UNFPA

Campaign to End Fistula

OBSTETRIC FISTULA

& OTHER FORMS OF FEMALE GENITAL FISTULA

Guiding principles

for clinical management and programme development

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Dedicated to the memory of Yusuf Omenda, gentle giant in the fight against fistula in Kenya

and to all the women and girls living with and rising above fistula, and all those who seek to serve them

TABLE OF CONTENTS

ACRONYMS

DRC	Democratic Republic of Congo
EmONC	Emergency obstetric and newborn care
EUO	External urethral orifice
FIGO	International Federation of Obstetrics and Gynecology
GI	Gastrointestinal
Hb	Haemoglobin
ICM	International Confederation of Midwives
ICF	International Classification of Functioning, Disability and Health
IV	Intravenous
ISOFS	International Society of Obstetric Fistula Surgeons
JHPIEGO	Johns Hopkins Program for International Education in Gynecology and Obstetrics
MSF	Médecins Sans Frontières/Doctors Without Borders
NGO	Non-governmental organization
RVF	Rectovaginal fistula
SDGs	Sustainable Development Goals
UN	United Nations
UNFPA	United Nations Population Fund
USAID	United States Agency for International Development
VVF	Vesicovaginal fistula
WADADIA	Women and Development Against Distress in Africa
WHO	World Health Organization

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ALTHOUGH THE WORLD IS FULL OF SUFFERING, IT IS ALSO FULL OF THE OVERCOMING OF IT

Helen Keller

INTRODUCTION

This document was first issued in 2006 (Lewis and de Bernis, 2006). It is truly remarkable to read it today[1] and to see the amazing degree to which the situation of fistula has changed. In 2006, the original groundbreaking work raised the profile of obstetric fistula as an urgent public health problem, and provided the first practical guidance for those involved in the care of women with the condition. In 2018, the international community called for obstetric fistula to be eliminated within a decade, aligning with the 2030 Agenda for Sustainable Development and its 17 global goals.

In so many ways, the unique set of challenges surrounding fistula have been a catalyst for change in the development world. The response to fistula was, along with responses to HIV and AIDS, tuberculosis and other conditions, an early example of a marriage between public health and clinical medicine. Fistula furthered this interface through community-based public-health interventions and institutionally-tied surgical care. Fistula required thought and programmes for both dealing with and preventing the condition, and these were based not in immunization or focus groups, but in institutionally-bound surgery. As a surgical issue, there have been tremendous hurdles to overcome, as fistula repair inconveniently straddles traditional boundaries in pelvic surgery training. Repair involves a mixture of techniques native to gynaecology, urology, general surgery and plastic surgery. It calls for significant capacity-building to conduct highly complex procedures in some of the world's most resource-poor areas.

In 2006, the number of women affected by fistula was unknown. While this is still true to some extent, substantial progress is being made. Then, there was almost no body of data upon which to base rational clinical care and programming. Now, there has been significant movement towards evidence-based care. Then, a small number of individual programmes struggled in isolation. Now, fistula care has a presence in the teaching and study of reconstructive surgery, development and social sciences. Networking and the emergence of a professional community have, as a result of concerted effort, begun to replace isolation.

In the past, most programmes existed through external support. Now, while support from international organizations remains critical, there is increasing involvement of national governments and professional bodies. Then, international surgeons dominated leadership of clinical fistula care. Now, African and Asian medical personnel have taken up the reins. Then, the term "fistula" was synonymous with obstetric fistula. Now, while obstetric fistula continues to be an issue, iatrogenic fistula has grown rapidly as a significant concern. Then, fistula prevention meant dealing with obstetric fistula by

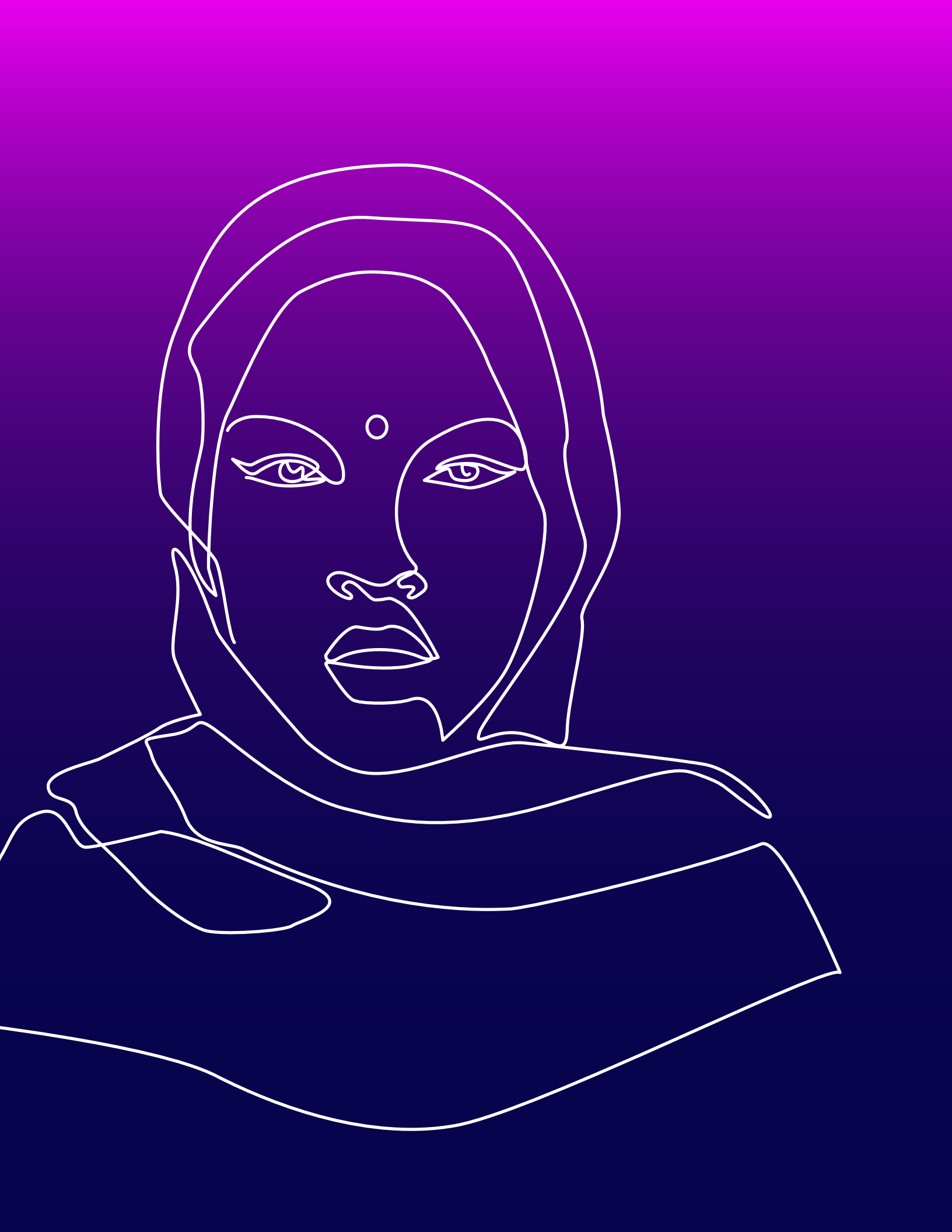
1 Obstetric fistula is an abnormal opening between the vagina and rectum or bladder that is caused by unrelieved prolonged obstructed labour, leaving a woman incontinent of urine or faeces or both.

reducing maternal morbidity. Now, iatrogenic fistula requires entirely new approaches. These are but a few of the major changes occuring in recent years, and motivating a second edition of this manual.

This is not an exhaustive textbook on fistula care, but rather functions as a "manual", aimed at giving a broad view of the issue and practical instruction on fistula programming and treatment. The manual is not specifically about fistula repair, epidemiology, programming, prevention or nursing, but briefly touches on all of these topics and more.

References

Lewis, G., and L. de Bernis, eds. 2006. ***Obstetric Fistula: Guiding Principles for Clinical Management and Programme Development***. Geneva: World Health Organization.



FISTULA PROGRAMMING

1

1.1 MEASUREMENT

NOWHERE IN FISTULA ISSUES HAS THE LACK OF QUALITY DATA BEEN MORE ACUTE THAN IN EPIDEMIOLOGY. TO DATE, WE STILL DO NOT HAVE UNIVERSALLY ACCEPTED INFORMATION ON THE INCIDENCE AND PREVALENCE OF FISTULA DISEASE. FIGURES HAVE BEEN MORE CONJECTURE THAN FACT (Stanton and others, 2007)

From a practical point of view, women with fistula tend to live behind nearly every imaginable barrier to easy enumeration. They often reside in rural areas in countries with bad roads or no roads. Many are in conflict areas where travel of any sort is dangerous. Many live under cultural circumstances that shield them from public view. Women with fistula may be desperately poor, isolated and not likely to receive queries sent out by electronic media. Stigma is an overpowering influence on many, who might prefer to go uncounted. Many women with fistula have little or no education, so that they have little natural voice in the affairs of their local communities. Some have impaired mobility as a result of co-morbidities from obstructed labour and cannot present themselves for counting. These factors mean that fistula epidemiology must always be speculative to a degree. New statistical modelling techniques, however, give hope for more accurate estimates of the population of women with fistula.

Other technical challenges affect fistula epidemiology. Studying conditions on a national scale requires large data sets that have not been widely available. In particular, the lack of integration of fistula into national health management information systems has been a lost opportunity.

Fistula is uncommon compared to other public health issues. It may reach the threshold for definition as a rare condition. The scarcity of cases makes detection difficult. Further, many estimates are based on the number of women presenting for care, given the expense of population-based surveys.

Though epidemiological solutions are not easy, and overall resources for fistula are limited, accurate estimates of incidence and prevalence are vital. Planning of large-scale fistula interventions is confoundingly difficult without a precise idea of the scale of the problem. Further, it is not possible to prove the benefits of programmes without reasonable before and after figures to assess efficacy.

Two studies from the London School of Hygiene and Tropical Medicine made early efforts to apply modern statistical methods to interpret available data and arrive at estimates with some objective basis (Adler, Ronsmans and others, 2013; Adler, Fox and others, 2013). However, the authors freely admitted that even their best efforts were, to a degree, thwarted by incomplete data sets. In particular, they expressed doubt that their conclusion on incidence really

Women with fistula tend to live behind nearly every imaginable barrier to easy enumeration

reflects the true scale of new cases each year. As we call for an evidence base as a foundation for action in fistula, everyone must be prepared to accept what the evidence says, even if the results are unexpected.

The impact of the sampling method can be seen in Bangladesh. In 2003, a situational analysis that included interviews yielding self-reported symptoms, observations of clinical practice and reviews of clinic records estimated prevalence at 70,000 women awaiting treatment (EngenderHealth Bangladesh Country Office, n.d.). In 2017, a second survey, which added a confirmatory examination for women suspected to have fistula, produced an estimate of 19,755 (Measure Evaluation and others, 2018. Tremendous strides in reducing maternal mortality have taken place in Bangladesh, mainly through reducing fertility rates via improving access to modern family planning and safe abortion. Some have claimed this dramatic reduction in prevalence as a towering achievement in maternal health programming. But over that same 14-year interval, at most 7,000 to 8,000 fistula repairs were done. So the need for more and more refined measurement tools remains ongoing and critically important.

1.2 ACCESS TO FISTULA PROGRAMMES

Women with obstetric fistula are generally young, poor, uneducated, often married too early and compelled to go through a pregnancy with little or no medical support

Awareness

Fistula has a compelling and morally unambiguous narrative that is easy to present to the public. A woman with obstetric fistula is generally young, poor, uneducated, often married too early and compelled to go through a pregnancy with little or no medical support. She is then subjected to days of agonizing pain due to prolonged and obstructed labour, followed by the death of her first (and likely only) child (United Nations, 2018). From there, she develops incontinence that leaves her stigmatized and isolated, and she spends years not knowing where to get help.

A second narrative also describes fistula. In this version, the woman in question might be 30-something with two or three children, perhaps a university graduate with her own career. She goes to her doctor with vague abdominal pain or perhaps irregular menses, and is told that she needs to have her uterus removed. After this is done, she finds herself suddenly unable to control the flow of urine constantly emanating from her vagina. She returns to her doctor who immediately refers her for another operation to repair the hole made during her pelvic surgery. This is an iatrogenic fistula.

While the original story of an obstetric fistula patient is still valid for many women and girls seeking fistula care, the second narrative is becoming more common. Clinically speaking, there are subtle differences between the two conditions. But the two stories are so different from a personal and social point of view that the increase in iatrogenic fistula calls for rethinking how to present fistula to the public at large.

Of course, there is overlap. Poor, rural women have surgery just like more wealthy women, and poor women with the same demographics as seen in obstetric fistula can have iatrogenic fistula as well. Though data are yet to come, there are reasons to believe that iatrogenic fistula significantly affects poor women. Poorer women often go to ill-trained surgeons (even quacks) for their surgery. Morbidities are more bothersome for poor working women who want quick and permanent remedies to be able to go to work. But to convey the truth about the cause we have all taken to heart, perhaps it is time for a new think around how fistula should be described.

1.3 THE NEW CHALLENGE OF IATROGENIC FISTULA

Iatrogenic is a medical term that means induced by a physician or by medical treatment

One of the most striking changes since the publication of the first edition of this manual has been the rise of iatrogenic fistula. "Iatrogenic" is a medical term that means induced by a physician or by medical treatment. While the causes of obstetric fistula have layer upon layer of complexity, the formation of iatrogenic fistula is entirely straightforward. During pelvic surgery, an inadvertent cut or incision in the wrong spot, a crush injury by a clamp placed in a delicate area, the burning of tissue from trying to stop bleeding with electrocautery, or the unfortunate placement of a suture in the wrong location can all lead to a small area of tissue loss and a connection between the bladder and vagina.

Any pelvic surgery can result in iatrogenic fistula, but the most common cause is gynaecologic surgery. The most common procedure resulting in the condition is an abdominal hysterectomy, with the Caesarean section being in second place. The ureter (the tube between the bladder and kidney) can be surgically injured, as can the urethra, but these injuries are less common. In general, iatrogenic fistula has long been known as a rare complication of pelvic surgery in women and men. Current attention to it began with Raassen's review (Raassen and others, 2014). We currently lack robust data on this problem across the range of countries where fistula is common, yet the mix between the two types of fistula is clearly in a state of flux.

Since consideration of iatrogenic fistula is still in its early days, tight definitions of the condition have yet to be agreed. It is simple to make the diagnosis when a woman is continent, has a hysterectomy and then is totally incontinent after surgery. More difficult is the scenario after a Caesarean section. If the woman begins to leak urine after surgery, is it because there was an accident related to surgery? Or the woman did not receive her Caesarean in time to prevent obstetric fistula from occurring? As of now, there are no stringent guidelines to distinguish these two scenarios.

We do not have long-term follow-up of women after iatrogenic fistula repair. But it makes sense theoretically that incontinence after surgery should be far less common, since injuries would not tend to be focused in areas critical to urinary control as they are in obstetric fistula. Iatrogenic fistula injuries tend to be "high", occurring in the lower uterine segment where the cervix and vagina meet. Obstetric fistula defects can be severe, leading to a wide field

of ischaemic injury leaving areas of scarring around the fistula defect. Iatrogenic fistulae tend to be small, with the injury focal or limited to the small area where a suture was misplaced or an inadvertent cut was made. Each of these technical distinctions potentially affect how women will fare after repair.

For many decades, urologists in wealthy countries have repaired iatrogenic fistula. Because the usual location is near the cervix, it can be easier to approach abdominally to repair. This may contribute to the perception that urologists repair fistulae abdominally while gynaecologists tend to do them vaginally. The involvement of gynaecologists in fistula repair became much more common for obstetric fistula, which almost never occurs in wealthy nations.

The difference in location is the fundamental technical distinction between a generic obstetric fistula and a generic iatrogenic fistula. As surgeons have been trained in the repair of obstetric fistula, a vaginal approach has become more common. As iatrogenic fistula becomes more prevalent, there may be a swing back towards abdominal repair, since this approach to iatrogenic fistula injuries may be a bit less awkward in certain cases. Abdominal cases require a slightly different set of instruments, may call for more frequent use of general anaesthesia and probably involve a longer recovery time compared to vaginal surgery. Each of these factors has implications for fistula programmes.

One key element is promoting awareness among health-care professionals at all levels of their education. Medical, nursing and midwifery schools should have curricula that include major discussions about fistula, treatment, prevention and rehabilitation, covering both obstetric and iatrogenic fistula.

Outreach is important for any fistula centre. It is the first step in the "continuum of care", from patient identification to patient referral, treatment, recovery, follow-up and the return to/ reintegration in society

1.4 OUTREACH AND CLIENT IDENTIFICATION

In the era of fistula as "the hidden epidemic", little or no thought was given to identifying new clients for care. Any fistula centre with open doors had more than enough work to do. Now, most centres require new strategies to identify and mobilize clients. Is this because women with fistula have not heard of the centres, cannot afford to come, are afraid to come or are not allowed to come have made peace with their injuries or have heard bad things about treatment? Or for other reasons?

Regardless of the reason, outreach is important for any fistula centre. It is the first step in the "continuum of care", from patient identification to patient referral, treatment, recovery, follow-up and the return to/reintegration in society. Many approaches have been employed in getting the word out that help is available, from town criers, to newspapers, to radio and television, community health workers and now, mobile telephones and social media.

The first and most effective form of outreach, however, has always been word-of-mouth. Verbal communication within this invisible community of resourceful women has astounding reach and effectiveness. Often, one happy survivor can bring back many other women from her home area, even after formal mobilization efforts in the same location have failed to yield any results.

Long before feedback on a webpage became a powerful tool, women with fistula were "rating" the quality of care and effectively communicating about it.

Modern media have potential to reach a far greater swath of the population of any given area, especially where mobile telephones have become ubiquitous. Focused text message "blasts" have been effective in locating new clients. Especially encouraging has been the ability to facilitate the transport of new clients via mobile phone-based transfers of funds (Fiander and others, 2013).

As is the case in so many other aspects of the response to fistula, outreach seems to work best when tailored to different geographic and cultural settings. In spite of the rush to new media, there are still areas where radio seems to work best, while in places like Kenya, television has provided an extraordinary boost to outreach. In other places, printed media such as posters and fliers placed in prominent locations have been used to similar effect. The key seems to be applying local insights on media that are most popular in any given area.

Outreach seems to work best when tailored to different geographic and cultural settings

Outreach and clinical services are obviously separate from one another. Classically, any effort to bring women with fistula to a treatment location has resulted in finding other conditions. If these cannot be addressed, ethical challenges arise that cannot be fully resolved without ending "siloed" funding for specific medical conditions. It can be a significant drain on resources if a woman is transported from a remote location to a fistula treatment centre only to find that she does not have a fistula. What then is the obligation of the centre?

One of the prime reasons that non-governmental organizations (NGOs) have been able to maintain effective responses to fistula is that they sustain a narrow focus on interventions with tailored resources. So it becomes critical that everything to accurately diagnose fistula be done prior to referral. Screening tools help community health workers, fistula advocates or any other individuals charged with interacting with women in a community to identify fistula, even though a confirmatory clinical exam may not be possible. Such tools can also assist screeners responding to calls on fistula "hotlines" in response to other outreach activities. Validated tools exist, such as the Obstetric Fistula Community-Based Assessment Tool (see Annex 1). These tools need to be simple enough for non-medical staff to administer, brief enough that they can be efficiently applied, and accurate enough to positively identify women with fistula without missing anyone.

Mobile telephones have been valuable in allowing workers and volunteers in the field to easily communicate to a central "command centre" that can act as a bridge to the treatment centre. One exemplary effort is the referral system in Kenya called the Action on Fistula network. Treatment centres partner with field-based organizations like Women and Development Against Distress in Africa (WADADIA). An army of field workers receive basic awareness training on fistula and a small stipend for performing outreach within communities. They then have regular contact via mobile phone with the WADADIA office, which organizes transport and referrals to treatment centres such as the Gynocare Fistula Centre in Eldoret. If any difficulties arise, WADADIA staff go

directly to the field to sort out the issues. Direct communication with clinical staff addresses any questions about the appropriateness of referral before the individual woman is ever sent to the treatment facility. Another major innovation is that this same network is then used after the woman returns home, so that if she has concerns about potential late complications, late failure of treatment or other issues, they can be fed back to the treatment facility for expert advice, thereby closing the loop within the continuum of care.

One approach to outreach has been providing financial incentives to workers charged with identifying and referring new fistula clients. There have been ethical concerns with potential conflicts of interest inherent to this approach. But performance-based incentivizing may potentially be of benefit in public health (Patel, 2016), especially given careful consideration and oversight to ensure accountability and avoid ethical violations. Fistula programming should always involve specialized agencies that understand the patients and their disease. While a growing number of countries have national health insurance schemes that should improve access to fistula care, services must ultimately be accessible and useful to women and girls. This encompasses provision through some form of social insurance at scale, or through private insurance without constraints such as the classification of fistula as a "pre-existing" condition.

Outreach activities must have data to assess the relative effectiveness and efficiency of the wide menu of different approaches

Activities discussed to this point have been for obstetric fistula, mainly among poor, marginalized, rural women. For them, when it comes to iatrogenic fistula, there should be little difference in the challenges to patient identification and referral. But what about women who are potentially educated and more empowered, and suffer fistula after pelvic surgery?

Outreach activities must have data to assess the relative effectiveness and efficiency of the wide menu of different approaches. When planners are armed with hard facts, they can make difficult choices around epidemiology, treatment and follow-up, outreach and reintegration. The cost of outreach remains a challenge to the sustainability of fistula programming.

1.5 RESOURCE DEPLOYMENT

The decreasing number of women/girls with fistula requires rethinking strategies in many areas of fistula programming. The response to this changing reality is a recurrent theme throughout this manual. One challenge is in the rational deployment of fistula resources. Elsewhere we will discuss the balance between funding for treatment and prevention as dual moral imperatives. Broadly, on national and regional scales, careful thought needs to go into defining the best ways to distribute fistula capabilities. Why should there be a choice between funding epidemiology and other fistula programming? Prevention promotes maternal and newborn survival and health. Anything done to prevent maternal mortality will help prevent fistula.

Fistula treatment should be resourced well, as ending fistula is key to achieving the UN Sustainable Development Goals (SDGs). As some countries that have

been sites of fistula programming in the past now approach middle-income status, local resources should be increasingly available. Even 20,000 repairs at $1,000 each amount to $20 million, which should be affordable for emerging economies. Increasing national budgets and harnessing domestic resources for health, ensuring that adequate funds are allocated to prevent obstetric fistula and to treat existing cases, and strengthening the capacity of health-care systems to provide essential services will contribute to ending fistula within a decade.

Earlier in the fight against fistula, there was broad-based consensus on providing fistula repair services across a range of smaller regional and district hospitals. The idea grew from the notion that women with fistula should not have to travel great distances to receive help for their condition. Now that fewer women are presenting for care, the time for this approach may have passed. It would be wonderful if sufficient numbers of highly trained, competent and experienced surgeons and staff reached increasing numbers of hospitals. Yet training is expensive, trained surgeons are distressingly unlikely to remain in fistula-endemic areas to practice, and fistula repair is difficult and requires frequent practice to maintain competence. Organizations like the United Nations Population Fund (UNFPA), the Campaign to End Fistula, EngenderHealth, the Fistula Foundation and the International Federation of Obstetrics and Gynecology (FIGO) have made laudable efforts to support surgeon training. But the challenges are many, suggesting that we cannot continue in a mode of expansion. The current period calls for strengthening and consolidating resources, with a focus on quality care and the fundamental principle of medicine, "first, do no harm".

With decreasing numbers of women with fistula distributed over a growing network of treatment sites, one unintended consequence is that it is increasingly difficult for any individual surgeon to amass extensive experience in repair. The number of fistula surgeons arrested at a level of competence limited to "simple" repairs has been troublesome, suggesting a looming crisis. The world's top fistula surgeons, who are called on over and over to staff fistula repair camps, are getting older. Most are in their 60s and 70s. Several of the greatest have died in the past few years, including John Kelly, Maura Lynch and Sr. Ann Ward. Those remaining are approaching retirement. Although there are exceptions, there does not appear to be an obvious group of middle-aged/younger surgeons ready to step into these roles. Without training cases to bring new surgeons on board, where will experience come from to equip the new generation of master trainers and surgeons capable of fistula repair at the highest levels of difficulty?

Procuring consumables and equipment for fistula centres can be difficult and resource intensive. Implementing effective programmes for patient identification and referral is a challenge, and with declining client numbers, having this capability has become essential to the survival of individual treatment centres. Offering a full menu of social services to women after repair requires investment in reintegration programming. Declining funding and numbers of clients again underscore the need to consolidate capabilities (and link with existing health, social protection, community development and women's empowerment programmes) rather than reduplicating them across larger and larger numbers of individual sites.

Offering a full menu of social services to women after repair requires investment in reintegration programming

FISTULA PREVENTION

2

This manual's first edition defined three categories of prevention:

Primary prevention (social measures)

- Health promotion (programmes, policies)
- Planned pregnancies
- Birth spacing
- Contraception
- Community awareness

Secondary prevention (basic obstetric care)

- Antenatal care
- Skilled health personnel at birth
- Use of partograph
- Identification of signs and symptoms of obstructed labour
- Immediate referral
- Bladder care and/or catheterization during labour, if needed

Tertiary prevention (more advanced obstetric care)

- Access to emergency obstetric and neonatal care (EmONC) by providing a timely, safe, quality Caesarean section by a trained/competent surgeon
- Use of an indwelling catheter (i.e., a Foley catheter) to close small fresh fistulae

These categories continue to guide fistula prevention today.

PREVENTION CHECKLIST

Obstetric fistula:

- Improve maternal/newborn care/EmONC quality
- Improve maternal/newborn care/EmONC accessibility
- Impact measurement
- Family planning
- Women's & girls' education & empowerment

2.1 PREVENTION OF OBSTETRIC FISTULA: THE WAY FORWARD

In some of the poorest and most isolated areas of Africa, Asia and the developing world, the relative scale of maternal morbidities such as fistula seems to persist despite decades of effort. In other areas, progress has been spectacular. A prime example is Bangladesh, which achieved stunning success in reducing maternal mortality under the Millennium Development Goals. The 2016 Bangladesh Maternal Mortality and Healthcare Survey found that the maternal mortality ratio fell from 574 to 196 per 100,000 live births from 1990 to 2016. Fistula incidence has always lacked hard data, but most would agree that rates of maternal morbidity and mortality roughly move with each other over time.

It is now quite practical to envision eradication of fistula in Bangladesh. Its success came as a result of community-based efforts to improve prenatal care, better linkages with facilities capable of providing Caesarean sections, and a remarkably robust system of real-time maternal health data streaming back to health ministry officials in Dhaka, who in turn have contact at least weekly by teleconference with peripheral health-care facilities. At the same time, there has apparently been no further decline in maternal mortality between 2010 and 2016. Can it be assumed that obstetric fistula incidence has also remained the same?

If obstetric fistula stabilizes but iatrogenic fistula increases, net fistula incidence should increase. Determining the rate of both is required, which is easier said than done, but essential for tailoring national strategies to the true level of fistula burden. Programmes in a country with high numbers of new cases must differ from those in areas where fistula eradication seems feasible.

2.1.1 Promoting and enhancing skilled health personnel providing care during childbirth

The most important intervention to reduce the toll of maternal death and disability is enabling all women to access quality, timely services provided by skilled health personnel (competent maternal and newborn health professionals, including midwives, nurses, obstetricians, physicians and anaesthetists) at the time of birth. An important part of any fistula or maternal health outreach programme is to promote the use of such services by engaging and educating the community (men as well as women and youth) about the importance of getting skilled care at every delivery. Women should be encouraged to come to the health facility for advice, antenatal care and delivery. As recommended by WHO, interventions including birth preparedness and complication readiness, male involvement and community mobilization through facilitated participatory learning and action cycles with women's groups are important interventions to promote safe pregnancy, childbirth and postpartum health. The community clinic also has to strengthen links with next-level health centres or hospitals to facilitate quick and efficient referral in cases of emergency. Midwives can give high-quality intrapartum care and carry out the life-saving tasks outlined below. These competencies are directly linked to preventing maternal and perinatal morbidity and mortality.

Women should be encouraged to come to the health facility for advice, antenatal care and delivery

2.1.2 Human resources – skilled health personnel providing care during childbirth

The introduction and support of skilled health personnel in childbirth as per the World Health Organization's (WHO) definition (WHO and others, 2018) is essential in fistula prevention. Maximizing clinical skills and the confidence of midwives, doctors and other cadres in maternity care is a crucial part of quality care. The International Confederation of Midwives (ICM) also underlines the importance of available, quality maternity care for all pregnant women to help prevent and manage obstetric fistula and to improve maternal health outcomes.

Midwives who are trained, mentored and regulated to international standards are well-positioned to support these ends and will substantially contribute to the goal of universal health coverage by 2030 (WHO, n.d.).

This manual is not intended to replace approved textbooks or additional technical guidelines. It is critical, however, that health-care professionals who provide intrapartum care can carry out the key competencies outlined in the next section in order to prevent new fistula cases.

2.1.3 The role of midwives in obstetric fistula prevention and detection

The ICM states that ending obstetric fistula requires the full involvement of midwives at the community, national, regional and global levels. Midwives can:

- Provide skilled midwifery care, particularly antenatal, perinatal and postnatal care;
- Provide health education, explaining the risk factors for obstetric fistula;
- Promote the use of health and maternity services by women, their families and communities; and
- Provide extended reproductive health services such as family planning.

Midwives are often a safe point of contact in a community, and carry out a variety of sexual and reproductive health services, such as contraception and family planning counselling, cervical cancer screening, and antenatal and postnatal care. They are also often involved in community sensitization and outreach on maternal and newborn health and adolescent sexual and reproductive health. Based on these roles, midwives play an important role in identifying women and girls who suffer from obstetric fistula (and other maternal morbidities), and referring them to a hospital for assessment and further treatment and surgery.

Midwives are often a safe point of contact in a community, and carry out a variety of sexual and reproductive health services, such as contraception and family planning counselling, cervical cancer screening, and antenatal and postnatal care

Discussion on developing a programme for a supported midwifery workforce to help prevent new cases of obstetric fistula goes beyond the scope of this manual. At least two essential components, however, help ensure that midwives perform well and can practice within their scope: mentorship and the status of the midwifery profession.

As in many areas of medicine, professionals develop their skills over time. Midwives strengthen their clinical judgment and decision-making by being directly involved in maternity care. Mentorship/coaching is integral to making any health-care professional an independent and competent practitioner. A mentor is a senior colleague committed to the team performing well, and ensuring evidence-based practice and respectful care. Having a mentor will strengthen the competence of midwives to prevent new cases of obstetric fistula.

In many countries, the status of midwives remains low. Decisions made by other practitioners override interventions initiated by the midwife. In practice,

It is important that midwives are in charge of maternity care, and that no other practitioner can override their decision-making without very clearly defined reporting lines

this could entail a scenario where a midwife has diagnosed obstructed labour and wants to involve a doctor and initiate referral. Perhaps someone else will make the decision that neither doctor nor referral are needed. It is important that midwives are in charge of maternity care, and that no other practitioner can override their decision-making without very clearly defined reporting lines.

2.2 RECOGNIZING AND DIAGNOSING OBSTRUCTED LABOUR

Obstructed labour is the failure of the fetus to descend through the birth canal because there is an impassable barrier (obstruction) preventing its descent despite strong uterine contractions. The obstruction usually occurs at the pelvic brim, but occasionally may occur lower in the pelvic cavity or at the outlet of the pelvis. There is no single definition of prolonged labour, because what counts as "too long" varies with the stage of labour. In general, a key sign of obstructed labour is if the widest diameter of the fetal skull remains stationary above the pelvic brim because it is unable to descend. Midwives are able to detect this by palpation of the mother's abdomen. If the uterus has gone into tonic contraction (it is continuously hard) and sits tightly molded around the fetus, it will be very difficult to feel whether the fetus is making any progress towards descending into the birth canal. In this case, palpation will also be very painful for the woman. The following interventions can aid in assessing progress of labour and diagnosing obstructed labour.

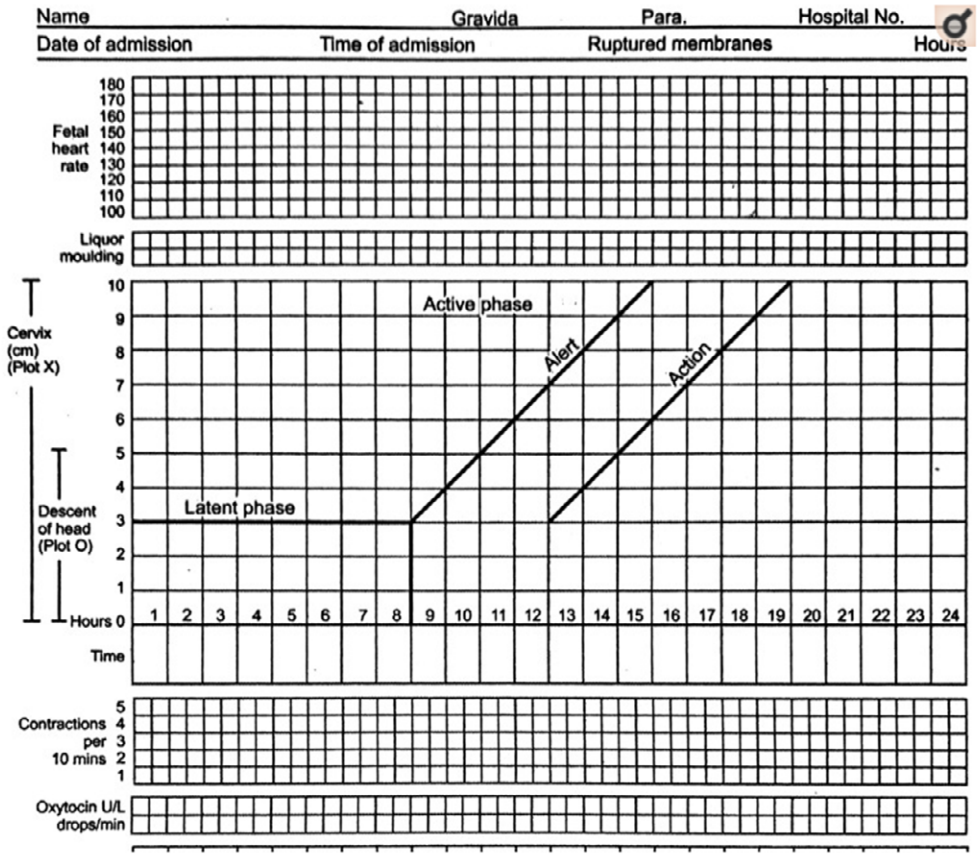
2.2.1 Using the partograph

A useful diagnostic tool for identifying prolonged labour is to plot the stages of labour on the partograph (Figure 1), while regularly assessing fetal and maternal condition. Competent use of the tool can save maternal and fetal lives by ensuring that life-threatening complications such as obstructed labour are identified and treated (Dalal and Purandare, 2018). The partograph record will give an early warning if labour may be prolonged to the point where an obstruction seems likely and referral is essential.

Note: The 2018 "WHO recommendations: intrapartum care for a positive childbirth experience" references the findings of a large observational study suggesting that all women do not progress in labour/cervical dilation at the same rate. Therefore, the usefulness of the partograph has come under discussion. The important factor that midwives will track during labour is progress, such as if the baby rotates forward (anterior), if the baby descends into the small pelvis and/or the cervix is dilating consistently (even though perhaps at a slower pace).

It may not be easy to learn and apply the partograph in low-resource settings. Health-care systems must support the correct use of the tool. Midwives and other cadres in maternity care must be trained and assisted to fill it in and

Figure 1 WHO composite partograph



- Midwives and other cadres in maternity care must be trained and assisted to fill in the partograph and interpret it correctly

interpret it correctly. A mentorship programme is important, where senior midwives supervise others in a supportive manner.

2.2.2 Vaginal examination

Vaginal examinations to evaluate the cervix can assess the progress of labour. Such examinations can cause infection for the mother and newborn, however, and be very uncomfortable and distressing for the woman. Only the amount of examination medically indicated should be performed. The woman should be encouraged to stay mobile and be allowed to walk around; this will help the baby to rotate into the small pelvis and can reduce the risk of obstruction.

2.2.3 Bladder care

Keeping the bladder empty is important for it not to take up additional space as the fetus descends. The woman must also be well hydrated during labour for efficient contractions and for sustaining a normal fetal heart rate. The further the fetus descends into the birth canal, the more difficult it usually becomes for

women to pass urine. This is because the fetus' head somewhat compresses the urethra. Pregnant/labouring women should be encouraged to pass urine frequently and should be given a private space where they can take their time to do so. If passing urine is impossible, catheterization is indicated. It comes with a risk of infection, however, and should only be conducted if necessary and under as sterile conditions as possible.

2.2.4 Assessment of clinical signs of obstruction

Obstructed labour is more likely to occur if labour has been prolonged (lasting more than 12 hours), and the woman appears exhausted, anxious and weak. The rupture of fetal membranes and passing of amniotic fluid may have been premature (several hours before labour began). The mother could have abnormal vital signs: a fast pulse rate above 100 beats per minute, low blood pressure, a respiration rate above 30 breaths per minute and possibly also a raised temperature. Any of the following additional signs would suggest the presence of obstruction: offensive-smelling meconium draining from the mother's vagina; concentrated urine, which may contain meconium or blood; and oedema (swelling due to collection of fluid in the tissues) of the vulva or cervix, especially if the woman has been pushing for a long time. The vagina can feel hot and dry during examination because of dehydration. Sometimes there is a large swelling over the fetal head that can be felt. The fetus may be in a malpresentation (i.e., incomplete breech presentation) or malposition (i.e., brow or face position). In most cases of obstructed labour, there is poor cervical effacement.

Women in obstructed labour should have an indwelling bladder catheter inserted, and women identified with obstetric fistula within 6 to 12 weeks of labour should have a catheter put in place as they are referred to a fistula centre for management

2.2.5 Bandl's ring

The Bandl's ring (Figure 2) is the name given to the "dip" between the upper and lower halves of the uterus, at about the level of the umbilicus. It should not be seen or felt on abdominal examination during a normal labour. But when it becomes visible and/or palpable, the Bandl's ring is a late sign of obstructed labour. Above this ring is the grossly thickened, upper uterine segment which is pulled upwards (retracted) towards the mother's ribs. Below the Bandl's ring is the distended (swollen), dangerously thinned, lower uterine segment. The lower abdomen can be further distended by a full bladder and gas in the intestines.

2.2.6 Other risk factors for obstructed labour

It is also important to consider underlying factors that increase the risk of obstructed labour. A major cause of obstructed labour is a small pelvis, which is mostly the result of poor nutrition during childhood persisting into adult life. Midwives will routinely screen for injuries or fractures to the pelvis during antenatal care. Another issue is child or early marriage and early pregnancy. Very young pregnant women or girls are at especially high risk of obstructed labour because the pelvis has not grown sufficiently to accommodate the baby's head. Therefore, contraceptive programmes play a role in fistula

prevention as a way of delaying the first pregnancy among very young women. If unwanted pregnancy occurs, it is also important to provide counselling on safe abortion services (within the extent of the law).

CASE STUDY: THE USE OF A URINARY CATHETER IN OBSTETRIC FISTULA PREVENTION POSTPARTUM/AFTER A FRESH FISTULA

In 2015, the Nigeria ministry of health made a formal declaration advocating the use of an indwelling urinary catheter in the prevention of fistula, based on a recommendation made in 2013 by a consultation of experts in fistula treatment and programming (EngenderHealth and Fistula Care, 2013).

This approach is divided in two areas. "Primary prevention" refers to the practice of inserting a catheter into the bladder whenever a woman presents with obstructed labour. The rationale is that during obstructed labour, the primary pathway to fistula formation is the ischaemia that follows when the presenting fetal part (usually the head) compresses pelvic soft-tissue structures against the bony pelvis and interrupts the flow of blood in these areas. Another way in which bladder tissue can become ischaemic is when the bladder remains overly full for long periods of time. The resulting stretching of the bladder wall can narrow small blood vessels and, again, reduce blood flow and lead to the breakdown of tissue (necrosis).

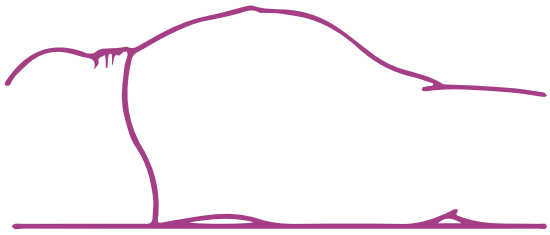
"Secondary prevention" refers to inserting a catheter into the bladder when a woman with a freshly formed fistula (generally within 6 to 12 weeks of obstructed labour) presents for care. Since this practice is employed after a woman develops a fistula, it should really be classified as a non-surgical treatment, rather than a preventive measure. There are literature reports of spontaneous closures of fistulae when this approach is followed (Waaldijk, 2004). There has never been a study with a control group to answer the question of the natural history of small fistulae, however. It is entirely possible that spontaneous fistula closure might occur in a sub-group of women with small, new fistulae with no intervention at all. However, there is a lack of conclusive evidence to either confirm or deny the utility of this intervention. (Further research is required.)

In short, women in obstructed labour should have an indwelling bladder catheter inserted, and women identified with obstetric fistula within 6 to 12 weeks of labour should have a catheter put in place as they are referred to a fistula centre for management.

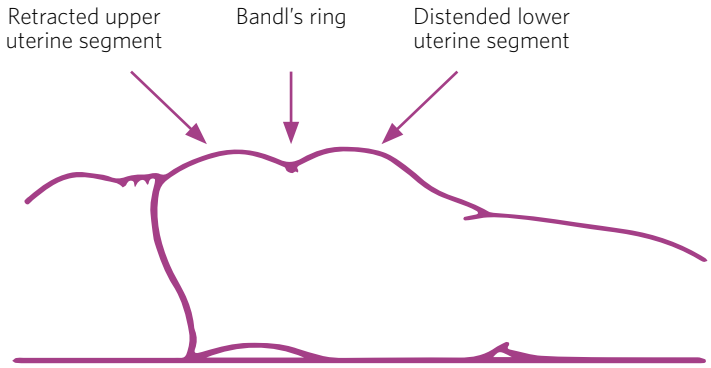
Contraceptive programmes play a role in fistula prevention as a way of delaying the first pregnancy among very young women

Figure 2 Bandl's ring

Normal shape of pregnant abdomen during labour, in a woman lying on her back



Bandl's ring in the abdomen of a woman with obstructed labour



Source: The Open University ©2017.

Midwives can take several actions to prevent prolonged labour from becoming obstructed and to try to relieve the obstruction

2.3 MANAGEMENT OF OBSTRUCTED LABOUR

Midwives can take several actions to prevent prolonged labour from becoming obstructed and to try to relieve the obstruction if the record of cervical dilatation reaches the alert line on the partograph, and before it approaches the action line.[2]

2.3.1 Treatment of shock

If the woman has signs of shock (fast pulse and low blood pressure), she has to receive an intravenous infusion of Ringer's Lactate for rehydration. Suggested regime (reference): Use a large (no. 18 or 20) cannula. Start with an IV infusion of 1 litre, with the flow rate running as quickly as possible, then repeat 1 litre every 20 minutes until her pulse slows to less than 90 beats per minute, and her diastolic blood pressure is 90 mmHg or higher.

2 In addition to obstetric fistula, obstructed labour can lead to the following complications in the mother: postpartum haemorrhage; slow return of the uterus to its pre-pregnancy size; shock (low blood pressure and fast pulse rate); small intestine becomes paralysed and stops movement (paralytic ileus); and sepsis (systematic infection throughout the body/blood system. The most severe complications can result in death. In the newborn, obstructed labour may result in asphyxia, nerve damage and/or death.

2.3.2 Emptying the bladder

As mentioned earlier, if the obstruction is caused by a very full bladder, it should be drained through catheterization. The perineal area should be cleaned and the urine drained into a closed container. Relieving this obstruction may be enough to allow the baby to be born. Catheterization of a woman with obstructed labour is usually very difficult, however, because the urethra is also obstructed by the deeply engaged baby's head. If an indwelling (Foley) catheter is used it can remain in situ until the baby and complete placenta have been born.

2.3.3 Referral to a higher level facility

Timely referral to a facility where a woman with obstructed labour can receive quality and comprehensive EmONC, including a Caesarean section and blood products, should be the highest priority. Research suggests that maternal deaths also occur in transit due to the lack of sufficient stabilization of the woman prior to the referral. For instance, a woman with an incomplete placenta and retained products may start bleeding profusely at any point during the transfer. Her condition could deteriorate to a level that her life cannot be saved at the receiving referral facility. The same can be true for severe cases of eclampsia, especially if road conditions are poor and cause lots of movements in the ambulance; this can trigger seizures more easily and lead to the woman's death. It is, therefore, critical to stabilize the woman first and ensure that she is in sufficient medical condition to be transferred. A midwife must accompany the woman to manage complications before reaching the next facility and to support the birth of the baby if the woman is transferred during labour.

Timely referral to a facility where a woman with obstructed labour can receive quality and comprehensive EmONC, including a Caesarean section and blood products, should be the highest priority

2.4 DIAGNOSIS/EXAMINATION POSTPARTUM

It is essential to perform a clinical exam after the baby and placenta have been born. This is not only important to identify any trauma to the perineum, labia, vaginal wall or cervix, but also to detect if there are deep injuries between the vaginal wall and rectum (buttonhole injury or very deep third-degree tear).

It is essential to closely monitor the woman in the early postpartum period to assess her ability to pass urine within two hours of giving birth. If she is not able to do so, she should be catheterized and encouraged to drink fluids or receive another IV infusion. If she is not able to pass urine within the next four hours, she should be referred to a facility that conducts urogenital assessments.

The prevention of fistula has always centred around improving access to and the quality of EmONC. A timely and safe Caesarean section is the difference between life, injury or death for both mother and baby when obstructed labour occurs. The same strategies for preventing maternal mortality will also help prevent obstetric fistula.

Provision of EmONC is a momentous topic of its own, the details of which fall well outside the scope of this handbook. More information and resources can be obtained from the WHO EmONC monitoring handbook, and the Implementation manual for developing a national network of maternity units (UNFPA & partners).

2.5 PREVENTION OF IATROGENIC FISTULA

IATROGENIC FISTULA PREVENTION CHECKLIST

- Advocate for and ensure safer surgery practices at health facilities/ institutions
- Advocate for/ ensure safer surgery at the national level
- Advocate for/ ensure safer surgery at the international level
- Reduce non-indicated Caesarean section rates

The sudden increase/spike of iatrogenic fistula presents a whole set of challenges to nations and organizations committed to the eradication of fistula. Since the origin of each type of fistula is entirely separate from the other, approaches to prevention must be different. Obstetric fistula is a complication of untreated prolonged obstructed labour. Nearly any measure to reduce the risk of maternal mortality will have positive effects in reducing fistula. But iatrogenic fistula is a consequence of surgical injury. Why does surgical injury occur?

Surgery is a dangerous undertaking, by definition the most invasive of treatment interventions. Even in the best of hands with the most careful preparation and the finest technique, it can, simply by statistical inevitability, lead to adverse outcomes for the patient. Surgery almost always requires anaesthesia, and anaesthesia has its own list of potential complications, even when delivered well, many of which might end in the death of the patient. So, it is not reasonable to assume that surgery can be rendered risk free.

What can be addressed are complications related to faulty decision-making, and to surgery done based on the wrong diagnosis or at the wrong time, or by the wrong individual or using the wrong technique. Iatrogenic fistula can be prevented, but only by venturing into new territory. Cultural structures of power and respect can render surgeons above reproach, whereas addressing iatrogenic fistula must include systems of professional accountability and quality assurance. Governments need to accept accountability for systems and structures that might put individual doctors in the wrong place at the wrong time.

Exactly the same discussion is required to address poor results in fistula repair. Some failures just happen. Some are the result of blatant incompetence, poor-quality medical training and education, or pressure to perform surgeries beyond the scope and competence of a health-care provider or surgeon. Some are caused by weak health systems struggling with a lack of equipment, training, medication and supervision, where the staff is overworked, etc. How can we sort through this maze? The WHO has identified quality of care for women and children as a priority in addressing preventable maternal and child mortality and morbidity, and puts forward a vision that: "Every woman, child and adolescent should receive quality care throughout the continuum of their life course and care." In support of this vision, a Network for Improving Quality of Care for Maternal Newborn and Child Health was established in 2017, bringing global and regional coordination to the quality of care. It links countries to share their best practices and catalyse change, through coordinated evidence-based actions and joint learning.

One general prevention measure is higher levels of training for providers of fistula care. The International Society of Obstetric Fistula Surgeons (ISOFS), the Fistula Care Plus Project, and the Royal College of Obstetricians and Gynaecologists have been very active in attempting to strengthen training for gynaecologists though new fellowship-level programmes in urogynaecology. This approach takes a long view, requiring time for programmes to be developed and individuals to join the fistula workforce. Similar efforts are underway in a more general sense to improve the quality and safety of care for women needing a hysterectomy.

Fistula surgeons have called for reviewing national policies that contribute to unsafe surgery. One ubiquitous strategy is to place young doctors in remote areas for one or two years of "national service" after graduation from medical school. This can be a source of some medical care to people who might not have any access. But the policy places the least trained and experienced individuals in what are often inadequate facilities. These personnel are then expected to deal with severe obstetric emergencies, perhaps under less than ideal circumstances. For instance, a crisis may erupt in the middle of the night, when there is no electrical power, and certainly with no on-site support from a more senior surgeon. Such circumstances pose major challenges to quality of care, making it much more likely for adverse outcomes to occur, such as iatrogenic fistula after a Caesarean section.

Another problematic national policy has to do with requirements for an individual physician to perform surgery. In some areas, only individuals with proof of accredited training in a surgical discipline can open surgical practices. But in many countries, a basic diploma from a medical school, regardless of any postgraduate training or specialty, allows a new doctor to practice any type of medical care. In such countries, it would be perfectly legal for a dermatologist to perform a hysterectomy.

The Bangladesh experience underscores new challenges in terms of iatrogenic fistula prevention. Despite the lack of sufficient data to determine whether incidence is rising of its own accord or is simply being unmasked, it is clear that iatrogenic fistula has gone from a novelty to an alarming and more common reality. While a country with rural populations living, for example, on the edge of the Sahara Desert might still need to address the basic provision of EmONC, entirely new approaches may also be required to address iatrogenic fistula.

Addressing fistula is a core element of a new effort to address safe surgery internationally. Organizations including the WHO, G4 Alliance, JHPIEGO, EngenderHealth, the Harvard University Medical Schools Program in Global Surgery and Social Change, UNFPA and others are working hard to encourage practices leading to decreases in surgical morbidity and mortality. *The Lancet* Commission on Global Surgery is an excellent resource for learning about these efforts, as is the WHO website – especially the emergency and essential surgical care space and the Quality of Care Network.

One general prevention measure is higher levels of training for providers of fistula care. Fistula surgeons have called for reviewing national policies that contribute to unsafe surgery

Tools like safe-surgery checklists (see Annex 2), international standards for evaluating fitness for surgery, and a number of other interventions are at the forefront of this new effort. The Fistula Care Plus project has developed a number of useful tools. Providers of fistula care are encouraged to implement these simple, but profound changes to maximize surgical safety in their institutions. No matter the starting point, these steps can reduce the risks that patients face as they come to surgery. Funding agencies are encouraged to require that their sponsored sites implement these standards and monitor compliance as part of broader monitoring and evaluation.

Perhaps the most difficult component of safe surgery is surgeon accountability. In wealthy countries, the fear of litigation drives unnecessary/unindicated medical or surgical interventions and diagnostic studies, drastically increasing expense even as overall quality of care remains problematic. But surgeons in low-resource settings, working in rural settings with insufficient resources, may have no supervision at all. Regulation is often lacking. Surgeons may be unqualified and untrained (or insufficiently qualified/trained), and perform unjustified hysterectomies and Caesarean sections. More evidence is needed on these issues, although it is already clear that local and national professional societies need to better censure surgeons with high incidences of bad surgical outcomes. Remedial education may be needed for some, while measures to protect patients from frequent offenders, even removal from practice, may be required in extreme cases. Making this level of accountability a new tenet of medical culture will be necessary, but also exceedingly challenging.

Overall, obstetric fistula prevention requires national systems that provide quality midwifery care and/or skilled health personnel during childbirth (WHO and others, 2018). It calls for timely access to EmONC for all women and girls in need, everywhere, while prioritizing quality of care. In spite of the overwhelming scale of this task, real progress has been made. Preventing iatrogenic fistula means ensuring that the safety of pelvic surgery across the board reaches new levels of quality and accountability. While this may seem impossible, obstetric fistula prevention at one point seemed no less so, and now many nations are planning for obstetric fistula eradication. We cannot lose heart as we "reinvent" prevention strategies for iatrogenic fistula and maintain the excellent progress achieved with obstetric fistula. Without unrelenting attention to both, precious gains could easily be lost.

TRAINING CHECKLIST

- Are more surgeons required at a facility?
- Are there sufficient cases to maintain skills?
- Can the trainee immediately put new training into practice?
- How can surgeon competency & quality of care be assured?

2.6 TRAINING OF FISTULA SURGEONS

One of the most challenging areas of fistula programming is training. There was once a common conviction that we needed more and more fistula surgeons to staff more and more fistula centres. The first edition of this manual laid out guidelines for surgical credentials, suggesting a history of 300 repairs to achieve competence, and an ongoing exposure to 150 cases per year to maintain skills. These standards were a critical contribution towards demystifying and codifying the difficult question of who should be performing fistula repair.

Today, there are fewer and fewer institutions where 150 fistula repairs are being done annually, however, much less by a single surgeon. Under the 2006 standard for training, it might take many years for an individual trainee to perform the requisite 300 cases and master the full range of clinical scales. For example, Bangladesh repair activity is currently at about 400 to 600 repairs per year nationally (as of 2019), but about 70 surgeons have self-identified as fistula surgeons. This means that the average activity level is less than eight repairs per year, far too few to meet the standards for ongoing experience to maintain skills. Considering that many repairs are still being done by visitors via the camp (or campaign) model of service delivery, the dearth of clinical activity for national fistula surgeons becomes even more acute. So, purely in terms of the sensible use of surgical expertise, programmes need to be oriented around the appropriate number of surgeons, emphasizing "quality over quantity" so that women can have access to truly expert care.

Average activity level is less than eight repairs per year, far too few to meet the standards for ongoing experience to maintain skills

Some would argue that guidelines for developing and maintaining skills have been too stringent. Untreated, obstructed labour causes a broad range of injuries (Arrowsmith and others, 1996), and fistula is one of many issues requiring surgical attention. Women presenting for fistula care nearly all need fistula closure. But some clients require the surgeon to have the ability to rebuild or even replace the urethra, to treat incontinence (in up to 40 per cent of women) after fistula closure (ibid.), to use skin flaps or segments of bowel to repair or replace a damaged or lost vagina, to reroute the ureter (the tube carrying urine from the kidney to the bladder) into the bladder when it is injured and leaking into the vagina, to enlarge the bladder using segments of bowel when not enough bladder is left to store urine properly, to reconnect the bladder and urethra to each other in a "circumferential fistula", to repair rectal injuries with sound surgical technique (and rarely, to perform a colostomy in conjunction with rectal repair), and to "take down" a colostomy after a rectal repair if one has been used. Learning and maintaining all of these diverse surgical skills requires a large volume of patients, excellent training (to competence) in the fundamental skills of reconstructive surgery, and long experience.

Depending on the training practices in individual countries where fistula is repaired, the need for this broad foundation of training has implications for who should be providing fistula repair. People with a broad range of educational backgrounds have gone on to become effective providers, from PhD-level academic specialist surgeons to, in extremely rare cases, former patients. One group comprises individuals who entered the pool of providers as general medical officers or other pathways that did not include formal surgical training. There are general medical officers who have performed over 3,000 fistula repairs, and they do excellent work. These success stories happened in an era of abundant clinical cases for training, however. Without exception, these individuals trained very closely in intense, long-term mentorship relationships with expert fistula surgeons in very high-volume fistula centres. It is difficult to picture scenarios where training to this level could be replicated today. "Task-shifting" for fistula surgery (i.e., from surgeons to non-surgeons) is, therefore, generally not recommended, as there is no evidence to suggest that it is safe or advisable in terms of a patient's health, well-being and long-term outcomes.

Some classic surgical specialties (i.e., general surgery and its related disciplines, such as colorectal surgery, urology and plastic surgery) include training in the range of surgical skills that equip a provider to do reconstructive surgery, whether breast reconstruction after mastectomy, treatment of imperforate anus in children or urethral reconstruction in complete hypospadias. This involves spending time in multiple surgical disciplines to gain the particular skill sets required. Moving into a new brand of reconstructive surgery (such as fistula) simply requires the application of these foundational skills in a new setting. For this reason, general surgeons and urologists should ideally be a strong component of fistula surgical staffing. Gynaecologists should be praised for carrying the bulk of the work in fistula repair to date. But we should ask why surgeons from other disciplines, especially those with a strong foundation in reconstructive techniques (as often required for fistula repair), have not been more involved, and we should seek to encourage their participation. As we move toward the new paradigm of fistula eradication and heightened need for sustainability of treatment programmes, we cannot fail to tap into the wealth of expertise provided by these other surgical disciplines.

With respect to obstetric fistula, women tend to be from the most rural and resource-poor areas in the poorest nations on earth. The very few individuals with training in fistula repair are not likely to choose to live in such areas

With respect to obstetric fistula, women tend to be from the most rural and resource-poor areas in the poorest nations on earth. Fistula repair is difficult, requiring a broad range of skills. The very few individuals with training of this caliber are not likely to choose to live in areas with few good options for the education of their children, career and cultural opportunities for spouses, or the possibility of professional advancement for the surgeon. They have too many other opportunities to commit to a practice dedicated only to fistula repair, especially if the number of patients is waning. Further, fistula practice is inherently not profitable as a vocation. All of these factors suggest that fistula centres probably need to be located where highly trained surgical specialists are willing to live, generally in urban areas in national capitals. NGOs and governments can deploy surgeons against their will into geographic areas that might make access to care easier for women with obstetric fistula, but these strategies only lead to sustainable capacity-building when surgeons remain over the long term. Somehow, planners and policymakers need to take into consideration both women's needs to easily access care and the realities of locating highly trained fistula surgeons in areas without benefits that might entice them to stay.

Quality of care and patient safety should always come first in fistula surgery. Historically, the overwhelming number of women and girls needing repairs drove stop-gap measures such as task-shifting, whereby individuals without formal surgical training in pelvic reconstruction procedures provided fistula care, including repair surgery. Justification for this strategy is now waning, given that both the number of skilled surgeons worldwide has increased and the number of fistula cases is decreasing. To date, no evidence validates the safety and efficacy of task-shifting for fistula care and treatment. Such programmes should be conducted only in areas of extraordinary, overwhelming need and lack of capacity, and, even then, only under the auspices of official health ministry or government policy, under national guidelines, and/or as a research protocol with ethical approval. Careful oversight of such providers and tracking

of long-term patient outcomes is a moral imperative. Where task-shifting is implemented, there should be the simultaneous prioritization of investment in human resources for health, health systems strengthening and universal access to quality health care to overcome the need for "band-aid" short-term measures.

2.7 ERADICATION OF FISTULA

The falling number of women and girls living with fistula is not a reason to move on to the next cause, but to redouble efforts to achieve eradication. Wealthy nations brought fistula incidence and maternal mortality under control in the 1930s (Loudon and others, 2010) through making EmONC easily accessible to all. Advances in the concepts of asepsis and safe anaesthesia made surgery generally safer. The Woman's Hospital in New York was razed to make room for the Waldorf Astoria Hotel, and no need was seen to relocate it, as fistula had fallen to such low levels that a dedicated facility no longer made sense.

Today, the UN Secretary-General and Member States are calling for an end to fistula globally within a decade, aligning to the 2030 Agenda and as per the 2018 UN General Assembly resolution on fistula (A/RES/73/147). Individual nations have set similar goals. In 2014, Ethiopia announced a national action plan to end fistula by 2020, and in 2019 Nigeria updated its strategic framework to reduce the incidence of fistula by 30 per cent by 2023. At least 23 affected countries have developed national strategies to end fistula (Campaign to End Fistula, 2018a).

The push towards fistula eradication should be a universal goal, but clarity is needed around an acceptable definition. Eradication is a term borrowed from infectious disease measures referring to bringing the incidence of new cases of a disease to zero, as was done with smallpox. Since obstetric fistula occurs in small numbers everywhere, "eradication" does not quite fit in this context. The goal should be to bring both forms of it down to levels accepted as "background" incidence. In this, some would argue for distinguishing between obstetric and iatrogenic fistula, although eradication should be discussed in the context of fistula as a disease and its consequences, and not just its causes. After all, the suffering is the same.

In fistula programmes, the shift into eradication mode is at different stages. Asian countries like Bangladesh and Nepal see obstetric fistula in small enough numbers that ending the condition seems a rational next step. But in other areas, fistula remains a significant public health and human rights challenge. To date, there is not yet consensus on the components of programming for eradication. Any thought that obstetric fistula might be moving towards control, however, cannot ignore the issue of iatrogenic fistula, and should not dampen energy to deal with other maternal morbidities (like urinary incontinence and the sequelae of prolonged obstructed labour).

One often discussed measure is for ministries of health in fistula-endemic countries to make fistula a notifiable condition. In this way, individual cases could

The push towards fistula eradication should be a universal goal, but clarity is needed around an acceptable definition. The goal should be to bring both forms of it down to levels accepted as "background" incidence

be identified and reviewed, and findings used to continually fine-tune prevention and close gaps until the condition is eradicated. Yet, there is some concern that labelling fistula as notifiable could deepen stigma that is already overpowering for women with this condition, and so the initiative is still under consideration.

Eradication programming must prepare for a new paradigm. Even when cases are brought down to a low level, the capacity for fistula care must be established and sustainable, and probably funded with local resources. Can adequate skills be maintained and quality care assured at a large number of centres scattered across a nation as case numbers trend downward? If not, some effort must be made to consolidate services (focusing on quality, not quantity), a radical change from efforts to expand services in the earlier era of fistula care.

2.8 SUSTAINABILITY

SUSTAINABILITY CHECKLIST

- What is the programme's funding source?
  - Governmental
  - Institutional
  - International
- Retention of key personnel
- Compensation
- Professional acknowledgement
- Regional networking

Pending better data and epidemiology, there is a growing sense that the numbers of new fistula cases may be waning. If this is true, there are significant implications for fistula programmes. One challenge is in the rational deployment of resources. Elsewhere we will discuss the balance between funding for fistula treatment and prevention as dual moral imperatives. But on national and regional scales, careful thought needs to go into defining the best ways to distribute fistula capabilities.

Funding and resources

Fistula has long been considered a condition requiring external support. Since it affects the poorest of the poor, there have never been easy answers to paying for fistula repair. The relative simplicity of equipment and facilities required for fistula surgery, the limited menu of necessary drugs, and the infrequency of the need for lab studies or imaging all boded well (initially) for institutional care managed through external financing. Some major projects providing fistula care have now stretched into a decade or more, with support from funders like UNFPA/Campaign to End Fistula, the Fistula Foundation, the Freedom from Fistula Foundation, Fistula Care *Plus* backed by the United States Agency for International Development (USAID) and a smattering of other organizations. These initiatives made it easy to imagine that financial support would always be there.

But current day realities are different, with major supporters of fistula care seeing across-the-board reductions in funding. At the same time, national governments have their own challenges from a lack of resources coupled with great need, leaving women with fistula as the last to be served. Policymakers engage in discussions on the issue but typically leave fistula services to the NGO community. Without governments' active participation, ending fistula by 2030 is likely to remain an unrealized goal.

What form can fistula programming take in an era of waning international support? Where should ownership of the issue reside? Is it a matter of NGO/donor responsibility or has the time come for public ownership? The UN Secretary-General and Member States have called on countries to commit more of their own resources for fistula care (Campaign to End Fistula, 2018b). Yet tough challenges abound, including those related to achieving decent health governance and a quality health system. Few other surgical conditions are considered diseases of public health significance. Fistula is not a primary health-care subject but a tertiary-level one that requires an optimized health system to show results.

Countries that struggle to provide quality maternal and newborn health services will struggle with fistula care. A premature transition from a donor/NGO-driven model to public ownership can be risky until a country shows resolve in decreasing maternal mortality first. Governments can be financiers and choose to outsource fistula care to NGOs, taking donors out of the equation, but cannot take NGOs out until an adequate, high-performing service delivery network provides quality and accountable care. In some cases, fistula programmes are partnering with local industry (e.g., technology, banking, energy) and making their own direct approaches to international corporations as sources of support.

Though the fistula elimination effort is full of challenges, both old and new, everyone should be encouraged by the great progress made in reducing the burden of suffering. New links among stakeholders, improved public awareness, and a host of other factors point to an ever brighter hope for a world free of fistula.

Countries that struggle to provide quality maternal and newborn health services will struggle with fistula care

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FISTULA TREATMENT

3

THE FIRST EDITION OF THIS MANUAL PRESENTED CONSENSUS ON TREATMENT PRINCIPLES BASED ON INPUTS BY A BROAD PANEL OF RECOGNIZED EXPERT SURGEONS. THESE PRINCIPLES REMAIN VALID TODAY, BUT A NEW PANEL OF SURGICAL EXPERTS ADDRESSES CHANGES IN TREATMENT SINCE THEN.

3.1 BEFORE SURGERY

3.1.1 Fistula screening

Fistula screening refers to the initial clinical examination when the surgeon first encounters a new patient. (Field screening by non-medical personnel to determine the presence or absence of fistula is discussed under outreach and patient identification.) It is critical to spend adequate time to gain a complete mental picture of the injuries that are to be repaired, the difficulties expected, the potential for complications and the techniques that will be required.

In field settings, the environment may not be ideal for a good clinical exam. Patient positioning, possibly interments for gentle retraction, the materials for "dye testing" and lighting must be considered.

Positioning:
As with any procedure performed with the patient awake, the intent of the examiner should be explained to the patient, and she should have the opportunity to ask questions before the screening exam begins. The patient may be subjected to some discomfort if the fistula is difficult to see. Preparing the patient before this happens includes explaining that everything possible will be done to minimize her discomfort. Helping her relax upholds the patient's basic right to be treated gently and respectfully, and will improve the quality of the exam and the likelihood of a correct diagnosis.

If possible, patient positioning should simulate that in the operating theatre as closely as possible. If the foot of the table can be lowered, the patient's buttocks should be positioned as closely as possible to the edge of the table. This requires leg stirrups or supports of some kind. Care should be taken to avoid patient discomfort by over abducting the hips. Contact between the legs and the supports of the leg stirrups should be avoided. If the head of the table can be lowered, this can be very helpful in visualizing high fistula injuries. Lighting fixtures should be directed to shine directly down the long axis of the vagina.

SCREENING CHECKLIST

The surgeon should:

- Take the time to position well and make optimal use of available lighting
- Use a headlight
- Explain what you are doing to the patient
- Be gentle and you will get a better exam

CLASSIFICATION CHECKLIST

- Pick one of the two most widely used systems and stick with it
- Document what you see with a sketch
- Consider using a specific scoring tool for needs like prognosis

3.1.2 Fistula classification

No topic in fistula care is more fraught than the classification of fistula injuries. The issue goes back more than 150 years and remains unresolved today.

The most important truth about fistula classification is that it must meet some need. We assign seemingly cryptic letters and numbers to particular fistula injuries for a number of potential reasons:

- **To be able to accurately communicate with a colleague the nature of a patient's particular injury.** "I want to refer a fistula client to you. She has a Goh 3bii fistula."
- **To accurately delineate a type of fistula for research or publication purposes:** "In our study, 30 per cent of women presented with Waaldijk type IIAb injuries."
- **To assist in patient selection for training exercises:** "This is a good case for our trainee. It is just a IAa."
- **To predict outcomes:** "As a IIBb, she is very likely to be incontinent after repair."
- **To assist in describing incurable cases.** "No one can repair that case. It is a Goh 4ciii."

In sum, fistula classifications systems become a language allowing for communication, prognostications, triage and distribution of individual fistula cases.

Also keep in mind what classification systems do not do. Early in the design of the multicentre research protocol on catheter management after fistula repair (Barone and others, 2015), it was decided that the results would be most helpful and applicable if only simple fistula cases were included in the study. But if one carefully considers the available classification systems, the difficulty of repair is not precisely what any of them were designed to describe. A Goh 4ciii might be very difficult to address but other subtypes can be challenging as well. So the designers of the study faced a long litany of criticism because no precise definition of a "simple" case could be distilled from the available systems.

Since before the time of J. Marion Sims, surgeons have put forward their own particular spins on fistula classification. Over 40 different schemas have been published. The most conceptually straightforward system is a simple anatomic description. Where is the fistula, how big is it, and how much scarring is present? In this system, an injury might be described as a "3cm juxtaurethral defect with severe scarring". This allows for the formation of a mental picture of what the surgeon saw at the screening or in the operating room.

Each of the many classification systems tries to pack in more benefits by focusing on important factors. It is well accepted, for example, that injuries to the urethra and bladder neck are much more likely to be associated with

Box 1 Goh classification

GOH CLASSIFICATION: URETHRAL LENGTH
Type 1: Distal edge of fistula >3.5 cm from the external urethral orifice (EUO)
Type 2: Distal edge 2.5–3.5 cm from the EUO
Type 3: Distal edge 1.5–<2.5 cm from the EUO
Type 4: Distal edge <1.5 cm from the EUO

FISTULA SIZE
(a) Size <1.5 cm
(b) Size 1.5–3 cm
(c) Size >3 cm

SCARRING
I. No or mild fibrosis and/or vagina length >6 cm or normal capacity
II. Moderate or severe fibrosis and/or reduced vaginal length and/or capacity
III. Special considerations, e.g., circumferential fistula, ureteric, etc.

incontinence after successful fistula closure. Current classifications have designations based on how close to the urethra the damage occurred, and even make special note of the type of fistula known as "circumferential", where the urethra and bladder completely separate from one another.

Though new systems continued to be published, the dominant systems are those put forth by Dr. Judith Goh (2004) (Box 1) and Dr. Kees Waaldijk (1995) (Box 2). Both have wide clinical support and seem to work well in daily use.

Box 2 Waaldijk classification

WAALDIJK CLASSIFICATION:

Type I: Fistulae ≥5 cm from the EUO
Type II: Fistulae <5cm from the EUO:
A. Without (sub)total involvement of the urethra:
(a) without a circumferential defect
(b) with a circumferential defect

B. With (sub)total involvement of the urethra:
(a) without a circumferential defect
(b) with a circumferential defect

Type III: Miscellaneous fistulae, e.g., ureterovaginal

Fistula classifications systems become a language allowing for communication, prognostications, triage and distribution of individual fistula cases

Since classifications have so many different intended uses, it may not be practical for any single scheme to fit clinical need across such a wide variety of applications. Other tools might be employed to fit particular niches in fistula practice. Two different publications have suggested scoring systems purely oriented towards prognosis and "severity" (Mukwege and others, 2018). The prognosis score (Box 3) is presented here as an example. Focused tools like these may help in meeting specific clinical needs where the broader classification systems do not quite reach.

Box 3 Vesicovaginal fistula score for prognosis

Scarring	**Score**
Mild	1
Moderate	2
Severe	3
Urethral status	
Intact	0
Partial damage	2
Complete loss	3

Score <3: dry rate 84%
Score 3 or more: dry rate 40%

3.1.3 The obstructed labour injury complex[3]

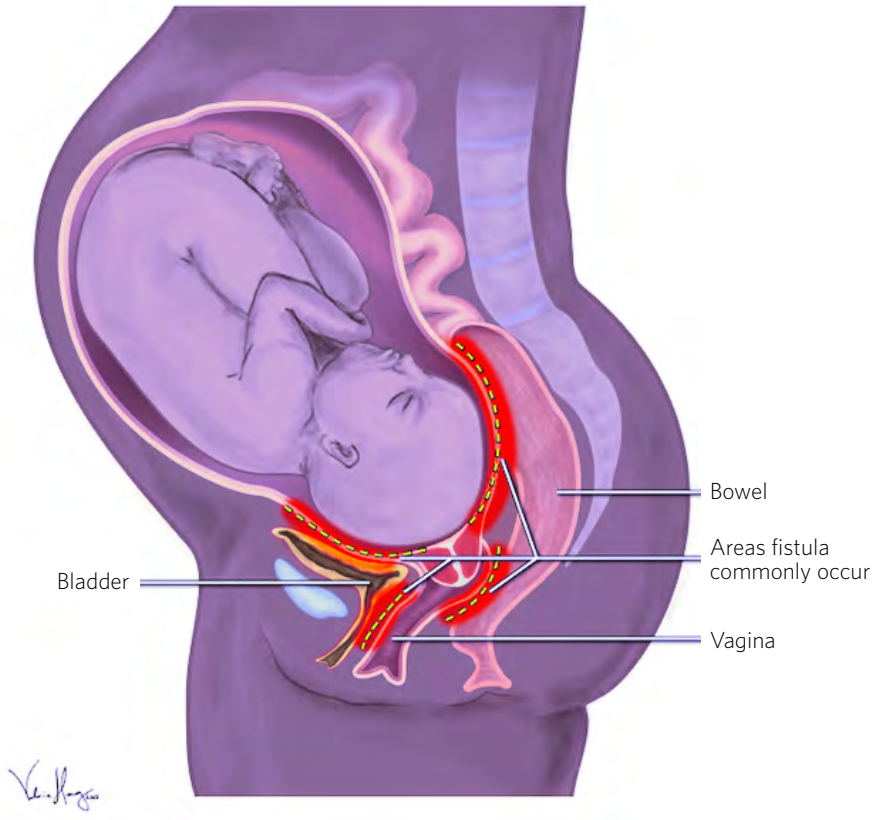
Women with obstetric fistulae have injuries to the bladder beyond the formation of a fistula into the vagina

The primary means of injury that results in obstetric fistula is the loss of blood flow (referred to as "ischaemia") to the bladder, vagina and perhaps the rectum, resulting in the breakdown of tissue (i.e., necrosis) and an abnormal opening (known anatomically as a "fistula") between these structures (Figure 3). The fistula, however, is but the most obvious expression (among myriad others) of damage done during untreated obstructed labour.

The pelvic organ most often affected in obstetric fistula is the urinary bladder. Women with obstetric fistulae have injuries to the bladder beyond the formation of a fistula into the vagina (Arrowsmith and others, 2018). The human bladder is a marvelous organ capable of storing large amounts of liquid at zero pressure. Zero pressure is an absolute necessity, for if the pressure increases as the bladder fills, urine is soon pressed back up toward the kidneys, which are highly

3 As described in: Arrowsmith, Hamlin and Wall, 1996. Prolonged obstructed labour may result in a myriad of birth-related injuries to multiple organ systems in addition to (or instead of) an obstetric fistula. These may include total urethral loss, stress incontinence, hydroureteronephrosis, renal failure, rectovaginal fistula formation, rectal atresia, anal sphincter incompetence, cervical destruction, amenorrhoea, pelvic inflammatory disease, secondary infertility, vaginal stenosis, osteitis pubis and foot-drop. In addition to their physical injuries, women who have experienced prolonged obstructed labour often develop serious sociocultural problems, including divorce, exclusion from religious/community activities, separation from their families, worsening poverty, malnutrition, mental health issues and almost unendurable suffering.

Figure 3 Areas where obstetric fistulae occur



Source: https://commons.wikimedia.org.

The primary means of injury that results in obstetric fistula is the loss of blood flow to the bladder, vagina and perhaps the rectum, resulting in the breakdown of tissue and an abnormal opening between these structures

sensitive to damage by this means. Low pressure storage requires a bladder that is big and elastic enough to stretch freely (this property is called "compliance"). Large fistula defects can mean that enough of the bladder has been destroyed by ischaemia that it no longer has the capacity to store enough urine. Even if these women have the defect closed and are continent, the tiny bladder capacity that results might mean that they must void every few minutes. The lack of blood flow results in the loss of bladder tissue comprising the fistula defect, but surrounding areas have been compromised as well, and are subject to profound scarring. While normal bladder tissue must be soft and stretchy to maintain compliance, scarred bladder tissue is rigid and inelastic. This scenario can lead to kidney damage.

The bladder has amazingly complex micro-anatomy. The first level of bladder control occurs via an area of the bladder that is rich in a variety of synapses and neuroreceptors, making it the "field headquarters" for bladder function. This area is at the base of the bladder, between where the tubes bringing urine down from the kidneys enter. Unfortunately, it is by far the most common anatomic spot for fistulae.

Neurologic control of voiding is a tightly conducted symphony where the bladder must receive a command to contract just as the sphincter gets the go-ahead to relax. The opposite is required to remain dry between voids. Unfortunately, the signals regulating voiding and continence come down via nerves that enter the bladder from its base, which is, once again, the area where the carnage occurs in obstructed labour. So women might be unable to sense when the bladder is full or to send the command for the bladder to empty. If there is no sensation of fullness, the bladder gets overstretched, which eventually destroys the muscular function of the bladder wall. In the case of partial injury to the nerve supply of the bladder, the bladder can tend to contract of its own accord, frequently and with great urgency.

The urethra is far from a simple pipe carrying urine to the outside world, but rather a complex structure with delicate muscular anatomy and elaborate means of control. The urethra and the "neck" of the bladder make up the entity known as the "continence mechanism". If the head of the baby is lodged low down in the pelvis during obstructed labour, they can be damaged or entirely lost.

Early fistula surgeons saw women leaking urine because they had a hole in the bladder and set out to do all they could to close that hole. But all of the detailed discussion above is worth mentioning as incontinence after successful repair is so prevalent. Voiding and continence are the yin and yang of bladder function, and it is now apparent that prolonged obstructed labour is a "perfect storm" capable of disrupting these intricate functions at every level.

When the pressure of the fetal head is directed towards the back instead of the front of the vagina, the rectum bears the brunt of the pressure and ischaemia. When part of the rectal wall dies, this is known as a rectovaginal fistula. Women with this suffer terrible morbidity as they endure the constant leakage of faeces directly into the vagina. Many women unfortunate enough to have a rectovaginal fistula also have a vesicovaginal fistula (often called a "double fistula"), such that they experience both faecal and urinary leakage as a constant issue for the rest of their lives.

In considering which fistulae are the most difficult to repair, double fistulae are near the top of this category

In considering which fistulae are the most difficult to repair, double fistulae are near the top of this category. Women with double fistulae have endured the broadest area of ischaemia, and therefore have the most extensive injuries. The particularly severe ischaemia in double fistulae seems to result in the injuries associated with the most extensive scarring. So women who lose the most tissue and have the largest defects to close often also have the most brittle, scarred remaining tissue with which to work.

Almost all rectovaginal fistulae present as double fistulae. Isolated rectovaginal fistulae due to obstructed labour are very rare, accounting for less than 1 per cent of all ischaemic fistula cases. They are usually associated with a longer labour, a circumferential bladder fistula and more scarring, hinting that they result from a greater degree of trauma. Some isolated rectovaginal fistulae do occur after a poorly repaired perineal tear or assisted delivery, but these are not ischaemic in nature. Sometimes a patient may present with an isolated

rectovaginal fistula, but on questioning, it emerges that they initially presented with a double fistula and had their bladder fistula repaired. The rectovaginal fistula repair was either deferred or subsequently broke down.

Other women have a fistula injury that includes the anal sphincter, and they experience the inability to control the passage of stool. The anal sphincter, like that of the bladder, has a complex anatomy and intricate systems of control. Restoring normal function can be a challenge.

From there, we see a menu of other possible injuries that might be endured by a woman whose obstructed labour goes untreated:

- In addition to the bladder and rectum, the vaginal tissue is dealt a fatal blow during obstructed labour. These injuries range from simply the loss of the vaginal tissue in the area of the fistula to complete loss of all of the vagina. A scarred, short vagina can exacerbate issues with incontinence. But the major effect on quality of life is the loss of sexual function.

- A number of women sustain injuries affecting fertility (Kopp and others, 2017). Very often the cervix is injured or destroyed; proper cervical function is vital to the normal progress of pregnancy and labour. One small study found that an endoscopic examination of the uterine cavity in women with fistula showed scarring inside the uterus (known as Ashermann's Syndrome), which can prevent implantation of the embryo in very early pregnancy.

- The nerve supply to the lower legs can be compressed and injured by the fetal head. Some women are probably injured by labouring for days in the traditional squatting position, which is known to possibly affect the peroneal nerves near the knee. The result of these injuries is known as "foot-drop". Some women can no longer feel the foot (or feet), nor can they lift the foot at the ankle. This is analogous to the injuries seen in people affected by leprosy. They can find it difficult to walk and can inadvertently cause major damage to their feet because of the inability to feel pain when the toes drag along the ground.

- The skin of the vulvae and perineum can be profoundly affected by chronic contact with urine (and/or faeces). Grossly thickened and ulcerated skin results in terrible pain for some women.

- One study from South Africa (Cockshott, 1973) noted that after obstructed labour, even damage to the bones of the pelvis can be seen on plain x-rays, once again presumed to be from the interruption of blood flow, this time to the nourishing tissue layer surrounding the bone known as the periosteum.

The fundamental point is that each of these injuries occurs in and affects the life of a human being. Incontinence is terribly uncomfortable in its own right, but it also leads to huge social stigma and isolation. Loss of sexual function can have disastrous effects on a marriage or relationship. The inability to conceive and carry out a normal pregnancy can affect marriages, family dynamics and

the woman's place in her community. The odour of incontinence might exclude the woman from participation in her church, mosque or other place of worship, where cleanliness might be a pre-requisite for entry. A woman with foot-drop might be unable to perform basic household functions like carrying water or helping on a family farm. Stigma and a loss of a sense of self-worth can lead to depression, which is almost universal in all fistula patients in all cultures, and other kinds of mental/emotional illness, even suicide. Deepening poverty can push women to desperate measures, while local and national economies are affected by the loss of economic contributions that women provide.

A broad range of services are required to deal with such a constellation of harm from fistula. On a clinical level, it is not sufficient to offer low-level, single specialty surgical capability when injures range across such a broad expanse of organ systems. It would be easier to build a functioning network for fistula care if most injuries were simple. But the opposite is true. At an internal regional Médecins Sans Frontières meeting in 2019, the board president, a surgeon, referred to fistula repair as "the most complex of all disciplines of reconstructive surgery". Women at the severe end of the spectrum of "whole-person" injury might require advanced capabilities for mental health interventions; social needs might be minimal but might also be profound and life-long. Fistula is, by its very nature, complex, multilayered and resource intensive.

3.1.4 Informed consent

INFORMED CONSENT CHECKLIST

- The patient has a right to decide about her care
- Language and cultural barriers require local solutions
- For really serious interventions, with the patient's consent, involve other decision makers: family, clergy, traditional leaders
- Be creative: drama, films
- Keep in mind that consent takes time

Surgeons and health-care professionals might have entirely different perceptions of what a woman wants to know than what she actually wants. For this reason, it can be very helpful to enable women who have been through fistula repair to explain to a new client what to expect. In one centre in Niger, women booked for repair see a drama put on by a former patient, who acts out each step, from a preoperative shower, to being positioned for a spinal anaesthetic, to the position for surgery. While this does not address the possibilities of complications or odds of success, it does help demystify the surgery so that women can ask better questions.

Along with surgical checklists, providing quality documentation for the medical record and a host of other non-clinical duties, informed consent may seem like one more task. But these must all be done, not because the health ministry or the WHO or a funding agency says so, but for the benefit of patients and to protect their human rights. EngenderHealth (2010) has published tools for simplifying informed consent in daily practice. Like so many aspects of fistula care, informed consent needs an approach tailored to local cultural practices, the educational level of the patient, the presence or absence of others (family, etc.) who might be traditionally empowered to take part in decision-making, and many other factors. If the starting point is protecting the woman's rights and agency, sensible local solutions can hopefully be found.

We can never forget that we serve a vulnerable population. We must not assume that we always know the best answer for the patient. Informed consent

does not involve convincing the patient to do what we think they should do. It calls instead for educating them on what is being proposed, and helping them to choose freely whether or not to proceed. We cannot assume that they want to have surgery, or that they would choose to risk a dangerous procedure over the prospect of living with incontinence.

As is true anywhere, but particularly in the case of many obstetric fistula patients, the client may freeze at the sight of a doctor. She may feel obliged to go along with anything this seemingly immensely important and powerful person says, and may not feel the right to ask questions. So the burden is on the surgeon to create an environment where she feels invited into a conversation about her care, even if this is awkward and time-consuming.

3.2 APPLYING PRINCIPLES OF SAFE SURGERY

Safe surgery is the crux of both quality fistula repair and the prevention of both obstetric and iatrogenic fistula. In fistula care, the best surgical practices should be oriented towards safety to avoid, as far as possible, subjecting patients to bad outcomes. When adverse outcomes occur in pelvic surgery, iatrogenic fistula can be the result. Therefore, applying sound principles of surgical safety applies to fistula care on different levels.

In fistula care, the best surgical practices should be oriented towards safety to avoid, as far as possible, subjecting patients to bad outcomes

The Fistula Care Project has been among the most visible champions of safer surgery with an excellent collection of tools. The WHO has also been a very active leader in this field. See its surgical safety checklist in Annex 2 and additional resources from the WHO safe surgery webpage.

The basic tenets of safe surgery are simple and can be easily incorporated into a brief checklist like the one produced by the WHO (2009).

3.2.1 Is this the correct patient, and are we doing the planned operation on the correct side?

First, verify that the right patient has been brought for treatment. Surgical patients might be either pre-medicated, terrified, unaware of what is happening or even unable to speak the language used in the operating room environment. So the identity of the patient must be confirmed for every case, every time. Errors occur in rich countries even when patients wear ID bracelets with bar-codes and are "scanned in" on arrival. Each surgical unit must, even in low-resource settings, have a means of establishing that, for example, the woman on the operating table really is the first patient/case on the list, and not the second.

Then, it is imperative to verify which procedure is being done, and, when this applies, which side of the patient is involved. A beautifully done surgical approach to the left ureter is a disaster if the fistula is on the right. The site can be identified with a marking pen; once again it is up to the creativity of the staff at an individual centre to make a policy that works locally.

3.2.2 Are we prepared for the intended procedure?

Once an anaesthetic is given, it is too late to think of what should have been done before the operation started

Once an anaesthetic is given, it is too late to think of what should have been done before the operation started. Has the anaesthetist prepared the drugs needed, are materials for a spinal or for intubation nearby, have surgical monitors been tested, prepared and put on the patient? The same is true on the surgery side. Has the surgeon communicated clearly with the theatre staff on the surgical plan, and confirmed that the instruments, equipment and supplies like catheters and sutures are all readily at hand? Have the surgeon, anaesthetist and theatre staff discussed any potential special needs? For instance, the surgeon needs to tell everyone if he or she suspects that a particular case might be a bloody one, so that initial preparations for transfusion can be made. Particularly in a "camp" setting, staff may not be familiar with each other. Has everyone identified and introduced themselves to everyone else? If the surgeon is a visitor, does she or he know the local procedure for ordering blood or any other urgent need that might arise during the operation?

The use of prophylactic antibiotics is discussed in more detail below. The question here is: have the antibiotics been given within an hour of incision time?

Though imaging is not a common part of the evaluation of fistula patients before surgery, there are times, such as in the repair of ureteric fistula, when an x-ray like an intravenous pyelogram (or excretory urogram) can be used to define the anatomy of the injury. Are these films in the room on display when the operation starts?

3.3 AFTER THE OPERATION

The use of the checklist is not complete until the patient leaves the operating room. Before she goes, the nurses must confirm that all instruments and needles have been accounted for. Often the plan for surgery changes drastically as a particular operation unfolds. The surgeon must confirm the name of the procedure that was actually done to ensure proper documentation. The surgeon and anaesthetist should discuss any concerns or needs pertaining to the early care of the patient after anaesthesia as the operation comes to an end.

Doing the checklist should be as natural as washing hands before surgery

The author has observed that in places that routinely employ a surgical checklist, it is often done derisively, as if this is a silly imposition on the valuable time of the theatre staff. It is important that the surgeon and anaesthetist model a professional attitude as the checklist is completed. Doing the checklist should be as natural as washing hands before surgery. No one would want to fly on an airliner where the pilots did not run through the appropriate checklists prior to every phase of a flight. Surgery should be no different, as the implications of an avoidable error can be catastrophic.

3.3.1 Antibiotic prophylaxis

In a survey of current practice in fistula care (Arrowsmith and others, 2010), one area of broadest variance within perioperative care was the use of antibiotics. A study on the use of antibiotics in fistula repair (Muleta and others, 2010) addresses choices of antibiotics for prophylaxis. More specific guidance on antibiotic use calls for extrapolating from studies done on other types of female pelvic surgery (Van Eyk and van Schalkwyk, 2012). It is generally accepted that antibiotic prophylaxis is indicated in pelvic operations. For many surgeons, antibiotics are continued until the catheter is removed, but this practice has yet to be supported in the surgical literature. The recommendation of this manual is that all patients receive single-dose antibiotic prophylaxis unless there is an overt clinical infection being treated. In that case, it may be prudent to delay this elective surgery.

The specific choice of agents for prophylaxis is a complex matter depending on local bacterial resistance patterns, the availability of drugs and the capability of microbiology services in the hospital laboratory. The common practice among fistula surgeons is one dose of gentamycin 160 mg with induction of anaesthesia for vesicovaginal fistula, gentamycin with metronidazole for a combined vesicovaginal fistula and rectovaginal fistula, and metronidazole alone for an isolated rectovaginal fistula.

The recommendation is that all patients receive single-dose antibiotic prophylaxis unless there is an overt clinical infection being treated. In that case, it may be prudent to delay this elective surgery

3.3.2 Fistula repair

The basic surgical principles for vesicovaginal fistula 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 of sutures with absorbable sutures 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 16F catheter (though there is room for surgeon preference in choice of the size of the catheter). Larger sizes may cause urethral irritation and smaller sizes may be bypassed 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, usually with 5ml in the balloon so a large balloon in the bladder doesn't hit the fistula repair as the patient ambulates. The catheter should be held firmly but gently in place by tape on the thigh or sutures at the introitus.

- In recent times, more attention has been paid to reducing incontinence rates after fistula repair. This happens more often in patients with a fistula involving the urethra and hence the continence mechanisms. Greatly improved outcomes are obtained by repairing the urethra to an anatomical length and width, reconstructing the pubourethral ligament, and, lastly, repairing the vagina with no tension, utilizing flaps.

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

Rectovaginal fistula

The principles of repair of a rectovaginal fistula are similar to those for a vesicovaginal fistula, except:

- Care should be taken not to cause an inadvertent stricture of the rectum.
- Preoperative bowel preparation should be more thorough than for vesicovaginal fistula alone. This can be achieved with enemas.
- A temporary colostomy may be required for large, high or severely scarred rectovaginal fistula. (Since 2006, there has been a general trend in colorectal surgery away from frequent use of a colostomy. It seems generally true that fistula surgeons are using colostomy much less, even in difficult rectovaginal fistula repair.) We recommend reserving a colostomy for the most severe cases of rectovaginal fistula only. The traditional approach has been that if the rectovaginal fistula is high, scarred and/or circumferential, or if the peritoneal cavity is entered during the repair, then a break in the repair may leak faeces into the abdomen. Traditionally it has been felt to be safer to divert faeces via a colostomy during the healing phase in such cases.
- A previous failed repair may also require a colostomy, though as above, colostomies are now less frequently employed.
- In the opinion of many surgeons, rectovaginal fistula repair requires prophylactic antibiotic coverage to prevent intraoperative infection, although no case-control studies have evaluated this.
- Post-operative women who have had a rectovaginal fistula 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 with a high fluid intake for a few more days.

Combined fistula

Combined vesicovaginal and rectovaginal fistulae should be repaired at the same time, usually commencing with the vesicovaginal fistula, but circumstances and common sense should determine the most practical approach.

3.3.3 Post-operative management

Routine measures in post-operative care are presented in Chapter 5 (principles of nursing) and graphically represented in Annex 4 (obstetric fistula post-operative clinical pathways).

Care after surgery is an area where the surgeon's preference becomes very important. In general, it is reasonable to refrain from dogmatic statements where comparative data are lacking, but one area of care (namely, catheter management post-repair) has an evidence base and deserves special mention.

3.3.4 Catheter management after repair

One of the most exciting changes in fistula care since 2006 has been a move towards evidence-based care. While Nardos and Browning (Nardos and others, 2008; Nardos and others, 2012) laid a foundation with earlier, smaller studies, a landmark event was the completion of the first large-scale, multicentre, randomized, prospective study to compare 7 and 14 days of catheterization after the repair of simple fistulae (Barone and others, 2015). The study showed that 7 days was not inferior in outcomes or complications .

A shorter duration of catheterization can offer many potential benefits. Since hospital stays are often related to how long a catheter is in place, employing the seven-day standard has the potential to lead to shorter stays. These reduce costs, exposure to nosocomial infections, and the risks of complications of immobility such as deep-vein thrombosis and pulmonary embolism. Shorter stays can increase the capacity of a centre to offer fistula repair without any new investment in staff or facilities. Shorter stays also have fewer negative impacts on families and may allow women to resume work sooner (thereby lessening socioeconomic burdens).

One of the most exciting changes in fistula care since 2006 has been a move towards evidence-based care

3.3.5 Possible post-operative complications

Secondary vaginal haemorrhage: This requires immediate attention, including to assess the need for resuscitation. 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. The patient will need her haemoglobin (Hb) levels checked if her bleeding has been severe, and any resulting anaemia treated by iron supplementation. Methods for estimating the severity of bleeding are presented in the chapter on nursing care after surgery. In general, if the surgeon is wondering whether or not a return to surgery is indicated, it is most prudent to go ahead and do so.

Catheter blockage: Blockage of a catheter requires immediate attention to relieve pressure on the surgical repair site. Further details on how to unblock a catheter are given in the chapter 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. 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). More and more medical centres now have ultrasound capability, and a quick check of the kidneys can be confirmatory if hydronephrosis suggestive of ureteric obstruction is seen.

Breakdown of repair: A dye test to check the completeness of the repair should be performed before removal of the catheter. In the past, it was recommended that if the dye test is positive with new leakage post-operatively, the catheter should remain in place and on free drainage for four to six weeks to facilitate healing. This practice leads to a very long hospital stay, however, and all of the potential risks associated with long-term bladder catheterization. An immediate return to surgery for secondary repair might be a preferable option. If the breakdown is extensive or the quality of the tissue poor, or if there was significant blood loss during the initial attempt at repair, the catheter can be removed and the patient brought back for another attempt after two to three months.

In most cases of early breakdown (within the first five days), it is unlikely that prolonged catheter drainage will help heal the repair. There may be more benefits for breakdowns that occur later (after 7 to 14 days). Some surgeons would advocate that if the urine is not slowly decreasing after a week of catheter treatment, and the fistula is not attached to the side walls, then re-operating should proceed, albeit while expecting less success if the fistula is stuck to the side wall and needs releasing again. This approach leads to about a 70 to 80 per cent success rate.

Infection: Infections of the repair site or 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 vesicovaginal fistula, genuine urinary stress incontinence, detrusor overactivity or mixed incontinence. The chapter on 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

3.4 SPECIAL CASES

3.4.1 Urethral loss or damage

In addition to standard fistula closure, urethral repair is a frequently employed technique for women with injuries in this area.

When the urethra is partially affected, urethral repair is accomplished by mobilizing urethral tissue from the side of the injured segment and closing it over a urethral catheter. Several points should be kept in mind.

- Urethral anatomy is complex and delicate. The surgeon needs to approach the urethra with special care, using delicate instruments and fine sutures (4-0, 5-0 or 6-0 absorbable sutures).
- Two- or three-layer closures are ideal.
- There is a useful memory tool to determine how much tissue needs to be mobilized to close around the catheter. French size, in which catheters are measured, refers to the circumference of the catheter in millimeters. So, a 14F catheter requires a strip of tissue 14mm wide, plus a bit extra for suturing.

If the urethra is lost, construction of a neourethra is required.

- Urethral tissue has a slightly more pink appearance than vaginal mucosa. In many urethral injuries, a pink strip of tissue can be seen along the inner surface of the pubic arch. This tissue can be mobilized and fashioned into a tube over a catheter in exactly the same way as in a partial urethral injury.
- With urethral loss in other patients, it can be obvious that the urethra is no longer present and only vaginal epithelium covers the pubic bones. In this case, more complex reconstructive techniques are required. One very useful approach is the Elkins anterior bladder-wall flap neourethra (Elkins and others, 1992).
- Many would advocate the concomitant use of a sling if a new urethra is fashioned. This could either be a classic pubovaginal fascial sling or the fibromuscular sling proposed by Browning.[16]

3.4.2 Ureteric fistula

A ureteric fistula repair can be more involved than a standard fistula repair, since it is almost always necessary to approach the injury via the abdomen. Once treated, however, virtually 100 per cent of women with ureteric fistula are dry. The ureter can be approached both intra- and extraperitoneally. An

A ureteric fistula repair can be more involved than a standard fistula repair, since it is almost always necessary to approach the injury via the abdomen

extraperitoneal approach has the advantage of avoiding the possibility of intra-abdominal adhesions as a long-term complication. Ureteric stents can make the anastomosis of the ureter into the bladder less challenging, but it has been suggested in urology that non-stented re-implantations have results equal to those where stents are employed. Indwelling "double-J" stents made of soft silastic material are superior in their ability to provide drainage and allow the patient to resume normal activity, but most centres do not have access to these more expensive stents.

Classically, indwelling stents have been removed cystoscopically. In centres where endoscopic equipment is not available or the surgeon does not possess these skills, a small permanent suture (which is already in place on most stents) can allow the surgeon to tie the distal end of the stent to the eyelet of the bladder catheter. In this way, the indwelling stent is removed along with the bladder catheter.

3.4.3 The "incurable fistula"

One of the great dangling issues in fistula care is the patient who receives expert care and remains incontinent. To date, there has not been universal agreement even on what to label individuals who, unfortunately, fall into this category. Various terms have been suggested, from "the incurables" to "women deemed incurable" to "inoperable fistulae" (Fistula Care and Harvard Humanitarian Initiative, 2012). No one wants to take a stigmatized fistula survivor and then further isolate her by branding her with yet another stigmatizing term. Yet we need a way to refer to this group.

Who defines these patients as incurable? It is true that some women are deemed incurable by less skilled or experienced surgeons, whereas others might be able to heal the injuries. It is also true that some women can be placed within this category as a clinical certainty. Though no solid clinical definition yet exists, few would argue that a woman with no urethra, little or no surviving bladder tissue, and impaired access because of severe scarring is not going to achieve continence via any intervention currently available. This has nothing to do with the skill of the surgeon but rather reflects a combination of injuries that leads to a hopeless scenario. To be continent, a woman must possess a functioning and adequately sized bladder and a urethra/bladder neck capable of enough function to provide urinary control. Browning and others (2018) found that making a new vagina can salvage some women thought to be incurable. The approach follows three principles: making the urethra a normal length and width, recreating the pubourethral ligament with pubococcygeal muscle or rectus sheath, and making the vagina adequate.

A visit to any dedicated fistula centre will reveal women referred for care after many previous failed repair attempts. It is not unheard of for individual woman to have endured seven, eight, nine or even more prior surgeries. Surgeons by definition are trained to intervene when presented with clinical issues. But there is a huge need for an agreed upon (and compulsory) set

of criteria to define the injuries that allow a provider to understand from the very first screening that surgery is not the answer to the patient's situation. Surgeons will sometimes claim "compassionate reasons" for going ahead with yet another attempt at repair for a woman who begs for help, even though her injuries are clearly not amenable to surgical repair. Yet the compassionate course of action in these cases is to refrain from subjecting the woman to an operation that can only harm and not help her. These are emotionally charged scenarios, and doctors by definition want to offer help and not rejection. But physicians must see this scenario as a pure application of the dictum *primum non nocere*: first, do no harm.

To avoid casting these women into a hopeless void, it is critical to avoid the tunnel vision that can accompany treatment of patients with a disease predominantly dealt with via surgery. Treatments other than surgery can improve the quality of life for women with incurable fistulae. Incontinence products and simple lifestyle measures can make a big difference. Perineal pads can be produced locally (Kaur and others, 2018) to help mitigate leakage of urine. Urethral plugs were formerly popular but have been taken out of production. An alternative option could be to use an indwelling catheter with a plug or "spigot" that they release every two to three hours. The catheter needs to be changed every month, and not many women prefer this option. Women can also employ fluid restriction and other behavioural strategies to minimize the impact of urinary incontinence.

In the spectrum of available interventions for social reintegration, women with incurable fistula should be at the front of the line, eligible for anything and everything that might be available at a given centre/community. Beyond repairing the injuries, the centre/community needs to help these women live with chronic incontinence with the least possible impact on quality of life (though the impact will inevitably be substantial). A provider can still instill hope in a patient with incurable fistula even though she is told that she is not a candidate for surgery.

Treatments other than surgery can improve the quality of life for women with incurable fistulae. Incontinence products and simple lifestyle measures can make a big difference

It is important to educate the patient and her family that not only is she being told that she cannot benefit from surgery at this hospital, but that she should never again seek surgery anywhere. Many women in this category wander from fistula centre to fistula centre hoping that the next person might be willing to give her the operation she believes will be the answer to her problems. It can be helpful for the surgeon (or a nurse) to write out and give to the patient a letter explaining why the surgeon has told her that her injuries are not amenable to surgical options, and ask her to show it in any future consultations for her condition. Some advocate that women check in at a fistula centre every year or so just to see if new interventions might be available.

A subset of women with incurable fistulae can be candidates for "salvage" procedures such as urinary diversion. Urinary diversion may be one of the most philosophically misunderstood options in the pantheon of fistula interventions. Since a fistula is a relatively rare condition and an incurable fistula a relatively unusual final outcome, very few fistula surgeons amass

large experience in diversion. For a notable exception, see the review of the great work done by Dr. Sunday Lengman at the Evangel Fistula Center in Jos, Nigeria (Kirschner and others, 2016).

A subset of women with incurable fistulae can be candidates for "salvage" procedures such as urinary diversion

Beyond whether or not an individual surgeon has the skills to pull off the procedure, diversion is a stark departure from standard fistula repair in terms of the commitments and capabilities required afterward. Obstetric fistula repair has always been appealing to funders and designers of programmes as a single-intervention scenario where a condition that has obliterated quality of life can be reversed after one operation. Though long-term follow-up data have not yet been amassed, some indications suggest that many women develop incontinence again years after successful fistula closure. In general, many surgeons do not routinely see their fistula clients after a successful fistula closure, for reasons such as patients being unable to afford the cost of return travel to a fistula centre for a routine check-up.

By contrast, urinary diversion requires lifetime care. It has been thought of by some (in other clinical contexts) as treating incontinence at the cost of inducing permanent metabolic disease. Diversion procedures mean that part of the digestive tract is employed to reconstruct some sort of urine storage mechanism in a woman whose bladder is no longer up to the task. Unlike the structures of the urinary tract, the gastrointestinal (GI) tract is built to absorb from the material passing through. When in contact with urine, the GI tract resorbs waste products that were meant to be excreted, not looped back into the system. Blood acid and chloride levels go up, and potassium levels fall. Patients tend to be somewhat dehydrated.

For procedures like the Mainz II pouch, attaching the ureters to the GI tract means that there is always the possibility of kidney infection because of faecal contamination. Kidney failure can ensue. Mechanical complications like blockages in the upper urinary tract from scarring that might occur after reconstruction are fairly common. Dr. Lengmang's work shows that, with a careful commitment to long-term care, women undergoing urinary diversion can do well. But these women must have periodic laboratory studies for the rest of their lives and must be in contact with physicians who understand what they are watching for and how to treat metabolic derangements as they occur.

Another concern with diversion is informed consent. When a woman presents with an obstetric fistula, she is coming because she is leaking urine and wants the leakage to stop. In counselling before an intervention, the surgeon needs to explain that the repair might break down, that she might continue to leak even if the hole is successfully closed, and that she might have bleeding or possibly fever/infection. None of these issues are particularly difficult to explain. But how does one explain hypokalaemic hyperchloremic metabolic acidosis to someone with no formal education, and why she must keep coming back even if she is feeling well? This is especially challenging if the provider is using a translator who may not understand the subject material. No one likes to mention such things to patients before surgery, but it is certainly possible for women to die after diversion. Is the woman truly empowered to say "no" if that is her decision, or does she consider

the word of the surgeon as final? It may be possible to involve women who have undergone diversion to counsel women considering the operation, and to answer practical questions that they might not feel free to ask the doctor.

All of these complexities justify a very conservative approach to patient selection when considering diversion (Arrowsmith, 2007b). First, the physical/objective criteria are straightforward. Her renal function will potentially be compromised after a diversion, so it must be normal to begin with. Most critically, if she is to have diversion into the GI tract, does she have a normal anal sphincter function, which will allow her to hold the watery stools she will experience for the rest of her life? One method to test this capability is to give the prospective diversion client a large enema (300 ml), and insist and observe that she is able to hold the fluid for two to three hours. Failure to pay attention to this issue poses the risk that a woman who is permanently incontinent with urine will become permanently incontinent with a slurry of urine and faeces.

More subjective criteria relate to her ability to live in a new reality. Does she live near enough to a health-care facility to regularly have bloodwork to measure the kidney function and serum electrolytes? Can she afford to have lab work done if a local project will not cover long-term care? Could she afford a permanent requirement for medication if metabolic problems develop? Does she truly understand all the ramifications, even the possibility of death? To be sure, there are other opinions, and some believe this strict approach can exclude women from care that might benefit them.

Dr. Lengmang currently has the largest published experience with diversion procedures for fistula patients. His centre in Jos, Nigeria offers all of the necessary laboratory studies and imaging capabilities for follow-up, pharmacologic treatments, counselling resources, and social support to make a diversion programme safe and feasible. When asked what his best advice would be to other fistula surgeons considering diversion operations, his answer was: "Do fewer of them."

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3.5 OUTCOMES

After an attempt at fistula repair, it is critical to have a system to describe how things turned out. Comparing patient outcomes is the cornerstone of monitoring and evaluating treatment activities, and comparing different clinical practices. Outcomes might reflect issues in quality of care or the competence of an individual provider. Precise, agreed terminology is absolutely critical to avoid confusion. Traditional terms like "cured" and "successful" have been sources of uncertainty and are simply not helpful.

Whose perspective should be taken in the definition of outcomes? Some surgeons have stated that if a woman comes to them with a hole in the bladder and the hole is closed, the operation is a "success". But in this scenario, the patient might well say, "But I am still leaking urine!" From a programmatic point

Comparing patient outcomes is the cornerstone of monitoring and evaluating treatment activities, and comparing different clinical practices

of view, if 80 per cent of women who present for fistula care are happy after surgery, this might legitimately be characterized as a successful project. Women in the 20 per cent who are still wet might not agree, however. If we depend on self-reporting of continence status by women, there can be errors. Women may want to tell surgeons what they perceive will make the doctor happy, and report dryness even if this is not truly the case. Or perhaps they cannot believe that after they have endured surgery they are still wet and want to believe that they will become normal again. Perhaps they fear diving back into the stigma of incontinence and try to hide their less than perfect outcome. Perhaps they simply fear what the doctor might do to them if they report still being wet. It is disheartening to see women dancing away in new dresses after discharge from a "successful" surgery with urine still streaming down their ankles.

The timing of pronouncing an outcome must also be considered. The gold standard of a successful fistula closure is the "dye test" done at the end of a repair. After suturing is complete, the bladder is filled with saline tinted with a bit of dye. If nothing leaks through the suture line, the repair was successful. But whether or not the woman is continent cannot be addressed until after the catheter is removed. Even then some women are wet for a few days simply because the bladder is irritated from the repair surgery; this can resolve rapidly.

Many providers assess outcome at the time of discharge from the hospital. Others routinely require a follow-up clinic visit at some point after surgery (usually either six weeks or three months) and defer the assessment of outcome until this point. The problem is that there is no standardized way to assess a patient after a fistula repair to ascertain her continence level. History alone may be misleading as can be a physical examination. Probably the most objective way is to perform a one-hour pad test in the standard way (Kopp and others, 2017).

We are only just beginning to appreciate our lack of understanding of the function of the bladder after a fistula is repaired. Although no comprehensive data sets are yet available, it is apparent that continence may not be a static state. Some women have incontinence at the time of discharge, but spontaneously become dry by a three-month follow-up visit. There are early hints that the opposite may also be true in a discouragingly large segment of women who have been repaired. In the Action on Fistula Project in Kenya, a particularly active patient outreach programme has field workers scattered all over the countryside trying to identify new clients with fistula. As they inquire in rural settings about women with incontinence, they often encounter women who have had repairs in the past. As a result of interactions with these women, Outreach Coordinator Habiba Corodhia Mohammed (of WADADIA and the Fistula Foundation) believes that a significant proportion (published data are pending, but perhaps as many as 25-plus per cent) of women who go home dry return to being incontinent over the ensuing years.

Everyone involved in fistula programming should refrain from fraught terms like "success" or "failure", and use the neutral term "outcome". The most commonly employed indicators (Ngongo, 2015) for the outcome of fistula repair are:

- Closed and dry
- Closed and incontinent
- Not closed

"Closed and dry" implies that the dye test was negative, meaning that watertight closure of the fistula was achieved, and that, after the catheter was removed, the patient was continent. "Closed and incontinent" means that the dye test was negative at the end of the repair and watertight repair had been achieved, but after removal of the catheter, the patient had urinary incontinence. "Not closed" means that the patient still has a fistula that could not be closed by the repair, or that was closed and subsequently broke down again before the assessment of outcome.

These indicators should be used with an indication of the timing of the assessment. Examples:

- "Closed and dry at six-month follow-up"
- "Not closed at the end of surgery"
- "Closed and incontinent at discharge"

Agreed standards for follow-up after fistula repair could help standardize the timing of the determination of outcomes. The longest possible interval between surgery and outcome assessment would be of the most value in knowing how an intervention has affected the quality of life of the fistula client. But the longer one waits to ask a patient to return, the less likely the patient might be to comply. In obstetric fistula care, there has long been an agreement that women probably do not have the financial means to travel back for a clinical visit. Some projects include funding transport costs for a single follow-up visit after surgery. In the catheter management randomized control trial (by Barone and others, published in *The Lancet* in 2015), many reviewers of the proposed protocol that outcome be determined at a three-month follow-up argued that compliance would be so poor that the results would be uninterpretable. But with careful education of patients on the need for follow-up and provision for transport costs, the three-month follow-up was 93 per cent. Women should be seen at any time after surgery if there are issues related to the surgery, but for purposes of consensus, this manual recommends a three-month follow-up as routine.

The longest possible interval between surgery and outcome assessment would be of the most value in knowing how an intervention has affected the quality of life of the fistula client

Consensus on outcome terminology and timing would allow the accurate comparison of the results of care for women who go home dry from site to site, surgeon to surgeon, technique to technique, project to project, and country to country. If indicators like the ones listed above could be agreed among funding agencies and key stakeholders, overseers of health practice like the WHO, Ministries of health, academic/research institutions and journals that publish on fistula care, the benefits to patients would be significant. Only these international players have the ability to lead a diverse community of clinical and non-clinical workers towards consensus.

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4

PROGRAMMES AND STRATEGIES TO PREVENT AND RESPOND TO FISTULA

Fistula and the 2030 Agenda for Sustainable Development

Ending obstetric fistula is critical to achieving the SDGs and central to realizing the vision of the International Conference on Population and Development (ICPD) Programme of Action. Achieving universal access to health care and guaranteeing sexual and reproductive health and rights is key to ensuring that women and girls who are at risk of or suffer from fistula are not left behind in the drive to achieve sustainable development. In 2018, UN Member States unanimously adopted a new UN resolution that called for intensified efforts and increased investments to end fistula "within a decade". This new timeline aligns with the 2030 Agenda for Sustainable Development and the achievement of the SDGs (United Nations General Assembly, 2018). Though progress has been made globally to reduce incidence of the condition, challenges related to equity in access, quality of care and accountability remain. Interventions have often failed to reach those most in need. The provision of quality care is uneven, and the rights and dignity of those who seek it are often not respected. Fistula is an indication of the failure of health systems and a violation of the rights of women and girls. Interventions to address the condition should therefore be designed and implemented using a human rights-based approach.

Global Campaign to End Fistula

UNFPA and its partners launched the global Campaign to End Fistula in 2003, with an aim to "leave no one behind" by making obstetric fistula as rare in developing countries as it is in the developed world. The Campaign is a key contributor to promoting the rights, dignity and well-being of women and girls. It brings together hundreds of partner agencies[4] at the global, national and subnational levels and is active in over 55 countries across Africa, Asia, the Arab States and Latin America. Since its launch, the Campaign has helped restore overall health, dignity, hope, and a sense of self-worth and agency to over 100,000 of the poorest, most marginalized women and girls worldwide (UNFPA, 2020) using a holistic, gender-sensitive and rights-based approach.

4 See: http://www.endfistula.org.

The Campaign focuses on four pillars:

- Prevention of fistula
- Treatment and repair of existing cases
- Rehabilitation and social reintegration of fistula survivors
- Evidence-based advocacy and resource mobilization

UNFPA leads the Campaign and serves as the secretariat of the International Obstetric Fistula Working Group, the main decision-making body of the Campaign. In 2017, UNFPA and the Campaign were awarded the United Nations Federal Credit Union Women's Empowerment Award, in appreciation for the global leadership of UNFPA and the Campaign's transformative impact on reducing inequities as well as its action for a new global agenda grounded in principles of rights, inclusiveness and equality (UNFPA, 2018a).

4.1 PROGRAMMING FOR FISTULA

The determinants of maternal mortality and morbidity, as well as newborn deaths, also cause obstetric fistula. Programmes to end fistula will, thus, fundamentally improve maternal and newborn health, and contribute towards fulfilment of the human rights of women and girls. Improving access to quality care and knowledge about fistula are important first steps in reducing the condition. It is also important that plans to address fistula be integrated into broader reproductive health and poverty-reduction strategies (WHO, 2006).

Fistula programmes should be holistic, addressing prevention while ensuring a continuum of care for fistula clients, including follow-up

Fistula programmes should be holistic, addressing prevention while ensuring a continuum of care for fistula clients, including follow-up. They must also take into account changing trends in incidence and prevalence, epidemiology and other factors (such as social determinants) related to both obstetric and iatrogenic fistula. Using a human rights-based approach helps to uncover underlying inequalities and discrimination that drive fistula, through multiple intersecting factors. We should build on gains made and lessons learned in reducing fistula, and improving maternal and newborn health as a whole, such as through integrated and multisectoral approaches.

The need for fistula prevention and treatment services will vary among and within countries due to a variety of circumstances and barriers to care. Although policies and strategies 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 particular constraints in a given area, or among specific, local, high-risk populations. This section suggests possible approaches for developing and delivering fistula programmes.

4.1.1 A national fistula programme

A national fistula programme should be evidence-based with an aim to ensure that quality, affordable and accessible sexual and reproductive health information and services are available to prevent and treat fistula. It should take into account the country context, fistula prevalence and incidence estimates, the strength of the existing health system, political/government leadership, and the sociocultural-economic environment and power of communities. Such a programme should specifically aim to achieve the following:

- Prevent the occurrence of new cases of fistula (through health promotion and awareness and demand creation, and provision of high-quality, accessible, affordable, basic and comprehensive maternal and reproductive health-care services, including EmONC, family planning services and skilled health personnel at birth), and prevent child marriage and adolescent pregnancy.
- Ensure that all women and girls living with fistula have timely and affordable access to a holistic continuum of care through competent fistula surgeons (and care teams) able to provide needed quality treatment or repair, followed by evidence-based social reintegration. (This includes strengthening referral systems to identify and refer patients.)
- Ensure that each girl's and woman's health and reproductive rights, which are closely linked to fistula prevention (as well as treatment and reintegration), are recognized and protected by policies and regulations (Lewis and De Bernis, 2006).

Key elements of a national programme to end fistula

4.1.2 A costed national strategy on fistula is developed, implemented and monitored

A national fistula strategy can be developed as a standalone or as part of a national reproductive, maternal and newborn health strategy. As the principles for the prevention and treatment of fistula are so closely aligned to safe motherhood, the development of a national fistula strategy should either be part of the core work of the national maternal and newborn health committee or undertaken by a subgroup reporting to the national committee. Most importantly, the strategy's development and implementation should be government-led and evidence-based, and should maximize coordination among stakeholders and partners. The document can be used as an advocacy and resource mobilization tool. It should be implemented and progressively monitored. According to UNFPA, 22 countries have developed national strategies to end fistula (UNFPA, 2018a).

A national fistula strategy can be developed as a standalone or as part of a national reproductive, maternal and newborn health strategy

4.1.3 Essential components of a national fistula strategy

A national fistula strategy should be costed and time-bound. It should address interventions for the prevention and treatment of fistula in communities at risk, social reintegration of survivors, as well as advocacy and resource mobilization (as per the country context). The strategy should be developed and implemented in the broader context of improving maternal health outcomes and empowering women, using a human rights-based approach. It should also satisfy the following:

1. Be aligned with the global vision to **end fistula by 2030**[5]
2. Be based on the country **prevalence and incidence of fistula**, and evidence of social and medical/health circumstances and needs that lead or contribute to fistula
3. Be **integrated** into the national strategy to improve sexual, reproductive, maternal, newborn and adolescent health, with a focus **on preventing fistula** through skilled care during childbirth and access to quality emergency obstetric care and family planning services
4. Be included as a key component of **health education/promotion and advocacy** programmes
5. Plan for the development and strengthening of **sustainable treatment services by building/strengthening capacity** of health facilities for quality and timely routine fistula repair and care
6. Address **socioeconomic and cultural barriers** to fistula prevention such as early and child marriage, unmet need for modern contraception and other barriers that may prevent women from seeking obstetric care or treatment for fistula
7. Include **subnational and community initiatives** to prevent obstetric fistula and enable more women to access quality treatment – including case identification and referral mechanisms

5 2018 UN General Assembly resolution 73/147 on intensification of efforts to end obstetric fistula

8 Outline strategies to **strengthen data collection** on fistula and integration in government health system (e.g., DHIS2)

9 Outline the **roles and responsibilities of stakeholders** for implementation and reporting. Stakeholders include national and local governments, civil society organizations, NGOs (including faith-based organizations), development partners, women's groups, community/traditional and religious leaders and members, community volunteers, field-level government health workers, etc.

10 Have an **operational plan**

11 Have a functional **monitoring and evaluation** system

12 Address **retention of skills of fistula surgeons** and continuous medical education (capacity development) of surgeons

13 Engage different stakeholders including government ministries – e.g., ministry of women's affairs, ministry of social welfare, , etc. – to **strengthen rehabilitation and reintegration** support for fistula survivors

14 Promote research and evidence generation (as needed)

15 Address the issue of women/girls living with fistula who are deemed **inoperable**/**incurable**

A checklist for developing or assessing a national strategy to end fistula may be found in Annex 3.

4.2 NATIONAL LEADERSHIP AND ACCOUNTABILITY

National leadership is key to ensure that fistula prevention and response is well integrated into national sexual and reproductive health programmes and sustained over time. This leadership is usually evidenced in implementation of programmes, availability of national resources for programmes and availability of data through monitoring/evaluation to inform programmes. National leadership can be facilitated through a functioning national task force on fistula.

National fistula task forces

National fistula task forces play a key role in the development of national fistula programmes in countries where they exist, including the development of national fistula strategies. By the end of 2018, 30 countries had functioning national task teams in place (UNFPA, 2018). A functioning national fistula task team should:

- Be government led;
- Be established with clear terms of reference to lead the development of a national programme (if non-existent), and coordinate implementation and monitoring of existing programmes;
- Convene stakeholders and harness in-country partnerships to tackle fistula through a multisectoral approach;
- Have power and autonomy to make decisions;
- Provide strategic and technical guidance;
- Lead advocacy and policy guidance related to the national fistula programme; and
- Have adequate resources and appropriate/available lines of communication to enable it to function effectively.

Membership of the national task force

Membership of a national fistula task force should be multisectoral and multidisciplinary. The team should, as a minimum, include the following:

- Representative of the ministry of health
- Representatives from health services experienced in working in the field of fistula prevention, treatment and rehabilitation such as fistula surgeons, doctors, midwives, nurses
- Representative from the ministry of gender, social protection, women, family affairs (or equivalent)
- Representative of the transport ministry
- Representative of traditional leaders
- Representative from the ministry of education/Education service/Women affairs/Social welfare/Youth and development
- Representative of the Media
- Representative of the professional society

- Representative of civil society organization/NGOs
- Representatives from development partners

The proposed membership above is not exhaustive; however, the team should be easy to manage in terms of numbers. It is also necessary for the national task force to work closely with other government departments and agencies that play a role in the well-being of women (e.g., related to agriculture, employment, justice) to deliver on objectives to improve maternal/newborn health and eradicate fistula by 2030.

4.3 FISTULA PREVENTION STRATEGIES

Poor quality of care and lack of access to critical health services are the main contributing factors to maternal mortality and morbidity (Lancet Global Health, 2018). National fistula response programmes should target strengthening of health systems to expand timely access to quality prevention and treatment of fistula (Romanzi and others, 2019). This starts with improving the capacity of and access to health facilities and bolstering routine treatment of fistula. Strategies to prevent fistula should:

Poor quality of care and lack of access to critical health services are the main contributing factors to maternal mortality and morbidity

- **Promote and improve quality, universal access to, and utilization of sexual and reproductive health services. This includes measures to strengthen health systems to deliver the three most cost-effective interventions to prevent fistula, i.e.,** a) high-quality and timely emergency obstetric and newborn care (including strengthening referral links and safe surgery); b) trained health professionals with midwifery skills at childbirth; and c) universal access to modern contraception (United Nations, 2018).

- **Promote intersectoral collaboration to address the root causes of fistula.** Poverty, sociocultural barriers, socioeconomic inequities, gender inequalities, access barriers (especially for remote/hard-to-reach areas) lack of education, child marriage and adolescent pregnancy are root causes of fistula. These determinants of maternal morbidity and mortality should be tackled using a multisectoral approach with effective collaboration between relevant sectors and stakeholders, and a focus on promoting and protecting the human rights of women and girls.

- **Education and sensitization of women, families, communities and health providers** on causes and prevention of fistula should be a key part of this strategy.

4.4 TREATMENT STRATEGIES

A national fistula programme should aim to ensure that all women and girls with fistula have access to quality treatment services, including treatment of complex cases. Many fistula survivors (and their families) may not be aware of the availability of treatment facilities; or for those who are aware, access to

treatment facilities may be limited by economic and geographic inaccessibility, gender power imbalances (Baker and others, 2017) and a lack of skilled personnel with the required treatment skills. Treatment strategies should include:

- **Strengthening health systems with the capacity to provide quality, appropriate and accessible fistula treatment services via:**

  - Identification of strategically located health facilities to provide a continuum of quality and holistic care for routine fistula treatment – including availability of competent surgical teams and fistula repair supplies, and establishment/strengthening of follow-up mechanisms to track fistula survivors, including for subsequent pregnancies.

  - Strengthened capacities for quality fistula care through enabling access to surgeons skilled in pelvic reconstruction (e.g., urologists, general surgeons, urogynaecologists), patient selection and preparation, longitudinal care, and professional and competent perioperative nursing, accompanied by quality assurance mechanisms and institutional commitment to safe surgery.

  - Monitoring the quality of fistula surgery and patient outcomes.

- **Strengthen case identification and referral for treatment:** Initiatives for improving case identification and referral mechanisms are key to enable more women and girls to access quality treatment. Initiatives should aim to achieve identification with strong coordination mechanisms to ensure that an identified fistula survivor can be supported to reach treatment. Referral mechanisms can be strengthened through community sensitization and mobilization, surveillance/notification systems and outreach workers (UNFPA, 2018b). Mobile phones and mobile money transfer systems can address financial barriers, as demonstrated in the United Republic of Tanzania (UNFPA, 2014). Engaging fistula survivors as advocates of safe motherhood is a strategy used in Ethiopia, Ghana, Nigeria and Uganda to educate communities on good maternal newborn health practices and prevention of fistula, and to identify fistula cases for treatment (United Nations, 2018). In Bangladesh, a fistula pocket handbook was developed for government health workers contributing to identification of fistula at the community level and provision of effective referral services (UNFPA Bangladesh, 2019). Bangladesh also engaged community fistula advocates (volunteers) to identify suspected fistula patients. The media, local governments, community/traditional leaders, civil society organizations, NGOs and faith-based organizations are key partners in this area.

Initiatives for improving case identification and referral mechanisms are key to enable more women and girls to access quality treatment

4.5 SOCIAL REINTEGRATION AND REHABILITATION

A holistic approach that addresses the psychosocial and socioeconomic needs of fistula survivors is required to ensure their full recovery and healing. This

approach includes a social reintegration and rehabilitation programme tailored to benefit each fistula survivor as per their individual needs. This important pillar in the fight to end fistula, however, continues to lag behind. Intensive social reintegration of women and girls deemed inoperable or incurable remains a major gap, as these women endure significant social challenges.

Social reintegration strategies should aim to break the cycle of poverty and vulnerability that puts women and girls at risk of fistula, and end the marginalization of those with the condition (UNFPA, 2020). They can help fistula survivors live healthy, dignified and economically independent lives. National programmes should aim to provide rehabilitation and reintegration for fistula survivors and support for their caregivers. The interventions should be built on existing evidence, and use monitoring and evaluation to track what works and to scale up effective programmes. Uganda developed a Minimum Fistula Reintegration Package/Standards at both facility and community level, and in 2019, the country assessed its existing social reintegration programme, resulting in findings to improve the programme (UNFPA Uganda, 2019). Partnerships with existing systems, such as local government support for small-scale businesses; engaging other government ministries (at national or subnational level) to mobilize domestic resources; working with women's and community support groups; and/or national health insurance and social protection schemes could be explored to facilitate healing and enhance the sustainability of the reintegration process. Social reintegration strategies include:

Social reintegration strategies should aim to break the cycle of poverty and vulnerability that puts women and girls at risk of fistula, and end the marginalization of those with the condition

- Development of client-centred rehabilitation/social reintegration programmes tailored to individual women's and caregivers' needs (including psychological, medical and socioeconomic needs).
- Routine follow-up systems to help track fistula survivors in their communities to assess and improve their quality of life.
- Monitoring and evaluation of existing social rehabilitation programmes to develop an evidence base to improve planning, implementation and scale up of interventions.

(See Chapter 7 for in-depth information on social reintegration)

4.6 ADVOCACY AND RESOURCE MOBILIZATION

Ending obstetric fistula by 2030 requires significantly increased effort, commitment, investment and urgent action. Evidence-based advocacy and resource mobilization should be a priority in country programmes to support implementation of programmes at national and subnational levels. This includes raising awareness, strengthening partnerships with public and private sectors to harness domestic resources, strategic communication, and media engagement for fistula prevention and response.

4.7 COMMUNITY EMPOWERMENT AND ENGAGEMENT

Prevention-related education and health promotion is one element; another is information on treatment services for both communities and their leaders

Successful programmes to end fistula require community involvement (Marston and others, 2013) and active participation in dialogue, planning, programme design and decision-making. To successfully address the determinants of fistula, and ensure the utilization of fistula prevention and treatment services, women, girls, their families and communities should be empowered. Holistic involvement of communities should include engagement of men and boys as allies in promoting and upholding the rights of women and girls, especially in patriarchal communities. Members of communities must understand different dimensions of maternal and newborn health, be motivated to seek/utilize health-care services and have access to quality care. Prevention-related education and health promotion is one element; another is information on treatment services for both communities and their leaders. Local NGOs, community groups including women's groups, and traditional and religious leaders can promote awareness, prevention and treatment. They should be involved in the development of local or national action plans (WHO, 2006).

4.8 MONITORING AND EVALUATING A NATIONAL PROGRAMME

Monitoring and evaluation are vital in determining the success of strategies, policies and initiatives, and whether it is necessary to make adjustments and changes. Evaluations should be integral to a national fistula strategy, and planned at the beginning of the process. There should be clear arrangements for how they will be performed, backed by earmarked resources. Robust data-collection systems need to be in place for effective monitoring, which underpins evaluation.

4.8.1 Availability of fistula data

National programmes should encompass strategies to enhance research and improve data on fistula and maternal health (as needed). Programmes should draw on data on fistula incidence and prevalence (e.g., Johns Hopkins University model) and routine data on key components of implementation can guide progress and inform future programmes.

Fistula indicators should be included and monitored in health information management systems to standardize and strengthen quality reporting of diagnosed and treated fistula cases, and the tracking of information from the facility and/or programme levels to the national level.[6] Mozambique in partnership with Operation Fistula and UNFPA has developed a realtime data system to generate fistula data as part of the national response to fistula (UNFPA Mozambique, 2019). Bangladesh has integrated fistula data into

6 Measure Evaluation, Safe motherhood.

routine data collection – e.g., DHIS2 (https://www.dhis2.org/). Some high-burden countries have also integrated a module on obstetric fistula into their national Demographic and Health Surveys; other countries may opt to do so (although this approach has some limitations, see Tunçalp and others, 2014). Research and data on relevant maternal health programmes, including up-to-date EmONC needs assessments, should be strengthened to guide maternal and newborn health programmes.

Monitoring and evaluation of the national response can be further buttressed by putting in place human rights redress mechanisms (e.g., issues of obstetric violence and fistula can be investigated by national human rights institutions and tried by courts) and social accountability mechanisms, whereby affected women/girls, civil society organizations and human rights groups can monitor how programmes, services and budgets related to maternal health/fistula care are being implemented. Countries may also wish to make obstetric fistula a nationally notifiable condition – triggering immediate response, referral and follow-up action once a fistula case is identified – while ensuring a client-centred, culturally appropriate and human-rights based approach.[7]

4.8.2 Clinical audit and research

Apart from monitoring the progress and impact of the overall national fistula strategy, it is crucial to audit the clinical care provided for women and girls. This helps ensure they receive the best possible repairs and allows for the sharing of information with others. Resources and tools to measure the quality of care include the WHO standards for improving the quality of maternal and newborn care in health facilities (WHO, 2016), and "Quality of Care for Maternal and Newborn Health: A Monitoring Framework" for countries in the Quality of Care network (Bangladesh, Côte d'Ivoire, Ethiopia, Ghana, India, Kenya, Malawi, Nigeria, Sierra Leone, the United Republic of Tanzania and Uganda). Visit the WHO Quality of Care Network Knowledge library[8] for more information.

Apart from monitoring the progress and impact of the overall national fistula strategy, it is crucial to audit the clinical care provided for women and girls

4.8.3 Performance indicators

Selected reproductive health indicators (WHO, 2006b; Measure Evaluation[9]) and SDG indicators[10] appear below. These may be useful for monitoring maternal/newborn and adolescent health and safe motherhood programmes (see Box 4) and fistula programmes (see Box 5).

7 See: Campaign to End Fistula,2014. "UN General Assembly enshrines call for intensified efforts to end fistula".
8 See: http://www.qualityofcarenetwork.org/knowledge-library.
9 See: Measure Evaluation, Safe motherhood.
10 See the UN Statistics Wiki dashboard for Goal 3.

Box 4 Reproductive and maternal health indicators for global monitoring and evaluation

- Maternal mortality ratio
- Adolescent birth rate (aged 10 to 14 years, aged 15 to 19 years) per 1,000 women in that age group
- Antenatal care coverage – percentage of women attended at least eight times during pregnancy, by skilled health personnel (excluding trained or untrained traditional birth attendants), for reasons relating to pregnancy
- Percentage of births attended by skilled health personnel (skilled health personnel, as referenced by SDG indicator 3.1.2, are competent maternal and newborn health professionals, including midwives, nurses, doctors obstetricians and anaesthetists) (WHO and others, 2018)
- Percentage of births by Caesarean section
- Proportion of women of reproductive age (aged 15 to 49 years) who have their need for family planning satisfied with modern methods (or: married women/women in union who have their need for family planning satisfied with modern methods)
- Number of facilities with functioning basic essential obstetric care per 500,000 population
- Number of facilities with functioning comprehensive essential obstetric care per 500,000 population
- Proportion of women aged 20 to 24 years who were first married or in a union before age 15 and before age 18, with a target to eliminate all harmful practices, such as child, early and forced marriage, etc.
- Case fatality rate for all complications

To help prevent and treat cases of iatrogenic fistula, the Lancet Commission on Global Surgery's policy brief on monitoring safe surgery for improved health, welfare and development offers a useful list of core indicators as well as a measurement and planning tool (Global Surgery 2030, n.d.) to help ensure access to safe, affordable surgery. The WHO Surgical Safety Checklist (Annex 2) is another useful key resource.

Box 5 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

Epidemiological

- Prevalence of fistula – estimated number of females age 10 and older who are living with fistula in a defined area per 1,000 females age 10 and older)
- Incidence of fistula – estimated number of new cases of fistula per year)
- Estimated rate of obstetric fistula per 1,000 deliveries
- Obstetric fistula data collected in the Health Management Information System database at national and/or subnational level
- Met need for surgical treatment among women diagnosed with female genital fistula seeking surgical repair services[11]
- Number of fistula cases referred to a referral-level facility for treatment of fistula

Universal access to safe, affordable surgical and anaesthesia care when needed

- Access to timely and essential surgery (proportion of the population that can access, within two hours, a facility that can perform Caesarean delivery, laparotomy and treatment of open fracture [the Bellwether procedures])

Service delivery

- Number of midwives, nurses and doctors with midwifery skills (i.e., skilled health personnel providing care during childbirth, as per the WHO 2018 definition) per 1,000 births
- Number of skilled, certified/credentialed providers (e.g., doctors, surgeons) able to perform Caesarean sections per 1,000 births
- Proportion of births managed with a partograph

11 The percentage of all women seeking surgical repair services for and diagnosed with obstetric fistula who receive surgical treatment for the condition, within a given timeframe (generally annually) and by facility. See: "Measure Evaluation, Met need for surgical treatment".

Training

- Number of midwifery and nursing training facilities (pre-service and in-service) including fistula prevention and management as part of the core syllabus

Follow up and tracking of fistula

- A social reintegration programme is available and monitored

Quality of care

- Percentage of women presenting with obstetric fistula who have a "closed and dry" outcome after first repair, by facility
- Percentage of facilities that conduct case reviews/audits of maternal death/near miss
- Percentage of obstetric fistula treatment facilities that provide or refer fistula survivors to social reintegration services
- Percentage of women who have been treated for fistula and have benefitted from an (evaluated) social reintegration programme

Country ownership and sustainability

- Existence of a national fistula policy or strategy (either as a stand-alone document or integrated into national health or reproductive health policies or strategies)

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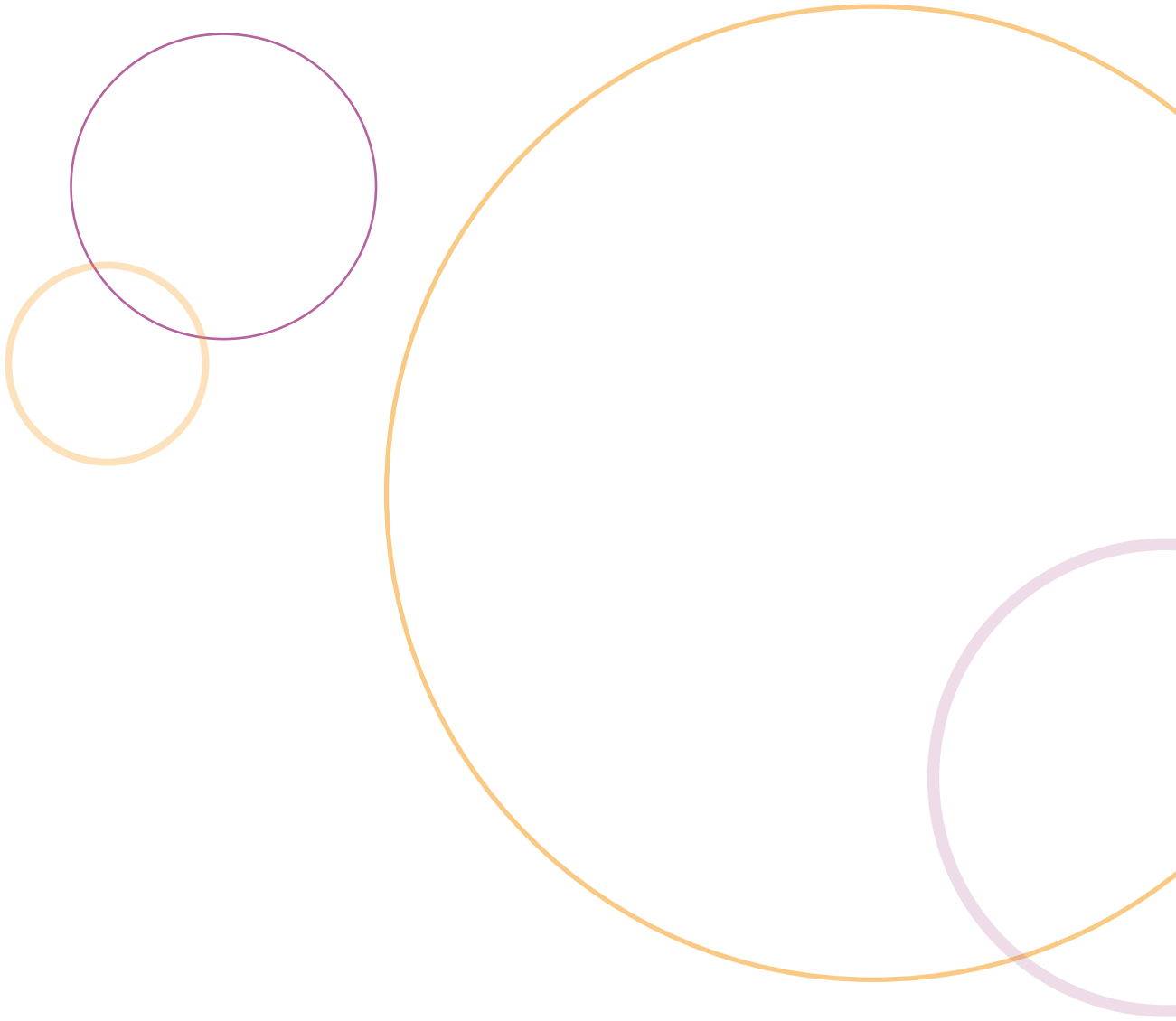

PRINCIPLES OF NURSING

5

5.1 THE PAST AND THE PRESENT

Quality nursing care may be as important as good surgery for women with fistula. That said, nursing paradigms around the world are amazingly diverse. There are centres in West Africa with essentially no nursing care; junior doctors look after post-operative patients. The Hamlin Fistula Center in Ethiopia has famously utilized former patients with nothing but on-the-job training to provide nursing care. External NGOs like Mercy Ships and Médecins Sans Frontières (MSF) attempt to replicate a completely Western style and level of quality in their nursing practices. Some centres have dedicated fistula wards where the staff becomes comfortable and efficient by focusing on fistula nursing each day. Other facilities have fistula patients scattered among other female patients on general surgical wards.

Nursing staff may be permanently assigned to fistula care, or they may be rotated to a fistula ward among other clinical duties. Many centres provide fistula care only via a "camp" model, where fistula nursing occurs during one- to two-week focused outreach sessions that supplant other clinical operations in the hospital for that period. Some nurses do fistula care as a calling, some as part of regular duties, and some only if offered extra compensation. Some work closely with fistula surgeons; others work independently.

This huge range of practice makes it difficult to apply any universal guidelines or standards for fistula nursing, so this chapter will focus on looking at the underlying principles of fistula nursing, tools that others have found useful and ways to move forward.

As with fistula surgery, fistula nursing has deep roots in tradition but without a sound base of evidence. In some institutions, the traditional way of doing things may date back 30 or 40 years. Change may come very slowly. In other places, rotating staff may mean that the style of fistula nursing is constantly in flux.

Overall, many nurses have been trained at just a small number of prominent fistula care centres, meaning that core tenets and practices hold from place to place, just as they do for surgeons, many of whom received their initial exposure at just a handful of prominent centres around the world. In 2020, the over-riding trend is towards evidence-based care, and many traditional principles of fistula nursing have come into question. To name just a few:

- **Bed rest after surgery:** In the early 1990s, the prevailing practice was that women remained on bed rest until the bladder catheter was removed, meaning that some remained this way for up to three weeks or even more. Today, wide recognition of the general health benefits of early ambulation

NURSING CHECKLIST

Obstetric fistula:

- Remember the patient's rights to dignity, privacy and agency
- Use clinical pathways
- Follow good preventive practices:
  - Handwashing
  - Sterile technique
- Whenever catheter drainage system is broken, flush bladder with sterile fluid using sterile technique
- Early ambulation
- Keep urine bags below bladder-height
- Keep open lines of communication with the surgeon

after surgery has made this a standard practice after fistula repair. Most centres allow women to ambulate whenever their anaesthesia providers feel that the effects of spinal anaesthesia have worn off. Benefits include reduced risk of deep vein thrombosis, pulmonary embolism and other pulmonary complications.

- **Exotic vaginal packing materials:** For many years, the "acriflavine pack", made up of gauze soaked in a mysterious mixture of ingredients including bee's wax, was the standard of care. Now vaginal packing has fallen in line with standard gynaecologic practice, with some practitioners using estrogen creme or other more standard materials, and most using simple dry gauze.

- **Forcing oral fluids after surgery:** This practice persists in some centres. A small unpublished study done by Dr. Jonathan Karshima in Jos, Nigeria randomized women into two groups where one received traditional nursing where oral intake was strongly encouraged, while the other simply had a full container of drinking water at hand and allowed women to drink as they felt they needed to. He found no difference in the rates of infection, catheter blockage or breakdown between either group. Some fistula doctors suspect that some deaths after fistula repair are due to brain swelling because of hyponatraemia related to overhydration and a rare syndrome involving the inappropriate secretion of an antidiuretic hormone in young women following pelvic surgery (Stohl and others, 2011). If there is no benefit to forcing fluids, and there is the possibility of a fatal complication from the practice, even if the complication is rare, then why take the risk?

- **IV hydration after surgery:** Women formerly received many days of intravenous fluids after surgery to "maintain a good urine output". In most centres today, some fluid is given preoperatively if desired by the anaesthesia provider to prevent hypotension after spinal anaesthesia. A line is maintained during and briefly after surgery for access for emergency drugs, but most remove cannulas after a liter of IV fluid is received after surgery. If overhydration can (even if only rarely) have fatal consequences, and since IV fluids can be one of the more expensive supply items at a fistula centre, it makes sense to minimize the use of IV fluids unless the woman is unable to take fluids orally.

A smile, appropriate touch and listening can all be crucial tools that can improve outcomes

5.2 FOUNDATIONAL PRINCIPLES

Quality fistula nursing care is rooted in good general nursing care, which is grounded in respectful, patient-centred nursing. Women with fistula have been deeply stigmatized and emotionally wounded. Their human rights have been violated. In a very big way, healing begins the moment that medical providers greet them and treat them as fellow human beings. A smile, appropriate touch and listening can all be crucial tools that can improve outcomes (Delamou and others, 2015).

Nurses should make patients feel welcome to ask questions and provide them the information they need to make decisions about their own care. The best nurses project themselves into the life and world view of the patient. They treat women with dignity and give their best regardless of the socioeconomic, ethnic, cultural or religious background of the client. They protect the privacy of their clients, and minimize compromises to patient modesty (keeping them as clothed and covered as possible in every clinical situation). These principles, of course, should apply equally to physicians and other health-care providers.

The principles of preoperative nursing in fistula care are straightforward. Nurses play a critical role in preparing fistula clients to maximize the odds of surgical success. They then serve as vigilant overseers for these women and girls immediately after surgery. When problems occur, the nurses are the first to call for timely intervention and to alert the operating surgeon of issues requiring physician input.

When problems occur, nurses are the first to call for timely intervention and to alert the operating surgeon of issues requiring physician input

Preparation of the patient should focus on a few specific, essential needs. Does the patient understand what is to be done? Have her questions been encouraged and answered? Does the nurse have any concerns about the fitness of the patient for surgery of which the surgeon should be made aware?

After surgery, nurses must be acutely aware of three common scenarios that can affect the outcome of surgery or even the survival of the patient.

First, there is bleeding. Although bleeding, whether vaginal, incisional or in the urine, can happen at any point in the post-operative period, the first few hours are by far the most common time to see it. But how much bleeding is too much? This is a judgment call that nurses will develop in relationship with the surgeon. Rather than using subjective terminology such as "she is bleeding a lot", it can be helpful to use more objective means of describing bleeding. One method is to simply use a ruler to measure the diameter of a bloody spot on the sheets. In this way, the nurse can document that a 10cm spot of blood became a 30cm spot in just 20 minutes. Or that there is a 30cm spot, but it has stayed the same size over the past hour. Other nurses have used a pen to draw a circle around the bloody area on the sheets, and then set a time to come back to look to see how much the area has increased.

If a nurse is concerned about bleeding being excessive, it is always good to quickly obtain a fresh set of vital signs. In this way, the nurse can report to the surgeon that his or her patient who returned from surgery at 3 p.m. with a 10 cm spot of blood now at 4 p.m. has a 40 cm spot, and the pulse has increased from 80 bpm to 115 bpm while the systolic blood pressure has decreased from 100 mm/hg to 75 mm/hg. The objective description of the degree of bleeding along with the vital signs that show how the patient is responding to the blood loss helps to paint a much clearer picture to the surgeon, who then must decide whether to watch the patient, replace the vaginal pack, transfuse the patient or even return urgently to surgery to find and stop the bleeding site.

One confounding issue with bleeding is that women who have not been having menstrual bleeding before surgery can start after the surgery. Sometimes a cervical canal that was closed from the injuries from obstructed labour is re-opened during the repair, and the woman can pass blood that is exceedingly difficult to distinguish from post-operative haemorrhage. Stable vital signs can be quite reassuring and instructive to the surgeon/care provider in this scenario. Likewise, revisiting the menstrual history of the patient might reveal that she was due for her menses at about the time of her surgery.

Whether or not the nurse is free to make any intervention for bleeding depends on the policies developed between the nurse and the doctor. The first-round intervention is to remove the vaginal pack and replace it with a new one. But this should be something sanctioned by the surgeon. If the case has been difficult, if vaginal reconstruction has been performed or if the closure was particularly tenuous, it is critical that the surgeon communicate these special circumstances to the nursing staff, and that the surgeon be immediately willing and available to perform the repacking.

It is also good to review patient medications and stop any that can contribute to bleeding, most notoriously non-steroidal anti-inflammatory agents (NSAIDs).

Second, there is blockage of the catheter. If the catheter does not drain, a range of consequences can occur, none of them good. A distended bladder can lead to failure of the fresh fistula repair and therefore needs to be avoided at all costs. A non-draining bladder can be a source of infection/sepsis, can cause changes in vital signs and can lead to significant discomfort, but rupture of the repair is of primary concern.

Catheter blockage should be suspected if:

- Urine is not draining into the catheter tubing;
- The suprapubic region is distended, tender or painful; or
- The patient begins to leak urine, keeping in mind that most leakage around the catheter is because of unwanted bladder contraction, and not from failure of the repair.

If the catheter is not draining, it must be immediately irrigated with a catheter-tipped syringe and sterile saline using sterile techniques:

- Irrigation may need to be fairly forceful to dislodge a clot.
- At least 20-30 ml of fluid should be used with each infusion of fluid.
- Sometimes fluid can be injected into the bladder, but it cannot be aspirated out again. If this occurs, then no more than 100 ml of saline should be used before contacting the surgeon to discuss next steps, as this can exacerbate distention of the bladder.

- Aspiration (sucking the fluid out by pulling on the catheter plunger) should be done vigorously if there are clots present.

- If irrigating the bladder does not successfully restore the drainage of urine and the catheter still seems to be blocked, then the nurse should refer to the protocol for changing the catheter or contacting the surgeon. Generally, changing the catheter is not a problem, but if there has been a urethral repair or reconstruction performed, the surgeon should probably be the one to perform the catheter change.

- Larger bore catheters are less likely to block than smaller ones. Large catheters (even 24F) are not really any more uncomfortable, nor are they harmful to a normal urethra. It is when the urethra has been directly repaired that smaller catheters are used.

Third, there is sepsis. Urinary tract infections have long been recognized as one of the leading causes of death in hospitalized patients (Melzer and Welch, 2013). Prevention requires attention and effort:

- Handwashing is the cornerstone of the prevention of infection (Di Muzio and others, 2015) and should be followed assiduously.

- Many fistula centres began using open drainage of urinary catheters in the era when resources were desperately short. But as the level of fistula care has increased, this practice is increasingly difficult to justify. Catheter drainage systems should remain closed at all times, except when the catheter is being irrigated (Hsu, 2014).

- Flushing the catheter should be done under sterile conditions using sterile fluid.

Anyone working in tropical areas knows that post-operative fever can be difficult to sort out. The patient may have an acute and life-threatening post-operative infection, or she may have malaria or other tropical infectious diseases (Gleckman and Roth, 1986). Even in a malaria-endemic area, however, fever must be taken seriously as multiresistant organisms are a problem, and infections can lead to the death of the patient. Nurses should be aware of the institutional protocol for post-operative fever, and act accordingly and swiftly when one is encountered.

5.3 A NEW APPROACH: CLINICAL PATHWAYS

One of the newer tools in modern nursing care is the clinical pathway. This is a map that itemizes each nursing task provided to the patient on each day before and after surgery. Although this may seem regimented, more and more tasks in modern medicine are governed by checklists and pathways in an effort to make sure that critical tasks do not go undone. Using checklists and pathways ensures that client care is backed by research (Furuhata and others, 2017) as the best possible means of improving client outcomes.

Using checklists and pathways ensures that client care is backed by research

A sample pathway for fistula care is provided in Annex 4. This pathway was developed by Mercy Ships for pre-operative nursing care of fistula clients on the hospital ship *Africa Mercy*. Obviously, a Western hospital ship represents one end of the resource spectrum, as it has a full pharmacy, lab and other resources that many facilities might not have access to. The pathway demonstrates the principle and utility of such an approach to standardizing care, however. Readers are encouraged to download and modify specific items in the pathway to fit individual institutions.

It would be pointless and most likely contentious to insist on aligning care exactly with the measures listed here. But nursing care should be provided based on evidence rather than tradition. Constantly evaluating and re-evaluating each principle can define opportunities to continually improve safety, quality and cost-efficiency as well as a central focus on patients in nursing care.

Nursing care can easily be brought up to modern standards, even in resource-poor settings, by using tools like the clinical pathway with professionalism and diligence. Nurses are on the frontline of fistula care each moment of each day. The difference that quality nursing care makes should never be underestimated.

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PHYSIOTHERAPY

6

This section addresses physiotherapy[12] and physical rehabilitation for women and girls with obstetric (or female genital) fistula. Intended as an overview for those involved in fistula care, it has been adapted from a larger work developed by the Fistula Care Plus Project, with support from EngenderHealth, USAID and Mama LLC (see http://themamas.world/training-guide).

Physiotherapy is one of several disciplines that fall under the umbrella of "rehabilitation services". Investment in quality services minimizes the burden of disability associated with a health condition. It may offer several cost benefits, including decreased length of hospital stay; improved short- and long-term health outcomes; reduced need for expensive medical procedures or repeat surgeries; and optimized mobility and function, enabling women to meaningfully (and financially) contribute to their family and community (Howard-Wilsher and others, 2016).

6.1 PHYSIOTHERAPY IN THE CONTEXT OF WOMEN'S HEALTH

The World Confederation for Physical Therapy is the global governing body for the profession. It highlights the profession's broad role in restoring and maintaining mobility, function and independence, and emphasizes treatment of the whole person and not just the symptomatic body part (World Confederation for Physical Therapy, 2011; International Organization of Physical Therapists in Women's Health, 2013). Physiotherapists identify and treat physical impairments and functional limitations associated with disease, injury or illness. These may include muscle weakness; tightness or contractures of joints, muscles and connective tissues; pain; or difficulties with mobility or self-care.

In presenting the role of physiotherapy in the context of pelvic floor fistula and maternity care, it is important to understand the physiotherapist's scope and value as an integral member of the health-care team. This may be in the context of fistula care exclusively, in the broader context of gynaecologic and obstetric care, or in general neurological and musculoskeletal health. Physiotherapists can operate across a spectrum from wellness and prevention services, to treatment of an acute injury, to working with those who now must live with a permanent disability.

Skilled physiotherapists optimize the function of healthy tissues. For example, in prenatal care, they can work to improve the function of the pelvic and abdominal muscles, and address spinal, hip and pelvic mobility to facilitate

12 This section is authored by Jessica L. McKinney, PT, MS, CMPT, and Laura Keyser, DPT, MPH.

better labour. They may also teach new mothers to rehabilitate their own bodies after delivery to improve strength, restore function and prevent injury.

Skilled physiotherapists also treat acute and chronic injury. For pelvic floor fistula, there are varying degrees of tissue damage, from mild to complete destruction of nerves, muscles, organs and connective tissues. In these cases, the physiotherapist can work to restore full or partial function, or offer alternative movement strategies to compensate for impaired muscle, joint or tissue function.

For a severe disability, a physiotherapy plan of care may improve functioning and quality of life. Disability management might include teaching compensatory movement strategies, training on the use of assistive devices, or working with families and caregivers so that they may learn the best methods for facilitating independence and promoting inclusion in family and community life.

6.2 PERIOPERATIVE PHYSIOTHERAPY FOR WOMEN WITH FISTULA

Physiotherapy or physiotherapy-informed care is important before and after fistula surgery

Even though a skilled surgeon can often repair the fistula, damage to the pelvic muscles, nerves and connective tissues also requires rehabilitation to achieve full or partial recovery of function. This is why physiotherapy or physiotherapy-informed care can be so important before and after fistula surgery. Research supports using physiotherapy services to address the various complications described below. It suggests that investment in physiotherapy programme development will substantially decrease the burden of disability (Hagen and others, 2014; Burgio, 2013; Castille and others, 2014; Castille and others, 2015; Keyser and others, 2014; Wolf, 2006).

6.2.1 Incontinence

Women may continue to have incontinence even after the fistula is repaired, with 15 to 33 per cent reporting post-operative incontinence at the time of their hospital discharge. An estimated 12 to 31 per cent of women with fistula will require more than one fistula surgery in their lifetime (Wall and others, 2005; Wall and others, 2004; Nardos and others, 2009; Onsrud and others, 2011; Holme and others, 2007; Tebeu and others, 2010; Kirschner and others, 2012; Ghosh and Kwawukume, 1993). Further, continence rates decline over time. A range of 45 to 100 per cent of women may become incontinent in the years following their fistula repair (Drew and others, 2016; Barone and others, 2012; McFadden and others, 2011; Murray and others, 2002; Browning, 2004). Not all factors contributing to incontinence after a fistula repair are understood, but some studies suggest that scar tissue, including fibrosis of the abdominal wall and pelvis and vaginal stenosis, is strongly associated with post-operative incontinence (Nardos and others, 2009; Roenneburg and others, 2006; Goh and others, 2008; Loposso and others, 2016).

6.2.2 Pelvic pain

Pelvic pain can include pain or discomfort in the abdomen, pelvis, hips and/or lower back. It may be present with physical activities, such as walking, carrying or lifting, or occur with urination, bowel movements, sexual stimulation or intercourse.

There is little research on pelvic pain among women with fistula. It has been reported that women who have experienced sexual violence are more likely to report pelvic pain, and rates of sexual violence are high in some regions where fistula is also common, such as in the Democratic Republic of the Congo (Dossa and others, 2014). It is important to understand the circumstances in which women develop fistula, so that a programme of physiotherapy and rehabilitation can address some of these additional concerns.

6.2.3 Sexual function

Sexual function is complex, and includes factors such as desire, arousal, lubrication, orgasm, satisfaction and pain. Research on the sexual function of women with fistula is limited, though this has become a growing area of interest and concern among health workers and women alike. Recent studies suggest that women who have been repaired are more likely to complain of pain with intercourse (dyspareunia) and/or loss of desire. Many women also have problems achieving vaginal penetration due to stenosis and a shortened vagina (Turan and others, 2007; Ankaku and others, 2017; Amisi and Luendo, 2016; Bukabau, 2016; Esegbona and Isa, 2015; Pope and others, 2018; Anzaku and others, 2017).

Research on the sexual function of women with fistula is limited, though this has become a growing area of interest and concern among health workers and women, alike

6.2.4 Musculoskeletal problems

Musculoskeletal problems can include limitations in the joint range of motion of the hips, knees and/or ankles; muscle weakness; impaired sensation and pain. These may lead to mobility problems, such as difficulty walking and performing daily activities. Research on musculoskeletal and mobility problems among women with fistula is limited. Some studies show that 20 to 30 per cent may experience foot-drop, due to nerve damage and resulting leg weakness. Weakness and decreased range of motion at the knee and ankle may be more common among women with fistula, and they are also more likely to report difficulty walking (Tennfjord and others, 2014).

6.3 AN INTERNATIONAL TOOL TO GUIDE PHYSIOTHERAPY FOR WOMEN WITH FISTULA

The International Classification of Functioning, Disability and Health (ICF) provides a framework, (see Figure 7), that helps understand that anyone can experience a health condition that causes some level of disability. This may be permanent (long-term) or temporary (short-term). The framework normalizes

the experience of disability as a human experience that we may all have at some point in our lives. It shifts the focus from the cause of disease to its impact on a person's daily life, and helps measure health and not just disease, injury or illness (WHO, 2002).

The framework places each individual woman at the centre of care. It encourages a multidisciplinary team approach to helping her achieve the best possible health outcome – her most optimal level of function (ibid.). It can be used for collaboration and task-sharing or task-shifting (ibid.), which is critical where there are not enough skilled physiotherapists to provide individual treatment to every woman with a maternal or reproductive health condition.

Some women may need individual specialized physiotherapy, others may be successful in a group class

Since not all women with fistula or another maternal health condition will need identical treatment and services, the framework helps members of the health-care team to understand individual needs. For example, some women may need individual (one-on-one) specialized physiotherapy. Others may be successful in a group class that offers health information and advises on ways to improve functional activities and participation in daily life. Some may benefit from both.

The framework also helps understand how a disease, illness or injury impacts how an individual functions in daily life and interacts with the world around her, and how her environment influences her experience of disease, illness or injury. It guides the identification of contextual factors in the environment and within each individual – both positive and negative – that influence health, predict treatment needs and guide outcomes.

The framework identifies three levels of function: the body and its structures (parts), the person and her ability to perform daily activities for herself, and the person in a social context and her ability to interact with and participate in family and community life. See Figure 7 and Table 1.

Figure 7 International Classification of Functioning, Disability and Health

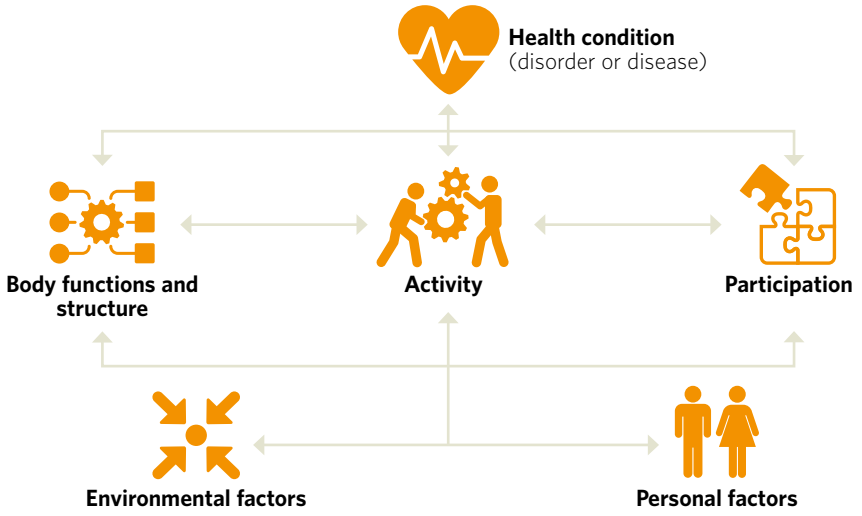

Table 1 Elements of the International Classification of Functioning, Disability and Health framework

Health condition	Example
Any disease, illness, injury or disorder that influences functioning and may lead to disability	Obstetric fistula
Function/disability	**Example**
Impairments in body structures and functions The extent of damage to body structures or the severity to which body functions are impacted by the health condition **Activity/limitations** Actions and tasks executed by individuals **Participation restrictions** Involvement in life situations	Bladder, vagina, pelvic floor muscles, urinary system, digestive system (anus, rectum), reproductive system, sexual function Inability to maintain personal hygiene, interrupted due to frequent toileting and clothing changes, inability to engage in sexual activity Marital strain or divorce, isolation from family and community activities
Contextual factors (positive or negative influences)	**Example**
Personal Gender, age, ethnicity, tribal affiliation, habits, lifestyle, education, profession **Environmental** Physical, social, attitudinal environment may be a barrier or facilitator	A young woman with no children may be more impacted by fistula than an older woman who has surviving children at the time she developed fistula Community beliefs about fistula, family support, access to a health-care facility

Using the ICF to plan for rehabilitative care

Why is it important to think about function and disability when we care for women with pelvic floor fistula and other reproductive health conditions? Each woman is affected a little bit differently depending on many factors – not just the health condition itself.

For each impairment, activity limitation and participation restriction, we must ask the individual both *whether* she experiences these issues and also the *extent* to which this impacts her life (severity). One useful tool to broadly determine the impact of a health condition, such as fistula, on a woman's daily life is called the World Health Organization Disability Assessment Schedule (WHODAS 2.0).[13] This tool is a simple survey that provides information about the level of disability a person experiences as a result of a health condition. It provides a score that represents a measure of disability.

This tool can be used before and after an intervention to determine how effective or useful the intervention is in impacting a person's health. It has been translated into many languages and validated for use in a variety of populations, including after surgery.

Each woman is affected a little bit differently depending on many factors – not just the health condition itself

13 See: http://www.who.int/classifications/icf/more_whodas/en/.

Promoting woman-centred care using the ICF

The primary aim of fistula surgery is to close the hole and restore continence, so that the woman with fistula does not leak urine or stool continuously. The primary goal of physiotherapy and rehabilitation is to identify physical factors, such as muscle weakness, incoordination and decreased flexibility, and how these impact a woman's ability to function in daily life. Rehabilitation requires that we ask a woman about what she can and cannot do for herself, her family or her community and about her personal goals for treatment. We might ask her:

What does success look like for you? What self-care activities, family roles or community responsibilities would you like to be able to do that you currently have difficulty with or cannot do?

Her answers to these questions help to guide physiotherapy treatment, and will help both the patient and the health-care worker to know when treatment has been successful.

By identifying specific physical impairments and functional limitations, treatment may be tailored to address the unique needs and health goals of each woman

Planning physiotherapy or physiotherapy-informed care

It is important to remember that physiotherapy and rehabilitation treatment techniques address functional problems. They do not *directly* address the fistula or the underlying cause of disease. Some physiotherapy treatment techniques include:

- Pelvic floor muscle exercises to improve strength, function and coordination of injured or weak muscles
- Stretching exercises to improve muscle flexibility and mobility of the hips, pelvis and back
- Functional exercises to enable independent movement to accomplish self-care and daily tasks
- Manual therapy or massage techniques to improve tissue mobility and function, including scar massage
- Patient education about pelvic floor anatomy and function, bladder training, fluid schedule and hydration
- Accommodations for persistent disability, including incontinence management with absorbent underwear or pads, assistive devices for mobility (walkers, crutches, wheelchairs, etc.), and other adaptive equipment as needed

The ICF framework aids health-care workers in identifying the factors that contribute to a woman's health and well-being beyond her medical diagnosis. We recommend using this framework to guide physiotherapy and rehabilitation

treatment for any woman with a pelvic health condition. By identifying specific physical impairments and functional limitations, treatment may be tailored to address the unique needs and health goals of each woman.

A thoughtful approach to rehabilitation can empower a woman to seek and understand health-related information and to take action for health, for herself, her family and her community (Paterick and others, 2017). This contributes to restoring a woman's sense of agency – her sense that she has control over her own body and what happens to it (Moore, 2016). This can be particularly important for women who have experienced the physical and psychological trauma that accompanies obstructed labour; stillbirth; unpleasant, unsafe or unwanted medical procedures at traditional or ill-equipped health clinics; or forced sex and/or marriage, among others.

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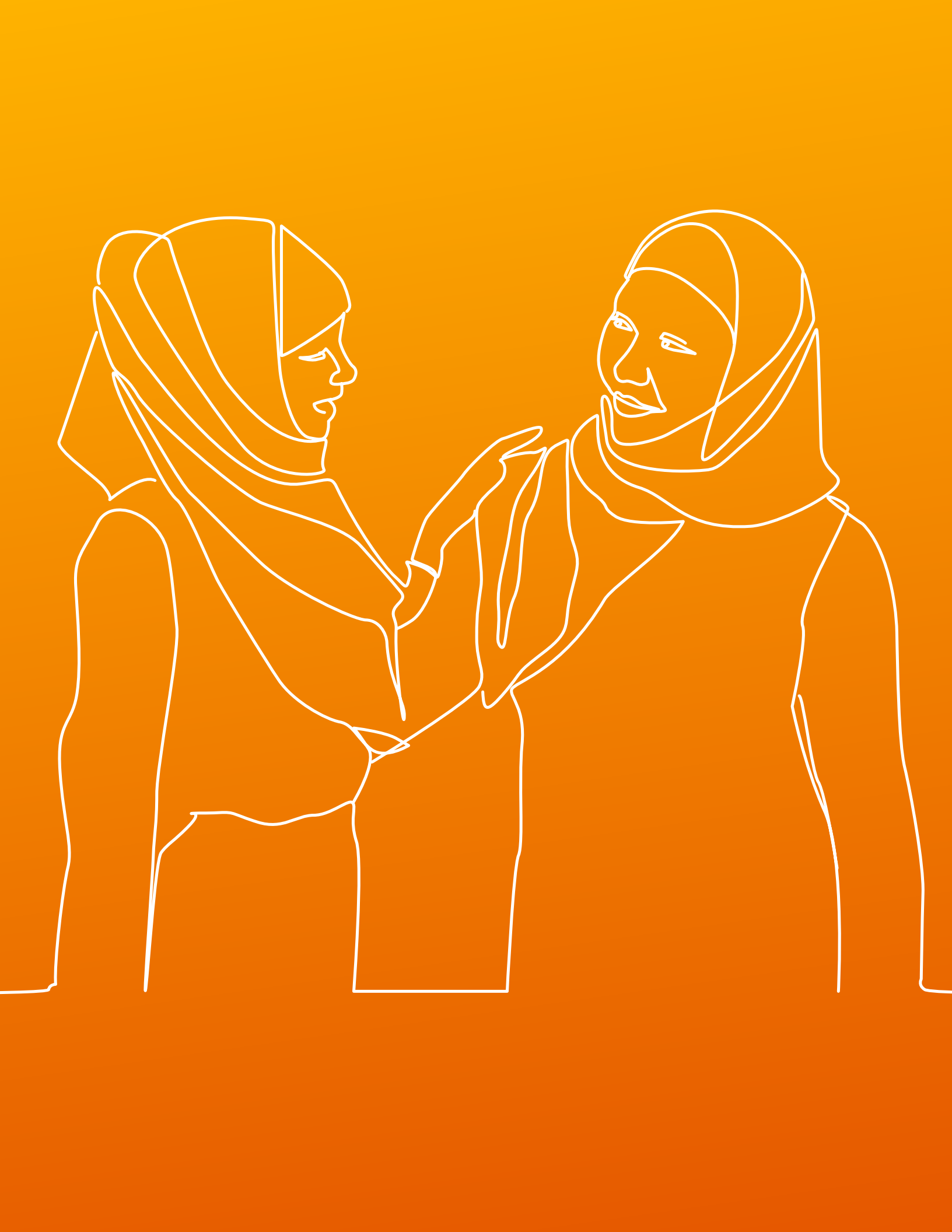

7

PRINCIPLES FOR SOCIAL REINTEGRATION AND REHABILITATION AFTER OBSTETRIC FISTULA REPAIR

Social reintegration and rehabilitation have long been seen as important needs for women with fistula. The principles of excellent care in these areas have stood the test of time. Examples from the growing body of academic literature and studies on social integration appear in a reading list at the end of this chapter.

These programmes face new challenges, however, from financial pressure. There have always been difficult choices between the needs of fistula epidemiology, outreach, treatment, prevention and reintegration. Today, funding on all levels seems constrained, so it is increasingly painful to assign a relative value to each of these areas when budgeting for fistula care. Fistula has always been part of a host of chronic neglected conditions, each of which rightfully might expect support and attention. But resources are ever more difficult to procure. International attention waxes and wanes as individual causes like fistula have a time of prominence in media and public consciousness. There are no easy answers. Women have the right to avoid fistula altogether, but if it happens, they have a right to comprehensive care, of which reintegration should be seen as a part.

We need to focus on measurement, with many issues around epidemiology. Another important need is the development and use of patient-reported and functional outcomes. This work is ongoing, and a validated measure for assessment of reintegration has been developed (El Ayadi and others, 2017). Social reintegration measures have also begun to improve longer-term perspectives on clinical outcomes years after repair, although with a remaining need for more evidence on what works and is sustained.

SOCIAL REINTEGRATION CHECKLIST

- Look outside the hospital for opportunities for partnership with NGOs/civil society/faith-based organizations, government programmes
- Track outcomes and publish your experience
- Explore tools to determine who benefits from social reintegration, and who might not require help
- Encourage women to participate in intervention decisions. What are their perceived social needs? How can available programming help them?

7.1 BACKGROUND

Committed doctors and nurses in countries where fistula exists have worked for decades to provide girls and women with treatment (including repairs). But reintegration of fistula survivors is not quite as dominant in fistula programming. Since the first edition of this manual in 2006, awareness of the need for evidence-based reintegration has grown, along with the availability of reintegration programmes. Though evidence remains largely anecdotal, most

would agree that women who are fully healed after repair, and particularly those who did not live with fistula for a long period of time before repair, are likely to reintegrate into their communities more easily than women who are still leaking urine and/or faeces after repair (due to incontinence or failure of the repair). Women who continue to leak may face significant problems because they are regarded as unclean or cursed. If they are isolated from opportunities to generate income, they may experience economic hardship.

Current reintegration interventions generally include health counselling, necessary items such as new clothes, training in basic literacy and income-generating skills, and occasionally a small amount of cash. Other elements may encompass information on sexual and reproductive health and rights (including family planning and maternal/newborn health care), facilitation of access to funding mechanisms such as microcredit loans, and integration of fistula survivors into existing women's support or empowerment groups

Strategies need to provide women with emotional, psychological and economic support. Interventions should be based, first and foremost, on an understanding of the realities of life after surgery so that women and girls receive meaningful help to return to a life of dignity. A multisectoral approach helps women navigate interpersonal relationships, and capitalize on available resources and support in their social networks. As in all other aspects of fistula care, sociocultural variations that influence women's experiences of fistula and reintegration need to be taken into account.

Interventions should be based, first and foremost, on an understanding of the realities of life after surgery so that women and girls receive meaningful help to return to a life of dignity

7.2 THE LIMITATIONS OF CURRENT INFORMATION ON REINTEGRATION STRATEGIES

As with many other aspects of obstetric fistula, there is not enough information on successful reintegration strategies, and a paucity of experiences with these programmes given limited resources and the small number of people working on the long-term needs of survivors. Nonetheless, progress is gradually being made.

Existing centres and hospitals that offer fistula repair have only limited resources for non-clinical tasks. Staff have minimal time to gather information from women on their psychosocial needs and to carry out successful reintegration programmes. Since 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 – there is growing awareness that the expertise for good reintegration programming may not reside within a hospital/health facility staff. But a growing number of organizations and programmes (both in the public and private sectors) offer social services that might be available for providing reintegration services. Partners might be found in organizations with broader mandates than fistula alone, such as through programmes aimed at maternal health or even general development. Waning resources for fistula programming of any sort underscore the imperative of finding new sources of assistance.

An additional constraint, which limits the collection of data on the value of integration programmes, is the significant time and expense required in gathering information on women once they have left a facility. Women may travel up to 1,000 kilometers to seek repairs. Once healed, they often return to far-off villages in remote regions, making follow-up extremely difficult. Communication has been eased to some extent with mobile phone technology, allowing some programmes to make excellent success in maintaining contact with clients.

The taboos surrounding fistula may make it very difficult for many girls and women, especially those who are not healed, to return home. This complicates the gathering of follow-up information as well. Survivors may have been forced to flee their villages when they first had fistula. Even when they are healed, people may be reluctant to welcome them back, and women themselves may be ambivalent about returning.

The taboos surrounding fistula may make it very difficult for many girls and women, especially those who are not healed, to return home

Using facility-based data

While data from hospitals/health facilities can be useful, they generally only give information on girls and women before their repair and not their experiences on returning home afterwards. Exceptions may be 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 they may be better off than others 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 and girls living with fistula. It is also 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 may be able to reintegrate themselves back home. In the experience of providers and advocates in Ethiopia, Nigeria and the United Republic of Tanzania (Pope and others, 2011), totally cured women can often reintegrate and carry on with life, including remarrying and having further pregnancies. Others have noted that this may not be universal, however. A survey of 170 women treated for fistula in western Kenya found that although most were well accepted by their families, 7 out of 10 were not involved in any form of income-generating activities within the first year after treatment. (Mohamed, 2014) Of the three involved in small-scale businesses during that time, only one reported significant success. Some factors that came up during this discussion included lack of self-confidence to effectively manage the business, the underlying fear of fistula recurrence in case they

actively got involved in outdoor activities, low self-esteem and frustration from customers who had a hard time believing clients were healed. This trend seems to be changing in areas where interventions target both the client's family and the community.

- One facility in the United Republic of Tanzania has found that women who come for post-operative follow-up over the long term tend to be those with more chronic problems such as severe incontinence. Women who have a successful fistula repair but 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. Women with long-term symptoms also typically identify and employ coping strategies, however. In one group of women in Uganda (El Ayadi and others, 2017), quality of life by length of time with fistula followed a "J" shape, where women who had recently developed fistula and women who had had it for more than five years reported higher quality of life than women who had been living with it for one to five years. Some consideration may be needed around better supporting women whose incontinence is not resolved by surgery.

- Many women continue in much the same situation as before their repair, supported by friends or relatives but not remarrying. This is especially the case if there is also severe vaginal stenosis.(Pope and others, 2018)

Women with fistula are extremely vulnerable, both economically and socially, as a result of their precarious living circumstances and the costs associated with finding treatment/repair

While successful repair may well lead to a smooth transition/reintegration when returning home, further research is needed to identify specific challenges to quality of life and the degree of reintegration. At the very least, many girls and women are extraordinarily poor. Those with fistula are extremely vulnerable, both economically and socially, as a result of their precarious living circumstances and the costs associated with finding treatment/repair. Unfortunately, those with fistula are far from being the only women whose lives are adversely affected by poverty.

7.3 PRINCIPLES FOR REINTEGRATION PROGRAMMES

Bodies such as the International Obstetric Fistula Working Group have provided a platform for experts to begin working towards a consensus on reintegration for fistula survivors At the group's meeting in Nepal in 2018, the members agreed in very general terms on ensuring that available reintegration programming takes a broad approach, incorporating all needs, while also responding to women's individual situations.

7.3.1 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. Reintegration strategies need to address

differences such as varying needs for family and social support, livelihoods and income generation, and education and training.

Reintegration experiences may be significantly impacted by previous experiences of living with a fistula prior to the repair. The degree of isolation or stigmatization could influence what happens even after a repair, and 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/has a partner, and/or has a supportive family.

If the initial disruption is low (e.g., her husband/partner is supportive, and she has other children), then she may continue (more or less) in her normal life. The future is more uncertain if a woman is divorced, has lost employment, has no future child-bearing capacity, does not have a normal vagina (and, thus, has difficulty or is unable to have intercourse), or has incontinence and is still leaking.

The differing experiences of girls and women living with fistula or after repair need further evaluation to inform reintegration efforts as well as a range of other interventions to support them (Khisa and others, 2019). While the call for an evidence base for clinical interventions is clear, the same applies to social efforts. Once new approaches are suggested, their efficacy must be assessed and course corrections made as needed. Hearing from women and girls themselves is a critical step in matching programmes to patient needs. Even though these interventions are based in social science, the need for data is no less than it is in other areas of fistula care. Data-based assessments of impact are essential to appeals for funding.

One significant gap is the lack of tools to predict which women require social interventions and which are likely to do well without them. It has become well accepted that women who have only briefly suffered incontinence, have strongly supportive family systems, and possess education and skills allowing them to live independently may not require social reintegration programmes. Since social reintegration can be expensive, and resources are declining, it is imperative not to waste funds. An objective, statistically validated way to assess women for their social health, as is done for their physical health, is an important area for further study.

One significant gap is the lack of tools to predict which women require social interventions and which are likely to do well without them

7.3.2 Skills training for income generation

Equipping women who have undergone fistula repair with skills can strengthen their capacity to care for themselves in the future and promote overall well-being. Basic reading and writing, financial literacy, as well as other income-generating skills 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 help them establish an economic base for themselves and/or participate in a women's business cooperative if one exists in the community.

The key challenge is to train girls and women to acquire skills that actually produce some income. Many current strategies are insufficient for really promoting economic self-sufficiency. Given that women with fistula are living in areas with generally high need, fistula programmes need to link with general poverty alleviation and women's empowerment efforts, particularly those that are more intensive. This is a critical strategy for fistula prevention as well.

Some income-generating skills usually provided to fistula survivors, such as craft-making, sewing, basket-making, etc., result in the production of goods already in oversupply with few market outlets. Thought and effort are needed to tailor reintegration support to the needs of the survivor and to issues such as market links and demand. Training could be integrated with existing programmes that promote income-generating activities, small businesses or microfunding schemes, with potential for reducing both poverty and stigma. Significant progress has been made generally in helping individuals break the cycle of poverty. These ideas need to be liberally applied in fistula programming.

Surgical repair alone, while going a long way in helping women return to a normal lifestyle, may not be enough to address the impact of living with fistula or post-fistula repair

7.3.3 Counselling

Women who live, or have lived, with obstetric fistula have often 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, may not be 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, future risk factors and how to prevent fistula from occurring again, and the importance of using contraception and accessing good maternal/newborn/reproductive care. In many communities, especially in rural areas, obstetric fistula is seen as being part of the process of giving birth or, in some cases, as a curse from God. Often, very little is known or understood by community members about the risks and causes of obstetric fistula.

Individual discussions with a social worker or trained nurse should be offered to women and their important family members to give them the opportunity to talk about what they have been through and to ask questions about their health and fistula (Watt and others, 2015, 2017). 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. The experiences of those caring for a woman with fistula need to be considered, as these can be very difficult as well.

Meeting other fistula patients at the hospital may be 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 stigmatizing condition. The personal support they feel by meeting other fistula patients is a powerful experience that can be used as a basis for personal counselling. Basic counselling should help identify clients who may need professional help from counsellors who are not

only trained in trauma management but can also assess the client to identify underlying issues that could be blocks to holistic recovery.

7.3.4 Family reintegration

Providing assistance for reconciliation and reintegration can ease the return of fistula survivors to their communities. If possible, providing a nurse and/or a social worker to escort the woman or girl home can 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 the future. Putting the woman in contact with a local woman's support group may be another way of facilitating an initial network of friends. There may be added benefits to beginning family involvement and preparation even before treatment.

7.3.5 The wider community

Education: Community outreach should involve awareness creation, both community sensitization and client identification. Various approaches could be explored based on specific community dynamics for outreach to be effective. In devising effective outreach strategies, it is important to involve gatekeepers and understand cultural values. Community seminars can educate both men and women about the importance of seeking skilled antenatal care, developing a birth plan and having skilled attendance at delivery. Such seminars can also include a discussion of the risk factors associated with obstetric fistula and how they can be prevented in the future. Facilitating community awareness is crucial to cultivating a supportive environment for women who develop, or are living with, obstetric fistula, or those who return to their communities after surgery.

Successfully treated patients may be able to educate others about the causes of fistula and dispel myths and rumours

Advocacy: In the long run, women who successfully reintegrate into their communities will be the strongest advocates for the prevention and management of fistula. They can help inform the community, including traditional and political leaders, about fistula repairs, and refer others for treatment. They can advocate for family planning, delayed marriage, timely health care, appropriate antenatal care and skilled attendance at birth. Expectations of what former patients can achieve should remain realistic, however, as they will be returning to the same socioeconomic and cultural environment that 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.

Successfully treated patients may be able to educate others about the causes of fistula and dispel myths and rumours. In Nigeria, for example, many people believe that women develop fistula because they offended the gods when they were younger or during pregnancy. Another belief is that fistula happens if women are promiscuous during their pregnancy. In some parts of East Africa, women with prolonged labour (and not just obstetric fistula) may be suspected

of 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.

In some cases, minimal funds provided to women and girls may be crucial to the ability to return home and start life/livelihoods again

7.3.6 Financing reintegration

The costs of reintegration programmes must be considered. In some cases, minimal funds provided to women and girls may be crucial to the ability to return home and start life/livelihoods again. These funds could include a small amount of money to start income-generation projects, given consideration to those with products that are most marketable and profitable. Tying income-generating projects to ongoing economic activities can help women leverage activities for the greatest net gain. Microfinancing through loans with low-interest rates and reasonable repayment plans may also be appropriate. Financing interventions calls for strong links between facility and home-based interventions, public and private entities, and clinical and non-clinically-based programming.

Facilities or organizations supporting patients should consider developing criteria for allocating and accounting for reintegration support, including who can access it, how funds/support will be distributed, and ensuring accountability. This can be particularly difficult in areas where fistulae often occur, since many girls and women without fistula may be equally poor and needy.

7.3.7 Research

Mapping the communities of origin of patients and researching the values and sociocultural, gender and economic factors that prevail in these communities will provide a better understanding of the determinants of fistula. This in turn can inform appropriate reintegration strategies. Analysis and reporting on reintegration efforts can contribute to developing new programmes.

7.4 SUGGESTED GENERAL READING ON REINTEGRATION

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ANNEXES

ANNEX 1 OBSTETRIC FISTULA COMMUNITY-BASED ASSESSMENT TOOL[14]

OF-COMBAT Questionnaire and Scoring

Reliability

Split half reliability: *.72 to .86*

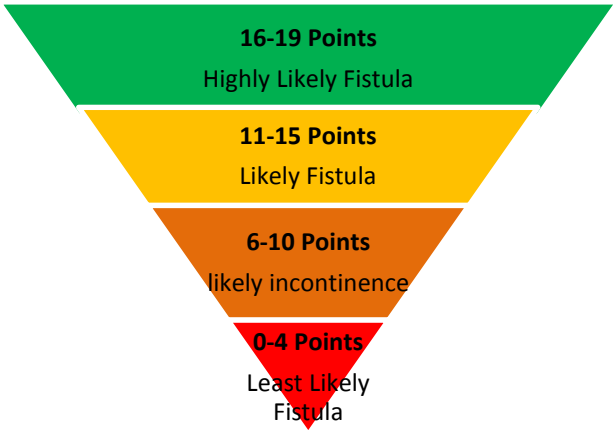
Test retest reliability: *.79 to .93*

Test Scoring

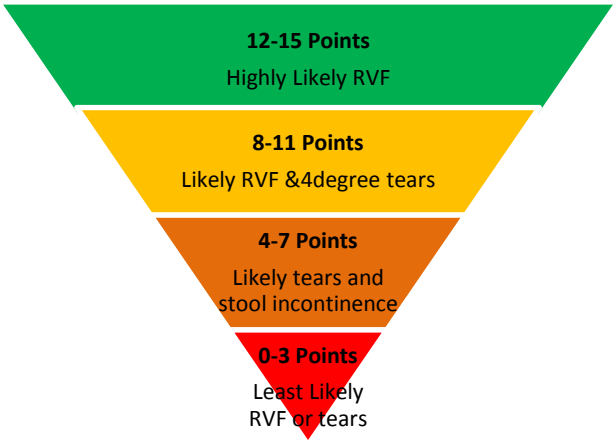
Part I: Use this Section for Suspected VVF Cases

→ SKIP THIS SECTION if client does not describe leakage of urine and proceed to PART II.

VVF scores



RVF scores



Part IA: Signs and symptoms (VVF). Instructions: For each question answered "Yes" score one (1) point. For each question answered "No" score zero (0) points.

	Yes (1)	No (0)
1. Do you continuously leak urine via your birth canal?		
2. Does the urine leak without you feeling it?		
3. Do you often find yourself wet with urine most if not all the time irrespective of where you are and what you are doing?		
4. Does the urine pass /leak on your bed while you are asleep most nights?		
5. Does the urine pass even when it's not provoked by anything?		
6. Do you need to use diapers and/or protective clothes to prevent being wet with the leakage?		
Total Points Section IA:		

14 Source: Mohamed, H., Y. Omenda and L. Pollaczek. 2015. Obstetric Fistula Community-based Assessment Tool (OF-COMBAT). International Journal of Recent Research in Social Sciences and Humanities 2 (4): 127-133.

Part IB: Validation Questions (VVF). Instructions: For each question answered "Yes" score zero (0) points. For each question answered "No" score one (1) points.*

	Yes (0)	No (1)
1. Are there days or times that you are dry and not wet with urine?		
2. Do you ever have the urge to pass urine?		
3. Do you ever go to the bathroom/ washroom to pass urine?		
4. Do you wake up to pass urine at night/Are you able to get out of your bed to pass urine at night?		
5. Does urine leak when you cough or lift something?		
6. Can you go on with your work or leave the house without any diapers and/or protective clothing but still don't wet yourself?		
Total Points Section IB:		

****Scoring note**: When the respondent answers the same numeric question in Part A and B with identical response, the question becomes void and should be eliminated from the scoring. E.g., if the respondent answers 'yes' to question 1 in Part IA and 'yes' to question 1 in Part IB you should eliminate this question from the scoring for Section 1A.*

PART II: Use this section for Suspected RVF or perineal tear

→ SKIP THIS SECTION if client does not report leakage of stool and proceed to SECTION III.

Part IIA: Signs and Symptoms (RVF or perennial tear)

Instructions: For each question answered "Yes" score one (1) point. For each question answered "No" score zero (0) points.

	Yes (1)	No (0)
1. Do you pass stool via your birth canal?		
2. Do you pass gas with particles of stool via your birth canal?		
3. Do you have a visible tear between your vagina and your anal opening or connecting the two openings?		
4. Do you have stool incontinence that more often soils your birth canal?		
Total Points Section IIA:		

Part IIB: Validation Questions: (RVF or perineal tear)

Instructions: For each question answered "Yes" score zero (0) points. For each question answered "No" score one (1) points.

	Yes (0)	No (1)
1. Do you pass stool in the normal way without any problems?		
2. Do you pass gas well via your anal opening and your under pants always clean with no stool?		
3. Did you heal well after delivery and have discomfort, tears or injury around your birth canal or anal opening?		
4. When you having loss stool, Are you able get to the toilet and the stool comes out of your anal opening with not problem?		
Total Points Section IIB:		

****Scoring note**: When the respondent answers the same numeric question in Part A and B with identical response, the question becomes void and should be eliminated from the scoring. E.g. if the respondent answers 'yes' to question 1 in Part IIA and 'yes' to question 1 in Part IIB you should subtract this question from the scoring for Section IIA.*

PART III and PART IV: Use for BOTH Suspected VVF and RVF Cases

Part III: Causes of the obstetric fistula. Instructions: For each question answered "Yes" score one (1) point. For each question answered "No" score zero (0) points.

	Yes (1)	No (0)
1. Did you start leaking urine after delivery or Caesarean Section?		
2. Were you in labour for more than 48 hours?		
3. Did you deliver at home?		
4. Did you go to the health facility after more than 24 hours in labour?		
Total Points Section III:		

Part IV: The interval between the cause and effect

	Yes (1)	No (0)
1. Did the leaking start immediately after delivery?		
2. Did the leaking start within six weeks of delivery?		
3. Did the leaking start immediately after the catheter removal?		
Total Points Section IV:		

Final Scoring

Scoring VVF (Part I, III, IV)	
Section IA + IB (Max 12 points)	
Section III (Max 4 points)	
Section IV (Max 3 points)	
Total VVF Score (Max 19 points)	

Scoring RVF (Part II, III, IV)	
Section IIA + IIB (Max 8 points)	
Section III (Max 4 points)	
Section IV (Max 3 points)	
Total RVF Score (Max 15 points)	

ANNEX 2 SURGICAL SAFETY CHECKLIST [15]

Surgical Safety Checklist

World Health Organization | Patient Safety
A World Alliance for Safer Health Care

Before induction of anaesthesia

(with at least nurse and anaesthetist)

Has the patient confirmed his/her identity, site, procedure, and consent?
- ☐ Yes

Is the site marked?
- ☐ Yes
- ☐ Not applicable

Is the anaesthesia machine and medication check complete?
- ☐ Yes

Is the pulse oximeter on the patient and functioning?
- ☐ Yes

Does the patient have a:

Known allergy?
- ☐ No
- ☐ Yes

Difficult airway or aspiration risk?
- ☐ No
- ☐ Yes, and equipment/assistance available

Risk of >500ml blood loss (7ml/kg in children)?
- ☐ No
- ☐ Yes, and two IVs/central access and fluids planned

Before skin incision

(with nurse, anaesthetist and surgeon)

- ☐ **Confirm all team members have introduced themselves by name and role.**
- ☐ **Confirm the patient's name, procedure, and where the incision will be made.**

Has antibiotic prophylaxis been given within the last 60 minutes?
- ☐ Yes
- ☐ Not applicable

Anticipated Critical Events

To Surgeon:
- ☐ What are the critical or non-routine steps?
- ☐ How long will the case take?
- ☐ What is the anticipated blood loss?

To Anaesthetist:
- ☐ Are there any patient-specific concerns?

To Nursing Team:
- ☐ Has sterility (including indicator results) been confirmed?
- ☐ Are there equipment issues or any concerns?

Is essential imaging displayed?
- ☐ Yes
- ☐ Not applicable

Before patient leaves operating room

(with nurse, anaesthetist and surgeon)

Nurse Verbally Confirms:
- ☐ The name of the procedure
- ☐ Completion of instrument, sponge and needle counts
- ☐ Specimen labelling (read specimen labels aloud, including patient name)
- ☐ Whether there are any equipment problems to be addressed

To Surgeon, Anaesthetist and Nurse:
- ☐ What are the key concerns for recovery and management of this patient?

This checklist is not intended to be comprehensive. Additions and modifications to fit local practice are encouraged.

Revised 1 / 2009

15 Source: https://www.who.int/patientsafety/safesurgery/checklist/en/ accessed on 20/10/2020.

ANNEX 3 CHECKLIST FOR NATIONAL STRATEGIES TO END OBSTETRIC (AND IATROGENIC) FISTULA

Why a checklist

This checklist has been developed to provide a quick guide and check on the alignment of the process, content and implementation of a national strategy to end fistula. This document is a tool for government ministries and agencies, development partners, stakeholders, and UN organizations, that are either in the process of developing a policy or strategy to end fistula in their countries, or reflecting on an existing national strategy and how to maximize its impact. The checklist builds on lessons learned and recommendations outlined in the 2020 guidelines on programming to end fistula. It provides a framework for analysing the process of developing national strategies, provides suggestions for the content to be included in these strategies, and highlights questions to consider on the implementation of the strategy. This checklist was adapted from the 2016 checklist for National Strategies to End Child Marriage.

How to read the checklist?

The checklist sets out the essential components of a sound national strategy to end fistula. The checklist encourages users to consider the strategy development process in their countries and consider questions in three areas, on a scale of **1** to **4**:

a) The process for developing the national strategy
b) The content of the national strategy
c) The implementation of the national strategy

Please use the following scale to rate each item:
1 = Yes
2 = To some extent
3 = No
4 = Don't know

A. The Strategy Development Process			
	1 Political commitment/government leadership	**Rating**	**Comment**
1.1	Was there a mandate from the top of government to develop the strategy?[16]		
1.2	Has the strategy been approved at the highest levels[17]?		
1.3.	Is there political will to implement the strategy?[18]		
	2 Government accountability	**Rating**	**Comment**
2.1.	Is it clear who will hold organizational, financial and technical leadership for the development and implementation of the strategy?		
	3 Consultation process	**Rating**	**Comment**
3.1.	Was there adequate time for consultations with all relevant stakeholders in the development of the strategy?		
3.2	Was a stakeholder analysis done to determine who needs to be involved in developing and implementing the national strategy?		
3.3.	Was the process well communicated and transparent to all stakeholders?[19]		
3.4	Did the consultation process involve other relevant government ministries/agencies to discuss how the strategy could be developed and implemented? For example, those responsible for: • Women's health and rights • Gender/women, adolescents and children's affairs • Social protection/social welfare • Access to justice • Infrastructure and transport • Finance • Cultural and traditional affairs • Religious affairs • Education • Other? *Please specify in comment section*		

16 Was it the minister of health, minister of women and children's affairs or equivalent? The level at which the government mandates the strategy can impact how seriously ministries across government will take it and engage with its process of development and implementation.

17 A higher level cabinet approval may guarantee greater funding and cross governmental support.

18 Political will and commitment are key to successful implementation of the strategy.

19 Was a clear consultation process outlined? Was it clear who would make decisions about the strategy and how? Were clear meeting objectives and expected outcomes defined for consultations? Was the process communicated to all stakeholders?

3.5	Did the consultation involve other relevant stakeholders? For example: • Fistula survivors • Communities affected (including key decision-makers in the family and key actors in the community)[20] • Health providers – midwives, community health workers, fistula surgeons and doctors (at both national and subnational levels) • Civil society organizations, including women's groups, international NGOs and community-based organizations that work on fistula/maternal/newborn health/sexual and reproductive health/adolescent sexual and reproductive health • Development partners – bilateral and multilateral agencies including UNFPA, UNICEF and WHO • Other actors who could have an impact on the implementation of the strategy, for example: parliamentarians, the private sector, national human rights institutions,[21] media, local government authorities.		
3.6	Were any groups excluded from the consultation or not consulted in a meaningful way for any particular reason?[22]		
	4 Research and evidence	**Rating**	**Comment**
	Is the strategy based on relevant data and evidence about:		
4.1	Prevalence[23] and incidence[24] of fistula in the country including regional variations to identify high-risk communities, women and girls?		
4.2	A review/study of root causes and social determinants or barriers to ending fistula (as per country context)?[25]		
4.3	A review of effective programmes and solutions (within and outside the country), including reviews of implementation of previous fistula strategies if applicable ?		
B. Content of the Strategy			
	5 Goal and longer term vision	**Rating**	**Comment**
5.1	Does the strategy have a measurable quantitative goal for the elimination of fistula defined in the strategy?		
5.2	Is the goal achievable within the given time-frame		
5.3	Is the goal of the strategy aligned to the global vision?		
5.4	Does the strategy include a longer-term vision to eliminate fistula beyond the time – frame of the strategy itself?		

20 Decision-makers in the family and key actors in the community will vary according to context but these often include fathers, mothers, husbands, mothers-in-law, and traditional and religious leaders.

21 Fistula is a human rights violation. National human rights institutions are state-mandated bodies, independent of government, with a broad constitutional or legal mandate to protect and promote human rights at the national level.

22 For example, fistula survivors and community members: The consultation should involve all relevant stakeholders and be tailored to suit the specific audience.

23 The prevalence of obstetric fistula provides a sense of the magnitude of the problem of fistula. It is the estimated number of girls and women who are living with obstetric fistula in the country per 1,000 females age 10 and older. Understanding the overall burden of fistula has positive implications for policy development and advocacy efforts.

24 Estimated number of new cases of obstetric fistula per year.

25 It is important to look not only at the short-term causes and consequences of obstetric and iatrogenic fistula, but also the root causes and structural/systemic barriers to addressing it.

5.5	Does the strategy aim overall to ensure quality sexual and reproductive health including improvement of quality and access to sexual reproductive health and rights?[26]		
	6 Prioritization	**Rating**	**Comment**
6.1	Have specific interventions been identified and prioritized in the strategy?		
	7 Content	**Rating**	**Comment**
7.1	Does the strategy include interventions to prevent fistula including provision of and access to quality sexual and reproductive health and rights information and services, including the three cost effective interventions – emergency obstetric and newborn care, skilled attendance at birth and family planning?		
7.2	Does the strategy target holistic care of fistula survivors including identification and referral of cases, treatment and repair, and rehabilitation and social reintegration of survivors including follow-up?		
7.3	Does the strategy include provisions to: • Empower women and girls to employ their agency for their sexual and reproductive health and rights?[27] • Engage communities in planning, implementation and monitoring of fistula programmes?[28] • Advocate for establishment and implementation of necessary laws and policies to improve maternal, sexual and reproductive health?		
	8 Synergies with related policies and compatibility with international human rights obligations	**Rating**	**Comments**
8.1	Does the strategy make links with existing policy initiatives in the country? • Sexual reproductive maternal newborn child, adolescent health education • Gender equality • Social protection • Transport • Poverty reduction • Sustainable development • Communication • Gender-based violence and other harmful practices such as child marriage • Other? *Please specify in the comment section*		
8.2	Does the strategy link to existing regional initiatives that the country is part of?[29]		
8.3	Is the strategy in line with the government's international and regional human rights obligations?		

26 A national fistula programme should aim to ensure that quality, affordable and accessible sexual and reproductive health information and services are available to prevent and treat fistula.

27 Women and girls should be empowered to act independently and to make their own informed choices related to their sexual reproductive health, free from coercion.

28 For example, does the strategy promote community-based interventions that place the community at the centre of a reflection and action about social determinants including gender inequalities, and harmful patriarchal and traditional practices such as child marriage? This should involve all members of the community in a collective and long-term process of questioning negative social norms to become actors of change.

29 For example, the resolution of the Economic Community of West African States to end fistula in West Africa, the Campaign for Accelerated Reduction of Maternal Mortality in Africa, the Arab Region Reproductive Maternal Newborn Child Adolescent Health strategy, etc.

	9 Evidence generation		
9.1	Does the strategy include a research agenda to gather up-to-date evidence about what works and what does not?		
C. Implementation of the strategy			
	10 Implementation, governance and accountability	**Rating**	**Comment**
10.1	Is there an operational plan to guide the implementation of the strategy?		
10.2	If yes, is the operational plan costed?[30]		
10.3	If an operational plan is not in place, is there a timeline and a responsible stakeholder for delivering a more detailed action plan?		
	If an operational plan exists		
10.4	Does it outline clear roles for different stakeholders (e.g., for government Ministries, civil society organisations, parliamentarians, traditional and religious leaders, media, women and girls, fistula survivors?		
10.5	Does it include annual milestones and a corresponding progress report?		
10.6	Are there clear lines of accountability for implementation of the plan?		
	11 Capacity development	**Rating**	**Comment**
11.1	Is there a plan to support the capacity development of stakeholders working on prevention and response to fistula with appropriate resources (technical and financial), for implementation at national and sub-national level? If yes, does this include: • Government ministries and agencies • Local governance structures • Community-based organizations • Civil society organizations • Community, traditional and religious leaders • Fistula survivors • Women's groups • Men's and boys groups		
	12 Coordination	**Rating**	**Comment**
12.1	Is there a government-led national task force (or working group) in place to coordinate and monitor the implementation of the strategy?[31]		
12.2	Does the taskforce have a clear mandate, goals and time frame to report on progress?		
12.3	Is the task force adequately resourced?		
12.4	Is there a dedicated position/post within the lead ministry to support the functioning of the national task force?		

30 Guidance on costing includes the WHO OneHealth Tool.

31 A task force (or working group) should be government-led, multidisciplinary, and multi-agency/sectoral, comprising key stakeholders, to assist with the coordination of country fistula programmes and monitor implementation of the national strategy and advocate for appropriate resources.

12.5	Is the task force multisectoral? Are other relevant ministries and stakeholders involved in the coordination mechanism?		
12.6	Is the national task force functioning?[32]		
	13 Communication	**Rating**	**Comment**
13.1	Is there a launch or dissemination plan in place for the strategy?		
13.2	Is there a communication strategy for implementation of the overall strategy?		
13.4	Is there a plan or provision to document case studies on good practices?		
	14 Financing and resource mobilization	**Rating**	**Comment**
14.1	Is the strategy funded? Fully? Partially? By whom?		
14.2	Has the ministry of finance or a relevant ministry approved specific budget lines for implementation of the strategy? (What proportion of the total budget does this cover?		
14.3	Is there an advocacy and resource mobilization plan to raise funds for implementation of the strategy?		
	15 Monitoring and evaluation	**Rating**	**Comment**
15.1	Is there a monitoring and evaluation plan for the strategy?[33]		
15.2	Have baselines and targets been set?		
15.3	Have indicators to track impact, as well as outcomes, been identified?		
15.4	Are adequate data available to track progress on indicators? (Or is there a functioning system to track progress on indicators? Including a health management information system?		
15.5	Is there any guidance for government, NGOs, community-based organizations and other implementing partners for measuring their impact?		
15.6	Is there a provision to review progress and produce annual reports on implementation of the strategy over its period of validity?		
15.7	Is there a provision for an evaluation of the strategy? Does it include an evaluation of the existing social reintegration programme?		
15.8	Are there plans to involve fistula survivors, women and girls, affected families and community members in monitoring and evaluating the strategy?		

32 "Functioning of a national task force" includes the following: a) meets at least twice per year; b) develops and/or monitors implementation of national strategy; and c) produces annual report of its activities and achievements, including detailing its support to government efforts to develop/implement national strategy to end fistula.

33 The monitoring and evaluation plan describes how data, results and progress in the implementation of plan will be communicated to stakeholders and beneficiaries. It helps to track and assess the results of the interventions throughout the validity of the strategy

ANNEX 4 NURSING CLINICAL PATHWAYS[34]

Obstetric fistula post-op continuation pathway

Obstetric fistula post-op clinical pathway

34 Source: Mercy Ships. 2019. Obstetric Fistula Post-Op Clinical Pathway. https://globalfistulamap.org/files/OBF_pathway.pdf.
Mercy Ships. 2019. Obstetric Fistula Post-Op Continuation Pathway. https://globalfistulamap.org/files/OBF_continuation_pathway.pdf.

OBSTETRIC FISTULA
POST-OP CONTINUATION PATHWAY

Affix ID label -**OR**- Name, ID#, Age, & Sex

Surgery: ❑ VVF ❑ UVF ❑ RVF

Date: _____ Day-month-year	**POD# ____ Night Shift** Nurse_____	**POD# _____ Day Shift** Nurse_____	**POD# _____ Eve Shift** Nurse_____
Patient and Family Teaching		❑ Teach Catheter care: not to pull, kink or twist; keep bag off floor when out of bed ❑ Report bladder fullness, pain, or spasm; or newly wet ❑ Maintain adequate fluid intake to ensure urine clear and without clots	❑ Teach Catheter care: not to pull, kink or twist; keep bag off floor when out of bed ❑ Report bladder fullness, pain, or spasm; or newly wet ❑ Maintain adequate fluid intake to ensure urine clear and without clots
Nursing Assessment	❑ **Dry** ❑ **Intermittent Wet** ❑ **Constant Wet** ❑ Vital signs **Q shift** ❑ Physical Assessment ❑ Urine color_____ ❑ Vaginal Bleeding or discharge	❑ **Dry** ❑ **Intermittently Wet** ❑ **Constantly Wet** ❑ Vital signs **Q shift** ❑ Physical assessment Q shift ❑ Ureteral Stents secure ❒ R ❒ L ❒Bilat ❑ N/A ❑ Urine color at **1200** ❑ Yellow ❑ Pink/blood tinged ❑ Tea Colored ❑ Bloody ❑ Clots present ❑ Vaginal Bleeding or discharge ❑ Notify surgeon if saturating >2 pads in 4 hours _____ _____ _____	❑ **Dry** ❑ **Intermittently Wet** ❑ **Constantly Wet** ❑ Vital signs **Q shift** ❑ Physical assessment Q shift ❑ Ureteral Stents secure ❒ R ❒ L ❒Bilat ❑ N/A ❑ Urine color at **2000** ❑ Yellow ❑ Pink/blood tinged ❑ Tea Colored ❑ Bloody ❑ Clots present ❑ Vaginal Bleeding or discharge ❑ Notify surgeon if saturating >2 pads in 4 hours _____ _____ _____
Nursing Care	❑ Catheter secure ❑ Catheter patent ❑ Clots present ❑ Irrigated catheter per post-op order x _____ ❑ Urine pots changed ❑ Catheter Removed, on Voiding Protocol (see voiding record) (& Voiding Protocol from Day & Eve shifts)	❑ **Pericare** BID when vag pack removed ❑ non-sterile ❑ sterile, incision present **Catheter** N/A Secure & Patent ❑ Irrigate catheter with normal saline PRN if obstruction suspected. Irrigate per protocol on post-op orders ❑ If urine output is <30 ml in one hour, flush as above and notify Charge Nurse who will contact on-call fistula surgeon ❑ **Voiding** Protocol N/A ❒ ≤4 hrs after catheter removed: bladder scan within 10 mins of void to determine post-void residual (PVR) ❒ Notify Charge Nurse if PVR>150 ml or s/s of retention: decreasing amount of voids, dribbling urine, suprapubic pain ❒ Ensure Oxybutynin discontinued	❑ **Pericare** BID when vag pack removed ❑ non-sterile ❑ sterile, incision present **Catheter** N/A Secure & Patent ❑ Irrigate catheter with normal saline PRN if obstruction suspected. Irrigate per protocol on post-op orders ❑ If urine output is <30 ml in one hour, flush as above and notify Charge Nurse who will contact on-call fistula surgeon ❑ **Voiding** Protocol N/A ❒ ≤4 hrs after catheter removed: bladder scan within 10 mins of void to determine post-void residual (PVR) ❒ Notify Charge Nurse if PVR>150 ml or s/s of retention: decreasing amount of voids, dribbling urine, suprapubic pain ❒ Ensure Oxybutynin discontinued
Wound Care	❑ N/A ❑ Dressing intact ❑ Dressing changed _____ _____	❑ N/A ❑ Abdominal repair: ❒ OTA ❒ Dressing clean, dry, & intact ❒ Dressing changed Orders:_____ _____ _____	❑ N/A ❑ Abdominal repair: ❒ OTA ❒ Dressing clean, dry, & intact ❒ Dressing changed Orders:_____ _____ _____
IV & Medication	❑ VIP Score _____ (score>2, remove & restart IV) ❑ Flush IV cannula end of shift ❑ No IV cannula	❑ VIP Score _____ (score>2, remove & restart IV) ❑ Flush IV cannula at end of shift ❑ No IV cannula ❑ Oxybutynin per order for suspected bladder spasm. **D/C 24 hours before catheter removed** ❑ **RVF**: Nothing per rectum	❑ VIP Score _____ (score>2, remove & restart IV) ❑ Flush IV cannula at end of shift ❑ No IV cannula ❑ Oxybutynin per order for suspected bladder spasm. **D/C 24 hours before catheter removed** ❑ **RVF**: Nothing per rectum
Activity and Safety		❑ Encourage ambulation ❑ Other_____	❑ Encourage ambulation ❑ Other_____
Nutrition and Fluid Balance	❑ **0400** water bottle filled to: ❑ Catheter:1500 ml ❑ Voiding: 750 ml ❑ **0400** Total I&O ❑ & 24hr Total	❑ Regular ❑ Other _____ ❑ **1200** Water bottle filled to 1000 ml ❑ Catheter: 1000 ml ❑ Voiding: 750 ml ❑ **1200** Total intake and output	❑ Regular ❑ Other _____ ❑ **2000** Water bottle filled to 500 ml ❑ Catheter: 500 ml ❑ Voiding: 500 ml ❑ **2000** Total intake and output
Nursing Notes	_____ _____ _____ _____ _____	_____ _____ _____ _____ _____	_____ _____ _____ _____ _____

Affix ID label -**OR**- Name, ID#, Age, & Sex

Surgery: ❑ VVF ❑ UVF ❑ RVF

Date: _____ Day-month-year	**POD# ____ Night Shift** Nurse_____	**POD# _____ Day Shift** Nurse_____	**POD# _____ Eve Shift** Nurse_____
Patient and Family Teaching		❑ Teach Catheter care: not to pull, kink or twist; keep bag off floor when out of bed ❑ Report bladder fullness, pain, or spasm; or newly wet ❑ Maintain adequate fluid intake to ensure urine clear and without clots	❑ Teach Catheter care: not to pull, kink or twist; keep bag off floor when out of bed ❑ Report bladder fullness, pain, or spasm; or newly wet ❑ Maintain adequate fluid intake to ensure urine clear and without clots
Nursing Assessment	❑ **Dry** ❑ **Intermittent Wet** ❑ **Constant Wet** ❑ Vital signs **Q shift** ❑ Physical Assessment ❑ Urine color_____ ❑ Vaginal Bleeding or discharge	❑ **Dry** ❑ **Intermittently Wet** ❑ **Constantly Wet** ❑ Vital signs **Q shift** ❑ Physical assessment Q shift ❑ Ureteral Stents secure ❒ R ❒ L ❒Bilat ❑ N/A ❑ Urine color at **1200** ❑ Yellow ❑ Pink/blood tinged ❑ Tea Colored ❑ Bloody ❑ Clots present ❑ Vaginal Bleeding or discharge ❑ Notify surgeon if saturating >2 pads in 4 hours _____ _____ _____	❑ **Dry** ❑ **Intermittently Wet** ❑ **Constantly Wet** ❑ Vital signs **Q shift** ❑ Physical assessment Q shift ❑ Ureteral Stents secure ❒ R ❒ L ❒Bilat ❑ N/A ❑ Urine color at **2000** ❑ Yellow ❑ Pink/blood tinged ❑ Tea Colored ❑ Bloody ❑ Clots present ❑ Vaginal Bleeding or discharge ❑ Notify surgeon if saturating >2 pads in 4 hours _____ _____ _____
Nursing Care	❑ Catheter secure ❑ Catheter patent ❑ Clots present ❑ Irrigated catheter per post-op order x _____ ❑ Urine pots changed ❑ Catheter Removed, on Voiding Protocol (see voiding record) (& Voiding Protocol from Day & Eve shifts)	❑ **Pericare** BID when vag pack removed ❑ non-sterile ❑ sterile, incision present **Catheter** N/A Secure & Patent ❑ Irrigate catheter with normal saline PRN if obstruction suspected. Irrigate per protocol on post-op orders ❑ If urine output is <30 ml in one hour, flush as above and notify Charge Nurse who will contact on-call fistula surgeon ❑ **Voiding** Protocol N/A ❒ ≤4 hrs after catheter removed: bladder scan within 10 mins of void to determine post-void residual (PVR) ❒ Notify Charge Nurse if PVR>150 ml or s/s of retention: decreasing amount of voids, dribbling urine, suprapubic pain ❒ Ensure Oxybutynin discontinued	❑ **Pericare** BID when vag pack removed ❑ non-sterile ❑ sterile, incision present **Catheter** N/A Secure & Patent ❑ Irrigate catheter with normal saline PRN if obstruction suspected. Irrigate per protocol on post-op orders ❑ If urine output is <30 ml in one hour, flush as above and notify Charge Nurse who will contact on-call fistula surgeon ❑ **Voiding** Protocol N/A ❒ ≤4 hrs after catheter removed: bladder scan within 10 mins of void to determine post-void residual (PVR) ❒ Notify Charge Nurse if PVR>150 ml or s/s of retention: decreasing amount of voids, dribbling urine, suprapubic pain ❒ Ensure Oxybutynin discontinued
Wound Care	❑ N/A ❑ Dressing intact ❑ Dressing changed _____ _____	❑ N/A ❑ Abdominal repair: ❒ OTA ❒ Dressing clean, dry, & intact ❒ Dressing changed Orders:_____ _____ _____	❑ N/A ❑ Abdominal repair: ❒ OTA ❒ Dressing clean, dry, & intact ❒ Dressing changed Orders:_____ _____ _____
IV & Medication	❑ VIP Score _____ (score>2, remove & restart IV) ❑ Flush IV cannula end of shift ❑ No IV cannula	❑ VIP Score _____ (score>2, remove & restart IV) ❑ Flush IV cannula at end of shift ❑ No IV cannula ❑ Oxybutynin per order for suspected bladder spasm. **D/C 24 hours before catheter removed** ❑ **RVF**: Nothing per rectum	❑ VIP Score _____ (score>2, remove & restart IV) ❑ Flush IV cannula at end of shift ❑ No IV cannula ❑ Oxybutynin per order for suspected bladder spasm. **D/C 24 hours before catheter removed** ❑ **RVF**: Nothing per rectum
Activity and Safety		❑ Encourage ambulation ❑ Other_____	❑ Encourage ambulation ❑ Other_____
Nutrition and Fluid Balance	❑ **0400** water bottle filled to: ❑ Catheter:1500 ml ❑ Voiding: 750 ml ❑ **0400** Total I&O ❑ & 24hr Total	❑ Regular ❑ Other _____ ❑ **1200** Water bottle filled to 1000 ml ❑ Catheter: 1000 ml ❑ Voiding: 750 ml ❑ **1200** Total intake and output	❑ Regular ❑ Other _____ ❑ **2000** Water bottle filled to 500 ml ❑ Catheter: 500 ml ❑ Voiding: 500 ml ❑ **2000** Total intake and output
Nursing Notes	_____ _____ _____ _____ _____ _____ _____	_____ _____ _____ _____ _____ _____ _____	_____ _____ _____ _____ _____ _____ _____

OBSTETRIC FISTULA
POST-OP CLINICAL PATHWAY

Affix ID label **-OR-** Name, ID#, Age, & Sex

Surgery: ❑ VVF ❑ UVF ❑ RVF

Date: _____ Day-month-year	**Pre-op: Admission** Eve Shift Nurse: _____	**Pre-Op: Day of Surgery** Night Shift Nurse:_____ Day Shift Nurse: _____	**Post-Op: Day of Surgery** Day Shift Nurse:_____ _____ Time back from OR Evening Shift Nurse: _____
Patient and Family Teaching	❑ Explain surgery ❑ Type of Anesthesia (if spinal, they will be awake) ❑ How to use bathroom ❑ Catheter care ❑ Chance surgery won't be successful	❒ Tell patient number on OR list: _____ ❒ Explain surgical procedure and what to expect post-op (monitoring, IV, bedrest, catheter care, vag pack, etc.) ❒ Teach patient how to report post-op pain using pain scale	❑ Encourage patient to report pain or nausea after surgery ❑ Teach Catheter care: not to pull, kink or twist; keep bag off floor when out of bed ❑ Report bladder fullness, pain, or spasm; or newly wet ❑ Avoid straining while having a bowel movement ❑ Maintain adequate fluid intake to ensure urine clear and without clots
Nursing Assessment	❑ Bowel movement post-suppository ❑ No bowel movement-Fleet's enema done before **2200**	❑ Document pre-op vital signs at **0600** ❑ Pre-op nursing assessment ❑ IV cannula patent	**Post-Op Monitoring Protocol:** ❑ VS/OBS upon arrival, then every 30min X4, every 60min X4, every 4 hr X 48 hr ❑ Use pulse oximeter for SaO_2 upon arrival until stable ❑ Temp on arrival then every 2 hour until stable ❑ Assess for pain and nausea with vital signs ❑ Post-op nursing assessment upon arrival then every shift ❑ Spinal Anaesthetics Record with VS/OBS ❑ N/A ❑ Strict fluid intake/output **every hour** for first 12 hours ❑ assess from patient to catheter bag to ensure catheter secured well, draining well, not kinked, no visible clots present and pad dry ❑ **Dry** ❑ **Intermittently Wet** ❑ **Constantly Wet** **Notify charge nurse of newly wet/leaking patient** ❑ Ureteral Stents ❑ Right ❑ Left ❑Bilateral ❑ Urine colour at **2000** ❑ Yellow ❑ Pink/blood tinged ❑ Tea Colored ❑ Bloody ❑ Clots present Orders: _____
Nursing Care	❑Chlorhexidine shower ❑Nothing per rectum after **2400** ❑ Place IV cannula ❑ Provide adult diaper ❑ Complete pre-op checklist	❑ Complete Pre-op Checklist on OR Record ❑ Standard soap shower in AM before surgery ❑ **1st case to OR** (no 30 min call) in AM, ❑ **On Call** other cases. ❑ Chlorhexidine scrub to perineum (wash off) ❑ New diaper –may leave on	❑ Irrigate catheter with normal saline PRN if obstruction suspected. Irrigate per protocol on post-op orders ❑ **If urine output is <30 ml in one hour**, flush as above and notify Charge Nurse who will contact on-call fistula surgeon ❑ Stents not draining, flushed per post-op order ❑ Vaginal packing until POD____ ❒ Vaginal bleeding, notified Charge Nurse/TL Orders: _____ _____
IV and Medications	❑ Glycerin suppository **before 1800** ❑ Fleet enema if no BM by **2200** ❑ RVF: per MD orders	❑ Ensure pre-op medications transcribed onto PRN Medication Sheet As per orders (1st to OR or on call) ❑ Give pre-med ❑ N/A ❑ Flush IV cannula ❑ Give 500 ml RL or NS bolus, once bolus complete continue fluids TKO	❑ **Give scheduled pain meds** ❑ Vitamin C daily or BID scheduled **Intravenous** ❑ Visual Infusion Phlebitis Score _____ (score>2, remove & restart IV) ❑ IV fluids: _____ @ _____ ml/hr until awake & tolerating PO/NG fluids & has passed urine ❑ IV fluids D/C'd @ _____: Flush IV with 5 mL NS at the end of the shift
Activity and Safety			❑ Bedrest ❑ Bathroom Privileges ❑ Assist with turning. Be careful to keep catheter &/or stents from pulling
Nutrition and Fluid Balance	❑ Encourage fluid intake ❑ RVF: per MD orders ❑ Give 1.5L water bottle	❑ Check NPO/Fasting orders from Anesthesia Fast from solids at _____ Fast from liquids at _____ ❑ Signs at bedside visible with fasting orders and patient/caregiver aware ❑ Have pt drink a cup of water immediately before NPO of clears	❑ Clear Liquids ❑ Full Liquids ❑ Regular ❑ Advance diet as tolerated ❑ **2000** Fill water bottle to 500 ml, may fill to 1000 ml if urine bloody or clots present ❑ **2000** Total intake and output
Nursing Notes	_____	_____	_____

Affix ID label -**OR-** Name, ID#, Age, & Sex

Surgery: ❑ VVF ❑ UVF ❑ RVF

Date: _____ Day-month-year	**POD# 1 Night Shift** Nurse_____	**POD# 1 Day Shift** Nurse_____	**POD# 1 Eve Shift** Nurse_____
Patient and Family Teaching		❑ Encourage pt to report pain or nausea post-op ❑ Teach Catheter care: not to pull, kink or twist; keep bag off floor when out of bed ❑ Report bladder fullness, pain, or spasm; or newly wet ❑ Maintain adequate fluid intake to ensure urine clear and without clots	❑ Encourage pt to report pain or nausea post-op ❑ Teach Catheter care: not to pull, kink or twist; keep bag off floor when out of bed ❑ Report bladder fullness, pain, or spasm; or newly wet ❑ Maintain adequate fluid intake to ensure urine clear and without clots
Nursing Assessment	❑ **Dry** ❑ **Intermittent Wet** ❑ **Constant Wet** ❑ Vital signs per routine post-op, then **Q 4 hours** ❑ Physical Assessment ❑ Spinal Record with VS/OBS ❑ N/A ❑ H**ourly** urine output Urine color_____ ❑ Vaginal Bleeding or discharge _____ _____	❑ **Dry** ❑ **Intermittently Wet** ❑ **Constantly Wet** ❑ Vital signs **Q 4 hours** ❑ Physical assessment Q shift ❑ Spinal Anaesthetics Record with VS/OBS ❑ N/A ❑ Strict fluid intake/output **every 2 hours x 4** ❑ assess from patient to catheter bag to ensure catheter draining well, not kinked, no visible clots present and pad dry ❑ Ureteral Stents secure ❒ Right ❒ Left ❒Bilateral ❑ Urine colour at **1200** ❑ Yellow ❑ Pink/blood tinged ❑ Tea Colored ❑ Bloody ❑ Clots present ❑ Vaginal Bleeding or discharge ❑ Notify surgeon if saturating >2 pads in 4 hours _____ _____ _____	❑ **Dry** ❑ **Intermittently Wet** ❑ **Constantly Wet** ❑ Vital signs **Q 4 hours** ❑ Physical assessment Q shift ❑ Spinal Anaesthetics Record with VS/OBS ❑ N/A ❑ Strict fluid intake/output **every 4 hours x 48 hrs** ❑ assess from patient to catheter bag to ensure catheter draining well, not kinked, no visible clots present and pad dry ❑ Ureteral Stents secure ❒ Right ❒ Left ❒Bilateral ❑ Urine colour at **2000** ❑ Yellow ❑ Pink/blood tinged ❑ Tea Colored ❑ Bloody ❑ Clots present ❑ Vaginal Bleeding or discharge ❑ Notify surgeon if saturating >2 pads in 4 hours _____ _____ _____
Nursing Care	❑ Catheter secure ❑ Catheter patent ❑ Clots present ❑ Irrigated catheter per post-op order x _____ ❑ Urine pots changed ❑ **Vaginal packing:** ❑ In place ❑ Removed at **0600,** intact _____ _____ _____ _____	❑ Peri-care BID when vag pack removed ❑ non-sterile ❑ sterile, incision present ❑ Catheter secure ❑ Catheter patent ❑ Irrigate catheter with normal saline PRN if obstruction suspected. Irrigate per protocol on post-op orders ❑ If urine output is <30 ml in one hour, flush as above and notify Charge Nurse who will contact on-call fistula surgeon ❑ **Vaginal packing:** ❑ In place ❑ Out ❑ Removed, intact _____ _____ _____	❑ Peri-care BID when vag pack removed ❑ non-sterile ❑ sterile, incision present ❑ Catheter secure ❑ Catheter patent ❑ Irrigate catheter with normal saline PRN if obstruction suspected. Irrigate per protocol on post-op orders ❑ If urine output is <30 ml in one hour, flush as above and notify Charge Nurse who will contact on-call fistula surgeon ❑ **Vaginal packing:** ❑ In place ❑ Out ❑ Removed, intact _____ _____ _____
Wound Care	❑ N/A ❑ Dressing intact ❑ Dressing changed _____ _____	❑ N/A ❑ Abdominal repair: leave dressing intact x 48hrs., then remove and leave open to air ❒ Dressing clean, dry, & intact ❒ Dressing changed ❒ OTA Orders:_____ _____	❑ N/A ❑ Abdominal repair: leave dressing intact x 48hrs., then remove and leave open to air ❒ Dressing clean, dry, & intact ❒ Dressing changed ❒ OTA Orders:_____ _____
IV & Medication	❑ VIP Score _____ (score>2, remove & restart IV) ❑ IV Fluids _____@_____ml/hr ❑ Flush IV cannula end of shift ❑ No IV cannula	❑ VIP Score _____ (score>2, remove & restart IV) ❑ IV Fluids _____@ _____ ml/hr ❑ Flush IV cannula at end of shift ❑ No IV cannula ❑ Oxybutynin per order for suspected bladder spasm. **D/C 24 hours before catheter removed** ❑ **RVF**: Nothing per rectum	❑ VIP Score _____ (score>2, remove & restart IV) ❑ IV Fluids _____@ _____ ml/hr ❑ Flush IV cannula at end of shift ❑ No IV cannula ❑ Oxybutynin per order for suspected bladder spasm. **D/C 24 hours before catheter removed** ❑ **RVF**: Nothing per rectum
Activity and Safety	❑ Bedrest ❑ Off bedrest	❑ Bedrest ❑ Walking ad lib ❑ Assist to the bathroom for the first time	❑ Bedrest ❑ Encourage ambulation ❑ Other_____
Nutrition and Fluid Balance	❑ **0400** water bottle filled to 1500 ml ❑ **0400** Total I&O ❑ & 24hr Total	❑ Regular ❑ Other _____ ❑ **1200** Water bottle filled to 1000 ml ❑ **1200** Total intake and output	❑ Regular ❑ Other _____ ❑ **2000** Water bottle filled to 500 ml ❑ **2000** Total intake and output
Nursing Notes	_____ _____ _____ _____ _____	_____ _____ _____ _____ _____	_____ _____ _____ _____ _____

Affix ID label -**OR**- Name, ID#, Age, & Sex

Surgery: ❑ VVF ❑ UVF ❑ RVF

Date: _____ Day-month-year	**POD# 2 Night Shift** Nurse_____	**POD# 2 Day Shift** Nurse_____	**POD# 2 Eve Shift** Nurse_____
Patient and Family Teaching		❑ Encourage pt to report pain or nausea post-op ❑ Teach Catheter care: not to pull, kink or twist; keep bag off floor when out of bed ❑ Report bladder fullness, pain, or spasm; or newly wet ❑ Maintain adequate fluid intake to ensure urine clear and without clots	❑ Encourage pt to report pain or nausea post-op ❑ Teach Catheter care: not to pull, kink or twist; keep bag off floor when out of bed ❑ Report bladder fullness, pain, or spasm; or newly wet ❑ Maintain adequate fluid intake to ensure urine clear and without clots
Nursing Assessment	❑ **Dry** ❑ **Intermittent Wet** ❑ **Constant Wet** ❑ Vital signs **Q 4hrs** ❑ Physical Assessment ❑ I&O **Q 4 hours** ❑ Urine color_____ ❑ Vaginal Bleeding or discharge	❑ **Dry** ❑ **Intermittently Wet** ❑ **Constantly Wet** ❑ Vital signs **Q 4 hours** ❑ Physical assessment Q shift ❑ Strict fluid intake/output **every 4 hours** ❑ assess from patient to catheter bag to ensure catheter draining well, not kinked, no visible clots present and pad dry ❑ Ureteral Stents secure ❒ Right ❒ Left ❒Bilateral ❑ Urine colour at **1200** ❑ Yellow ❑ Pink/blood tinged ❑ Tea Colored ❑ Bloody ❑ Clots present ❑ Vaginal Bleeding or discharge ❑ Notify surgeon if saturating >2 pads in 4 hours _____ _____ _____	❑ **Dry** ❑ **Intermittently Wet** ❑ **Constantly Wet** ❑ Vital signs **Q shift** ❑ Physical assessment Q shift ❑ Strict fluid intake/output **every 4 hours** ❑ assess from patient to catheter bag to ensure catheter draining well, not kinked, no visible clots present and pad dry ❑ Ureteral Stents secure ❒ Right ❒ Left ❒Bilateral ❑ Urine colour at **2000** ❑ Yellow ❑ Pink/blood tinged ❑ Tea Colored ❑ Bloody ❑ Clots present ❑ Vaginal Bleeding or discharge ❑ Notify surgeon if saturating >2 pads in 4 hours _____ _____ _____
Nursing Care	❑ Catheter secure ❑ Catheter patent ❑ Clots present ❑ Irrigated catheter per post-op order x _____ ❑ Urine pots changed ❑ **Vaginal packing:** ❑ In place ❑ Removed at **0600,** intact _____ _____ _____ _____	❑ Peri-care BID when vag pack removed ❑ non-sterile ❑ sterile, incision present ❑ Catheter secure ❑ Catheter patent ❑ Irrigate catheter with normal saline PRN if obstruction suspected. Irrigate per protocol on post-op orders ❑ If urine output is <30 ml in one hour, flush as above and notify Charge Nurse who will contact on-call fistula surgeon ❑ **Vaginal packing:** ❑ In place ❑ Out ❑ Removed, intact _____ _____ _____	❑ Peri-care BID when vag pack removed ❑ non-sterile ❑ sterile, incision present ❑ Catheter secure ❑ Catheter patent ❑ Irrigate catheter with normal saline PRN if obstruction suspected. Irrigate per protocol on post-op orders ❑ If urine output is <30 ml in one hour, flush as above and notify Charge Nurse who will contact on-call fistula surgeon ❑ **Vaginal packing:** ❑ In place ❑ Out ❑ Removed, intact _____ _____ _____
Wound Care	❑ N/A ❑ Dressing intact ❑ Dressing changed _____ _____ _____ _____	❑ N/A ❑ Abdominal repair: leave dressing intact x 48hrs., then remove and leave open to air ❒ Dressing clean, dry, & intact ❒ Dressing changed ❒ OTA Orders:_____ _____ _____	❑ N/A ❑ Abdominal repair: leave dressing intact x 48hrs., then remove and leave open to air ❒ Dressing clean, dry, & intact ❒ Dressing changed ❒ OTA Orders:_____ _____ _____
IV & Medication	❑ VIP Score _____ (score>2, remove & restart IV) ❑ IV Fluids _____@_____ml/hr ❑ Flush IV cannula end of shift ❑ No IV cannula	❑ VIP Score _____ (score>2, remove & restart IV) ❑ IV Fluids _____@_____ ml/hr ❑ Flush IV cannula at end of shift ❑ No IV cannula ❑ Oxybutynin per order for suspected bladder spasm. **D/C 24 hours before catheter removed** ❑ **RVF**: Nothing per rectum	❑ IV Fluids _____@_____ ml/hr ❑ VIP Score _____ (score>2, remove & restart IV) ❑ Flush IV cannula at end of shift ❑ No IV cannula ❑ Oxybutynin per order for suspected bladder spasm. **D/C 24 hours before catheter removed** ❑ **RVF**: Nothing per rectum
Activity and Safety	❑ Bedrest ❑ Off bedrest	❑ Bedrest ❑ Walking ad lib ❑ Assist to the bathroom for the first time	❑ Bedrest ❑ Encourage ambulation ❑ Other_____
Nutrition and Fluid Balance	❑ **0400** water bottle filled to 1500 ml ❑ **0400** Total I&O ❑ & 24hr Total	❑ Regular ❑ Other _____ ❑ **1200** Water bottle filled to 1000 ml ❑ **1200** Total intake and output	❑ Regular ❑ Other _____ ❑ **2000** Water bottle filled to 500 ml ❑ **2000** Total intake and output
Nursing Notes	_____ _____ _____ _____	_____ _____ _____ _____	_____ _____ _____ _____

Affix ID label -**OR**- Name, ID#, Age, & Sex

Surgery: ❑ VVF ❑ UVF ❑ RVF

Date: _____ Day-month-year	**POD# 3 Night Shift** Nurse_____	**POD# 3 Day Shift** Nurse_____	**POD# 3 Eve Shift** Nurse_____
Patient and Family Teaching		❑ Encourage pt to report pain or nausea post-op ❑ Teach Catheter care: not to pull, kink or twist; keep bag off floor when out of bed ❑ Report bladder fullness, pain, or spasm; or newly wet ❑ Maintain adequate fluid intake to ensure urine clear and without clots	❑ Encourage pt to report pain or nausea post-op ❑ Teach Catheter care: not to pull, kink or twist; keep bag off floor when out of bed ❑ Report bladder fullness, pain, or spasm; or newly wet ❑ Maintain adequate fluid intake to ensure urine clear and without clots
Nursing Assessment	❑ **Dry** ❑ **Intermittent Wet** ❑ **Constant Wet** ❑ Vital signs **Q shift** ❑ Physical Assessment ❑ I&O **Q 4 hours** ❑ Urine color_____ ❑ Vaginal Bleeding or discharge	❑ **Dry** ❑ **Intermittently Wet** ❑ **Constantly Wet** ❑ Vital signs **Q shift** ❑ Physical assessment Q shift ❑ Strict fluid intake/output **every 4 hours** ❑ assess from patient to catheter bag to ensure catheter draining well, not kinked, no visible clots present and pad dry ❑ Ureteral Stents secure ❒ Right ❒ Left ❒Bilateral ❑ Urine colour at **1200** ❑ Yellow ❑ Pink/blood tinged ❑ Tea Colored ❑ Bloody ❑ Clots present ❑ Vaginal Bleeding or discharge ❑ Notify surgeon if saturating >2 pads in 4 hours _____ _____ _____	❑ **Dry** ❑ **Intermittently Wet** ❑ **Constantly Wet** ❑ Vital signs **Q shift** ❑ Physical assessment Q shift ❑ Strict fluid intake/output **every 8 hours** ❑ assess from patient to catheter bag to ensure catheter draining well, not kinked, no visible clots present and pad dry ❑ Ureteral Stents secure ❒ Right ❒ Left ❒Bilateral ❑ Urine colour at **2000** ❑ Yellow ❑ Pink/blood tinged ❑ Tea Colored ❑ Bloody ❑ Clots present ❑ Vaginal Bleeding or discharge ❑ Notify surgeon if saturating >2 pads in 4 hours _____ _____ _____
Nursing Care	❑ Catheter secure ❑ Catheter patent ❑ Clots present ❑ Irrigated catheter per post-op order x _____ ❑ Urine pots changed	❑ Peri-care BID ❑ non-sterile ❑ sterile, incision present ❑ Catheter secure ❑ Catheter patent ❑ Irrigate catheter with normal saline PRN if obstruction suspected. Irrigate per protocol on post-op orders ❑ If urine output is <30 ml in one hour, flush as above and notify Charge Nurse who will contact on-call fistula surgeon	❑ Peri-care BID ❑ non-sterile ❑ sterile, incision present ❑ Catheter secure ❑ Catheter patent ❑ Irrigate catheter with normal saline PRN if obstruction suspected. Irrigate per protocol on post-op orders ❑ If urine output is <30 ml in one hour, flush as above and notify Charge Nurse who will contact on-call fistula surgeon
Wound Care	❑ N/A ❑ Dressing intact ❑ Dressing changed _____ _____	❑ N/A ❑ Abdominal repair: ❒ OTA ❒ Dressing clean, dry, & intact ❒ Dressing changed Orders:_____ _____ _____	❑ N/A ❑ Abdominal repair: ❒ OTA ❒ Dressing clean, dry, & intact ❒ Dressing changed Orders:_____ _____ _____
IV & Medication	❑ VIP Score _____ (score>2, remove & restart IV) ❑ IV Fluids _____@_____ml/hr ❑ Flush IV cannula end of shift ❑ No IV cannula	❑ VIP Score _____ (score>2, remove & restart IV) ❑ IV Fluids _____@ _____ ml/hr ❑ Flush IV cannula at end of shift ❑ No IV cannula ❑ Oxybutynin per order for suspected bladder spasm. **D/C 24 hours before catheter removed** ❑ **RVF**: Nothing per rectum	❑ VIP Score _____ (score>2, remove & restart IV) ❑ IV Fluids _____@ _____ ml/hr ❑ Flush IV cannula at end of shift ❑ No IV cannula ❑ Oxybutynin per order for suspected bladder spasm. **D/C 24 hours before catheter removed** ❑ **RVF**: Nothing per rectum
Activity and Safety		❑ Encourage ambulation ❑ Other_____	❑ Encourage ambulation ❑ Other_____
Nutrition and Fluid Balance	❑ **0400** water bottle filled to 1500 ml ❑ **0400** Total I&O ❑ & 24hr Total	❑ Regular ❑ Other _____ ❑ **1200** Water bottle filled to 1000 ml ❑ **1200** Total intake and output	❑ Regular ❑ Other _____ ❑ **2000** Water bottle filled to 500 ml ❑ **2000** Total intake and output
Nursing Notes	_____ _____ _____ _____ _____ _____ _____ _____ _____	_____ _____ _____ _____ _____ _____ _____ _____ _____	_____ _____ _____ _____ _____ _____ _____ _____ _____

NOTES

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Campaign to End Fistula

United Nations Population Fund
605 Third Avenue
New York, NY 10158

September 2020

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