

Integrated Management of Pregnancy and Childbirth

Obstetric Fistula

Guiding principles for clinical management
and programme development



World Health
Organization

Department of
Making Pregnancy Safer

WHO Library Cataloguing-in-Publication Data

Obstetric Fistula: Guiding principles for clinical management and programme development
Editors: Gwyneth Lewis and Luc de Bernis

(Integrated Management of Pregnancy and Childbirth)

1. Rectovaginal fistula—therapy 2. National health programmes—organization and administration 3. Manuals 4. Practice guidelines I. Lewis, Gwyneth II. De Bernis, Luc

ISBN 92 4 159367 9

(NLM classification: WP 180)

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The named authors alone are responsible for the views expressed in this publication.

Printed in Geneva

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Acknowledgements

Managing Editors: Gwyneth Lewis and Luc de Bernis

The members of the Fistula Manual Steering Committee, established by the International Fistula working group, include: Andre De Clercq, Charlotte Gardiner, Ogbaselassie Gebreamlak, Jonathan Kashima, John Kelly, Ruth Kennedy, Barbara E. Kwast, Peju Olukoya, Doyin Oluwole, Naren Patel, Joseph Ruminjo and Petra ten Hoope-Bender.

We would like to express our sincere thanks to the Averting Maternal Death and Disability (AMDD) programme of Columbia University, USA, for their generous financial support to the development of the manual.

We are also grateful to the following people for their advice and help with specific chapters of this manual:

Chapter 1: Glen Mola and Charles Vangeenderhuysen

Chapter 2: Maggie Bangser, Adrian Brown and Yvonne Wettstein

Chapter 3: Fistula Surgeons:

Ambaye Wolde Michael, Michael Breen, Andrew Browning, Baye Assane Diagne, Lucien Djangnikpo, Ludovic Falandry, Brian Hancock, John Kelly, Kallilou Ouattara, Tom Raassen, Charles-Henry Rochat, Shershah Syed, Ann Ward and Abdulrasheed Yusuf.

Chapter 4: Ruth Kennedy

Chapter 5: Lesley Cochrane

Chapter 6: Maggie Bangser and Yvonne Wettstein

Additional thanks are due to:

Meena Cherian, France Donnay, Claude Dumurgier, Zafarullah Gill, Rita Kabra, Yahya Kane, Barbara E. Kwast and Kate Ramsey.

Edited by Catherine Hamill and Tala Dowlatshahi, and designed by Duke Gyamerah.



International Federation of
Gynecology and Obstetrics

AMDD
Averting Maternal Death and Disability

Preface

Despite its devastating impact on the lives of girls and women, obstetric fistula is still largely neglected in the developing world. It has remained a ‘hidden’ condition, because it affects some of the most marginalized members of the population—poor, young, often illiterate girls and women in remote regions of the world.

On a global scale, the continued incidence of obstetric fistula in low-resource settings is one of the most visible indicators of the enormous gaps in maternal health care between the developed and developing world. Obstetric fistula still exists because health care systems fail to provide accessible, quality maternal health care, including family planning, skilled birth attendance, basic and emergency obstetric care, and affordable treatment of fistula. In addition, social systems are failing to provide a safety net for girls and women.

Thankfully, fistula has recently begun to gain international attention. Efforts to prevent and treat fistula have, until now, been primarily conducted by dedicated individuals who have worked with very limited political, financial or institutional support. Now, however, there is a growing global momentum to reduce drastically the incidence of obstetric fistula. Today, everyone working in reproductive and maternal health has the opportunity to make changes that will turn despair into hope, and restore dignity to the millions of girls and women living in shame and poverty.

No woman should have to endure a condition which is both preventable and treatable. Our long-term goal should be to make fistula as rare a problem in the developing world as it is in the developed world. I hope this manual on fistula prevention and management will promote increased coverage of the recommended interventions, and become an integral part of the international Campaign to End Fistula.

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Section I

**Understanding the problem and
developing a national approach**

Terefa's story

Terefa is fourteen years old. She lives in a small village in Africa, more than 200 km from the country's capital. She is the sixth child in a family of eight children and has never been to school. Her father, a farmer, did not have enough money to send all of his children to the village school. The older children—two boys—thus benefited from schooling, while Terefa stayed at home to help her parents to survive. Her chores were to gather firewood, draw water and help work the fields.

When she was thirteen, her father married her to one of his friends who was a little better off. Terefa could only accept this marriage and, a few months later, she became pregnant. Throughout her pregnancy she continued working, as if nothing had changed. The closest antenatal clinic was a few dozen kilometres from her house, but she didn't go to it because she didn't have money to pay for transport. Also, everyone in the village said that pregnancy was not an illness and that the other women had always given birth without any problems, so why shouldn't she?

Terefa's husband and mother-in-law let the village traditional birth attendant know when labour started. The contractions became more and more violent, and more and more painful, but the baby did not seem to want to come out. Terefa saw the sun rise and set three times. She was exhausted by the long ordeal. The village birth attendant tried to speed up events, first with herbal potions, then by inserting various substances into the vagina and, finally, by making incisions with a rusty knife in her vagina, but nothing worked.

The village elders then met to take a decision: Terefa had to be sent to the health centre. It took several hours to collect the necessary money, transport Terefa in a cart to reach the road and find a driver to take her to the town. Terefa was afraid, for she knew no one there and wondered how she, a simple peasant, would be received.

At the health centre she was examined by a midwife. The midwife was not happy that Terefa had come so late and told her that the baby was dead, but that an operation was required. As the doctor who performed caesarean sections was away for several days for a training course, she had to go to another hospital.

After the operation, Terefa realized that she couldn't retain her urine. Back at the village she was ashamed because she had lost her child, was constantly wet and continually gave off the smell of urine. Seeing that the situation did not improve, her husband rejected her and chose another wife and, little by little, the entire village turned its back on her.

Since then Terefa and her mother have lived in a tent at the edge of the village. The two women subsist on charity, but Terefa's health is becoming a little more precarious every day. No one knows how much longer she will survive.

“In an unequal world, these women are the most unequal among unequals.”¹

Living in shame

Millions of girls and young women in resource-poor countries are living in shame and isolation, often abandoned by their husbands and excluded by their families and communities. They usually live in abject poverty, shunned or blamed by society and, unable to earn money, many fall deeper into poverty and further despair.

The reason for this suffering is that these young girls or women are living with an obstetric fistula (OF) due to complications which arose during childbirth. Their babies are also probably dead, which adds to their depression, pain and suffering.

An OF is an abnormal opening between a woman’s vagina and bladder and/or rectum, through which her urine and/or faeces continually leak. Naturally these women are embarrassed that they are unable to control their bodily functions, that they are constantly soiled and wet, and that they smell. Their pain and shame may be further complicated by recurring infections, infertility, damage to their vaginal tissue that makes sexual activity impossible and paralysis of the muscles in their lower legs which may require the use of crutches, if any are available.

The greater tragedy is that these OF can largely be avoided by delaying the age of first pregnancy, by the cessation of harmful traditional practices and by timely access to maternal and obstetric care. They can be repaired by simple surgery.

The burden of suffering

The development of OF is directly linked to one of the major causes of maternal mortality: obstructed labour. This is labour where the mother’s pelvis is too small to enable the baby to be delivered without help. The labour can last many days and often results in the death of both the mother and the baby. Should the mother survive, she will probably develop a fistula and her baby will most likely be dead. With access to skilled maternal care, such labour can be predicted, identified and treated.

Worldwide each year more than half a million healthy young women die from complications of pregnancy and childbirth. Virtually all such deaths occur in developing countries (2). The World Health Organization (WHO) estimates that, globally, over 300 million women currently suffer from short- or long-term complications arising from pregnancy or childbirth, with around 20 million new cases arising every year (3). Problems include infertility, severe anaemia, uterine prolapse and vaginal fistula.

Worldwide, obstructed labour occurs in an estimated 5% of life births and accounts for 8% of maternal deaths (4). Adolescent girls are particularly susceptible to obstructed labour, because their pelvises are not fully developed.

Throughout the world, but mainly in parts of sub-Saharan Africa and Asia, it is conservatively estimated that more than 2 million young women live with untreated OF. It has also been estimated that between 50 000 and 100 000 new women are affected each year (5). It is probable these figures are underestimates but it has been impossible to determine the true burden of suffering to date. Not only has there been generally a lack of commitment in addressing and resolving this problem, but also these young girls or women tend to live with their fear and stigmatization in silence and isolation, unknown to the health-care system.

Some in-depth studies serve to support the widely held belief that the true number of women living with untreated fistula and suffering the consequent pain and degradation may have been underestimated, suggesting that there may be between 100 000 and one million women living with fistula in Nigeria alone (6) and over 70 000 in Bangladesh (7,8). Other studies in Ethiopia, Nigeria and other parts of West Africa estimate the incidence of fistula to be 1–10 per 1 000 births(6). In Ethiopia it is estimated that 9 000 women annually develop a fistula, of which only 1 200 are treated (9).

Unless they have access to a hospital that provides subsidized treatment and care, women may live with the fistula until they die, often at a very young age, from complications of their fistula. Such women often receive no support from their husband or family members. At the Addis Ababa Fistula Hospital, 53% of the women had been abandoned by their husbands, and one woman in every five said that she had to beg for food to survive (10). In India and Pakistan, some 70% to 90% of women with fistula had been abandoned or divorced, according to limited hospital studies (11). It is not surprising, therefore, that some women can no longer cope with the pain and suffering, and resort to suicide (10).

The causes of OF

Physical causes

Obstetric fistula are predominantly caused by a very long, or obstructed, labour which can last several days or even, sometimes, over a week before the woman receives obstetric care or dies. If labour remains obstructed, the unrelenting pressure of the baby's head against the pelvis can greatly reduce the flow of blood to the soft tissues surrounding the bladder, vagina and rectum. If the mother survives, this kind of labour often ends when the fetus dies and gradually decomposes enough to slide out of the vagina. The injured pelvic tissue also rots away, leaving a hole, or a fistula, between adjacent organs.

If the woman had received timely care, the baby would have been delivered by a caesarean section, and both the mother and baby would most probably have survived.

Rarer causes of fistula are from sexual abuse and rape, the complications of unsafe abortions and surgical trauma (most commonly, injury to the bladder at caesarean section). Gynaecological cancers and/or related radiotherapy treatment can also cause this condition, although this is rare in developing countries.

Lack of access to maternity care

In developed countries, both obstructed labour and OF are medical problems which are largely in the past. This is because problems with labour may be anticipated during antenatal care and a difficult labour that may become

obstructed can be identified by the use of the partograph, and a caesarean section can be performed.

In resource-poor countries, the reality is different. In these countries the vast majority of the women who die, or who develop fistula during childbirth, do so because they did not receive the health care that they needed. This may be due to a lack of basic health-care provision or through, for whatever reason, an inability to access the local health-care services.

The need for skilled care

Skilled care before and after birth, and particularly during labour, can make the difference between life and death for women and their babies, and can help to prevent OF. Yet only half of the women in developing countries receive assistance from a skilled attendant during delivery (4). The WHO publication, *Global action for skilled attendants for pregnant women* (12), sets out the evidence and responsibilities for increasing access to skilled professionals at delivery as well as identifying steps to maximize the effectiveness of current staff in countries where trained professionals are scarce.

Availability of facilities

Accessing suitably equipped facilities for antenatal care and safe childbirth is usually difficult, especially in rural settings where health centres able to provide basic emergency obstetric careⁱ may be 70 kms away, and there is no easy or affordable form of transport. Even where such centres exist, there is often a lack of accessible referral facilities further away that can provide comprehensive emergency obstetric careⁱⁱ such as a caesarean section.

Assessments of basic and comprehensive emergency obstetric care in a number of anglophone and francophone African countries, conducted recently by United Nations Population Fund (UNFPA) and United Nations Children's Fund (UNICEF), found that each country had one comprehensive emergency obstetric facility per 500 000 inhabitants, but none had the required number of facilities for basic emergency obstetric care (13). Further, only 8.2–35% of women with complications in labour received care at an appropriate facility.

Even if women manage to travel to these facilities, they are often required to provide their own surgical gloves, dressings etc., for a clean delivery and may be required to pay official and, often, unofficial costs. For a poor family living in extreme poverty, the costs of an emergency caesarean section can be crippling; some families cannot afford them, or are left in debt for many years (14). A recent study in rural Tanzania estimated the average cost of an emergency caesarean section at US\$135, compared to the average family annual income of US\$115 (15).

Improving access to timely obstetric care is the most important first step that can be taken to prevent fistula from occurring in the first place. The problems

ⁱ *Basic emergency obstetric care (BEmOC) includes the availability of parenteral antibiotics, oxytocics, treatments for eclampsia, assisted vaginal delivery (vacuum extraction), manual removal of placenta and removal of retained products (MVA).*

ⁱⁱ *Comprehensive emergency obstetric care (CEmOC) should include all elements of Basic emergency obstetric care (BEmOC) plus 24 hour facilities, caesarean section and blood transfusion.*

in accessing maternity care that can lead to maternal death or complications are commonly referred to as the “three-delays.” (16). Fistula can develop because of any one of these:

- 1) a delay in deciding to seek care caused by community or sociocultural factors, by being unaware of the need for care, or of the warning signs of problems;
- 2) a delay in reaching a health-care facility, perhaps because of transport problems, distance or cost; and
- 3) a delay in receiving adequate care at the facility, because resources (human, equipment, etc.) may not have been available, or the care provided was inadequate or harmful.

Lack of knowledge about, or facilities for, fistula repair

Once they occur, OF require surgical repair; they usually cannot heal by themselves. The principles for this are described in Chapter Three on surgical repair. Over 90% of women can be cured with one operation and can resume an active and fulfilling life, including having further children.

However many women and/or their families, especially those who lacked skilled care during delivery, may not even know that a treatment exists for fistula. And these services, when they exist, are often too far away or too expensive. In some developing countries, a few specialized fistula hospitals or services exist, particularly in parts of Ethiopia, Nigeria, Pakistan, Sudan and Tanzania. But most doctors lack training in fistula repair, and most hospitals and clinics are unable to treat fistula successfully.

Underlying social causes

Most fistula occur among women living in poverty in traditional cultures, where a women’s status and self-esteem may depend almost entirely on her marriage and ability to bear children.

Poverty

While the immediate causes of OF are obstructed labour and a lack of emergency obstetric care, pervasive poverty is an important underlying cause. Women who suffer from OF tend to be impoverished, malnourished, lack basic education and live in remote or rural areas. Two epidemiologic studies of fistula have found that over 99% of women undergoing repair were illiterate (17,18).

In sub-Saharan Africa the incidence of OF has been estimated to be about 124 cases per 100,000 deliveries in rural areas, compared with virtually no cases in major cities (19). Like many other women in remote areas of poor countries, most women who develop untreated fistula give birth at home, without assistance from skilled birth attendants.

Early marriage and childbirth

The traditional practice of early marriage contributes to a risk of obstructed labour and fistula. In parts of sub-Saharan Africa and South Asia, where OF is most common, women often marry as adolescents, sometimes as young as ten years of age, and many become pregnant immediately thereafter, before their pelvises are fully developed for childbearing. In Ethiopia and Nigeria, for example, over 25% of fistula patients had become pregnant before the age of 15, and over 50% had become pregnant before the age of 18 (20). Fistula formation is also more likely

to follow a first labour (21) and often these girls and women may have been the victims of forced marriages. Many adolescent girls in developing countries may also be undernourished and underweight, thus compounding the risks (7).

Too early marriage, inadequate family planning and birth spacing

In many traditional communities early marriage and childbearing, and large families, are the norm. There is little awareness of the need to delay the first pregnancy, or to space pregnancies well apart to enable the mother to recover and gain strength before a subsequent pregnancy. However, health services alone are unable to respond to these problems. Deeply embedded cultural and social values, and systems of beliefs, continue to form barriers which prevent young women from being able to manage their own lives and bodies. Changes in social and cultural attitudes, and enabling legislation to protect the rights of the health of adolescent girls, are also needed to help women delay their first pregnancy until they are physically able to deliver safely.

It has been estimated that up to 100,000 maternal deaths could be prevented each year if women who do not wish to become pregnant had access to, and used, effective contraception (22). The number of fistula that could be prevented by the availability of family planning must therefore be considerably higher. The Department for International Development (DFID) in the United Kingdom of Great Britain and Northern Ireland (UK) estimates that delaying the age of marriage and first birth, preventing unwanted pregnancy and eliminating unsafe abortion will avert one-third of maternal deaths. Further, DFID estimates that birth spacing and prevention of pregnancy in very young women may reduce neonatal mortality by one quarter (23).

The role and status of women

The low status of women, particularly young women just after marriage, plays a fundamental part in fistula development. Some women are denied access to care, or actually harmed, due to cultural beliefs and traditional practices. Some women may live in seclusion and, for many, the responsibility to decide to seek health care in pregnancy, or even after prolonged labour, falls to the husband or other family members, including the mother-in-law. When these women fail in their perceived duty to bear live children and, still worse, develop the stigmatizing condition of OF, they are often rejected by their husband's family and have no means of subsistence. They are usually immediately divorced and left to fend for themselves.

Harmful traditional practices

Harmful traditional practices, such as female genital cutting or mutilation (FGC or FGM), also contribute to the risk. Such cutting is usually carried out under unsanitary conditions, often by removing large amounts of vaginal or vulval tissue, thus causing the vaginal outlet and birth canal to become constricted by thick scar tissue. These practices increase the likelihood of gynaecological and obstetric complications, including prolonged labour and fistula. Although there are few reliable statistics available, these practices may increase the likelihood of such complications by up to seven times.

Harmful cutting before or during labour by unskilled birth attendants also contributes to fistula formation. In some countries, a traditional midwife or barber uses a sharp instrument, such as a knife, a razor blade or a piece of broken glass, to make a series of random cuts in the vagina in an attempt to either prepare the vagina for delivery or, during labour, to remove the obstruction and make way for the baby. These practices may explain as many as 15% of fistula cases in some parts of Africa (14).

Sexual violence

While most fistula cases in developing countries stem from obstetric causes, others result from direct tearing caused by rape or vaginal trauma. For example, at the Addis Ababa Fistula Hospital, which treats about 1,200 fistula cases per year, a study found that over a six-year period, 91 fistula cases were caused by rape or sexual abuse within a marriage (25). It is difficult to estimate the prevalence of fistula caused by sexual abuse, however, because many victims do not seek treatment, often fearing stigmatization or lacking access to health care (26). In wartime conditions, sexual violence is common, often used as tactic to intimidate and control. Aid workers in war-torn areas have estimated that one woman in every three is a rape victim and that the majority of new fistula cases are caused by rape (27).

Developing strategies: the time is now

Currently there is a worldwide effort to reduce maternal mortality in line with the Millennium Development Goals (MDGs) to reduce maternal mortality by 75% by 2115 (28). This was restated and re-emphasized on World Health Day 2005, which was dedicated to maternal and newborn health. The accompanying World Health Report for 2005 was devoted entirely to advocating that more action should be taken to save the lives of mothers and children.

As this chapter has shown, the determinants for both maternal deaths and OF are the same. Thus strategies that are currently being designed to develop national programmes to improve maternal and newborn health are directly linked to those aimed at fistula prevention and cure. There is no better time than now to assimilate the fistula prevention and treatment strategies, outlined in Chapter Two, into an integrated maternal health strategy designed to ensure that all pregnant women have safe deliveries and return home, with a healthy baby, to a loving and supportive family.

UNFPA has published an in-depth background book, *Obstetric Fistula: Ending the Silence, Easing the Suffering*, which provides more information on both the international Campaign to End Fistula as well as much more in-depth information on the problem and examples of good practice. Further information is available on the UNFPA web site: www.unfpa.org/fistula.

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2 Principles for the development of a national or sub-national strategy for the prevention and treatment of obstetric fistula

2.1 Introduction

As discussed in Chapter One, the factors that lead women to develop OF are the same as those which cause maternal morbidity and mortality as well as many newborn deaths. Preventive strategies to reduce one will have a significant impact on the other. Any strategy for OF prevention and treatment should, therefore, be an integral part of the national maternal and neonatal health strategy, or the maternal and neonatal mortality reduction plan. This is a particularly opportune moment for countries to develop their own OF plans, as they are currently in the process of developing and implementing strategies to reduce maternal and newborn deaths in order to achieve the MDGs (1). It is also important that such plans be integrated into broader reproductive health plans as well as national development plans and poverty-reduction strategies.

The need for OF prevention and treatment services will vary greatly between individual countries, and between regions or areas within one country. Although policies and strategies to prevent and treat OF need to be adapted with national support, in some circumstances they may need to be modified at the local level to identify, address and overcome the particular constraints due to circumstances in a particular area, or amongst specific, local high-risk populations.

Due to the variety of circumstances and barriers to care that need to be overcome in countries, this chapter is not prescriptive. Instead it suggests possible approaches and models for delivering preventive and treatment services that a national OF strategy committee or regional sub-committees may wish to consider.

The long-term goal of any national fistula programme should be to:

- Prevent women from developing fistula through health promotion and awareness, and the development of high-quality basic and comprehensive maternal health services, available to all.
- Ensure that all women living with fistula have easy and early access to skilled professionals able to repair simple fistula and/or refer more complex cases to more experienced colleagues.
- Ensure that each girl's and woman's right to health, including reproductive rights, which are closely linked with the prevention of OF, are recognized and protected by the provision of an enabling policy and regulatory environment.

The wider social determinants for the improvement of the general health of girls and women may include, for example, addressing issues such as better child and adolescent nutrition, recognizing a girl's right to education and setting a minimum age for marriage. Health-system issues include providing health education and access to modern methods for family planning as well as easy access to maternity health services. Cultural barriers to be overcome include enabling women to seek care without seeking authorization from family or community members.

None of these measures, clinical or social, will be easy to take, particularly in resource-poor countries. However, it is possible to develop a realistic fistula programme with short- and medium-term goals that can be met in a step-by-step manner, provided that there is continuing support at national, regional and local levels.

2.2 Developing an OF prevention and treatment strategy

Developing a strategy will require a step-by-step, consistent approach. The elements to be considered include:

1. Setting up a National OF strategy committee as an integral part of the national maternal- and newborn-health strategy committee or task force.
2. Gathering available information on the prevalence and incidence of OF in all parts of the country. Identifying any specific local determinants, mapping current preventive and curative service provision, and undertaking a needs assessment to guide future policy development. In some countries existing information may be enhanced by commissioning more specific surveys, either in facilities or at community level, as discussed later in this manual.
3. Based on these findings, developing (within the national maternal and newborn health strategy) a policy framework with realistic short-, medium- and long-term objectives, with associated financial costings and budget. The programme will need to address the following:
 - a. strategies for OF prevention, including health promotion, family planning, the provision of access to skilled care during pregnancy and childbirth, basic and comprehensive emergency obstetric services, and an enabling legal and policy framework;
 - b. provision of adequate facilities for OF repair and postoperative rehabilitation;
 - c. building of a sustainable cadre of health-care workers trained in OF prevention, management and repair.
4. Promoting and oversee the implementation of the policy, and advocate for resources.
5. Regularly monitoring and evaluating the success and failures of the programme and, in light of these findings, modifying and refining the programme accordingly.

2.3 The national OF prevention and treatment policy committee

To date, the development of in-country OF treatment and prevention programmes has been patchy. Experience in some countries has shown that the initial work has been started by small groups of committed health professionals and nongovernmental organizations (NGOs) working outside the formal health-system structures and, for some, as their work developed it became part of mainstream programming. However, without the support of national governments and firm grounding within the formal health and social-care context, OF treatment and prevention programmes will not become a routine part of the safe motherhood initiative.

As the principles for the prevention and treatment of OF are so closely aligned to safe motherhood, the development of a national OF strategy should either be part of the core work of the national Maternal and Newborn Health (MNH) committee or undertaken by a sub-group reporting to the national committee. The membership of the team should be multidisciplinary and multi-agency. The team should be as small and easy to manage as possible, and should include, as a minimum:

- At least one representative from the national Ministry of Health (MoH) and, if necessary, from local health agencies to represent specific areas of need. The Ministry of Women's Affairs, or its equivalent should also be represented, when in existence.
- Representatives from the leaders of professional organizations whose members, once sensitized to the issues, can make a difference both in terms of promoting good preventive and clinical practice as well as in ensuring that OF becomes a mandatory part of all relevant undergraduate and post-graduate training curricula. These may include nominees of the national societies of obstetricians and gynaecologists, midwives, nursing, public health and health promotion as well as academic institutions responsible for pre- and in-service training and research.
- Doctors and surgeons, midwives, nurses and social workers experienced in working in the field of OF prevention, surgery and rehabilitation.
- An economist and a statistician.
- Representatives from international and bilateral cooperation agencies, national and international NGOs and private institutions involved in fistula-service provision, safe motherhood activities, community development or participatory governance.
- Representatives from women's and community based organizations.

All members of the team should be able to advocate powerfully for the need to prevent and treat OF within their own constituencies and through the media, as well as working together at the national level. The team should have a clear terms of reference, well-defined roles and responsibilities and the power and autonomy to make decisions. Adequate resources and lines of communication should be available to enable it to function effectively.

It is also necessary for the national committee to work closely with other government departments and agencies. By working together, an aligned vision can be formed which will be able to deliver the wider long-term objectives of eradicating OF through health-promotion programmes and the provision of adequate health-care services. Other wider determinants of health, including poverty, transport, agriculture, education and the environment will also need to be taken into consideration.

2.4 Collecting information

Ideally, different types of base-line information should be available to develop and monitor OF prevention and treatment programmes. These include data to determine the size of the problem and which particular groups of women are affected (levels/numbers), data on underlying factors that directly cause or contribute to the problem and which can lead to the identification of potential

solutions (determinants and interventions), and information on which actions to reduce the problem can be planned, carried out and assessed (progress). All this type of information can also draw attention to the problem of OF (advocacy). No single data-collection tool will be able to provide information to meet all of these needs. This manual suggests a variety of methods which could be combined to help design and direct such programmes with a cost-effective use of resources. However, it should be borne in mind that the overall priority should be to take action as soon as possible rather than waiting for the results of detailed and possibly costly studies that may detract from such scarce resources as are available.

Before planning data collection to underpin OF policy development, it is important that the national committee identify what types of information on OF, maternal deaths and severe morbidity are already available. Health-care planners, managers and professionals may have access to multiple sources and types of information that should help to identify strengths and weaknesses in the maternal health-care system, including the policy environment, and which they can use in their planning and management activities. Population-based data, such as demographic and health surveys, censuses and vital registration systems, can provide information on the population as a whole, including data on the estimated level of OF, maternal mortality, maternal-health coverage, and community knowledge, attitudes and practices. Routine health information activities as well as special surveys and maternal health needs assessments can provide health-service related information, such as that on health-service infrastructure, available resources, and current health-care practices in facilities.

Boxes 2.1 and 2.2, (pages 28-29) show lists of indicators that may help provide some baseline data and could help those monitoring the success or limitations of the programme.

A baseline needs assessment and service mapping

Building on the information that is already available, and before developing a strategy for reducing the prevalence of OF and improving treatment services, it is advisable to perform a needs assessment of the situation within the particular country or region, because the data readily available may be scant, incomplete, directed to maternal and newborn mortality and morbidity, and not specifically designed to provide information on the prevalence and unmet need for OF services. This assessment should not only provide baseline estimates of the current burden of women living with fistula but also indicate the capacity of the existing health-care system and maternal health services to care for these women, and identify the specific barriers to care faced by women from particular groups in society or from specific areas of the country. The information provided by the needs assessment will thus enable policy-makers to devise realistic programmes to reduce the impact of OF and to set reasonable milestones for achieving this.

Mapping existing services provides useful information to planners and policy-makers by identifying any gaps in services, equipment and human resources for emergency obstetric care (basic and comprehensive) and fistula services. The Service Availability Mapping (SAM), a WHO tool, is available to help with this (2). Needs assessments, aimed at estimating the number of women living with fistula and the current national treatment capacities have been conducted in a number of countries within the international Campaign to End Fistula by EngenderHealth and UNFPA (3).

If data is inadequate, activities related to the prevention and treatment of OF should not be delayed. The top priority for any OF programme should be to start to address and overcome the current shortcomings in service provision as further data collection can be undertaken as and when resources allow. Should the committee consider it appropriate to undertake larger studies to determine the prevalence and incidence of OF, there are some relatively simple approaches to needs assessment that could be applied in settings where data is currently limited.

i. Epidemiological

This involves the collection, collation and analysis of data routinely collected by health and other government departments, and other data such as community surveys to give an indication as to the 'unmet need' for fistula prevention and repair services for a particular community. Unfortunately, in many areas where fistula is prevalent, data-collection systems have either not been established or are not robust or reliable, as is also the case with other maternal morbidities. Most data on fistula are from hospital services, which do not take into account the majority of women hidden in the community who are unable to seek medical care. It may therefore be necessary to collect primary data. This may be done through community-based surveys using more qualitative approaches to estimate the unmet need. Proxy measures may also be available to estimate the prevalence and burden of OF. For example high maternal mortality rates or high rates of uterine rupture are often associated with a high prevalence of OF. The quality of data available will also provide helpful information on what type of support will be required to strengthen the overall maternal and newborn health information systems.

ii. Stakeholder analysis

This approach involves drawing together the information and opinions of experts in the field, women and their families who live with fistula or have had fistula treated, local providers or potential local providers of services, government, community-based organizations, NGOs, and other relevant stakeholders. This may involve mapping out in detail the current preventive and treatment services available to women in a particular area, and revealing areas of potential unmet need. The information can then be assimilated to provide an overview of the existing situation, provide information on what is currently working well, what could be improved and how this could be achieved. Methodologies based on participatory processes aimed at creating strong ownership, such as the 'Strategic Approach' developed by WHO (4) may be adapted for use in relation to OF.

Community or facility-based reviews

Knowing the prevalence of women living with fistula, or the incidence of new cases occurring each year, is in itself not sufficient to develop a sustainable OF programme. It is also necessary to understand the underlying determinants that lead to fistula formation as, only then, can effective ways to improve the local situation be determined. The causes may well be multi-factorial but often relate to access to services during complicated or obstructed labours. Reviewing individual cases and aggregating the findings, either retrospectively or prospectively, through community-based or facility-based case reviews will help to delineate the particular issues locally and provide indications as to potential solutions. It is vital that local health professionals and relevant policy-makers are involved in the process, as these are the key people who can advocate for, and implement, the necessary changes at the local level.

How to undertake such studies is described, step-by step, in the WHO manual, *Beyond the Numbers—Reviewing maternal deaths and complications to make pregnancy safer (BTN) (5)*, which also describes a number of other approaches to enable policy-makers to understand why pregnant women die or suffer severe morbidity, such as OF. Such understanding will enable them to develop programmes designed to promote safe motherhood. Other methodologies presented in the BTN manual describe how to undertake reviews of severe morbidity (near-miss cases), confidential enquiries into maternal deaths and clinical audits.

Reviewing the cases of women living with fistula in the community will help determine any personal, family or community factors that led to the fistula formation or why the woman did not seek treatment for the fistula once formed. Issues may include a lack of education about pregnancy and childbirth, cultural factors inhibiting women's access to appropriate care or financial and logistical barriers to accessing services. Community-based surveys require the cooperation of the women, their families and communities, and need particular sensitivity to avoid appearing to apportion blame. These studies are of particular importance in areas of high OF prevalence, where most women have not sought intrapartum care, and live in isolation and shame with a condition they and their families probably do not know can be cured. These reviews involving community members can be designed and used as opportunities for increasing community awareness and mobilization for safe motherhood activities. Case reviews should be action oriented.

Facility-based reviews are easier to undertake, as the women will have gone to a hospital for management of obstructed labour or fistula repair. These reviews will not only identify similar issues as the community-based reviews but will provide further information on delays such as, for example, difficulty accessing professional help locally, lack of availability of such services or long journeys to a health-care facility. As women who go to health-care facilities may have travelled long distances, such reviews may not provide information relevant to the specific community in which they are conducted. These reviews are useful, however, in providing an overall picture of the problems these women face.

2.5 Developing realistic policies and strategies

A national strategy with short-, medium- and long-term objectives

Strategy and policy development to overcome OF needs to be based on developing and promoting short-, medium- and long-term objectives and milestones to measure achievement. Where possible, estimations of the resources (financial and human) required, and feasibility studies should be included. When identifying priorities, and calculating the costs of interventions and services, it is best to look beyond the constraints of individual budgets and consider the long-term benefits. Formal and informal consultations with stakeholders will help to increase ownership of the proposals.

A strategy document should be produced which summarizes the information gathered, the policy objectives, how these relate to the national policy for maternal and neonatal health, and how these are to be delivered locally. This may include integrating some of the goals and milestones suggested later with appropriate timescales and lines of responsibility. The strategy should be agreed upon by the national OF strategy committee and endorsement should be sought from key individuals from the MoH and partner organizations. Since the determinants of fistula are broad in nature, the OF strategy, and also the maternal and newborn health strategy, should be endorsed across governmental departments. Developing

a ‘coalition of support’ in this way will maximize successful delivery. Eliciting media and private-sector support may also increase effectiveness.

Different countries and regions will differ in the level of need for the development of preventive and curative services. There will also be differing levels of available resources, both in human and economics terms, and it is not possible for this manual to describe an ‘ideal’ programme suitable for every country. Individual national OF strategy committees will need to develop their own population-specific policies and measurable milestones. The following are offered as suggestions for these, knowing that a combination of short-, middle- and long-term objectives will need to be addressed throughout the process:

Short-term objectives

1. Establish a national OF strategy committee and programme, integrated with the national maternal and newborn health strategy.
2. Undertake a national needs assessment and map current services.
3. Identify any gaps in information available and commission relevant research, if this is considered necessary, and an efficient use of resources by the OF national strategy committee.
4. Improve support to, and strengthen existing obstetric and fistula-repair services, including capacity building and the use of international expertise when necessary.
5. Plan the introduction of a given number of accessible, quality fistula treatment and rehabilitation services, using a suitable and sustainable local model of service delivery.
6. Introduce health promotion and education initiatives to reduce the incidence of new OF by stressing the need for skilled care during childbirth, as well as explaining what fistula is, how it can be prevented, and most importantly, that it is curable.
7. As part of the safe motherhood programme, strengthen maternal health services to enable all pregnant women to have access to antenatal care and a skilled attendant during childbirth.
8. Include knowledge of OF, its prevention and treatment (including management of labour, use of the partograph, obstructed labour, etc.) in all relevant nursing, midwifery and medical undergraduate and post-graduate curricula.
9. Start to increase awareness of fistula-repair facilities among providers and communities.

Medium-term objectives

1. Introduce a given number of accessible, quality fistula treatment and rehabilitation services, using a suitable and sustainable local model of service delivery.
2. Start a core training programme for surgeons and others able to undertake fistula repair, with national oversight and measurable standards.
3. Develop at least one centre for training established surgeons to become basic fistula-repair trainers.

4. Start a routine data-collection system and, if considered appropriate, an audit system.
5. Strengthen health-promotion initiatives related to safe motherhood and reducing fistula formation and associated stigma.
6. Establish a good referral system for women living with fistula.

Long-term objectives

1. Have a fully functioning national OF fistula treatment and prevention service.
2. Reduce the number of women requiring fistula repair.
3. Increase the number of women who have access to antenatal care and a skilled attendant during childbirth.
4. Provide access to comprehensive emergency obstetric care for all pregnant women in need.
5. Address the wider issue of reproductive rights for girls and women, including delaying the age of marriage and first pregnancy.

2.6 Essential components for any strategy

Any strategy, within any timescale, needs to address concurrently both activities for the prevention and the treatment of OF in communities at risk. It should also:

- Be integrated into the national strategy to improve maternal and newborn health, including providing skilled care during childbirth and access to basic and emergency obstetric care services;
- Be included as a key component of health-education programmes;
- Be based on the results of the needs assessment and a sound understanding of the social and medical circumstances that lead to OF;
- Plan for the development of sustainable treatment services by building capacity for services for OF repair both in terms of accessible facilities able to provide treatment and by the training of local health-care personnel in the management and surgical repair of OF;
- Ensure that the prevention and treatment of OF is included in the undergraduate and post-graduate curricula for all relevant health-care workers; and
- Address social and cultural issues such as early marriage, birth spacing, access to family planning and socio-cultural barriers which may prevent women from seeking obstetric care or treatment for OF.

2.7 Strategies for prevention

Recommendations to prevent OF fall into three types:

Primary-prevention strategies

These are aimed at ensuring that pregnancies are planned, wanted, and occur at an optimal time in the woman's life. They are based on principles of health

promotion and education designed to ensure that all women, their families and communities, understand the need for delaying the age of first pregnancy, as well as the advantages of birth spacing and providing access to family planning.

Ideally, the wider social determinants of maternal ill-health that arise from women's poor health before pregnancy, should be addressed by both the OF and safe motherhood programme. In many parts of the world, it is usual for girls and women to receive less nutritious food than their brothers or husbands. Malnourished girls and women are often anaemic, and thus are less able to manage the physiological demands of pregnancy or complications such as haemorrhage. They have underdeveloped pelvises, that often increase the incidence of obstructed labour and generally, reduce their ability to manage any other complications of pregnancy that may arise. Girls also are less likely to be educated, and illiterate girls are far more likely to suffer from complications of pregnancy including OF.

Cultural barriers to be overcome include enabling women to seek care without seeking authorization from family or community members.

Secondary-prevention strategies

Once a girl or woman is pregnant, she, her family and the community need to be aware of the need to seek antenatal care, the importance of skilled care at childbirth, and the signs and symptoms of possible problems during pregnancy and childbirth, such as prolonged labour. This can be promoted by increasing community awareness, training traditional birth attendants, increasing women's knowledge of normal pregnancy and delivery, and about when and where to seek help, and why. However, increasing knowledge is not enough and easy access to a local essential obstetric-care facility is paramount (6).

One of the principal measures to reduce maternal mortality and prevent fistula formation is to ensure that women have a skilled professional present during childbirth and have access to comprehensive obstetric-care services. The recent WHO publication, *Global action for skilled attendants for pregnant women* (7), sets out the evidence and responsibilities for increasing access to skilled professionals at delivery as well as identifying steps to maximize the effectiveness of current staff in countries where trained professionals are scarce. The document, *Making pregnancy safer—the critical role of the skilled attendant* (WHO, ICM, FIGO) (8), provides information on the required skills and abilities of professionals attending delivery and also advice on planning a strategy to ensure adequate provision of skilled attendants. WHO has developed a set of tools, *Integrated Management of Pregnancy and Childbirth* (IMPAC), which provide the key clinical and managerial interventions at first and referral levels. Consistent use of a partograph for the correct monitoring of labour has been proven effective for the early diagnosis and management of prolonged/obstructed labour. A referral to a setting in which a caesarean section or assisted vaginal delivery can be performed in a timely manner is the key intervention to prevent deaths and complications related to obstructed labour.

Tertiary-prevention strategies

These are designed to identify and prevent the development of fistula in labour or in recently delivered women who are at risk. This includes monitoring every labour by use of a partograph to identify those women who are at risk of, or who have developed, obstructed labour and to refer them quickly, if services are not available on site, to a comprehensive emergency obstetric-care facility with the

capacity to undertake caesarean sections and assisted vaginal deliveries. WHO recommends the use of a partograph at any birth(6). Midwives and doctors should also be trained, as described in detail in Chapter Three, to help prevent fistula formation or to enable closure of very small fistula without surgery by the use of an indwelling urinary catheter for all mothers who have survived an obstructed labour. This simple technique will help very small OF to close and is estimated to prevent fistula formation in between 10% to 20% of cases (9). Further, all pregnant women who experience prolonged or obstructed labour should be informed about fistula symptoms and encouraged to consult a skilled attendant as soon as such symptoms appear.

Community involvement

Women living with fistula very often suffer stigmatization and discrimination and become social outcasts. This not only has individual psychological consequences but also means women living with fistula are often hidden and thus more difficult to reach if repair services are available. In tandem with changing the wider determinants of fistula and providing repair services, it is necessary for all stakeholders to contribute to the empowerment of women, men, families and communities to increase control over maternal and newborn health as well as to increase access to, and utilization of, quality health services. This involves education and health promotion on the prevention of fistula and information on the availability of repair services to both communities and their leaders. It has been demonstrated that community involvement and participation is key for maternal and neonatal mortality and morbidity reduction strategies. The role of local NGOs and other groups active in local communities in promoting fistula awareness, prevention and treatment is also crucial, and they should be involved in the development of any local or national action plans.

2.8 Providing services for fistula treatment and repair

Settings for treatment care and models for service delivery

Although long-term strategies to reduce or eradicate OF must focus on access to care, the management of obstructed labour, and delaying the age of first childbirth, the needs of women who have already developed fistula and their special claim on resources must also be met.

Women living with OF not only suffer from physical, psychological and social problems and stigmatization, but are often from the most vulnerable and marginalized groups of society. The care and support they will require to rebuild their lives goes far beyond the initial medical interventions. They and, if possible, their families, need understanding and support to enable them to adjust to their new and changed circumstances and to repair their shattered lives. Ideally, this would be addressed with a specialized, multi-disciplinary and holistic approach.

Currently, very few hospitals or surgeons offer fistula-repair services because of a lack of facilities, capacity or trained staff. Even if a woman reaches a facility able to offer repair, these operations are often not regarded as emergencies and slip down or off the already busy operating-theatre list. Such facilities may also lack the capacity to care for the woman for a prolonged period of time. Until OF repair and rehabilitation becomes a routine part of the work of any hospital, alternative strategies need to be developed.

There are several different models of care currently in practice, or under development, in different countries and settings. There is no strong evidence to date as to the most appropriate model for delivering fistula-repair services, and the best model to adopt must be considered in light of the local context. Factors influencing the best type of service to provide include geographical factors (such as distance and terrain), transport infrastructures and communication networks, the configuration of existing health-care services and the availability of current and potential trained staff in fistula repair. Depending on these and other factors, countries can develop locally responsive strategies. Any of these models should be grounded, however, on the promotion of good obstetric care and access to skilled attendants. Current models of service delivery include:

- Stand-alone fistula centres (e.g. the Fistula Hospital, Addis Ababa, Ethiopia, and Babbar Ruga Fistula Hospital, Katsina, Nigeria).
- Fistula centres within existing general hospitals or maternity units (e.g. Nigeria, Niger, Benin and Tanzania).
- Fistula repair within the urology or obstetric department of general hospitals (e.g. Tanzania, Mali, Senegal and Kenya).
- Satellite fistula-repair units linked to a fistula centre (e.g. northern Nigeria, planned development in Ethiopia).
- Multilevel/multitiered national systems for fistula care. This approach involves smaller local units performing more basic fistula repairs while more complex fistula repairs are treated by visiting surgeons (e.g. Kenya, Uganda and the United Republic of Tanzania) or are referred to a national or sub-national centre.
- Fistula repair camps managed by national mobile teams (e.g. Pakistan, Somalia and the United Republic of Tanzania).

In a very few parts of the world, specific 'stand alone' fistula centres are being developed or proposed. These not only act as centres of excellence for treatment, particularly for complex cases, and provide rehabilitation, but also serve as training centres for future fistula surgeons. They are often very difficult for women to reach, however, given that they are few in number and far from where women with fistula may live. Staff from these centres and the cured women they have treated also act as powerful advocates for change by raising awareness of the issues and providing practical solutions. Such is their success that the very few in existence are overwhelmed with requests not only for treatment but also for training, and are unable to meet this demand that will grow further once OF programmes develop. If the development of a series of national fistula centres is proposed, then attention needs to be given to where they are located.

Other national fistula service providers prefer to base their services within a teaching or larger district hospital where there is easy access to facilities and on-site staff training can be regularly undertaken. Such hospitals, if based in large cities, may be distant and perhaps alien to rural women and their families but may be easier to reach through better transport links. However, in these hospitals there may be pressure on resources unless a separate operating theatre is dedicated to fistula repair, and long-term accommodations and rehabilitation services are available.

While the long-term aim of any programme should be to ensure that all obstetricians and other trained staff can successfully undertake simple fistula repair within any facility in which they work, supported by other professionals providing a multi-disciplinary team approach to care and rehabilitation, this may take many years to achieve. Once trained, however, it is important that even those surgeons competent to undertake simple repairs have a high enough case load to maintain their skills. In the interim, when planning services, it is important to be realistic as to how and where they may be best placed within the current health-care system. There are, however, some basic principles that need to be considered and these are discussed below.

2.9 Principles for planning service provision

As with preventive activities, the following principles should be adapted to address specific issues relating to particular problems of individual countries or its regions. The Addis Ababa Fistula Hospital has recently published a paper on its experience of setting up a fistula centre which may provide helpful information for health services planners considering establishing such a facility (10).

- Initially treatment services should be set up where capacity commitment, leadership and resources are found.
- Facilities should be within relatively easy reach of the women and her family, keeping in mind that these women are poor and live in mainly rural areas. They may need a financial subsidy to travel to the point of care and back to their home. Services provided in the capital, or in other large cities, may be expensive for rural women and their families. Consideration needs to be given to how to overcome potential barriers to care.
- Women undergoing treatment for OF require a holistic approach to their care. The work of the centre should be that of a team where the women, relatives, nurses, physiotherapists, occupational therapists, counsellors, surgeons and anaesthetists all work together to maximize the outcomes. Training of surgeons and nurses at the same time is recommended to create a team spirit and generate efficient team work.
- The hospital providing fistula treatment should be linked to a centre of excellence for obstetric care and be part of a functioning network of maternity services working in the same geographical area. Ideally women should be referred to OF treatment centres from maternity wards, immediately after the diagnosis of OF is made.
- Women with more complex fistula, or who need further surgery, should be referred to a specialist fistula-repair centre which is also part of the local maternity-services network.
- As a basic principle, it should be understood that elective surgery for OF repairs should not be crowded out by emergency operations, either by providing an operating list dedicated to OF or, in larger centres, perhaps a separate operating theatre.
- Ideally all facilities offering treatment need to be able to provide long-term accommodation and rehabilitation services as well as the special multi-disciplinary expertise, counselling and skills required.

- Each centre should work with communities to increase awareness and contribute to changing attitudes to attract women living with fistula to the centre for repair, and to succeed in reintegrating these women socially.
- Each fistula centre should document and evaluate its work, and be involved in research activities regarding fistula prevention and treatment.

2.10 Training

As with other parts of the fistula strategy, there is both a need to address the immediate problems of training staff to undertake fistula repair, or provide other essential services, while simultaneously developing a sustainable long-term programme. These must be done in parallel and be based on the findings of the local needs assessment.

The term ‘training’ covers a number of important different issues, all of which will need to be addressed within the national OF programme (11). These are:

1. Undergraduate training for all health professionals, social workers and other professionals.
2. Post-graduate training for obstetricians, midwives, nurses, surgeons, clinical officers, general practitioners and others who may be caring for pregnant women, women in labour and/or those who have developed OF.
3. Basic, supervised, surgical training in simple fistula repair for those who will be able and authorized to undertake such repairs once competent.
4. Training for nurses, midwives, physiotherapists, counsellors and social workers who will be providing the integrated care required for the management and rehabilitation of women undergoing OF repair.
5. Specialist training for obstetricians or surgeons who, once able to undertake simple repairs, will become ‘experts’ in complex fistula repair. These specialists will be able to manage the most complex cases, serve as a knowledge base to whom other surgeons can refer, and train more junior or inexperienced staff.

2.10.1 Pre-service or undergraduate curricula

The pre-service, or undergraduate, curriculum must include a basic understanding of OF, its causes, its management and, most importantly, its prevention. The programme should also include a wider social and cultural understanding of both the root causes of fistula and its implications for affected women. It should stress the need for all pregnant women to seek skilled care both in the antenatal period and during childbirth. It will also include more clinical issues such as the identification of prolonged or obstructed labour (including the use of a partograph) and the need for early referral of such women to an obstetrician.

In countries where the prevalence of OF is high, all curricula for trainee midwives, nurses and doctors should include not only theoretical training on OF prevention but also treatment. Midwives and obstetricians should be trained in the clinical prevention of OF (e.g. the systematic use of a partograph to monitor labour, the use of an indwelling bladder catheter in case of prolonged/obstructed labour etc), counselling for women living with fistula, and the importance of seeking family planning and skilled care during their subsequent pregnancies.

2.10.2 In service/post-graduate training

Surgeons and others able to perform simple repairs

A standardized training programme should be developed as a core component of the practical post-graduate syllabus for all those who are able to undertake surgery. These may include doctors, such as obstetricians and gynaecologists, urologists and general surgeons, depending on the capacity of each country and the skill mix. At the end of their training the trainees should be competent to undertake a simple fistula repair and to know which cases to refer to more experienced, or specialist, surgeons. This should be a mandatory part of training and, once assessed as competent in simple repairs, simple fistula repair should become a regular part of the routine work of these doctors. Developing such programmes will take time but is necessary if the long-term aims of reducing the number of women living with untreated fistula are to be met.

Requirements for surgical training

Until such time as the national training programme is fully established, in order to ensure a consistently high quality of repairs and to prevent unskilled surgeons from causing more physical damage to women, it may be helpful to reward those who have completed a recognized training programme with a suitable national or international certificate.

Specific training of fistula surgeons, nurses, and other health and social-care professionals should ideally take place in a location where fistula are prevalent, the case load is high, the trainer is competent, and/or where women with fistula have been gathered together at special fistula clinics. Until fistula repair is routinely available in the country, it may be necessary for the trainee to work side-by-side with a visiting expert who comes to their facility, or for the trainee to visit another unit or specialist centre as these types of apprenticeships will ensure access to 'hands-on' experience and the opportunity to observe both simple and complex repairs. Visits to fistula centres will also enable trainees to observe the teamwork required to ensure that women return to full and active lives and will provide insight into other associated medical and psychosocial problems.

It is generally agreed that during their initial training period, the trainees should see or, better yet, assist at around 50 fistula repairs and perform a minimum of 10 satisfactory repairs under supervision. They should not be allowed to practice until certified as competent by their trainer. At the end of this period trainees will be able to identify the simple cases they should be able to manage on their own and the more complex cases which require referral to a specialist fistula surgeon. Depending on the case load of the trainers and the training centre, this may require an additional four to six weeks or more of training. This training can also be provided by an expert visiting the trainees' own facility. It is important that the newly trained surgeons regularly undertake simple fistula repairs in their hospital after their training. They can be assisted by an experienced surgeon (trainer) for complicated cases and should continue to attend further intensive training workshops or have access to other mechanisms for providing skills updates on a regular basis. A continuous partnership between the trainees and the trainers is important in maintaining and improving skills, and in acquiring new skills.

Skill mix and who to train

Fistula services in different countries currently differ in their approach to the profession, specializations and the level of training required for those who can perform fistula repair. Clearly, training obstetricians and gynaecologists to undertake fistula repair has the advantage that preventive (i.e. managing obstructive labour) and curative activities can be dealt with by both. Trained obstetricians should be available in all emergency referral obstetric centres, i.e. those providing caesarean sections, to ensure prompt access to fistula repair. However urologists, general surgeons and general practitioners may have been trained and may be competent in both simple and, occasionally, complex repair.

Until such time as simple fistula repair is a routine part of the post-graduate training syllabus for obstetrics and other appropriate medical specialities, the training of health-care professionals to perform fistula repair requires the use of often scarce resources. To maximize the effectiveness of this training it is therefore important to direct the limited resources to committed surgeons and health personnel who will then use these skills regularly to benefit women and their families. It may not be appropriate to train professionals in fistula repair who are not practising in areas with a high fistula prevalence or whose facilities do not have the capacity or commitment to provide repairs on a regular basis.

Whichever professional performs fistula repair, it is important that they have a sufficiently high case load to maintain their surgical skills. It is widely accepted that the first attempt at fistula repair is likely to be the most successful, as discussed in Chapter Three on surgical repair, and it is vital that a fully trained and competent surgeon carries out this operation. Incompetent, ill-equipped or unskilled surgeons who do not undertake regular repairs may cause more damage to an existing fistula, making it subsequently more difficult to repair, and thus reducing the chance of a successful closure.

Nurses and other health-care professionals

All dedicated and motivated nurses and midwives working in special fistula centres or in any hospital providing fistula repair will also require specific training. This training includes pre- and post-surgery care, psychological support, counselling and communication skills. To encourage team building and mutual understanding, nurses and others should be trained alongside surgeons whenever this service is provided. This may be when trainers are visiting their home facility or when accompanying trainee surgeons to a specific training centre.

Continuing professional development

All health and social care professionals involved in the care of women with fistula should be encouraged to develop their knowledge and skills. Responsibility for this lies not just with individuals, but also with governments, employers and professional bodies to ensure there is adequate time devoted to ongoing personal development and the sharing of ideas. Professionals should, working as part of a team, be encouraged to take part in formal audit programmes for the outcome and impact of their work, and thus further improve the care of women with fistula.

2.10.3 Specialist fistula surgery

Developing a cadre of expert surgeons

Apart from basic training and enabling more obstetricians and surgeons to undertake simple repairs, each country will also need a number of specialist fistula surgeons able to operate both on more complex cases as well as to act as trainers for expert surgeons. Such surgeons are currently few and far between and tend to work in a number of different types of facilities, as described in sub-section 2.8.

The development of specialist centres and the training of trainers

The aim of providing training for complex fistula repair is to enable the development of:

- A sustainable in-country specialist centre, or a set of hospitals able to provide expert care for women with complex requirements.
- A cadre of future trainers.

To develop an appropriately trained workforce in order to implement a successful strategy for the reduction of fistula, it is necessary to have an adequate number of experienced fistula surgeons who can train others. Specialist fistula surgeons are not only able to cope with the tertiary referrals for the management of women with complex fistula, but can also act as trainers for other first-level or specialist fistula surgeons. It is generally agreed that a specialist surgeon and trainer should have performed at least 300 fistula repairs before starting to train others and have an ongoing case load of more than 150 fistula repairs per year.

Specialist training centres are very few, with only two in Africa to date: one is the Addis Ababa Fistula Hospital, Ethiopia, and the second is a hospital located in Katsina, in northern Nigeria. One or two others may be in the process of development. The demand for training already far exceeds the capacity of these centres to train the number of trainers required, or applying to be trained, and additional training centres should be urgently identified and equipped. Many countries are on the way to assessing their need for such trainers. All relevant partners should work together at local and national levels to ensure coordination between professional bodies, educational establishments, local experts and service providers.

Any training centre that is developed should perform a minimum of 300 fistula repairs per year and be a model centre of excellence for all aspects of care and treatment for OF. Whenever possible, a continuum of complete care from the pre-surgery period through to rehabilitation and social reintegration should be provided. Such centres should also be part of the maternity service network to ensure prompt referral and treatment of fistula. See also sub-section 2.9 for more details and a checklist that may be helpful in planning for the expansion of training centres.

If there is insufficient expertise within a country, it may be necessary for external experts to contribute to fistula-repair services and fistula-repair training. This may involve local professionals being sent to be trained in other countries where this type of training capacity exists or international experts, including those from neighbouring countries, regularly visiting national or sub-national training institutions.

As part of any national strategy, countries may decide that at least one or more training centres should be established as part of the short- to medium-term plan.

The use of external expert support

A number of countries are supported by external experts who have, to date, provided a significant proportion of the fistula-repair services. This crucial work will need to continue until a viable in-country programme has been established. These experts are not only providing much needed services for local women but are increasingly training local staff in both simple and advanced fistula repair.

2.11 Monitoring and evaluating the national programme

As with any strategy, monitoring and evaluation are vital in determining the level of success of implementation of new policies and initiatives and whether it is necessary to make adjustments and changes. Evaluation plans should be integral to the strategy and should be planned at the beginning of the process with clear arrangements for how they will be performed, and with earmarked resources.

Evaluation relies on the introduction of robust data-collection systems to allow for effective monitoring.

Clinical audit and research

Apart from monitoring the impact of the overall strategy it is also crucial to audit the clinical care provided for these women, to ensure they receive the best possible repairs, and to share the results of these audits with others. As Chapter Three highlights, there is a lack of robust qualitative and comparative research into a number of key areas, including the optimal timing for repair and the effectiveness of types of repair undertaken. Participation in such research should also be included as a key component of the national strategy.

Performance indicators

WHO has produced a list of 17 reproductive health indicators that may be useful for safe motherhood programme monitoring (12, 13). Those indicators that may prove useful in helping monitor and evaluate fistula programmes are shown in Box 2.1. Suggestions for additional indicators are listed in Box 2.2.

Box 2.1**Reproductive health indicators for global monitoring (12)**

- Percentage of births attended by skilled health personnel

Skilled health personnel include midwives, or doctors and nurses skilled in midwifery, and exclude trained or untrained traditional birth attendants.

- Number of facilities with functioning basic essential obstetric care per 500,000 population

Basic essential obstetric care should include the availability of basic emergency care: parenteral antibiotics, oxytocics, sedatives for eclampsia, assisted vaginal deliveries (vacuum extraction), manual removals of placenta and removals of retained products (MVA).

- Number of facilities with functioning comprehensive essential obstetric care per 500,000 population

Comprehensive essential obstetric care should include basic essential obstetric care plus surgery, anaesthesia and blood transfusion.

Other indicators for monitoring obstetric care (14)

- Proportion of women estimated to have complications who are treated in essential obstetric care facilities (basic or comprehensive)

This indicator covers all obstetric complications and can be used for both basic and comprehensive levels of essential obstetric care. It can be refined to address specific complications related to OF such as obstructed labour, ruptured uterus or women who present with OF after delivery. Minimum acceptable level: at least 100% of women estimated to have obstetric complications are treated in essential obstetric care facilities.

- Caesarean-section rate

The caesarean-section rate is a percentage of all births. Minimum acceptable level: as a proportion of all births in a population, caesarean sections should account for not less than 5%, nor more than 15%.

- Case-fatality rate (CFR)

The case-fatality rate applies to all complications but can also be used for specific obstetric complication: e.g. the number of deaths from obstructed labour divided by the overall number of women admitted with obstructed labour. Minimum level acceptable: the case-fatality rate among women with obstetric complications in essential obstetric care facilities should be less than 1%.

Box 2.2**Possible specific indicators for monitoring and evaluating fistula prevention, and the availability and quality of obstetric care and fistula repair for any given country or specific area under consideration****Epidemiological**

- Estimated number of women living with OF, i.e. prevalence
- Estimated number of new cases of OF per year, i.e. incidence
- Estimated rate of OF per 1,000 deliveries
- Number of women treated for OF per year
- Estimate of unmet need for fistula repair

Service delivery

- Number of midwives, nurses and doctors with midwifery skills per 1,000 births
- Number of doctors or mid-level providers able to perform caesarean section per 1,000 births
- Proportion of births managed with a partograph
- Number of facilities providing simple fistula treatment services
- Number of centres providing specialist fistula services
- Number of fistula treatment services which include social reintegration activities
- Number of surgeons able to undertake simple repairs
- Number of surgeons able to undertake complex repairs

Training

- Number of training facilities (pre-service and in-service) including OF prevention and treatment as part of the core syllabus
- Number of surgeons undertaking simple fistula repair training per year
- Number of in-country surgeons undertaking specialist fistula training (either in country or elsewhere) per year

Quality of care

- Proportion of women with obstetric fistula who have a successful first repair by each facility. Ideally the closure rate should be 85%, of which 90% should be without incontinence (15). This success rate can also be disaggregated into different types of fistula. (See Chapter Three.)
- Proportion of women who have had two or more unsuccessful repairs
- Percentage of women successfully reintegrated in their society after treatment

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Section II

**Basic principles for caring for women
undergoing obstetric fistula repair**

Background

The guiding principles contained in this short chapter were discussed at a meeting which brought together many experts in fistula surgery from around the world. As with many other aspects of OF, funds for research into the optimal methods of repair have been limited. Thus the type of peer-reviewed research, case control or randomized clinical trials and systematic-reviews that are usually required to underpin international evidence-based clinical guidelines are not available and the principles outlined here are based on consensus alone. Over the years, different surgeons have developed their own techniques and protocols, which may vary, and these different approaches have been identified whenever possible. This chapter is therefore not a textbook on how to undertake fistula repair but aims to summarize the main clinical points and provide a list of further references. Everyone involved in drawing this chapter together stresses the urgent need for more formal research in this area and makes this a priority recommendation for all relevant funding organizations.

This chapter should be read in conjunction with the chapters on nursing, physiotherapy and reintegration, since caring for these women during their hospital stay requires teamwork and the development of local services and protocols between surgeons, nurses, physiotherapists, counsellors, nursing aides and other professional staff. The key role that a woman's relatives or friends may be able to play on the team also needs to be recognized.

This chapter covers the principles for the management of women presenting in the following three ways:

- The immediate management of women who have survived prolonged or obstructed labour.
- The management of women who present immediately after delivery with an OF.
- The management of women who present with an established OF.

The aims and objectives of fistula surgery

The vast majority of OF can be successfully repaired by the use of appropriate and skilled surgical techniques. The clinical aims of fistula-repair surgery are simple:

- To close the fistula.
- To make the woman continent and able to resume a full and active life.

Principles for the immediate care of women who have survived prolonged or obstructed labour

In order to try to prevent fistula formation, or to encourage very small fistula to close spontaneously, it is important that all women who have survived prolonged or obstructed labour, with or without a caesarean section, be treated by the following regime immediately after delivery, or as soon as they present to a health-care facility:

- An appropriate size (Foley size 16-18) indwelling bladder catheter should be inserted to enable free drainage of urine. Opinions vary as to the length of time this should remain in place; in the case of a small healing fistula it may be from four to six weeks, but if no apparent damage has been shown to have occurred it may be suitable to remove the catheter after 14 days.
- The perineum and vagina should be cleaned with salty water (sitz-baths), or a solution of mild detergent in water, twice a day.
- The woman should be encouraged to drink a large volume of fluids, around four to five litres a day.
- The vagina should be examined as soon as possible, by speculum, and any necrotic tissue gently excised. This should be performed under aseptic conditions and may need to be repeated until the vagina is clean.
- Any intercurrent infection should be treated according to local protocols, as should routine prophylaxis against urinary tract infections, if used.

All maternity units should draw up a protocol for the management of women who have survived prolonged labour based on the above principles. These women can be cared for by any suitably trained staff including obstetricians, urologists, general surgeons, medical officers, clinical officers or midwives, and will not require referral for fistula repair unless the above regime fails or unless there is any remaining doubt. Should this treatment prove successful, and before discharge, the woman, preferably with her husband, should receive the pre-discharge advice given later in this and the nursing chapter about family planning and contraception. The need to deliver future babies in a unit equipped and staffed to undertake emergency caesarean sections should be emphasized as well as the need to seek antenatal care in future pregnancies.

Principles for the management of women who present immediately after delivery with an obstetric fistula

The spontaneous closure of around 15-20% of simple or small fistula can be achieved by conservative means, provided these women are treated immediately after, or within a few days of, delivery.

The regime is identical to that previously described for the management of women who have survived a prolonged or obstructed labour except that continuous bladder drainage by catheter should be maintained for a minimum of four to a maximum of six weeks according to the local protocol. As before, any necrotic tissue should be regularly and gently debrided, if necessary, even if the woman will eventually require surgery, as fistula surgery should not be performed if necrotic tissue is present in the vagina.

Women for whom the above regime proves successful may be discharged when their vagina is clean and has completely healed. As with other women who have had a fistula repair, before discharge the woman should receive advice about family planning and contraception, the need to seek antenatal care in future pregnancies and to be delivered in a unit equipped and staffed to undertake emergency caesarean sections. It is preferable that this information is also given to her husband and family members.

There is no clear consensus on the optimum timing to undertake fistula surgery in recently delivered women for whom the above measures have failed. Many experienced fistula surgeons prefer to operate as soon as the vagina is clear of necrotic tissues while others prefer to wait for two to three months after the fistula occurred. This chapter describes the guiding operative principles for either option.

Principles for the management of women who present with an established OF requiring repair

The following principles generally apply to both those women for whom conservative treatment immediately following formation of the fistula has failed as well as formation for women who present with established fistula and who have not received previous of the medical attention.

The initial consultation

The chapter on nursing care provides protocols for the management of women when they present to the clinic, including outpatient procedures and the completion of the basic registration card. Annex B of the nursing chapter (p. 55) contains an example of a fistula patient record form used in Addis Ababa Fistula Hospital which can be adapted for local use. The collection of such background data is not only helpful in managing a woman's own care plan but also for the collection of aggregated statistics that can be used in developing fistula prevention strategies as well as for advocating for or planning future fistula services in the district, region or country. Such data will also provide insight into the barriers women may encounter whilst trying to access obstetric or midwifery services for safe delivery.

The information contained on the basic registration card can be used to complement the fuller social and medical history required as part of her initial examination. It is the woman's history and the physical examination which are key to successful surgical decision making.

A full medical and social history

This should, as a minimum, include the following:

- Age, parity and past obstetric history.
- History of any ritual genital cutting or circumcision.
- Number and ages of living children, and dates of delivery and death for those who were stillborn or who died later.
- Menstrual history following her most recent pregnancy.
- Who cared for and assisted her during her last pregnancy and delivery.

- Duration of labour and how it was managed (particularly in relation to the use of traditional herbs or techniques including vaginal or perineal cutting by traditional birth attendants).
- Whether the baby was a vertex, breech or transverse/abnormal lie (if known).
- Mode of delivery (caesarean, forceps, ventouse or spontaneous vaginal) and if episiotomy, symphysiotomy or destructive surgery was required.
- Outcome for the baby (living/stillbirth/early or late neonatal death, sex).
- Symptoms of urinary and/or faecal incontinence and for how long have these been known.
- At what point after delivery were these symptoms first noticed.
- What, if any, problems have there been with mobility in general and walking in particular.
- Past medical history including any illness, surgery and/or allergies.
- Who has been giving care until now and who is able to give care should surgery be required.
- Marital status and social history, including any problems which have arisen as a consequence of fistula.

Her physical examination

The nursing chapter stresses the importance of preparing women for examination and surgery as many will be frightened and will require reassurance. Each woman's consent should be sought before the examination and it is important that she understands what will happen and why it is being performed. Many, especially the young, may feel more comfortable and secure if they are accompanied throughout the process, and a companion or nurse should be provided if at all possible.

The examination should cover both the woman's general medical condition as well as conditions associated with OF. The routine medical examination should include checking the vital signs including the pulse, blood pressure, respiration, temperature and noting any indicators of possible malnutrition or anaemia. A gentle abdominal palpation should be performed together with an assessment of the ability to walk unaided and the presence of any limb contractures or foot drop. There are differing opinions as to whether more than a visual inspection of the vulval and perineal areas are necessary. Some surgeons prefer to wait until the operation before undertaking a complete vaginal examination as it is only then that the full extent of the fistula can be appreciated and this causes less pain and distress. Others perform a preliminary gentle digital and speculum examination if the extent of the fistula is not readily apparent. All have however agreed that the guiding principle should be look before you touch, and to touch only if really necessary.

The visual inspection should include an assessment of the perineal, vaginal and labial tissues and thighs to check for signs of:

- urinary/ammonia dermatitis
- ulceration
- concurrent infection of the skin or urine

- faecal soiling
- genital cutting of the vagina or perineum, either as a result of an episiotomy, the attempts of untrained attendants to assist in an obstructed labour or female genital mutilation.

The gentle digital examination, if performed, should note:

- any concurrent pelvic pathology
- the presence or absence of the uterus
- the presence and severity of any vaginal scarring
- the location and number of fistula
- the approximate size of each fistula
- any urethral involvement
- the presence of any recto-vaginal fistula, again noting location, size, scarring, anal sphincter involvement, any rectal stricture or circumferential defect.

Some surgeons will compliment this with an inspection of the vagina using a Sims or other speculum, with the woman in the exaggerated left-lateral position.

Sometimes bladder calculi can be palpated during a physical examination, but the passage of a small metal catheter or uterine sound through the urethra can aid in the diagnosis, although this procedure may be uncomfortable. Some surgeons therefore prefer to wait to do this until the operation.

Basic laboratory tests

Following the examination and prior to surgery a number of basic laboratory tests should be performed. Depending on the availability of facilities and resources, there should be stool and urine tests for parasites or infection, and renal function tests if considered appropriate. Blood tests should routinely include a haemoglobin (Hb) count and blood grouping. If facilities are available, consideration can be given to screening for parasites and to offering a VDRL, Hepatitis B or HIV test, with consent. If there is a clinical suspicion of AIDS, this should be discussed with the woman alone, and, if she wishes, pretest counselling should be arranged. Although a positive HIV diagnosis will not influence the treatment options for her fistula, it will enable the woman to access any local treatment programmes and receive advice and counselling concerning her health and reducing the risk of transmission to her partner and future children.

Explanation, discussion and consent

Once the results of these preliminary investigations are available, the treatment options, details of the operation and post-operative period and the possible long-term sequelae should be explained to the woman, and her husband and family where possible. It is important to try to involve her husband and family in these discussions, for they are likely to be the decision-makers for her future. Thus, explaining that she can most likely be cured and return to an active and normal life, and involving them in the decision-making, is likely to increase their support for her after the operation and during future pregnancies.

The woman and her husband/family may need some time or counselling to enable consideration of the various options before a decision can be made. If she agrees to the operation, her informed consent for the procedure should be obtained and formally recorded. It is important that the decision and the consent is freely given by the woman herself.

Preoperative management

The nursing chapter describes the principles for admission to hospital and the supportive care required for women awaiting surgery. It also covers routine pre-operative care prior to surgery, the key principles of which are repeated here although, again, there is no clear consensus. However, each unit will have its own protocol which should cover the following:

- The timing of washing and shaving (if required) of the perineum. Some surgeons prefer to wash and shave the perineum at the onset of surgery, while in other units this is undertaken by the nursing staff before surgery.
- The use of enemas before the operation. While some surgeons do not use enemas before operations for simple vesico-vaginal fistula (VVF) repair, the majority do, as spinal anaesthesia relaxes the anal sphincter with resultant soiling of the operative field. Enemas are recommended for the repair of a recto-vaginal fistula (RVF).
- Some surgeons prefer the women to be 'nil by mouth' from midnight before the operation but others encourage a high fluid intake before surgery for those women who will be having their fistula repaired under spinal anaesthesia.
- The optional use of preoperative sedation such as 10 mg madazolam or 100 mg phenobarbitone the night before and just prior to her surgery.
- Her preoperative anaesthetic check.

Deciding who should operate

Fistula surgery has a reputation of being difficult; however, with adequate training and suitable experience, competent doctors with surgical expertise should be able to repair simple fistula. Training issues are discussed in more detail in Chapter Two of this manual. All staff trained to undertake simple fistula repair need to recognize and work within the limits of their own skills and refer women with more complex fistula to more experienced expert surgeons in this field when in doubt or if the surgery looks beyond their own competence.

Surgical classification of OF

The degree of complexity of the fistula is crucial to the decision as to who should operate, as there is a decreasing possibility of success with each successive attempt at repair. A number of classifications have been developed which attempt to gauge the severity of the injury and classify fistula into the simple and more complex, thus assisting in deciding which women will require preoperative referral to an expert fistula surgeon and those who may be treated by a suitably trained local surgeon. Two such classifications are given in Annex A (p. 44) of this chapter.

Operative principles

The overriding principle is that the first attempt at repair offers the best chance of success which is why emphasis is placed on determining the classification of the fistula in order to decide who should operate.

A number of different surgical techniques are employed, depending on the surgeon's preference. None are described here and, although references for many of the different techniques are given at the end of this chapter, it is stressed that none should be attempted by untrained surgeons.

The following are the basic principles for fistula surgery:

The route of repair

The usual approach for fistula repair is the vaginal route. However, the surgeon's own experience, the site of the fistula and the extent of injury determine whether the vaginal or, less commonly, the abdominal route is chosen.

The operative position

The most commonly used position for the vaginal route is the exaggerated lithotomy position with shoulder supports for comfort and to help prevent the woman from sliding from the table. The operating table should be tilted in the steep Trendelenburg position so that the surgeon can look down easily into the vagina. The woman's legs should be placed outside the lithotomy poles or padded supports, and supported in the stirrups of the poles, with a small pillow placed under her head.

Preventing infection

Strict asepsis should be ensured by using antiseptic wash, sterile drapes and employing an aseptic technique. Some surgeons also routinely use prophylactic antibiotics, while others do not. It is, however, common practice in developed countries to give appropriate prophylactic antibiotics to all patients undergoing pelvic surgery at induction of anaesthesia and this principle should be followed wherever possible, particularly for women undergoing repair of recto-vaginal fistula, who are at higher risk of coliform contamination.

The basic surgical principles for vesico-vaginal fistula (VVF) can be summarized as follows:

- The fistula should be exposed and the ureters protected.
- The bladder should be mobilized to enable tension-free closure and wide enough dissection of the bladder and vagina. The bladder and vagina should be closed separately, excluding the mucosa and inverting the bladder. The majority of fistula surgeons use one layer closure for the bladder but some prefer closure in two layers, though this may necessitate wider dissection. The vaginal skin/epithelia can be opposed either by minimal suturing to allow for drainage or closed more formally, but in either case haemostasis should be obtained.
- The bladder should be drained with a size 16-18 catheter. Larger sizes may cause urethral irritation and smaller sizes may be by-passed if urine output is high. The type of catheter used varies according to personal preference. Some operators prefer plain catheters, while others use Foleys with or without the balloon inflated. The catheter should be held firmly but gently in place by tape on the thigh or sutures at the introitus to keep it in place and to avoid pulling on the repair site.

The basic surgical principles for complex fistula can be summarized as follows:

Recto-vaginal fistula (RVF)

The principles of repair of a RVF are similar to those given for VVF except:

- Care should be taken not to cause an inadvertent stricture of the rectum.
- Preoperative bowel preparation should be more thorough than for VVF alone. This can be achieved by the use of enemas.
- A temporary colostomy may be required for large, high or severely scarred RVF.
- A previous failed repair may also require a colostomy.
- In the opinion of many surgeons, RVF repair requires prophylactic antibiotic coverage to prevent intra-operative infection, although no case-control studies have been undertaken to evaluate this.
- Postoperative women who have had an RVF repair that has not required a colostomy, should remain on a fluids-only diet for the first two days and then a low-residual diet but with a high fluid intake for a few more days.

Combined fistula

Combined vesico- and recto-vaginal fistula should be repaired at the same time, usually commencing with the vesico-vaginal fistula, but circumstances and common sense should determine the most practical approach.

Postoperative care

Skilled postoperative care is paramount in determining the success of the fistula repair. More detailed guidelines and principles for postoperative care are given in the nursing chapter as it will be nurses who are largely responsible for providing such care, but these are also summarized here:

The immediate postoperative period

- The vital signs (blood pressure, pulse and temperature) should be regularly observed and recorded as per the unit protocol. (See Chapter Four on nursing.)
- The woman should be observed for excessive blood loss both vaginally and through the catheter.
- Intravenous fluids should be given until fluids can be taken orally as per the unit protocol. (See Chapter Four on nursing.)
- The fluid balance should be regularly monitored, including both fluid input and output.
- The woman should be kept comfortable with adequate analgesia.
- The woman should be mobilized as soon as possible if she has had a simple repair.

After 24 hours and during the following days:

- The woman should be encouraged to maintain a high oral-fluid intake level to enable her to produce two to three litres of urine per 24 hours.
- The vaginal pack, if used, should be removed within 24 to 72 hours, according to the local protocol.

- The indwelling catheter to enable free drainage should be retained for 10–14 days.
- It is important to ensure that neither the drainage tube or urinary catheter become kinked, and that the drainage receptacle is always at a lower level than the bladder.
- The woman should be encouraged to become fully mobilized as soon as possible depending on the type of repair, she has received. Women who have had a simple repair can start to be mobilized within a day of operation; those who have undergone complicated fistula repairs, e.g. those requiring a ureteric implant, will need bed rest for up to seven days after surgery depending on the type of operation and the surgeon's own preference. Relevant physiotherapy exercises should be started the day after the operation, as discussed in Chapter Five on physiotherapy.
- Any non-absorbable sutures should be removed when the tissues are healed.
- The woman should be observed for possible anaemia and, if necessary, have a post-operative Hb check.

Possible postoperative complications

Secondary vaginal haemorrhage

This requires immediate attention including assessing the need for resuscitation. Immediate measures should be implemented if this is necessary. In cases where the bleeding, is not arterial, a firm vaginal pack should be used. In cases of arterial bleeding the woman should be taken to the operating theatre and the bleeding points identified and ligated. Should bleeding continue, other causes should be sought. She will need her Hb levels checked if her bleeding has been severe, and any resulting anaemia treated by iron supplementation.

Catheter blockage

Blockage of a catheter requires immediate attention in order to relieve pressure on the surgical repair site. Further details on how to unblock a catheter are given in Chapter Four on nursing.

Anuria

In case of anuria, it is essential to ensure that the catheter is not blocked and the ureters have not been ligated. After ensuring the woman has had sufficient fluid replacement, that her catheter is not blocked, and that the inflated balloon is not causing ureteric obstruction, if the woman has not passed urine she should be taken back to the theatre and, if the ureters have inadvertently been tied off then the sutures must be undone. If the medical officer in charge is not able to do so then the woman should be referred urgently to a specialist. If anuria persists, look for other causes (prerenal, renal and postrenal).

Breakdown of repair

A dye test to check the completeness of the repair should be performed before removal of the catheter. If positive, the catheter should remain in place and on free drainage for four to six weeks afterwards to facilitate healing as discussed earlier. In most cases of early breakdown (within the first five days), it is unlikely that prolonged catheter drainage will help heal the repair but those which occur later (after 7–14 days) may do so.

Infection

Infections of the repair site, or of the urinary tract, should be treated with appropriate antibiotics and in accordance with local protocols. Wound infections also require the wound to be re-opened.

Longer-term post-operative clinical problems may include:

- Residual incontinence, either due to the breakdown of the repair or the persistence of vesico-vaginal fistula, genuine urinary stress incontinence, detrusor over-activity or mixed incontinence. Chapter Five on principles for physiotherapy provides treatment strategies for urge and stress incontinence. Cases due to failed repair will require surgical intervention.
- Urethral or vaginal strictures.
- A genuinely failed repair.
- Dyspareunia.
- Haematometra.
- Secondary amenorrhoea or infertility.
- Bladder stones.

This chapter has been seen and commented on by Andrew Browning, Brian Hancock, John Kelly, Tom Raassen, Joseph Ruminjo and Sister Ann Ward.

Suggestions for further reading

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Annex A: The classification of obstetric fistula

Two main classifications have been drawn up to classify fistula: 1) on the possible degree of difficulty of their repair; and 2) as a surgical classification. Both are based on the degree of involvement, or not, of the closing mechanism since this will have consequences for the operative technique and the prognosis of the repair.

Grading of the degree of anticipated difficulty of the repair

The first classification classifies fistula into two groups according to the degree of operative difficulty:

- Good prognosis/simple fistula able to be repaired by surgeons fully trained and competent to undertake uncomplicated fistula repairs.
- Uncertain prognosis/complicated fistula which will require referral to, and repair by, a specialist fistula surgeon.

Criteria based on the degree of anticipated difficulty of the repair		
Defining criteria	Good prognosis/Simple	Complicated/Uncertain
Number of fistula	single	multiple
Site	vesico-vaginal (VVF)	recto-vaginal (RVF) mixed VVF/RVF involvement of cervix
Size (diameter)	<4cm	>4cm
Involvement of the urethra/ continence mechanism	absent	present
Scarring of vaginal tissue	absent	present
Presence of circumferential defect*	absent	present
Degree of tissue loss	minimal	extensive
Ureter/bladder involvement	ureters are inside the bladder, not draining into the vagina	ureters are draining into the vagina, bladder may have stones
Number of attempts at repair	no previous attempt	failed previous attempts of repair

* *the complete separation of the urethra from the bladder.*

Grading by surgical classification to determine the type of repair that will be required

This classification, as described by Waaldijkⁱ, is used to determine the type of surgical repair that may be required. A detailed explanation can be found in the published literature. In principle, the operative technique becomes progressively more complicated from type I to IIBb. The same principle also applies to the size, from small to extensive.

Classification of fistula according to type of surgery required based on their anatomic/physiologic location	
I	fistula not involving the closing mechanism
II	fistula involving the closing mechanism
	A without (sub)total urethral involvement
	a without circumferential defect*
	b with circumferential defect
	B with (sub)total urethral involvement
	a without circumferential defect
	b with circumferential defect
III	miscellaneous, e.g. ureteric and other exceptional fistula
Sub-classification according to size	
small	<2 cm
medium	2-3 cm
large	4-5 cm
extensive	6 or more cm

* circumferential defect: the complete separation of the urethra from the bladder.

ⁱ Waaldijk K. Surgical classification of obstetric fistula. *International Journal of Gynecology and Obstetrics*, 1995, 49:161-163.

The principles outlined in this chapter are based on those kindly provided by the nursing staff of the Addis Ababa Fistula Hospital. It is recognized, however, that different facilities may have less available resources, or their surgeons may adopt different clinical protocols and the guidelines contained here will require local adaptation. Further, this chapter should be read in conjunction with the chapters on the principles for fistula surgery and physiotherapy when designing individual local protocols.

Supportive and psychological care

The principle underpinning all aspects of the care provided for women being treated for OF is that they will require supportive and sympathetic care along their path through the services provided for them. This starts when they first present at the reception desk of an outpatient clinic through their inpatient stay (pre-, intra- and postoperatively) and up to, and including, their postoperative discharge.

Staff privileged to work with women who have recovered from fistula surgery are struck by their strength to endure hardship and to manage to get on with an active life. However, at the outset, many women living with OF will have been traumatized by the events surrounding the birth of their baby and subsequent frequent ostracism by husbands, other family members and their community. Some may see themselves as cursed. They may be frightened, wary and depressed. Often their knowledge of a hospital or clinic is that it is just a place of pain, suffering and death. It is therefore important to talk to each woman individually to alleviate any specific fears that she may have and let her know that the staff are present to help her. At all stages touch is very important; a gentle pat on the shoulder, and a hug if appropriate, tells her that she is not untouchable.

Good supportive and empathetic care will help women to adjust to the hospital environment as well as prepare them psychologically for a successful operation and recovery period. Training former fistula patients as nursing aides is an excellent way to provide this psychological care as there is empathy between caregiver and patient, having both gone through the same plight. Providing an opportunity for the patient to talk to a woman who has already undergone the treatment successfully is another good strategy for support.

Women undergoing investigation and treatment for OF will be subject to a number of unfamiliar intimate and uncomfortable examinations and procedures as well as undergoing anaesthesia and a major operation. These can be frightening and women should, ideally, be supported through each step by the reassuring presence and touch of a nurse or a nurse's aide. Each procedure should be explained beforehand as well as step-by-step throughout the process. This should include not only informing her of what is being done at each point and why, but also what she can expect to feel and how quickly the feeling will pass.

Registration at outpatients

A warm welcome for these women is very important. The role of the registration officer is key, as s/he is the first person the girl or woman will meet. The choice of receptionist should be done with great care as a kind, sympathetic person is essential.

It is important to document the details of each woman carefully as this not only helps with developing her own care plan but also provides crucial data for professionals and health-care planners to use in helping to advocate for and provide a better service for other women in the future. A special card should be prepared for each woman to record where she is from, how far she has travelled, how she arrived at the hospital etc. An example of the card used by the Addis Ababa Fistula Hospital is attached as Annex B to this chapter. These should then be presented in order of each woman's arrival at the clinic for the doctor to see.

The outpatient examination

A nurse or a nurse's aid should accompany the woman into the examination room and gently show her to a chair near the examining doctor where a brief medical history is taken. She should, if possible, stay with the woman throughout her examination and the subsequent discussions. The medical history will be followed by a physical examination that may, or may not, include a pelvic examination, depending on the doctor's preference.

Once the examination is finished, and the summary and drawing of the findings included in her medical notes, she should be informed of the findings. Where possible, her relatives should then be called in and her condition, and the possible options and outcomes for her treatment should be explained to them.

Time should then be allowed for both the woman and her relatives to discuss the possible options and ask any questions. They may then take some time to decide what they want. If she is offered immediate admission to the hospital, extra time will be required to say goodbye.

On admission

Ideally the woman should be admitted by a nurse, or nurse's aide, who speaks the same or at least a common language, and who can answer any questions she may have, explain what will happen and the procedures of admission. She should be shown where the toilets and showers are, and given a small tour of the hospital so that she can feel more relaxed and familiar with her surroundings. If possible, she should be introduced to other patients of her own age and ethnic group if they are present. She should be introduced to her carer so that she has a friendly name and face she can refer to if she is troubled about anything.

If facilities are available, she should have a bath and have her hair checked for lice and washed if necessary. Where possible, a hospital nightdress should be provided and her own clothes kept in a secure place to take home once she has been discharged. A blanket, if available, will help keep her warm if the weather is cold. A well-balanced diet should be provided and any intestinal parasites treated. If she is very weak, she will require supportive nursing care including ensuring that she receives a nutritious diet in a form she can tolerate and that she does not become dehydrated. She may need help with her personal care, including bed baths, and she should receive appropriate medical supervision when required.

On admission, each woman should be checked for signs of nerve injury in her lower limbs. These should be assessed by examining her gait and noting if she is able to move her toes, ankles, knees and hips in all normal directions. Common presentations include foot drop on one or both sides and, less frequently, weakness of the hip muscles or the quadriceps/hamstring muscle. Such injuries are common but may be missed if the woman has been completely bedridden for a few weeks, due to puerperal sepsis or generalized weakness for example. If these are missed, contractures can develop very quickly.

The principles of pre- and postoperative prevention and management of nerve injuries and contractures are described in Chapter Five on the principles of physiotherapy and should be incorporated into the nursing protocol of each unit, depending on the availability of specially trained nurses or physiotherapists.

Preoperative care

Details of the medical examination and basic laboratory investigations are contained in Chapter Three on the basic principles for surgery.

Diet

A high-protein, high-calorie diet is essential for all women, both prior to and after surgery. The social circumstances of women who have lived with fistula for some time may have led to anaemia and malnutrition. Throughout her stay the woman should be encouraged to drink at least three litres of water a day to discourage the development of bladder calculi.

Two days before surgery, the woman should be given a light diet only, but encouraged to maintain a high oral intake of fluids and the day before surgery she should have a fluid-only diet (tea, soft drinks and water).

Medication

Medication should be given according to local protocols but may include:

- Iron supplementation if required.
- Anti-helminths if needed, or if part of the routine protocol for bowel care and preparation.
- Preoperative antibiotic coverage if this forms part of the surgeon's protocol.
- Sedation the night before surgery and the morning of the operation or according to the hospital's regimen.

Bowel care

- Rectal wash outs with warm soapy water should be given until clear water returns.
- For women with a recto-vaginal fistula or a complex fistula, some surgeons give castor oil 30 cc with plenty of water two days prior to surgery.

Other preoperative care

- It should be ensured that the woman understands the operation and signs the consent form.

- If part of the local protocol, the woman's pubic hair should be shaved before going to theatre.
- Her preoperative vital signs should be checked and recorded.

The role of nurses in the operating theatre

Reassurance and support

As already mentioned, nurses, or nurse's aides, have a vital role to play in offering support and reassurance for women before and during the operation itself.

Apart from reassurance, nurses may provide a step-by-step explanation of what is happening during induction of anaesthesia as well as during the operation itself. A nurse's aide, who speaks the patient's language and who can be with her and answer any questions, can be helpful although this may not always be possible. The patient then feels that a nurse is close by at all times and should be reassured by touch whilst awake. Most women are awake during the repair of a vesico-vaginal fistula, as a spinal block using Bupivacaine is normally used. For more extensive surgery, general anaesthesia is usually given.

During the operation

Apart from support and reassurance the nurse or nurse's aide will:

- Help the surgeon or other staff to place the woman gently on the operating table in the preferred position, so that she is as comfortable as possible and has a small pillow to go under her head.
- Ensure her vital signs are regularly monitored.
- Note and record the number of vaginal packs used and left in situ on a form for this specific purpose.

Postoperative nursing care

Immediate

After her operation the nurse should:

- Ensure the woman's post-operative bed is prepared, with the blankets folded back, in order to receive her upon her return from the operating theatre. A sphygmomanometer, stethoscope and an intravenous (IV) drip stand should be ready, as should a vital sign chart with the woman's name, card number and the date clearly marked with the surgeon's name at the head of the chart.
- Check the vital signs regularly. Her temperature, pulse, respiration and blood pressure should be checked every 15 minutes for the first hour and then, if stable, every half an hour for a further four hours. If she is well and has no signs of shock these may then be done at four-hour intervals. If there is any cause for concern, or signs of shock, the surgeon must be notified immediately.
- Ensure the surgeon's instructions for IV fluids are followed and regularly monitor the woman's fluid input and output, and record this on her fluid-balance chart.
- Regularly check for bleeding from both the Foley catheter and, if present, the ureteric catheters. The woman's vagina and the labial Martius graft site, if used, should also be checked for bleeding.
- Make sure the woman is as comfortable as possible and receives analgesia according to the local protocol.

Later postoperative management (after 24 hours)

Her vital signs should be checked and recorded regularly, as dictated by the unit protocol or by her surgeon if there have been, or may be, any problems. Pain medication will be given as directed, either by the unit protocol or by her surgeon.

Fluids

- Initially she will receive intravenous fluids, as prescribed by the surgeon.
- Starting on the first day she should be encouraged to drink enough fluid to produce two to three litres of urine per 24 hours. This amount prevents ascending urinary tract infections and also prevents blocking of the catheter.
- Her urinary output should be clear, and completely colourless and odourless (there is no clear evidence and the consensus is 10 days). If not, the doctor must be informed.

Diet

All women should be started on a fluid diet the day after operation and encouraged to drink copiously. Usually a woman who has had a VVF repair will commence with a light diet the second day after surgery and a woman who has had an RVF or complex fistula repair will follow the surgeon's preferred diet protocol. Women who have had a colostomy can follow the diet of the VVF patient.

Dietary Classification

- Fluid diet: tea, juice, very thin flour gruel or water.
- Light diet: potato, rice, macaroni, clear soup and/or low-fibre bread.
- Normal diet: the usual food of the given country.

Further details about the immediate and later postoperative management of women treated for an obstetric fistula are found in Chapter Three.

Post-operative mobilization, physiotherapy and pelvic floor exercises

The timing and techniques for these are described in detail in Chapter Five on physiotherapy and should be adapted for each woman on an individual basis according to her needs.

Checking for possible complications

Each woman should be regularly checked to:

- Look for bleeding from both the Foley catheter and, if present, the ureteric catheters. Her vagina and the labial Martius graft site, if used, should also be checked for bleeding. If problems are noted her surgeon should be informed.
- Ensure she has good urinary drainage from the Foley catheter and ureteric catheters as these may block and require flushing.

Catheter care (ureteric and Foley)

The catheters should empty by free drainage into a kidney dish or other receptacle at the bedside. The patient herself is then able to monitor the state of her urine and note immediately if no urine is coming out or if it smelly, cloudy or insufficient. She is responsible for emptying the dish into a bucket provided at the side of the bed for this purpose. Other methods are drainage into a clear glass

male or female urinal. Urinary bags pose problems in that they are supervised by staff rather than by patients, and identifying and resolving any catheter blockages may be delayed. Catheter blockages must also be resolved using aseptic techniques.

Should urinary bags be used, well-trained nursing staff are needed to ensure that these do not block as this will lead to wound break down and recurrence of the fistula. There should be regular hourly checks of each patient's urinary bag to ensure that the urine is flowing, that the bags are emptied and that the contents are quickly examined for quantity, smell and appearance by the nurse.

Another method used is the 'drink, drip and dry method' where a simple straight clean silicone tube is attached to the Foley catheter, which is then allowed to 'drip' into a small bucket with a lid into which a hole has been made to allow the tube through. This allows for mobility and is sustainable, where urinary bags are not.

Catheters should be removed only with the agreement of the supervising doctor. Chapter Three describes the principles and timescales for this.

Removing the vaginal pack

The woman's vaginal pack should be removed on the first to third postoperative day as the surgeon may instruct. It should be gently pulled out and, if two or more packs have been inserted, a note should be made at the time of insertion so that the carer will know to ensure that the correct number are removed.

Once the pack(s) is removed she will need daily perineal care until she is ambulant, at which time she can do this herself.

Repacking the vagina

Should it be necessary to repack her vagina the following technique is suggested:

- Using a sterile vaginal gauze pack, and sterile technique, carefully separate the labia with gloved hands and gently introduce the pack, coated with Acriflavine emulsion, through the vaginal introitus. Continue to introduce the gauze until no more will go in, using gently pressure only, and then cut off the remainder of the gauze.

Perineal toilet and catheter care

After removal of the vaginal pack (and labial pack if used) a scrupulously clean perineal area is essential. This can be achieved by the regular use of sitz-baths, or by daily perineal and catheter care. This may need to be more frequent if the weather is very hot. A trolley with syringes (10 cc and 50 cc), gauze swabs, gloves and saline should be prepared:

- The woman should be placed on a bedpan and saline drizzled over the outer edge of her labia. The labia should be gently separated with a gloved hand and more saline drizzled over them. The area should be then gently dried, ensuring that all dirt, blood or mucus is removed.
- The catheters should have a gentle wipe around, ensuring that no crust has formed. It is important not to pull the catheters during cleaning.
- The catheters should be flushed with just enough saline, to keep them unblocked. No pressure should be used when undertaking this procedure.

Catheter problems

It is essential that catheters never block or, if they do, that this is dealt with immediately by gentle and careful flushing. The catheter should immediately be flushed out with saline (sodium chloride 9%) or boric solution (chlorinated lime 1.25 g) and boric acid solution (B.P. 1988: Eusol) mixed with 100 ml of purified water. The urinary flow and the colour of the urine should be checked afterwards. The woman should also be encouraged to drink. Sometimes the catheter may need to be completely changed.

The labial pressure pad

A labial pressure pad is used if the woman has had a repair using a Martius graft. In general it is removed on the fifth post-operative day. Removal is by using a sterile technique to cut and remove the sutures holding the pressure pad over the labia majorum, from where the fat graft was taken. The area should then be carefully cleaned.

Any problems with a Martius graft are usually due to the development of haematomas. These can be released by removing the suture closest to the haematoma and allowing free drainage. Ice and analgesia may help relieve the discomfort.

Removal of sutures

Non-absorbable sutures should be removed, using an aseptic technique, when the tissues are healed and the surgeon is content to do so. The timing of this will vary according to each woman's own circumstances and the preference of her individual surgeon.

Self-catheterization

On occasions, if other resources are not available, some women will have to do a self-catheterization. In such circumstances they should be taught:

- Cleanliness is of utmost importance.
- How to use a mirror in order to see the perineum and the urinary meatus.
- By using her left hand to open the labia she may use her right hand to insert the catheter. Initially some local anaesthetic gel (if available, otherwise just use lubricant) may be used but with time she will become accustomed to catheterize herself without using gel.
- How to care for her catheter. A semi-permanent catheter can be used several times and should be washed and then boiled for 20 minutes and kept wrapped in a clean cloth until the next use. A disposable one should be destroyed and buried after use.

Pre-discharge health education

Prior to discharge, the woman and her partner, if present, should receive basic health and nutritional education to ensure she maintains her overall general health. Further, she and her partner should receive full advice on family planning, contraception (with supplies if available) and the management of any subsequent pregnancies. She should also be put in touch with any organizations near to her home which can offer support and advice. The principles for social reintegration are discussed in Chapter Six of this manual and should be adopted if required, depending on the woman's particular circumstances.

Sexual intercourse

She should be advised not have intercourse for three months to allow for complete healing to take place and ideally not to become pregnant for six months to a year following this period. This should also be explained to her partner if possible. Once intercourse has resumed this should be gentle, and with consideration for the woman.

Future pregnancies and the importance of antenatal care

Women, and their partners and families, should be advised of the importance of having adequate antenatal care from a trained health-care professional in subsequent pregnancies. Further, that she must deliver in a hospital equipped to undertake caesarean sections, as this may be necessary. If she lives far away from such a hospital she should wait near the hospital before delivery in case she goes into labour and cannot easily reach the facility.

The take-home card

Each woman should be given a card to take home with details of her history, a diagram of the injury and a summary of the operation undertaken to repair it. Thereafter, any time she goes to a clinic for maternity care she can present this card so that those caring for her will be able to take necessary precautions on her behalf to avoid further injuries in childbirth.

The Addis Ababa Fistula Hospital has also provided recipes for the emulsions, tinctures and solutions commonly used in the care of these women. These are shown in Annex C.

Date _____

Name _____

Age _____

Who came with the patient? _____

Does she have any friends or relatives in Addis Ababa?
Please record the address and telephone number of
nearest friend or family here?

What is the Doctors's name that sent her here?

What is the Doctor's address?

Has she got a letter from this Doctor?

What did the Doctor say in his or her letter?

When was her last baby born? _____

Did she lose control of her urine then? _____

And faeces also? _____

Was that her first labour? _____

Was the baby stillborn? _____

How many babies has she had? _____

How many are alive? _____

Her height _____

Was the baby's head or legs born first? _____

How many days was she in labour? _____

How many days before she could walk? _____

Is she still with her husband? _____

Who cared for her? _____

Where is her province? _____

What is the name of her village? _____

What is the name of the nearest large town to her village? _____

What road leads from that town to Addis Ababa? _____

Did a cured fistula woman tell her to come to this hospital? _____

Who told her to come to Addis Ababa? _____

How did she travel? _____

How many hours walking? _____

How many hours on donkey or mule? _____

How many hours by bus? _____

What did the bus cost? _____

What happened when she got off the bus in Addis Ababa?

How did she travel from the bus station to the fistula hospital?

How many days has she been in the city? _____

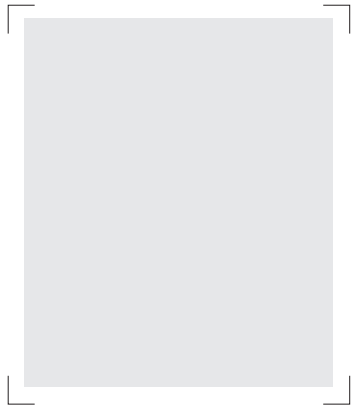
Where did she stay? _____

Who gave her money for her journey _____

What other hospital has she been in? _____

O/E

Photograph or Drawing



Present management _____

Operation date _____

Operation summary

Outcome of surgery: _____

Stress incontinence: _____

Blood group _____

Transfusion _____

Was she given clothes to go home? _____

And transport money ? _____ (amount)

Annex C: Recipes for tinctures and emulsions

Acriflavine emulsion

Ingredients

Acriflavine 1 gm
Beeswax 41 gm
Distilled water 250 cc
Liquid paraffin 750 cc

- Boil the beeswax in the liquid paraffin and let it cool.
- Boil the acriflavine powder with distilled water and let it cool.
- Add the acriflavine solution to the boiled paraffin, stirring continuously until it gets cold.
- Transfer the emulsion into a bottle and shake well.

Bonney's blue dye

Ingredients

Gentian violet 5 gm
Brilliant green 5 gm
Alcohol 500 ml
Distilled water 500 ml

- Mix together.

Gentian violet solution

Ingredients

Alcohol 100 ml
Purified water 800 ml
Gentian violet 10 gm

- Mix the alcohol with the purified water. Then dissolve the gentian violet by diluting with the mixture and add sufficient purified water to make 1000 ml.

Tincture of iodine

Ingredients

Iodine 25 gm
Sodium iodide 15 gm
Distilled water 25 cc

- Mix and add alcohol to make 1000 cc.

5 Principles for pre- and postoperative physiotherapy

This chapter has been written by Lesley Cochrane, visiting physiotherapist to the Addis Ababa Fistula Hospital.

General principles

Physiotherapy for women who have a fistula repair is important to enable them to regain as full and as active a life as possible after surgery. This includes improving bladder and bowel control, and regaining mobility if they have general muscle weakness or have sustained injury to the nerves of their lower legs.

If at all possible, a physiotherapist with the relevant skills and experience in women's health should work with these women. If this is not possible, at least one member of the nursing staff should be taught simple physiotherapy techniques by a qualified physiotherapist.

The objectives of physiotherapy for women with OF

These are to ensure each woman:

- achieves optimum physical fitness preoperatively, until she is fit for surgery, postoperatively, during bed rest, and then until she can walk to the best of her ability; and
- understands how her pelvic floor muscles and bladder work, and how she can help achieve control over her bladder and bowel after surgery.

On admission

Each woman should be physically assessed to check for:

- *Mobility*
 - Can she walk unaided?
 - Does she have a foot drop on one or both sides?
 - Can she stand up from sitting without help?
 - Can she get up from lying down without help?
- *Joint contractures*
 - Does she have any limitation of movement in her hips, knees or ankles?
- *Muscle weakness*
 - Can she move all her joints without help?
- *Pain and numbness*
 - Does she have any numb or painful areas in her legs or feet?

Physiotherapy for mobilization and general health

Preoperative physiotherapy

For all women, particularly those likely to be on bed rest after surgery, regular exercise beforehand is important to help promote good circulation and to maintain muscle strength. The general exercises given in this chapter should be taught and started as soon as the woman is admitted. Pelvic floor exercises can also be started at this stage, but it is important that she recognizes that after her operation, particularly whilst her catheter is still in place, gentle squeezes only are advised.

Specific principles for the preoperative management of women who have nerve damage, muscle weakness and other physical problems are given in the appropriate section in this chapter.

Post-operative physiotherapy

Until fully mobilized it is important for the woman to undertake the general exercises described in this chapter. However, she should be encouraged to mobilize as soon as possible by:

- Sitting up with her legs over the side of the bed, learning to balance in the sitting position. She should then be helped to stand with support from a nurse or aide, or by holding onto something secure for balance. Transferring her weight from one foot to the other in the standing position helps to build up strength and balance, eventually leading to walking with the help of nursing staff and then by herself, or with sticks or crutches if necessary.
- Once up and about, she can then participate in the more general postoperative exercises.
- If the woman has problems with limb contractures, foot drop or nerve damage, the additional exercises for these, which she will have started in her pre-operative period, should be continued throughout her period of rehabilitation.

Pelvic floor exercises and the management of urinary incontinence are described in a separate section at the end of this chapter, but these can be explained at this time and the patient encouraged to carry out gentle squeezes only while the catheter is in situ.

Exercises—general principles

- The exercises described in this chapter should be done at least three times a day.
- The number of times an exercise is repeated will vary according to the ability of the individual woman. As she becomes stronger the number of repetitions may be increased. As a starting point it is suggested each exercise be repeated 5 times (R5x) for each side, if appropriate. If this is easily achieved this can be increased to R10x or R20x, but this is only a rough guide.
- If she feels pain while exercising she should stop.
- Normal breathing should be encouraged while exercising, as holding the breath puts strain on the pelvic floor.

General pre- and postoperative exercises for mobility and health, particularly whilst on bed rest

Firstly lying on her back, with her knees bent and feet on the bed, the woman should be shown how to:

1. Place one hand on her abdomen and slowly breathe in, letting the abdomen rise up under her hand. She should then slowly breathe out, letting her abdomen sink down. R5x
2. Keep her knees together and gently rock them from side to side, using small movements only. R10x
3. Tighten her lower abdominal muscles and lift her buttocks up off the bed (as though to have a bedpan put in place). Hold the position for five seconds and then slowly lower back into the bed. R5x

Then, lying on her back, with her legs straight:

4. Bend and stretch her feet up and down from the ankles. R20x
5. Rotate her feet first one way and then the other. R20x
6. Bend one knee up to chest and then straighten. Repeat with the other leg. R10x
7. Tighten her thigh muscles, feel knees straighten, then release. R10x
8. Straighten one leg and lift it a short distance off the bed, lowering it down, slowly and then repeat with the other leg. R10x
9. Squeeze her buttocks tight and count to five, and then release. R10x

Ongoing general pre- and postoperative exercises to improve fitness and mobility

Each woman should be encouraged to continue to work on strengthening and stretching exercises for her own specific problems.

Working with other women in groups, using any equipment such as balls and music, and encouraged by the staff, can result in effective and enjoyable exercise sessions. Traditional dancing can also be incorporated into exercise classes.

Many different functional exercises can be developed from the following:

- Walking forwards/backwards/sideways/on the toes.
- Standing to throw and catch a ball/bounce/kick a ball.
- Balancing on one leg.
- Standing on wobble boards.
- Sitting and lifting balls or other objects, using the feet.

Crutches and walking sticks are helpful for mobility in the early period and, if women are having a lot of pain in their feet, shoes may help. A simple 'foot-up splint', which fits around the ankle and attaches to the front of the shoe may make walking easier for the woman with a foot drop.

The management of women with lower-limb nerve injuries and the prevention of further limb contractures

For a woman with joint contractures or nerve injuries, the following principles of management should be followed, both before and after surgery:

- She should be encouraged to move by herself as much as possible at all times.
- She should be correctly positioned in her bed to avoid or reduce contractures and maintain the functional positions for her paralysed limbs.
- She should undertake a programme of active exercises to strengthen any weakened muscles, with assistance and walking aids as required.
- Any tight soft tissue in her legs should be gently stretched.

Any woman on pre- or postoperative bed rest should be encouraged to undertake the general physiotherapy exercises suitable for women on bed rest given in this chapter. She should also move herself around the bed as much as she can, with help only when required. She should be mobilized as soon as possible.

Management of contractures of the hip and knee

A woman with severe contractures should be referred to an orthopaedic surgeon, if possible. The following general principles apply:

Positioning her in bed

- Lying on her side, she should have her lower knee slightly bent and the top leg as straight as possible, supported by a pillow.
- Lying on her back, she should have a pillow under her thigh, if necessary, to give support.
- She should be helped to change her position regularly.

Passive movements

Nursing staff can encourage mobility by passively moving her hips and knees by the following exercises. No movements should be forced and each should be R5x:

- While lying on her side:
 1. Support her top leg under her thigh and lower leg. Gently bend her knee towards the chest and then straighten the leg, and take it back as far as it will go without causing pain.
- While lying on her back:
 2. Support her leg under the lower thigh and lower leg. Bend her knee towards her chest and then straighten it.
 3. With the unaffected leg lying slightly out to the side, support the other leg under the thigh and lower leg. Then take this leg gently a little way out towards the side of the bed and then back across towards the other leg.
 4. Place one hand on top of the affected thigh and the other on top of the lower leg. Gently roll the leg inwards and outwards.

Management of contractures of the ankle and foot drop

In addition to the other general or specific physiotherapy techniques appropriate for the individual woman, the following principles apply to women who have ankle contractures or foot drop:

- The sole of her affected foot should be supported by sandbags to maintain a functional position of 90 degrees dorsiflexion.
- Passive exercises, each R5x:
 1. The nurse or physiotherapist places one hand on the top of the affected foot and the other on the sole of the foot. The foot is moved gently up and down. Then the foot is turned inwards and outwards.
 2. The woman can be given a piece of material, a bandage or a piece of stretchy, wide rubber band. She takes one end in each hand and passes it under her foot. Keeping her knee straight she then pulls gently up until she feels a stretch at the back of her calf muscle. She should hold this position, count to 30 and then release.

Exercises for the pelvic floor and achieving bladder control

Physiotherapy for women who have had a fistula repair is not just about enabling women to mobilize quickly and safely, and to address physical issues such as nerve damage or limb contractures. Another essential component is to enable women to regain control over their pelvic floor muscles, their bladder and bowel, and to resume a normal life.

Learning about the pelvic floor

Learning about the importance of, and techniques for, regular pelvic floor exercises to help with postoperative bladder and bowel control should be started as soon as the woman is admitted for operation. By the time she is discharged, every woman should understand:

- The importance of undertaking regular pelvic floor exercises to help with bladder and bowel control, and that these can be done at any time, in any place, and that no one will know she is doing them.
- Where her pelvic floor muscles are, and how to exercise them.
- How to protect her pelvic floor from the effects of increased intra-abdominal pressure during physical activities and how she can protect herself from strain.

Learning about her pelvic floor is the first step in this process. Diagrams and models are helpful in helping her understand where the muscles are placed in relation to her bladder, vagina and rectum, for example:

The pelvis is a bowl shaped formation of bones. The base of this bowl is formed by a hammock of muscles known as the pelvic floor muscles. These muscles help to control the bladder and bowel as well as supporting all the pelvic organs.

The pelvic floor exercise is described as squeezing and lifting inside as though trying to stop the flow of urine or prevent wind coming out of the back passage. Nowadays women are discouraged from actually stopping and starting the flow of urine as it is thought this can cause other problems. It is difficult to know if a woman is doing a pelvic floor contraction correctly without doing a vaginal

assessment. This may not always be possible, in which case the assessment may be done visually. In either case she should be reassured and treated with sensitivity, and an explanation should be given of what she is going to be asked to do and how it will feel:

- She should lie on her back with her feet on the bed, with her knees bent and slightly apart, and be asked to squeeze her pelvic floor and lift up inside without holding her breath. On observation there may be visible tightening and drawing in of the vagina, the anus and the perineal body.
- If there is bulging downwards of the perineum this indicates that the woman is pushing down instead of pulling up. This should be explained to the woman and she should be asked to try again.
- If there is no visible contraction, it may help to place a finger on the perineal body and ask the woman to tighten and lift away from the finger.

If appropriate, the woman can be taught how to tighten the muscles during a vaginal examination when she is asked to squeeze the examining finger and lift it up inside the pelvis. A vaginal examination enables a more accurate assessment of the strength of the contraction and endurance of the muscles. It is usually done by professionals specialized in this area.

The pelvic floor exercises

The general principles described earlier in this section also apply to this group of exercises, namely:

- They should be done at least three times a day. Just before meals can be an easy time to remember.
- The number of times an exercise is repeated will vary according to the ability of the individual woman. As she becomes stronger the number of repetitions may be increased. As a starting point, it is suggested each exercise be R5x.
- If she feels pain while exercising, she should stop.
- Normal breathing should be encouraged while exercising. Holding her breath puts strain on the pelvic floor.

Two types of pelvic floor squeezes should be taught:

1. Squeeze and lift up the muscles inside the pelvis as though trying to stop the flow of urine or prevent wind escaping from the back passage, hold for up to five seconds and then release. Rest for five seconds. R5x
2. Squeeze as tightly as possible and then release. R5x

These exercises should be done very gently during the immediate postoperative period when the bladder catheter is still in place.

This set of exercises can be done at any time and in any position. It is good to use different positions for each session such as lying, sitting, standing, walking or the positions assumed during normal activities.

Progression of pelvic floor exercises

It will take time for women to learn to do these exercises and some will find them difficult if they have very weak and damaged muscles. Each woman should be encouraged to work according to her own capability—increasing the length of time she holds the squeeze and the number of repetitions as her muscle strength improves.

Once a woman can do one set of exercises, she should be encouraged to progress to doing the other set after a brief rest. Eventually she could be doing both types in a number of positions at each session.

Avoiding undue stress

Women should be taught to tighten the pelvic floor before any activity involving effort such as coughing, lifting, bending, pushing or pulling. This will help to counteract the internal downward pressure caused by the exertion.

Incontinence after surgery

After surgery some women may have problems with incontinence, which will appear as though the operation may have been unsuccessful. Overcoming her incontinence is therefore as important as treating her fistula.

If the woman leaks constantly, the first step is to try to reduce the intake of fluid to about two litres a day, bearing in mind the principles of maintaining a high post-operative oral intake described in the chapters on nursing and on surgical repair. She may feel there is no point in trying to void normally as there is nothing in her bladder. Alternatively, her needs may be urgent and she may be voiding very frequently. Although this may be due to various mechanical factors, it is important to ensure that the woman is trying to follow a normal pattern of bladder behaviour.

The main causes of incontinence may be categorized:

- Stress incontinence—the woman leaks on exertion (such as coughing, walking or lifting).
- Urge incontinence—the woman suddenly has an overwhelming urge to pass urine and leaks.
- A combination of both stress and urge incontinence.
- Overflow incontinence, resulting from retention of urine.

Identifying the cause

The problem of urge incontinence is often combined with stress incontinence. Therefore the following principles should also be included not only for the assessment of urge incontinence, but for stress incontinence as well:

- A description to be given by the woman of when she leaks.
- Her urine should be checked for infection.
- Her volume of fluid intake and output should be measured for three days.
- The number of voids and leaks should be recorded.
- The pelvic floor contractions should be observed, as described in the pelvic floor section.

The urine input and output frequency and volume chart

If possible, this should be recorded over a three-day period. A simple chart can be drawn up with four columns to record:

- Time.
- Number and volume of all drinks taken.
- Volume of urine passed each time the bladder is emptied.
- Any leakage of urine.

The management of incontinence

The management principles for both urge and stress incontinence are similar, and in many cases, the woman is suffering from a combination of both.

- Avoiding stress on the pelvic floor and bladder. Women should be taught to tighten the pelvic floor before any activity involving effort such as coughing, lifting, bending, pushing or pulling. This will help to counteract the internal downward pressure caused by the exertion.
- A simple bladder re-education programme should be introduced. This is also necessary for women who may only appear to have stress incontinence but who also complain of frequency and urgency.
- Regular pelvic floor exercises should be encouraged.
- Support and encouragement from all staff is important.
- Working in a group with other women with the same problem can be helpful.

The bladder re-education programme

The aim is to stretch the bladder to hold sufficient urine, without discomfort or leaking, to enable the woman to resume a normal lifestyle. Eventually some women may be able to wait for up to three hours before having to pass urine. The method is as follows:

- A regular pattern of drinking and passing urine should be agreed with the woman, based on the results from the frequency volume chart. The time between passing urine should be noted and she should be made aware that she is going to try and increase the length of time between voiding urine.
- To begin with she should try to pass urine every hour. If she finds this impossible the timescale can be reduced to an achievable time, e.g. 45 minutes. Staff will need to help her establish this time and be on hand to tell the woman when she can go to pass urine. Sometimes other women who are able to tell the time can help.
- She should be encouraged to wait for at least this length of time between passing urine throughout the day, even if she is desperate to go to the toilet. Sitting down can help as can distraction such as singing, counting or talking to other women. When she is able to wait the agreed length of time, the period of time should be increased.
- This process should continue until the woman is able to wait for a reasonable length of time without leaking.

Group support

It can be very disheartening for women to suffer from incontinence after surgery. Bringing women with similar problems together to teach them pelvic floor exercises, to explain bladder function and to encourage bladder re-education can be very effective.

Staff support

Practical assistance from staff to help women comply with the frequency volume chart initially, and then to encourage them to keep to the agreed times for passing urine, is very important if this treatment is to be successful. As with all other aspects of the care of girls and women having fistula surgery, such continuing support is vital.

Suggestions for further reading

Tidy PP. *Physiotherapy*. London, Butterworth Heinemann 2003.

Hollis M. *Practical Exercise Therapy*. London, Blackwell Science, 1999.

Principles for the social reintegration and rehabilitation of women who have had an obstetric fistula repair

6

Background

Committed doctors and nurses in countries where fistula exists have worked for decades to provide girls and women with repairs. Whilst there have been significant achievements in making treatment more accessible, the long-term needs of these women for emotional, psychological and economic support after the initial repair of their fistula have received little attention to date. These women may also face problems reintegrating into their local communities, that may shun them or regard them as unclean or cursed. In many cases, economic hardship occurs because of the increasing poverty girls and women with fistula face as a result of their limited income-earning capacity.

Those reintegration interventions that currently exist generally include the provision of new clothes, training in basic literacy and crafts, and occasionally, funds for transport home and a small amount of cash. Strategies need to be developed to provide women with the emotional, psychological and economic support they need. These interventions should be based, first and foremost, on an understanding of the realities of life after surgery faced by girls and women living with fistula so that they receive meaningful help to return to a life of dignity.

The limitations of current information on reintegration strategies

As with many other aspects of OF, little information is available on successful reintegration strategies. There is also a paucity of experiences in specific reintegration programmes upon which to draw, given the limited resources allocated to fistula care and the scarcity of people working on the long-term needs of these girls and women.

The existing centres and hospitals that offer fistula repair carry an enormous caseload and have only limited resources to meet the overwhelming demand for care. The staff have minimal time to gather information from women on their psychosocial needs, and to then develop and implement successful reintegration programmes. Such interventions are likely to require specially trained staff whose time is solely allocated to these efforts—a rare commodity in health facilities in resource-poor settings.

An additional constraint to collecting data is the significant time and expense required in gathering information on women once they have left the facility. Women may travel up to 1,000 kilometres to seek repair. As such, once healed, they return to far-off villages in remote regions making follow-up impossible.

Lastly, the taboos surrounding fistula may make it very difficult for many girls and women, healed or not healed, to return home and for follow-up information to be gathered. They may have been forced to flee their villages when they got the fistula and even, when they are healed, people may be reluctant to welcome them back.

Using facility-based data

While data from hospitals can be useful, it generally only gives information on girls and women before their repair and not their experiences on returning home afterwards. Exceptions may be in cases where women come for follow-up examinations or where explicit measures are taken to find women post-repair.

In interpreting social information from girls and women who have succeeded in reaching a facility for a repair, it is important to remember that these women may well be better off than many living with fistula. They have managed to obtain the necessary financial and personal resources to get to a hospital which, in and of itself, is a major achievement given the poverty and isolation confronting many women living with fistula. On the other hand, it is possible that girls and women who arrive at a hospital may have more physical and/or social problems that led them to seek help in the first place.

Information based on anecdotal reports of those working with many patients suggest the following:

- Women who have a successful repair and are no longer leaking are likely to be able to reintegrate themselves back home. In the experience of providers and advocates in Ethiopia, Nigeria and the United Republic of Tanzania, totally cured women can and do reintegrate back into their community and are able to carry on with life, including remarrying and having further pregnancies.
- In the experience of one facility in the United Republic of Tanzania, women who come for post-operative follow-up over the long term tend to be those with more chronic problems such as severe stress incontinence. Women who have a successful fistula repair but who continue to leak due to incontinence (which can be as problematic for the woman as the actual fistula) tend to find it difficult to reintegrate successfully since they are still leaking. Many of these women may continue in much the same situation as before their repair, supported by friends or relatives but not re-marrying. This is especially the case if there is also severe vaginal stenosis.

While it appears that successful repair may well lead to a smooth transition/reintegration when returning home, further research is needed to identify specific challenges to the quality of life of these women and the degree to which they are reintegrated. At the very least, many girls and women are extraordinarily poor and those with fistula are extremely vulnerable, both economically and socially as a result of their precarious living circumstances and the costs associated with finding a repair.

Principles for reintegration programmes

Programme design: all girls and women with fistula are not the same

Girls and women with fistula may share a number of common experiences but are also different in many respects. As such, reintegration strategies need to address the different situations in which these women may find themselves such as, for example, the varying need for family and social support, livelihood and income generation, and education and training.

In addition, their reintegration experiences may be impacted significantly by previous experiences of living with a fistula prior to the repair. The degree of isolation, stigmatization, etc. experienced while living with fistula could well affect

the situation after the repair even if the girl or woman is dry. Possible variables include: if she had leaked faeces as well as urine, how long she had lived with the fistula, if her child had survived or died, if she has other children, if she has a source of income and if she is married or has a supportive family.

If the initial disruption experienced by the woman is low (e.g. her husband is supportive and she has other children), then she may continue in her normal life. On the other hand, the future is less clear if a woman is divorced, has lost employment, is back living with her relatives, has no future child-bearing capacity, does not have a normal vagina for intercourse or has stress incontinence and is still leaking.

The differing experiences of girls and women living with fistula, or after repair, need further evaluation in order to inform reintegration efforts as well as a range of other interventions to support them.

Skills training for income generation

Equipping women who have undergone fistula repair with self-sustaining skills can strengthen their capacity to care for themselves in the future and promotes their overall well-being. Activities such as literacy workshops for basic reading and writing, as well as skills to make clothes or handicrafts may enable women to reclaim their lives and return to their communities with pride and independence. If possible, a small loan or grant should be offered to the women to help them start a trade or establish a small economic base for themselves.

The key challenge is to train girls and women to acquire a skill that can actually produce some income for them. Crafts, sewing, basket making, etc., are often already in oversupply and may have few market outlets. Thought and effort is needed to link the crafts and other products produced by these women to actual and realistic markets in order for the work to be economically productive. This training could be integrated with existing programmes which promote income-generating activities or micro-funding schemes. Thereby both poverty and stigma can be reduced.

Counselling

Women who live, or have lived, with OF have endured severe physical, emotional and psychological distress, if not trauma. Surgical repair alone, while going a long way in helping women return to a normal lifestyle, is probably not enough to address the impact of living with fistula or post-fistula repair.

At the very least, basic counselling for all women with fistula should include information on what fistula is, an understanding of how the woman sustained the injury, the future risk factors and how to prevent fistula from occurring again, including the use of family planning as well as good obstetric care. In many communities, especially in rural areas, OF are seen as being part of the process of giving birth or, in some cases, as a curse from god. Very little is known or understood by community members about the risk factors and causes associated with OF.

Individual discussions with a social worker or trained nurse should be offered to women to give them the opportunity to talk about what they have been through and to ask questions about their health and fistula. They should also be advised about how to enter into a dialogue with family members about what they have experienced and how a successful fistula repair enables a woman to return to a full family and community life.

It is also often true that meeting other fistula patients at the hospital is one of the greatest support and counselling tools available. Girls and women with fistula often feel they are the only persons in the world with a hated condition; the personal support they feel by meeting other fistula patients is a powerful experience for them and can be used as a basis for personal counselling.

Family reintegration

Providing assistance for reconciliation and reintegration is important to ensure that these women are able to return to their communities successfully. This may include, if possible, providing a nurse and/or a social worker to escort the woman home and help explain to the family and community the causes of fistula (stressing that it is not the woman's fault or due to a curse) and how to prevent fistula in future. Putting the woman in contact with a local woman's support group within or near her community may be another way of facilitating an initial network of friends within which the women can develop a solid foundation for her future.

The wider community

Education

Community seminars will educate both men and women about the importance of seeking skilled antenatal care and attendance at delivery. Such seminars can also include a discussion of the risk factors associated with OF and how they can be prevented in future. Facilitating community awareness is also crucial to enable the provision of a supportive community for women who develop, or are living with, OF or those who return to their communities after surgery.

Advocacy

In the long run, women who are successfully reintegrated into their communities will be the strongest advocates for the prevention and management of fistula. They can help inform the community, including the traditional and political leaders, about fistula repairs, refer others for treatment, advocate for delayed marriage, appropriate antenatal care and skilled attendance at birth. It is important, however, to have realistic expectations of what former patients can achieve as they will be returning to the same socioeconomic and cultural environment which led to the development of their fistula in the first place. It is also their decision alone as to whether or not to be involved in advocacy activities. Such a decision should not be imposed on them.

Cured patients may be able to educate others about the causes of fistula and dispel myths and rumors. In Nigeria, for example, many people believe that women develop fistula because they had offended the gods when they were younger or during pregnancy. It is also attributed to women who were promiscuous during their pregnancy. In parts of East Africa, women with prolonged labour may be suspected to have committed adultery; sometimes they are beaten during the birth process so they will 'confess' their supposed infidelity and the name of the man with whom they allegedly had sex.

Financing reintegration

The costs of implementing reintegration programmes must be considered. In some cases the funds may be minimal but are crucial to the girl's or woman's ability to return home and start her life again. These funds could cover costs to travel home and a small amount of money to start an income-generation project.

Facilities or organizations supporting patients should consider developing criteria for allocating reintegration support including: to whom it will be given, how the funds/support will be distributed, and if and how they will be accounted for. This becomes particularly difficult in circumstances, typical of areas where fistula occur, where there are many girls and women without fistula who are equally poor and needy.

In order for skills training to be rewarding for the woman and provide her with an income, the products of her labour need to be marketable and profitable. An alternative would be to devise income-generating projects that are tied to the ongoing economic activities of the woman's home area, so as to leverage the woman's activity to greatest net gain. Micro-funding through the provision of loans with low-interest rates and reasonable repayment plans should also be envisaged when appropriate.

Research

Mapping of the communities of origin of patients and research on the values and sociocultural principles that prevail in these communities will provide a better understanding of the determinants for fistula which will help to design and implement sound and pertinent strategies. Analysis of, and reporting on, these strategies will contribute further to the development of new reintegration programmes.