



(RESEARCH ARTICLE)



## World Health Organization (WHO) modified partogram fill audit at Matam Communal Medical Center

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### Abstract

**Objective:** To assess the quality of filling of the modified partogram from WHO at CMC Matam.

**Methods:** This was a retrospective descriptive study by clinical audit (AC), carried out on a sample of obstetric records of parturients who gave birth in the maternity unit of the CMC of Matam from January 1 to December 31, 2020, it consisted of a evaluation of the use of the partogram using an audit sheet prepared for this purpose. The random sampling with one step in ten 1/10 was used for the sampling. The parameters related to the performance of the partogram, the progress of labor (hourly rate, fetal state, materno-fetal outcome.) Were evaluated, the traceability of events related to maternal condition, acts and treatments carried out during labor as well as immediate postpartum surveillance data. Data was collected and analyzed using SPSS 20.0 and MS Excel 2010 software.

**Results:** We retained 470 files. The sample represented 87.45% of all parturients whose monitoring required the opening of a partogram during the study period; its behavior met the standard in more than 87, 41% of cases; The hourly rhythm, and the precise moment of each act were notified and respected in 66.60% of the cases, the progress of the work was correctly notified and respected in 28.72% of the cases; the presentation level and the fetal heart rate were reported and respected in 28.78% and 85.96% respectively; the method of entering into labor was notified and complied with in 95.7% of cases.

**Conclusion:** The modified WHO partogram has some shortcomings in relation to its performance, which can be corrected by supportive supervision.

**Keywords:** WHO; Partogram; Clinical audit; Work surveillance; Conakry

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## 1. Introduction

According to the World Health Organization (WHO): "the partograph is the graphic recording of the progress of labor and of the main data on the state of the mother and the fetus" [1]. As part of its maternal health and safe motherhood program and with the aim of standardizing the various graphics and in order to rapidly generalize their adoption, the WHO established in 1988 a partograph model inspired by numerous works [ 2,3], called the modified WHO partograph. It is a key, reliable, inexpensive, easy-to-use tool for monitoring the progress of labor and postpartum. It allows the synthesis of the elements of maternal-fetal surveillance and early detection of labor anomalies, facilitates decision-making and communication between professionals [4]. In addition, it is a medico-legal document and is an integral part of the medical file, a support for teaching, for clinical research and the evaluation of professional practices. Therefore, the quality of its dress is essential to prevent many preventable maternal and newborn deaths.

The aim of this study is the evaluation of professional practices by a clinical audit approach on the performance of the partograph, we adopted the diagnostic method oriented towards action. Its main characteristic is to measure, using determined criteria, the differences between the observed practice and the expected practice. It is in this perspective that we carried out this work to assess the professional practices in terms of carrying out the partograph in a level II maternity unit in the capital Conakry where almost all providers have benefited from training in obstetrical and neonatal care. births of basic emergencies.

The objective of this work was to assess the quality of the fit of the modified WHO partograph in order to formulate recommendations in the direction of promoting the quality of its fitting, presentation and correct use.

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## 2. Methodology

### 2.1. Study framework

Our study was carried out in the Matam Communal Medical Center (CMC) which housed the reference maternity unit for the urban health centers in the municipality of Matam. It polarized two (2) health centers and ensured care, teaching and research activities.

### 2.2. Type of study

We had carried out a descriptive, retrospective study of the targeted clinical audit (ACC) type, carried out on a sample of obstetric records of parturients who gave birth at the maternity unit of the CMC of Matam from January 1 to December 31, 2020,

### 2.3. Sampling

To choose our study sample, we stratified our population by mode of delivery; the files were selected at random by a simple random survey with a sampling interval of 1/10, which allowed us to have 470 files including 413 vaginal delivery files and 57 cesarean section files.

### 2.4. Inclusion criteria

- Partographs of all women admitted to labor and who gave birth in the maternity hospital during the study period and whose labor was monitored using the partograph from the active phase and monitored in the postpartum period.
- Partographs of parturients who had a cesarean section during labor.

### 2.5. Non-inclusion criteria

Patients who gave birth at home, had a prophylactic caesarean section or received full dilation and those with fetal death in utero on admission.

### 2.6. Data collection

A data sheet inspired by the assessment guide of the National Agency for Accreditation and Assessment in Health (ANAES) [5] and adapted to our working conditions was developed for data collection. For each parturient, the notification of the following parameters was collected and evaluated: the keeping of the partograph, the traceability of the work and the traceability of the acts, events and treatments received; each parameter was evaluated by three criteria:

Either correctly notified and complied with, notified not complied with and not notified

SPSS 20.0 and MS Excel 2010 software were used for the collection and analysis of quantitative data.

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### **3. Results**

During the study period, 470 records were randomly selected from the 4,700 obstetric records of parturients whose monitoring required the opening of a partograph.

Correctly completed partograms meeting the inclusion criteria were 411 files (87.45%).

Vaginal birth represented 413 cases (88%), cesarean section 57 cases (12%).

#### **3.1. Holding the partograph**

The evaluation of the presentation of the partograph showed that the civil identity of the patients was notified and respected in the 450 files, ie 95.7% and not notified in the 20 files (4.2%); The admission date was notified and respected in the 442 files (94%) and not notified in the 28 files (5.98%); In relation to the time of admission, it was notified and respected on the 341 files, ie 72.55%, on the other hand it was not notified on the 129 files 27.45%; the schedules of the various examinations were correctly notified and respected in the majority of cases 313 files (66.60%) and notified but not respected on the 98 files (20.85%), on the other hand the hourly rate was not notified on the 59 files (12.55%); The identification of the health care provider who provided care for the parturient was notified and respected for the most part in the vaginal delivery records in 424 (90.21%), on the other hand the identity of the provider was not notified. of the 46 files (9.78%), only one caesarean section had the name of the provider who indicated the caesarean section 1 (1.75%) and of the 56 files (98.25%) the identity of the provider n ' was not notified.

#### **3.2. Traceability of labor**

The procedures for starting work were notified and respected, and in 450 cases (95.7%), only 20 cases (4.2%) remained without notification.

The progress of labor was appreciated on the level of descent; the presentation was notified and respected on the 135 files (28.72%), the pace was notified but not respected on the 261 files (55.53%) and the level of the descent was not notified on the 74 files (15, 74%).

Regarding dilation, this indicator was notified and respected on the 131 files (27.87%), we noticed the notification of the dilation but the rhythm was not respected on the 293 files (62.34%), dilation was not notified in the 46 files (9.78%). On the other hand, the uterine contraction in the great majority of cases was notified and correctly observed in the 408 files (86.80%), we noted that on the 15 files (3.19%) this indicator was notified but the rate of The examination was not respected, on the other hand on the 47 files (10%) no notification of this indicator appears.

Postpartum surveillance, we recorded the notification and regularity of the rhythm on the 370 files (78.72%), notified but not complied with in 14.9%, no notification in 6.4% of cases.

#### **3.3. Condition of the fetus and appendages**

Monitoring of the fetal heart rate by intermittent auscultation of fetal heart sounds using the Pinard stethoscope was reported and observed in 404 records representing 85.96% of cases. The state and appearance of the water bag, as well as those of the amniotic fluid were specified at each examination on 130 files of parturients (27.66%), the overlap was found on 118 files (25.11%) as shown in Table 1:

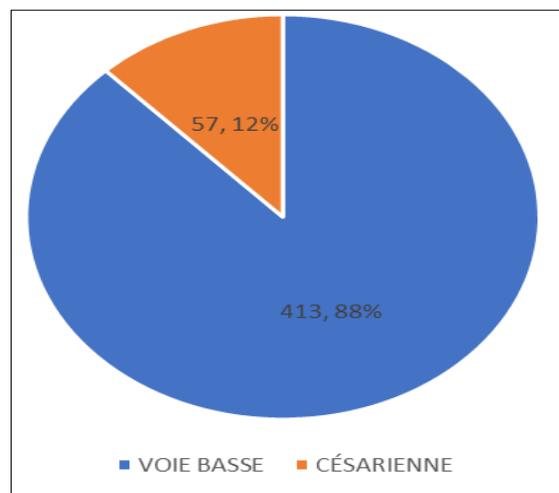
**Table 1** Notification of fetal condition and appendices

Variables	Notifié et respecté N (%)	Notifié et non respecté N (%)	Non notifié N (%)
condition of the water bag intact	219 (46.6)	135 (28.72)	116 (24.68)
broken water pocket	163(34.68)	160 (34.04)	147(31.28)
hour of the water pocket	108(23)	166 (35.31)	196(41.7)
fetal heartbeat	404(85.96)	16(3.4)	50(10.64)
Appearance of Amniotic Fluid	130(27.66)	221(47.02)	119(25.32)
Overlap	118(25.11)	189(40.21)	163(34.68)
Time of birth	416(88.51)		54(11.49)
Date of Birth	428(91.06)		42(8.94)
Weight	413(87.87)		57(12.13)
Cut	413(87.87)		57(12.13)
Cranial perimeter	413(87.87)		57(12.13)
Sex	413(87.87)		57(12.13)
In the long term	421(89.57)		49(10.43)
Premature	03(0.64)		467(99.36)
Intensive care	07(1.49)		463(98.51)
Death does not charge	03(0.64)		467(99.36)

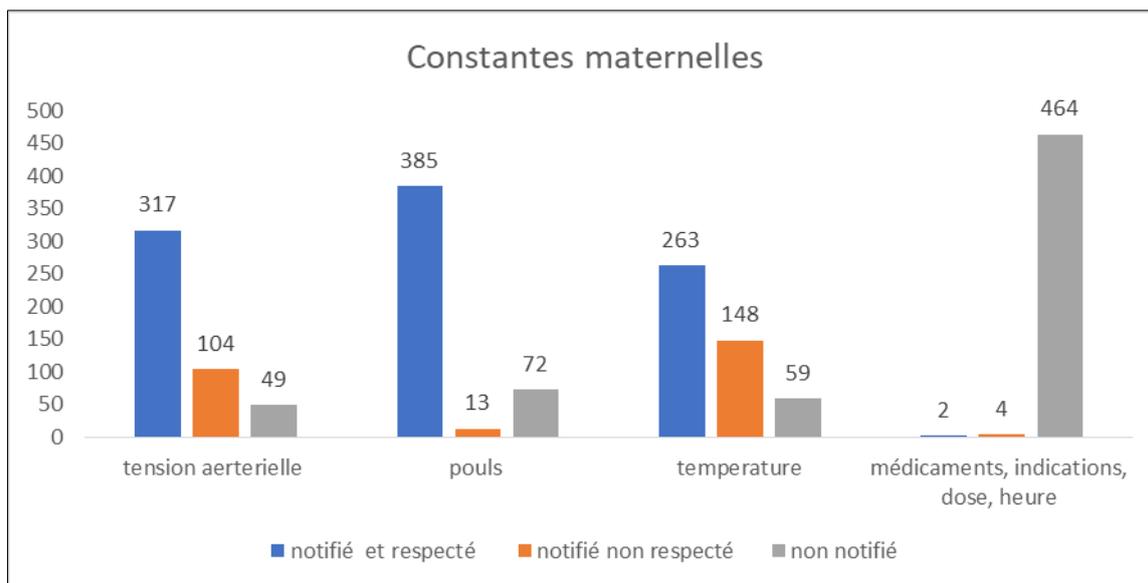
**3.4. Maternal-fetal outcome**

The onset of expulsive efforts and the condition of the perineum are not reported, thus posing a challenge for this study.

In our series, 413 deliveries (88%) were performed by the midwife while 57 cesareans (12%) required the intervention of an obstetrician (fig1).



**Figure 1** Mode of delivery



**Figure 2** Traceability of Acts, Events and Treatments during labor

### 3.5. Involvement of the obstetrician

Among the 57 cases of caesarean section, the call of the obstetrician was noted on only one (1) file or 1.75%.

## 4. Discussion

The random selection with one step in ten (1/10), was carried out to minimize bias in the choice of the sample and limited the audit to the evaluation of the behavior and the traceability of the partograph within Matam's maternity hospital.

The targeted clinical audit falls within the framework of the evaluation of professional practices as recommended by the World Health Organization (WHO) [6] and the national agency for accreditation and evaluation in health (ANAES) [1.4]. This process makes it possible to identify various dysfunctions and anomalies in practice and to make immediate corrections and improvements.

### 4.1. Keeping of the partogram

The presentation and proper fit of the partogram are essential for the early detection of abnormalities in the duration and progression of labor; in our study we reported 87.45% of partograms meeting the inclusion criteria, however it remains lower than that reported in Dakar by M'baye M et al, ie 98.6% [7],

The civil identity of our parturients was notified and respected in 95.7%, the date and time of admission were notified, the hourly rate of the various examinations were notified and respected in 66.60%, this rate satisfactory in our However, this study remains lower than that noted in the filling audit in Dakar in 2017 by M'baye et col in 85% of cases [7] and in 2006 in France by the Haute Autorité de santé [4].

In 9.78% of cases, neither the name nor the qualification of the provider appeared on the delivery records; our results were superior to those reported by M'baye M in Dakar, which was 5.3% [7], this fact could suggest the possibility of a medico-legal problem in the event of a complication.

Indeed, the partograph must allow the identification of all providers involved in the care of the parturient [1].

The majority of deliveries were carried out by the midwife 88%, the same observation was noted by the Mbaye survey in Dakar, in our context only 12% of deliveries required the involvement of the obstetrician, our results were lower than those reported by M'baye M and col 26% in Dakar [7], on the other hand the HAS reports fair birth rates between the midwife and the obstetrician with respectively 97 and 96% of cases [4] ; this situation could be explained by the fact that, in our health structures, midwives occupy the first rank of care in the hierarchy of members of the on-call team. For each parturient, the presence of an obstetrician and a midwife is desirable [5],

#### **4.2. Work traceability**

#### **4.3. Progress of labor**

In our study, the presentation of the fetus and its level of descent were notified in 28.72% of cases, the rate of descent was notified but not respected in 55.53% and not notified in 15.74%; Our results were lower than those of Mbaye 96% in Dakar [7].

The modified partograph of the WHO, has a graph intended for recording the descent of the fetal motive, which facilitates its notification, unlike the old partograph. The appreciation of the variety of position and level of descent, facilitates the early diagnosis of mechanical obstructed labor.

Cervical dilation through vaginal examination was reported and observed only in 27.87%; this key indicator was notified but the pace was not respected in 62.34%. The notification rate noted in our series study was lower compared to the study of Mbaye 96% in Dakar [7] and that of HAS 51.5 % in France [4], the hourly rate of vaginal examination according to the WHO recommendation was 4 hours [8] this indicator was poorly respected in our study, this fact would help to limit unjustified interventions in connection with duration abnormalities in the progression of cervical dilation. Multicenter trial study reports [2] to which the modified WHO partograph was subjected have revealed the effectiveness of its use in reducing cesarean section rates in relation to the duration of labor, vaginal examination makes it possible to diagnose on the stage of labor that is often overlooked by providers.

The analysis of uterine contractions were correctly notified and respected in 86.80% of cases, despite this rate being high in our series, it remains however lower than that reported in Dakar by M'baye et col 92.4% of cases and remains higher than the 80.3% revealed in the survey report to assess the availability, use and quality of emergency obstetric and neonatal care in Senegal during the period 2012-2013 [9]. In the modified WHO partograph, assessment of uterine contractions should be done every half hour with emphasis on reporting the frequency and duration [8].

The use of the partograph in the postpartum represents an advantage for the early detection of complications, through the effective monitoring of the vital parameters of the mother, in our series we observed 78.72% of normal monitoring in the postpartum, this high rate in our study would be linked to the training of providers in basic emergency obstetric and neonatal care. In fact, the partograph remains a still current tool for evaluating the quality of obstetrical care [10].

#### **4.4. Condition of the fetus and appendages**

The monitoring of the fetal heart rate, by auscultation of the sounds of the fetal heart was reported and respected in 85.96%, the result of our study was higher than that of Mbaye 63% in Dakar [7]. One of the improvements of the modified partograph of the WHO is the presence of a grid reserved for the recording of the heartbeat of the fetus. This allows for better notification and appreciation of fetal heart sounds in the form of a curve.

The overlap was notified and respected during vaginal examination in 25.11%, in the greatest proportion, the notification of this indicator was made but the rhythm was not respected in 40.21%, for this purpose sensitization is essential to get providers to appreciate this indicator during vaginal examination. On the other hand, the state of the water bag was notified and respected in the following situations: intact 46.6%; broken 34.68%; the time of rupture was only specified in 23% and the analysis of the appearance of the amniotic fluid was also notified but the rhythm was not respected in 47.02% against 27.66% of notification and respect for the rhythm; on the other hand, 25.32% of our files did not bear a notification; While the results of these indicators are encouraging, they were nevertheless lower than the results of the M'baye 63.1% [7] and Sene 97.1% [11] study in Dakar.

#### **4.5. Mode of delivery**

In our series, vaginal delivery was the most numerous 88% (fig1), the rate of caesarean section 12% remains lower than that reported by Mbaye 24.5% [7] and who shares with us the same working conditions.

#### **4.6. Traceability of acts, events and treatments**

Taking maternal records during labor and in the Post-Partum period is a key indicator for the midwife and the obstetrician.

In our study, the analysis of these indicators had shown that the majority of our files showed blood pressure, compliance with the rate of intake was 67.44%, non-compliance with the rate of intake was 22, 12% This criterion was also non-compliant (1% to 2%) in several other studies [12].

And the lack of notification was 10.42%. The results in our series were lower than those reported in Dakar 92.4% [7]; In France, the blood pressure test was notified in all files 100% of the services questioned [4,5], this difference is explained in part by the availability of providers and equipment.

The notification rates for pulse 81.91% and blood pressure 55% were clearly higher than the results of the study by M'baye et col in Dakar [7] respectively 34.6% and 8.5%. According to WHO recommendations [8], blood pressure and temperature should be measured every 4 hours; the monitoring rate can be adapted to the clinical context.

The drugs administered, indications, doses and times were not recorded in 98.72%, this is one of the weak points of our study thus constituting the challenge, on the other hand in Dakar [7] drug administration was notified in 67% of cases; The drug prescription met the reporting standards for the partograph in 41% of cases. This observation could find explanations in part on there under notification, the negligence on the part of the providers. WHO recommends that any medication prescribed to the patient during labor as well as the route of administration and dosage be noted in the partograph [8].

In our study, the obstetrician's call for decision-making was insignificant an appeal with observation of the records, then decision-making 1.75%. Finally, the insufficiency or lack of notification sometimes reflects a lack of action or an omission while the examination, act or treatment has been carried out.

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## 5. Conclusion

The evaluation of the performance of the partograph constitutes the first step in a policy of improving the quality of care provided to the mother and the fetus. Our study allowed us to assess the quality of the partograph's performance and to identify the factors that may be linked to non-compliance. An improvement plan has been put in place. It will be followed by a reassessment to meet the obligation of continuous improvement of the quality approach.

### *State of current knowledge on the subject*

The partograph remains an up-to-date tool for evaluating the quality of obstetrical care, the rate of compliance with the performance of the partograph remains satisfactory in our context.

### *Contribution of our study to knowledge*

Our study is the first clinical audit which made it possible to determine the conformity of the performance of the partograph in a maternity level II of the health pyramid of our country.

This work is an opportunity for service providers to familiarize themselves with the tools for evaluating professional practices;

As a result of this study, a plan to improve the quality of partograph performance was put in place.

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## Compliance with ethical standards

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### *Disclosure of conflict of interest*

The authors declare that there were no conflicts of interest in the scientific writing of this work.

### *Statement of informed consent*

All of the authors who appear in this article have an equal share of and agree to the publication of this article in your journal.

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**References**

- [1] Agence Nationale d'Accréditation et d'Evaluation en Santé ANAES). Évaluation des pratiques professionnelles dans les établissements de santé. Évaluation de la tenue du partogramme. ANAES, Ed. 2000; 44: 8-12.
- [2] Bernarde Souberbielle, Marye RO. Use of WHO partogram in developing countries. *The Lancet*. 1994; 344(8916): 193.
- [3] Christopher EL, Barbara E Kwast. La prévention des anomalies dans la durée du travail, guide pratique ; le partogramme partie 1 : principe et stratégie, Programme santé maternelle et maternité sans risque division de la santé de la famille. Organization Mondiale de la Santé, Genève. 1994.
- [4] Haute Autorité de Santé (HAS). Évaluation des pratiques professionnelles : Audit clinique ciblé : surveillance du travail et de l'accouchement par la tenue du partogramme. Service d'Évaluation des Pratiques. Octobre 2006; 35.
- [5] Locquet C, et al. L'audit clinique ciblé pour évaluer les pratiques professionnelles. Résultats préliminaires de la mise en œuvre dans les 177 établissements de santé français. *Gest. Hosp.* 2005; 344: 329-35.
- [6] Organisation Mondiale de la Santé. La prévention des anomalies dans la durée du travail: guide pratique. Le partogramme. Partie I : Principes et stratégies. Genève. 1994; 15: 5-9.
- [7] Mbaye M, Gueye M, El Metghari L, Mbodji A, Niassy Diallo Ac, Ndiaye Gueye Md, Diop Ak, Moreau Jc. Audit du remplissage du partogramme modifié de l'Organisation Mondiale de la Santé (OMS) au Centre de Santé Philippe Maguilen Senghor à Dakar. *Journal de la SAGO*. 2017; 18(1): 7-11.
- [8] Organisation Mondiale de la Santé. La prévention des anomalies dans la durée du travail: guide pratique. Le partogramme. Partie II : Manuel de l'utilisateur. Genève. 1994; 35: 25-27.
- [9] Ministère de la Santé et de la Prévention Médicale, CEFOPREP, OMS, UNFPA Résultats de l'enquête d'évaluation de la disponibilité, de l'utilisation et de la qualité des soins obstétricaux et néonataux d'urgence au Sénégal. Dakar. 2012-2013.
- [10] Lansac J, Carbonne B, Pierre F. Le partogramme: un outil toujours actuel pour évaluer la qualité des soins en obstétrique. *J Gynécologie Obstétrique Biol Reprod*. Févr. 2007; 36(1): 2-7.
- [11] Sene NK. Audit du remplissage du partogramme à la Maternité du Centre de Santé Nabil Choucair. Thèse Méd., Dakar. 2009; 127.
- [12] Fabienne D. Evaluation des pratiques professionnelles des sages-femmes du groupe hospitalier Cochin-Saint-Vincent-de- Paul concernant la tenue du partogramme (Thèse). *Gynecology and obstetrics*. France. 2011; 92.