

Original Research Article

Evaluation of the Reference - Evacuation Markala

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Abstract: The aim of this study was to evaluate the performance of the referral system for evacuation of obstetric emergencies between the CSCom and the CS Réf in Markala from 1 January 2021 to 31 December 2021. This study enabled us to identify:

- The performance of the evacuation reference system between the CSCom and the CS Réf in Markala;
 - The effectiveness of maternal death audits ;
 - Holding staff meetings;
 - The mother's condition.
- The problems related to :
 - The functionality of the management committee;
 - The child's condition;
 - Payment of co-payments.

At the end of the work, it was concluded that the evacuation reference system between the CSCom and the CS Réf in Markala was not performing well with regard to the criteria set by the evaluation team.

Keywords: CSCom and the CS Réf, family nucleus, Pregnancy, health policies.

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I. INTRODUCTION

The development of any nation, of any community, depends on the development of the family nucleus, which in turn depends on the health of individuals, particularly mothers and children. Indeed, health policies in most developed countries, and developing countries in particular, give pride of place to maternal and child health through development plans, programmes and projects.

The birth of a child is a source of happiness and fulfilment for the family and society. It is a process that begins with the conception of the pregnancy and ends with the birth. However, pregnancy is a physiological process that is often accompanied by disorders of varying intensity, requiring special care to ensure the proper growth of the product of conception.

Pregnancy is considered to be physiological if it progresses to term without causing the mother any noticeable alteration in her general state of health or any disorders, while ensuring the proper development of the product of conception. It is considered pathological when it leads to abnormal manifestations in the mother and the foetus, particularly those that result in the death of the foetus in utero [1], the expulsion of which is stillbirth.

Maternal mortality and morbidity affect not only the women in question, but also their children, their families and their communities. In developing countries, the health of newborn babies depends largely on that of their mothers. When a woman dies during childbirth or shortly afterwards, there is a very good chance that her newborn will also die. The death of a woman can also have a considerable impact on the

community through the loss of an important member of community life [2].

Stillbirths are relatively neglected, and are not included in the Sustainable Development Goals (SDGs) for improving maternal health and reducing child mortality. Their seriousness is not appreciated by staff in the same way as maternal, infant and neonatal deaths.

The aim of this work is to contribute to the reduction of maternal, neonatal and stillbirth morbidity and mortality, especially fresh stillbirths, in the Markala district by evaluating the performance of its evacuation referral system. In the hope that the results of this evaluation will lead to greater mobilisation of communities in order to strengthen the effectiveness and efficiency of the system in the context of free caesarean sections.

General Objective:

Evaluate the performance of the evacuation reference system between the CSCoM and the CS Réf in Markala from 1 January 2017 to 31 December 2017.

II. METHOD

We opted for a mixed quantitative and qualitative study.

➤ **Quantitative part:**

We collected data from parturients evacuated to the Markala referral health centre.

➤ **Quantitative part:**

We conducted individual interviews with:

- The technical directors of the community health centres surveyed;
- The Markala health district management team;
- The mayors of the CSCoM municipalities surveyed;
- The head of the solidarity fund management committee at district level;
- The presidents of the CSCoM ASACOs surveyed;
- Husbands or companions of evacuated women;

Leaders of women's groups or associations in the CSCoM surveyed

III. RESULTS

Quantitative part:

Social and demographic characteristics of women evacuees:

- The women evacuated were aged between 15 and 49. Young mothers, i.e. those under the age of 20, accounted for around 40% of the women in our sample.
- The 15-19 age group is the most numerous (early pregnancies);
- There is a drop in the 20-24 age group;
- An increase between the ages of 20-24 and 25-29;
- The situation is almost the same between 30-34 and 35-39 year olds;
- Virtually no evacuation after the age of 40 (late pregnancies).

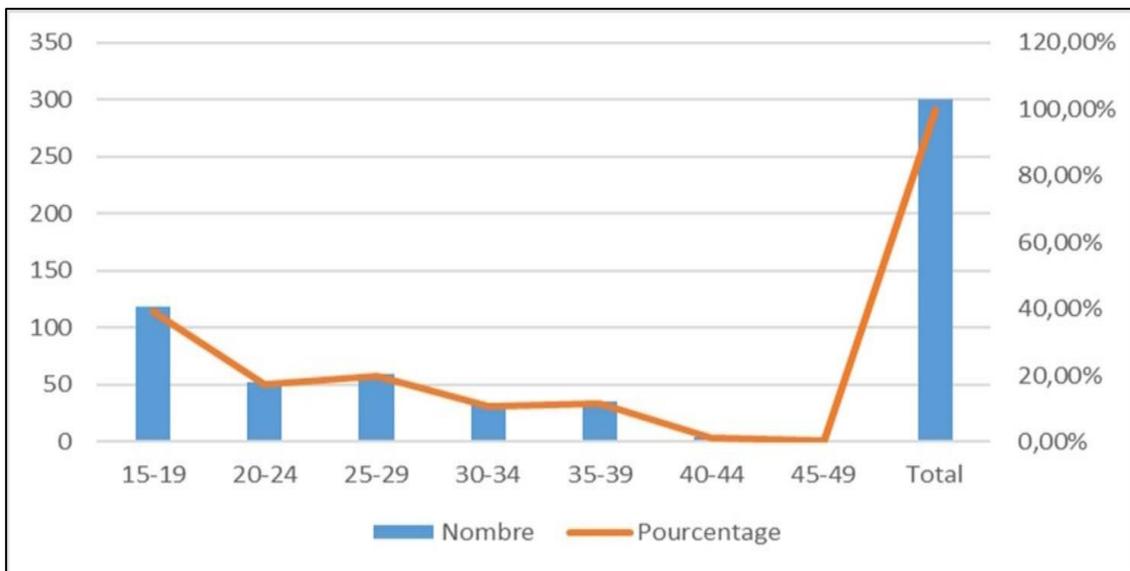


Figure 1: The age distribution of women evacuated to CS Réf in Markala in 2017

The socio-cultural and even economic context may explain this state of affairs. Early marriage is a reality in some areas of the Markala health district.

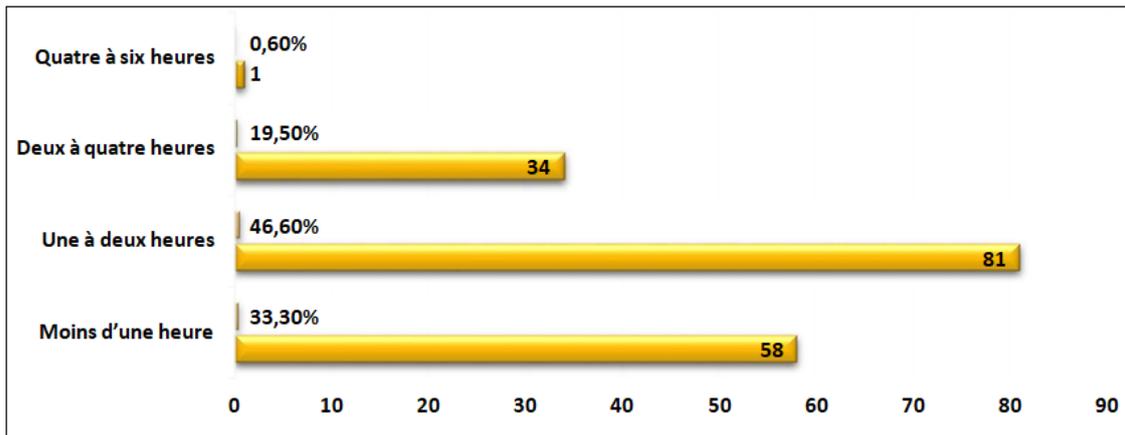


Figure 2: Distribution of women according to the length of time they were evacuated from the CSCOM to the CS Réf in Markala in 2021
 Source: SISL du District de Markala 2021

The evacuation of the majority of parturients (66.70%) took more than an hour. This time may seem

reasonable given the state of the roads, especially at certain times of the year.

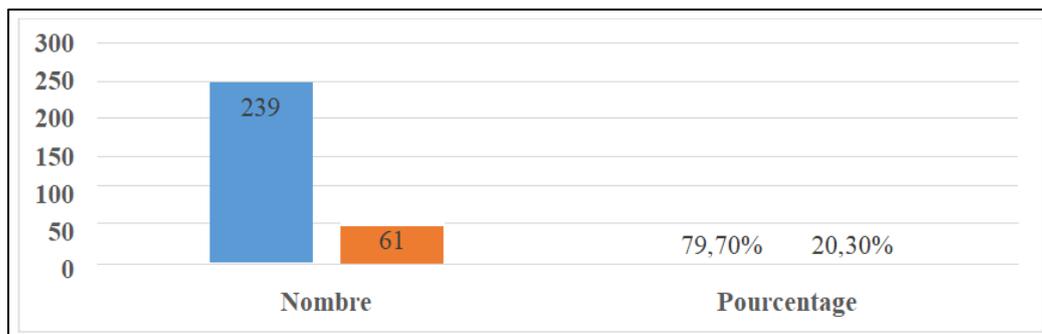


Figure 3: Breakdown of Parturients Evacuated to CS Ref in 2017 according to Means of Transport
 Source: Markala District SISL 2021.

Around 80% of the women evacuated to CS Réf in Markala were transported by ambulance and 20% by transport vehicles, personal vehicles and motorbikes.

These results show a certain dysfunction in the referral-evacuation system, as all obstetric evacuations should be carried out by the CSRéf ambulance.

The means of personal transport used are not suitable for transporting obstetric cases.

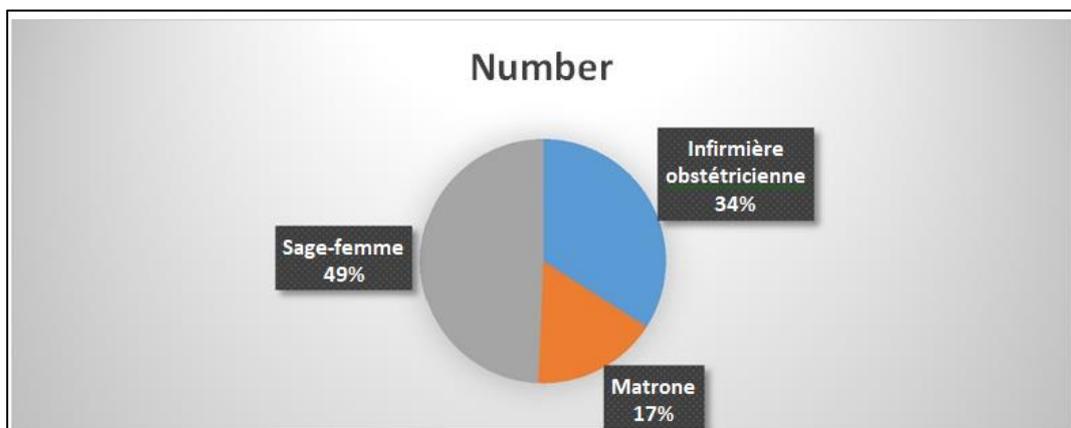


Figure 4: The Distribution of Agents on Board the Ambulance during Evacuation of Parturients According to Their Qualifications
 Source: Markala District SISL 2021

Midwives accompanied about half of the women evacuated to CS Réf in Markala in 2021. Matrons, on the other hand, accompanied around 17% of the women evacuated.

Resources needed to operate the reference system - evacuation

Contribution from Various Players (Financial Resources)

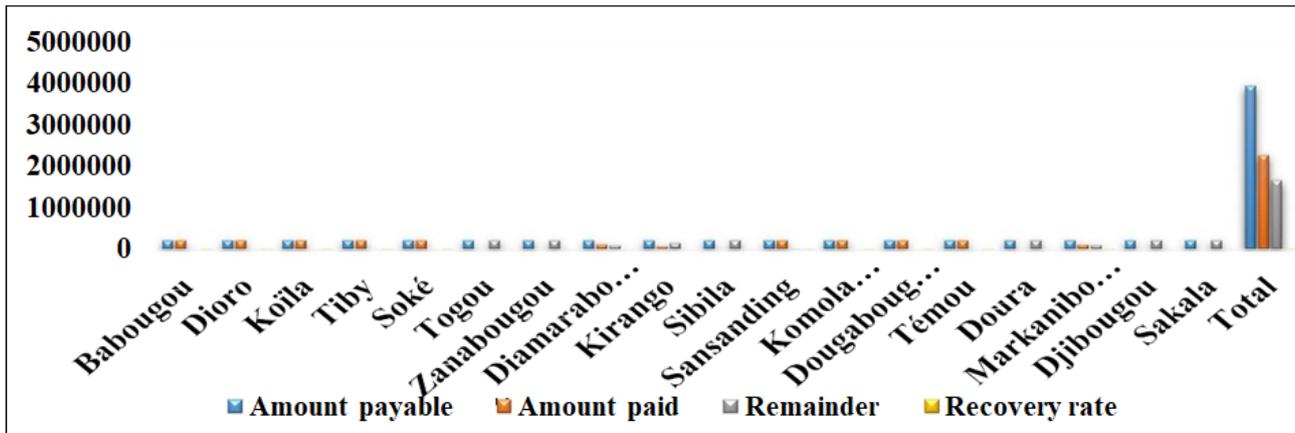


Figure 5: Breakdown of contributions by ASACO to the Markala health district evacuation reference solidarity fund in 20 21
Source: Markala District SISL 2021

Asaco's contribution to the solidarity fund for the evacuation reference amounted to 2,285,000 CFA francs at 31 December 2021, representing 57.70% of the collection rate.

State of health of evacuated mothers referred to CS Réf in Markala:

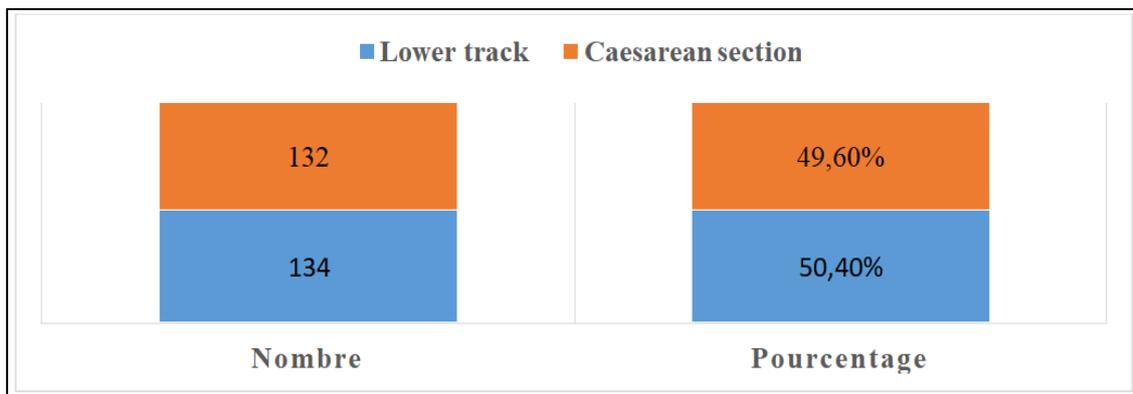


Figure 6: Summary of Delivery Routes for Women Evacuated to CS Ref in Markala 2017
Source: Markala District SISL 2021

Table 2: Breakdown of Women by Outcome at CS Ref in Markala in 2021 at the End of the Process

Parent state	Number	Percentage
Deceased	2	0,70%
Alive	292	99,30%
Total	294	100,00%

Source: Markala District SISL 2017

The CS Réf maternity unit in Markala recorded two (2) maternal deaths in 2021.

IV. ANALYSIS AND DISCUSSION

Discussions centred on the following points:

- Achieving the objectives of the study,
- The quality and validity of results;
- Comparison of results with other studies.

6.1. Quality and validity of results:

This section deals mainly with the study framework and sampling. This evaluation was carried out in the Markala health district, one of the three districts covered by the PRSSD in the Ségou region. This district was chosen for two main reasons.

Firstly, the desire to move away from the routine monitoring of solidarity funds and turn the evaluation of evacuation reference systems in the health

districts covered by the PRSSD into genuine action/operational research.

Secondly, the Markala health district was the only one to include this activity in its 2021 operational programme, so we had to take all the necessary steps to ensure that this first event was a success. To this end, steps were taken to minimise information and selection bias.

These include:

- The combination of two sampling methods: random and non-random;
- The size of the sufficiently large sample of women evacuated to CS Réf in Markala in 2021 ;
- The measures taken to ensure that we take the necessary time to clearly explain the purpose and objectives of the survey to respondents in order to obtain their informed consent are only verbal.

• Comparison of results:

Socio-demographic characteristics of women evacuees:

In our study, the average age of the women was 25, with extremes ranging from 15 to 46. The most common age group was 15 to 19.

GOITAB [10], in his study on the evaluation of the evacuation referral system in Macina, found that the average age of women was 26, with extremes of 14 and 45. DIALLO L [11], in his study on the evaluation of the reference/evacuation system in the Baroueli district, found the same trend, with an average age of 24, with extremes of 14 and 48. These results show that certain socio-cultural realities do not vary fundamentally from one region of Mali to another. The main one is early marriage, which leads to early pregnancy.

6.2.2. Operating mechanism (system organisation):

In the evacuation referral system, the mechanism put in place for transporting parturients supported by the solidarity fund is an important determinant of the system's effectiveness. THIAM O [12], in his study on the problem of parturients evacuated from rural Senegal, found that 69% of patients were evacuated by ambulance, 28.9% by their own means and 1.4% by public transport. In our study, approximately 80% of women evacuated to CS Réf in Markala were transported by ambulance and 20% by their own means. Admittedly, there is no great difference between the proportions evacuated by different means of transport, but in our study public transport was not used by parturients. These results show a certain dysfunction in the two systems for evacuating obstetric emergencies, as the ambulance remains the ideal means of transport. THERA T [15], in her study, found that only 15.40% of patients were accompanied by a health worker in the ambulance. In

our study, all the women evacuated by ambulance were accompanied by a health worker. Not all the staff were qualified, as matrons accompanied around 17% of the cases. These figures confirm the dysfunction in the transport of evacuees independently of the countries in the sub-region because nowadays any evacuation of obstetric emergencies must be accompanied by qualified personnel. DIALLO L [11], in his study on the evaluation of the referral/evacuation system in the Baroueli district, found that 45.97% of women were evacuated to the CS Réf in less than an hour. In the present study, the majority of parturients (46.60%) were evacuated in over an hour. The state of the rural tracks could explain this difference, especially at certain times of the year.

MAÏGA A [13]. In her study, she states that there is no organisation in place to transport women to health centres in the event of childbirth difficulties. Families pay for transport from the village to the health centre or hospital. Our study found more or less the same situation, with the exception of the CSCom CS Réf circuit, which is organised and supported by the solidarity fund. These observations could be explained by the years in which the two (2) studies were carried out. The present study covers the year 2021, while the MAÏGA study was carried out in 2007, at which time the reference circuit was not yet well organised in the sub-region.

Resources required to operate the system (human, material):

In our study, the maternity unit at CS Réf in Markala had qualified staff to care for women referred for evacuation. The team consisted of a gynaecologist, two (2) doctors with surgical skills, four (7) midwives and five (3) obstetric nurses. In addition, qualified technical staff in peripheral facilities represent 61.76% of the workforce. MAÏGAA [13], in his study, found that the health centres had qualified staff meeting the standards for on-call duty, but 55% of the staff in the peripheral health facilities were orderlies, i.e. unqualified staff. The difference in staff qualifications in the two (2) studies could be explained by two reasons. Firstly, the time elapsed between the two studies: MAÏGA's study was carried out in 2007 in Benin and ours in 2021 in Mali. During this time, many things have changed in the socio-health field in Benin. Secondly, in Mali, major efforts have been made by all the players to provide qualified staff for the social and health structures, particularly the CSComs.

For example, all the CSCom in the Markala health district are currently staffed by qualified personnel. In the two (2) evaluations, it emerged that the minimum material and equipment exist to ensure the management of obstetric emergencies.

Contribution from various players (financial resources):

GOITA B [10], in his study on the evaluation of the Macina evacuation reference, reports that 54% of the ASACOs are not up to date with payment of their share of the solidarity fund, and 79% of the town councils. In our assessment, the ASACOs' contribution to the solidarity fund for the evacuation reference amounted to 2,285,000 CFA francs on 31 December 2021, i.e. 57.70% of the recovery rate, and that of the town councils on the same date amounted to 6,400,000 CFA francs, i.e. 26.45% of the recovery rate. These figures clearly show that financing the solidarity fund for evacuation referrals is a problem in the two health districts. It is true that the town halls have contributed less to the fund in the two districts, but the collection rate of the ASACOs is not as high as they would like. This situation calls for urgent action if we want to ensure the sustainability of the evacuation referral system in the Markala health district.

The state of health of mothers evacuated to CS Réf in Markala:

DIALLOM L [11], in his study, reported that postoperative complications were observed in 7.92% of cases. In the present study, the cases of post caesarean complications recorded at the CS Réf in Markala were 5.40%. In the two (2) studies, the proportion of postoperative complications remained reasonable given the socio-economic environment of the health districts. These figures indicate a certain quality in the management of obstetric emergencies.

THIAMO [12], in his study reports 8 cases of maternal death, i.e. 2% of women evacuated. In our study, the maternity unit of the CS Réf in Markala recorded two (2) maternal deaths in 2016, i.e. 0.7% of women evacuated. Admittedly, "one maternal death is too many" but in the current socio-economic situation of the Markala health district this rate is acceptable and confirms the quality of obstetric emergency care. One of the key factors in this quality of care is the availability of qualified staff in the maternity unit, including a gynaecologist, two (2) doctors with surgical skills, midwives and obstetric nurses in sufficient numbers.

Health status of newborns born to mothers evacuated from the Markala district in 2020

DIALLOM L [11], in his study, found that at the end of referral/evacuation, live babies represented 77.66% and stillbirths born fresh and macerated represented a significant proportion, i.e. 10.93%. In the present study, the proportion of stillbirths was 18.90%. In addition, the proportion of fresh stillbirths was worryingly high at 83.70%. Although stillbirths were high in both studies, they were even more worrying in the present study, with a worrying proportion of fresh stillbirths. These figures corroborate certain indicators of the evacuation process, in particular the length of

time taken to transport women from the CSCom to the CS Réf. 45.97% of women in the Baroueli district were evacuated to the CS Réf in less than an hour, while 46.60% of women in Markala were evacuated in more than an hour.

These times may be relatively reasonable given the state of the rural tracks in these two (2) districts, but combined with other levels of delay, they can be fatal for the foetus.

MAÏGAA [13], in her study, reports a proportion of 21.4% of stillbirths among women seen for an obstetric emergency at the Klouekanme-Toviklin-Lalo area hospital (Benin). The high stillbirth rate seems to be linked to the socio-economic status of developing countries, especially those south of the Sahara.

Performance level of the Markala evacuation reference system in 2021:

MAGUIRAGA F [14], in his evaluation of the performance of the referral and counter-referral system for obstetric emergencies in the Djidja-Abomey-Agbangnizoun health zone, taking into account his evaluation criteria, the referral and counter-referral system for obstetric emergencies in the DAA health zone had a score of 110 out of 186, i.e. 59.1%, which corresponds to a poor level of performance. In the present study, the score obtained was 136 points out of a possible 226, corresponding to 61.18% of the points. In the light of our assessment criteria, the evacuation reference system in the Markala health district was judged not to be performing well. In fact, the scores obtained in the two evaluations should lead to the same conclusion if the performance assessment scores were identical.

Conclusion: To improve the performance of this system, we have made the following recommendations.

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