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## Obstetric fistulas in Mali, Combating maternal and child mortality

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Abstract. At the end of 1993, Médecins du Monde (MdM) launched a project at the regional hospital of Mopti, in Mali, to treat obstetric fistulas. From the outset, the goal of MdM was to treat the maximum number of affected women under the best possible conditions and to train an autonomous surgical team on site. From a project that was essentially surgical in nature at the outset, the program evolved to include the wider, medical and psychosocial care of women suffering from obstetric fistulas, with the introduction in 2008 of psychological counselling for the women arriving at the hospital for treatment. MdM has also developed a community-based prevention and awareness campaign on the subject of obstetric fistulas in the Mopti region.

**Key words.** Mali, Pregnancy, Dystocic delivery, Obstetric fistula, Disability, Exclusion, Reconstructive surgery, Psychological counselling, Community integration, Fistula clinic

#### 1. Definition of obstetric fistula

An obstetric fistula is a perforation of the vaginal wall which results in continuity with the bladder (vesico-vaginal fistula) or the rectum (recto-vaginal fistula) or both (vesico-recto-vaginal fistula). This perforation occurs during childbirth, following a long and dystocic delivery (when the foetus' progression is stopped in the genital channel and its exit through the natural channel is impossible) as a result of necrosis of tissues compressed for too long by fetal mobility. Less often, fistulas can result from the use of forceps, a caesarian section, rape or extreme excision.

The seriousness of the obstetric fistulae is measured by two criteria: the length of time of the fistula and the gravity of the anatomic damages. The fistula causes permanent urinary incontinence, fecal incontinence if the rectum is affected, and secondary vulval ulceration as a result of excreting urine or fecal matter. Secondary amenorrhoea often occurs.

The social consequences of these physical disabilities are serious. The majority of these women give birth to stillborn children. In addition to the suffering caused by sterility, these women are often abandoned by their spouses. They are gradually ostracized, and left isolated, socially excluded and facing difficult economic deprivation. This affective and social isolation leads to severe depressive state and even suicide.

In practice, surgical reconstruction of obstetric fistulas is a complex procedure requiring properly trained surgeons. A number of surgical operations may be necessary. This kind of surgery is not routine surgery, and can only be performed in hospitals with appropriately trained specialists.

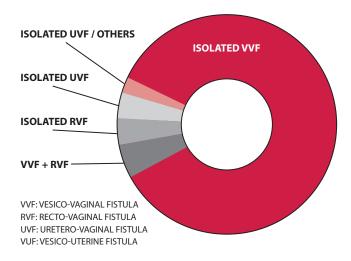


Figure 1. Description of lesions (Médecins du Monde, 2010) Obstetric fistulae (n = 1054).

Doctor Robein, who initiated the MdM project in Mali in 1993, wrote: "As the physical cost of dystocic deliveries left to develop unaided or at the mercy of dangerous manipulations, the tears and necrosis of the tissue walls that result in physical connection between the genital tracts and the urinary system or rectum are famously difficult to treat". He further extended his expertise spending several weeks at the hospital that sets the global benchmark for this area of surgery: The Addis Ababa Fistula Hospital which has performed more than 12,000 fistula operations in 20 years with a 95% success rate. The clinic was founded by an English couple in the

fifties, who have devoted their life to this disease. Nowadays this clinic has a world reputation as for surgical treatment of obstetric fistulas.

### 2. The epidemiological context of obstetric fistulas

Despite the dreadful consequences of dystocic deliveries, the morbidity is poorly understood and the prevalence of obstetric fistulas is unknown. This pathology is particularly hard to measure because the women who suffer from fistulas are ostracized from society. They are rejected since the physical manifestations of this condition, such as the smell and sterility, are viewed as being incurable.

This plight is probably suffered by some 2 million women worldwide, mainly in Africa and Asia, and the WHO estimates that there are likely to be between 50,000 and 100,000 new cases every year. In Mali, a country with a population of 13 million, estimates suggest that there are 1,800 women at risk of obstetric fistulas every year and 1,000 new cases every year. There are only 3 hospitals that are able to perform surgical interventions, with fewer than 10 surgeons trained in this specialty in the country (National Directory of Health data). In 2005, the Mali Ministry of Health decided to develop "The National Strategy for the prevention and treatment of obstetric fistulas in Mali: zero cases of obstetric fistula". This decision is the result of several elements including the WHO universal recommendations, population diagnostic of public health Directory, the launch of our project in Mopti and our advocacy efforts toward the Ministry.

The MdM project in Mali fits within the scope of the WHO "risk-free maternity" framework. This framework aims to reduce maternal morbidity and mortality, which is 50 to 100 higher in developing countries than in OECD countries.

#### 3. The Mali health system

First, a number of key indicators: demographic growth is 2.88%, representing an average of 6.8 children per woman, infant mortality is 191 per 1000, life expectancy is 48.1 years, the combined school enrolment rate is 46.9% and GDP per head of population is USD 1,083 (UNDP and World Bank). Mali is one of the 5 poorest countries in the world.

The health system organizational structure is pyramidal with 4 levels of care are shown in Figure 2.

The Malian health system is organized as follows:

- The first contact is at the community health center level (CSCom) which offers the minimum basic package. There is one CSCom per health area, and each group of health areas forms a health district. Each CSCom is managed by a community health association (Association de santé communautaire or ASACO). The country has 900 CSComs. These centers are staffed by nurses, medical auxiliaries, and matrons.
- The second level of the pyramid is the referral health center (CSRef). There is one CSRef per health district

- and it has a more substantial technical center, operating suite, laboratory and more highly qualified personnel, including doctors and midwives. There are a total of 59 health districts in Mali.
- The third level is made up of public Regional Hospitals. There are 7 of these in the main regional capitals, and each offers all the medical and surgical specialties, high-tech laboratories and medical imaging services. The medical staff includes all standard specialties.
- The top of the pyramid is represented by the 4 main public teaching hospitals, all of which are in Bamako. Two of them are general hospitals and the other two specialize in ophthalmology and odontostomatology. These hospitals are the ultimate level of referral in terms of healthcare, and especially the surgical treatment of obstetric fistulas in their urology departments. These hospitals provide clinical training for medical students. Mali trains some 100 doctors per year.

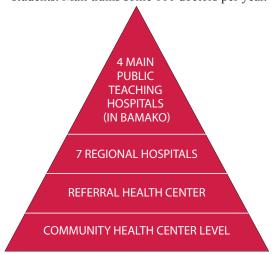


Figure 2. The Malian health system organizational structure (Médecins du Monde, 2010).

Working alongside the public health service, a private health system has gradually been introduced over the past 10 years.

This private system, which operates mainly in the regional capitals, comprises essentially general practice, a few specialists and very few clinics specializing in gynaecology and obstetrics. Very few doctors work in rural communities, despite a French cooperation program that granted subsidies to purchase practice medical equipment and vehicles to allow doctors to travel from village to village.

#### 4. Obstetric care in Mali

Among the 35 healthcare facilities in Mopti, the number of facilities offering obstetric care (giving birth and caesarean intervention) and neonatal care (such as «reanimation» of the new-borns) is simply insufficient. Furthermore, there are not enough frontline health staff in the CSComs, and the few that there are poorly trained and not evenly distributed over the

country.

- This inadequate healthcare offer influences the demand for treatment from the population. Consequently, not enough women give birth in health centers. Although the national delivery rate is 61%, in Bamako the figure is 96%, which falls to just 42% in rural Mali and the Mopti region.
- According to a retrospective study conducted by the Ministry of Health, fistulas generally occur in young women of low socio-economic status, who have not had prenatal consultations during pregnancy, and who have given birth at home.

#### The MdM project to combat obstetric fistulas in Mali

MdM has been established in Mali in the region of Mopti since 1985 in order to develop a large support project for primary healthcare in partnership with the Regional Direction of health. During the implementation of the project covering a population of 500,000 persons, we discovered the importance of this pathology in the rural area and the lack of support at every level. In 1990, only one urology service in Bamako was capable of surgically treating fistulas. Bearing in mind the cultural and socio-economic background of farmers in the bush, it was inconceivable for a woman to go to Bamako. In addition to these materials difficulties, the impairment of the women was considered as a punishment of a fault committed during the pregnancy.

The project began in 1993 in Mopti, the regional capital of the 5<sup>th</sup> region of Mali. The Mopti region was chosen because MdM had been providing a major Primary Healthcare support program there since 1985, which included the restitution of healthcare infrastructures, the retraining of healthcare personnel, the provision of consumables and essential medication, the introduction of a community-based approach and the covering of Bamako Initiative's costs. At the beginning, the project was planned to last five to six years but ended-up lasting until the end of 2013.

On the other hand, there was already a functional regional hospital in Mopti, which was refurbished by MdM in 1989, to act as the referral center for 7 district health centers capable of identifying and referring women suffering from fistulas.

As this project has grown, it has developed four distinct strands; the first and most highly prioritized is the surgical strand, followed by a community awareness strand, a social strand and lastly a psychological strand. At the beginning, the project only dealt with surgical treatment, focusing on surgical reconstruction technics. Many surgeons trained in Abbis-Adeba clinic. With the time but without either national or international recommendation, we realized the importance of both an individual and community psycho-social dimension, which we included to the project.

#### 5.1 The Surgical strand

This is a long story punctuated by many comings and goings: the Malian government required that the project be reconducted every two or three years on the basis of a contract negotiated with the National Health Directorate in Bamako, the head of the urology department at the university hospital of Point G in Bamako and the Regional Health Department in Mopti. At several stages during the negotiations with the authorities, we experienced a certain degree of despondency due to bureaucratic nit-picking which took no account of the urgency or extent of the health issues involved.

- 1993-1994 Implementation of the surgical strand in Mopti, on the basis of a framework agreement signed with the National Health Directorate, which provided for 5 MdM expatriate surgeon secondments per year, with surgeons working for 2 to 3 weeks on each occasion. A resident doctor from the urology department of university hospital of Point G was tasked with welcoming, informing and facilitating the transfer in Mopti of the expatriate teams.
- At the end of the 1<sup>st</sup> year, 250 fistula cases had been diagnosed and 108 operations carried out with a 75% rate of fistula closure.
- 1995-1998 Consolidation of the surgical strand; 300 new cases were diagnosed during this period; 210 operations were carried out with an initial fistula closure rate of 75%, and a secondary closure rate of 95% following a second operation. Even though training Malian doctors was included in the project, it is only on the basis of these successes, the master of these subtle surgical technics and the treatment protocol elaboration, that the surgical team started training them. It is the philosophy of MdM to ensure competences transfer so that local teams turn autonomous and take responsibility for the program once MdM mission is over.
- 1998-2000 Transition phase. A new framework agreement was signed under the terms of which MdM would refurbish and equip the operating suite at the hospital in Mopti, build a bed block to accommodate the women diagnosed with fistulas, spend four years training two Malian surgeons in the surgical techniques involved in treating fistulas, organize an anthropological survey and gather as much epidemiological data as possible with a view to drawing up a summary paper to allow the National Health Directorate to gain a better understanding of the health and social issues involved.
- 2000-2006 Consolidation of the project. Given the problems encountered during the first two years of this phase by the National Health Directorate in allocating 2 young Malian doctors to the hospital at Mopti to be trained in the surgical treatment of fistulas and provide continuity of fistula post-operative care, MdM recruited a Madagascan urology surgeon with many years of

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<sup>1</sup> The Bamako initiative is a Ministry of Health policy based on WHO recommendations. It consists in asking for a financial participation to population in the healthcare, which were banked by health centers.

surgical experience in this field. At the beginning of 2003, a young Malian surgeon was appointed to work at the hospital in Mopti. By the end of 2004, this young surgeon and the hospital's deputy director of surgery were able to look after and treat simple fistula cases presenting no complications.

 2006-2010 - Supervision and on-going training of Malian partners. From 2006 onwards, expatriate surgeons visited twice a year to discuss and share therapeutic indications for the most difficult cases, especially where complex surgery, such as displacement, was under consideration. Between 1993 and 2010, 1,747 procedures were carried out on 1,054 patients suffering from obstetric fistulas. 85.6% of these were straightforward fistulas, and the remaining 14.4% were complex fistulas. The overall surgical closure rate was 84.4%, and the cure rate – i.e. closed fistulas without residual urinary incontinence – was 74.5%. There was a 15.6% failure rate, representing 173 fistulas out of a total of 1,108.

Table 1. Outcomes of vesico-vaginal fistula surgical procedures (Médecins du Monde, 2010)

	CURE (FISTULA CLOSED WITH URINARY CONTINENCE)		RESIDUAL INC (FISTULA CLOSED INCONTIN	WITH URINARY	UNSUCCESSFUL (FISTULA NOT CLOSED)		OVERALL TOTAL	
	NUMBER	%	NUMBER	%	NUMBER	%	NUMBER	%
FVS (simple)	181	82.27	6	2.73	33	15.00	220	13.84
FVC (complex)	385	57.63	62	9.28	221	33.08	668	42.01
FVG (serious)	207	29.49	141	20.9	354	50.43	702	44.15
Total	773	48.62	209	13.14	608	38.24	1590	100

Table 2. Outcomes by type of surgical procedure for obstetric fistulas (Médecins du Monde, 2010)

	LOW PATH		HIGH PATH		MIXED PATH		TOTAL	
	NUMBER	%	NUMBER	%	NUMBER	%	NUMBER	%
FVS (simple)	181	82.27	6	2.73	33	15.00	220	13.84
FVC (complex)	385	57.63	62	9.28	221	33.08	668	42.01
FVG (serious)	207	29.49	141	20.09	354	50.43	702	44.15
Total	773	48.62	209	13.14	608	38.24	1590	100

Table 3. Outcomes of recto-vaginal fistulas (Médecins du Monde, 2010)

	CURE (CLOSED FISTULA)			CESSFUL OT CLOSED)	OVERALL TOTAL	
	NUMBER	%	NUMBER	%		
RVF + VVF	50	86.2	8	13.8	58	
RVF only	40	100.00	0	0.0	40	
Total RVF	90	91.8	8	8.2	98	

The project only took place in the Regional hospital of Mopti with a 150 beds capacity, composed by the following services: internal medicine on infectious diseases and bacteriology, paediatrics, general surgery (with some beds reserved for fistulas patients), gynaecology, operating theatre, a laboratory, radiology capable of realizing intravenous urography, ophthalmology and a dental surgery. The maternity

was outside the hospital. The hospital was generally directed by the Surgeon Medical Officer. After ten years of three weeks training session three time a year, young Malian surgeons were capable to operate simple fistulas. They needed technical assistance for operating complex fistulas, which fortunately represented few cases. Most of the women were originated of Mopti region.

Table 4. Outcomes by surgical intervention techniques (Médecins du Monde, 2010)

	CURE (FISTULA CLOSED WITH URINARY CONTINENCE)		RESIDUAL INCONTINENCE (FISTULA CLOSED WITH URINARY INCONTINENCE)		UNSUCCESSFUL (FISTULA NOT CLOSED)		TOTAL	TOTAL FISTULAS CLOSED	CLOSURE RATE
	NUMBER	%	NUMBER	%	NUMBER	%		NUMBER	%
MARTIUS	220	48.67	40	8.85	192	42.48	452	260	57.52
GRACILIS	5	33.33	4	26.67	6	40.00	15	9	60.00
LAMBEAUX	11	15.28	14	19.44	47	65.28	72	25	34.72
NONE	433	54.53	80	10.08	281	35.39	794	513	64.61
Total	669	50.19	138	10.35	526	36.46	1333	807	60.54

#### 5.2 The community awareness strand

This strand started in 2000. It takes a twofold approach to the issue of prevention: primary prevention based on informing and educating communities about the obstetrical fistula in order to end irrational causes attributed to this condition which lead to the exclusion of women with fistulas; and secondary prevention through screening of fistula cases by the community itself and through changing its attitudes towards women with this condition.

The purpose of this awareness campaign is to demystify the condition and dispel the prejudices that surround it, thereby changing the attitudes and behaviour of village communities. In the initial phase, the awareness-raising method adopted was based on a touring theatre company and radio commercials broadcast in all the local languages, radio being the only way to reach people living in the most remote areas, especially when the river Niger floods. However, it soon became evident that it would be necessary to involve community development technicians (TDCs) in the awareness-raising program. These technicians are public servants from the Social Affairs and Community Development Direction that were paid for this specific program. They travel from village to village providing information and explaining how fistulas occur, thereby demonstrating that they can be avoided and cured. They also inform people that admission to the regional hospital in Mopti is universal and is free of charge. The fact they were closed to population and even originated from it, contributed to their high quality of services.

With the permission of village chiefs, TDCs visit villages and hold meetings designed to involve all villagers. They explain how fistulas occur using a picture box of illustrative cards, explain that the condition has nothing to do with ill fate, witchcraft or divine punishment for infidelity. They then go on to talk about prevention, stressing the importance of prenatal consultations and giving birth in appropriate health facilities staffed by qualified people, retrained matrons, nurses and/or midwives. They also highlight other factors that can cause obstetric fistulas, such as adolescent marriages, early-age first pregnancies and sexual mutilation. The talk concludes with information about the

possibility of curing fistulas by going to the hospital in Mopti, where specialist surgeons cure 75% of cases. MdM pays for all the transportation costs involved in going to and from the hospital. The public health system nowadays does not take in charge these transportation costs. The surgical treatment is completely free of charge, and a member of the family may accompany the woman throughout her hospital stay.

Between 2008 and 2010, more than 400 villages were reached by the awareness campaign, and some 20,000 people took part in the talks, though this represents just 18% of the population to be covered. The TDCs experienced difficulties in some Wahabi villages (fundamentalist Muslims) and as a result were unable to organize talks with the women. Other issues included the fact that some villages were inaccessible during the rainy season, at harvest time the women were working in the fields, and there were major language problems in the Dogon area, where there are 60 different dialects.

The higher number of women visiting the hospital in Mopti for consultation at an earlier stage of the condition proves that the information has been well circulated. Most of those women are accompanied by their husbands throughout the full treatment period. Some women are even from those villages where there were no talks or theatre performances. This is due to word of mouth between women at the big weekly markets.

#### 5.3 The social strand

This strand did not originally form part of the project, but given the length of post-operative hospitalization causing bed blocking, the decision was made to create an Accommodation Center adjoining the hospital. This center was built and is managed by the French social organization Delta Survie, directed by an expatriate and run by a local staff. The average length of stay is 4 to 6 weeks, food aid is provided either by Delta Survie or by MdM, and friends and family of patients are also permitted to stay in the center.

To help the women regain their self-confidence and build a future, training in income-generating activities has been introduced, including hairdressing, sewing, pottery, weaving

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and cooking, as well as literacy courses. Despite multiple procedures, 10 to 15% women are not cured. Therefore, they spend several months in the center until they are socially self-sufficient.

#### 5.4 The psychological care strand

An evaluation of the program in 2006 concluded that surgical intervention alone was not sufficient because some women suffered severe psychological distress as a result of their condition and being rejected by their community. The decision was therefore made to introduce psychological counselling for fistula patients, because it is the overall package of surgical, social and psychological care that is the determining factor for recovery. This strand aims primarily to de-dramatize the condition and put in place the necessary resources throughout the period of care. Patients are encouraged to express their suffering, are given full explanations of the condition and its treatment, prepared for their return to their home villages and encouraged to adopt medical recommendations. Psychological counselling is very important for those women who have had several operations, but whose fistulas cannot be cured. After ten years of experience, we estimated 15% of failures among surgical interventions. This counselling helps them, especially for those 15%, to live a worthwhile life as they live with their disability. This counselling needs also to include the wider family and carers.

An expatriate psychologist from MdM set up the intervention program, and then recruited a full-time Malian clinical psychologist to implement it. The psychological counselling package includes 5 sessions:

 The first session takes place at the point of hospital admission and covers: marital status, history of the condition, explanation of the surgical procedure, the possibility of further surgical procedures, and open conversation.

- The second session takes place before the surgical procedure either with the doctor or with the psychologist to explain the technical aspects, the pain, the anesthesia and pre- and post-operative care. The psychologist visits the patient on each of the three days following surgery to help her manage her pain and address any fears surrounding the outcome.
- The third session takes place when the patient has moved into the accommodation center, before the urinary catheter is removed, to prepare her for her future depending on the outcome of the operation (once the urinary catheter has been removed)
- The fourth session takes place after the urinary catheter has been removed and it is at this point that the patient finds out whether she is cured or not. If the operation has not been successful, there are a number of further sessions to help the patient overcome her disappointment and prepare her to come to terms with another surgical procedure.
- The fifth session takes place at the point where the patient leaves the Center. The patient is reminded of the medical recommendations regarding sexual activity, hygiene, pregnancy and childbirth. The patient's carers are also the focus for particular attention, because they can play an important role as mediators in their villages and be there to back up the woman's testimony on their hospital stay.

Psychological counselling has allowed women to regain their enjoyment of life and to feel that they have a purpose in their community. And for those who have not been cured, it helps them to manage their condition better by feeling less

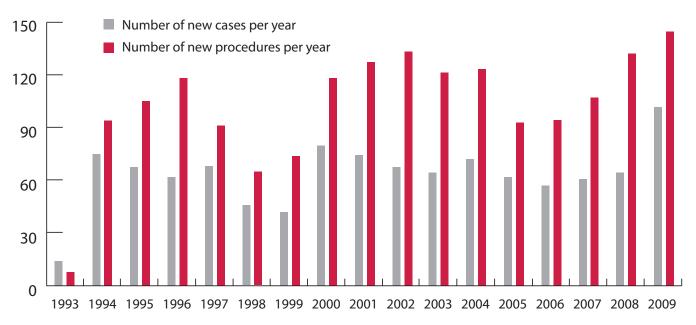


Figure 3. Number of new cases per year and number of surgical procedures per year between 1993 and 2009 (Médecins du Monde, 2010). Note: the project began in 1993, so only a few operations took place that year, because the majority of the patients included in the project were operated on in 1994.

isolated and supporting them in the process of regaining their own body image. It has also had an impact on the patient's environment. Combined with the other three strands, psychological counselling delivers a decisive improvement in the social reintegration of women.

### 6. Conclusions, outlook and general recommendations

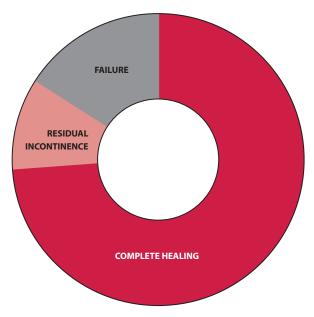


Figure 4. Overall outcomes in the number of patients (n=1,054) (Médecins du Monde, 2010).

Between 1993 and 2009, 1,108 obstetric fistulas were treated surgically. This involved 1,054 patients (some women presented with more than one fistula), and required 1,747 procedures, representing 1.6 procedures per woman on average (because some cases involved a number of successive operations). The results obtained in January 2010 show that 889 obstetric fistulas were closed amongst these 1,054 patients: a closure rate of 84.3%. Of these 889 closed fistulas, 110 of the women treated were left with urinary incontinence (10.4%). Of the 1,054 patients, treatment was unsuccessful in 166 failures (15.7%). Lastly, fistulas were closed and continence restored for 779 of the 1,054 patients: 73.9% cure rate.

We believe that in order to give fistula sufferers assured access to high-quality care, given the presence of surgeons qualified and trained in this specialty in the 7 regional hospitals, that reconstructive surgery of obstetric fistulas should be a widespread and standard practice, offered in association with the specialist urology center at the teaching hospital in Bamako. This type of surgery should form part of weekly operating schedules throughout the year. The success factor of the project is not essential it low cost but a good training quality of the surgeons.

In Mopti, the transfer of surgical skills that has continued throughout the project is now complete, and qualified Malian surgeons are now in place. The transfer from the hospital in Mopti to the new site at Sévaré should further improve patient care in new, suitably adapted premises. If the hospital wishes, MdM could provide 1 or 2 secondments per year to

provide intervention in complex cases as a form on on-going training

"Universal free" treatment of obstetric fistulas is the key condition to ensuring that those women suffering from this condition, who come from the very poorest and most remote communities, can receive treatment. Obstetric fistulas really are a disease of poverty. If this form of treatment is to be established in the long term, Mali health policy must accept that the problem of obstetric fistulas can be greatly alleviated through free care provision, it is therefore important to engage in active lobbying with the Ministry of Health. The cost of the fistula treatment is not expensive as very few surgical materials are required (only a spinal anaesthesia, some surgical tools, urinary catheter, stitches and antibiotics if necessary). It represents on average 70 € per patient.

The importance of the five strands that are prevention, accommodation, psychological counselling, training to incomegenerating activities for the women and reintegration has been amply demonstrated. However, the hospital in Mopti is not in a position to provide these services, because they are not covered by either its mission framework or its resources. A closer partnership with Malian ONGs must be maintained if the continuity of these strands is to be assured. The French social organization Delta Survie has been looking after the social strand for several years now. A partnership is currently being built with a Malian medical organization capable of assuming responsibility for the prevention and psychological counselling strands.

A new health planning phase is in process in Mali for the period 2012-2020. One of the major aspects of the reproductive health policy will focus on encouraging childbirth in basic health facilities under the supervision of qualified personnel (retrained matrons, obstetric nurses, midwives, etc.). Traditional birth attendants will be redeployed to provide support and act as community representatives. The conditions governing referral and transfer to the regional hospital must also be improved. The transportation costs must be covered either by community solidarity funds or by a voluntary national policy funded by the State budget.

The prevention initiatives must be maintained and strengthened using all communication media. Lastly, initiatives must be undertaken in civil society to influence the key determining factors of obstetric fistulas; discouraging adolescent marriages, early-age pregnancies and genital mutilation, at the same time as fighting for the schooling and education of girls.

After 20 years of exercise, this MdM programme in Mali is planned to be closed at the end of 2013. With the current acute crisis, it is hard to predict how Malian government will take on the cover of obstetrical fistulas. Despite the low cost and the organisation in place left by MdM, it is quite doubtful that the administration will have the power and the will to do so.

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