

Analysis of Patient Evacuations at the Centre Hospitalier Universitaire Communautaire (CHUC), Central African Republic

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Abstract

Obstetric complications are the main cause of mortality and morbidity. Many factors limit women's access to the quality care they need to reduce this mortality. We proposed to analyse our referral system to identify certain factors that may limit its proper functioning and contribute to maternal deaths. This was a 12-month descriptive and analytical cross-sectional study of 259 evacuated women. The average age was 28.8 ± 7 with extremes ranging from 15 to 44 years. Most of the women were single (81.5%), accompanied by medical staff (78.8%), and had a venous approach (81.9%). The means of transfer used were ambulance (78.8%) and motorbike (11.6%). The transfer time was less than one hour (40.9%). The reasons for referral were consistent with the definitive diagnoses (64.5%) and diagnostic errors were noted (35.5%). The majority of patients were treated surgically (77.6%). We recorded maternal death (7.7%), due to unqualified personnel, transfer time, and poor general and haemodynamic condition ($P < 0.05$). The causes of death were abortion, ectopic pregnancy, arterial hypertension and post-partum haemorrhage ($P = 0.014$). Fresh stillbirths (14.9%), newborns transferred to neonatology (57.7%). Counter-referrals were assured (46.7%). Reducing diagnostic errors and late evacuations, as well as ongoing training for providers in peripheral health facilities on the signs of serious obstetric and neonatal emergencies will help to reduce the frequency of evacuations.

Keywords

Obstetrical Complications, Referral System, Counter-Referral, Bangui

1. Introduction

Obstetric complications are the leading causes of maternal and neonatal mortality and morbidity [1]. Around 830 women die every day worldwide as a result of these complications. This maternal mortality represents 99% of deaths in sub-Saharan Africa [2]. In the Central African Republic (CAR), the maternal death rate is estimated at 835 per 100,000 live births in 2022 [3]. The main complications, which account for 75% of all maternal deaths, are: haemorrhage, infections, pre-eclampsia and eclampsia, dystocia and unsafe abortions [4]-[6].

Several factors limit women's access to quality care, which can contain mortality to an acceptable level. Since the implementation of the reference system, counter-reference in 2022 at the Community University Hospital (CHUC) of Bangui, we have been wondering about the improvements made compared to the results of previous studies on the same subject. Hence the interest of this study, which aims to: Contribute to the improvement of the referral and counter-referral system in the care of patients at the CHUC in general; then to determine the frequency of these evacuated women; to identify the main indications for referrals to the maternity ward of the CHUC; to assess morbidity and mortality among evacuated women.

2. Patients and Method

It was a descriptive and analytical cross-sectional study carried out over a period from 1 July 2022 to 30 June 2023. The study population consisted of women admitted during the study period. These are women referred from a lower level of Basic Obstetric Care (SOUB) centres for the management of obstetric complications at the CHUC with regard to Emergency Obstetric Care (SOUC). All patients received with reference to the SOUC were included, who have a rating from the peripheral health structures taken into account by the partners (Médecins Sans Frontières) who support the CHUC. Those from other health centres that had a file or a written note were also taken care of. All patients who agreed to participate in the study after informed consent.

Patients who did not have a reference score, and those whose medical records were unusable were not included. The sample size was exhaustive. All reference cases were recorded. - After examinations on admission, the diagnostic errors made by the health structures of origin (initial diagnosis and diagnosis made at the CHUC) were corrected before the patients were treated. Data collection was carried out using a pre-established and pre-tested questionnaire. The variables studied consisted of: - Socio-demographic characteristics; - Gynaecological and

obstetric, medical and surgical history.

- Reference structure and reference methods (transfer time, quality of filling, means of transport, reference support, referral route accompanied by a health worker, treatment with antibiotics, oxytocin, vascular filling, date and time of arrival, qualification of the agent who received the patient, counter-referral made or not); - Clinical aspects (reason for referral, general condition, hemodynamic status, definitive diagnosis); - Management (blood transfusion, treatment received at the reception facility, situation at the time of discharge, cause of death, counter-referral, reasons for referral).

Ethical considerations: Anonymity was required because none of the records bore the names of the patients surveyed. We took care to clearly explain the motivations and objectives of the study to the patient or the caregiver. Consent was first obtained before questioning the patients. The director of the CHUC and the head of the Gynaecology and Obstetrics Department were informed of the progress of the investigation. Data collection was done on a daily basis at the level of the Gynecology and Obstetrics department of the CHUC.

The data was compiled, validated and analysed using Epi Info 7 software. The difference was significant if $P < 0.05$. The texts and tables were entered using Microsoft Office Word 2013 software. We calculated percentages for the quantitative variables. The results of the quantitative variables were converted into averages, and those of the qualitative variables into numbers and percentages.

3. Result

During the study period, we recorded 4808 patients admitted to the department, including 259 patients evacuated from other health facilities. The frequency of evacuations was 5.4%. Among the evacuated patients, two had already died before their arrival in the department. The most represented age group was 25 - 29 years old. The average age is 28.8 years with extremes of 15 and 44 years. Multi-gestures and pauciparous women were the most represented. The majority of the women evacuated were single. Housewives accounted for 47.1% of the evacuees. Previous caesarean section was reported in 59.5% of cases. Most patients had spent more than 6 hours in the structures of origin (64.1%) and evacuations were often decided by midwives. The duration of the transfer was between 1 and 2 hours for 52.9% of the patients.

Ambulance was the most used means of transport (78.8%). All patients evacuated by ambulance were accompanied by staff. Those evacuated by ambulance had a venous approach (81.9%). The most commonly reported treatment by patients was oxytocin (53.7%) and antibiotic therapy administered (18.1%) prior to transfer. The most common reasons for evacuation were haemorrhage (35.5%) followed by acute fetal asphyxia (21.2%) represented in **Table 1**. Ultrasound was the most performed paraclinical examination. Healthcare providers in peripheral health facilities had missed several diagnoses, the most important of which was uterine rupture. In the absence of a diagnosis in the reference centre, symptoms were the

reason for evacuation, the most frequent of which was bleeding during pregnancy. The reference reasons were in line with the diagnoses made in 64.5%. Evacuations, often justified, were carried out late in nearly half of the cases. The care at the CHUC involved resuscitation and surgical treatment.

Table 1. Distribution of evacuees according to the definitive diagnoses made at the CHUC.

Selected diagnoses	Actual (n = 259)	Percentage
Acute fetal asphyxia	55	21.2
Uterine rupture	20	7.7
Placenta previa	19	7.3
Abortion	18	6.9
Generally narrowed pelvis	16	6.2
Ectopic pregnancy	15	5.8
Pre-Break	15	5.8
Postpartum haemorrhage	16	6.2
Scarred uterus	9	3.5
Large foetus	9	3.5
Retroplacental haematoma	9	3.5
Preeclampsia	9	3.5
Feto-pelvic disproportion	9	3.5
Eclampsia	9	3.5
Haemorrhagic shock	6	2.3
Dead egg retention	6	2.3
Placental retention	4	1.6
Threat of preterm delivery	3	1.2
Cord prolapse	2	0.8
Pregnancy terminated	2	0.8
Genital sepsis	2	0.8
Cross-Sectional Presentation	2	0.8
Other	4	1.6

The mean length of hospital stay was 4.9 days with extremes of 0 and 11 days. Postpartum haemorrhage (50%) accounted for half of the causes of death in **Table 2**. The parameters related to the case of death were: unqualified personnel, transfer duration of at least 2 hours (poor general and haemodynamic condition ($P < 0.05$)). Abortion, ectopic pregnancy, High blood pressure and postpartum haemorrhage

were also the factors associated with death ($P = 0.014$) in **Table 3**. More than half of the evacuees were in good general condition at the time of admission. More than half of the newborns were transferred to the neonatal unit. Neonatal deaths following uterine rupture were the most common.

Table 2. Distribution of deceased evacuees by cause of death.

Cause of death	Actual (n = 20)	Percentage
Postpartum haemorrhage	10	50.0
Infection	3	15.5
Uterine rupture	3	15.5
Eclampsia	2	10.0
Pre-eclampsia	1	5.0
Retroplacental haematoma	1	5.0

Table 3. Distribution of evacuees according to the relationship between parameters and the state at discharge.

Parameters	Exit healed	Deceased. n (%)	P
Qualification of evacuated personnel			
Qualified staff	226 (94.6)	13 (5.4)	<0.001
Unskilled personnel	13 (65.0)	7 (35.0)	
Duration of the transfer			
<2 Hours	228 (93.8)	15 (6.2)	=0.002
≥2 Hours	11 (68.7)	5 (32.3)	
Reasons for evacuation			
Abortion, ectopic pregnancy	72 (90.0)	6 (10.0)	=0.014
Dystocia, former caesarean section	84 (98.8)	1 (1.2)	
High blood pressure and postpartum haemorrhage	83 (86.5)	13 (13.5)	
General condition			
Good	154 (98.1)	3 (1.9)	<0.001
Bad	83 (83.0)	17 (17.0)	
Hemodynamic status			
Good	157 (97.5)	4 (2.5)	<0.001
Bad	80 (83.3)	16 (16.7)	

4. Discussion

Limits of work: The limitations of this work are due to difficulties related to the obtaining of certain information by the patients given their state of health at admission and the reference forms incorrectly filled in by the staff who referred. Avoidable morbidity and mortality related to pregnancy remain unacceptably high in our country given the delay in the care of patients. Nearly half of maternal deaths are directly linked to inadequate care. We carried out work in a national reference structure, which receives patients from health facilities in Bangui and surrounding towns. The targeted free treatment applied in this centre means that it receives the most difficult, sometimes desperate, cases. This points to the possible representativeness of patients.

Medical evacuations, which are an essential link in the reduction of maternal and neonatal mortality, are a problem that challenges decision-makers on the quality of services in peripheral centres that are often lacking in equipment and competent personnel [7].

In the Central African Republic (CAR), a woman with an obstetric complication often faces several barriers to accessing emergency obstetric care (EOC). These different barriers are reflected in the three-delay model that elucidates the time that elapses between the onset of an obstetric complication and the receipt of emergency care. The 1st delay is the time elapsed at the family level before deciding to use emergency obstetric care (SOU); the 2nd delay is the time it takes to travel from home to the emergency obstetric care centre; the 3rd delay is the time elapsed between arrival at the centre and the provision of care by the providers [7].

The frequency of evacuees in our study was 5.4%. This rate is lower than that of several authors. Sépou *et al.* reported in the same service, a frequency of evacuees of 27.3% in 2000, then 12% in 2009 [7] [8]. For Mariko and Samake in Mali, they have recovered 24.1% and 24.6% respectively [9] [10]. These high frequencies of evacuees compared to ours can be explained by the fact that our study had only concerned obstetric emergencies and would explain the low rate obtained. The average age of the evacuees was 28.8 years, with extremes of 15 and 44 years. Young people under 25 years old represented 31.3%. This average age was higher than that of Sépou (23.3 years); Samaké (26 years old) and Coulibaly (26.5 years old) [8] [10] [11]. It is close to that observed by Mariko, which is 30 years old [9]. Pauciparous females were more represented, which corroborates the study by Sépou *et al.* [7]. Single women, often in a precarious social situation, accounted for 81.7% of the patients evacuated. Our result was different from that obtained by Fofana, who found that more than 80% of their patients are married [12]. This difference comes from the fact that Malian culture does not accept a conjugal union without marriage. In the Central African context, the majority of couples merge without legal recognition. Despite the high proportion of singles, there was no association with the risk of maternal death (OR = 0.62 [0.21 - 1.8]; Corrected Chi 2 = 3.4 and P = 0.064). During our study, housewives were more represented

at 47.0%. The professional profile is the same as that of the other authors [8] [9] [12] [13]. However, we had housewives in almost the same proportion as Fofana's 46.48% [12]. We did not find a statistically significant association between this variable and maternal prognosis (OR = 1.04 [0.38 - 2.8]; $\text{Chi}^2 = 0.008$; $P = 0.92$). The medical history often determines the course of a disease. More than half of the evacuated patients had a history of caesarean section. The management of a parturient who has a scarred uterus requires a lot of attention regarding a possible uterine test. And this may explain the high rate (63.3%) of caesarean sections among evacuated patients. The length of follow-up in the departure department may determine the effectiveness of the treatment. In 64.1% of cases, the patients had spent more than 6 hours in the health facilities of first contact before the transfer. We were not associated with the risk of maternal death (OR = 1.33 [0.49-3.63], $\text{Chi}^2 = 0.97$; $P = 0.76$). On the other hand, Sépou *et al.* found that more than half of the evacuees were followed for at least 5 hours in the first contact structure [8]. The time spent in reception centres before transfer is a huge problem. Raising awareness among health care providers can improve the prognosis of patients, especially when a risk factor is identified that is likely to lead to an obstetric and neonatal complication. Competence is determined by the level of training of the provider. Insufficient competence and/or knowledge of a pathology justifies evacuation. The majority of evacuations were decided by midwives, a result that corroborates that of Sépou *et al.* in 2007 in the same department [8]. This allows us to understand the role that midwives play in the management of obstetric emergencies. In rural Mali, Coulibaly *et al.* in 2018, found that evacuations are decided, mostly by nurses [11]. Analysis of this variable showed that maternal death was more observed in cases where the evacuation decision was made by unqualified personnel, with a statistically significant difference (OR = 9.4 [3.2 - 27.4]; $\text{Chi}^2 = 18.67$; $P < 0.001$). This reveals the lack of awareness of the signs of seriousness by unqualified personnel. The means of medical transport is one of the essential means to ensure evacuation in good conditions. During our study, we observed 78.8% of patients evacuated by ambulance. A high referral rate by ambulance was also reported by Mariko (60.7%) [9] and a lower rate by Diarra (40.1%) [14]. Diarra's low rate is justified by the fact that during the period of his study, there was only one ambulance that was in good working order. The high rate of evacuation by ambulance in our series is explained by the permanent availability of ambulances at the level of certain peripheral health units (FOSA) and the CHUC. For the FOSAs who do not have an ambulance, an alert system has been set up to allow them to call on the CHUC ambulances, which was not the case 5 years ago. A significant proportion of patients were evacuated by motorcycle taxi (11.6%), which poses a road safety problem for them. However, there was no association between mode of transport and the occurrence of maternal deaths ($P = 0.064$).

The referral of a patient requires prerequisites such as: the reference sheet, the alert system (telephone call available), additional health personnel to accompany

the patient, the taking of a venous line and a means of medical transport. The availability in the departments of protocols and flowcharts, emergency kits or kits, for the care of patients both at the peripheral level and at the level of the reference center. In our study, 73.0% of patients were accompanied by healthcare staff. Our rate was almost similar to that reported by Diarra (71.28%) [14]. Coulibaly *et al.*, had a higher rate of support (83.33%) than ours. On the other hand, Fofana (59%) and Thera (15.4%) had lower rates than our series. Fofana indicated that unaccompanied patients were evacuated by means other than the ambulance and Thera justified her low rate of accompaniment by a poor application of the principles of the referral/evacuation system [12] [15]. For our study, health care was not related to the risk of maternal death ($P = 0.105$).

Taking a venous line is one of the means of preparing patients before their evacuation. Only patients evacuated by ambulance had a venous line, in a proportion of 81.9%, of whom 96.4% benefited from vascular filling. The proportion of evacuees who had a venous line in our series is lower than that of Fofana and Diarra respectively 88% and 97.5% [12] [14]. On the other hand, Ndiaye reported a high proportion (71.0%) of patients evacuated without a venous line [16]. The placement of a venous line was not related to the maternal deaths recorded in our study ($P = 0.244$).

Treatments often reported by evacuated patients were oxytocic and antibiotics. Oxytocin was the most commonly used because of the initial diagnosis that is often made on postpartum haemorrhage. The FOSAs that have evacuated patients at the CHUC are located within a radius of less than 10 kilometres for the most part. Some patients come from areas more than 20 kilometres from the CHUC. The duration of the transfer is often less than 2 hours. In cases where this duration was greater than 2 hours, maternal death occurred with a statistically significant difference ($OR = 6.9$ [2.1 - 22.5]; $Chi^2 = 9.9$; $P = 0.002$). For Fomba *et al.*, they reported that one to two hours is the most common (46.60%), with a 0.7% rate of maternal death. However, Touré *et al.*, report in 49%, of indefinite duration and a maternal death rate of 2.24% [17] [18].

The reasons for reference are part of the elements of the relevance of an evacuation. The main reason for evacuation varies from one perpetrator to another and from one period to another. Fetal asphyxia was more of a reason for evacuation in our study, as in Diarra's study [14]. Abortion and genital infection are the main reasons reported by Sépou *et al.* in 1995 [7]. The same author reported maternal exhaustion as the main reason for evacuation in 2007 in the same department [8]. As for Mariko *et al.* in 2009, the main reason for evacuation was haemorrhage and dynamic dystocia [9]. The main reason for evacuation for Samaké in 2018 was dystocia [10]. Hypertension during pregnancy is the main reason for evacuation for Fofana [12]. In our study, we noted controversial situations such as evacuations for maternal indiscipline or refusal to push. Statistical analysis showed that maternal death occurred more in cases of evacuation for hypertension or postpartum hemorrhage ($OR = 10.3$ [1.4 -

78.3]; $\text{Chi}^2 = 7.6$; $P = 0.014$).

The patient's general condition before the evacuation, the conditions of transfer, the distance between the FOSAs are conditions that determine her evolution. At the end of the day, patients who had a poor general condition or a poor hemodynamic state had a higher risk of death ($P < 0.001$) in both cases.

Paraclinical examinations are necessary for a good diagnostic approach. In our series, obstetric ultrasound was the most commonly performed examination. This is facilitated by the permanent presence of a mobile ultrasound device in the department. This had made it possible to correct some of the diagnoses mentioned during the evacuation. As haemorrhages were one of the non-negligible causes of evacuation, the haemogram was quite often performed. To provide efficient care to a patient, a good diagnosis must be made. The diagnoses made are close to the reasons for evacuation according to some authors. Thus, the main reason for evacuation and the main diagnosis are the same for S epou *et al.* [7]. For our study, the diagnosis was the most common was acute fetal asphyxia (21.9%), which corroborated with the dominant reference reason. On the other hand, other authors have found discrepancies between the reasons for evacuation and the main diagnosis [8] [9]. This indicates a misdiagnosis in the FOSAs of origin. The relevance of a reference cannot be justified by the level of qualification of the referent agent and/or that of the technical platform. Late evacuations concerned 42.2% of patients whose decision to transfer was justified. Among these patients, we deplored two deaths that occurred before the arrival of the victims in the department. These patients had postpartum hemorrhage that required compensation for blood loss. Despite being transferred by ambulance with the support of health personnel, the death occurred during the transfer. The decision to transfer was late, despite the diagnosis made, which highlighted the notion of extreme urgency.

One of the problems with evacuations is diagnostic error, which is often frequent and fatal for patients with certain pathologies. We found 35.5% diagnostic error in our study. Several authors had noted diagnostic errors in their studies: S epou *et al.* 16.5%, Boua, 34.3% [7] [13]. These diagnostic errors could worsen the prognosis of patients. This was the case for uterine rupture which was 100% unknown, ectopic pregnancy at 53.3%, placenta previa at 42.1%, fetal asphyxia at 34.5% and retroplacental hematoma at 33.3%. These errors that endanger the lives of mothers and/or newborns have been systematically cross-referenced. Concordance of diagnoses was more observed for certain pathologies such as abortion, pre-eclampsia, cord prolapse, anemia in pregnancy and surgical site infection. In the absence of an etiological diagnosis, the agents at the evacuation site mentioned bleeding during pregnancy for cases of uterine rupture, placenta previa or retroplacental hematoma.

The treatment is based on the elements of the interview, clinical and paraclinical examinations. For our study, different treatments were applied: obstetric, medical and surgical.

The most commonly performed procedures were surgical consisting of a caesarean section or laparotomy for uterine rupture or ruptured ectopic pregnancy. The rate of caesarean section performed among evacuees (49.8%) is similar to that of Boua (48%) [13]. This rate is lower than those of Samaké and Diarra, which are 64.22% and 81.18% respectively [10] [14]. It is higher than the rate found by Coulibaly (32%) and Ndiaye *et al.* (21.8%) [11] [16]. In 26.1% of cases, the evacuated patients had given birth normally. This rate is higher than that found by Sépou *et al.* in 1995 which is 15.3% [7], but lower than that reported by other studies, 44.3% of normal delivery for Sépou in 2007, 51.9% for Démbélé in 2021 and 32.7% for Mariko in 2022 [4] [8] [9].

The quality of care and the ability to manage it are essential for the maternal-fetal prognosis. In our study, 6.2% of the mothers had died on the day of admission. This highlights the delay in evacuation. Maternal death was recorded in 7.7% of cases, which is close to that found in 2007 which is 6.9%, but higher than that reported in the same service in 1995 which is 2.8% [7] [8]. As for Démbélé, it recorded 5.9% of deaths among the evacuees [4]. The death rate reported by Samake is higher (31.31%) [10]. The leading cause of death in our study is postpartum haemorrhage. This poses the problem of monitoring during the first two hours of postpartum.

We recorded 14.9% of stillbirths, especially among mothers who had a uterine rupture. The rate of neonatal deaths is higher than those reported by Niaré (5.3%) [19], and Traoré (10.6%) [20].

5. Conclusion

Medical evacuations pose a health problem for the mother-child couple. Reducing misdiagnoses and late evacuations, as well as continuing training for providers in peripheral health facilities on the signs of severity of obstetric and neonatal emergencies, will reduce the frequency of evacuations.

Conflicts of Interest

The authors do not declare any conflict of interest.

References

- [1] Dumont, A. (2017) Reducing Maternal Mortality in Developing Countries: What Interventions Are Effective? *Revue de Médecine Périnatale*, **9**, 7-14.
- [2] Kaboré, S., Meda, C.Z., Sombié, I., Savadogo, L.B., Karama, R., Bakouan, K., *et al.* (2017) Combating Maternal Mortality in Rural Areas: Decentralisation of Emergency Obstetric Care Provision in Burkina Faso. *Pan African Medical Journal*, **27**, Article 236. <https://doi.org/10.11604/pamj.2017.27.236.12952>
- [3] Ministry of Health and Population (2022) Plan National de Développement Sanitaire (PNDS III) 2022-2026: Bangui.
- [4] Dembélé, S., Diassana, M., Macalou, B., Sidibé, A., Hamidou, A., Berthe, D., *et al.* (2021) Obstetric Evacuations at the Fousseyni Daou Hospital in Kayes. *Health Sciences and Disease*, **21**, 90-94.

- [5] Say, L., Chou, D., Gemmill, A., Tunçalp, Ö., Moller, A., Daniels, J., *et al.* (2014) Global Causes of Maternal Death: A WHO Systematic Analysis. *The Lancet Global Health*, **2**, e323-e333. [https://doi.org/10.1016/s2214-109x\(14\)70227-x](https://doi.org/10.1016/s2214-109x(14)70227-x)
- [6] Assarag, B., Dujardin, B., Essolbi, A., Cherkaoui, I. and De Brouwere, V. (2015) Conséquences des complications obstétricales sévères sur la santé des femmes au Maroc: Please, Listen to Me? *Tropical Medicine & International Health*, **20**, 1406-1414. <https://doi.org/10.1111/tmi.12586>
- [7] Sépou, A., Yanza, M.C., Nguembi, E., Dotte, G.R. and Nali, M.N. (2000) Analysis of Medical Evacuations for Obstetric Gynaecology in Bangui, Central African Republic. *French Studies Research/Health Notebooks*, **10**, 399-405.
- [8] Sépou, A., Goddot, M., Ngbale, R., Gaunefet, C.E., Domande-Modanga, Z., Fandema, E., *et al.* (2009) Trends in the Frequency and Problems Associated with Medical Evacuations to the Gynaecology-Obstetrics Department of Bangui Community Hospital. *Clinics in Mother and Child Health*, **6**, 1007-1012.
- [9] Mariko, S., Doumbia, N., Coulibaly, P., Bagayogo, N.S., Sarampo, A., Ouologuème, N., *et al.* (2022) Evaluation of the Referral/Evacuation System for Obstetric Emergencies at the Sominé Dolo Hospital Maternity Unit in Mopti. *Jaccr Africa*, **6**, 119-130.
- [10] Samake, A., Traoré, S.O., Diarra, L., Keita, M., Doumbia, S., Diallo, M., *et al.* (2020) Obstetrical Medical Evacuations in a Second Level Referral Hospital in the District of Bamako. *Jaccr Africa*, **4**, 73-78.
- [11] Coulibaly, M.B., Traoré, A., Camara, M.A., Kane, B., Sima, M., Touré, B., *et al.* (2021) Evaluation of the Obstetric Referral/Evacuation System at the Banamba Referral Health Centre in Mali. *Jaccr Africa*, **5**, 162-170.
- [12] Fofana, M.N. (2016) Evaluation of the Referral/Evacuation System for Obstetric Emergencies at the CSREF CIV in the District of Bamako. Doctoral Thesis in Medicine, Université des Sciences des Techniques et des Technologies de Bamako.
- [13] Boua, C. (2013) Evaluation of the Referral/Evacuation System for Obstetric Emergencies at the CSREF in Markala. Doctoral Thesis in Medicine, Université des Sciences des Techniques et des Technologies de Bamako.
- [14] Diarra, M.S. (2020) Evaluation of the Quality of the Obstetric Referral/Evacuation System at CS Réf CI. Doctoral Thesis in Medicine, Université des Sciences des Techniques et des Technologies de Bamako.
- [15] Théra, T., Traoré, Y., Kouma, A., Diallo, B., Traoré, Z.O., Traoré, M., *et al.* (2015) The Problem of the Referral-Referral System for Obstetric Emergencies and the Involvement of Communities in the District of Bamako. *Mali Medical*, **30**, 34-37.
- [16] Ndiaye, P., Thiam, O., Niang, B., Sylla, M., Gueye, M., Gassama, O., *et al.* (2020) Obstetrical Medical Evacuations at the Saint-Louis Regional Hospital, Senegal: Epidemiological and Prognostic Aspects. *Journal de la SAGO*, **21**, 2712-7230.
- [17] Fomba, D., Ballo, B., Diarra, I., Kone, O., Kanthé, D., Samake, B., *et al.* (2023) Evaluation of Reference-Evacuation Markala. *East African Scholars Journal of Medical Sciences*, **6**, 265-271. <https://doi.org/10.36349/easms.2023.v06i06.005>
- [18] Touré, M., Sinaba, F., Diarra, E.S. and Diakité, S. (2008) Gynaeco-Obstetric Referral/Evacuation at the CS Réf CIV in the District of Bamako. *Fourth Congress of the Malian Society of Gynaecology and Obstetrics*, Mali, 43 p. <http://sago.sante.goov.ml/>
- [19] Niaré, A. (2009) Obstetrical Evacuation at the Reference Health Centre of the Commune II of Bamako. Doctor of Medicine Thesis, Université de Bamako.

- [20] Traoré, B.D. (2010) Problems of the Obstetric Referral/Evacuation System at the Commune VI Reference Health Centre in the District of Bamako. Doctor of Medicine Thesis, University of Bamako.