

# Sanitary Evacuations at the Maternity Unit of the Social Hygiene Institute (IHS) in Dakar in 2020

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## Abstract

**Objective:** Determine the frequency of evacuations, specify the epidemiological and clinical characteristics of the evacuees, evaluate the data of the evacuation, the management and the maternal-fetal prognosis. **Methods:** Prospective and descriptive retrospective study concerning obstetrical evacuations received at the maternity ward of the Hospital of the Institute of Social Hygiene in Dakar between January 1 and December 31, 2020, *i.e.* a period of 12 months. **Results:** During the study period, we collected 1156 evacuees out of a total of 3507 patients treated in the Service, *i.e.* a frequency of 33%. The average age of the patients was 27.07 years with extremes of 14 and 46 years. Patients aged between 20 and 29 were the most represented (51.73%). The average parity was 1.6 with extremes of 0 and 10 pares. The nulliparous (46.37%) were the majority. The majority of evacuated patients (99.6%) resided in the Dakar region, including 58% in the suburbs and 42% in the city center. The patients received had performed an average of 3 prenatal consultations with extremes ranging from 0 to 9 CPN. They most often came from health centers (55.05%) or hospitals (29.09%). The reasons for evacuations were dominated by dystocia (21.54%) followed by premature rupture of membranes (17.21%) and premature deliveries (16.35%). On admission, only 176 patients (15.2%) had an evacuation sheet. Patients transited on average through two health structures (extremes ranging from 0 to 7 structures) before reaching the reception structure. The evacuation was most often done with a private vehicle on the patient's own means (91.96%). The outcome of the evacuees was most often vaginal delivery or hospitalization (72.79%). The majority of patients (99.4%) had evolved favorably but we deplore one maternal death (0.09%) linked to a late puerperal infection. We recorded 74 perinatal deaths and 1041 live births, *i.e.* a stillbirth rate of 71.1‰ live births. The causes of death were dominated by prematurity (24.7%). **Conclusion:**

Obstetrical evacuations are frequent in our practice but they should be better organized to improve the maternal-fetal prognosis.

## Keywords

Obstetrical Evacuations, Institute of Social Hygiene, Maternal-Fetal Prognosis

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## 1. Introduction

In Senegal, the maternal mortality ratio is estimated at 315 deaths per 100,000 live births in 2015. This ratio decreased by approximately 40% between 1990 and 2015 in Senegal. However, efforts are still needed for the Sustainable Development Goals, particularly in terms of the availability of emergency obstetric and neonatal care centres. This would allow a better organization of the Referral/Evacuation system. Indeed, in our developing countries, parturients encounter many difficulties when they have to be evacuated to a Maternity Hospital adapted to their level of risk. They make a real obstacle course before finding a reception structure. This observation led us to carry out this study whose objectives are to determine the frequency of evacuations, to specify the epidemiological and clinical characteristics of the evacuees, to evaluate the data of the evacuation, the care and the maternal-fetal prognosis.

## 2. Patients and Methods

### Type of study

This was a descriptive and analytical retrospective study on obstetrical evacuations at the level of the Gynecology-Obstetrics Department of the Hospital Institute of Social Hygiene (IHS) in Dakar over the period from January 1 to December 31, 2020.

### Patient selection criteria

We included all patients evacuated to the IHS in Dakar during the study period and whose records were usable.

### Data collection and analysis

Data collection was made from patient files and birth, abortion and hospitalization registers. The data were analyzed by the EPI info version 3.5 software. The parameters studied were the socio-demographic characteristics of the patients, the gynecological and obstetrical history, the characteristics of the evacuation (reasons for evacuation, means of transport, number of transit structures), management and prognosis.

## 3. Results

### 3.1. Frequency

During the study period, we collected 1156 evacuees out of a total of 3507.

Patients treated in the Service, *i.e.* a frequency of 33%.

### 3.2. Socio-Demographic and Clinical Characteristics of Patients

The average age of the patients was 27.07 years with extremes of 14 and 46 years.

Patients aged between 20 and 29 were the most represented (51.73%). The average parity was 1.6 with extremes of 0 and 10 pares. The nulliparous (46.37%) were the majority. The majority of evacuated patients (99.6%) resided in the Dakar region, including 58% in the suburbs and 42% in the city center. Pregnancy was most often at term (63.54%) (Figure 1). The majority of patients (83%) were in labor.

### 3.3. Prenatal Follow-Up

The patients received had performed an average of 3 prenatal consultations with extremes ranging from 0 to 9 CPN. The majority of pregnant women were followed by a midwife (98.46%), most often in a health center (60.6%) or a health post (34.9%).

### 3.4. Evacuation Data

#### Reasons for evacuation

The reasons for evacuations were dominated by dystocia (21.54%) followed by premature rupture of membranes (17.21%) and premature deliveries (16.35%) (Table 1).

#### Level of the original structure

Patients came to us most often from health centers (55.05%) or hospitals (29.09%) (Figure 2).

The evacuation decision-making time was specified in 92 patients (8.21%) with average of 11.4 minutes and extremes of 0 and 259. On admission, only 176 patients (15.2%) were provided with an evacuation sheet. The service provider who provided evacuation was most often a midwife (96.6%). Patients transited on average through two health structures (extremes ranging from 0 to 7 structures) before reaching the reception structure. The evacuation was most often done with a private vehicle on the patient's own means (91.96%). Only 87 patients (7.53%) were evacuated by an ambulance (Figure 3).

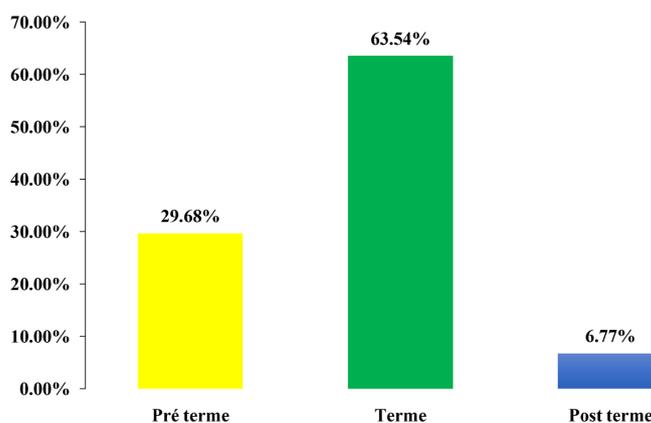
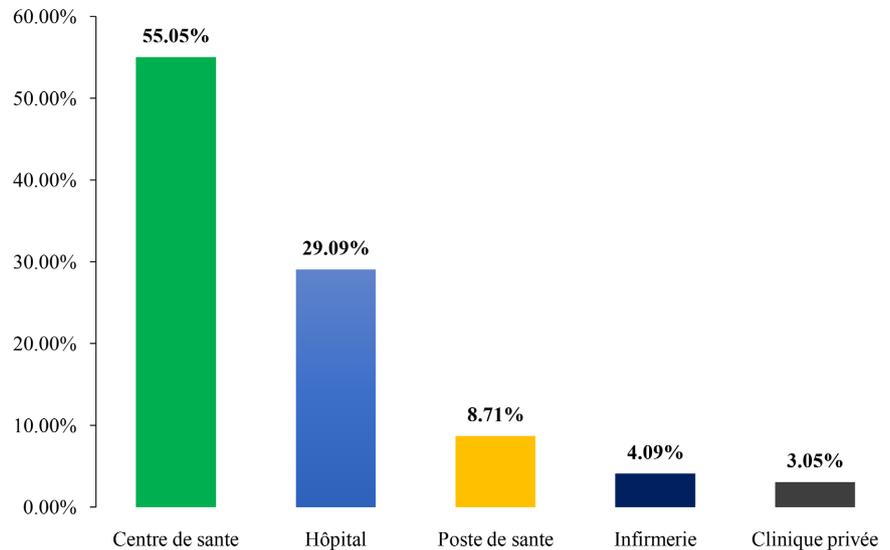


Figure 1. Distribution of patients according to gestational age.



**Figure 2.** Distribution of patients according to the structures of origin.

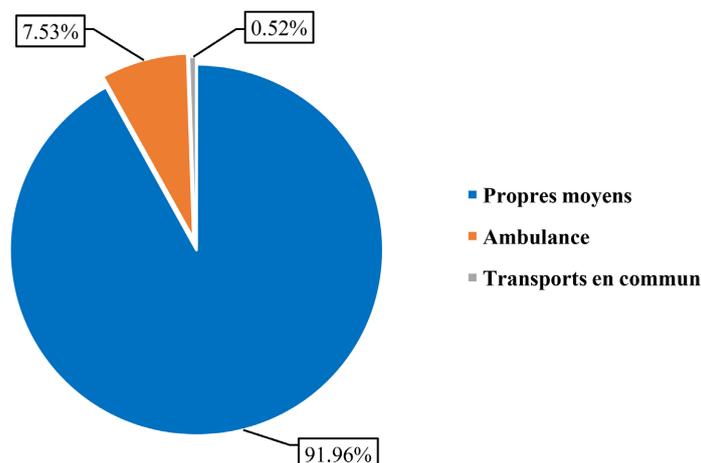
**Table 1.** Distribution of patients according to reasons for evacuation.

Reasons for evacuation	Number	Frequency (%)
Mechanical or dynamic dystocia	251	21.7
Premature rupture of membranes	199	17.2
Premature delivery	189	16.3
Hypertension and complications	145	12.5
Fundal uterine height excessive	86	7.4
Exceeded term	75	6.5
Ectopic pregnancy	21	1.8
Acute non-reassuring fetal status	14	1.2
Anemia and pregnancy	10	0.9
Abortion	10	0.9
Lack of space	64	5.5
Other	92	7.9
<b>Total</b>	<b>1156</b>	<b>100</b>

### Support data in the reception structure

In our study, the fate of the evacuees was as follows:

- 842 cases of vaginal delivery or hospitalization of a pathological pregnancy (72.79%),
- 275 emergency cesareans (23.83%),
- 6 planned caesareans (0.5%),
- 23 cases of laparotomy for GEU or uterine rupture (1.99%),
- 9 cases of medical treatment of an abortion with misoprostol (0.8%),
- and a valve examination in a single patient (0.08%) (**Table 2**).



**Figure 3.** Distribution of patients according to the means of transport used for medical evacuation.

**Table 2.** Distribution according to the future of patients evacuated (N = 74).

Causes of perinatal deaths	Number	Frequency (%)
Vaginal delivery and hospitalization	842	72.79
Emergency cesarean section	275	23.83
Planned cesarean section	6	0.5
Laparotomy for extra uterine pregnancy and uterine rupture	23	1.99
Medical treatment of abortion	9	0.8
Examination under valves	6	0.08
<b>Total</b>	<b>1155</b>	<b>100</b>

### Prognostic data

#### Maternal prognosis

The average length of hospitalization was 2.3 days with extremes of 0 and 40 days. The majority of patients (99.4%) had evolved favorably and five patients (0.48%) were transferred to another department for more appropriate care. We recorded one maternal death (0.09%) related to late puerperal infection.

#### Fetal prognosis

In our study, we recorded 74 perinatal deaths and 1041 live births, *i.e.* a still-birth rate of 71.1% live births. The causes of death were dominated by prematurity (24.7%) followed by pregnancy-induced hypertension or preeclampsia (21%) and perinatal asphyxia (19.8%) (Table 3).

## 4. Discussion

### 1) Epidemiology

In our study, the frequency of evacuees was 33% and most of them came from health centers (55.05%) or hospitals (29.09%). This proves that our structure is a

**Table 3.** Distribution of patients according to causes of perinatal death (N = 74).

Causes of perinatal deaths	Number	Frequency (%)
Prematurity	20	24.70
Pregnancy hypertension and preeclampsia	17	20.98
Perinatal asphyxia	16	19.76
Retroplacental hematoma	9	11.11
Maternal pathology	6	7.40
Fetal malformation	6	7.40
<b>Total</b>	<b>74</b>	<b>100</b>

reference center in Dakar where serious pathologies of pregnancy and childbirth are taken care of. The average age of the patients (27.07 years) does not differ from those recorded in the literature. Indeed, Sylla in Saint Louis [1] and Maiga [2] in Mali found an average age of 26.83 and 26.17 years respectively. In our pronatalist societies, with early marriage, the age of parturients is relatively low, unlike in industrialized countries where marriage is often late and the age at first childbirth high. In our series, nulliparas were the majority (46.37%). Belinga [3] in Cameroon reported 40.5% of nulliparas. This predominance of nulliparas among evacuees is explained by the complications of pregnancy and childbirth, which are more frequent among them, justifying the need to carry out prenatal monitoring and childbirth in a surgical maternity unit. Indeed, the reasons for evacuations were dominated by dystocia (21.54%), followed by premature rupture of membranes (17.21%) and premature delivery (16.35%).

### 2) Clinical data

Nearly two thirds of the patients evacuated (63.54%) were pregnant. We recorded 29.68% of preterm deliveries and 6.77% of term overruns. These results are similar to the data found by Ciss [4] with 62.5% full-term pregnancies. The significant frequency of premature births recorded in our series is explained by the presence of a Neonatology Service in our structure, often justifying in utero transfers to the IHS for severe maternal or fetal pathologies.

### 3) Evacuation data

The reasons for evacuation were mainly dominated by dynamic and/or mechanical dystocia (21.54%) and premature rupture of the membranes (17.21%). Sylla [1] made the same observation with a predominance of dystocia (29.76%). Diallo [5] had found a higher frequency of bleeding. These situations, which often require a cesarean delivery or an artificial induction of labor, justify the evacuation of parturients and pregnant women to Maternities like ours where the technical platform is adapted to the level of risk. In our study, 15.22% of evacuations were made with a liaison form. This rate is lower than those found by Diarra [6] and Coulibaly [7], which were 19.09% and 29% respectively. This document is very important because it guides the staff of the reception center

and thus makes it possible to reduce the waiting times. Before being admitted to the Service, 21.83% of patients had gone through a structure and 3.69% of them through at least 3 health structures. This shows the major shortcomings in our referral-recourse system, which does not always obey the architecture of the health pyramid but rather the availability of hospital beds. We have indeed received 29.09% of patients from hospitals of the same level as ours or of a higher level. Transportation was most often done by a private vehicle (91.96%) at the patient's own expense. This is due to the fact that in our hospitals there is most often only one ambulance for the different services. As the latter is often occupied, evacuations are done by taxi or private car, thus exposing the fetus and its mother to major risks of complications. Thiam [8] and Sylla [1] had made the same observation with respectively 29.3% and 41.28% of patients transported by means of a personal vehicle or a taxi.

#### **4) Support at admission**

In our series, the caesarean section rate among evacuees was 24.3%. This result is comparable to that found by Diallo [5] with 25.7% caesareans. This relatively high caesarean section rate among evacuees could be explained by the seriousness of the clinical situations which often justifies a caesarean delivery to save the life of the mother and the newborn, in particular dystocia. The WHO recommends a caesarean section rate of between 5% and 15% of deliveries [9].

#### **5) Maternal prognosis**

In Senegal, maternal deaths often occur among evacuated women whose prenatal monitoring data and history are unknown. Several factors are incriminated, in particular the delay in the decision to evacuate, the poor evacuation conditions and the long delays in diagnosis and care in the reception structure. These are major obstacles to reducing maternal mortality in Senegal and in developing countries [1]. In our series, we recorded one maternal death (0.09%) which was largely inferior to the results found in the studies of Diallo [5], Sylla [1] and Cissé [10] which were respectively 1%, 1.03% and 8.80% of maternal deaths. This low rate of maternal deaths that we have observed is due to the quality of the management of obstetric emergencies which is provided in our structure 24 hours a day, 7 days a week by qualified personnel. Other reasons are mentioned, in particular the availability of an intensive care unit for rapid and diligent management of serious cases.

#### **6) Fetal prognosis**

We recorded a stillbirth rate of 71.1‰ live births, far lower than that found in Thiam's study [8], which was 180‰ live births. These deaths were most often due to prematurity (24.7%), pregnancy-induced hypertension or preeclampsia (21%) and perinatal asphyxia (19.8%). These results are consistent with literature data. In fact, prematurity is the leading cause of neonatal death in our developing countries. Also, vascular-renal syndromes and their complications due to the risk of intrauterine growth retardation and induced prematurity expose the new to death.

## 5. Conclusion

Obstetrical evacuations are frequent at the maternity ward of the Institute of Social Hygiene in Dakar. Despite the often difficult evacuation conditions and the severe pathologies, the maternal and perinatal prognosis is relatively favorable.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

## References

- [1] Sylla, B. (2020) Facteurs pronostiques des évacuations obstétricales au Centre Hospitalier Régional de Saint-Louis (Sénégal). Thèse Med, Université Gaston Berger de Saint-Louis, Sénégal.
- [2] Maiga, I.B. (2019) Les évacuations sanitaires obstétricales reçues au Centre de Santé de Référence de la Commune V du District de Bamako. Thèse Med, Université de Bamako, Mali.
- [3] Belinga, E., Foumane, P., Dohbit, S.J., Um, E.M.N., Kinyeck, D.K. and Mboudou, E.T. (2017) Pronostic des références obstétricales à l'Hôpital Gynéco-Obstétrique et Pédiatrique de Yaoundé (HGOPY). *The Pan African Medical Journal*, **28**.
- [4] Ciss, D. (2010). *Les cas d'« échappées belles » ou « near miss » au Centre de Santé Roi Baudouin de Guédiawaye*. Thèse Med, Université Cheikh Anta Diop de Dakar, Sénégal.
- [5] Moussa, D., Gassama, O., Ndiaye, M., Gueye, M., Diallo, A., Mbodji, A., Diouf, A. and Mbaye, M. (2019) Audit of Obstetric Medical Evacuations at Youssou Mbargane DIOP Hospital in Rufisque, Dakar-Senegal. *Open Journal of Obstetrics and Gynecology*, **9**, 1092-1102.
- [6] Nama, A.J.D., Angbo, O., Koffi, M.N., Koffi, M.K., Ekra, C.W., Yao, T.K. and Diarra Nama, A.J. (1999) Morbidité et mortalité liées aux transferts obstétricaux dans le district sanitaire de Bouaflé en Côte d'Ivoire. *Santé Publique*, **11**, 193-201.
- [7] Coulibaly, A.B. (2004) *La référence / évacuation gynéco-obstétricale au centre de santé de référence de la commune V du district de Bamako*. Thèse Med, Université de Bamako, Mali.
- [8] Cissé, M.L., Dieye, S., Diouf, A.A., Gueye, M., Mbaye, M., Moreau, J.C., Niang, M.M. and Thiam, O. (2015) La problématique des parturientes évacuées en zone rurale sénégalaise: Exemple du centre hospitalier de Ndioum. *Sciences de la santé*, 51-56.
- [9] OMS, UNFPA. (2015) *Recommandations pour la pratique clinique des soins obstétricaux et néonataux d'urgence en Afrique Guide du prestataire*. OMS Bureau Régional de l'Afrique, 12-127.
- [10] Cissé, M., Raad, B., Diouf, A., Wade, F. and Moreau, J.C. (2010) Bilan des évacuations obstétricales à l'hôpital régional de Kolda (Sénégal). *Médecine d'Afrique Noire*, **57**, 37-43.