometimes to Ndera Neuropsychiatric Hospital and Butare University Teaching Hospital, The buildings looks old, except a new construction near the maternity which helps the hospital to achieve its mission. Byumba Hospital is delimited by the Republic of Uganda in the North and East, Rulindo District in the South, Burera District in the North and West, and Gasabo District of Kigali City. It is divided into 23 departments which are: administration and management, maintenance, physiotherapy, dental, mental health, nursing, anti-retroviral and prophylaxis drugs, intensive care and private rooms, minor and major surgeries, maternity, radiology, internal medicine, pediatric ward, recovery, hygiene, cartage, ophthalmology, outpatient clinic, nutritional care, laboratory and social departments.

Today, it has 184 personnel and are all managed by the internal regulations of the Hospital. This helps top Managers to perform their activities. All activities of the Hospital are planned and monitored on a monthly basis in order to take strategies that may improve health care delivery. The hospital serves 574 000 people of Gicumbi, Burera, Rulindo and Gasabo Districts and covers 26 health centers and it supervises them. Those health centers under Byumba Hospital are Byumba, Ruhenda, Gihembe, Munyinya, Rutare, Giti, Rwesero, Musenyi, Mukono, Bwisige, Bushara, Rushaki, Mulindi, Manyagiro, Kigogo, Miyove, Gisiza, Muhondo, Rubaya,

Mukono ,Tanda, Cyumba,Ruvune, Camp Gihembe Prison Miyove and Mukarange. It also helps people of Kisaro and Buyoga Health Centres of Rulindo District, people of Ruhunde, Kivuye and Bungwe Health Centres of Burera District. Byumba District Hospital Manual Report 2016 (1).

Table 1: Presentation of maternity department

Item	**Number/Percentage**
Beds in maternity ward	71
Normal deliveries (May 2015-May 2016)	1970
Deliveries by cesarean section (May 2015-May 2016)	1822
Bed occupancy rate in maternity ward	86.2%
Maternity staff Midwives	13
Maternity staff Nurses	4
Doctors	5

The partogram is a tool which guide monitoring of labor during the period of giving birth thus play an important role in progression of labor and saving women's lives and babies (2). The partogram was introduced in clinical practice as a life saving for a baby and mother, giving birth and post partum period.

The study shows that partogram if properly filled in all maternity units and incorporated with management guidelines on women during labor; babies and health care providers can benefit, and thus will reduce neonatal& maternal morbidity and mortality as well both in reducing caesarean deliveries (3)

The partogram is a simple sheet which is started at 4cm of cervix dilatation, has five parts and each part has a specific element which must be full completed assessment of every element has significantly outcome which can prevented morbidity, mortality of mother and foetus (4)

1.2 PROBLE STATEMENT

There was high rate of incompleteness of partogram at Byumba District Hospital.

The concern for incompleteness of the partogram was presented by Byumba Hospital Management as one of the low health indicators reported by accreditation team. This problem was also raised by the morning staff meeting who complained about incompleteness of partogram as the cause of foetal distress in maternity ward. A team was composed in April and May 2016 to conduct the baseline survey with regard to partogram incompleteness in maternity department. It was found that the rate of incompleteness was 85%. Only 15% of patograms were complete..

1.3 OBJECTIVE

To increase the completeness of partogram in maternity ward at Byumba District Hospital from 15% to 50%, within the period from November, 2016 to, April, 2017.

1.4 HYPOTHESIS

1 H_0: We assume that by recruitment of more number of midwives in maternity ward, establishment of supervision schedule day and night and increasing vital sign equipment will not increase the completeness of partogram in labor ward.

2 H_1: We assume that by recruitment of more number of midwives in maternity ward, establishment of supervision schedule day and night and increasing vital sign equipment will increase the completeness of partogram in labor ward.

1.5 JUSTIFICATION OF THE PROJECT

The partogram being a tool used to monitor women during labor, when it is not correctly recorded can lead to foetal distress, morbidity, mortality and mother as outcome of monitoring of labor. This project will increase the completeness of partogram thus plays an important role in reduction of foetal distress and save mothers' lives.

1.6 ORGANIZATION OF THE DISSERTATION

Chapter one presents the background of Byumba District Hospital, completeness of partogram, problem statement, objectives and hypothesis. Chapter two introduces the review of literature and relevant research associated with the problem which this study will address. Chapter three presents the methodology and procedures for data collection and analysis. Chapter four recaps various results concerning the completeness of partogram on quality care delivery to mothers and babies by the health providers at the hospital. Chapter five is about discussion on the results of how the intervention resolved the problem and how other researchers have overcome similar problems and finally the study ends with chapter six which involves conclusion and recommendations.

CHAPTER TWO: LITERATURE REVIEW

2.1 Definition of the partogram

A partogram is a tool used by midwives to record the progress of the labor, identifying complications of childbirth in a timely manner and referring women to an appropriate facility for treatment (1,3). It is a graphical record that when well used, can minimize the complication such as prolonged labor, post partum hemorrhage, foetal distress (2 ,4)

2.2 Description of partogram

The partogram is a simple sheet used starting from 4cm of cervix dilatation, it has five parts and each part has a specific element which must be fully completed. When one of the element is missing the partogram is considered incomplete (5).

1. Identification part

File code, Name of institution, Names of clients, gestation age, Gravid, parity ,date and hour of admission, date and hour of rupture of membranes, hour of transfer, and reasons of transfer obstetrical history (record once time)(6).

2. Fetal part

Fetal heart rate every 30 minutes or any time when it is necessary, amniotic liquid every 4 hours, overlap every 4hours (7).

3. Maternal part

Cervix dilation, descent every 4 hours or any time when it is necessary, blood pressure, temperature every 2 hours, pulse 30 minutes, contractions every 10 minutes, type of drugs, volume of urine (input vs output), proteinuria, acetone. The name of provider shall be indicated and readable.

4. Delivery part

Record once (date and hour of delivery, normal delivery, abnormal delivery, provider name: Dr, Nurse, Midwife or other with skills in maternity oxytocin. time provide cord traction controlled yes/no date and hour of decision of cesarean section, reason of cesarean section.

5. Post partum part

Post partum follow up of mother

Deliverance of placenta (hour, complete, incomplete, spontaneous, assisted, uterus strongly, placenta retention, laceration, blood clotting disorder).

Observation (abnormal hemorrhage, episiotomy, laceration) and interventions done.

Record every 15 minutes during the first two hours after delivery (date, weight, temperature, pallor, blood loosed, breast, blood pressure, pulse, observation, treatment, family planning cancelling(8).

Immediate post natal follow up of newborn

Living healthy, death, sex, weight, height, Apgar score in first minute, crying in five minutes, resuscitation, and death before 24hours, malformation, hour of clamping umbilical cord, skin to skin minimum one hour after birth, hour of start breast feeding, and observation treatment.(9)

Record every 15minutes during the first two hours after delivery for the newborn will evaluate time, weight temperature, conjunctivitis, hemorrhage on umbilicus cord, breast feeding, observation, treatment first immunization(10). Refer to (Appendix1)

2.4 Situation of partogram completeness in different settings

Although the partogram completion is no longer an issue in developed countries because they have started to use electronic as well as mobile versions of the partogram (11), completeness is low and still a constraint to maternal and child morbidity and mortality in low and middle income countries. A study conducted in Ethiopia revealed that only 29% of partogram were complete (12). Another study conducted in South Africa revealed that the partogram were

completed in a small proportion(13).This was also in agreement with another study in the same country where partogram incompleteness rate represented 80%(14). Results of the study from Mulanje district hospital in Malawi presented that only 10% of partogram had complete information(7.9). Equally so, Ogwang (15) in a his study from Rukungiri district hospital of Uganda demonstrated that only 30% of the partogram were complete. Other studies with similar results were reported from Ile-Ife, Osun State in Nigeria where only 30.9% and 53.9% of the 304 case files assessed had correct graphical charting(16).

In Rwanda, Bazirete(17) conducted a study on partogram use in Rwamagana health facilities and 58.78% of respondents indicated that a partogram is not properly used. A study done in Muhima District Hospital in Kigali Rwanda adopted the WHO guidelines and added supportive supervision and motoring in labor ward, the partogram compltness was 11% prior the intervention. These findings may reflect the poor management of labor due to the fact that a partogram is not properly used on every woman to detect complications and act accordingly in time and finally lack of defined guidelines of labor monitoring and supervision(18)

However one of the limitations is that the partogram is not used for complicated pregnancies such as pre-eclampsia, eclampsia, heart failure, placenta praevia, multiple gestation with prim gravid, uterine ruptured, fetal distress, obstructed labor, abnormal presentations and et cetera (19)

2.5 Factors affecting the partogram completeness

A wide range of literature highlight inadequate knowledge of staff, lack of policy and procedures regarding partogram use, insufficient vital sign equipment, absence of partogram charts, as factors causing the partogram incompleteness(14,16,20). In addition to the factors listed above, lack of supervision of healthcare workers, overcrowding of mothers in wards during delivery and heavy workload have also been identified by a number of literature(21–23).

2.6 Solutions to overcome the partogram incompleteness

To increase the partogram completion rate, many strategies have been used : adequate number of staff who are trained , proper and effective recording of information on partogram and regular supervision (10,21,24).

A clinical audit in one hospital of India reported that there was a reduced incidence at 50% of postpartum hemorrhage following an introduction of the routine use of the partogram in the management of labor (13).

2.3 The role of partogram completeness

The partogram contributes to good maternal and foetal outcome as complications are detected early and necessary interventions are done on time. It enables skilled birth attendants, who are mainly midwives, to monitor progress of labor, the mother and the fetus regularly. It provides a clear means of tracking labor progress with ‘alert’ and ‘action’ lines that signal when labor has become complicated. It helps in the management of labor by providing information to identify women who are or not likely to have a normal delivery(6,14)

CHAPTER THREE: METHODOLOGY

3.1 THE STUDY DESIGN

A pre and post interventional study was conducted to evaluate the completeness of partogram in Byumba District Hospital. During the pre- intervention, a baseline survey was carried out and the months of April and May for 2016 were purposively taken. Only 200 partograms which were available, were audited and evaluated to measure the magnitude of the problem. The process to identify the root cause was also done by a team of Doctors, midwives, the researcher and administrative staff. After identifying the root cause, interventions which were to recruit more midwives in maternity department, establish the supervision schedule during the day and night as well as to increase vital signs equipment were implemented. The implementation started in November 2016 up to March 2017 and the evaluation of the implementation was conducted in April 2017 to verify whether there was an improvement in partogram completeness. Thorough information of how activities followed from the start of the study up to the end is found on a Gantt chart in Appendix 2.

3.2 MAGNITUDE OF THE PROBLEM

In order to collect data on magnitude of the problem, Two hundred partograms were audited and counted well from the 1st April to 30th May 2016. The completeness was verified by observing all elements within various parts of partogram. Among two hundred partograms, only 30 were fully completed with the rate of 15% while 170 were incomplete at the rate of 85% as indicated by table 2.

Table 2: Summary of baseline on assessment of completeness on all parts of Two hundred partogram

Five parts of partogram completed	Completeness	Incompleteness
Identification	108(54)%	92(46)%
Foetal part	192 (96)%	8(4)%
Maternal part	193(96.5)%	7(3.5)%
Deliverance part	199(99.5)%	1(0.5)%
Post partum part	129(64.5)%	71(35.5)%
Overall completion	**30 (15)%**	**170(85)%**

The parts of partogram were completed in the following manner: Identification 54%, foetal 96%, maternal 96.5%, delivery 99.5%, and post partum 64.6%. The incompleteness of partogram was verified by checking completeness of every part; all five parts must be well filled to consider it complete. In other words, when one of these elements in five parts is missing, the partogram is considered as incomplete. The hospital management team together with gynecology and obstetrics department staff considers this low rate of completeness (15%) as a challenging issue to be addressed. The 15% of completeness was the baseline and the interventions carried out were aimed at increasing this rate up to 50% at the end of the study. The tally sheet was used to check the completeness of partogram as Refer in appendix3.

3.3 ROOT CAUSE ANALYSIS

The following steps were followed for the identification of the main cause: Discussion with staff, make Literature review of the previous studies designing data collection tools. We had a meeting with administrative and maternity department staff, where we discussed together by using brainstorming method and we mentioned the following areas as source of information on fish borne: people, system, environment, materials and equipments.

Here is the fishbone used:

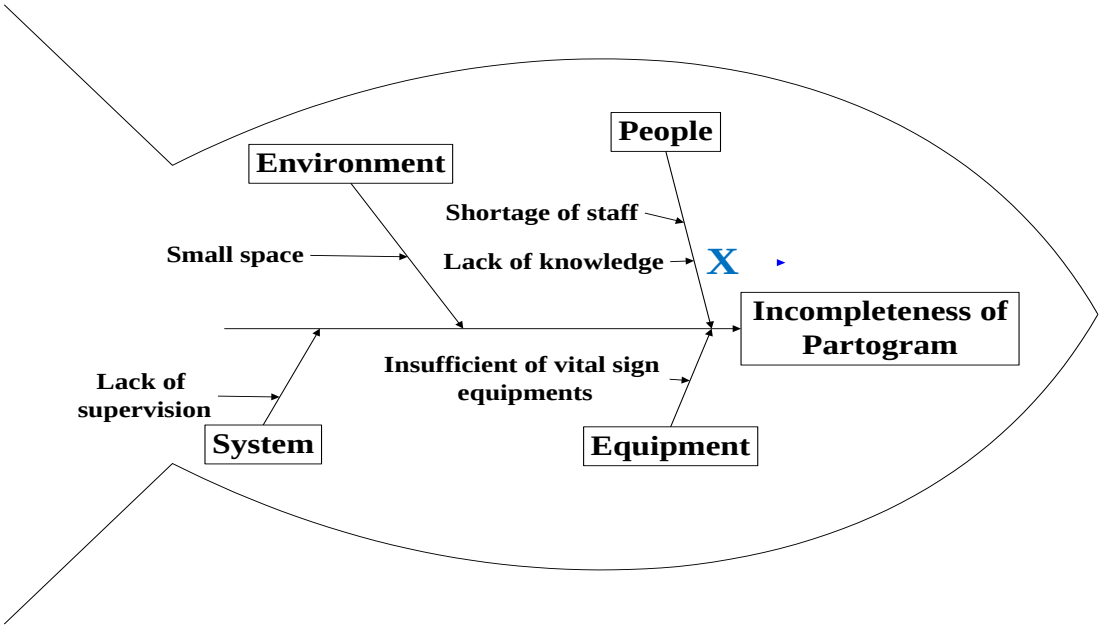


Figure1.Fishbone diagram summarizing the possible root causes

3.3.1 Verification of root causes

Data was gathered in order to document the four root causes and select the final root cause.

3.3.1.1. Assessment of availability and functionality of vital sign equipments in labor ward

Table 3 shows that the thermometers and blood pressure machines are not regularly in labor ward during ten day of assessment because there is insufficient and displaced in other wards. The four thermometers presented 30% of availability and two blood pressure machine presented 40% of availability and the measurements were made by tally sheet attached to this study report in appendix4.

Table 3.Availability and functionality of vital sign equipment

Department	Blood pressure machine		Thermometer		Foetoscope		Pencils		monitoring machine	
Availability of vital sign equipment	Yes	No	yes	No	Yes	No	Yes	No	Yes	No
Percentage	40 %	60%	30%	70 %	100%	0%	100 %	0%	100%	0%

3.3.1.2. Shortage of the staff

Looking at inpatient record in the labor ward and hospital data information, the labor ward of maternity has an average of 316 deliveries each month corresponding to 11clients per day with only 4 midwives in the labor ward over 24hours. This implies that the midwife to the delivering mother's ratio per day is 1:3.The Ministry of Health recommends 1:2 patient ratio is recommended in labor ward and 1:6 patient ratio in post natal (25). Byumba District Hospital has shortage of staff in maternity department and this is related to incompleteness of partogram in maternity ward. From the observational study there are only two midwives and one physician

who work in labor ward; when there is a case that requires going in the theatre to assisted operation, one midwife goes in and other remains in labor ward to monitor and helps mothers to deliver. This overload of midwives leads to partial completion of the partograms. It was also observed that partograms left blank during labor monitoring process, and the record are done after deliver in most cases which compromise with partogram guideline WHO(13) Refer (Appendix 1)

3.3.1.3 Lack of supervision plan

During data collection, we found that there was no supervision system in maternity ward during day and night are not the real root cause of incompleteness of partogram refer (Appendix6)

3.3.1.4 Healthcare workers' knowledge on completeness of partogram

Regarding healthcare workers' knowledge, all midwives reported to have adequate knowledge on partogram completeness and this was justified by their level of education in the field because they all had A1 qualification in midwifery. In addition, their academic profiles included certificates proving that they all had passed career entrance examination that is always set by Rwanda medical council which is the government entity under the ministry of health responsible for following up quality of care in all health facilities in the country.

Table 4 Summary of possible root causes

POSSIBLE ROOT CAUSES	RESULTS	DECISION	REASON
Insufficient vital sign equipments	The four Thermometers presented 30% and two blood pressure machine 40% of availability and were not regularly in labor ward due to Insufficiency and being displaced in other wards	Accepted	The partogram completeness require the vital sign for measurement of mothers and babies status during labor process
Shortage of staff in maternity wad	Nurse to patient ratio 1:3 Standard 1:2	Accepted	According to standard of the Rwanda Ministry of Health 1:2 patient ratio in labor ward ,this shortage of midwives can be one of factors which leads to incompleteness of partogram
Lack of supervision system in maternity ward	During period of observation of root cause there not supervision system	Accepted	The supervision will help to ensure if the midwives accomplish their task as assigned in task attribution including partogram completeness
Small space of maternity ward	Standard measurements of bed are two meters squared per woman for each section; delivery and waiting room. The delivery room is $23m^2$, while waiting room measures $15m^2$ and maternity room admits 14 women for normal deliveries per day in 24 hours on average implying that each room must have $28m^2$.	Rejected	Although space proved to be substandard, it was rejected because rearrangement of beds to address overcrowding was impossible and finishing new building of maternity could go beyond study period.

3.3.1.5 Inadequate space of maternity ward

Clients arrive directly in labor ward because the maternity department has no admission room including triage system and absence of space for immediate post partum follow-up of mothers and babies. In addition, the labor ward space is small with two rooms; one that serves as waiting room with 3 beds and another one as a delivery room with 3 tables of deliveries. Regarding measurements, delivery room is $23m^2$ length, while waiting room measures $15m^2$. This ward serves 14 clients per day for normal deliveries on average. It was observed that many times, two or three clients occupied one bed during labor; this is indeed a concern but not the principal cause of incompleteness of partogram.

3.3.2 Results from Root Cause Analysis

Based on results from data collected and analysed, the real causes of incompleteness of partogram in maternity ward of Byumba District Hospital are shortage of staff in maternity department, lack of supervision plan or schedule and insufficient of vital sign equipments.

3.4. Intervention

After root cause analysis, the team suggested to recruit more staff, establish a supervision plan or schedule and purchase vital sign equipments in maternity department. The intervention strategies comprised of recruitment of two more staff in maternity department, purchasing extra three electronic blood pressure machines, four electronic thermometers and establishment of supervision plan. This decision matrix was conducted with the following comparative criteria: impact, cost, time effect and feasibility of each possible solution to effectively complete partogram.

Article I. **Table 5 Summary of Comparative Analysis**

Possible solutions	Impact	Cost	Time effect	Feasibility	Total
Recruitment of more staff	5	3	3	5	16
Establishment of supervision plan	4	5	4	2	15
Purchase of more vital signs equipment	5	4	3	3	15

Intervention strategies

a) Recruitment

Basing on the need of staff in maternity department, the hospital management team agreed on the recruitment procedures and two midwives were recruited and deployed in maternity department. There primary purpose was to supplement the existing staff thereby reducing huge workload by sharing tasks which in turn would reduce stress and thus completing partogram effectively. Although the standards ratio of one midwife to two deliveries recommended by Rwanda ministry of health was not met but the problem of huge workload was minimised.

b) Purchasing vital sign equipments

Financial department approved the release of money to buy the missing thermometers and blood pressure machines. This task of purchasing these equipments was assigned to the head of pharmacy and in charge of maternity department and finally extra three electronic blood pressure machines, four thermometers were delivered in maternity department including labor ward.

This facilitated in monitoring of health status of mothers by taking vital signs regularly for proper recording of data on partogram.

c) Establishment supervision plan or schedule

The meeting was convened by the Hospital Management team and nominated one midwife took the responsibility of overseeing the achievement of tasks attributed to the rest of midwives including completeness of partogram in maternity ward. In addition, the schedule for supervision was elaborated, approved, communicated and posted on strategic walls of the maternity ward.

3.5 Measurement of indicators

To measure the effectiveness of the intervention, overall completion rate was measured as outcome indicator while appointed staff, supervision rate, number of vital sign equipments delivered and increasing level of five parts of partogram were measures as process indicators Refer in table (Appendix7)

3.6 Data analysis procedures

The collected data were put into a table by using SPSS software v 20. Chi square tests were used to analyze the statistical significances of pre and post intervention data. The P-values generated were less than 0.05 for all indicators which was statistically significant.

3.7 Ethical considerations

Initially the permission to conduct the research was granted by the senior management of the hospital. With regard to norms of privacy, the files containing the partogram inside to be analyzed were collected from the in charge of the maternity department. Same files were given back to her by the researcher after data collection with maximum confidentiality. Refer to the letter in (Appendix 8).

CHAPTER FOUR: RESULTS

Table 6 Demographic characteristics of the Maternity department staff of Byumba district hospital

Demographics	Frequency	Percentage	Mean	SD
Age distribution				
<30	4	23.50%		
31-35	7	41.10%	2.7	2.7
36-40	2	12%		
41-45	3	17.60%		
46-50	0	0		
>50	0	0		
Working experience in nursing(Year) <5	13	76.40%	4.25	0.34
5-10	2	12%	1	0.03
11-15	1	6%	0.5	0.00
>16	1	6%	4.5	0.66
Educational level				
Bachelor	0	0		
Advanced diploma (A1)	17	100%		
A2 Nurse	0	0		
Gender				
Female	13	76.40%		

Two hundred partograms inserted in patient files were reviewed in the pre intervention phase and Two hundred partograms in the post intervention; the chi- square test was used for testing level of significance with regard to partogram completeness rate. The overall completeness was increased from 15% to 90% with P<0.001. As shown in table 3, identification part the rate was increase significantly from 54%to 90%, with P<0.and in post partum part was significantly increasing level from 64.5% to 97%, with P<0.001. Others parts were not analyze because had low rate of incompleteness of partograms

Table 7 Summary of pre and post intervention results on partogram completeness in maternity ward (N=Two hundred)

Parts of partogram	Pre intervention	Post intervention	Change	P- value (P <=0.05)
Identification	108 (54%)	198 (99%)	55%	< 0.001
Post partum part	129(64.5%	183(91.5%)	27%	< 0.001
Overall completion	30 (15%)	180 (90%)	75%	<0.001

CHAPTER FIVE: DISCUSSION

The results from intervention study on partogram completeness revealed that, there was overall significant change of 75% with P (<0.001). The study focused on how the 2 major parts (identification, and post partum) of a partogram are filled.

The results from baseline survey on partogram completeness revealed that, completion rate was 15% and the causes behind this low score was associated with shortage of staff, minimum supervision on partogram completeness and few vital sign equipment. After intervention, there was a significant increase in completing partogram in labor ward from 15% to 90% which implies that the objective set has been achieved beyond reasonable doubt. Addition to this the foetal distress reduced from 10.9% to 3% due the remarkable improvement was due to recruitment of two more staff, putting in place supervision schedule on completeness of partogram, availing more vital signs equipment. Similar intervention studies have also showed positive results. Smilar study was conducted at Muhima District Hospital in Kigali Rwanda adopted the WHO guidelines and added supportive supervision and motoring in labor ward, this inceased the partogram completeness from 11% to 61%(18). Results from intervention study done in Uganda Rujumbura and Rukungiri Districts focused on training of heads of maternity wards indicated that completeness rate increased from 30% to 69.9% (26). It was alsio noted that the partogram completenese increased from 8.3% to 89.3% in Uganda as well at Bwera Government hospital due to training of all midwives and doctors working in maternity ward on correct use and documentation of partogram(21) .

The concern of congestion of mothers in the ward during labor was not addressed in the intervention period because finishing the new building required long time and extra costs which

were not feasible to meet in the specified study period. In fact, the objective set of 50% completeness of partogram was exceeded; the rate increase up to 90% after intervention.

The outcome demonstrated that by increasing the number of staff in maternity ward, close supervision day and night increasing vital sign equipment reduced the incompleteness of partogram

The success of the project was due to working as team during the entire period of the project and the hospital management was very supportive and demonstrated ownership toward the project.

During intervention of the study, multiples challenges were faced. Initially, there was staff shortage in labor ward and this put stress on few available thus resulting to poor documentation of partogram during labor monitoring. To overcome this problem, the senior management of the hospital resolved it by speeding up the recruitment process where two more staffs were recruited.

Another challenge was that recruitment process took a long time of three months, this delayed the implementation of the project intervention to address the problem of inadequate staff. To overcome this challenge, there was a meeting which focused only on how recruitment process can be given priority among many competing activities of the hospital. In addition to challenge, some staff were not taking the project as one of their priorities they were considering as additional work

The researcher and MHA faculty reminded the importance of their role in success and sustainability of this quality improvement project. As a result, the hospital management agreed to support and sustains the project even beyond study implementation period.

The lesson leant from this project is that team work is very vital in such action. Working with the beneficiaries of the project is also important for the ownership and sustainability of the project. a

lesson was learnt that a quality improvement project it is teamwork effort. It requires ownership from the team members from the beginning up to the end. However, this study had limitation as time of the implementation and evaluation was short due to the staff, in charge ,and others leader went in Itorero commission program. , another limitation is the difficult to retrieve the patients files because of poor archive system.

CHAPTER SIX: CONCLUSION AND RECOMMANDATIONS

6.1 Conclusion

At Byumba district hospital, the partogram completion rate was low (15%) . To increase its completeness, recruitment of two more staff, increasing vital sign equipment as well as establishment of supervision plan were put in place. After intervention, a significant increase in completing partogram in labor ward was observed. It had increased from 15% to 90%. This achievement was a result of close collaboration of Hospital Management.

6.2 Recommendations

Byumba District Management is recommended to maintain the project by ensuring that all the parts of partogram are always completed, through supervision and effective reporting.

Finishing of the new building should be speeded up to do away with congestion of mothers in labor ward during monitoring and delivery.

The Byumba district hospital is recommended to establish the archive system

The head and in charge of the maternity department are recommended to always complete the partogram during labor monitoring and delivery because it is one of the essential tool that will contribute to saving lives mother and babies.

REFERENCES

1. Hospital B district. Hospital administrative manual. GICUMBI; 2016.

2. Tayade S, Jadhao P. the Impact of Use of Modified Who Partograph on Maternal and Perinatal Outcome. Vol. 3, International Journal of Biomedical and Advance Research. 2012.

3. Dalili H, Nili F, Sheikh M, Hardani AK, Shariat M. Comparison of the Four Proposed Apgar Scoring Systems in the Assessment of Birth Asphyxia and Adverse Early Neurologic Outcomes. 2015;1–9.

4. Souza JP, Oladapo OT, Bohren MA, Mugerwa K, Fawole B, Moscovici L, et al. The development of a Simplified, Effective, Labour Monitoring-to-Action (SELMA) tool for Better Outcomes in Labour Difficulty (BOLD): study protocol. Reprod Health [Internet]. ???; 2015;12:49. Available from: http://www.ncbi.nlm.nih.gov/pubmed/26006758

5. Yisma E, Dessalegn B, Astatkie A, Fesseha N. Knowledge and utilization of partograph among obstetric care givers in public health institutions of Addis Ababa, Ethiopia. Vol. 13, BMC Pregnancy Childbirth. 2013.

6. Maina, Rose Muthoni., Mutunga-Mwenda, Catherine,& Karonjo J. Utilization of the parthograph among nurse midwives at country referral hospital in kenya. History. 2016;75–83.

7. Use of Partographs in Women in Labour At Mulanje District. 2014.

8. Kigotho MS. the effect of free delivery services on partograph. 2016;

9. KC A, Wrammert J, Clark RRB, Ewald U, Målqvist M, Lawn J, et al. Service Packages

for Health Facilities at Different levels of Service Delivery. BMC Pregnancy Childbirth [Internet]. BMC Pregnancy and Childbirth; 2014;16(August):28–138. Available from: http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=emed11&NEWS=N&AN=71175767

10. Ur RM, Year C-BC. LABOR MONITORING & PARTOGRAPH USE. 2016;

11. Schweers J, Khalid M, Underwood H, Bishnoi S, Chhugani M. MLabour: Design and evaluation of a mobile partograph and labor ward management application. Procedia Eng [Internet]. Elsevier B.V.; 2016;159(June):35–43. Available from: http://dx.doi.org/10.1016/j.proeng.2016.08.061

12. M. N, S.O. N, F. L, A. D, M. D, B. D, et al. Epidemiology and clinical study of pediatric psoriasis on black skin in Dakar, Senegal [Internet]. Vol. 27, Journal of the European Academy of Dermatology and Venereology. 2013. Available from: http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=emed11&NEWS=N&AN=71175767

13. Mathibe-Neke J.M LFL and MB, Lebeko FL, Motupa B. The partograph : A labour management tool or a midwifery record ? Int J Nurs Midwifery. 2013;5(December):145–53.

14. Singh R. A Description of the Utilisation of the Partograph by Midwives in the Public Hospitals in the Umgungundlovu District, Kwazulu- Natal. 2013;(December).

15. Ogwang S, Karyabakabo Z, Rutebemberwa E. Assessment of partogram use during labour in Rujumbura Health Sub District, Rukungiri District, Uganda. Afr Heal Sci. 2009;9(s1):S27-34.

16. Adesola O, Omolola I, Adekemi O, Audu O. Partograph Utilization at Three Levels of Health Care Delivery Services in. Int J Caring Sci. 2014;7(2):679–91.

17. Oliva BAZIRETE. UTILIZATION OF PARTOGRAM AMONG NURSES AND MIDWIVES IN RWAMAGANA HEALTH FACILITIES IN THE EASTERN PROVINCE OF RWANDA. 2014.

18. Byukusenge Jean Bosco. TO INCREASE COMPLETION RATE OF PARTOGRAPH BY DEVELOPING GUIDELINE AND SUPPORTIVE SUPERVISION DURING LABOR MONITORING IN MUHIMA HOSPITAL. 2016;(June).

19. World Health Organization. WHO_RHR_14.15_eng Labor augmentn.

20. Gans-Lartey F, O'Brien BA, Gyekye FO, Schopflocher D. The relationship between the use of the partograph and birth outcomes at Korle-Bu teaching hospital. Midwifery [Internet]. Elsevier; 2013;29(5):461–7. Available from: http://dx.doi.org/10.1016/j.midw.2012.03.002

21. Aliona Masika M, Peter Katongole S, Govule P. Improving Partograph Documentation and Use by Health Workers of Bwera Hospital: A Process Improvement Research [Internet]. Vol. 2, International Journal of Nursing and Health Science. 2015. Available from: http://www.openscienceonline.com/journal/ijnhs

22. ANALISYS THE FULFILLMENT PARTOGRAPH IN MONITORING PHASE I FOR DECREASE MORTALITY IN DELIVERING BABY 2013 SeptiRianawati 1 , YuliTrisnawati 2. 2013.

23. KC A, Wrammert J, Clark RB, Ewald U, Målqvist M, Lawn J, et al. Inadequate fetal heart

rate monitoring and poor use of partogram associated with intrapartum stillbirth: a case-referent study in Nepal [Internet]. Vol. 16, BMC Pregnancy and Childbirth. BMC Pregnancy and Childbirth; 2016. Available from: http://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/s12884-016-1034-5

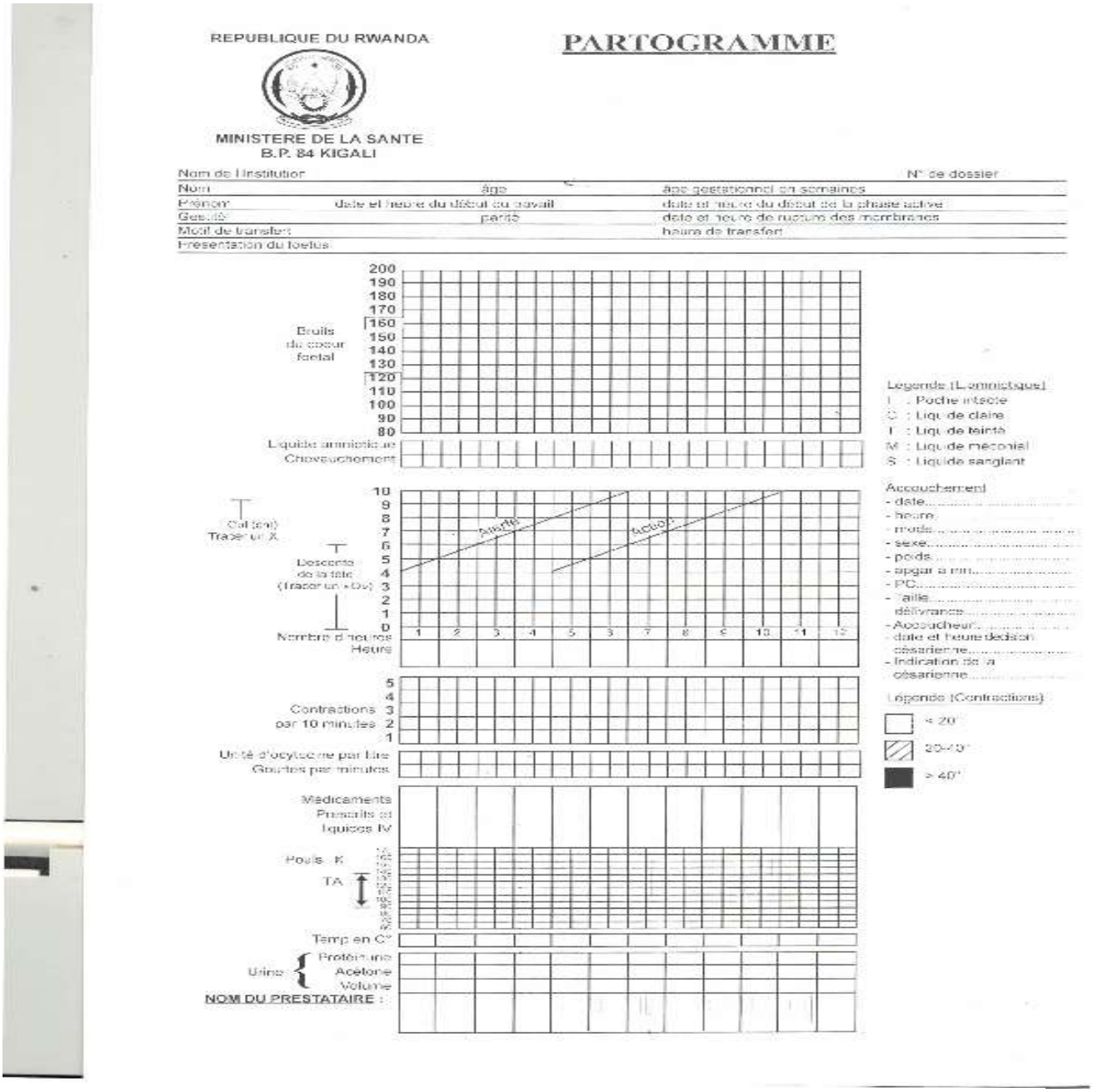
24. Jediel CM. the Effect of Ict Services on Business. 2016;

25. Rwanda R of. Service Packages for Health Facilities at Different levels of Service Delivery. Moh. 2011.

26. Sama C, Takah NF, Danwe VK, Melo UF, Dingana TN, Angwafo FF. Knowledge and utilization of the partograph: A cross-sectional survey among obstetric care providers in urban referral public health institutions in northwest and southwest Cameroon [Internet]. Vol. 12, Plos One. 2017. Available from: http://dx.plos.org/10.1371/journal.pone.0172860

APPENDICES

Appendix1.Assessment of partogram



REPUBLIQUE DU RWANDA

MINISTERE DE LA SANTE
B.P. 84 KIGALI

PARTOGRAMME

Nom de l'institution: N° de dossier:

Nom: Age: Age gestationnel en semaines:

Prénom: Date et heure du début du travail: Date et heure du début de la phase active:

Gestité: Parité: Date et heure de rupture des membranes:

Motif de transfert: Heure de transfert:

Présentation du foetus:

Bruits du coeur foetal: 200 190 180 170 160 150 140 130 120 110 100 90 80

Liquide amniotique / Chevauchement:

Col (cm) Tracer un X: 10 9 8 7 6 5 4 3 2 1 0

Alerte

Action

Descente de la tête (Tracer un «Ou): 1 2 3 4 5 6 7 8 9 10 11 12

Nombre d'heures / Heure

Contractions par 10 minutes: 5 4 3 2 1

Unité d'oxytocine par litre / Gouttes par minutes:

Médicaments / Prescrits et liquides IV:

Pouls: P

TA:

Temp en C°:

Urine: Protéinurie / Acétone / Volume

NOM DU PRESTATAIRE :

Légende (Liquide amniotique)
I : Poche intacte
C : Liquide claire
T : Liquide teinté
M : Liquide méconial
S : Liquide sanglant

Accouchement
- date.....
- heure.....
- mode.....
- sexe.....
- poids.....
- apgar à min.....
- PC.....
- Taille.....
- délivrance.....
- Accoucheur.....
- date et heure de la césarienne.....
- Indication de la césarienne.....

Légende (Contractions)
< 20"
20-40"
> 40"

ACCOUCHEMENT

Date : ..... Heure : ..... Eutocique ☐ Dystocique ☐ .....

Fait par : ..... Obstétricien/Médecin/Sage femme/infirmier(e)/Autre : .....

GATPA= Oxytocin: Unit..... Time..... Traction contrôlée du cordon Oui ☐ Non ☐

DELIVRANCE Heure:..... Placenta Complet ☐ incomplet ☐

spontanée ☐ assistée ☐ manuelle ☐ Globe de sûreté Oui ☐ Non ☐

Observation (Hémorragie et cause [atonie utérine, rétention placentaire, déchirure, trouble de la coagulation sanguine], autres.....)

.....

Intervention : .....

ENFANT Né - vivant ☐ Mort-né ☐

Sexe ..... Poids : ..... Apgar à 1 min ..... 5mn : ..... 10mn : .....

(ou Cris/pleurs après : ..... min.)

Réanimation : ..... Mort avant 24 heures ☐

Heure de la ligature du cordon : .....

Peau à peau minimum une heure après la naissance : Oui ☐ Non ☐

Heure de la mise au sein : .....

Malformation : .....

Observation : .....

Traitement : .....

Date POLIO 0 : ..... BCG : ..... Date RV Cons. postnatale : .....

SUIVI POSTPARTUM DE LA MERE

Date et heure	Pouls	T°	TA	Pâleur Conj.	Pertes	Sein	Observation + Traitement	Nom et signature du prestataire

SUIVI POSTNATAL IMMÉDIAT DU NOUVEAU NÉ

Date et heure	FC*	T°	Respiration	Conjonct./ Muqueuse	Ombilic	Observation + Traitement	Nom et signature du prestataire

FC = Fréquence cardiaque

Date RV : ..... PF : ..... Consultation postnatale : .....

Nom du prestataire qui autorise la sortie du post-partum immédiat : .....

IMPLEMENTATION PLAN OF GANTT'S CHART (Appendix2)

Task	Responsible						
		14-Nov	28-Nov	23-Dec	15th Jan	15th Feb	15th March
Establishing a supervision system		X					
Establish manual police of supervision	In charge of accreditation		X				
Schedule of supervision	Investigator & head of department			X			
Identify the in charge of supervision	Hospital Director				X		
Communicate the supervision system to staff	Clinical Director					X	
Evaluation							X
INCREASING NUMBER OF STAFF IN MATERNITY DEPARTMENT							
		15 Nov	25-Nov	27-Nov	15Dec	05- Jan	
Identify needed staff in maternity department	Nursing Director	X					
Job Advertisement			X				
Recruitment of midwives				X			
Appointed the staff in maternity department	Nursing Director				X		
Oriented staff	Nursing Director					X	
Increasing number of vital sign equipments							
		13-nov	15-nov	20-nov	26nov	5-jan	
Identify the need vital equipments and set budget	In charge of maternity department, Researcher and nursing Director						
Request			X				
Approve	Administrator			X			
Purchase order	Procurement Officer				X		
Post intervention Evaluation		15Feb	25 Feb	1st March	15Ap	20April	
Delivery of vital equipments	Head of pharmacy	X					
Request from maternity Department	In charge of maternity department		X				
Data collection				X			
Analysis	Researcher				X		
Final Evaluation of implementation						X	

Tool measured the magnitude of completeness of partogram

Appendix 3.measurement of completeness of partogram by tally sheet

Number of partogram	Five parts of partogram	Completeness of partogram Yes or No	Decision of completeness of partogram(Yes= 1) (No= 0)

Assessment of availability and functionality of vital sign equipments in labor ward by tally sheet (Appendix4)

Department	blood pressure		thermometer		Foetoscope		Pencils		monitoring machine	
Maternity ward	Yes	No	yes	No	Yes	No	Yes	No	Yes	No
Percentage										

Shortage of the staff (Appendix 5)

Date	**Number of midwives in 24houres**	**Number of patients in 24houres**	**Nurse to patient ratio**
October 2016	4	316/month	1:3/day

Number of supervision day& night by tally sheet (Appendix6)

Date	**Day/ Night**	**Supervision**
October 2016		

Appendix7.Outcome Indicator and Process Indicator

Outcome Indicator:				
Indicator	Definition	Who collect information	Where to get information	When to collect information
% of partogram well completed	Completed partogram/total partogram	Investigator	Tally sheet	15-20April 2017
Process Indicator:				
Supervision rate	# of supervision done	Investigator	Number of supervision rate	March2017
Appointed staff	Number of new staff/requested	Investigator	midwives Patient ration	March y/2017
Number of vital sign equipments procured/bought	Number of supplied quip/needed	Investigator	Tally sheet	March 2017

(Appendix8) Acceptance letter of conduct the research at Byumba District Hospital

REPUBLIC OF RWANDA

NORTHERN PROVINCE
GICUMBI DISTRICT
BYUMBA HOSPITAL
E-mail : hopbyumba@yahoo.fr
TEL: 0252564329

Byumba 20th June, 2016

N° 20/ 273/HOP BYBA/2016

Dean of School of Health Sciences,
UR-CMHS Kigali

RE: Your request for hospital attachment for UWIMANA Beatrice

Dear Sir,

I am pleased to tell you that the request for hospital attachment for UWIMANA Beatrice is approved. She is welcome and allowed to carry out that research on the topic of "**Incompletness of partogram in maternity ward of Byumba Hospital**" working with the maternity team.

Sincerely,

Dr Jean de Dieu Twizeyimana
Medical Director of Byumba Hospital

Cc :

-Principal,UR-CMHS
-Coordinator MHA program,UR-CMHS
-Human Resource Manager of Byumba Hospital