NATIONAL TRAINING MANUAL

for Doctors on MANAGEMENT OF OBSTETRIC FISTULA

UNFPA

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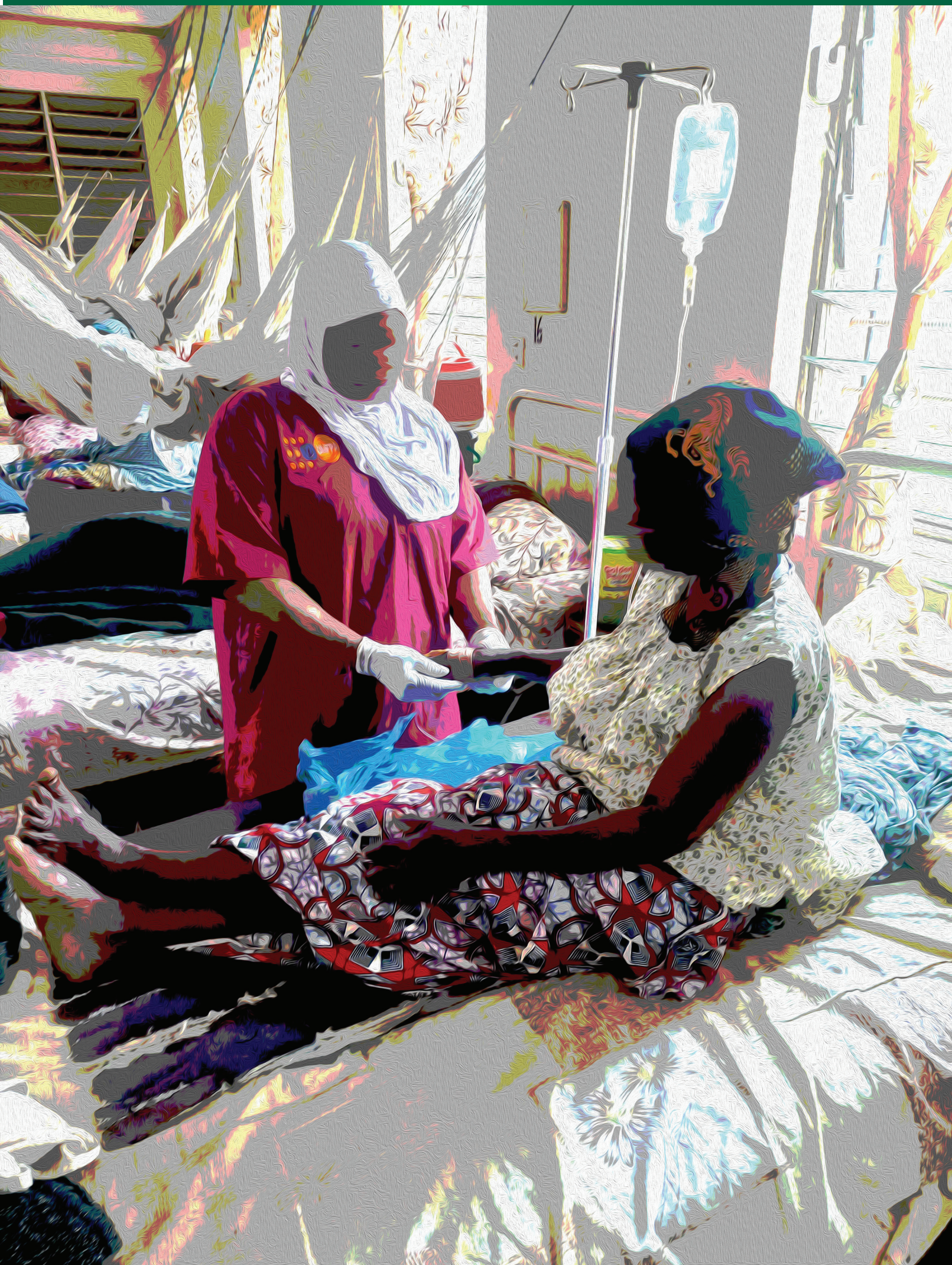

FOREWORD

Obstetric Fistula, has persisted as a public health issue in the developing world. Nigeria has an estimated prevalence of 114,048 and an incidence of 12,000 of women and girls living with Obstetric Fistula. Those Women and girls affected with obstetric fistula suffer great physical, social, psychological and mental ill Health.

Currently there are 20 dedicated Fistula Treatment Centres in Nigeria. Despite these, it is estimated that these centres can only offer surgical care to about 5,000 women with fistula annually at different levels of expertise. At this maximum rate of annual repairs, it will take about 30 years to treat the backlog of women requiring fistula surgeries. With renewed global attention to address the burden of obstetric fistula championed by UNFPA and partners, WAHO and USAID MOMENTUM Safe Surgery in Family Pianning and Obstetrics (led by EngenderHealth) in line with the National Strategic Framework for the Elimination of Obstetric Fistula in Nigeria, surgical management and rehabilitation of women with obstetric fistula will become central in addressing the burden of obstetric fistula while preventive measures are being strengthened.

It is therefore, obvious that there is a need to intensify training of more surgeons and other health workers that will deal with the backlog and provide care closer to the women suffering from obstetric fistula.

The goal of this document is to provide a national standard training material in line with global standards that shall provide respectful, simple, affordable, quality and evidence-based care that will guarantee improved quality of life for women and girls living with obstetric fistula including women with fistula deemed inoperable.

I therefore, approve the use of this document which has been carefully articulated by the VVF Technical Sub-Committee of the Reproductive Health Working Group with the hope that it will ensure good quality and uniformity in the training of Doctors on the management of obstetric fistula in Nigeria.

Professor Muhammad Ali Pate, CON
Honourable Minister of Health and Social Welfare
April, 2024

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ACRONYMS

COVID-19	Coronavirus Disease 2019
EUA	Examination Under Anaesthesia
FIGO	International Federation of Gynaecology and Obstetrics
FMOHSW	Federal Ministry of Health and Social Welfare
HIV	Human Immunodeficiency Virus
ISC	Intermittent self-catheterization
ISOFS	International Society of Obstetric Fistula Surgeons
IVF	In Vitro Fertilisation
JC	Juxta cervical
JU	Juxta Urethral
MRC	Medical Research Council
MV	Mid vaginal
NCWS	National Council of Women Societies
NFVVF	National Foundation on Vesico Vaginal Fistula
NGOs	Non-Governmental Organisation
NSAIDS	Non Steroid Anti-inflammatory Drugs
NSF	National Strategic Framework
OBGYN	Obstetrics and Gynaecology
OF	Obstetric Fistula
PBAs	Performance Based Assessment
PFRD	Persistent Fistula Related Disorders
RVF	Recto-vaginal Fistula
SOP	Standard Operating Procedure
UN	United Nations
UNFPA	United Nations Population Fund
USA	United States of America
UTI	urinary tract infection
VVF	Vesico Vaginal Fistula
WAHO	West Africa Health Organization
WHO	World Health Organization

1 INTRODUCTION

1.1 BACKGROUND

Obstetric Fistula, has persisted as a public health issue in the developing world. Nigeria has an estimated 0.24% (114,048) prevalence of women and girls living with obstetric fistula, [1] and an annual incidence of 12,000 cases. Those Women and girls affected with genital fistula suffer great physical, social, psychological and mental ill Health. [2]

Currently there are 20 dedicated Fistula Treatment Centres in Nigeria. Despite these dedicated fistula centres in Nigeria, it is estimated that these centres can only offer surgical care to about 5,000 women with fistula annually at different levels of expertise. [2] At this maximum rate of annual repairs, it will take about 30 years to treat the backlog of women requiring fistula surgeries, ignoring new cases. Furthermore, there are hundreds of women and girls in Nigeria with genital fistula who are deemed inoperable, especially in older fistula treatment centres. At this rate, the current global call to end fistula in our generation will be a mirage for Nigeria.

This therefore brings forward the need to increase access to fistula repair services and ensure that the services are of high quality for all women and girls living with genital fistulae, including those with fistulae that are deemed inoperable. To achieve this feat, human resource development is central and should be coordinated via an organised scheme of events starting with policy documentation, and capacity building.

The National Strategic Framework for the elimination of obstetric fistula in Nigeria (2025-2030) provides the policy framework focusing among other issues on 30% reduction in the prevalence of female genital fistula by 2030. The standards of practice for doctors and nurses in Nigeria, is a policy document that is a decade old and lags behind current scientific realities and global health challenges. The absence of a national training manual on fistula care has led to variance in the quality of training of fistula surgeons and nurses in Nigeria. This situation calls for development of a quality training manual on fistula care to achieve a renewed acceleration of repair to eliminate fistula by 2030.

The Federal Ministry of Health and Social Welfare with support from UNFPA and WAHO therefore, set out to bridge this policy gap by producing this training manual for doctors so as to meet the human resource needs through training of fistula surgeons that will accelerate access to the management of women and girls with genital fistula in Nigeria.

The goal of this document is to provide a national standard training material in line with global standards that shall provide respectful, simple, affordable, quality and evidence-based care that will guarantee improved quality of life for women and girls living with obstetric fistula including women with fistula deemed inoperable.

1.2 GOALS

The goals of this document are to:

i. Provide a global standard, user friendly training manual for doctors to provide holistic, respectful, simple, affordable, quality and evidence-based care that will guarantee improved quality of life for women and girls living with genital fistula.
ii. Accelerate human resource development of fistula surgeons and caregivers that will provide fistula services to all women and girls living with genital fistula at all levels of health care delivery.

1.3 PURPOSE AND SPECIFIC OBJECTIVES

The purpose of this manual is to provide a document that will serve as a guide for clinical care of fistula patients in Nigeria.

The intention is to standardised Obstetric Fistula management based on current scientific advancement and global health realities in the light of evidence based best practices in the clinical management of female genital fistula, and guaranty quality service in a manner that is respectful, safe, simple and affordable in the context of a low resource economy.

The topics covered were harmonised with the 2022 FIGO global fistula training manual [3] ranging from overview of obstetric fistula, magnitude of the problem, surgical management of the fistula clients including simple and complicated fistulae. Issues related to fistula deemed inoperable were also featured. The draft was reviewed and validated at technical review meetings by stakeholders, the Consultants harmonised and finalised inputs from these reviews to produce the final document.

1.3.1 Specific Objectives

i. To collate and review experiences and published materials on training of doctors on female genital fistula.
ii. To document and share the findings of the review of experiences and published materials on training of doctors in management of female genital fistula.
iii. To develop a simple and standard training manual for the management of female genital fistula.

2 OVERVIEW OF OBSTETRIC FISTULA

2.1 DEFINITION

Obstetric fistula is a type of female genital fistula that results from the process of child birth. Fistula is an abnormal communication between two body cavities or two epithelial surfaces. Obstetric fistula can be defined as an abnormal communication between the female genital tract and the lower urinary tract forming the urogenital fistula with consequent leakage of urine through the vagina; and / or the lower gastro-intestinal tract forming the faecal genital fistula, which allows leakage of faeces through the vagina. The most common female genital fistula is the vesico-vaginal fistula.

2.2 HISTORICAL BACKGROUND

The history of obstetric fistula goes back to primitive human history, as long as childbirth and obstructed labour have occurred. Obstetric fistula was described in an Egyptian Mummy from a royal family as far back as 2000 BC. Before the 17th Century, VVF was considered irreparable and attention was devoted only to devising receptacles for collecting urine. It was not until 1666 that Hendrick Van Roonhuyse first described VVF repair.

George Hayward of Boston, in 1839, described separating the bladder from the vagina. This was a major technical breakthrough in the repair of vesico-vaginal fistula, and is still practised today as the flap splitting dissection in standard repair of vesico-vaginal fistula.

James Marion Sims, is considered the father of fistula repair, regardless of recent critiques. He was credited with publishing an article on the treatment of VVF In 1852 and establishing the first VVF hospital in New York in the year 1860.

The transvesical approach for VVF repair was first described by Trendelenburg in 1881, while Pawlik recommended ureteric catheterization during fistula repair in 1882. Shortly after, the German Surgeon, Dittel, described the transabdominal approach to VVF repair in 1883. Martius later described the use of labial fat graft in VVF repair in the year 1928. The first fistula hospital in Africa (second in the world) was founded by Drs. Catherine and Reginald Hamlin in 1972 in Addis Ababa, Ethiopia.

In Nigeria, Dr. Ann Ward of the Medical Missionaries of Mary in Akwa Ibom State, started work on VVF in the early 50s and championed extensive work on VVF in Southern Nigeria. Majekodumi (Lagos) and Lawson (Ibadan) in the 60s did some work on VVF. Lawson worked on over 350 patients. Prof. Oladosu Ojengbende later built on Lawson's work by ensuring the establishment of a genitourinary unit at the Obstetrics and Gynaecology Department, University of Ibadan/University College Hospital, Ibadan for the training of fistula surgeons. Una Lister worked extensively on VVF patients in Northern Nigeria. Dr. Kees Waaldijk, in 1984, started the National VVF Repair Project which eventually extended to several centres in Nigeria.

Female genital fistula services remained only in the health system in Nigeria until the early 90s, when the National Council of Women Societies (NCWS) Task Force on VVF under the leadership of Dr. Amina Sambo, looked at the multi-dimensional factors associated with VVF. This Task Force later metamorphosed to what is now the National Foundation on VVF (NFVVF). The NCWS and the NFVVF spearheaded strategies to address the many factors associated with VVF and the plight of women living with urinary incontinence. The Task Force on VVF was instrumental to subsequent training of health workers (surgeons and nurses) in VVF management in the 90s and early 2000s.

United Nations Population Fund (UNFPA) in 2003 championed the global campaign to end fistula and facilitated the development of the National Strategic Framework and Plan for eradication of VVF in Nigeria. UNFPA also conducted the first ever, fistula fortnight in 2005, where over 500 women and girls with obstetric fistula were surgically repaired in five centres (Kano, Katsina, Sokoto, Kaduna and Kebbi States).

The International Society of Obstetric Fistula Surgeons (ISOFS) was founded in Addis Ababa Fistula Hospital in 2008. Drs. Kees Waaldijk and Associate Professor Sunday Lengmang from Nigeria

attended the inaugural meeting and were among the founding members of ISOFS. Dr. Catherine Hamlin, the co-Founder of Addis Ababa Fistula Hospital was the Foundation President of ISOFS while Dr. Kees was the first Vice president and later became the President of ISOFS. Professor Oladosu Ojengbede was later to become the Vice president in 2016 and during his tenure, Nigeria hosted the ISOFS conference in Abuja. At the end of the conference, Professor Ojengbede became president of ISOFS while Professor Sunday Adeoye emerged as Executive Secretary of ISOFS in 2018.

To improve the effectiveness and efficiency of fistula services in Nigeria, the Federal Government established zonal Fistula Hospitals of excellence in female genital fistula management and research. The first National Obstetric Fistula Centre was established in Abakaliki, Ebonyi State in 2011, followed by the National Obstetric Fistula Centre Babbar-Ruga, Katsina state in 2013, and the National Obstetric Fistula Centre Ningi, Bauchi State, in 2013 . The Federal Ministry of Health and Social Welfare is working with State governments and Partners to establish additional National Obstetric Fistula Centres in the remaining geo-political zones.

The National Obstetric Fistula technical working group was also established by the Federal Ministry of Health and Social Welfare to bring the various actors who continue to provide quality technical input to fistula management and programming issues in Nigeria. The working group meet quarterly to share data and review fistula management services in Nigeria, the COVID-19 pandemic slowed down physical contact meetings and introduced virtual meetings.

The United Nations commemorated the first International Day to End Obstetric Fistula on May 23, 2013, for awareness raising and mobilisation of support around the globe on Obstetric Fistula. Various partners who are committed to ending fistula observe this day annually around the world. The 2020 UN Resolution on Fistula called on every fistula-affected nation to end fistula by 2030.[4]

2.3 MAGNITUDE OF THE PROBLEM

Nigeria bears the highest burden of obstetric fistula in the world with an estimated prevalence of 114,048[1]; and an estimated 12,000 new cases annually.[2] Although the prevalence and incidence of obstetric fistula has been on the decline over the years, it is disheartening that the rate of repair lags behind the desire to end fistula in a generation. At the highest rate of repair ever recorded in Nigeria, 5,000 repairs were done in a year, it will take about 30 years to surgically operate the backlog of cases assuming there are no new cases.

2.4 PROFILE OF THE OBSTETRIC FISTULA CLIENT

Generally, the obstetric fistula patient is often poor, uneducated, unhappy and abandoned. The disease takes away their dignity and is often associated with great psychological burden. Other associated problems may include infertility, menstrual disturbance, dyspareunia /apareunia, difficulty in walking etc; with some often resorting to begging and cheap prostitution for livelihood.[5,6]

Generally, victims often end up as destitute if the incontinence is not relieved. They are socially, mentally, emotionally and sometimes physically challenged. The condition is also associated with a high foetal wastage rate of about 96%, leaving victims in a profound state of despair from childlessness, incontinence and abandonment.[5,6]

While this profile persists, there appears to be an emerging profile of fistula women who are from urban areas in their mid-thirties and forties, educated, retain their husbands and continue to work in spite of their fistula presenting with iatrogenic fistula mainly from pelvic surgeries like Caesarean delivery or hysterectomy.[7]

In Northern Nigeria, 70% of the patients are below the age of 20 years when they develop fistula, while in the South, older women are affected.[5]

2.5 LINKAGE OF NATIONAL STRATEGIC FRAMEWORK FOR ELIMINATION OF OBSTETRIC FISTULA TO THE TRAINING MANUAL FOR FISTULA REPAIR

The fistula surgeons and trainees should be familiar with contents of the National Strategic Framework for the elimination of VVF in Nigeria (2025-2030). The framework's strategic approaches include: enhance policy and governance; quality of maternal care; strengthen community education and awareness; access to timely surgical care; address socio-economic determinants; strengthen coordination and collaboration; improve financial accessibility; research and innovation; engagement of men and boys; and data generation including monitoring and evaluation. The treatment priority area targets a 50% reduction of the backlog of women and girls with genital fistula in Nigeria by: expanding the national and state treatment centres; promoting mandatory rotation of OB GYN resident doctors to fistula centres; increasing the number of fistula repairs; expanding the use of catheterization for early management of obstetric fistula; developing system of classification of fistula surgery and a system of referral of complex fistula cases to experienced surgeons; providing standardised basic and specialist training for doctors, nurses and other health professionals in OF prevention and management; and instituting a system of quality assurance of OF treatment centres among others. This training manual addresses many of these key activities.

2.6 PUBLIC HEALTH VIEW OF OBSTETRIC FISTULA

In Nigeria, Obstetric Fistula is a major public health concern that requires specialised units and personnel for treatment and prevention. The Public Health Strategy should include creating awareness among patients on their rights to adequate obstetric care and addressing issues of access to care like:

- Improving various modalities that can facilitate access to maternal care for pregnant women;
- Provision of functional health care facilities where emergency obstetric care can be accessed;
- Development of road network and emphasis on girl and boy child education as important tools for the prevention of obstetric fistula;
- Community microfinancing of health to help support access to healthcare in the community.

Maternal health advocates should be encouraged to refer all pregnant women to Skilled Attendants for childbirths. According to the USA National Vital Statistics, there were 171,674 child births by teenage mothers in 2019. However, there was no single obstetric fistula.

Overall, the focus on improving obstetric care should be the hallmark of strategies to prevent obstetric fistula. It is the collective responsibility of government at all levels, civil society, NGOs, and communities to ensure that obstetric fistula is eradicated from Nigeria using a multi-faceted approach.

3 PATHOLOGY OF OBSTETRIC FISTULA AND OTHER FORMS OF FEMALE GENITAL FISTULA

3.1 BASIC SCIENCES RELATED TO OBSTETRIC FISTULA

The fistula surgeon should be very conversant with anatomy of the pelvis, particularly the bony pelvis. The female bony pelvis is made up of the sacrum, the coccyx on the posterior aspect, and three pairs of bones – ileum, ischium and pubis forming the lateral and anterior portion. This bony framework forms the wider pelvic inlet and narrower outlet through which the baby rotates to descend through the passage. Thus, fistula surgeons should also be conversant with the various types of the female pelvis that exist such as gynaecoid, android, anthropoid and platypelloid; and their relevance to childbirth. Any factor contributing to an abnormality in the pelvis (e.g., Rickets, undernutrition) the uterus or baby (e.g., Cephalopelvic disproportion, macrocephaly) could lead to an arrest of descent of the baby (obstructed labour), a predominant cause of obstetric fistula. Also, the anatomy of the intrapelvic structures including their vasculature and innervations and of the perineum should be known. Similarly, one must also be familiar with the basic physiology of micturition (urination), defaecation, continence mechanism of stool and urine in the female as well as the physiology of menstruation. These would enhance understanding of the aetio-pathogenesis of obstetric fistula.

3.2 CAUSES OF OBSTETRIC FISTULA AND OTHER FORMS OF FEMALE GENITAL FISTULA

3.2.1 Direct Causes of Female Genital Fistula

i. Prolonged obstructed labour (major cause)
ii. Injury to the bladder, and/or rectum during Caesarean section and other gynaecological operations or interventions
iii. Instrumental vaginal delivery like use of obstetric forceps and destructive operations on the dead foetus in the uterus.
iv. Direct fall on a sharp object or during road traffic accident
v. Symphysiotomy
vi. Harmful traditional practices like FGM such as “yankan gishiri” or other traditional practices which involves application of douching with harmful chemical solutions
vii. Rape
viii. Coital Injuries

3.2.2 Other Causes of Female Genital Fistula

i. Foreign bodies
a. Insertion of caustic salt and paste, etc
b. Insertion of sexual toys
ii. Infections
a. Granulomatous infections like lymphogranuloma venereum
b. HIV
c. Tuberculosis
iii. Tumours:
a. Advanced cancer of the cervix
b. Advanced cancer of the bladder
iv. Radiotherapy

3.2.3 Indirect Causes of Female Genital Fistula

i. Poverty
ii. Illiteracy and ignorance
iii. Poor infrastructure
iv. Poor obstetric care
v. Industrial strike
vi. Cultural or religious beliefs and practices such as early pregnancy
vii. Malnutrition, particularly in children
viii. Insurgency and displacement

3.3 PATHOLOGY AND PATHOPHYSIOLOGY

Following prolonged obstructed labour, pressure by the foetal presenting part on the vagina, bladder / urethra, rectum and pelvic nerves, in between, against the bony pelvis results in necrosis of the soft tissue involved causing VVF, RVF and obstetric palsy.

Figure 1: Pathophysiology of obstetric fistula:

Abnormal presentation / Cephalopelvic disproportion
↓
Obstruction
↓
Not relieved on time
↓
Compression
↓
Prolong pressure of foetal head against the hard maternal pelvis
↓
Interference in the blood supply
↓
Ischaemic necrosis of intervening soft tissue
↓
Obstetric Fistula

3.4 CLASSIFICATION

3.4.1 Urogenital fistula

i. The anatomical position of the fistula could be described as:-

- Juxta-urethral (JU)
- Juxta-cervical (JC)
- Mid-vaginal (MV)
- Combined
- Vault

ii. The size of the fistula could be described as:-

- Small <2 cm in diameter
- Medium 2-3 cm
- Large 4-5cm
- Extensive >6cm in diameter

iii. Urethral or involvement of the continence mechanism (physiological outcome: Revised Kees Classification 1995)

1. Fistula not involving the continence mechanism
2. Fistula Involving the urethral closing mechanism

A. Without (sub) total urethral involvement
B. With (sub) total involvement

a. without circumferential defect
b. with circumferential defect

3. Ureteric fistula and other exceptional fistulas

3.4.2 Faeco-genital Fistula (Recto-vaginal Fistula (RVF))

I. Anatomical position of the fistula could be described as:

a. Upper RVF
b. Lower RVF

Demarcation is the pubo-rectalis muscle.

II. Size of the fistula could be described as:

i. Small <2cm in diameter
ii. Medium 2-3cm
iii. Large 4-5cm
iv. Extensive >6cm in diameter

III. Involvement of the anal Sphincter

(Any of the rectovaginal fistulae with involvement of the anal sphincter) check the complete classification A&B).

3.4.3 Classification Based on ease of Repair and Repair Outcome

Female genital fistula can also be classified based on the ease of repair and the anticipated outcome into simple (easy to repair and good prognosis) and complex/ difficult (complicated and uncertain prognosis) fistulas.

Table 1

Criteria based on the degree of anticipated ease of repair (WHO Criteria)		
Characteristic of fistula	Simple	Complex
Site	Mid vaginal VVF	Recto-vaginal (RVF), Mixed VVF /RVF Involvement of cervix
Size	<4cm	>4cm
Involvement of the urethra / continence mechanism	Absent	Present
Scarring of the vaginal tissue	Absent	Present
Presence of circumferential defect*	Absent	Present
Degree of tissue loss	Minimal	Extensive
Ureter/bladder involvement	Ureters are inside the bladder, not draining into the vagina	Ureters are draining into the vagina; bladder may have stones
Number of attempts at repair	No previous attempt	Failed previous attempts at repair

*Complete separation of urethra from bladder. Adopted from Obstetric Fistula and Other Forms of Female Genital Fistula: Guiding principles for clinical management and programme development (UNFPA, 2020)

3.4.4 Classification based on difficulty of cases for the different levels of training

Table 2

CLASSIFICATION OF FEMALE GENITAL FISTULA BASED ON EASE OF IDENTIFICATION OF TYPES OF FISTULA FOR THE THREE LEVELS OF TRAINING (LENGMANG SJ - UNPUBLISHED)		
DIRECT FISTULA (Fistula seen on direct genital exam)	**INDIRECT FISTULA (Fistula not seen on direct genital exam)**	**SPECIAL FISTULA & RELATED COMPLI-CATIONS**
Direct simple fistula	Intra-cervical (vesico-cervical) fistula	Ureteric fistula (uretero-cervical fistula)
MV	Vesico-Uterine Fistula	Extensive Fistula requiring flaps or grafts
JC	Entero-Uterine Fistula	Complete Urethral loss
JU		Fistula with severe fibrosis
RVF		Fistula with severe vaginal stenosis
PERINEAL TEAR		Genital Fistula following radiotherapy
Direct complex fistula		Paediatric congenital fistula
Pinhole		Uretero-appendiceal fistula
Circum-ferential fistula		Uretero-cutaneous fistula
Vault Fistula		Fistula deemed inoperable
Fistula+bladder stone		Post closure incontinence
Multiple Fistula		Vaginal stenosis (bahanya)
Fistula Moderate fibrosis		
Fistula+ureter outside the fistula		
Lungu fistula (around the corner fistula)		
RVF with stricture		
Circum-ferential RVF		

3.4.5 Other Classifications

Goh classification, Tafesse classification, FIGO Classification and others exist.

The fact that numerous classifications exist suggest that it is difficult to have one standard criteria that addresses all the issues concerned and that fistulae vary so much and findings could be subjective. Whereas some classifications are mainly descriptive based on the location of the fistula, others mainly refer to the complexity of the fistula and ease of selection for training at different levels; others refer to expected outcome of surgery and prognosis. It is therefore difficult to use only one classification. It is therefore recommended that each fistula is well described so as to make it easier to fit into any preferred classification system.

3.5 PREVENTION OF OBSTETRIC FISTULA

Prevention of OF are actions aimed at eliminating OF from occurring and includes actions at minimising the impact of genital fistula and its associated disabilities when it has occurred.

Prevention of OF has four main components as shown in table 3 below.

Table 3

Table 3: Levels of Prevention		
Types	**Timing**	**Target**
Primordial Prevention	Underlying Condition leading to causation	Total population / selected groups
Primary Prevention	Specific causal factor	Total population / selected groups / Individuals
Secondary Prevention	Early stage of disease	Patients
Tertiary Prevention	Late stage of disease (treatment and rehabilitation)	Patients

3.5.1 Primordial Prevention

- Childhood and women nutrition
- Formal education particularly for the girl child and women
- Planning for all pregnancies by use of appropriate contraceptive(s)
- Delaying the age of first pregnancy
- Birth spacing and easy access to family planning information and services
- Overcoming cultural barriers that subjugate women
- Peace and stability for easy access to healthcare

3.5.2 Primary Prevention

- Functional prenatal care
- Birth preparedness and complication readiness
- Knowledge and identification of possible

problems (danger signs) during pregnancy and childbirth
- Skilled professional attendant at birth
- Easy access to basic and comprehensive emergency obstetric care
- Consistent use of Labour Care guide for monitoring of labour
- Easy and quick means of referral when problems arise in labour
- Use of indwelling Foley's catheter for 7 to 14 days or longer for women who had obstructed labour.

3.5.3 Secondary Prevention

These are designed to identify fistula early and provide immediate conservative and / or active early surgical treatment of fistula.

- Knowledge and identification of symptoms and signs of fistula
- Immediate use of Foley's catheter for all women who developed fistula after obstructed labour or surgery.
- Quick and easy access to centres with capability for fistula treatment
- Identify and reach women with fistula and mobilise for early treatment.

3.5.4 Tertiary Prevention

The major goal is to improve the quality of life.

- Effective surgical treatment and the prevention of complications
- Physiotherapy for pelvic floor and foot drop
- Rehabilitation and social reintegration

3.5.5 Community Involvement and Advocacy

Women living with fistula very often suffer stigmatisation and discrimination, and sometimes become social outcasts.

- Empowering women, men and communities towards safe motherhood
- Advocacy for free or subsidised ANC and obstetric care
- Information on availability of fistula treatment services
- Advocacy at all levels of government and leadership on the problems of unsafe motherhood, including fistula
- Promoting fistula awareness, prevention and treatment.
- Develop and implement national and subnational action plans on eradication of obstetric fistula.
- Human rights and legislations: To protect the fundamental human right of women (right to life, education, health and self-determination).

Pre-operative care for genital fistula patients is critical to the success of their surgical management. Furthermore, the fact that many of these women and girls with genital fistula may access modern health services for the first time during such encounters. It is important that they have a very thorough general health assessment. Their management, therefore, requires a thorough history, complete physical examination and investigations to make a good diagnosis of the fistula and of any other co-morbid conditions.

4 PRE-OPERATIVE CARE OF PATIENTS WITH OBSTETRIC FISTULA

4.1 DIAGNOSIS OF OBSTETRIC FISTULA (MEDICAL AND SOCIAL EVALUATION)

4.1.1 History

A detailed history must be obtained which includes:

i. Biodata: This include name, age, parity, last child birth, number of children alive, address of place of residence, telephone number if any, local government area, state of origin, religion, ethnic group, marital status, age at marriage, age at first coitus, educational status, occupation, husband's educational status and occupation; age at menarche, date of last menstrual period.

ii. Presenting complaint and duration of the complaint

iii. History of presenting complaint [should include labour and delivery events preceding the fistula], duration of labour and where it occurred:

- Mode of delivery; Vaginal delivery, vacuum delivery, Forceps delivery, Caesarean section and other Operative procedures like symphysiotomy, craniotomy (destructive operation)
- Assistance or procedures (like Gishiri cut, insertion of substances, fundal pressure) made during labour or delivery.
- How soon after delivery did the leakage start?
- Foetal outcome
- If there was delay in accessing health care, enquire for reasons for the delay
- Is the patient capable of voiding (per urethra) despite the leakage?
- Other associated morbidities such as recto-vaginal fistula, gait abnormality, amenorrhoea, pain or difficulty with intercourse or absence of sexual activity.
- Any treatment so far: orthodox and unorthodox or both.
- What has been the source of support since the illness? Is there any associated marital disharmony due to the ailment?
- Obtain history of mental health (insomnia, depression, aggression, mutism), Substance abuse including alcohol, head injury, etc.

iv. Social History to include any abandonment, stigmatisation, family network (where is the patient currently residing, who is supporting her). Find out her trade or skills, enquire about her source of income.

v. History to review all systems to find out existing comorbidities – vaginal bleeding, fever, abdominal pains, cough, dyspnoea, headaches, excessive weight loss, diarrhoea and vomiting.

vi. Past medical history including history of previous surgical procedures.

4.1.2 Physical Examination

General examination - height, weight, gait, foot drop, odour, dehydration, pallor, jaundice, pedal oedema, lymphadenopathy, decubitus ulcer.

Cardiovascular system – pulse rate, blood pressure, and heart sounds.

Respiratory system – respiratory rate and listen to the chest for abnormal breath sounds.

The abdomen – examine for scar, tenderness, masses, fluids, uterus.

Vaginal examination: follow inspection and palpation principles. Start with the patient in the dorsal position and then the left lateral position during examination with the speculum.

Inspection of the vagina involves both direct visualisation and the use of the Sim's speculum: Inspect for wetness or faecal soiling on the perineum, buttocks and wrappers, rashes or ulcers on the buttocks. Look for urine coming through the urethra. Test for stress incontinence by asking the patient to cough. The test is interpreted as positive with urine coming through the urethra. Confirm true urinary incontinence and exclude it from stress incontinence and other forms of urinary incontinence. If no obvious fistula is seen, do a dye test. Observe for faecal matter in the vagina for RVF.

Digital examination should also be done in this position to determine the degree of gynaetresia and to choose the appropriately sized Sim's speculum. During digital examination note the size, number, site of fistula and degree of scarring or fibrosis. At examination with the speculum: the site, size and number of fistula should be noted. Also note any present or past perineal tear, absence of the perineal body, scaring or defect in the vagina. There may be narrowing or shortening or other abnormalities involving the Vagina.

If a fistula is not obvious at this stage, it may be likely that a uretero-vaginal fistula or stress incontinence, or a minute VVF or a vesico-cervical fistula may be present. A bladder dye test may be necessary to facilitate diagnosis.

4.1.3 Direct Dye Test
It is a test done when a fistula is not seen on speculum examination. As much as 180mls of diluted methylene blue or gentian violet should be instilled into the bladder while blocking the external urethra opening with a gauze to prevent leakage. It is positive when dye is seen in the vagina.

Interpretation:
Positive test indicates a vesico-vaginal fistula, vesico-cervical or vesico-uterine fistula.

Negative test indicates a ureteric fistula and occasionally, pinhole VVF. A clean urine coming through the cervical os confirms a ureteric fistula. However, a swab test is worth doing for further evaluation.

4.1.4 Three Swab Test
180mls of dye is instilled into the bladder and then the catheter is removed. Then, 2 to 3 swabs or gauze are placed into the vagina, and the patient is ask to walk around for 30 minutes.[5]

Interpretation:
Swabs wet but not stained mean there is ureteric fistula which may be iatrogenic or congenital.

Inner swab stained with dye indicate a VVF while stress incontinence is suspected if the outer swab alone is stained with dye.

Neurological examination using the Medical Research Council (MRC) Scale is necessary especially when there is foot drop or a fresh fistula. Anal reflex and musculo-skeletal system should also be examined.

4.1.5 Rectal Examination
Rectal Examination should be performed in patients with Recto-vaginal Fistula and other perineal injuries.

4.1.6 Investigation
A minimum number of tests should be encouraged as much as possible to reduce the cost of healthcare. Tests that can be done include but not limited to pregnancy test, haemoglobin estimation (or packed cell volume), blood group and HIV test. For urinalysis, special consideration for urine sample collection must be made in order to avoid contamination from the vagina.[5]

Specific investigations such as upper urinary tract sonography, urinary tract contrast study (intravenous urography and cystoscopy), and urodynamics may be indicated in certain cases.

Other investigations may be necessary when co-morbidities exist.

4.1.7 Examination Under Anaesthesia (EUA)
Considering the cost and the risk of EUA, it is suggested that examination without anaesthesia in the lithotomy position should be conducted. However, EUA can be done preceding surgery while the patient is in theatre for surgery.

4.1.8 Indications for Surgery
As soon as the fistula is clean and inflammatory processes have abated and there are no other concurrent medical morbidities, surgical repair can be performed.

4.2 PRE-OPERATIVE CARE

Patient and family should be appropriately counselled about:
1. Condition
2. Nature of treatment
3. Possible complications from surgery and anaesthesia
4. Obtaining informed consent

4.2.1 Clerking
Every OF patient should undergo normal pre-operative admission procedure which will include repeat history taking, physical examination and laboratory investigations if the preceding evaluation was more than two weeks.

There should be a nutritional evaluation of the patient on presentation and strategies to build up the patient nutritionally before surgery. Anaemia if present must be corrected. Other co-morbidities like diabetes or hypertension to be controlled before surgery.

4.2.2 Preoperative antibiotic(s)
This may not be indicated as routine for OF patients, however global standard requires a single dose of antibiotics for every pelvic or abdominal surgery before the first incision is made.

Bowel preparation: The patient's last meal should be before 10.00pm (8 hours before surgery) and enema early in the morning of the surgery.

For patients with RVF, bowel preparation should commence at least three days before surgery in the form of liquid diet and may include gut sterilisation with oral antibiotics.

Body Preparation: Early morning bath on the day of the surgery.

Movement to the theatre: Patients should be conveyed to the theatre on a trolley or wheelchair but returned to the ward after the surgery on a trolley.

4.2.3 Patient with HIV/AIDS
It is not uncommon to find women with fistula testing positive for HIV, Hepatitis B and C. Therefore, all fistula patients should be offered HIV, Hepatitis B and C screening, as this may be their only opportunity for accessing the service. In screening patients for HIV, Hepatitis B and C follow the standard procedure of HIV, Hepatitis B and C testing and counselling. Those found positive should be offered the appropriate care. No fistula patient should be denied surgery or care for the reason of their status unless they are not physically fit for the procedure.

4.3 COUNSELING

Counselling is a major aspect of managing obstetric fistula patients. This can be conducted for patients and their families at every stage of the management process. Some patients may require psychotherapy, additional treatment for mental health issues or spiritual support.

The components of spiritual support may include the following, depending on the individual's beliefs, preferences, and cultural background.

1. Active listening: Healthcare providers should actively listen to patients' spiritual concerns, needs, and questions without judgement or bias.

2. Meaning and purpose: Encouraging patients to explore and find meaning and purpose in their lives, particularly in relation to their illness or suffering.

3. Support and empathy: Providing emotional support and empathy to patients and their families during challenging times, recognizing the impact of illness on their overall well-being.

4. Rituals and religious practices: Respecting and facilitating patients' religious or spiritual practices, rituals, or observances that are important to them during their healthcare journey.

5. Culturally sensitive care: Recognizing and understanding the diverse cultural and religious backgrounds of patients, and tailoring spiritual care according to the individual's specific beliefs and customs.

6. Collaboration with spiritual leaders: Collaborating with spiritual leaders, such as chaplains, priests, imams, or other religious figures, to provide guidance, support, or specific religious rituals as needed.

7. Reflective moments: Encouraging patients to engage in moments of reflection, meditation, prayer, or other practices that promote self-awareness, peace, and tranquillity.

8. Education and resources: Providing patients and their families with resources, literature, or information about spiritual practices, support groups, or organisations that can help them explore and enhance their spiritual well-being.

9. Ethical decision-making: Assisting patients in navigating complex ethical dilemmas or decisions that may arise in the context of their healthcare, taking into account their spiritual values and beliefs.

10. Interdisciplinary collaboration: Working collaboratively with other healthcare team members, such as nurses, social workers, psychologists, or palliative care specialists, to provide comprehensive and holistic care that addresses patients' spiritual needs along with their physical, emotional, and social well-being.

4.4 PHYSIOTHERAPY

Situations that may require physical therapy include foot drop from obstetric palsy (injury to the nerves of the sacral plexus), overflow incontinence from urinary retention due to atonic bladder, faecal incontinence from weak anal sphincter etc. For these reasons it is advised that a physiotherapist be part of the obstetric fistula treatment team. Basic processes for the physical therapy of some of these conditions include:

4.4.1 Foot Drop

Encourage early ambulation and physiotherapy. Show patients how to dorsiflex foot passively and at intervals.

4.4.2 Atonic Bladder

The bladder should be catheterized and drained for at least 2 weeks followed by bladder training: (a) Spigotting (b) frequent micturition. Cholinergic drugs can be used.

4.4.3 Weak Anal Sphincter

Do pelvic floor muscle exercise. Teach patients how this is done (4.3.5.)

4.4.4 Unstable Bladder

Make efforts to determine the cause of the irritable bladder such as stone, urinary tract infections and very small bladder. In intractable cases refer for urodynamic studies.

4.4.5 Pelvic Floor Exercise

Since the American Gynaecologist Arnold Kegel first described and published pelvic floor exercise in 1948, several versions of the exercise have been described and is said to be useful for women and men. Pelvic floor exercise is sometimes called Kegel's exercise.

The exercise aims to strengthen pelvic floor muscles. In women, the pelvic floor muscles help in holding up the bladder, so the exercise can help in preventing urinary stress incontinence, vaginal and uterine prolapse.

The exercise can be done by squeezing the pelvic floor muscles very quickly for about 10 seconds, followed by complete relaxation for about 10 seconds. This is done 45 times daily, divided into three sessions to prevent muscle fatigue. The exercise can initially be done lying down, then sitting and then standing.

While doing the exercise, ensure to breathe normally and avoid increasing the intra-abdominal or pelvic pressure which can lead to a counterproductive effect.

5 SURGICAL TREATMENT OF PATIENT WITH OBSTETRIC FISTULA

5.1 ANAESTHESIA

Good anaesthesia begins from pre-anaesthetic evaluation of the patient in the ward at least one day before surgery for elective cases. The patient is screened and evaluated for fitness for anaesthesia and surgery. A decision is made about the preferred form of anaesthesia and discussed with the patient (anaesthetic counselling). An informed consent for anaesthesia and surgery should be obtained in the ward, before the day of surgery.

It is good practice for the entire team to meet on the day of the surgery to discuss the operation list. The surgeon, anaesthetist and peri-operative nurse all discuss what they intend to do for each patient on the list and expectations are shared and issues clarified. Concerns from all parties participating in the surgery are brought and dealt with as a team before starting the surgical list.

At least a nurse anaesthetist must be present during anaesthesia. However, the surgeon should be familiar with the procedures of administering spinal anaesthesia, and should be present too while the anaesthesia is being administered to provide assistance where needed.

In situations where the surgeon administered the spinal anaesthesia, the Nurse anaesthetist must be present to monitor the patient during surgery and immediate post-operative period.

The anaesthetist should regularly monitor the vital signs intra-operatively and record such in an anaesthetic chart.

For Spinal anaesthesia, preload patients with 1-2 litres of intravenous fluid (preferably Ringer's Lactate solution or Normal Saline) before the spinal anaesthesia. Pre-operative preload of patients improves safety of spinal anaesthesia and is very useful for the surgeon as it makes it easier to see the ureteric opening with the constant spillage of urine into the bladder.

Take the vital signs and document before anaesthesia and at regular intervals.

Drugs that should be available in the theatre include:

- Bupivacaine 0.5% (heavy Marcaine)
- Lignocaine
- Pentazocine
- Promethazine
- Atropine
- Hydrocortisone
- Adrenaline
- Ephedrine
- Ketamine
- Intravenous fluid (Ringer's lactate, Normal saline, 5% dextrose in water)

5.1.1 Types of Anaesthesia

In most cases, spinal anaesthesia is recommended but in some instances general anaesthesia may be indicated.

The following minimum anaesthetic equipment and consumables are required:

- Ambu Bag and or bag-valve mask
- Oxygen
- Cuffed endotracheal tubes
- Laryngoscopes with good batteries
- Intravenous infusion and blood giving sets
- Intravenous cannulas (preferably sizes 18G to 14G)
- Syringes and Needles (Syringes sizes 2mls, 5mls, 10mls and 20mls)
- Anaesthetic Machine
- Anaesthetic Gases (Halothane)
- Savoflorence
- Suxamethonium
- Propofol
- Ketamine
- Suction Machine

Post-operative Anaesthetic Recovery Care: Patients should be observed for 15-30 minutes in the recovery room after surgery. During this time, check vital signs and the patient's level of consciousness regularly.

Possible complications of spinal anaesthesia:

- Headache and vomiting
- Backache
- Hypotension and total spinal shock
- Spinal anaesthesia wearing off before the end of surgery

Prevention of Complications of Spinal Anaesthesia:

a. Use fine spinal needles – preferably 25G or 26G and heavy marcaine at spinal position L3 to L5. Keep the patient's head elevated with a pillow for at least 20 minutes after spinal anaesthesia. The dose of spinal anaesthesia administered should be relative to the weight of the patient.

b. Failed spinal anaesthesia: Second dose of anaesthesia can be given but if there is contra-indication alternative technique can be considered.

c. A patient who is given sufficient intravenous fluid at the preloading stage is unlikely to develop hypotension. However, if the patient develops hypotension or shock, give normal saline/Ringer's lactate fast to elevate the blood pressure and thereafter, maintain the blood pressure with the same fluid. If available, administer ephedrine intravenously.

d. For a patient who is vomiting during anaesthesia, give promethazine and turn the head of the patient sideways.

5.2 TREATMENT OF FEMALE GENITAL FISTULA

The management of a woman with obstetric fistula should be approached in a multidisciplinary manner. As patients with these conditions often suffer from other ailments be it mental, neurologic, nutritional disorders etc. The social and economic impact should also be considered. Hence, all available personnel from the surgeon to physiotherapist, psychiatrist, and social workers should be engaged in the fistula management

After a detailed history and examination, it is important to consider the following

I. Is the patient clinically stable?
II. Can the fistula be managed conservatively?
III. If surgery is mandated, is it within the capacity of the surgeon and the facility?

Clinical conditions such as sepsis, severe malaria, urosepsis, etc., should be looked out for in clinically unstable patients and managed appropriately. Necrotic tissue within the perineum should be debrided in a fistula centre.

5.2.1 Conservative Management

According to the national guideline put forward by the federal ministry of health and Social Welfare [8], conservative management of obstetric fistula by the insertion of catheter should be recommended for the following:

I. Occurrence of fistula injury within 4 weeks
ii. Fistula size (not more than 4cm) not large enough to allow visualisation of the catheter within the vagina
iii. Fistula not from complications of radiotherapy, infection, malignancy etc.

The rationale behind catheterization is to allow healing of fistula edge by preventing bladder distension. Catheterization for 4 weeks is recommended.

Antibiotics or other medications may be recommended based on the patient's clinical features. The success rate of conservative management is estimated at 25%. Moreover, its simplicity reduces the cost of health care drastically and saves the patient from mental and surgical stress.

Liberal fluid intake of 5 litres (i.e., 10 sachets) of clean water is recommended to enhance microbial clearance and prevention of bladder stones.

Catheter insertion should be aseptic. It is recommended that the balloon be inflated with 5 - 10 mls of fluid and catheter connected via an open drainage system for 4 weeks while ensuring that the catheter is changed at two weeks. Take into account the rule of fours:

- Fistula size ≤ 4cm
- Injury recovery ≤ 4 weeks
- Catheter inserted for 4 weeks
- Follow up patient for ≥ 4 month after treatment

Discontinue catheter treatment if:

I. Catheter is seen in the vaginal during insertion or after 24hrs
II. Catheter is not draining during insertion or after 24hrs follow-up
III. Patient not actively drinking

At 4 weeks follow-up

I. Remove catheter if client is dry and well
II. Discharge patient after one-week follow-up if continence is achieved otherwise refer

Adequate counselling of patient should be based on the following during discharge

I. Resumption of sexual intercourse three to six month after treatment
II. The need to visit the clinic in case of problems e.g., urine leakage, pain with micturition
III. Importance of child spacing and available contraception
IV. The need to attend antenatal services in subsequent pregnancies
V. Deliveries of subsequent pregnancies should be via safe elective Caesarean section

Surgical management of fistula

It is important to note that most of the surgical management of fistula is not an emergency, hence, patients should be clinically and mentally fit and the fistula is clean before being prepared for surgery. Before 2004, a general rule had existed that tissue reaction around the fistula had to subside i.e. 3 months before an attempt of repair is made.

Dr. Kee's work [9] brought a better approach and understanding to early fistula closure where 95.2% of the 1,633 who had early fistula repair (between 3 to 75 days) had their fistula closed. This enhances early reintegration of the woman into the society which could prevent severe social, marital and mental health complications. This however depends on the competence of the surgeon in handling more delicate tissues.[9]

5.3 OPERATIVE TECHNIQUES

5.3.1 Route of repairs

- Vaginal approach is preferred for repair of most cases in Nigeria.[5]
- The level of expertise and preference determines the approach (vaginal or abdominal) for high fistulas e.g., vesico-cervical (intracervical) or uterine fistulae.
- Consider an abdominal approach for fistulae that is not accessible by the vaginal route like vesico-cervical (or uterine) fistulae.
- Abdominal approach is also the preferred route for treatment of ureteric fistula. The expert fistula surgeons can re-implant the ureter into the bladder via the vaginal route. [5, 10]
- The surgeons should choose the route that he/she is most comfortable with and one that is within his/her competence.

5.3.2 Positioning of the Patient

The aim of positioning in fistula surgery is to maximise exposure. It is a very important aspect of fistula surgery as it accounts for easier accessibility to the surgeons and is best done before scrubbing.

(I) For vaginal route repairs, place the patient in lithotomy position (patient lying on her back with the legs and feet handing on stirrups) with the head of the table tilted downward to about 25o – 30o. The use of shoulder support pads helps prevent patients slipping down headlong. When there are no shoulder support pads, the anaesthetist can use a pillow and / or guide the level of head tilt. The exposure gets better when the buttocks are placed beyond the table and legs abducted in exaggerated Trendelenburg position. [10]

To improve access, the following are done:
Bilateral sutures are applied to the labia majora / minora and an Auvard (weighted) speculum is placed to provide more exposure. For small introital opening, a unilateral or in extreme cases bilateral episiotomy (ies) are done at 5 o'clock and or 7 o'clock positions. The weighted speculum is used to retract the posterior aspect of the vagina. To prevent faecal contamination of the surgical field, a piece of sterile gauze is placed over the posterior commissure ensuring it extends from the vaginal orifice to the anus. If this does not help, a stay suture can be applied across the lower aspect of the anus.

(II) For abdominal approach, the patient is placed in supine position and often with head tilt to help displacement of the bowel away from the pelvis and ease packing of the bowel with abdominal packs. [10] For the majority of the patients, you do not need to go through the abdominal cavity since the urinary tract is extra peritoneal.

(III) All patients should have a screen that shields them from seeing what is happening below their chest. Adequate illumination is achieved by adjusting the head of the lamp to centre on the operating field. Use of headlamps and positioning the operating table with access to natural sunlight can be used in limited resources.

5.3.3 Position of the Surgical Team and Placement of Instruments

In vaginal procedure: For a right handed surgeon, the scrub nurse stays on the right side and vice versa. The assistant surgeon stays opposite the scrub nurse. When there is need for a second assistant surgeon, she/he stands cephalad to the scrub nurse.

5.3.4 Final Evaluation

With the patient under anaesthesia and appropriately positioned, repeat vaginal examination to determine classification and level of competence. During the examination under anaesthesia, note the position, size and number of fistulae; the associated degree of fibrosis and presence of rectal fistula. Sound the bladder for the presence of bladder stone(s).

Measure the distance from the external urethral opening to the fistula. Specifically look for circumferential defects (that is urethra or bladder detached from each other) and the fistula hidden in the corner behind the pubic bone as well as the ureteric orifices. When there is circumferential defect, ascertain the patency of the distal piece of the urethra and extent of proximal urethral loss. The ureteric orifices must be localised, especially in fistula near the cervix and / or large ones. All efforts and perseverance to locate the ureteric orifices are worthy of investment.

After the examination, decide your level of competence before scrubbing. If the fistula is beyond your competence, please refer.

5.3.5 Scrubbing Procedure for Operating Team

Notwithstanding the vaginal area for the surgery, fistula surgery is a sterile procedure and must be treated as such. Standard scrubbing procedure with use of adequate water and soap including Povidone iodine scrub (if available) should be adhered to by the anaesthetist for administration of the spinal anaesthesia. The scrub nurse, the surgeon and assistant surgeon(s) must wear the appropriate operating gown with cap, mask and gloves. It is advisable to double glove for surgery. The anaesthetist should wear only a theatre gown with cap, mask and gloves.

5.3.6 Field Preparation

Standard / Routine cleansing and draping should be done. Randomised Controlled Trials evidence finds no difference in surgical site infections among patients who have had hair removed prior to surgery and those who have not. However, if it is necessary to remove hair, the use of clipper or depilatory creams are recommended as opposed to the use of razor. (Cochrane Collaboration, 2008). Clean the operative area with 1.0% aqueous solution of chlorhexidine in cetrimide (or 10% povidone iodine) solution three times starting from inside the vagina and moving outwards, clean the perineum up to the level of the umbilicus and down to the medial aspect of the mid-thigh and dry with a dry swab. Systematically drape the operating field. Leggings, drapes with a hole or straight drapes may be used depending on availability. Get adequate towel clips to hold the draping securely.

5.3.7 Improving Access and Lighting

Working in the vagina to fix an obstetric fistula poses the challenge of working in a hole. Adequate exposure is required. One can achieve this by: Good positioning and illumination as stated in 5.3.2 above.

5.3.8 Dissection and Tissue Mobilization

You may wish to infiltrate round the fistula with 1:100,000 aqueous solution of adrenaline to help with haemostasis and raise the tissue planes. Before using adrenaline, make sure the patient is not hypertensive. Where the patient is hypertensive, use plain normal saline to infiltrate the tissue and define the tissue plain for ease of dissection.

Catheterize the ureters with size 4-6 Fr ureteric stents where the orifices are localised. Small sized NG tube could be used as substitutes where ureteric catheters are not available. Incise around the margin of the fistula with bilateral extensions starting with the point most accessible (usually the lower margin). A midline vertical extension of the upper margin incision in such a manner that gives a three flap piece of the vaginal mucosa at dissection makes it easier. Dissect as needed to close the bladder without tension. It is easier to start dissecting from the lower margin to ensure that bleeding does not obscure vision if dissected starts from the distal portion. Use of appropriate instruments eases the process. Whether the ureters were visualised or not, avoid accidental injury to the structure. Secure haemostasis by use of haemostatic clamps or direct pressure. Areas of attention for excessive bleeding include the lateral sides of the urethra, the base of the bladder, lateral side of the cervix and the lateral walls of the vagina.

5.3.9 Closing the Fistula

This involves closing the bladder and later the vaginal skin. Each stitch should be purposefully placed. Bladder closure should be with inverting sutures using 1 or more layers of Vicryl 2/0 or 0 with 3/5 curved needle (the UR6 circle needle) if available. Other needle types are also available and the surgeon can choose his/her preference. Bladder repair is preferably done in transverse fashion or follow the pattern that will minimise tension at the suture line. Taking a bigger bite (3-5mm) on the serosal portion, musculosa and coming out through muscularis mucosa ensures that there is less likelihood of bleeding into the bladder. This simple step could save you the trouble of irrigating the bladder, flushing and changing of the catheter due to postoperative bleeding and blockage of the catheter. The stitches can be placed either interrupted or continuous, but interrupted style and avoiding strangulating the tissue is safe. Regardless of style of closure (interrupted or continuous, it is wiser to start the initial stitches from the outer margins of the fistula to avoid residual fistula at the margins.

After closure of bladder – test repair with methylene blue or any sterile coloured fluid by doing the direct dye test (test of repair). Then close the vaginal mucosa again, everting the edges of the mucosa and using Vicryl 0 or 2/0 suture materials.

Repair episiotomy with Vicryl 2/0 or 0, usually the vaginal mucosa with continuous suturing and the perineal skin with continuous or interrupted suturing. Do not approximate the perineal muscles if that will reduce capacity of the vagina.

5.3.10 Bladder Drainage / Catheters

This is a critical part of surgical management of patients with obstetric fistula. Use size 16 -18 self-retaining Foley's catheter to drain the bladder continuously for 7-14 days. Seven days of drainage is allowed for simple fistula as suggested by the non – inferiority multi-country study.[11] For complex fistula up to 28 days catheterization may be required. Use 5 - 10 mls of fluid to inflate the balloon of the Foley's catheter; except if you are using smaller catheters where you should not exceed the recommended volume stated on the catheter. Strap the catheter securely over the less dominant thigh and if there was repair that involved the urethra, use a stitch around the labium to anchor the catheter.

5.3.11 Recto-Vaginal Fistula (RVF)

This occurs in about 15% of all fistulas encountered and occurs more frequently in combination with urinary fistula than solitary rectal fistula. The solitary rectal fistula are seen more in 3o perineal tears and extended episiotomies that were not repaired well or broke down after repair.

Columns of faeces and flatus make RVF repair failure rate slightly higher than urinary fistula of equal status. Circumferential defect and / or anal sphincter damage make repair challenging and outcome less favourable.

Surgical repair of RVF is done in a double layer. If the anal sphincter is damage, or the fistula is way down with only a bridge of anal skin over the lower edge of the fistula, convert the fistula into a 3o perineal tear, dissect by raising a flap close the ano-rectum with adaptation of the internal

sphincter followed by reconstruction of the external anal sphincter and then repair of perineal body. In many situations, diverting colostomy is not required.

5.3.12 Vaginal Packing

At the end of the surgery, wash the vagina with sterile saline or mop dry and pack it with single or knotted pieces of gauze to close the dead space between the bladder and vagina. This will also create pressure to achieve haemostasis. Where there are raw surfaces in the vagina, the packing can be done with gauze ribbon soaked in povidone iodine, acriflavine or sofratulle vaseline.

Factors promoting healing of fistula:

- Highly nutritional diet i.e., high fat, high protein, adequate rehydration of 4-5 litres of water (8-10 sachet water), Vitamins C, Vitamin B complex, iron, and folic acid
- Deworming patients with anti-helminthics e.g. albendazole
- Liberal fluid intake of not more than 5 litres for continuous bladder draining to avoid water intoxication and hyponatremia
- Topical oestrogen; and where not available oral contraceptive pills can be used instead. [12]
- Smoking cessation
- Avoidance of chronic use of anti-inflammatory drugs: NSAIDS, steroids
- Antibiotics where necessary
- Regular exercise

5.3.13 Patient Transfer to the Ward

Ensure that the patient is properly cleaned (of blood, faeces, mucus and sometimes vomitus) before moving her to the ward. Use a patient trolley to move her back to the ward.

5.4 PERI-OPERATIVE CARE

The operating room for fistula surgeries should have:

(1) A scrubbing area with adequate water source
(2) A gynaecological pneumatic operating table with stirrups
(3) A light source with a head loop if available
(4) Provision for shoulder support to allow for tilting the head down during surgery without risking the patient slipping backwards
(5) Standard operating outfit and towel/drapes / leggings
(6) Functional suction machine
(7) If possible diathermy machine

Operating instruments:

1. Sim's speculum double ended medium
2. Sim's speculum double ended large
3. Langenbeck retractor modified 3.5cm x 1.5cm
4. Auvard weighted speculum large
5. Lawrence needle holder light weight
6. Mayo-Hegar needle holder Tungsten Carbide
7. Kelly artery forceps straight (16cm)
8. Mosquito artery forceps straight (12.5cm)
9. Mosquito artery forceps curved (12.5cm)
10. Grille artery forceps straight (16cm)
11. Female metal catheter FG 12 3 Gauge
12. Female metal catheter FG 16 3 Gauge
13. Mayo chambered scissors straight (16.5cm)
14. Kocher artery forceps straight (20cm)
15. Kocher artery forceps straight (18cm)
16. Littlewoods Tissue forceps (18.5cm)
17. Judd Allis Tissue forceps (19.5cm) 3 to 4
18. Silver Probe with eye (15cm)
19. Silver Probe with eye (12.5 cm)
20. McIndoe dissecting forceps (15cm)
21. McIndoe dissecting forceps toothed 1:2 (15cm)
22. McIndoe's scissors curved (18cm)
23. Boyd scissors semi sharp (18cm) (slight double curve)
24. Kelly artery forceps (curved) (16cm)
25. Thorek scissors
26. Dean scissors
27. Stamey needle

5.4.1 Provision for Secretariat Work and Data Collection

There should be a standard operation register where the patient's name, age, hospital number, type of OF, type of anaesthesia, the surgeon, assistant / scrub nurse and anaesthetist names, and the date of surgery are entered. Please refer to the FMOHSW standard operation register in the appendix.

Give the patient a hand card at the end of the surgery (or at discharge) detailing the date and type of the operation done. Encourage the patient to present the hand card at any health facility that she goes for pregnancy care or labour at subsequent pregnancies.

6 POST-OPERATIVE CARE AFTER FISTULA REPAIR

6.1 POST OPERATIVE CARE

6.1.1 Immediate Care (First 24 hours)

The first twenty-four hours after surgery require critical observation from the anaesthetist, fistula surgeon and ward nurses to ensure the patient is stable. Observe the patient in the recovery room for about 30 minutes, monitoring vital signs: breathing, blood pressure, pulse and level of consciousness every 5 minutes. When her condition is stable and satisfactory, move her to the ward. Check vital signs every 30 minutes for 4 hours and then 4 hourly for the next 20 hours. Patient should be reviewed preferably by the operating surgeon within the first 4-6 hours of surgery.

6.1.2 Post-operative Care during Stable State

i. Vaginal approach /spinal anaesthesia - usually the patient would return to the ward with intravenous fluid (IVF) infusion running and that unit may be the last IVF that the patient may have. Thereafter, give liberal fluid orally (5 litres/day), aiming that urine produced is as clear as water. Where a patient cannot tolerate oral fluids because of vomiting during the first 24 hours, give IVF (4 litres), 5% dextrose solution in water to alternate with Normal Saline.
   Monitor the serum electrolytes where facilities are available.

ii. Abdominal approach /general or spinal anaesthesia - usually the patient would return to the ward with intravenous fluid (IVF) infusion. Continue intravenous infusion for at least 8 hours. Thereafter, give liberal fluid orally (5 litres/day), aiming that urine produced is as clear as water.
   Where a patient cannot tolerate oral fluids because of vomiting during the first 24 hours, give IVF (4 litres), 5% dextrose solution in water to alternate with Normal Saline.

iii. Monitor urine output hourly. Urine should be clear as water. Not less than 3000 mls of urine may be produced in 24 hours if the patient drinks enough water as stated above. Give clear instructions on what needs to be done with the urine output and appearance is below expectation.

iv. Catheter care: this is critical and very important.

a. Usually size 16 or 18 Fr Foley's catheter is used. The bigger size is better to allow free urine drainage.

b. The catheter should be anchored by a stitch or held in place with an adhesive strap.

c. Catheter should be connected to a bowl for continuous open drainage or connected to a urine bag.

d. Make sure the catheter is placed over the patient's thigh to ensure the patient does not lie on the catheter or get it kinked. When it is blocked, irrigate it with a normal saline solution using a bladder syringe. Adequate intake of fluid (water) not less than five litres per day keeps the urine clear and cleanses the catheter. Less water intake produces sludge and can clog the catheter.

e. If urine is cloudy, exclude urinary tract infection. Do urine microscopy and culture where facilities are available or treat empirically with cotrimoxazole or nitrofurantoin and increase the fluid intake.

v. Drugs

a. Give adequate analgesia. A short-term non-steroidal anti-inflammatory drug like piroxicam, diclofenac or ibuprofen can be used.

b. Give haematinics like ferrous sulphate, folic acid, vitamin B complex and vitamin C. If the patient is still wet, use barrier creams (Vaseline) to avoid dermatitis. Routine antibiotic use is not recommended

iv. Check the patient's bed regularly for vaginal bleeding or wetting.

vii. Allow regular diet as tolerated by the patient. Where it is a rectal fistula repair, allow a low residue diet like pap or rice and stew and then advance to a regular diet. Stool softeners such as Liquid paraffin 15mls daily or Lactulose can soften the stool if there is constipation.

viii. Allow ambulation after the first 24 hours of surgery. Patient can carry the catheter as she moves around.

ix. Nutrition - adequate nutrition is critical and should be encouraged.

x. Encourage personal hygiene; encourage usual perineal and vaginal hygiene, avoid vaginal douching.

xi. Remove Foley's catheter on postoperative day 14. Encourage copious oral fluid intake even after the catheter is removed. If the patient is still leaking after removal of the catheter, reinsert the catheter for another 2 weeks to a maximum of 6 weeks if it is confirmed that the bladder has not completely healed.

xii. Before the patient is discharged, assess the woman using the following: Post void residual volumes / bladder scans / passage of catheter / Intermittent self-catheterization (ISC) / bladder drill and dye test.

6.2 DISCHARGE PROCEDURE

Counselling: Pre-discharge counselling of patient should involve the husband and other family members where available. Instructions should be on:

- The presumed cause of the fistula
- Avoiding coital activity for 3 to 6 months
- Counsel on appropriate contraceptives and subsequent pregnancies should be planned. Interval between pregnancies should be a minimum of 2 years, however, special considerations can be patient specific.
- When to return for follow – up care (4 weeks and 12 weeks). Give specific dates.
- Counsel patients to book for antenatal care in the Centre where repair was carried out and where not possible, should book in a hospital with capacity for performing Caesarean section on arrival, patient should show her post-operative hand card and insist on seeing a doctor to plan her delivery.
- All subsequent deliveries after fistula repair should be by elective Caesarean section.
- Manual work may resume after eight weeks.
- Importance of adequate nutrition to the family, particularly children.
- Advising other women in the neighbourhood of the importance of labour and delivery in a health facility instead of at home.
- Encourage patient to refer other women with fistula to treatment centres.

Give these instructions in plain, simple and clear terms. If the patient cannot understand them all at one session, give the instructions in bits as the patient comes for follow up.

It is important to have the husband or influential family member during the time of counselling.

6.3 FOLLOW UP VISITS

At each follow-up visit, enquire about leakage of urine, date of last menstrual period (if she has resumed menstruation), coital activity and about any other complaint. If the visit is not as planned, enquire for the reason for the default.

Examine patient for leakage, anaemia, gait, abdominal tenderness and swelling. Note the presence or use of a piece of old cloth. Examine the perineum, the vagina including a dye test if still leaking.

Encourage the patient, give instruction about diet, coital activity, contraceptives, antenatal care and need for hospital delivery. You may give her haematinics and multivitamin supplements and the date for the next visit.

6.4 COMPLICATIONS OF SURGICAL TREATMENT OF OBSTETRICS FISTULA

(Prevention, Identification and Management)

6.4.1 Intra-operative

i) Bleeding: This can be minimised by infiltrating the tissue around the fistula with adrenaline 1:100,000 solutions (0.5ml of (SOP) adrenaline in 100mls of saline or sterile water) for non-hypertensive patient, using haemostatic clamps, pressure application and ligatures. Electrical diathermy can make things easy when available.

ii) Ureteric Injury: If inadvertently the ureters are injured, identify the ureteric orifice and catheterize where possible and if not call for help where available, attempt repair or refer. To prevent ureteric injury – make every effort to identify and catheterize with ureteric catheter leaving the metal stylet in place during dissection and repair to avoid injury to the ureter. Remove the ureteric catheter if during the course of the repair

the ureteric orifices moved further into the bladder away from the repair line. However, if the ureter(s) were at the edge and mobilised into the bladder, retain the catheter without the metal stylet for 10 days, connecting it to a separate urine bag.

iii) Vomiting: Identify the cause such as hypotension from spinal anaesthesia, exaggerated lithotomy position etc. and treat with antiemetic drug like promethazine and intravenous normal saline or Ringer's lactate fluid infusion where indicated. Spinal anaesthesia, because the patient is conscious, is protective against aspiration of vomitus. If general anaesthesia is used, make efforts to prevent aspiration of the vomitus by the patient.

To prevent vomiting in the ward after surgery, patient should start water intake and regular diet gradually.

iv) Shock: Resuscitate with intravenous fluids and give blood where indicated. Give oxygen and keep the patient warm. Look for cause and treat.

v) Pain: This occurs when the spinal anaesthesia is wearing off. Supplement analgesia with pentazocine or consider alternative anaesthesia with ketamine and sedation.

vi) Injury to the gut: Use appropriate retractors, involve General surgeons especially where adhesions are suspected. Where injury to the gut occurs, the General surgeons must be invited for repair except where none is available.

6.4.2 Delayed Complications

i) Patient not making urine:- If after the surgery and the patient is not making urine, identify the cause such as kinked or blocked catheter, shock due to dehydration, bilateral ureteric ligation, and treat appropriately. If anuric within the first 24 hours and the cause is suspected to be bilateral ureteric ligation, take the patient back to the theatre and undo and redo the repair. Anuria due to bilateral ureteric ligation can be fatal if not corrected.

ii) Fever: Do a full workup to determine the cause of fever like malaria, sepsis and dehydration. Ward window/bed nets will prevent mosquito bites.

iii) Headache: Consider spinal headache – lay patient flat, give analgesics and increase fluid intake. (spinal needle size in prevention of spinal headache)

iv) Wound infection: Open the wound and clean; take a swab for bacteriology examination (microscopy, culture and sensitivity) Vulva toileting should be done routinely.

v) Catheter Problems

- Not draining – check for kinking and patient lying on it.

Blocked Catheter: this may be by clots, debris or stone. Flush with normal saline or change the catheter if still blocked.

- If the catheter falls out, Re-catheterize.
- When removing the catheter becomes difficult: try to over inflate the balloon or puncture the balloon per vagina by tugging on the catheter, using a 21 G needle on a syringe. One can feel or hear a puncture sound, then remove it.

vi) Urinary retention: ensure patency of catheter and that the urinary bag or bowl is lower than the patient's bed where the catheter is in situ. If not in situ, re-pass the catheter.

vii) Forgotten materials –

- vaginal pack: Avoid this by using a long single strip of gauze with the tip at the introitus. Where forgotten, there will be offensive odour and vaginal discharge. Pack should be removed, and the vagina cleaned with saline or 3% solution of hydrogen peroxide.
- Forgotten suture: Suture should be cut long enough for identification where non-absorbable sutures are used.

Removal should be done in the lithotomy position under good lighting and proper exposure. The use of non-absorbable suture materials for fistula repair is discouraged.

viii) The wet bed: Patient is leaking – do a dye test preferably in the operating room and leave the catheter for a longer time where leakage is from the repair site. Also check

the size of the catheter, kinking or blockage of catheter as the cause of the wet bed..

ix) The moody patient – Fistula patients are elated when they find themselves dry after surgery. When a patient is moody, it is often due to a wet bed. Review the patient and find the cause of moodiness and treat accordingly including use of psychotherapy..

x) Death: Confirm and certify patient dead, then give patient's relation grief counselling.

Causes of death among post- operative fistula patient include:

a. Pre-existing medical conditions like hypertension, chronic liver disease, diabetes, anaemia and in some women with early fistula, postpartum hypertensive disorders or eclampsia.
b. Intraoperative complication: Haemorrhage and bilateral ligation of ureters.
c. Post-operative complications like haemorrhage and infections.

A good preoperative work-up of the patient to identify existing medical problems and meticulous observation of surgical details can avert these deaths in many situations. Adequate postoperative monitoring of patients and readily available resuscitative equipment and drugs in the theatre and wards or immediate use when need arises can also circumvent many deaths. Involve the social worker preoperatively to ensure contact tracing.

6.4.3 Late Complications

a) Failed repair – counsel the patient and rebook for another repair after 3 months or refer.
b) Amenorrhea, dyspareunia and chronic pelvic pain: refer to a Gynaecologist
c) Secondary fistula: Re-evaluate the patient for secondary repair or referral
d) Urethral stricture: Dilate the urethra with graded urethral dilators. The stricture scar can also be divided with a urethrotome.

Other complications like secondary amenorrhea, dyspareunia and infertility may become significant issues when the incontinence is cured. Refer such patients to a gynaecologist for evaluation and management.

6.5 INFECTION PREVENTION

6.5.1 Objectives

To prevent major infection when providing services to minimise the risk of transmitting serious diseases such as hepatitis B and C, HIV/AIDS, COVID-19 and other communicable diseases to patients, healthcare providers and staff, including cleaning and housekeeping personnel.

In 1983 the US Centre for Disease Control (CDC) established guidelines for infection control. In 1987 the guideline was revised and named " Standard Precautions" in 1995.[13]

It is applied to all patients and clinical specimens. The CDC group the body fluid into two groups:

i. Blood, serum, vaginal secretions, cerebrospinal fluid (CSF), synovial fluid, pleural fluid, peritoneal and pericardial fluid and Amniotic fluid.
ii. Faeces, nasal secretions, sputum, sweats, urine and vomits.

6.5.2 Protection Guide

These includes:

a. Assume every person is potentially infectious
b. Wear gloves before touching anything wet on/or from the patient
c. Wear gloves before touching anything wet on /or from the patient.
d. Always wear gloves when handling instruments. Make sure gloves are not torn or cracked.
e. Use personal protective equipment like barriers, such as gowns, aprons, eye shields or goggles and face masks when working where splashes are anticipated to prevent contact with blood or tissues. Dispose of sharp instruments properly.
f. Hand washing is the most important procedure in preventing infection. Therefore, wash hands immediately after removing gloves.
g. Avoid skin punctures from sharp instruments. Do not touch needles.
h. If you have oozing skin lesions, do not have contact with patients or medical instruments until the lesions heal.
i. Decontaminate instruments, linen etc., before sterilisation or high level disinfection.

6.5.3 Clinics and Wards
Learning from the COVID 19 pandemic, social distancing should be observed in the hospital environment including offices, clinics, wards, hostels and operation room. Depending on the need, there should be provision of face masks for all staff and patients. Abundant ventilation should be made in patient waiting areas especially clinic waiting area. Alternatively, patients and their relatives should be made to wait in open spaces under canopies or tents to ensure free air circulation.

Observe standard precautions. Facilities offering obstetric fistula surgery must have adequate water supply. Make provision and encourage frequent and regular hand washing in the clinic, ward, theatre and patient's hostel. Encourage patients to adopt hand washing habits at home even after discharge.

In addition, there is the need to sweep, scrub and mop floors and surfaces at least once daily and each time it is soiled. Change linen on beds daily, and each time it is soiled. Use Mackintosh rubber sheet for wet patients to protect the beddings and mattress.

Instruments must never be soaked in low-level disinfectants like savlon. They should be high level disinfected and dried in a well-covered container and decontaminated as soon as they are used, initiating another cycle of high level disinfection using 0.5% Chlorine solution. High-level disinfection ensures all microorganisms are killed except spores. Other options include boiling, dry or wet sterilisation.

6.5.4 Theatre
Sterilise instruments, towels, drapes and gowns by autoclaving.

Decontaminate instruments and all materials that are in contact with blood and secretions from the body in 0.5% Chlorine solution or by boiling for 20 minutes where indicated. Use protective barriers such as masks, gloves, boots, aprons, eye shield during surgeries and instruments processing.

Fumigate the theatre when new, before use and every 4-6 months thereafter.

6.6 WASTE DISPOSAL

There is a need for more attention on waste disposal systems in all health facilities in line with global standards. Waste management must start from the point of production with proper segregation, storage, transportation and disposal.

At the point of production, hospital waste should be segregated and deposited into coloured plastic containers depending on the waste management policy. Usually this should be a minimum of three plastic containers.[14] All personnel, especially the most junior staff handling hospital waste must be trained on waste management practices. Hospital staff handling, transporting and disposing waste must wear proper protection while doing their job. Particularly, they must wear face masks, utility gloves, eye protection and boots.

7 SPECIFIC ISSUES IN OBSTETRIC FISTULA TREATMENT

These are cases that require surgical skills at advance or expert levels and experience. You are encouraged to refer such cases to the experienced fistula surgeon or dedicated level II and level III fistula training centres. These cases include:

(1) Fistulae that may require use of flaps and/ or grafts during repair. Types of grafts used in fistula repair include Peritoneal (fibro fatty graft), gracilis graft, free skin graft, Martious graft, split skin and vascularised skin graft.

(2) Fistulas that may require abdominal approach.

(3) Damaged or absent urethra (urethral reconstruction/urethroplasty)

(4) Gynaetresia or severe vaginal stenosis requiring vaginoplasty

(5) Ureteric fistulas: Utero-vaginal or uretero-cervical fistulas

(6) Fistulae with more than two previous repairs

(7) Fistula deemed irreparable: May be considered for diversion procedures after careful re-evaluation.

(8) Patients with severe foot drop. Management includes physiotherapy by early mobilisation. Consider surgical approach such as tibialis posterior transfer if no improvement after 2 years.

(9) Non-compliant bladder: strict bladder training. Some may need augmentation cystoplasty. If the bladder neck is incompetent, refer to a specialised centre.

(10) Patients with amenorrhoea and / or infertility: These cases usually become issues when patients are cured and remarried or remained in marriage. Refer to the gynaecologist for evaluation and treatment. Where amenorrhoea is associated with menouria, it could be that the cervix is buried inside the bladder or utero-vesical fistula. In such a situation, the cervix can be repositioned back into the vagina; or the utero-vesical fistula repaired abdominally.

7.2 CONTENTIOUS ISSUES

These are issues that have no consensus opinion, so many surgeons do them differently. Some of these contentious issues include:

1) Examination under anaesthesia (EUA) as a booked procedure, is no longer recommended. It could be done just before surgery while the patient is under anaesthesia, as part of evaluation in determining the surgeon's level of competence. Evaluation at this stage is very much recommended to preclude situations where the surgeon starts on something above his/her competence.

2) Use of grafts: Many fistulae, especially those with minimal to moderate scarring heal well without the use of graft. Therefore, routine use of graft is not recommended. However, the surgeon should use his/her discretion on deciding which case to use graft. [5]

3) Route of repair: Vaginal approach is the route of choice for most of the OF repairs. However, other routes can be adopted at the surgeon's discretion and ease of accessibility for the repair.

4) Use of colostomies in recto-vaginal fistula repair as routine is no longer recommended. Where it has become necessary to use colostomy like in high circumferential recto-vaginal fistula, the colostomy must be closed within six weeks from the time it was done.

5) Prophylactic antibiotics recommended.

6) Ambulation: As soon as possible (within 24 hours) according to the patient's tolerance and nature of repair.

7) Post-operative position in bed: patient to adopt position of convenience unless specifically contraindicated. Where spinal anaesthesia is used, advise patient to lie flat for about twelve hours to prevent spinal headache.

8) Routine analgesia: liberal use is recommended and often, the patient can be given oral analgesics.

9) Successful repair: The goal of treatment of a woman leaking urine from obstetric fistula is continence. Successful repair therefore means the woman is continent of urine. After a surgical repair, the fistula may heal with or without continence or may not heal at all. The correct outcome should be reported.

10) Mode of catheter drainage: the important issue in catheter drainage is bladder decompression; this can be achieved by transurethral catheterization (the most practised) or suprapubic drainage. Drainage can be into an open or closed receptacle like urine bag or an open bowl.[5, 10, 12] It is a good idea to involve the patient in monitoring the urine output and therefore, bladder drainage that makes this easier is recommended.

11) Immediate perioperative fluid intake: this should be encouraged to provide hydration, help the woman with compliance during the postoperative fluid intake. This will assist with ease of identification of ureteric orifices, confirming ureteric patency and preventing postoperative ureteric obstruction.

12) Correct sutures: Use absorbable material like vicryl on the bladder and vagina.

13) Fistula repair during pregnancy: An experienced surgeon can do a repair during the first trimester with a good success rate. However, one should be prepared for increased bleeding due to increased genital circulation during pregnancy. Repair in late pregnancy is discouraged because of difficulty with positioning and anaesthesia.

14) Anaesthesia: Spinal anaesthesia with heavy marcaine is the preferred method.

15) Selection and referral criteria: The surgeon is encouraged to evaluate the patient properly and only take on those that are within his/her competence. Complex fistulae and those that have had two failed repairs should be referred from level-1 centres.

16) Timing of repeat repair: To allow for definition of tissue plains, allow 2-3 months after initial repair before attempting the next repair. However, immediate repair within twenty-four hours can be done where ureter(s) were inadvertently ligated during repair.

17) Where there is not enough vaginal skin to close the bladder: Options here include use of grafts or leaving it open. However, where the urethra was reconstructed, one must cover the new urethra with graft.

8 DOCUMENTATION

8.1 DATA COLLECTION

Patient records and data are very important for medical audit / research and for facility self-assessment.

8.1.1 Clinical Documentation

Record date and time at every contact with patients. Bio data: refer to previous chapter and record important details from referral notes and previous medical report. Pre-operative diagnosis to be clearly stated.

a) Preoperative:

i. Record pre-operative preparations that are conducted.

ii. Vital signs – pulse, BP, respiration, temperature.

iii. Pre-anaesthetic review – to assess fitness, recorded using the anaesthetic review checklist.

iv. Obtain written informed consent for surgery.

v. Record of pre-operative fluid balance

b) Before a patient is wheeled into theatre, anaesthetist and the ward nurse shall review above records using the standard pre-op check list.

c) Intra-operative:

i. Re-identify patient, pre-op diagnosis and type of surgery proposed.

ii. Record time and type of anaesthesia, anaesthetic complications if any and drugs administered intra-op.

iii. Record of the operation reports including the surgical team, intra operative diagnosis, procedures and proper record of complications and surgical management. Duration of surgery, estimation of blood loss, sutures used and intraoperative findings should be documented.

iv. Documentation in the operation register.

d) Post-operative:

Monitoring and recording of vital signs recovery from anaesthesia. Record immediate postoperative complication and /or request for further management and post-operative reviews. Record of postoperative fluid balance initially hourly for 24 hours, then 12 hourly or 24 hourly for 2 weeks.

d) Follow up:

- Is she still leaking urine? If yes, Is it while lying or standing at the first follow up visit?
- Check for healing, bladder support and stress incontinence and document all findings.

8.1.2 Social

- Demographic – see previous records
- Psychological support – document support provided and the result following the support.
- Literacy – adult education if illiterate, start before discharge and after discharge should be documented.
- Social support – who accompanied the patient and the willingness to pay for services.
- Skill acquisition – handwork / crafts – record identified skill patient is interested in.

9 TRAINING ISSUES

9.1 TRAINING ISSUES AND GUIDE

Female Genital Fistula is a unique example of a health condition that unites different specialties in its care[15] as the perineum, which represents only 1% of the body structure, actually has numerous systems closely packed together, but not in direct connection until a fistula occurs. As a result, the Gynaecologist who focuses on the female genital system is forced to relate with the Urologist as he/she ventures into the Urinary system through the genitor-urinary system; or is required to relate with the Colorectal surgeon as he/she ventures into Gastrointestinal system through the genito – faecal fistulae; or the General surgeon as he/she considers colostomy. Sometimes, the fistulas are so complicated hence requiring the need for flaps or grafts, which makes the Gynaecologist relate with the plastic surgeon. Sometimes, it begins with the urologist who is obliged to seek the expertise of the other subspecialties.

Furthermore, female genital fistula, especially obstetric fistula is prevalent among rural poor and illiterate women and girls in remote communities where specialists are difficult to find. The onus therefore falls on the lowest level of healthcare workers or non-specialist physicians to have the first interaction with the patient. The need for Medical Officers to participate in the care of the patients at that primary level is thus evident.

The management of women and girls with genital fistula therefore cuts across the different levels of health care, titles and expertise. This training manual therefore recognizes these complexities by making a bold attempt to classify fistula, the level of care of the surgeon and the fistula centres to fit into three levels while emphasising on competency. The level of care by surgical expertise has been defined as standard, advanced and expert regardless of medical specialty in line with the FIGO global training manual. The manual has taken a further step to classify the corresponding fistula types by classifying fistula into direct fistula, indirect fistula and special fistula to fit into the three surgeon levels of training. Furthermore, the manual also classified the Fistula Centres where these services are offered into levels I, II and III to fit into the Centres where the services could be provided in line with advancing levels of training.

Entry point into the training shall be by competence rather than titles and specialties. However, it is expected that specialists would have an advantage: a Gynaecologist, for instance will have advantage of operating in the perineum, while a Urologist will have advantage of working on the Kidneys, Ureters and bladder. It will therefore be the responsibility of the trainer to assess the entry point of his trainees. For example, a Gynaecologist that had acquired standard level fistula surgical competency while in training need not start from level I training; or a Urologist who had acquired some basic fistula surgical skills need not spend 6 weeks at basic level training.

9.2 TRAINING CENTRE

For a facility to qualify as a training Centre, it must be performing at least 250 fistula repairs annually and meet the criteria of training centre by level of training as shown in the Table 4. and Table 5. below.

1. The ideal training model is sustained apprenticeship in a high volume training centre where the trainee is exposed to all the aspects of fistula management for sustained period and participates not only on the surgical exposure, but also in clinic, ward round call duty, management of complications, and every aspect of the fistula programme of the fistula centre.

2. In the absence of No.1 above, surgeons could be trained in multiple centres where a minimum amount of exposure is guaranteed viz a viz peak seasons of patients' patronage.

3. As rule of thumb, since it takes a minimum of eight cases to maintain a skill level, it would be wonderful if a trainee surgeon is able to perform eight particular type of fistula surgery to ensure that the skill has been grasped and would be sustained for one year before certifying the trainee as competent in that case type.

4. The training Centres should have a high volume of patients for adequate training opportunities.

5. A team based approach to training will ensure adequate fistula skill transplant. A team should comprise:
a. A trainee surgeon
b. Trainee perioperative nurse
c. Trainee ward nurse
d. Where possible, a nurse anaesthetist could also be part of the team

6. Although 12 people can be exposed to adequate theoretical expose, proper and adequate surgical exposure is better done to fewer trainees. Three teams of three or two teams of four should be the maximum number of training per group to ensure maximum training per group.

7. Trainees must be provided with the training manual and list of reference materials for the training session.

8. The trainees should be identified by interest and or nomination by the sending institution

9. An orientation should be provided on the first day of training.

10. A brief tour of the training facility should be done.

11. Training materials (soft or hard copies) should be provided
a. The training manual
b. Training timetable
c. Training tools
i. Personal development plan
ii. Case based discussion report form
iii. Reflective learning form
iv. Performance Based Assessment (PBAs)

12. A training time table should be provided and clarified and could be tweaked accordingly.

13. A pre-test should be done at the beginning of the training and at the end of the training to document achievement of training objectives.

14. A training report should be written by the master trainer at the end of the training, and shared with the State Ministry of Health, Federal Ministry of Health and Social Welfare and the Donor Agency.

15. Each day should begin by a meeting to discuss plans for the day, answer issues raised from the previous day and a meeting at the end of the day to clarify lessons learned and prepare for the next day.

16. An assessment of the training Centres in Nigeria shall be done to document data required for classifying centres under the different levels: Level I, Level II and Level III and the level of various fistula surgeons within the training institutions.

17. A training of the trainers should be done for the trainers before training could be rolled out at the national level.

Table 4

TRAINING LEVEL CLASSIFICATION OF FEMALE GENITAL FISTULA BY SURGEON LEVEL, FISTULA CENTRE CLASSIFICATION & REFERRAL LEVEL (LENGMANG SJ, UNPUBLISHED)

TRAINING LEVEL CLASSIFICATION	SURGEON LEVEL TRAINING	FISTULA CENTRE LEVEL / REFERRAL	TRAINING LEVEL CLASSIFICATION	SURGEON LEVEL TRAINING	FISTULA CENTRE LEVEL / REFERRAL	TRAINING LEVEL CLASSIFICATION	SURGEON LEVEL TRAINING	FISTULA CENTRE LEVEL / REFERRAL
DIRECT FISTULA (Direct simple / Direct complex)			INDIRECT FISTULA	ADVANCE / EXPERT	II & III	SPECIAL FISTULA / related conditions		LEVELS III
Direct simple fistula	STANDARD	LEVEL I	Intra-cervical fistula			Ureteric fistula		
MV			Vesico-Uterine Fistula			Fistula requiring flaps or grafts		
JC			Entero-Uterine Fistula			Recurrent large fistulas requiring flaps or grafts		
JU						Fistula deemed inoperable		
RVF						Inoperable fistulas		
PERINEAL TEAR						Urethral loss		
Direct complex fistula	ADVANCE	LEVEL II				Post closure incontinence		
Pinhole						Vaginal stenosis (bahanya)		
Circum-ferential fistula						Uretero appendiceal fistula		
Vault Fistula						Uretero-cuteneous fistula		
Fistula + bladder stone						Fistula with severe fibrosis		
Multiple fistula						Fistula with vaginal stenosis		
Fistula + Moderate fibrosis						Paediatric congenital fistula		
Fistula+ureter outside the fistula						Combined Fistula (VVF / RVF)		
Around the corner fistula (lungu fistula)								
Genital fistula following radiotherapy								
RVF with stricture								
Circum-ferential RVF								
RVF with severe fibrosis								

Table 5

PRIORITY OBSTETRIC FISTULA TREATMENT SERVICE DELIVERY MODELS AND CLASSIFICATION OF FISTULA CENTRES (LENGMANG S.J. PRESENTED AT ISOFS CONFERENCE, UGANDA)							
0		**I**		**II**		**III**	
NON FISTULA CENTRE (Screening, basic repair / Referral, ± Fistula equipment ±fistula surgeon)		**BASIC FISTULA CENTRE (STANDARD SERVICES) (0 + Resident Fistula Surgeon & Fistula Equipment, Simple cases)**		**FISTULA TRAINING & RESEARCH CENTRE (ADVANCE SERVICES) (I + Complicated cases & Refer special fistula (very complicated cases)**		**SPECIAL FISTULA TRAINING & RESEARCH CENTRE (EXPERT SERVICES) (II + special cases (Very complicated cases)**	
I	Ii	I	Ii	I	ii	I	Ii
Outreach Treatment	Fistula service in other hospital set up	Pooled effort for regular treatment	Routine treatment	Pooled effort for complicated fistula treatment	Routine compli-cated fistula treatment	Special team services for very compli-cated fistula (No PFRD / Paediatric fistula)	Special team service All services: PFRD/ Paediatric fistula / Urinary Diversion
Consul-tant Fistula surgeon	Any fistula surgeon	Any fistula surgeon	Any fistula surgeon	Experienced fistula surgeon	Exper-ienced fistula surgeon	Experienced Consultant Fistula surgeon.	Experienced Consultant Fistula surgeon.
Free service or highly subsi-dized	Fee for service	Free service or highly subsi-dized	Free service or highly subsi-dized	Free service or highly subsidized	Free service or highly subsidized	Free service or highly subsidized	Free service or highly subsidized
At least spinal anaes-thesia	At least spinal anaes-thesia	At least spinal anaes-thesia	At least spinal anaes-thesia	Spinal / GA Anaesthetic machine + Monitor	Spinal / GA Anaesthetic machine + Monitor	Spinal / GA Anaesthetic machine + Monitor Bladder scan / Cysto / Urodynamics	Spinal / GA Anaesthetic machine + Monitor Bladder scan / Cysto / Urody-namics

9.3 TRAINEE SELECTION CRITERIA

The person desiring to be trained in fistula surgery must:

- Show interest in fistula work.
- Be a medical doctor with basic surgical skills.
- Be willing to practise as fistula surgeon
- Be willing to train others on the job
- The trainers should be involved in selection of trainees

9.4 DURATION OF TRAINING

The trainings are staggered in stages

- Standard level training: 4 weeks
- Advanced level training: 2-4 weeks and the doctor must have done no fewer than 100 surgeries after his initial training. [5]
- Expert level training: 3 weeks and the doctor must have done no fewer than 100 surgeries after the advanced training.
- Training of the Trainer's training: 1 week, for this level of training, the doctor must be a Consultant and must have had experience with a minimum of 400 – 500 fistula repairs. Non-Consultants may be trained as Trainer for the first level training (standard level training).

Log book: Trainees must carry a log book that would show number of patients clerked (minimum of 30 patients for consultants and 60 for medical officers or resident cadre trainees); the number operated upon (6-10 repairs for Consultants and minimum of 10 repairs for Medical Officers or Resident doctors; the number of patients attended to at follow up, (minimum of 50 patients) during the training period.

Trainee team: It is advised that the training team should comprise a doctor, a scrub nurse, ward nurse; and if possible a nurse anaesthetist and a social worker.

9.5 CONTINUOUS MEDICAL EDUCATION

This must be encouraged even after the final training in the form of attending conferences and visiting centres with advanced fistula treatment services and training.

A log book shall be used to document the expected surgeries that are conducted by trainee Fistula surgeon during the skill rotation.

9.6 PRACTICUMS / CLINICAL

Trainees should acquaint themselves with exhaustive history taking, examination, and required surgical skills including tying of surgical knots and norms of ward rounds.

9.7 MINIMUM HUMAN RESOURCE FOR SURGICAL CARE OF FISTULA PATIENTS

- Doctor – 1
- Scrub Nurses – 2
- Surgeon Assistant – 1
- Pharmacist/pharmacy technician -1
- Anaesthesiologist/Nurse Anaesthetist -1
- Laboratory scientist/technician - 1
- Medical record officer -1
- Cleaners -2
- Medical social worker -1
- Theatre attendants – 4
- Biomedical engineer/Technician -1
- Security guards – 3

10 MANAGEMENT OF COMPLICATED / COMPLEX FISTULAE

Please read the recommended books and articles from the reference section to gain an overview of this matter.

Objectives
At the end of this module, the trainee will be able to:

- Identify the types of complicated urinary/faecal fistula
- Describe surgical techniques for repairing complicated urinary fistulae

10.1 Types of Complicated/Complex Fistulae:

These are usually classified according to site or type as in Table 4:

Site of fistula	Urethral fistula Urethral damage Vesico-cervical, vesico-uterine, vault fistula Ureteric fistula
Type of fistula	Minute fistula Circumferential bladder fistula Fistula with small or no bladder Urinary fistula with extensive vaginal scarring Residual Fistula Recurrent fistula Lateral fistula
Associations	Bladder prolapse and bladder stones Combination of two or more of the fistulae

10.2 SURGICAL REPAIR OF COMPLICATED / COMPLEX FISTULAE

Surgical repair differs with each site or type of complicated/complex fistula. The modes of repair outlined below are only for guidance, as in-depth surgical training will be provided by the trainers.

Urethral Fistula Repair (Vaginal Approach)

- The extent of injury and scarring are assessed as well as bladder capacity
- The urethra is mobilised with the help of fine scissors and any fibrous tissues is removed
- Tissue is handled with care
- The fistula is closed in one layer with minimum tension, using fine absorbable 3/0 suturing material
- If needed, the closure is reinforced by means of a Martius labial fat pad graft or pubo-coccygeal sling [16]
- The vagina is closed using fine absorbable suture material

10.3 CIRCUMFERENTIAL URINARY FISTULA REPAIR

- The extent of the loss of bladder and urethral tissue is assessed
- The extent of the mobilisation required is assessed
- After the bladder has been mobilised circumferentially, it is moved toward the urethra and re-anastomosed by means of 3 to 5 sutures that are also attached to the periosteum of the posterior symphysis pubis
- A graft may be performed or a urethral sling placed, as appropriate
- The continence mechanism is reinforced
- The vaginal mucosa is closed.

10.4 REPAIR OF URINARY FISTULAE WITH EXTENSIVE VAGINAL SCARRING

Once the fistula is identified and the degree of vaginal scarring is determined a large episiotomy is performed (bilaterally, if necessary) and scarring is excised, as needed.[16] Then,

- The fistula is repaired, reinforced by a labial fat flap if the vaginal mucosa is atrophic
- Sometimes, sigmoid neo-vagina is done
- Vaginal packs are re-applied, as needed
- Post-operative vaginal dilatation can be done using a candle and condom or vaginal dilators

10.5 URETHRAL RECONSTRUCTION/ URETHROPLASTY

Urethral length and the extent of urethral loss are assessed before repair is planned.

Of the many reconstructive techniques, some are detrimental to future function. The following techniques are suggested for use:

Technique 1

a) Demarcate the tissue to be used for reconstruction and make deep para-urethral incisions at least 4 cm wide
b) Mobilise sufficient tissue
c) Insert a 12F Foley catheter into the urethra and repair the urethra by rolling mobilised tissue over the catheter

Technique 2

a) Tabularise the tissue, measuring the tube's diameter with a Hegar 8 dilator (6mm in diameter)[16]

b) Using a fine suture material, make as few sutures as possible and avoid tension

- Reinforce the continence mechanism
- Close the vaginal mucosa without tension, with flaps if necessary
- Leave the catheter for 2 to 4 weeks or create a suprapubic cystostomy, if necessary and if possible at the draining site
- Secure the catheter to avoid trauma to the neo-urethra
- For circumferential urethral loss, make a bladder flap or use buccal mucosa

10.6 URETERIC REIMPLANTATION (ABDOMINAL APPROACH)

The main indication for the abdominal Approach is when the ureter cannot be catheterized vaginally

Method:

1. Insert the ureteric and urethral catheters into the bladder via the urethral meatus

2. Identify the injured ureter and mobilise it retroperitoneally and distally up to the site of injury or site of obstruction

3. Tie the ureter as distally as possible, place a stay suture 1cm proximally and sever the ureter in between

4. Free the ureter proximally until it is sufficiently mobilised for re-implantation

5. Incise the bladder, make a new opening in the bladder for the ureter, introduce the ureter into the bladder, spatulate the ureter and anastomose it to the bladder mucosa

6. Secure the ureter to the outer layer of the bladder (anchoring)

7. Introduce the ureteric catheter into the ureter (optional)

8. If a ureteric catheter was introduced, either close the bladder around it for drainage through the incision in the abdominal wall or allow it to drain through the urethra

9. For ureter that cannot reach the bladder Boari flap or interposition graft (appendix, fallopian tube and sometimes small intestines) can be used

10.7 VESICO-CERVICAL (INTRAC-CERVICAL) AND VESICO-UTERINE FISTULA REPAIR

The approach depends on the surgeons' preference and experience, but always involves the mobilisation of the bladder from the cervix or uterus. If the fistula is vesico-cervical, mobilise the bladder until the bladder and cervical aspects of the fistula can both be accessed. Then,

i) Identify and catheterize the ureters
ii) Close the bladder defect (it is longitudinal in most cases)
iii) Close the cervical or uterine defect
iv) Interpose omentum between bladder and cervix, if possible
v) Close the vaginal mucosa

10.8 VAULT FISTULA REPAIR (AFTER HYSTERECTOMY)

Approaches may be abdominal or vaginal

i. With the patient in the exaggerated Trendelenburg position, mobilise the bladder from the peritoneum and vagina, taking care to avoid bowel injury

ii. Identify and catheterize the ureters (Note: the ureters may be implanted more laterally or higher than expected)

iii. Close each aspect of the fistula (with a peritoneal flap interposed, if desired

iv. Repair the vagina

10.9 URETERO-CERVICAL FISTULA REPAIR (VAGINAL APPROACH)

After catheterizing and mobilising the damaged ureter, incise the bladder and pull the distal end of the ureteric catheter up the urethra. Then,

- Close the bladder aspect of the fistula over the ureteric orifice
- Close the vaginal mucosa
- Keep the ureteric catheter in place for 10 days

10.10 REPAIR OF COMBINATION OF TWO OR MORE URINARY FISTULAE

These may be repaired simultaneously or separately, depending on the types of fistulae. If the fistulae are close to each other, make them into one and repair. Otherwise, repair them separately. Unrelated fistulae are usually managed separately or in two sessions.

10.11 POST REPAIR URINARY INCONTINENCE

There are several types of post-repair incontinence. These include:

- Stress incontinence
- Overflow incontinence
- Scar incontinence, due to intrinsic urethral sphincter deficiency
- Detrusor overactivity
- Mixed incontinence

Diagnosing the type of incontinence requires proper history taking, a physical examination, a cough stress test, inducing urgency by turning on a water faucet, and measuring post-void residual urine volume. It is also essential to rule out a urinary tract infection (UTI), which is the commonest cause of incontinence in women who underwent fistula repair.

Other tests in use are the pad test (to determine the weight of urine lost), a 24-hour urinary diary, urodynamic assessment and cystoscopy.

Once a diagnosis is made, treatment may be initiated.

10.11.1 Stress Incontinence Treatment (Conservative Management)

Pelvic floor exercises if the pelvic floor is intact

Indication: The exercises promote core stability and strengthen both pelvic floor and anal sphincter

Use the Glasgow grading methods to assess the strength of the pelvic floor muscles (Appendix B3). The intensity of pelvic floor exercises depends on pelvic floor strength. Exercising should be a gentle continuous process based on a protocol. To ensure compliance, the patient needs to be educated about pelvic floor physiotherapy.

10.11.2 Detrusor Overactivity or Urge Incontinence (Conservative Management)

Bladder training can be initiated after excluding infection and strictures. Then,

- Encourage a regular drinking and voiding pattern
- Encourage a gradual increase of the voiding interval
- Discourage alcohol and caffeine intake
- Prescribe anticholinergics, if available

10.11.3 Overflow Incontinence (Conservative Management)

After treating strictures

- Encourage double and triple voiding (explain further)
- Prescribe intermittent self-catheterization (import from nursing manual)

10.11.4 Surgical Management of Post-Repair Urinary Incontinence

None of the many surgical techniques devised to treat urinary incontinence supersedes the others.

The principles at the basis of surgery for post-repair stress incontinence aim at:

- Narrowing the urethra
- Lengthening the proximal urethra
- Elevating the pubo-vesical angle
- Reinforcing the continence mechanis

The different types of surgery include:

- Retro-pubic urethrolysis and sling operation
- Urethralization and fascio-colposuspension
- Urethralization and pubo-coccygeal sling
- Other (Burch colposuspension, mid-urethral sling / tapes)

However, their benefit to the patient has not been tested objectively.

Besides surgery, there are devices, such as silicon urethral plugs, that can be used for stress incontinence. These plugs are shaped to obstruct the urethra and are available in different sizes. They are meant to improve continence and bladder capacity, but a reliable supply is essential.

The indications for using a urethral plug include:
1. Severe incontinence following fistula repair
2. Small bladder
3. Intrinsic sphincter deficiency

The plugs carry risks, however, and must be used with caution and discretion. Well known complications are plug migration into the bladder, widening and infection of the urethra, and trauma to the urethra. It is therefore usually recommended that the plug be used for a maximum of 12 hours per day.

Each patient must be taught to fit the plug and maintain good perineal hygiene. Periodic follow –up is essential.

10.12 COMPLICATIONS OF FISTULA REPAIR

Please read the recommended books and articles for an overview.

Objectives

At the end of this module, the trainee will be able to:

1. Prevent intraoperative complications, detect them when they occur and determine whether their management should be anaesthetic or surgical.

2. Identify immediate post-operative complications and outline their management.

3. Identify later postoperative complications and outline their management.

4. The complications commonly associated with fistula surgery are outlined below.

10.12.1 Haemorrhage

Prevention is key with haemorrhage. Bleeding disorders should be detected ahead of time and haemostasis should be maintained throughout surgery.

When haemorrhage occurs despite meticulous haemostasis, it should be classified as mild, moderate or severe. It is essential that the patient be resuscitated and given a blood transfusion, if necessary, and that haemostasis be secured. If haemorrhage is secondary to infection, the infection should be treated. It is sometimes necessary to insert a vaginal pack with or without adrenaline.

10.12.2 Deep Vein Thrombosis and Pulmonary Embolism

Although these conditions are much less common after fistula repair than after other types of surgical interventions, preventative strategies should always be considered, including:

- Compression stockings
- Anticoagulants
- Aspirin

10.12.3 Surgical Injury

The pelvis contains many organs and injury can occur to the bladder, urethra, ureters and bowel during fistula surgery. Such injuries are usually treated by straightforward, direct closure, but ureters have been tied off, cut, crushed, torn or damaged by catheterization or the loss of a probe. These problems can be averted by inserting catheters very carefully into the ureters before dissection. If an injury occurs to a ureter, it must be identified and corrected (depending on the case) by releasing the suture, repairing the tear, re-implanting the ureter or removing the lost material.

10.12.4 Anuria

Anuria is a particular problem of urinary fistula surgery. It is usually a consequence of catheter blockage, ureter ligation, or pre-renal or renal failure. The management of anuria depends on its cause and may involve unblocking the catheter, un-tying and re-implanting the ureters, or treating the patient for renal failure.

When anuria is the result of a displaced Foley or ureteric catheter, the catheter must be carefully retrieved and replaced.

10.12.5 Wound Infection and Wound Breakdown

Wound infection can have disastrous consequences in fistula surgery, including early breakdown of the suture line, urinary or faecal incontinence, and stricture formation in the urethra and vagina.

Wound infection can also lead to gynaecological problems such as hematometra, menouria, infertility, amenorrhea and dyspareunia. Any one of these conditions can generate severe psychological problems.

Depending on the case, wound infection or breakdown can be treated by re-suturing under anaesthesia, leaving the catheter longer in place, and cleaning the wound using sitz baths and / or irrigation.

Repairing the suture line will be attempted only when inflammation has subsided, however, and treating underlying sepsis is therefore paramount. A swab culture (or blood culture, if possible) needs to be done to identify the responsible pathogen and sensitivity tests carried out to determine which antibiotics should be prescribed.

10.12.6 Urethral and Vaginal Strictures

Urethral strictures are usually managed by:

- Scar incision and urethral dilatation
- A dye test to exclude a minute fistula
- Fistula repair if the test reveals a fistula
- Intermittent self-catheterization to dilate the urethra

Vaginal strictures, which are accompanied by dyspareunia, can be managed by:

- Scar excision
- Vaginal dilatation with a candle and condom or vaginal dilators

Bladder stones

Bladder stones are relatively common after fistula surgery, and their removal must be done with great care to prevent damaging the bladder. First, a urethral stricture should be ruled out. Stones of different sizes are removed

- By extending the fistula and removing the stone vaginally
- By suprapubic cystostomy (larger stones)
- Endoscopically (stones <2 cm)

The patient should be encouraged to drink plenty of fluids to prevent infection and recurrence.

Bladder stone removal and repair of the fistula could be done concurrently, just like repair of VVF and RVF could also be done concurrently.[17]

10.12.7 Gynaecological Complications

These are numerous and their management is determined by the underlying cause.

1) Hematometra

- Is caused by cervical or vaginal stenosis
- The patient presents with amenorrhea and cyclic pain
- The management consist in:
- Opening the cervix and draining the uterus
- Stenting the cervical canal
- If the patient does not wish to have more children, ending menstruation by means of injectable progesterone or a hysterectomy

2) Menuria

- Occurs when the uterus or cervix drains into the bladder
- The management consist in:
- Separating the uterus or cervix from the bladder and repairing the fistula with interposition of omentum
- Repositioning the cervix vaginally or abdominally
- If the patient does not wish to have more children, ending menstruation via injectable progesterone or a hysterectomy. The patient should be referred to the Gynaecologist.

3) Secondary Amenorrhea

Causes include:

- Intrauterine synechiae
- Cervical stenosis
- Vaginal obliteration
- Psychological disorders
- Management: Refer the patient to the gynaecologist

4) Secondary Infertility: This should also be referred to the gynaecologist.

11 REHABILITATION AND REINTEGRATION

11.1 DEFINITIONS

Rehabilitation: “Rehabilitation in OF refers to any experience that strives to improve the quality of life of women before or after corrective surgery”.[18]

Reintegration: “Reintegration on the other hand, is the re-acceptance of the obstetric fistula patients back into their social environment following harrowing experiences of either faecal or urinary incontinence and in some instances, both of which have been associated with loss of self-esteem and dignity. It includes programmes aimed to improve overall status of women through empowerment and enhancement of their socio-economic status”.[18]

11.2 REHABILITATION AND REINTEGRATION LANDSCAPE

Obstetric fistula presents enormous psychological, social and economic challenges. While the situation appears to be changing, many patients still face stigma, discrimination, abandonment and neglect. However, anecdotal reports tend to suggest that increasingly, some of the women with OF are still supported by their husbands. There is therefore the need to develop client-centred needs-based rehabilitation and reintegration strategies that meet the needs of individual clients.

Beyond the medical and surgical treatment for obstetric fistula, a holistic approach that addresses the psychosocial and socioeconomic needs of survivors is required to ensure full recovery and healing from fistula. Follow-up of fistula patients is a major gap in the continuum of care. Tragically, only a fraction of needy fistula patients are offered reintegration services. All countries affected by fistula should track this indicator to ensure access to reintegration services. According to data collected by UNFPA in 2017, at least 27 countries have set up mechanisms to track survivors after treatment, a critical aspect of healing and successful reintegration. Intensive social reintegration of women and girls whose cases are deemed to be inoperable or incurable also remain a major gap; as these women endure significant social challenges, an individualised approach, tailored to their specific needs, is required to facilitate their reintegration.

Reintegration and rehabilitation services must be holistic, comprehensive, continuous and available when needed. They should include counselling and follow-up throughout all phases of treatment and recovery, from the first point of contact to after the patient’s discharge from the hospital, including health education, family planning services, psychosocial services and income -generating activities, which provide livelihood, renewed social connections and a sense of purpose, combined with community sensitization to reduce stigma and discrimination. Psychological support is necessary for all fistula patients, especially those who have not been fully healed.

Obstetric fistula programmes should take careful consideration of women needing rehabilitation and ensure that services are either provided by the programme or there is adequate linkage to institutions that provide such services so as to ensure that the recovery is not only surgical but holistic.

11.2.1 COMPONENTS OF REHABILITATION

Rehabilitation of OF includes: Health Promotion, physiotherapy, economic empowerment and social support. Details of this can be obtained in National Protocol for Rehabilitation & Social Reintegration Of Women Pre & Post Obstetric Fistula Repairs, 2021.

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APPENDIX I: General Logbook

GENERAL LOGBOOK				
S/N	Description of case including hospital and patient #	Observation or assisted Direct Supervision Independent practice	Comments	Trainer signature (if applicable)

APPENDIX II: 16 FIGO Modules Log Books

Available in FIGO training manual available at: Elneil, *S. Global Competency-Based Fistula Surgery Training Manual,* S. Elneil, Editor. 2021, FIGO and Partners. p. 221. https://www.figo.org/sites/default/files/2022-10/Module%20Logbooks%20Modules%201-16.pdf

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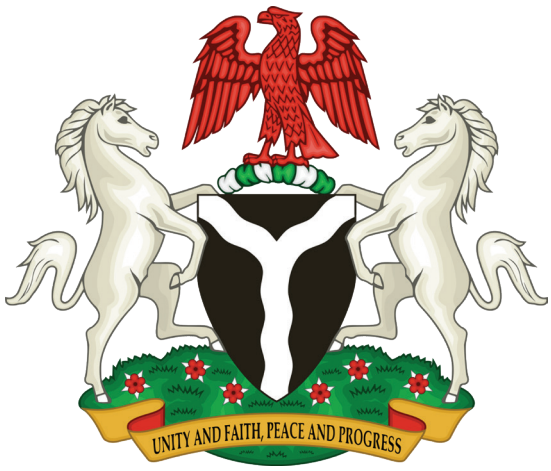
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