



Urgent Delivery

Maternal Death:
The Avoidable Crisis



Contents

Introduction	4
MSF obstetric programs	5
The critical moment: delivery	7
The causes of maternal death	8
Complications in conflict	9
Ivory Coast	10
Afghanistan	11
Somalia	12
Pregnant on the run, far from home	13
Kenya	14
Republic of Congo	15
Natural disaster: Spotlight on Haiti	16
Fragile health systems	19
Central African Republic	20
South Sudan	21
Democratic Republic of Congo	22
Pakistan	23
When maternal mortality <i>is</i> the emergency	25
Burundi	26
Nigeria	27



Maternal Death: The Avoidable Crisis

Every day, approximately 1000 women die in childbirth or from a pregnancy-related complication.¹ Maternal death can occur at any time in pregnancy, but delivery is by far the most dangerous time for both the mother and the baby. The vast majority of these deaths can be prevented if access to emergency obstetric care is ensured.

Experience shows us that at least 15 percent of all pregnant women worldwide encounter a life-threatening complication. In a conflict or a crisis, pregnant women are even more vulnerable because health services have collapsed, are inadequate or non-existent. But these women need access to quality emergency obstetric care whether they live in a conflict zone, in a refugee camp or under plastic sheeting after a devastating earthquake.

In fact, they need the same help that all pregnant women facing a complication need: access to appropriate medical assistance – skilled medical staff, drugs and equipment – to save their life and the life of their baby.

Médecins Sans Frontières (MSF) makes it a priority to provide life-saving, emergency obstetric care in both acute and chronic humanitarian crises. In the organisation's emergency activities, teams strive to address the five main causes of maternal death: haemorrhage, sepsis, unsafe abortion, hypertensive disorders and obstructed labour.

The provision of emergency obstetric care is at the forefront of MSF's work in sexual and reproductive health. Additional medical care provided to women by MSF includes antenatal and postnatal care, family planning, assistance to sexual violence survivors, fistula treatment, post-abortion care, and prevention of mother-to-child transmission of HIV.

This briefing paper details MSF's approach to delivering quality emergency obstetric care in five different types of crises:

- Conflict
- Population displacement
- Fragile health systems
- Natural disaster
- Maternal mortality emergency

Conflict, epidemics, natural disasters, or the complete breakdown of a country's health system are crises faced by MSF's millions of patients around the world every day.

But a maternal death: that's the avoidable crisis.

¹ Unless stated otherwise, all statistics (except for MSF activities) are sourced from the World Health Organization.

MSF provides obstetric care
in around 30 countries.

In 2010, MSF teams delivered
more than 150,000 babies.

Médecins Sans Frontières
obstetric projects

Afghanistan
Burundi
Central African Republic
Chad
Colombia
Democratic Republic of Congo
Ethiopia
Guinea
Haiti
India
Iraq
Kenya
Liberia
Malawi
Niger
Nigeria
Pakistan
Papua New Guinea
Republic of Congo
Russian Federation
Sierra Leone
Somalia
South Sudan
Sri Lanka
Sudan
Uganda
Yemen

* based on 2010 data – projects with
more than 100 deliveries per year



The critical moment: delivery

A maternal death¹ can occur at any time during pregnancy or up to 42 days after childbirth, but delivery is by far the most dangerous time for both the woman and her baby. The majority of maternal deaths occur just before, during, or just after delivery, often from complications that cannot be predicted. At this critical moment, a woman needs access to quality emergency obstetric care: skilled medical workers who can identify complications, and drugs and equipment necessary to take prompt action to save her life and the life of her baby.

Taking the emergency medical approach: Targeting the five main killers

When launching an emergency response to a crisis, MSF concentrates efforts on medical activity that directly addresses the main causes of maternal death. Over 80 percent of maternal deaths are due to direct

obstetric complications that are either preventable or treatable. The five main killers – haemorrhage, sepsis, unsafe abortion, eclampsia and obstructed labour – account for almost three quarters of all maternal deaths.

In order to have the most immediate impact on reducing maternal death during acute and chronic humanitarian crises, MSF has invested significantly in developing the technical and logistical capacity to provide life-saving emergency obstetric and neonatal care. This care is provided by a skilled attendant, such as a midwife, obstetrician or doctor, who is trained in promptly identifying and managing complications.

MSF provides life-saving care with skilled staff at:

A basic unit – provides appropriate drugs for treating infection, eclampsia and haemorrhage, manual removal of placenta and retained products, instrumental delivery such as vacuum extraction and care for the newborn.

MSF also manages a higher level of care in hospitals, to which women can be referred as required:

A comprehensive unit – provides all of the above as well as surgery such as caesarean sections, safe blood transfusion and care for sick and low birth weight newborns.

¹ A maternal death is the death of a woman while pregnant or within 42 days of childbirth or the termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to (direct) or aggravated by (indirect) the pregnancy or its management, but not from accidental or incidental causes (World Health Organization).



The causes of maternal death

World Health Organization,
World Health Report 2005

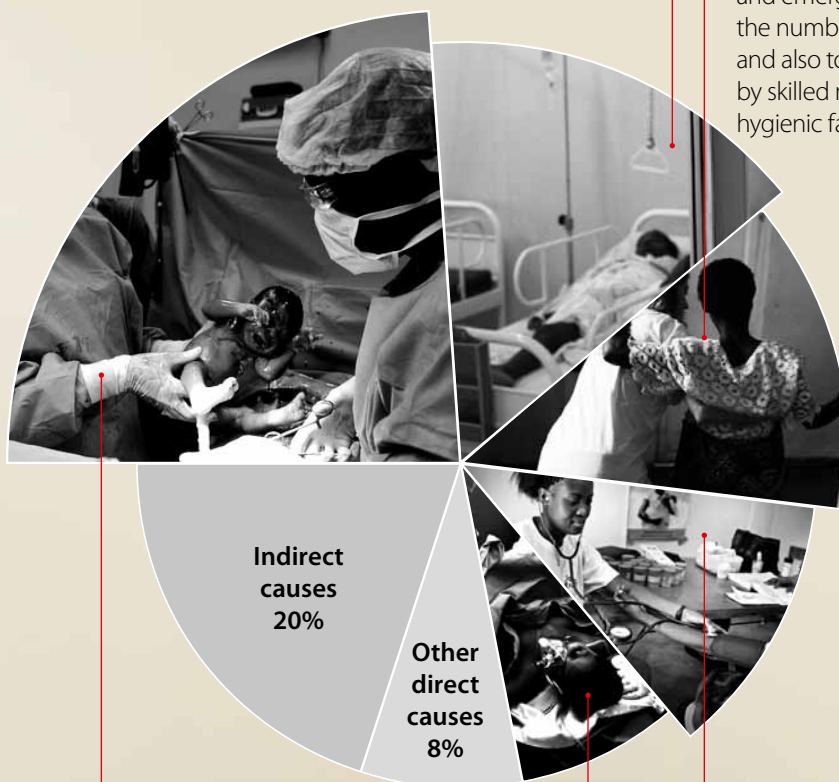
¹ Hussein et al (2011), *A review of health system infection control measures in developing countries: what can be learned to reduce maternal mortality*, *Globalisation and Health*, 7:14.

Sepsis (Infection) 15%

As many as 5.2 million new cases of maternal sepsis occur annually and an estimated 62,000 maternal deaths will result from the condition.¹ In order to prevent infections, it is essential that women deliver in a hygienic environment and if infection does occur, be treated with antibiotics. In addition to the threat to women's lives, the condition is also associated with more than one million neonatal deaths and can also lead to long term consequences for the woman such as infertility.

Unsafe Abortion 13%

Worldwide, nearly half of all induced abortions are performed under unsafe circumstances; 98 percent of these unsafe abortions occur in developing countries. Reducing the number of women dying as a result of an unsafe abortion requires a multi-faceted approach. Appropriate care must be available to all women who present to a health facility experiencing complications (incomplete abortion, sepsis, haemorrhage) following an unsafe abortion. In order to prevent unsafe abortions occurring in the first place, women need access to family planning and emergency contraceptives to reduce the number of unwanted pregnancies, and also to safe abortion care performed by skilled medical workers in safe and hygienic facilities.



Haemorrhage 24%

Haemorrhage (severe bleeding) accounts for approximately a quarter of all maternal deaths and can kill even a healthy woman within two hours. The majority of haemorrhage cases occur immediately after delivery and can be prevented and treated with simple measures. For example, an injection of oxytocin given immediately after childbirth is extremely effective in reducing the risk of postpartum haemorrhage. In some cases, the urgent manual removal of the placenta is required, and some women need a blood transfusion and/or a surgical intervention. Haemorrhage can result in severe anaemia in the longer term.

Obstructed Labour 8%

Obstructed labour can be the result of a woman's pelvis being too narrow for the baby's head to pass through during birth, by the baby being in the wrong position or by inadequate uterine contractions. Without an appropriate medical intervention, a woman may spend a number of days in labour and eventually die of complications of a ruptured uterus. Commonly, the baby is stillborn or dies soon after birth. Skilled medical workers can manage many of these problems before labour becomes obstructed or recognise slow progress and refer a woman for an instrumental delivery or caesarean section. If a woman survives a prolonged obstructed labour, she may be left with an obstetric fistula (see page 26).

Hypertensive Disorders (Pre-Eclampsia/Eclampsia) 12%

Pre-eclampsia is a pregnancy-induced hypertensive disorder occurring during late pregnancy, labour, or after childbirth. The last stage – eclampsia – is characterised by seizures. Mild pre-eclampsia can be monitored during pregnancy but severe pre-eclampsia or eclampsia requires urgent care in a hospital. While blood pressure can be lowered by the use of specific antihypertensive drugs and further seizures can be prevented with magnesium sulphate, the only 'cure' for the condition is the delivery of the baby, which must be done as quickly as possible, either by vaginal delivery or caesarean section.

Complications in conflict

Ivory Coast
Afghanistan
Somalia

Amidst the death and devastation of armed conflict, the cycle of everyday life continues and it is often pregnant women – the indirect victims of a conflict – who fill MSF's emergency rooms. Just like pregnant women anywhere in the world, they need access to quality emergency obstetric care in the event of a complication. But while their needs are ordinary, their circumstances are not.

Secondary level health care is one of the first casualties of armed conflict: health structures are often damaged, destroyed or shut down, supplies of medicines and equipment are cut off, and many skilled medical professionals flee the area to seek refuge. Insecurity also makes it dangerous, if not impossible, for women needing emergency obstetric care to access the health facilities that are still functioning.

Delivering care in these volatile and insecure contexts is inherently difficult and requires a flexible and pragmatic approach. It is not always feasible to provide a comprehensive package of sexual and reproductive healthcare, particularly during the initial phase of an emergency, so MSF focuses on the services that will have the most significant and immediate impact on mortality. Extensive outreach activities may not be possible due to insecurity, so MSF utilises the small opportunities that exist to reach out and let women know about the free maternal health services that are available at MSF facilities. Once the situation has stabilised, it is possible to implement more wide-ranging and far-reaching activities, such as health education, comprehensive postnatal follow up and family planning.



Ivory Coast

When Ivory Coast dissolved into a violent political crisis following the October 2010 national elections, pregnant women in the country's largest city, Abidjan, faced a crisis of their own. Fierce fighting forced the closure of many health facilities and a huge number of health professionals fled the city in search of safety, leaving women in need of emergency obstetric care in a dangerous position.

At the height of the conflict in February 2011, MSF began providing emergency medical care to thousands of wounded patients in a Ministry of Health hospital in Abobo, one of the areas of **Abidjan** most affected by heavy fighting. Confined to the hospital grounds because it was too dangerous to leave, medical staff faced a double emergency: multiple influxes of patients suffering from acute trauma such as bullet and shrapnel wounds; and at the same time, hundreds of women arriving at the hospital doors needing a place to deliver their babies safely. Sometimes overwhelmed by up to 80 deliveries a day, MSF staff went on to assist 1400 deliveries in just 56 days.



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Caroline Seguin, Emergency Coordinator in Abobo hospital, Abidjan

"In Abobo, the population had no access to health services because all the health structures had closed because of the fighting. At the height of the emergency, the scene in the hospital was a mess. The emergency room (ER) was full of wounded patients and we had to treat people outside the ER, on the floor. At the same time, the maternity ward was full of women delivering. The conditions were very difficult because we were short of some essential drugs and there were lots of emergencies at the same time. But the team was really proud to help women give birth in the middle of all the fighting and death.

It was really hard to manage the trauma and obstetric emergencies at the same time. We only had one operating theatre at the beginning and even after we opened another one, it was still not enough. We had to prioritise the cases. Some days we had to deal with seven or eight caesarean sections plus the trauma surgery and dressing changes for the wounded.

The security situation was critical – sometimes the hospital was full of armed men from the military and I had to calm them and ask them to leave the hospital. Sometimes we received bullets inside the hospital coming from the surrounding fighting. When the fighting in Abobo was too tense, it was too dangerous for women to cross the check points and avoid the bullets, so many women could not reach the hospital and they delivered at home. Some women came too late and arrived in a bad condition so unfortunately sometimes we had maternal deaths. But we were the only ones dealing with complicated deliveries so without MSF's services, a lot more women would have died."

**Lenet Kajogi, Medical Focal Point /
acting field coordinator, Ahmad
Shah Baba hospital, Kabul**

“From our hospital, we can reach a big part of the population of Kabul so that women do not have to make long journeys to reach medical care. The fact that all medical care is completely free at our hospital means that we also reach some of the poorest people who can’t afford expensive private clinics, which for many is the only other option in this area. We are trying to reach all women of reproductive age in Ahmad Shah Baba, but as word of the hospital has spread, we are seeing more and more women from the surrounding areas and villages.

In many families it is still not acceptable for women to go to a hospital alone, or at all. Most women still give birth at home in unhealthy conditions, and are not aware of the benefits of going to a hospital to get help from medical professionals. It is also very difficult to convince women [who deliver at the hospital] to come back for postnatal follow up. Out of 500 deliveries, only about ten come back for postnatal care, but it is something we are working on improving through health promotion and talking to our patients.

Busy days can get really busy. We usually perform around 25 deliveries every day and if there are many deliveries at once it can be challenging for the staff. Since opening the project, we have almost doubled the number of deliveries – in 2009 there were 3588, and in 2011 there were more than 6000. We have offered extensive training to the staff here, to the point that Afghan MSF midwives can now supervise the maternity without assistance from international staff.

There is one patient that I will never forget. She was a 25-year old woman who came in just before delivery with severe pre-eclampsia. We were all convinced that she was too ill to make it, but we managed to reduce her blood pressure and performed a vacuum-assisted delivery. After three intense days, she was sitting up with her baby in her arms and chatting. It was really amazing to see, and even more encouraging that she was one of the mothers who later came back for checkups after her delivery.”



Afghanistan

Afghanistan is one of the most dangerous places in the world for a woman to give birth. Decades of conflict continue to take a huge toll on the availability and quality of medical services in the country; the population suffers from a general lack of access to medical treatment, particularly to secondary level health care, including emergency obstetric services. Insecurity means that many women are hesitant to make the long, dangerous and often expensive journey to health facilities offering quality maternal healthcare. The private healthcare sector in Afghanistan is widespread, but it is unaffordable for many Afghans, and the quality of care on offer is questionable. The country also faces a shortage of qualified female staff and the supply of drugs and medical material can be inconsistent.

The tripling of the population of the capital **Kabul** over the last ten years reflects a migratory trend towards urban areas, and includes displaced persons fleeing conflict in more insecure regions in Afghanistan and returnees from refugee camps in Pakistan. In Ahmad Shah Baba, a growing district on the outskirts of eastern Kabul, MSF works alongside existing hospital staff to provide healthcare in all areas of the hospital, including a comprehensive maternal healthcare package that includes antenatal, delivery, emergency obstetric, postnatal and neonatal care.



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Somalia

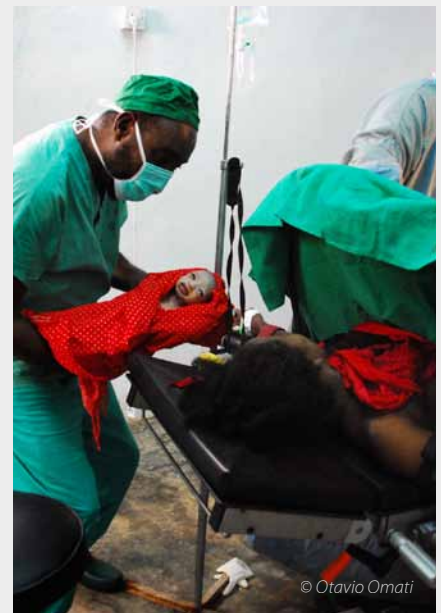
After more than two decades of civil war combined with frequent drought, Somalia maintains its status as one of the world's most intractable humanitarian crises. In addition to this ongoing emergency, every day, a Somali woman must face startling statistics: the country has some of the highest maternal mortality rates in the world at twice the global average and a woman has a one in thirteen lifetime chance of dying as a result of pregnancy or childbirth.

Today, Somalia is one of the most complex places where MSF is delivering assistance. A context of high insecurity prevails throughout most regions, leading to immense challenges in safely and efficiently providing humanitarian aid. Access for international technical support staff is still largely restricted due to the level of security risk and also due to imposed restrictions, so projects are run primarily by Somali staff, supported by teams of specialist staff based in Nairobi who visit the projects when possible. The ongoing conflict has caused health services to crumble, leaving the vast majority of the country without access to basic services. Emergency obstetric services are limited or non-existent in the majority of the country, and it is frequently unsafe for women to travel to access care, leaving those who

suffer complications during pregnancy and labour extremely vulnerable.

One of the regions where MSF is responding to this crisis is Middle Shabelle, in central Somalia. Teams are providing a comprehensive package of maternal healthcare through a network of four health centres, in the rural districts of **Jowhar** and Balcad. Through mobile and fixed clinics, staff also offer general healthcare, treatment for malnutrition and an extended immunisation program. All services are provided free-of-charge.

One of MSF's objectives is to ensure that women do not arrive too late to deliver at the hospital. In 2011, the MSF team registered five maternal deaths of women who delivered in the community but came to Jowhar Hospital too late with complications. In this hospital, 90 kilometres north of Mogadishu, 1834 women delivered their babies, including 291 who underwent complications. Some 126 women delivered by caesarean section.



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Hawa's story

Hawa, a 21 year old woman, had been in labour for three days before she was finally referred to MSF's hospital in Jowhar, 18 kilometres from her village. She was examined by medical staff and diagnosed with obstructed labour due to cephalous-pelvic disproportion with foetal distress. An emergency caesarean section was planned, but consent could not be provided by her husband because he was too young to give it. Therefore Hawa's brother was asked but refused to provide it because he thought the child's life should not take priority over Hawa's. Following advice and counselling from doctors and midwives, the older brother consented and the caesarean section was performed – a distressed baby boy was delivered and needed resuscitation, but fortunately Hawa and her baby survived the entire ordeal.

Pregnant on the run, far from home

Kenya
Republic of Congo

The risks faced by women during pregnancy and childbirth are compounded when they are forced to flee their homes due to violence or instability. Along with children, women are the most vulnerable group amongst a refugee or internally displaced population, and pregnancy amplifies this vulnerability. After days or weeks of walking, pregnant women are often in a weakened state by the time they reach safety. The living conditions that may greet them – lack of access to adequate shelter, nutritious food and clean water, as well as exposure to communicable diseases like cholera and hepatitis A – only intensify the danger. For many women, the place where they have sought

refuge is also affected by insecurity, so accessing the care that does exist involves an often perilous journey.

Assessing and addressing emergency obstetric needs is an integral part of MSF's response in both acute and protracted situations of displacement. Depending on the facilities and services that are already available, MSF may establish a network of health posts throughout a camp or area where people have settled, from where women needing obstetric care can be referred to a hospital, which deals with complications if necessary. To ensure as many women as possible are aware of, and can benefit from the services, proactive communication with community leaders, other health providers and the women themselves, is paramount.





Kenya

Dadaab, Kenya. The world's largest refugee camp. Home to around half a million people, the vast majority of whom have fled conflict or hunger in neighbouring Somalia.

Already in a dire situation, refugees living here are now facing an even bigger crisis. In October 2011, following the kidnapping of two MSF workers and an increase in insecurity, humanitarian aid was scaled back significantly. MSF remained however, running its 300 bed hospital in Dagahaley – one of the five camps that make up the complex – at full capacity. The maternity ward, which offers emergency obstetric care including caesarean sections if necessary, today sees around 350 deliveries per month.

Around 20 percent of the refugees living in **Dadaab** are women of reproductive age. In an average 24-hour period, eight to ten babies are born in MSF's maternity ward. The ward is also supported by a network of four health posts situated throughout Dagahaley, where women can receive antenatal care. Medical staff at the health posts will also immediately refer patients to the maternity ward if they have complications during pregnancy or are suffering any other obstetric problems. In 2010, MSF teams delivered over 2300 babies in the hospital.

Despite the presence of maternity services within Dagahaley, it is estimated that an average of 20–30 women deliver at home each month, leaving them prone to develop complications at a later stage, especially infections. To reduce the number of home births and to encourage women to deliver in the safe, controlled environment of the hospital, MSF is providing a special service called the 'Mama Taxi.' Expectant mothers are given the number of a driver they can call when they are in labour, avoiding them trying to find transportation at night when insecurity in the camp can be heightened, or having to walk too far to get to the hospital.

¹ Female genital mutilation results in a high morbidity (sepsis, bleeding and urinary retention) and has disastrous long term complications. It is on these objective medical grounds that MSF is strictly opposed to its practice and does not supply drugs or equipment for its purpose. MSF of course provides care for girls and women suffering the medical consequences of this practice and makes no related judgment of the practice.

To alleviate the risk of complications during pregnancy for women who have undergone infibulations, it is necessary to unstitch the vaginal opening so that the infant can pass through (disinfibulation). MSF has a policy of refusing to stitch the genital lips back together (reinfibulation) and MSF teams explain to communities the medical reasons for this.

Dr Josiah Oyieke, Maternity Ward Manager, Dagahaley Hospital

"One of the main challenges we face here in the maternity ward is the issue of obtaining consent from patients in emergency situations. Often the women in need of emergency interventions are not in a position to give consent for the required procedure, and need to obtain permission from family members – not just husbands, but other relatives too.

Time that is lost in waiting for consent from the woman's family can be the time between life and death. For example, one woman arrived at the ward in the late stages of pregnancy with bleeding and high blood pressure. She declined a caesarean section and went home despite the baby having already died inside the uterus. Eventually she came back to the ward with severe complications and associated blood clotting. She finally underwent the operation, but so much severe damage to her uterus was caused during the delay that the entire uterus had to be removed and she won't be able to have children again.

Female genital mutilation is almost universal in the population we are treating here, and it is the most extreme type-three form. This can have serious consequences for childbirth, as the passage is too small for delivery and the area needs to be disinfibulated in order to allow the birth to take place. The MSF protocol is to leave the women disinfibulated without refibulating after they have given birth.¹

The best thing about this job, and about MSF, is that the facilities are available to enable me to give mothers the best possible care. I do not need to worry about getting the equipment I need to ensure the highest standard of care. I know MSF will provide it."

Suleiman's story

Suleiman is a patient who gave birth to a baby girl in MSF's maternity ward. She arrived at the hospital with the help of the Mama Taxi service. "The child is now doing well. I felt my labour in the evening and my mother and I have the number of the taxi. We called and he came immediately, after 20 minutes."

Republic of Congo

Republic of Congo is home to some of the highest maternal mortality rates in Africa, with women having a one in 22 lifetime risk of dying due to pregnancy or childbirth.

Added to this is the dynamic of a large population of refugees who began fleeing from neighbouring Democratic Republic of Congo at the end of 2009. Many have settled along the Ubangi River in Likouala Province, and MSF has been working since November 2009 in the town of **Bétou**, providing emergency obstetric healthcare in the 25-bed maternity

unit, alongside other services. As well as working in Bétou hospital, to reach the more remote refugee settlements, mobile MSF medical teams travel up and down the river by boat, providing general consultations and antenatal care. Congolese nurses in the five health centres from where MSF runs these mobile clinics are also trained to attend to normal deliveries, and to monitor basic elements in pregnancies and labour so abnormalities can be diagnosed quickly and referred to the hospital.

In 2011, MSF performed 12,472 antenatal consultations, 2642 deliveries and 207 caesarean sections. There were no maternal deaths in Bétou hospital.



Natural Disaster: Spotlight on Haiti

“The one shining light in all this physical and emotional suffering is the birth of healthy little babies. Eight healthy little new ones arrived today under the blue tarp of our hospital. We all need them to breathe new life and hope into this torn country.”

21 January 2010,
Isabelle Jeanson, MSF Communications Officer



The massive earthquake that devastated Haiti on 12 January 2010 killed approximately 200,000 people and left one million homeless. The disaster led to MSF launching what would become the organisation's largest emergency response in its 40 year history. Images of makeshift medical facilities being inundated by thousands of injured patients and of surgeons desperately carrying out 'open-air' operations under plastic sheeting were broadcast around the world. But amidst the unrelenting cases of acute trauma, the everyday emergency of giving birth in Haiti continued amongst the rubble. In the 12 months following the earthquake, more than 15,000 women gave birth in MSF clinics and hospitals. In some facilities, obstetric-related surgery made up 60 percent of all surgical activity.

Even before the earthquake struck, pregnant women were at risk in Haiti – the country has the highest maternal mortality rate in the Western hemisphere. Since 2006, MSF had been providing emergency obstetric services in the Delmas slum area of the capital **Port-au-Prince**, where many women could not access care because it was unavailable, unaffordable or inaccessible due to violence and insecurity in the slum. Up to 60 percent of Haiti's health facilities were

severely damaged or destroyed in the earthquake, including MSF's obstetric facility – *Maternité Solidarité*.

As a result, MSF started providing human resources, drugs and obstetrics expertise to the Ministry of Health's maternity hospital *Isaïe Jeanty*, which had not been damaged in the earthquake. The hospital was overwhelmed with women coming to deliver, many of them with serious complications. And with thousands of families sleeping on the streets, many women faced the added difficulty of having no homes to bring their newborns to following a safe delivery.

"We've delivered so many premature babies as a result of trauma", said MSF midwife Eva de Plecker at the time. "Women are coming to us with pre-eclampsia or eclampsia – serious conditions exacerbated by stress. Though Haiti had an extremely high rate of pre-eclampsia before the earthquake, the massive toll of this disaster has probably further aggravated the condition. After a few days, the maternity ward here reached full capacity. Women with serious complications need a longer time to recover after birth. At the same time, we still have to keep making space for new mothers and babies that need our help."

As the cases of acute trauma slowed to a trickle in the weeks following the earthquake, the need for emergency

obstetric care – and secondary level healthcare more generally – remained in Port-au-Prince. In recognition of this need, MSF built the *Centre de Référence en Urgences Obstétricales (CRUO)* in the Delmas area to replace the destroyed *Maternité Solidarité*. The new 130-bed facility began treating patients in March 2011 and provides 24-hour free care for women experiencing serious and often life-threatening complications. Since opening, more than 4000 women have delivered at CRUO; 70 percent of which were complicated deliveries. The hospital is staffed primarily by Haitian health professionals and support staff and is equipped with its own laboratory, blood bank and pathology department. MSF also provides care to newborns in a dedicated neonatal department.

At the epicentre

In **Léogâne**, west of Port-au-Prince and very close to the epicentre of the earthquake, MSF began providing emergency medical assistance after 80 percent of the city was destroyed. While the project was initially set up to treat patients wounded in the earthquake, MSF quickly identified a huge need for obstetric and gynaecological care. Even before the earthquake, women in Léogâne had to travel to Port-au-Prince to reach the nearest hospital to give birth or receive emergency obstetric care. MSF decided to stay well beyond the





emergency phase and, by September 2010, the makeshift tent hospital was replaced with a semi-permanent structure made out of containers. Obstetric/gynaecological activities now make up more than half of all medical activities at Chatuley hospital, with five gynaecologists and twenty midwives assisting the delivery of up to more than 700 women each month. The hospital provides a full package of sexual and reproductive health services including antenatal care, postnatal care and treatment for sexual violence victims. Two years after the earthquake, the 160-bed health facility remains the only health structure offering free emergency medical care to a population of approximately 300,000 inhabitants in Léogâne and the surrounding area, and has become a referral centre.

Pregnancy and the cholera emergency

On 20 October 2010, cholera broke out for the first time in Haiti, prompting MSF to open 70 cholera treatment centres and units throughout the country. When cases began appearing in Port-au-Prince, pregnant women started arriving at MSF facilities suffering from the disease and experiencing obstetric complications or premature labour as a result. Cholera affects pregnant women the same way it affects other people, with dehydration, diarrhoea and vomiting, but for some pregnant women, their

baby is at critical risk. The mother's dehydration means the baby will not receive enough oxygen, blood flow, or the necessary nutrients, which causes distress and can bring on premature labour. In Isaïe Jeanty hospital in Port-au-Prince and Chatuley hospital in Léogâne, MSF set up obstetric cholera treatment units (CTU) to isolate pregnant women. The care was organised so that the pregnancy, delivery and postpartum period could be supervised within the CTU by specialised staff, with the possibility of referral to the maternity ward in the event of complications. In Léogâne, MSF undertook a study among the 102 pregnant women who received treatment for cholera at the hospital between 13 December 2010 and 28 February 2011, in order to measure the effect of this specialised approach on the outcome for the mothers and their babies. Previous research has shown the maternal mortality rate among cholera-affected pregnant women to be up to 25 percent and the foetal mortality rate to be between 12 and 54 percent. However, there were no maternal deaths recorded among the patients in MSF's study and there was a foetal mortality rate of 13.8 percent, half of which had occurred before admission. The study illustrated that the setting up of a specific care unit meant that specialised staff could successfully manage both the obstetric and neonatal aspects of care as well as the cholera at the same time.

Roseline, 34, was five months pregnant when the earthquake struck. She delivered her first baby at the Isaïe Jeanty hospital four months later.

"When the earthquake happened I was afraid I would lose the baby as I ran outside the house. I was so scared for him. Afterwards, I talked to the baby inside me and explained to him what happened. The pregnancy went well but the birth was a bit difficult. I had a lot of pain and I needed a caesarean section. I knew that the services would be free here, that's why I came. It all finally went well, and here is Angely, my first baby. I am very proud to finally be a mother. We thought that life was done. But no, we take it back, step by step."

Crisla, 19, was readmitted a day after giving birth to twins at Isaïe Jeanty hospital.

"I developed eclampsia the day before I delivered and I realise that's serious. During my pregnancy, the doctors advised me to stay calm so that my blood pressure would not rise. However, the day before I gave birth, I had a problem at home. I got angry and I fainted. When I woke up the next day, I realised that I was in the hospital with the two babies next to me. Then they told me that I had developed acute eclampsia and that the babies were born by caesarean section. I was making a good recovery until I went home and began to bleed again. I came back to the hospital right away. The doctors realised that I still had blood clots in my belly, so they operated again to clean everything out. They [the twins] are so pretty, but I can't take care of them yet. I have too much pain."

Fragile health systems

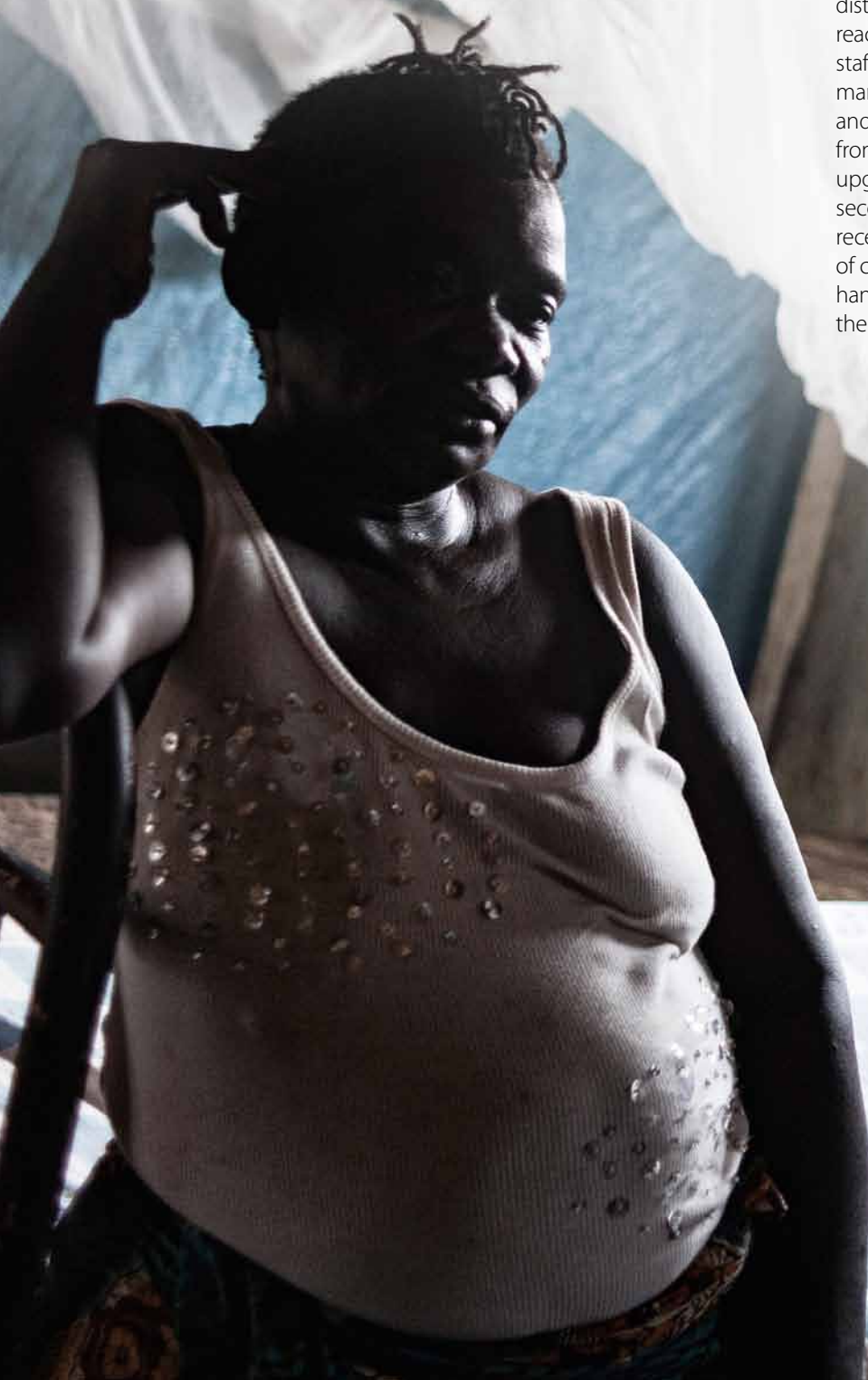
Central African Republic

South Sudan

Democratic Republic of Congo

Pakistan

No matter what the context, pregnancy and childbirth is always going to be a significant and constant demand on a country's health system. When this system is dysfunctional, damaged or non-existent, pregnant women are in a dangerous position. It is the life-saving, secondary level care that is most affected when a healthcare system is not functioning. Protracted conflict or instability means that infrastructure is basic or may not exist at all, drug supply is erratic at best, and skilled staff may have left for urban areas, or have left the country entirely. With health services concentrated in the capital city and major towns, women living in remote areas find it particularly difficult to access emergency obstetric care when they face complications. They must travel long distances, often with limited transport options, to reach facilities that may not even have the skilled staff, adequate drugs or equipment necessary to manage their delivery safely. Depending on needs and feasibility, MSF may create a health structure from scratch, support existing health facilities or upgrade a primary level health structure into a secondary level facility. To ensure that patients receive the best quality of care and that this level of care can continue after the organisation has handed over the project, MSF invests significantly in the training of national staff.



Central African Republic

The Central African Republic (CAR): a country in a state of chronic medical emergency. Five separate retrospective mortality surveys carried out by MSF and other researchers in 2011 highlighted excess mortality above the emergency threshold in areas accounting for the majority of the population.

Pregnant women do not escape these statistics – a woman has a one in twenty-five lifetime risk of dying as a result of pregnancy or childbirth in this country. One of the biggest barriers women face is access to health facilities: distances to travel to a hospital are often huge, roads are in poor condition, and transport options may be nonexistent or unaffordable. A dearth of trained medical staff in outlying areas, along with a significant lack of equipment and medication, makes it extremely difficult to access quality obstetric care in the event of a complication.

MSF provides emergency medical care in nine hospitals and 36 health posts throughout CAR. In **Paoua**, in the northwest of the country, MSF provides emergency obstetric care, including access to caesarean sections if necessary. In 2011, more than 1400 women delivered their babies in MSF's maternity ward at Paoua Hospital.

Dr Anne Marie Pegg, Medical Referent, Paoua

"Pauline arrived at the hospital late in the afternoon. It had been over an hour's drive on the back of a motorcycle taxi. She had already been in labour for over 24 hours. This was her fourth pregnancy – she had had three previous caesarean sections, but none of those babies were delivered alive. During her antenatal visits, she had been strongly counselled to make her way to the hospital at the onset of labour.

Her labour had started early in the morning. Knowing how important it was to get to the hospital, she started her search for a way to make the trip. This wasn't easy – she needed to find someone with a motorcycle who could take her. No small task in an area without mobile phone coverage, and where motorised forms of transport are not widespread. After an entire day and night of searching, she found someone. She was reassured by the movements of the baby within.

On arriving at the hospital, she was quickly assessed by the midwife, who then notified the doctor on call. Well aware that a caesarean section was necessary, the surgical team was summoned. Within an hour, Pauline's baby daughter was born, pink and screaming, into the world."



Janet Fields, a nurse-midwife who has worked in Aweil tells the story of a woman who suffered postpartum haemorrhage, the leading cause of death during childbirth:

"A mother came in for what we assumed was a normal delivery. She had a quick labour and delivery and within 30 seconds of the delivery of the placenta, she started bleeding. We had already given her oxytocin, a drug which helps with bleeding, but as the bleeding didn't stop, we immediately had to give her another medication in her leg, and also start an intravenous line on her. We also did a lot of uterine massage. It took a long time for the bleeding to stop, but eventually it did.

The thing that is scary about that story is that this woman would most certainly have died in the village. This woman has four other children to take care of. Because she was here, her life was saved."

Katie Hutchinson, midwife, Agok

"It's just horrific that so many women are still dying in this country, especially because there are simple procedures that can be done to prevent maternal mortality both in pregnancy and delivery. Access to life-saving surgery is extremely important for these women, and MSF is now providing this in Agok. During delivery there are some huge risks that women face here if they are not in the hospital.

But we can also do things that are not so difficult, and that really can save women's lives. Every single week in maternity, we save somebody's life. It's an amazing thing to do, but it also makes me a little upset that it's not a difficult thing to do. Women in South Sudan, as everywhere, should have the opportunity to have a safe delivery. We haven't had a maternal death since I've been here, and that is certainly my nightmare. A maternal death is not acceptable, and I hope it will stay like that."



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South Sudan

In July 2011 a new nation was born, and with it, hope that a better future would be paved for a country torn apart by decades of civil war. But the prospect for women in South Sudan remains alarmingly unchanged. Women still have a one in seven chance of dying as a result of pregnancy or childbirth during their lifetime, and it is not uncommon that they will have to walk for days, and often weeks, to reach an adequate health facility to give birth. South Sudan's health system has been left shattered by years of conflict, and a lack of trained and skilled health staff and adequate facilities, leaves three quarters of the population without access to even the most basic form of healthcare.

MSF, working in eight of ten states of the country, is running some of its largest obstetric programs in South Sudan in response to this crisis. The organisation runs the maternity department in the bustling **Aweil** Civil Hospital, in Northern Bahr El Ghazal State, and in 2011 there were more than 3000 deliveries, of which, around 10–12 percent were complicated.

An increasing number of women are coming to the hospital to deliver their babies, in the knowledge that their births will be safer with the assistance of a skilled health professional and access to drugs and the right equipment if necessary.

In **Agok**, a town in the transitional area of Abyei located in the border area of Sudan and South Sudan, the maternity team is carrying out an average of 66 deliveries per month. MSF has been working here since 2008, running a comprehensive hospital program serving a population of around 100,000. An operating theatre that opened in Agok in 2011 now means that emergency caesarean sections, as well as other surgical procedures for pregnancy complications, are available for women if necessary. In 2011, the maternity team delivered 802 babies.



Democratic Republic of Congo

In the Democratic Republic of Congo (DRC), a woman has a one in thirteen lifetime chance of dying as a result of pregnancy or childbirth. This is a country that has been ravaged by more than a decade of violent conflict, and years of neglect of the health system have contributed to this high rate of maternal mortality.

In 2010, MSF staff assisted more than 19,000 births in DRC, accounting for the largest number of deliveries in any of the countries the organisation is working in. One of MSF's many programs throughout the country is situated in **Rutshuru** Hospital, in North Kivu in the east of the country. Since 2005, alongside the Ministry of Health, MSF has been working in the 280-bed hospital supporting various services including the maternity. More than 400 women give birth each month in this ward, and in early 2011, nearly half of these deliveries were by caesarean section. Due to the dangers that such an intervention can pose to women in their future pregnancies, one of MSF's objectives has been to reduce the rate of caesarean sections.

Enrica Bentivegna,
MSF obstetrician/gynaecologist

"The rate of caesareans needs to be reduced in order to avoid future complications for the women. If a

woman of 15 years of age has a caesarean, she will likely need to have them for her other births, and a long list of complications therefore accompanies this, for example, uterine rupture and postpartum haemorrhage. Also, a child born by caesarean section is more exposed to respiratory distress.

In less than a year we've been able to successfully reduce the rate from 46 percent to 32 percent. Some caesarean sections can be prevented by instead doing an instrumental delivery. The training of health workers in this practice has been a key element in the reduction of the rate."

MSF is in the process of handing over the responsibility of the maternity unit of Rutshuru Hospital to the Ministry of Health, but will continue to train staff in the management of both normal and complicated deliveries. Also in North Kivu, MSF is working in **Mweso** health zone in collaboration with the Ministry of Health, assisting a large and dispersed population who during times of violence and instability are displaced. At the 170-bed Mweso Reference Hospital, teams are providing safe deliveries to mothers who might otherwise give birth in unsanitary and unassisted conditions in their villages. In 2011, more than 3500 deliveries were attended to by the MSF teams.

Dr Raghu Venugopal, Mweso

"We see a lot of complications here. Post-partum haemorrhage, retained products and malpresentation of newborns resulting in the impossibility of a normal delivery are daily needs here. The day before yesterday, a woman in labour presented with a ruptured uterus. The child was safely delivered during emergency surgery and is doing well, but the mother bled very heavily. Our Congolese doctors, operating late into the night, sent a guard to wake me up to help them find blood to transfuse into the mother. We quickly mobilised our MSF logistics and medical team, found blood for the mother, and she lived.

Even when safe deliveries occur, children often suffer the effects of pre-term labour. Many health problems among mothers, including the hard lives they live where they work in agricultural fields until the time they go into labour, result in early childbirths. Other problems include newborn infections, including tetanus. These medical conditions result in our neonatology ward being constantly full of mothers and their newborns. Neonatology is one of the most complicated and difficult aspects of our work, as premature and ill newborns are very fragile patients. However, our carefully designed protocols and constant close monitoring of such patients means they receive a real chance at survival."

Pakistan

“Most of the women’s deliveries do still happen at home. They don’t come to us because they often don’t have or can’t afford the transport... We do a lot of health education, about the importance of antenatal care and coming here for a safe delivery.”

Jannicken Troemborg,
MSF midwife, Kuchlak, Balochistan



Pakistan has one of the highest rates of maternal mortality in Asia: women have a one in 93 lifetime risk of dying as a result of pregnancy or childbirth. Limited access to quality emergency obstetric care, a shortage of qualified female medical staff, compounded by social and economic barriers, mean women face significant risks during childbirth. In areas affected by conflicts and sectarian clashes, insecurity and travel limitation make it even more difficult for women to access quality obstetric and gynaecological care. Many pregnant women who need services are either refugees, internally displaced or too poor to pay for private clinics.

Emergency obstetric care is only available in urban areas of Pakistan, often because of a severe shortage of trained female staff. And many women traditionally give birth at home, especially in rural areas. In Balochistan, Pakistan's largest and least developed province, violence, displacement, lack of economic development and poverty have limited people's access to healthcare. This often leaves pregnant women who need emergency obstetric care in an even more vulnerable situation.

To improve access to emergency obstetric and gynaecological care for internally displaced women, as well as to the local population of Nasirabad and Jaffarabad districts, MSF has been working in **Dera Murad Jamali** District Hospital since 2009. It is the only medical facility in the district providing free-of-charge, quality comprehensive obstetric care, including caesarean sections and antenatal and postnatal care. In 2011, MSF conducted 990 deliveries – 517 of which were complicated cases, including 146 that required caesarean sections.

In the town of **Kuchlak**, home to many Afghan migrants and refugees as well as nomads and a host population, MSF runs a mother and child healthcare clinic with a birthing unit that runs 24 hours a day, seven days a week. The all-female staff in

the birthing unit offers free-of-charge and much needed obstetric care. For complicated cases that require caesarean sections or other specialised medical care, MSF provides an ambulance service to refer patients to hospitals in Quetta. In 2011, the MSF team assisted 2114 deliveries, 308 of which were complicated. There were 197 women referred to hospitals for caesarean sections. The team also provided 3488 antenatal consultations and 2159 postnatal consultations.

In Khyber Pakhtunkhwa (KP) province, MSF is supporting the District Headquarter Hospital in Timergara and Tehsil Headquarter Hospital in **Dargai** to provide free-of-charge emergency obstetric care to a total catchment area of over one million people. In Timergara in 2011, there were 4568 deliveries, 708 of which were complicated cases, including 616 caesarean sections.

In Dargai, as well as antenatal and postnatal care, MSF also provides health promotion to male family members in order to explain the importance of antenatal care and the risks of delivery, to encourage them to send their wives and daughters to the hospital. In 2011, 2580 women successfully delivered at the facility, 844 of whom had complications. MSF teams performed 264 caesarean sections.

To respond to the significant need for emergency obstetric care in **Peshawar** district, MSF opened a Women's Hospital in May 2011. The 30-bed, private reference hospital focuses on managing complicated pregnancies and deliveries. MSF also supports Basic Health Units run by the local authorities in Peshawar district with antenatal and postnatal care. A medical referral network has been established with refugee and internally displaced persons camps and ten Basic Health Units. The hospital also receives referrals from other MSF projects in Hangu in KP province and in Kurram Agency in the tribal area, where clashes and insecurity are always a concern. In 2011, there were 156 deliveries conducted in the Women's Hospital, including 58 caesarean sections. There were no maternal deaths.

Jannicken Troemborg, midwife, Kuchlak, Balochistan

"It's a very poor area of Pakistan, with a main population of about 100,000 that live there constantly. There are also nomadic people who stay here in summer months, and in winter, they go to Sindh province in the south. Though there is medical care available in the private sector, people here are very poor and they really can't afford it. And there are limited health facilities, especially for women.

Most of the women's deliveries do still happen at home. They don't come to us because they often don't have or can't afford the transport or they need to have a man to come with them. They choose to come to us because they might have had a traumatic delivery before, or they often come when they have given birth to twin number one and they wait four or five hours but twin number two hasn't come. So then they seek help. So we do deliveries, but also general maternal and infant health. We do a lot of health education, about the importance of antenatal care and coming here for a safe delivery."

Razia, a patient at Tehsil Headquarter Hospital in Dargai, Khyber Pakhtunkhwa province

"I have eight children and all of them are alive. I have given birth to four of my children in hospital, and four at home. I have a blood weakness so I came here for my delivery. The deliveries in the hospital have been much easier. I also come here because we get free treatment and we cannot afford it otherwise. This is a good facility."

Annabelle Djeribi, Project Co-ordinator, Women's Hospital, Peshawar

"We have decided to have a hospital where as far as possible we have female staff only. We allow only females to go inside the hospital and that means women feel more confident. They are accompanied by female caretakers and it also gives some confidence for the male who is waiting in the visitor room outside. He knows that it is a place that a woman can find a secure and safe environment to deliver."

When maternal mortality *is* the emergency

Burundi
Nigeria

In some places, the maternal mortality rate is so high that MSF considers the situation to be an emergency in itself and launches a dedicated obstetric program with the objective of reducing maternal mortality within a specific area. Unlike in an acute emergency, where the situation evolves rapidly and it is difficult to plan beyond just a few weeks, in these more stable contexts, MSF is able to commit to a longer-term project with a dedicated and streamlined focus. This allows for significant investment in staff training, infrastructure, strengthening referral networks and outreach activities, which has obvious benefits for women

who would otherwise not have access to this kind of specialist care. In this environment, it also becomes possible to investigate and document problems over a longer period of time, implement comprehensive strategies to resolve them and measure whether a particular approach could be successfully applied in other contexts. In countries such as Nigeria, Chad and Burundi, MSF has also decided to complement its emergency obstetric activities with fistula repair programs [see opposite]. The approach is two-pronged: to repair existing fistulas, but also to try to prevent new fistulas from occurring in the first place by providing access to quality emergency obstetric care.





Burundi

In Burundi, giving birth can be dangerous – the country has one of the highest rates of maternal mortality in the world. The health system is still suffering from the consequences of the civil war that plagued the country from 1993 to 2006. As there is no functioning referral system for emergency cases and many women cannot afford to pay for services, only about half of pregnant women in Burundi receive assistance from trained health workers during delivery. The emergency obstetric care that does exist is not always accessible and the quality of the services is poor.

MSF opened the CURGO (Centre d'URgence Gynéco-Obstétrical) in **Kabezi**, just south of the capital Bujumbura, in 2008 to provide free, specialised care for women with complications. Now, there are about 250 babies born at the facility every month. MSF has put in place a 24 hour / seven days a week referral system, by which women suffering from, or at risk of complications, are transferred by ambulance from health centres throughout the province to the CURGO. The main obstetric complications treated at the CURGO are haemorrhage, infection, rupture of the uterus, prolonged or obstructed labour, ectopic pregnancy and eclampsia.

Fistula

For every woman who dies in childbirth, a further 20 are left with lifelong debilitating complications such as obstetric fistula. Without skilled medical assistance to intervene during an obstructed labour, the soft tissues of a woman's pelvis can be compressed between her baby's head and her pelvic bone for days. With the blood supply cut off, the tissue dies and she is left with an opening between the vagina and the bladder, the vagina and the rectum, or both. Without treatment, the injury results in permanent incontinence and women with fistulas often suffer in silence and isolation, rejected by their husbands, families and communities and forced to live as outcasts, some for decades.

There are an estimated two million women worldwide living with a fistula, with between 50,000 and 100,000 new cases occurring each year. MSF has permanent fistula repair projects in Nigeria, Burundi and Chad and also runs short-term fistula repair camps in unstable contexts where the condition is prevalent but the possibility for repair is absent, such as in the Central African Republic, Democratic Republic of Congo and Somalia.



Mary, 30, is one of thousands of women who have received emergency obstetric care at the CURGO in Kabezi.

Today, drops of sweat are running down her neck, but her eyes are lit up. Mary is recovering at the centre four days after giving birth to a little girl here. Even before she went into labour, Mary was hospitalised at her local health centre because she was severely malnourished. She was transferred to the MSF facility in an ambulance when she urgently needed a blood transfusion and her local centre could not provide it. When she was born, Mary's daughter was anaemic and underweight. Initially, she was vomiting a lot, but she has since improved markedly, as has Mary herself. Her lips have regained colour and swelling in her legs has decreased to the point that she has started walking again today. "If it weren't for MSF, my children wouldn't have a mother," says Mary, who now has five children. She has named her daughter Nduwakeza, which in Kirundi, the local language, means 'Good news'.

Nigeria

“The growth in the project has been amazing. When we first started working here, women would not come to the hospital because they thought it was a place where women died. It was difficult to change that stigma. Now they trust us and they come.”

Dr Damayanti Zahar,
MSF obstetrician/gynaecologist





With a one in 23 chance of dying from pregnancy or childbirth-related complications over the course of her life, simply being pregnant can be life-threatening for a Nigerian woman. This is especially true in the north of the country, where many women lack access to even basic obstetric services.

In **Jahun** in Jigawa state, MSF has been working alongside the state Ministry of Health and running a 35-bed maternity ward and 57-bed fistula repair ward since 2008. Through word of mouth and visits from the MSF outreach team, people in even the most remote villages now know about the free obstetric services available at Jahun General Hospital. More and more women are coming to the facility to deliver: there were 4092 deliveries in 2011 compared to 1640 in 2009. With the availability of skilled staff and the necessary drugs and equipment, the maternal mortality rate in the hospital has been dramatically reduced, from six percent when the project opened in 2008, to 1.5 percent today.

Dr Damayanti Zahar, MSF obstetrician/gynaecologist

"The growth in the project has been amazing. I've seen the national staff growing more confident and many more women coming to the hospital to deliver. When we first started working here, women would not come to the hospital

because they thought it was a place where women died. It was difficult to change that stigma. We needed to help them to have confidence in the hospital. Now they trust us and they come.

We see a lot of complications here. We see women who have been labouring at home on their own for two or three days and the baby has not come. When we first opened the project, we had women coming in with an obstructed labour and then refusing a caesarean section and actually leaving to go home. It's already a big decision to come to the hospital and then if we need to do surgery, it's another huge decision. They think if they go to the operating theatre, they will die. They also believe that if you don't deliver your baby normally, you're not a real woman. But it's gotten better. Now people are more open to surgery and trust us.

But caesarean sections are only one part of the solution. As an obstetrician, deciding to do a caesarean section in a place like Jahun is really a big decision. Women here have a high number of pregnancies and we don't know for sure that the next time she is pregnant she will come to the hospital for her delivery, which she really needs to do because she'll be at greater risk of uterine rupture and other complications."



Binta, 16, was brought to Jahun General Hospital after trying to deliver for two days at home.

Her labour was obstructed, but the doctors were able to do a vacuum delivery and Binta safely gave birth to her first child. In order to prevent an obstetric fistula from occurring, staff have inserted a urinary catheter, which will help the damaged tissue heal.

"I was frightened because it was my first pregnancy and I was going into the unknown. There were four women encouraging me to push and they gave me some herbs to drink, but when the baby still had not come, they decided to take me to the health centre. At the health centre, they didn't know what to do so they sent me here to Jahun Hospital. I was so tired from being in labour for so long that I couldn't push anymore. If I had not been able to come to the hospital, I would have suffered and the end result would have been death for both me and my baby. When I held my baby for the first time, I was very happy."



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