Malawi Guidelines for Syndromic Management of Sexually Transmitted Infections 2017



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Foreword

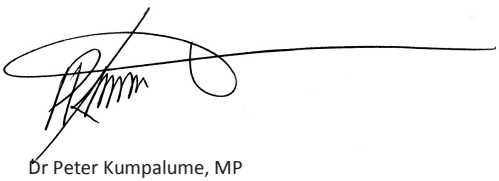
Sexually transmitted infections (STIs) have a profound impact on sexual and reproductive health worldwide, and continue to cause a major burden of disease. Investment in STI control will therefore contribute to the achievement of several Sustainable Development Goals.

According to the 2015/2016 Malawi Demographic and Health Survey, 15% of women and 10% of men (15-49 years) experienced STI symptoms in the past 12 months and only 41% of these sought treatment from a health care professional. Based on a total population of 8 million adults (15-49 years), this translates into 1 million STI cases, 430,000 of whom reported accessing professional care. However, MoH service data show only 264,397 STI patients treated in 2016, which is 62% of the population who reported seeking professional STI care. This discrepancy is probably due to incomplete service data as many patients may prefer private clinics for STI treatment and reporting from the private sector remains a challenge.

The Malawi Government adopted the Syndromic Management Approach for the management of STIs in 1992. This edition follows the 2008 version of the guidelines, and maintains the pragmatic principles of the syndromic management of STIs. As new technologies become more affordable, the syndromic management approach should be weighed against the public health benefits of introducing routine STI diagnostic tests and monitoring for antimicrobial resistance.

STIs can increase the risk of acquiring and transmitting HIV. In order for STI control to impact on HIV transmission, there is a need to prevent and appropriately treat STIs without delay. The national effort for STI prevention, diagnosis, and treatment needs to be further strengthened. There is a particular need for reinforcing primary prevention among the general population, including adolescents and key populations.

With the publication of this new edition of the national STI management guidelines, the Ministry of Health renews its commitment to significantly reduce the health and socioeconomic burden caused by STIs in Malawi including strengthening the quality of services provided by both the private and public sector.



Dr Peter Kumpalume, MP
Minister of Health

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Acronyms and Abbreviations

AIDS	Acquired Immuno-Deficiency Syndrome
ANRI	Ano-rectal Infections
AVD	Abnormal Vaginal Discharge
BA	Balanitis
BU	Bubo (Enlarged inguinal lymph nodes syndrome)
CSF	Cerebrospinal fluid
GUD	Genital Ulcer Disease
AVD	Abnormal Vaginal Discharge
HIV	Human Immuno-deficiency Virus
HTS	HIV Testing Services
LAP	Lower Abdominal Pain in women
MOH	Ministry of Health
PID	Pelvic Inflammatory Disease
PITC	Provider-Initiated Testing and Counselling
SS	Scrotal Swelling
STI	Sexually Transmitted Infection
UD	Urethral Discharge
USAID	United States Agency for International Development
VDRL	Venereal Disease Research Laboratory
WHO	World Health Organization

1 Introduction

1.1 Background

The diagnosis of STIs in well-resourced settings often relies on identifying the pathogen through laboratory tests. This is expensive and can be impractical in resource-constrained countries. Even when laboratory facilities are available, it may take several days to receive the results. During this time, patients may continue to transmit the infection to others.

Syndromic STI management is based on the fact that groups of pathogens cause similar signs and symptoms. A consistent group of signs and symptoms is known as a syndrome. For example, urethral discharge (UD) is most commonly caused by Chlamydia trachomatis (C. trachomatis) and or Neisseria gonorrhea (N. gonorrhea) and Trichomonas vaginalis (TV). This means that most patients with UD can be successfully treated with a combination of antibiotics that cover the three pathogens without the need to identify the specific pathogen causing the symptoms in each individual patient.

Since the last edition of the Malawi STI guidelines, new information from surveillance, research, and emerging needs merited review and update of the current guidelines. There have been advances in prevention tools, such as HPV vaccines. Diagnostic tests for STIs are also becoming simpler, albeit expensive, with the advent of molecular diagnostic technologies. However, considering the resource and practical constraints in Malawi the current guidelines remain focused on the syndromic approach.

The rise of antimicrobial resistance is a global threat. For example, the emergence of multidrug resistant *N. gonorrhoea* has complicated the previously simple, often single dose antibiotic treatment. The last class of antibiotics available to cure gonorrhoea reliably are third-generation cephalosporins, but there have been recent reports of treatment failure and reduced susceptibility of *N. gonorrhoea* to both oral and parenteral formulations of cephalosporins. Anecdotal reports indicate reduced susceptibility of *C. trachomatis*, *H.ducreyi* and *T. vaginalis* against standard antibiotics.

1.2 Policy context

The national STI control program is affiliated to the Department of HIV and AIDS in the MoH.

1.3 Target audience

These guidelines are written for health care workers providing STI services in the public and private sector in Malawi as follows: medical doctors, clinical officers, medical assistants, nurses, nurse midwife technicians.

1.4 **STI syndromes**

Figure 1 shows the distribution of STI syndromes diagnosed in Malawi in 2016. The most common syndromes are: Abnormal Vaginal Discharge (30%); Urethral Discharge (25%); Genital Ulcer Disease (16%); and Lower Abdominal Pain (15%). Together, these syndromes account for almost 90% of STI cases managed. A complete set of the syndromes along with possible causes of each syndrome is listed below.

Figure 1: Distribution of STI syndromes diagnosed and treated in Malawi in 2016 (n = 283,894)

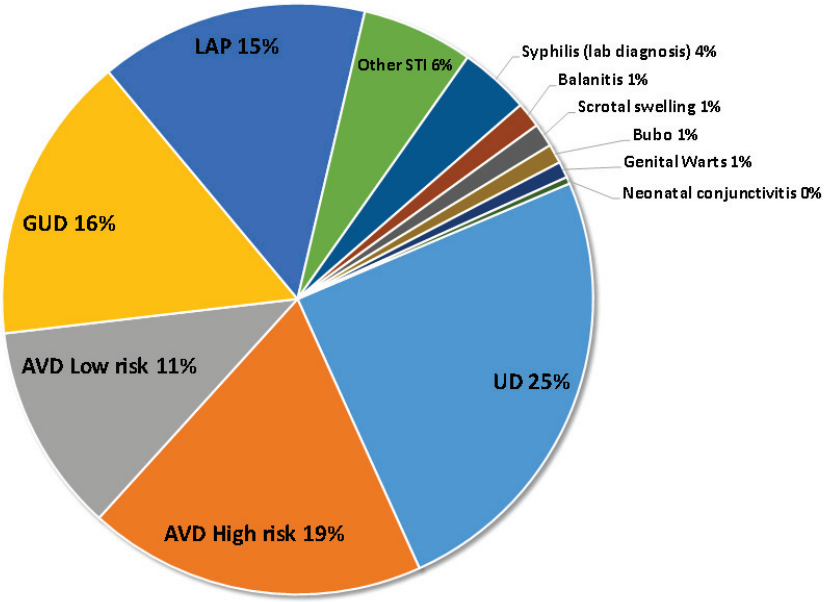


Table 1:STI symptoms and syndromes with clinical signs, underlying causes and differential diagnoses

Presenting Complaint (Symptoms)	Signs	Pathogens / Causes	Differential Diagnoses	Syndrome / Flowchart
Ulcers or sores on the penis, scrotum, labia, vagina, cervix and/or rectum	• Ulcers (visible break in the skin), blisters or sores on the genitals • With or without Bubo	• *Herpes simplex virus* • *Treponema pallidum* (Syphilis) • *Haemophilus ducreyi* (Chancroid) • *Calymatobacteriumgranulomatis*(Granuloma inguinale) • *Chlamydia trachomatis biovar* LGV (Lymphogranuloma venereum)		Genital Ulcer Disease *Figure 1*
Urethral Discharge with or without dysuria (pain on passing urine)	• Discharge from meatus urethrae with or without 'milking'/ expressing	• *Neisseria gonorrhoeae* • *Chlamydia trachomatis* • *Trichomonas vaginalis*		Urethral Discharge *Figure 3*
Pain in the lower abdomen in a woman With or without abnormal vaginal discharge	• Fever • Lower abdominal tenderness on palpation • Vaginal discharge / bleeding • Cervical excitation tenderness • Pelvic mass • Rebound tenderness /Guarding	• *Neisseria gonorrhoeae* • *Chlamydia trachomatis* • Other bacteroides species	• Ectopic pregnancy • Incomplete abortion • Appendicitis	Pelvic Inflammatory Disease *Figure 2*
Abnormal vaginal discharge Vulval itching Vulval swelling	• Abnormal vaginal discharge • Vaginal or vulval inflammation • Inflammation of the cervix • Pain on cervical movement	• *Trichomonas vaginalis* • *Candida albicans* • Bacterial Vaginosis • *Neisseria gonorrhoeae* • *Chlamydia trachomatis*		Abnormal Vaginal Discharge *Figure 4*
Painful testes With or without swelling With or without urethral discharge	• Swollen / tender scrotum • Redness of the scrotum • Urethral discharge • Fever	• *Neisseria gonorrhoeae* • *Chlamydia trachomatis*	• Trauma • Torsion of the testes • Mumps	Scrotal Swelling *Figure 6*
Swelling and pain in the groin	• Swollen inguinal lymph nodes • With or without ulceration or sinuses	• *H. ducreyi (Chancroid)* • *C. granulomatis*	• Infected wound in lower limb • Tuberculosis	Inguinal Bubo *Figure 7*
Itching and pain of the glans penis	• Redness on the glans penis • Discharge on the glans penis	• *Candida albicans* • *Trichomonas vaginalis*		Balanitis or Balano-prosthitis *Figure 8*
Discharging, swollen eyes	• Red, swollen eyes	• *N. gonorrhoeae* • *C. trachomatis*		Neonatal Conjunctivitis *Figure 9*

2 History-taking and Physical examination

The aims of history taking and examination are to:

- Make an accurate syndromic STI diagnosis.
- Establish the patient's risk of transmitting or contracting STIs including HIV.

Providers should:

- Ensure there is privacy and confidentiality.
- Ask open-ended questions.
- Seek consent before performing any physical examination.
- Explain each procedure before performing it and the reason why the procedure is being done.
- Maintain dignity and respect of the patient when performing the physical examination, exposing only the areas that need to be exposed.
- Offer HTS to every STI client.

3 Treatment regimens of STI syndromes

These guidelines provide the standard treatments and overall management of patients with STIs in Malawi. Syndromes are genital ulcer disease (GUD), urethral discharge (UD), abnormal vaginal discharge (AVD), lower abdominal pain in women (LAP), scrotal swelling, (SS), inguinal bubo (BU), balanitis (BA) and neonatal conjunctivitis (NC).

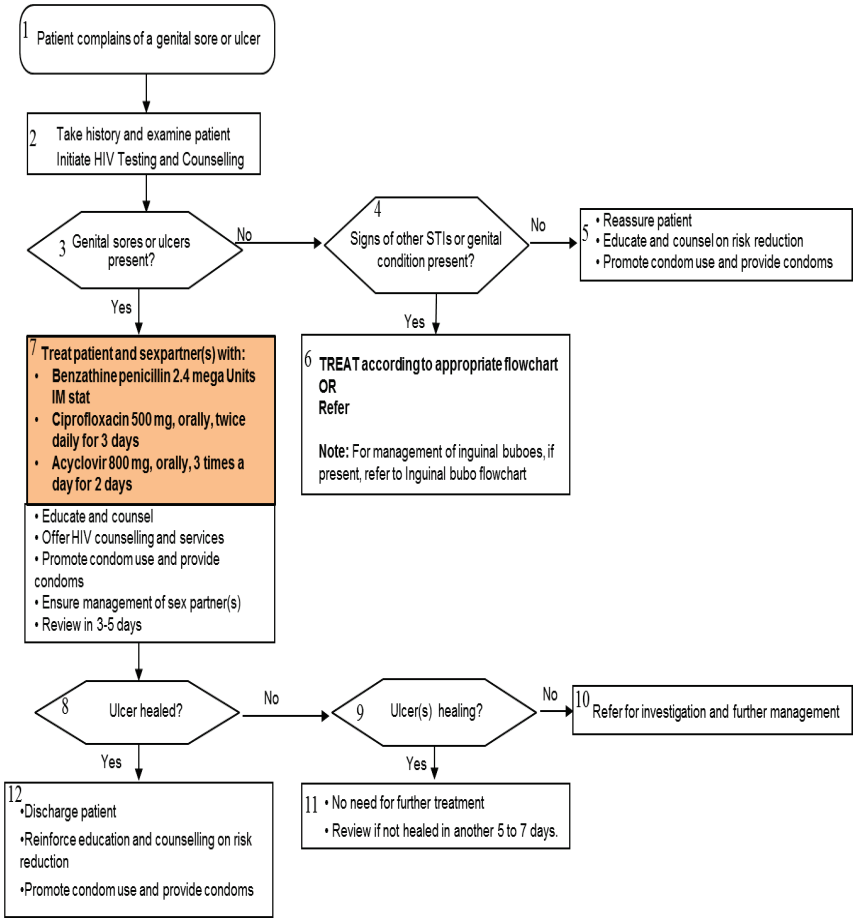
A new condition, which does not fit into syndromes, has been added to these guidelines: ano-rectal infections (ANRI). The guidelines also include other STI-related conditions of genital warts and cervical cancer, as well as syphilis in its different clinical stages.

3.1 Genital Ulcer Disease (GUD)

Introduction

A number of sexually transmitted organisms may cause genital ulceration. In Malawi, studies have shown that the commonest causes of genital ulcers are herpes simplex virus type 2 (HSV2), chancroid and syphilis. In addition, there is evidence that Lymphogranuloma venereum and granuloma inguinale also occur but studies are rather limited.

Figure 1. Flowchart for the management of genital ulcers in men and women



Note: Primary genital herpes and Non-primary first episode genital herpes require longer duration of treatment than recurrent genital herpes (refer to Table 2).

Table 2. Recommended treatment options for genital ulcer disease (GUD)

Single dose therapy for syphilis PLUS Multi-dose therapy for chancroid[i] plus Multi-dose therapy for herpes simplex virus infection

Infections covered	Recommended choice	Effective substitutes **(choose one medicine from each cell in this column)**	If woman is pregnant, breastfeeding or Patient of under 16 years of age **(choose one medicine from each cell in this column)**
Syphilis	• **Benzathine penicillin** 2.4 mega units by single intramuscular injection	**Doxycycline** 100 mg orally twice a day for 14 days **OR** **Erythromycin** 500 mg 4 times a day for 14 days	**Benzathine penicillin** 2.4 million units by single intramuscular injection **OR** **Erythromycin** 500 mg Orally 4 times a day for 14 days
Chancroid	• **Ciprofloxacin** 500 mg orally twice a day for 3 days	**Azithromycin** 1 gram orally as a single dose **OR** **Ceftriaxone** 250 mg as a single intramuscular injection **OR** **Erythromycin** 500 mg orally 4 times a day for 7 days	**Erythromycin** 500 mg orally 4 times a day for 7 days **OR** **Azithromycin** 1 gram orally as a single dose **OR** **Ceftriaxone** 250 mg as a single intramuscular injection
Genital herpes	• **Primary genital herpes: Acyclovir** 400 mg orally 3 times a day for 10 days	• **Primary genital herpes: Valaciclovir**500 mg orally twice daily for 10 days	• **Primary genital herpes: Acyclovir** 400 mg orally 3 times a day for 10 days
	• **Recurrent infection: Acyclovir** 800 mg orally 3 times a day for 2 days	• **Recurrent infection: Valaciclovir**500 mg twice a day for 3 days	• **Recurrent infection: Acyclovir** 800 mg orally 3 times a day for 2 days

Note 1: If there is no improvement after proper treatment for GUD, consider treating for granuloma inguinale and lymphogranuloma venereum. The recommended treatments for these conditions are summarized in Table 3.

Note 2: Primary genital herpes and Non-primary first episode genital herpes require longer duration of treatment than recurrent genital herpes.

Table 3.Recommended additional treatment for genital ulcers

The following treatments can be added to the GUD management depending on local epidemiology

Infections covered	Recommended choices	Effective substitutes	If client is pregnant, breastfeeding or under the age of 16 years old
Granuloma inguinale [Note: Treatments should be continued until all lesions have healed]	• **Azithromycin 1 gram orally** as a single dose followed by 500 mg once a day **OR** • **Doxycycline 100 mg orally** twice a day	• **Erythromycin 500 mg orally** 4 times a day **OR** • **Trimethoprim (80 mg)/ sulfamethoxazole (400 mg),** 2 tablets orally twice a day	• **Azithromycin 1 gram orally** as a single dose **OR** • **Erythromycin 500 mg** orally 4 times a day
Lymphogranuloma venereum	• **Doxycycline 100 mg orally** twice a day for 14 days or	• **Erythromycin 500 mg orally** 4 times a day for 14 days	• **Erythromycin 500 mg orally** 4 times a day for 14 days

3.2 Urethral Discharge (UD)

3.2.1 Introduction

Urethral discharge is a common presenting symptom of urethritis caused by an STI in men. Men with urethritis may also complain of a burning sensation (dysuria) while passing urine and frequent urination. Common causes are *Neisseria gonorrhoeae* (*N. gonorrhoeae*) and/or *Chlamydia trachomatis* (*C. trachomatis*) and/or *Trichomonas vaginalis* (*T. vaginalis*).

Figure 2. Flowchart for the management of urethral discharge (UD) in men

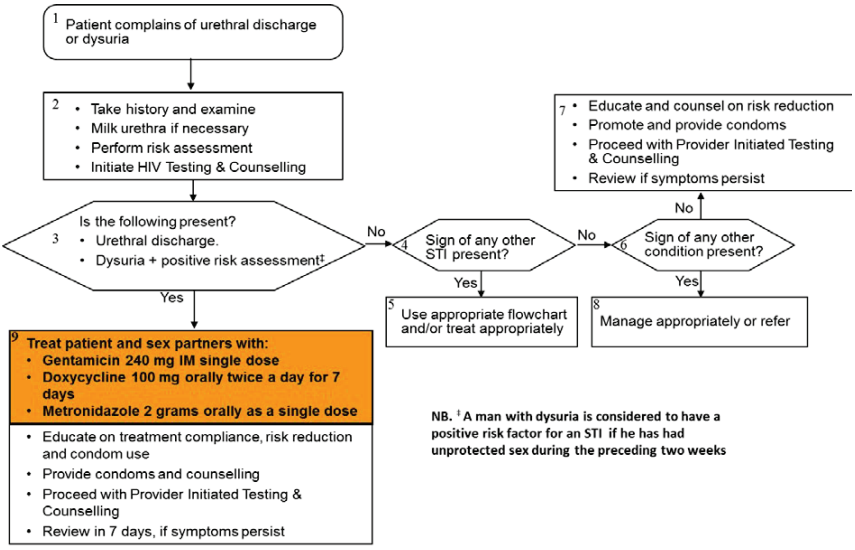


Table 4. Recommended treatment options for urethral discharge (UD) in men

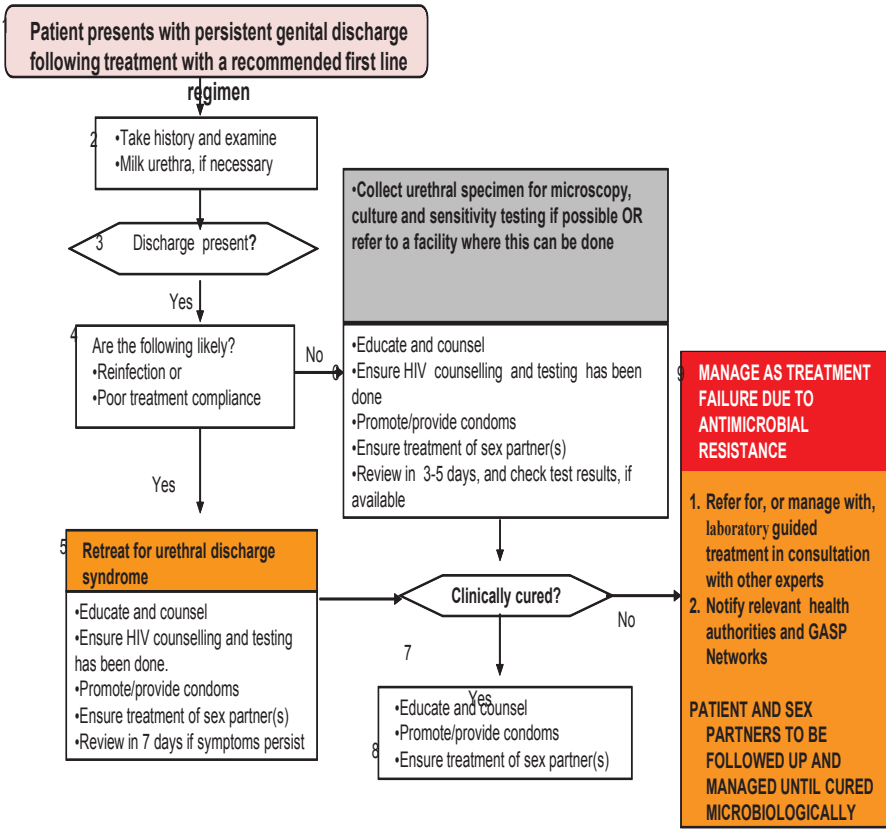
Therapy for uncomplicated Neisseria gonorrhoeae plus Therapy for Chlamydia trachomatis PLUS Therapy for Trichomonas vaginalis

Infections covered	Recommended choice	Effective substitutes	Alternatives pregnant or breastfeeding client
N. gonorrhoeae	• **Gentamicin 240 mg** IM, single dose	• **Cefuroxime 1 gram** orally as a single dose **OR** • **Cefixime 400 mg** orally single dose **OR** • **Ceftriaxone 250 mg** IM single dose	• **Same as for index client**
C. trachomatis	• **Doxycycline 100 mg** orally, twice daily for 7 days	• **Azithromycin 1gram** orally**,** single dose **OR** • **Erythromycin 500 mg** orally, four times a day for 7 days	• **Azithromycin 1 gram** orally, single dose **OR** • **Erythromycin 500 mg** orally four times a day for 7 days
T. vaginalis	• **Metronidazole 2 grams** orally, single dose	• **Metronidazole 400mg or 500 mg** orally twice daily for 7 days **OR** • **Tinidazole 2 grams** orally, single dose	• **Metronidazole 400 mg**, orally twice daily for 5 days

3.3 Persistent Urethral Discharge

Abnormal Vaginal Discharge (AVD)

N.B. This flowchart assumes that the patient has received and taken effective therapy for gonorrhoea , chlamydia and trichomonas vaginalis prior to this consultation



3.3.1 Introduction

Abnormal vaginal discharge is extremely common and may include changes in quantity, smell and colour. There may also be itching, dysuria, soreness and or swelling of the genitalia.

Most cases of AVD are due to vaginal infection. The causes of vaginal infections are *T. vaginalis* (Trichomoniasis), *Candida albicans* (Candidiasis) and Bacterial vaginosis. The assessment for AVD requires a **good sexual history** to estimate risk of cervical infection with *N. gonorrhoeae* and/or *C. trachomatis*. The **risk assessment** for clients may be considered to be positive for STIs if the following criteria are met:

1) If the client's sex partner has urethral discharge or genital ulcers,

OR

2) If the answer is yes to **two or more** of the following:

- Younger than 25 years of age
- Is not married
- Has had a new sex partner in the 3 months preceding this visit or
- Has had more than 1 sex partner in the 3 months preceding this visit.

Figure 4. Abnormal Vaginal Discharge Flowchart

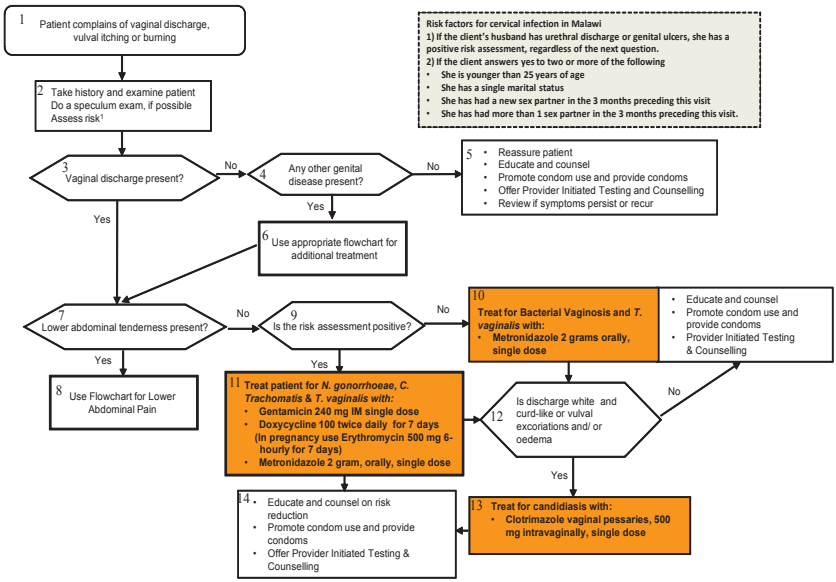


Table 5. Recommended treatment for vaginal infection

Therapy for bacterial vaginosis and Trichomonas vaginalis PLUS Therapy for yeast infection if curd-like white discharge is present

Infections covered	Recommended choice	Effective substitutes (choose one medicine from each cell in this column)	In pregnancy Note: metronidazole can be given, if necessary, during the first trimester[ii, iii]
Bacterial vaginosis	• **Metronidazole 2grams** orally, as single dose	• **Metronidazole 400 mg or 500 mg** orally twice daily for 7 days • **Clindamycin 300 mg** orally twice daily for 7 days	• **Metronidazole 200 mg or 250 mg** orally 3 times a day for 7 days **OR** • **Metronidazole gel** 0.75%, one full applicator (5g) intra-vaginally twice a day for 7 days **OR** • **Clindamycin 300 mg** orally twice a day for 7 days
Trichomonas vaginalis	• **Metronidazole 2 grams** orally in a single dose **(Note: Only one 2-gram dose is required to cover both TV and BV)**	• **Metronidazole 400 mg or 500 mg** twice a day for 7 days **OR** • **Tinidazole 2 grams** orally, single dose **OR** • **Tinidazole 500 mg** orally once daily for 5 days	• **Metronidazole 200 mg or 250 mg** orally 3 times a day for 7 days **OR** • **Metronidazole gel** 0.75%, one full applicator (5 grams) intravaginally twice a day for 7 days
Candida albicans (yeast infection)	• **Clotrimazole vaginal pessary, 500 mg** as a single intravaginal application	• **Fluconazole 150 mg (or 200 mg)** orally as single dose • **OR** • **Miconazole vaginal pessaries, 200 mg** at night for 3 nights	• **Miconazole 200 mg vaginal pessaries** once a day for 3 days **OR** • **Clotrimazole vaginal pessary** as a single dose **OR** • **Nystatin pessaries 200, 000 units** at night for 7 nights

Table 6. Recommended treatment options for cervical infection

Therapy for uncomplicated Neisseria gonorrhoeae PLUS Therapy for Chlamydia trachomatis

Infections covered	Recommended choice	Effective substitutes (choose one medicine from each cell in this column)	Options for pregnant women or during breastfeeding
Neisseria gonorrhoeae	• **Gentamicin 240 mg IM** single dose	• **Cefuroxime 1 gram** orally as a single dose **OR** • **Cefixime 400 mg** orally single dose **OR** • **Ceftriaxone 250 mg** IM single dose	• **Ceftriaxone 250 mg IM** single dose **OR** • **Cefixime 400 mg** orally single dose
Chlamydia trachomatis	• **Doxycycline 100 mg orally** twice daily for 7 days	• **Azithromycin 1gram orally,** single dose **OR** • **Erythromycin 500 mg orally,** 4 times a day for 7 days	• **Erythromycin 500 mg orally,** 4 times a day for 7 days **OR** • **Azithromycin 1 gram orally,** single dose

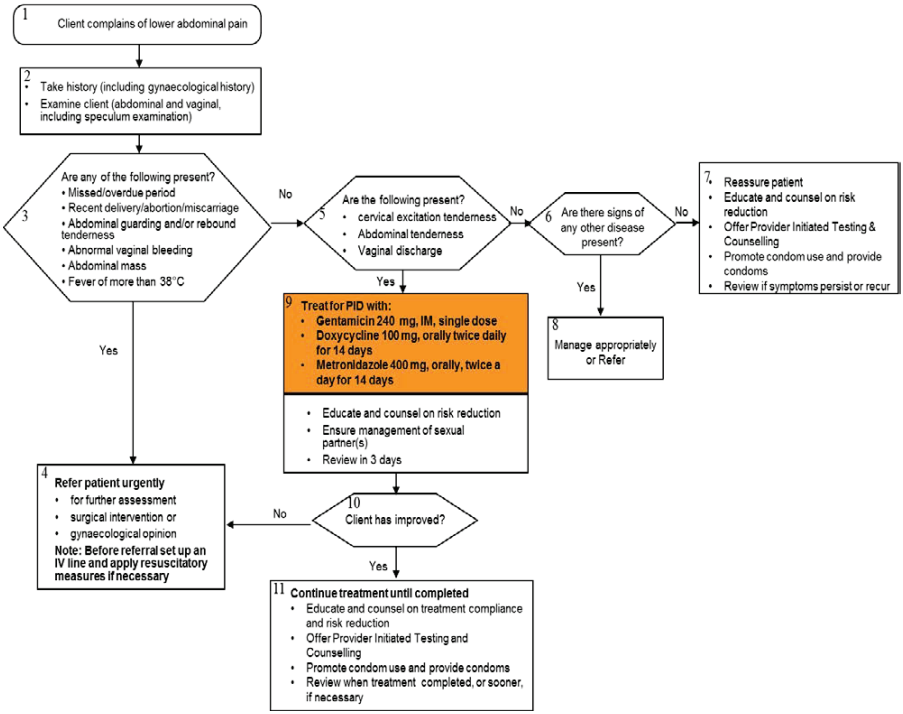
3.4 Lower Abdominal Pain in women (LAP)

PID is defined as infection of the female genital tract above the internal os of the cervix. It includes all of the following conditions: endometritis, salpingitis, tubo-ovarian abscess and pelvic peritonitis. PID occurs as a result of infection ascending from the cervix and can be caused by *N. gonorrhoeae, C.trachomatis* and anaerobic bacteria, usually of the *Bacterioides* species, mycoplasmas, gram-negative facultative bacteria and streptococci.

The seriousness of PID lies in the fact that the condition can lead to pelvic peritonitis, tubo-ovarian abscess, generalised peritonitis and ectopic pregnancy which can be fatal.

Lower abdominal pain is a common symptom in women and does not necessarily mean PID.

Figure 5.Flowchart for lower abdominal pain in women



If the diagnosis is in doubt or if the patient is very ill, and if a surgical emergency is suspected, the patient should be referred for specialist assessment without delay. Before transporting the client, resuscitation measures must be applied and an intravenous infusion must be set up.

Table 7.Recommended outpatient treatment for lower abdominal pain

Single –dose therapy for N. gonorrhoeae

PLUS

Multi-dose therapy for Chlamydia trachomatis

PLUS

Therapy for anaerobic infections

Infections covered	Recommended choice	Effective options
N. gonorrhoeae	• **Gentamicin240 mg IM** stat	• **Ceftriaxone 250 mg** by intramuscular injection
C. trachomatis	• **Doxycycline 100mg** orally twice a day for 14 days or	• **Erythromycin 500mg** every 6 hours for 14 days
Anaerobes	• **Metronidazole** 400mg orally twice a day for 14 days	•

3.5 Acute Scrotal Swelling (SS)

3.5.1 Introduction

Inflammation of the epididymis (epididymitis) usually manifests itself by acute onset of unilateral testicular pain and swelling, often with tenderness of the epididymis and vas deferens, and occasionally with erythema and oedema of the overlying skin. In men under 35 years this is more frequently caused by sexually transmitted organisms than in those over 35 years. When the epididymitis is accompanied by urethral discharge, it should be presumed to be of sexually transmitted origin, commonly gonococcal and/or chlamydial in nature. The adjacent testis is often also inflamed (orchitis), giving rise to epididymo-orchitis.

Bed rest, with the scrotum elevated, and cold compresses may be useful in decreasing swelling. Analgesic medicines may also be required for the management of scrotal pain.

Figure 6. Flowchart for the Management of Acute Scrotal Swelling

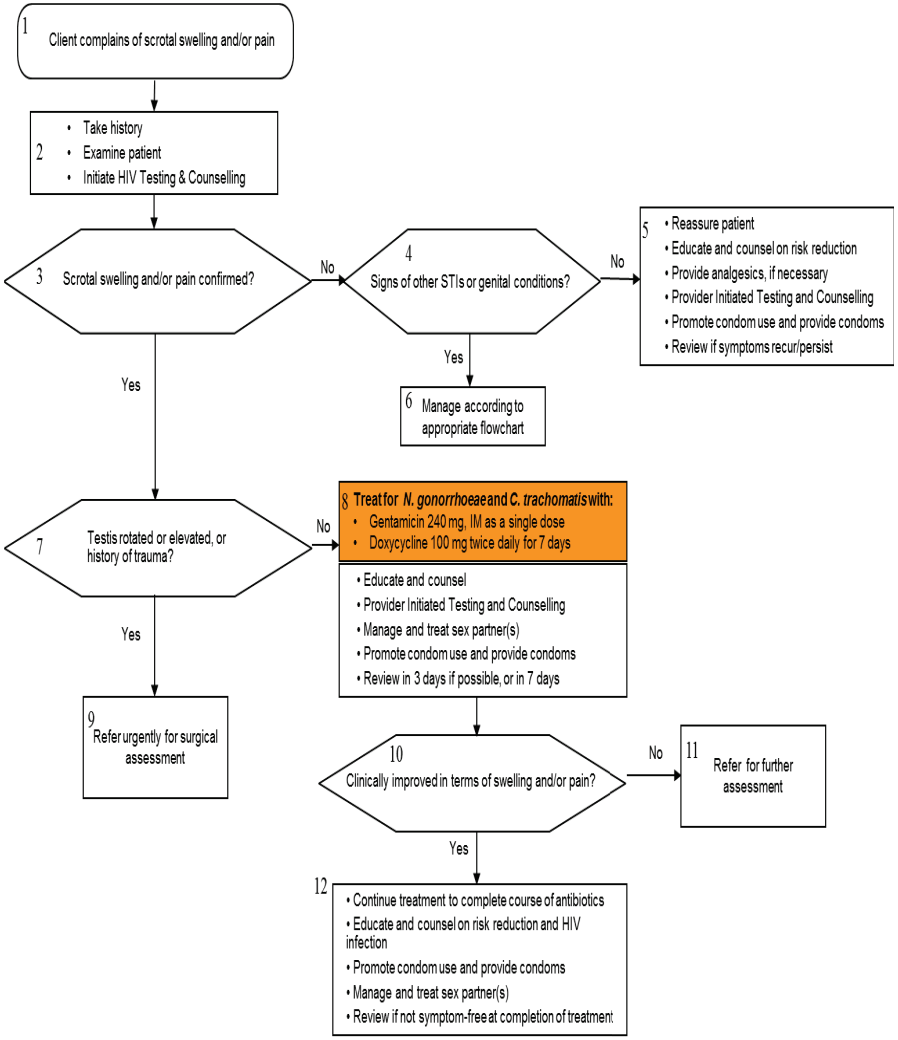


Table 8. Recommended treatment options for acute scrotal swelling

Therapy for uncomplicated N. gonorrhoeae

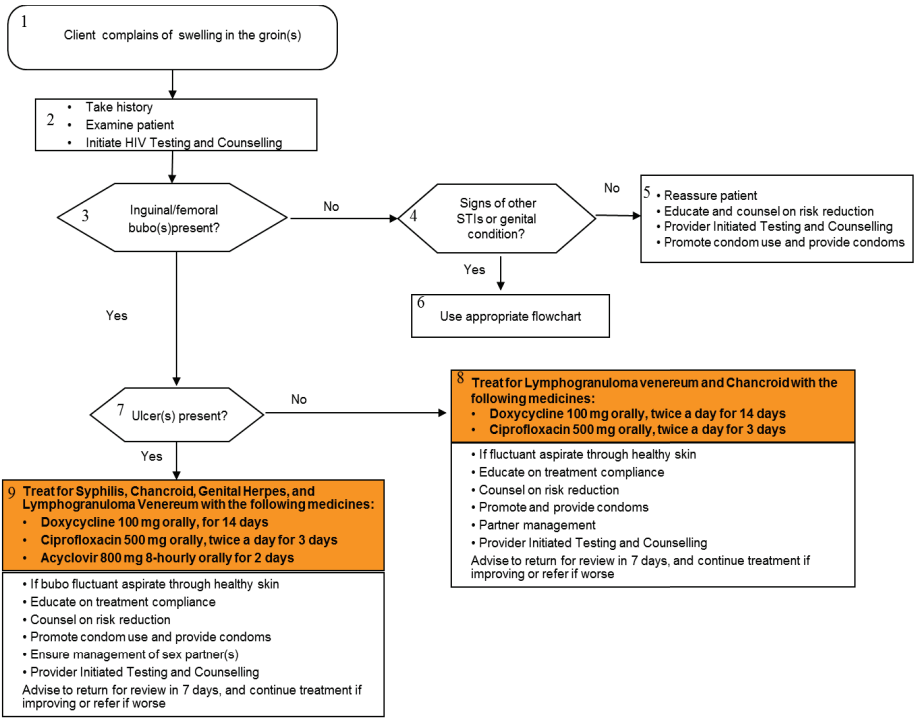
PLUS

Therapy for Chlamydia trachomatis

Infections covered	Recommended choice **(Choose one from each cell in the column below [=2 different medicines])**	Effective substitutes **(Choose one from each cell below [= 2 different medicines])**	Recommended options for sex partner who is pregnant or breastfeeding
N. gonorrhoea	• **Gentamycin 240 mg IM**, single dose	• **Ceftriaxone 250 mg IM** single dose **OR** • **Cefixime 400 mg orally** as a single dose **OR** • **Cefuroxime 1 gram orally as a single dose**	• **Ceftriaxone 250 mg IM** single dose **OR** • **Cefixime 400 mg** orally single dose
C. trachomatis	• **Doxycycline 100 mg orally,** twice daily for 7 days	• **Azithromycin 1 gram orally** as a single dose **OR** • **Erythromycin 500 mg orally** 4 times a day for 14 days	• **Erythromycin 500 mg orally,** 4 times a day for 7 days **OR** • **Azithromycin 2 gram orally,** single dose

3.6 Inguinal Bubo (BU)

Figure 7. Flowchart for the management of inguinal bubo



Note: Doxycycline is an effective medicine for the treatment of syphilis as well as LGV. There is no need to give penicillin. See choice of medicines in Table 9.

If the bubo is fluctuant, it must be aspirated by a trained health-care person using a large needle, such as an 18 or 19-gauge needle and syringe. Always enter the bubo through adjacent normal, healthy skin, not through inflamed skin.

Incision and drainage of buboes will delay healing process and are contraindicated.

Table 9. Recommended treatment options for inguinal bubo

Multi-dose therapy for chancroid PLUS Multi-dose therapy for Lymphogranuloma venereum(LGV)

Infections covered	Recommended choice	Effective substitutes **(choose one medicine from each cell in this column)**	If patient is pregnant or breastfeeding or if patient is under 16 years old
Chancroid	• **Ciprofloxacin 500 mg** orally twice a day for 3 days	• **Azithromycin 1 gram** orally as a single dose **OR** • **Ceftriaxone 250 mg IM** as a single dose	• **Erythromycin 500 mg** orally 4 times a day for 14 days (covers both chancroid and LGV)
LGV	• **Doxycycline 100 mg** orally twice a day for 14 days	• **Azithromycin 1 gram** orally as a single dose	• **Azithromycin 1 gram** orally as a single dose **OR** • **Erythromycin 500 mg** orally 6-hourly for 14 days
If genital ulcers are present add treatment for GUD as below			
Genital herpes	• **Acyclovir** 800 mg orally 3 times a day for 2 days		
Syphilis	• **Note that Doxycycline for 14 days for LGV will also cover syphilis**		• **Erythromycin** 500 mg 4 times a day for 14 days

3.7 Balanitis /Balanoposthitis (BA)

3.7.1 Introduction

Balanitis is an inflammation of the glans penis. If the foreskin is also affected, the condition is known as balanoposthitis. The patient usually complains of itchiness of the glans penis, which may be quite severe.

Figure 8. Flowchart for balanitis and balanoposthitis

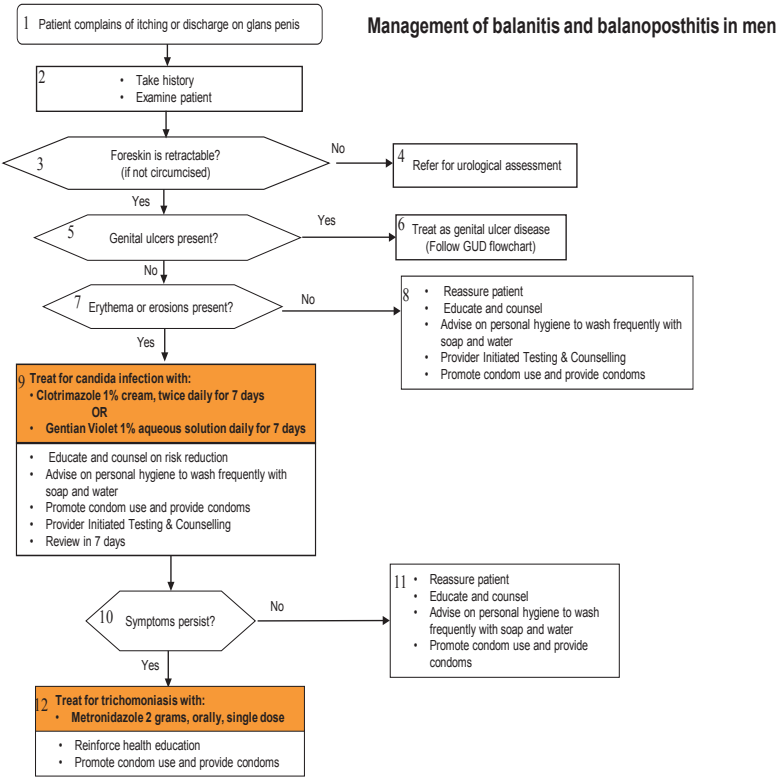


Table 10. Treatment options for balanitis and balanoposthitis

Infections covered	Recommended choices	Effective substitutes
Candida albicans	• **Clotrimazole 1% cream**, topically twice daily for 7 days. **OR** • **Gentian Violet 1%** aqueous solution applied to the glans penis daily for 7 days	• **Miconazole 2% cream topically** twice daily for 7 days **OR** • **Nystatin cream, topically,** twice daily for 7 days **OR** • **Fluconazole 150 mg** orally, single dose
Trichomonas vaginalis	• **Metronidazole 2gm PO stat**	

Note: Advise client and sex partner to avoid drinking alcohol while taking metronidazole and for up to 3 days after the last dose.

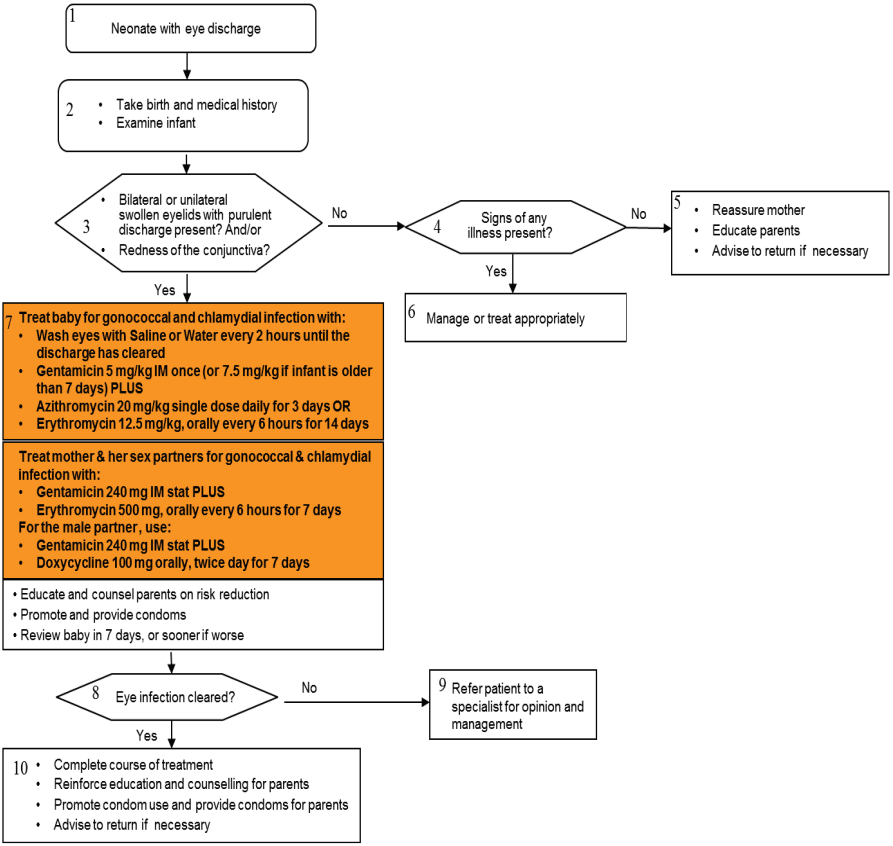
3.8 Neonatal Conjunctivitis (NC)

3.8.1 Introduction

Neonatal conjunctivitis or *Ophthalmia Neonatorum* is inflammation of the conjunctiva occurring within the first 28 days of birth. The most important sexually transmitted infections which cause neonatal conjunctivitis are *N. gonorrhoeae* and *C. trachomatis*, transmitted at birth if an infected woman is not treated during pregnancy.

Neonatal conjunctivitis is an extremely serious condition which may lead to blindness if not appropriately managed. It is, therefore, recommended that if the condition cannot be managed at primary health-care level, the infant is referred immediately to a Central Hospital where appropriate treatment can be administered by a Paediatrician.

Figure 9.Flowchart for the management of neonatal conjunctivitis



Neonatal conjunctivitis can be managed at primary health-care facility without need to refer to the next level. Only if the condition is severe should the child be referred.

Table 11. Recommended treatment and prophylaxis for neonatal conjunctivitis

Infections covered *N. gonorrhoeae* *C. trachomatis*	First line management approaches	Recommended choice of medicine	Effective treatment substitutes
Treatment for baby with established conjunctival infection			
Management	• Irrigate eyes with normal saline *Note*: No topical eye ointment is necessary if systemic therapy is administered	• **Gentamicin 5 mg/kg, IM stat (7.5 mg/kg** if the infant is older than 7 days, **PLUS** • **Azithromycin 20 mg/kg orally once a day for 3 days**	• **Ceftriaxone 50 mg/kg** up to a total of 150mg, IM, single dose **PLUS** • **Erythromycin 12.5 mg/kg** orally, every 6 hours for 14 days
• **Treatment for parents**			
Management for mother	• Educate and counsel. • Offer HIV counselling and testing. • Promote condom use and provide condoms.	• **Gentamicin 240 mgIM** as a single dose **PLUS** • **Erythromycin 500 mg** orally, 4 times a day for 7 days **OR** • **Azithromycin 1 gram** orally ,single dose	• **Ceftriaxone 250 mg IM**, single dose **OR** • **Cefuroxime 1 gram** orally, single dose **OR** • **Cefixime 400 mg,** orally, single dose **PLUS** • **Azithromycin 1** gram orally, single dose
Management for sex partner(s)	• Educate and counsel. • Offer HIV counselling and testing. • Promote condom use and provide condoms.	• **Gentamicin 240 mg, IM,** single dose **PLUS** • **Doxycycline 100 mg,** orally, twice daily for 7 days	• **Ceftriaxone 250 mg IM,** single dose **OR** • Cefixime 400 mg, orally, single dose **PLUS** • **Azithromycin 1 gram,** orally, single dose
Prophylaxis	• 1. Screen mother for cervicitis during pregnancy and treat, if necessary.	• **Treat mother for cervicitis (follow appropriate flowchart)**	• **Follow appropriate flowchart**
	• 2. Instil, as a single application, an appropriate antimicrobial eye ointment into the eyes of the neonate immediately after delivery.	• **Clean baby's face and eyes** **AND** • **Instil 1% tetracycline eye ointment, single application**	• **0.5% erythromycin ointment, single application** **OR** • **1% silver nitrate solution, single application.**

4 Common STIs not covered in the STI Syndromes

4.1 Genital Warts

There are several methods of treating genital warts as outlined below.

1) Chemical treatment
   - **Compound podophyllin paint weekly**. Apply carefully and sparingly to lesions, avoiding normal tissue. Wash off after 4 hours. If applied to vaginal, vulval surfaces, they should be allowed to dry before coming into contact with normal epithelium. If there is no improvement after 4-6 weeks, consider alternative treatments.
   - **Silver nitrate stick applied daily**. This can be used during pregnancy and lactation as an alternative to Podophyllin paint.

Podophyllin paint is toxic and should not be used in large amounts (usual recommended volume is no more than 5ml at each application). Large areas, requiring more than this amount, should be treated sequentially. Podophyllin paint is contra-indicated during pregnancy and lactation.

2) Treatment via physical removal uses
   - (i) Liquid nitrogen
   - (ii) Electro-cautery
   - (iii) Surgical removal

Note: Cutting away the warts (with scissors or razors) in the out-patient setting is contra-indicated since it results in excessive bleeding.

Table 12. Treatment options for genital warts

SITE OF WARTS	First line treatment options	Effective substitutes	If woman is pregnant
External penile, vulval and anal	Podophyllin 10-25% tincture of benzoin, applied carefully to the warts, avoiding normal surrounding skin, once weekly. Wash off after 4 hours in adults and after 2 hours in children	Trichloroacetic acid (TCA) 80-90%, once a week. Wash off after 4 hours **OR** Imiquimod 5% cream, applied with a finger at bedtime, left overnight, 3 times a week for as long as 16 weeks **OR** Electro-cautery **OR** Surgical excision	Avoid use of podophyllin
Cervical, urethral, rectal and vaginal **NB.** To be managed in collaboration with a specialist.	Cryotherapy with liquid nitrogen, solid carbon dioxide or a cryoprobe. Repeat applications every 1 to 2 weeks	Electro-cautery **OR** Surgical excision	

4.2 Cancer of the Cervix

Prevention

Primary prevention includes risk reduction counselling to minimise risk to STI exposure. Secondary prevention on the other hand, targets those women who are already infected with HPV, and the intervention would focus on:

- Identifying those with early, easily treatable precancerous lesions.
- Treating with cost-effective treatments before lesions progress to cancer

Diagnosis can be done by a Papanicolaou smear (which needs to be sent to Central Hospitals to be read by a histopathologist) or by Visual Inspection with Acetic Acid (VIA).

VIA is recommended in resource-low settings, such as Malawi for the following reasons.

- It is non-invasive, easy to perform and inexpensive.
- It can be performed by all level of health care-workers, in almost any setting.
- Results are immediately available – potential for immediate link to treatment.
- All supplies are locally available (light source, speculum, examination couch, acetic acid (vinegar), vaginal swabs, and gloves).

Table 13: Classification of changes on the cervix during VIA

VIA classification	Clinical Criteria
Test-negative	Smooth, pink, uniform, featureless, ectropion, polyp, cervicitis, Nabothian cysts
Test – positive	White plaques (Aceto-white epithelium is distinctly visible)
Suspected Cancer	Cauliflower like growth or ulcer, Fungating Mass

VIA is being rolled out throughout the country in Malawi. Early treatment consists of cryotherapy. This is the use of liquid nitrogen to freeze the lesions or dysplasia. In advanced stages of cervical cancer, radical surgery (removing parts of the cervix, or the entire uterus) is the only therapy.

4.3 Syphilis and Staging of Infection

4.3.1 Therapeutic consideration for syphilis

A treponemacidal level of antimicrobials needs to be achieved in the serum and cerebrospinal fluid (CSF) to provide effective treatment for syphilis. A penicillin level of greater than 0.018 mg per litre is considered sufficient, and needs to be maintained for at least 7–10 days in early syphilis and for a longer duration of up to 30 days in late syphilis, hence, the different treatment regimens at different stages of syphilis.

Parenteral, rather than oral, penicillin treatment is preferred as it provides guaranteed bioavailability and supervised treatment. The optimal dose and duration of treatment with ceftriaxone have not yet been determined.

Recently conducted studies show that azithromycin is as effective as benzathine penicillin in treating early syphilis. Azithromycin had the potential advantage of being effective against C. trachomatis, H. ducreyi and N. gonorrhoeae, but macrolide resistance in T. pallidum has been documented in several countries, thus, necessitating caution in its use as an oral alternative to intramuscular penicillins for the treatment of syphilis. When azithromycin is used for the treatment of early syphilis, close follow-up of patients is required to monitor response to treatment.

Management of patients with cardiovascular syphilis should include a consultation with a cardiologist. All patients with cardiovascular syphilis and neurosyphilis should be closely followed. The follow-up should include clinical, serological, CSF and, based on the clinician's assessment of the individual patient's condition, radiological examinations.

4.3.2 Syphilis and HIV Infection

All patients with syphilis should be encouraged to undergo testing for HIV infection because of the high frequency of dual infection and its implications for clinical assessment and management. Neurosyphilis should be considered in the differential diagnosis of neurological disease in HIV-infected individuals.

In cases of congenital syphilis, the mother should be encouraged to undergo testing for HIV; and if her test is positive, the infant should be referred for follow-up.

In all cases, careful follow-up is necessary to ensure adequacy of treatment.

4.3.3 Syphilis in pregnancy

Pregnant women should be regarded as a separate group, requiring close surveillance, in particular to detect possible reinfection after treatment has been given during early pregnancy. It is also important to treat their sex partner(s). Pregnant patients at all stages of

pregnancy, who are not allergic to penicillin, should be treated with penicillin according to the dosage schedules recommended for the treatment of non-pregnant patients at a similar stage of the disease.

4.3.4 Congenital Syphilis

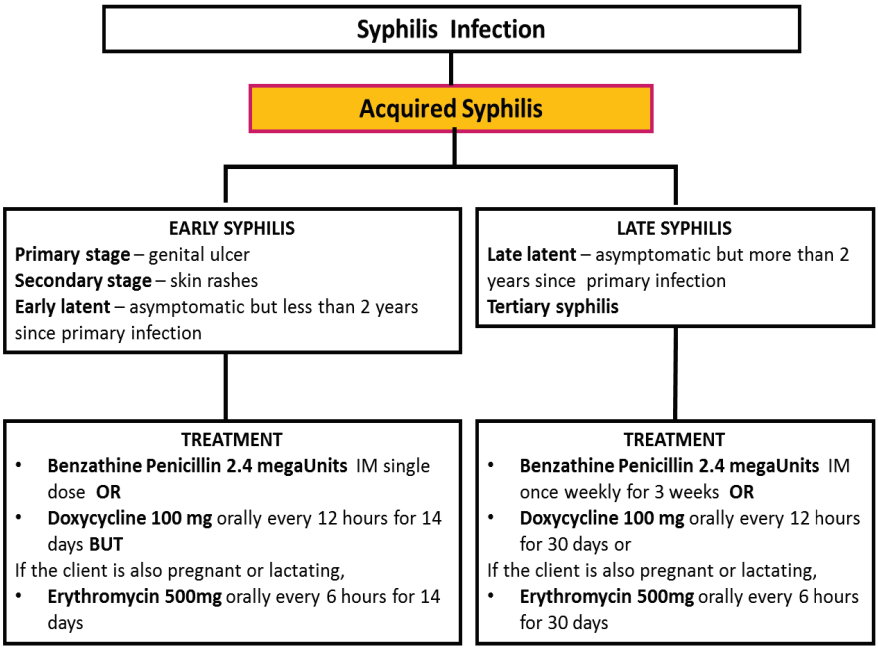
Congenital syphilis is divided into early (first two years of life) and late (becomes apparent later in life) stages.

Prevention of congenital syphilis is feasible. Those in poor nutritional condition may **succumb to concurrent infections, such as pneumonia.**

4.4 Treatment recommendations for different stages of syphilis.

4.4.1 Acquired syphilis

Figure 10. Scenario of treatment regimen for different stages of syphilis in adults



4.4.2 *Tertiary Syphilis including Neuro-syphilis*

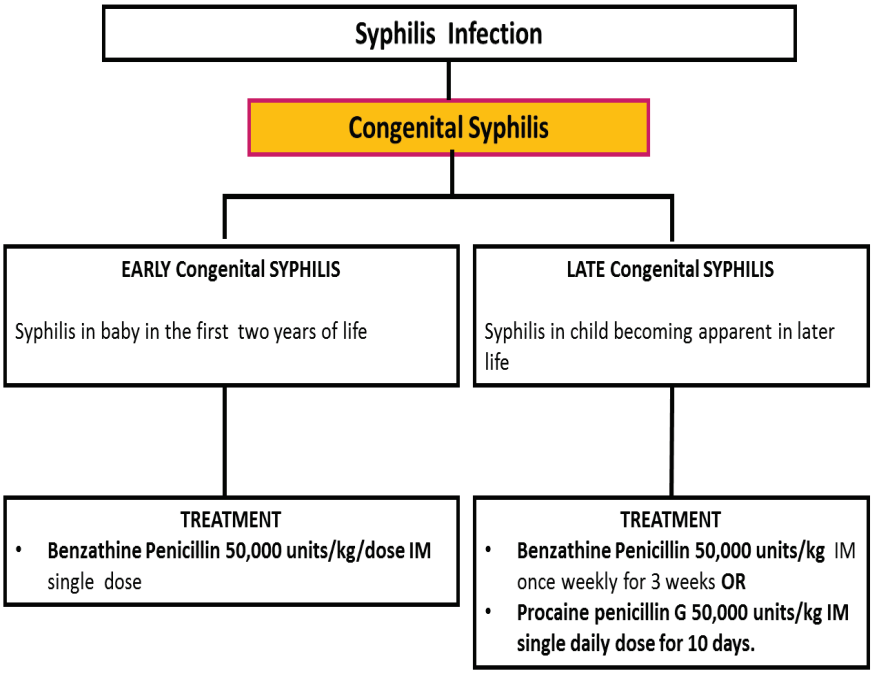
Tertiary syphilis which does not involve the nervous system (includes late benign syphilis and cardiovascular syphilis), the treatment is the same as in late latent syphilis.

Neuro-syphilis is treated with **Aqueous Benzyl Penicillin 3MU IV** every 4 hours for 14 days followed by **Benzathine penicillin 2.4 MU IM** once weekly for 3 weeks. In case the client is allergic for penicillin: **Doxycycline 100 mg orally** every 12 hours for 30 days or if the client is also pregnant or lactating, **Erythromycin 500mg orally** every 6 hours for 30 days.

4.4.3 *Congenital Syphilis*

Children under the age of 2 years usually respond well to adequate doses of penicillin, although recovery may be slow in seriously ill patients. The treatment recommendations for congenital syphilis are summarised in Figure 11.

Figure 11. Scenario of treatment regimen for early and late congenital syphilis



Ano-Rectal Infections (ANRI)

Anorectal symptoms and sexually transmitted anorectal infections are prevalent in men who have sex with men (MSM), in female sex workers, and male-to-female transgendered individuals by virtue of practising anal sexual intercourse.

4.5 Anatomical Sites of Infection

Infections of the ano-rectal region can be divided into the following anatomical sites.

- anal infections: infections of the external anus and anal canal, involving the stratified squamous epithelium – a common site for pathogens such as the human papillomavirus (HPV), herpes simplex virus (HSV) and syphilis;
- proctitis: infections from the dentate line to the recto-sigmoid junction – a common site for gonococcal and chlamydial infections and HSV;
- proctocolitis: infections of the rectum and colon – a common site for Shigella, Campylobacter, Salmonella, cytomegalovirus and amoebiasis.

Treatment recommendations for ano-rectal infections

The choice of medicines, dosage and duration of treatment are, in general, not different from those for infections at other anatomical sites.

Figure 12.Flowchart for the management of ano-rectal infections

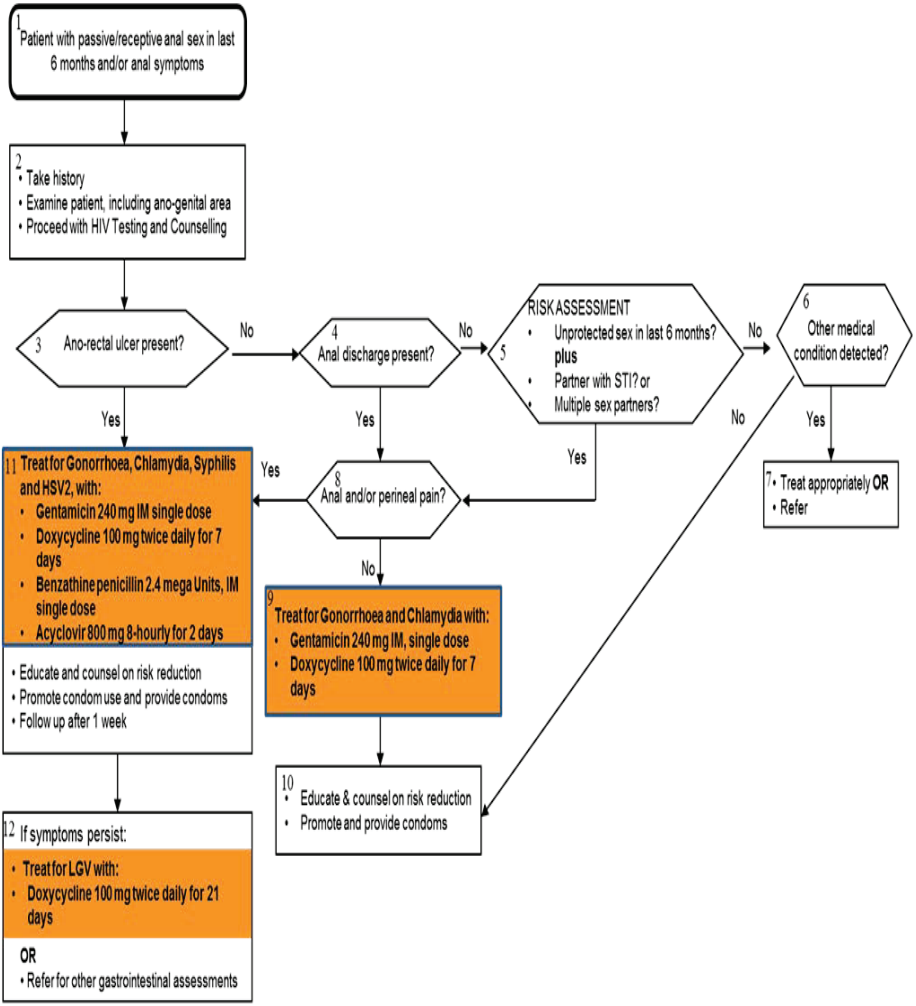
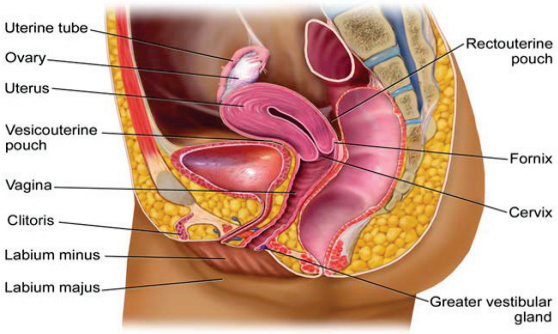


Table 14. Treatment options for ano-rectal infections

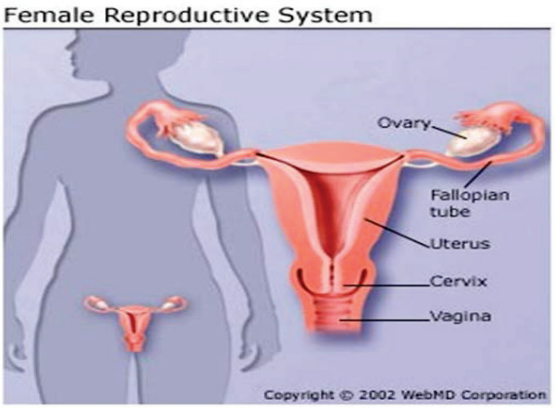
Infections covered	Recommended choice **(Choose one from each cell in the column below)**	Effective substitutes
Neisseria gonorrhoeae	• **Gentamicin 240 mg IM** single dose	• **Ceftriaxone 250 mg IM** single dose
Chlamydia trachomatis	• **Doxycycline 100 mg orally** twice daily for 7 days	• **Azithromycin 1 gram orally,** single dose
Syphilis	• **Benzathine penicillin** 2.4 million units by single intramuscular injection **Note:** patients with a positive syphilis test and no ulcer, administer the same dose at weekly intervals for a total of 3 doses	• **Doxycycline 100mg orally**, twice a day for 14 days **OR** • **Erythromycin** 500mg 4 times a day, orally, for 14 days
Genital herpes	• **Recurrent infection: Acyclovir** 800 mg orally 3 times a day for 2 days	• **Recurrent infection:Valaciclovir500 mg** twice a day for 3 days
	• **Primary genital herpes: Acyclovir** 400 mg orally 3 times a day for 10 days	• **Primary genital herpes:Valaciclovir**500 mg orally twice daily for 10 days

5 APPENDICES

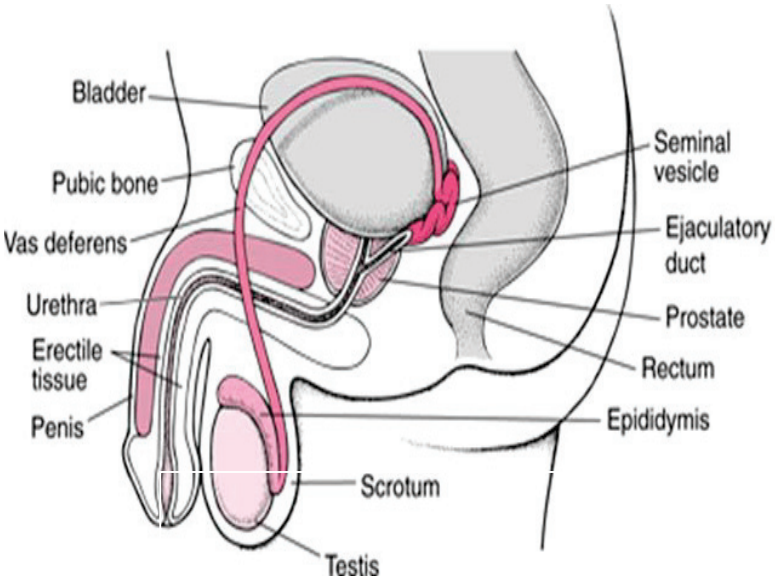
5.1 Appendix 1: Female Reproductive Systems



The female reproductive system



Appendix 2: Male Reproductive Systems



5.2 Appendix 3: Common Sexually Transmitted Infections

This appendix is designed to give a very quick reference to the diseases underlying the syndromes. It covers:

- Causative Organisms
- Clinical Presentation
- Complications
- Treatment
- Throughout, always remember that only a minority of people with STIs have symptoms of infection.

Infection	Causes	Incubation period	Signs/Symptoms	Treatment	Remarks
Chancroid	Haemophilus ducreyi	3-7 days	Ulcers • usually more than one • can become large • irregular edges, soft base • painful, bleed easily Lymph nodes • painful • may develop into abscesses	Ciprofloxacin 500 mg twice daily for 3 days	
Herpes Simplex Virus Infection	Herpes simplex virus	2-20 days	Ulcers • small, start off as blisters • usually itchy and painful • heal within 10 -14 days • usually recur, on average 5 times a year Lymph nodes • rarely swollen/tender	No cure, but symptoms may be relieved by: • Acyclovir (Zovirax) 800 mg every 8 hours for 2 days for recurrent attacks *Or* • Acyclovir 400 mg three times daily for 10 days for primary genital herpes. • Lesions must be kept clean and dry	*New-born babies may be affected if the mother has active disease at the time of delivery, but the incidence of neonatal herpes infection is estimated to range from 1 in 3,000 to 1 in 20,000 live births.*
Genital Warts	Human papilloma virus	1-6 months	Warts, i.e. fleshy outgrowths—number varies	**Chemical treatment:** • Compound podophyllin paint weekly. Apply carefully and sparingly to lesions, avoiding normal tissue. Wash off after 1-4 hours. If applied to vaginal, vulval, anal, or meatal surfaces, they should be allowed to dry before coming into contact with normal epithelium. If there is no improvement	*Caution: Cutting away the warts (with scissors or razors) in the outpatient setting is contra-indicated since it results in excessive bleeding*

Infection	Causes	Incubation period	Signs/Symptoms	Treatment	Remarks
				after 4-6 weeks, consider alternative treatments. Podophyllin paint is toxic and should not be used in large amounts. Large areas should be treated sequentially. Podophyllin paint is contra-indicated during pregnancy and lactation. • Silver nitrate stick applied daily. This can be used during pregnancy and lactation as an alternative to Podophyllin paint. **Physical removal:** • Liquid nitrogen • Electrocautery • Surgical removal	
Granuloma Inguinale	Calymmatobacteriumgranulomatis .		Ulcers • large, velvety, usually non-painful	• Azithromycin 1 gram orally as a single dose, followed by 500 mg once daily until lesions have completely healed **OR** • Doxycycline 100 mg orally every 12 hours until the lesions have completely healed	*Very rare in Malawi*
Trichomoniasis	Trichomonas *vaginalis*		In women: • vaginal discharge—frothy, foul smelling • inflamed vagina, vulva, perineum, inner thighs In men: • usually asymptomatic-itchy glans with or without rashes • may cause urethral discharge or balanitis	Metronidazole 2 grams orally stat dose	*Extremely common in Malawi*
Bacterial Vaginosis	Gardnerella vaginalis and other anaerobic bacteria		Grey, vaginal discharge, usually with fishy smell	• Metronidazole 2 grams orally stat dose or, • 400-500 mg orally every 12 hours for 7 days.	
Candida Albicans	Candida albicans		**In women**: • Vaginal discharge—white, cheesy • Vulvo-vaginal inflammation **In men:** • Erythematous rash with white curdy-like rash on glans penis—very itchy	**In women:** • Clotrimazole 500mg pessary intra-vaginally single dose. • Gentian Violet (GV) paint to the vaginal walls, cervix, and vulva daily for 7 days **In men:** • Gentian violet topical application daily for 7 days	*The organism is opportunistic and not usually a sexually transmitted disease—under certain circumstances an infection may develop:* • *during pregnancy*

Infection	Causes	Incubation period	Signs/Symptoms	Treatment	Remarks
				OR • Clotrimazole cream every 12 hours for 7 days *Note: Diflucan (fluconazole) 150 mg oral tab STAT may be given instead of clotrimazole and GV paint when available*	• *while using oral contraceptives* • *in diabetes* • *while using antibiotics*
Lymphogranuloma Venereum	Chlamydia *trachomatis* (L serovars)	1 - 6 weeks	Ulcer • usually one • Small, painless, often unnoticed Lymph nodes • Painful • may develop into abscesses (buboes)—may be presenting symptom	• Doxycycline 100 mg orally every 12 hours for 14 days • Erythromycin in pregnant and lactating women, 500 mg orally every 6 hours for 14 days)	
Gonorrhoea	Neisseria gonorrhoeae—infects the urethra, cervix	1 - 4 days	Commonest • Discharge (purulent, profuse)—vaginal in women, urethral in men • burning on micturition Others include • conjunctivitis • arthritis • pharyngitis • peri-anal itching	• Gentamycin 240 mg IM stat dose **OR** • Cefuroxime 1 gram orally as a single dose **OR** • Ceftriaxone 250 mg IM single dose	*COMPLICATIONS:* *Women* • *Bartholin's abscess* • *pelvic inflammatory disease* • *infertility* • *ectopic pregnancy* *Men* • *urethral stricture* • *epididymo-orchitis* • *Prostatitis* *New born babies* • *Conjunctivitis*
Non-Gonococcal Urethritis/Cervicitis	Chlamydia trachomatis (most common) Mycoplasma genitalium	1-3 weeks	As in gonorrhoea BUT the discharge may be less profuse. COMPLICATIONS: As in gonorrhoea, Reiter's disease (i.e. non-specific urethra-balanitis)	• Doxycycline 100 mg orally every 12 hours for 7 days **OR** • Azithromycin 1 gram orally as a single dose **OR** • Erythromycin 500 mg orally every 6 hours for 7 days	*Main differences between Gonorrhoea and NGU:* *- the incubation period of NGU is much longer (1-3 weeks) than that of gonorrhoea (1-4 days)* *A patient presenting with a discharge must be given treatment for*

Infection	Causes	Incubation period	Signs/Symptoms	Treatment	Remarks
					both infections unless there is laboratory evidence that there is only NGU or Gonorrhoea. *N.B.: NGU and Gonorrhoea often occur concomitantly*
Syphilis	Treponema Pallidum Untreated infections may pass through four stages: • primary syphilis • secondary syphilis • latent syphilis • tertiary syphilis	9 - 90 days		**Tests for Syphilis** SCREENING TESTS • VDRL (Venereal Disease Research Laboratory) • RPR (Rapid Plasma Reagin) SPECIFIC TESTS • TPHA (Treponema Pallidum Haemagglutination) • FTA-ABS (Fluorescent Treponemal Antibody test) • MHA-TP • Determine Syphilis Rapid test (TPHA-equivalent)	
Primary Syphilis			Ulcer(s) - one or more • Small, usually painless • Clear edges, hard base • does not bleed easily Lymph nodes • Often bilateral • Painless, matted	Benzathine penicillin 2.4 MU IM stat dose	*People are more infectious during this phase*
Secondary Syphilis			• rash • condylomatalata • Mucous patches • generalised illness 6-8 weeks after the appearance of the primary ulcer	• Benzathine penicillin 2.4 MU IM stat. **If the client is <u>allergic to Penicillin</u>:** • Doxycycline 100 mg every 12 hours for 14days **If the client is <u>allergic to penicillin</u>, <u>and also pregnant or lactating</u>**: Erythromycin 500 mg every 6 hours for 14 days.	*People are highly infectious during this phase*
Latent Syphilis				**Early latent phase** (time since acquisition of disease is less than 2 years): Treat as Secondary syphilis **Late latent phase** (time since acquisition of disease is over 2 years): Benzathine penicillin 2.4 MU IM at weekly intervals of 3 weeks. If the client is <u>allergic to penicillin</u> Doxycycline 100 mg every 12 hours for 30 days or	*The organism is still alive but is in a latent phase. There are no signs or symptoms and the person is less infectious.* *As latent syphilis may not be detected easily in the context of*

Infection	Causes	Incubation period	Signs/Symptoms	Treatment	Remarks
				If client is both allergic to penicillin and pregnant or lactating, Erythromycin 500 mg every 6 hours for 30 days.	*Malawi, and therefore the duration of disease is difficult to determine, it is advisable to treat all latent syphilis as LATE latent syphilis*
Tertiary Syphilis			• Gumma (sores) • Cardiovascular pathology • Central nervous system disorders	**If nervous system is not involved** then treat as in LATE LATENT syphilis **Neuro-syphilis** is treated with: Aqueous Benzyl Penicillin 3 MU IV every 4 hours for 14 days followed by Benzathine penicillin 2.4 MU IM at weekly intervals for 3 weeks. If the client is allergic to penicillin treat with Doxycycline 100 mg every 12 hours for 30 days. If the client is allergic to penicillin and pregnant or lactating treat with Erythromycin 500 mg every 6 hours for 30 days.	
Congenital Syphilis			Snuffles (often bloody), syphilis rash (maculo-papular with small spots) most severe on hands and feet, hepatosplenomegaly and periostitis.	Benzathine penicillin 50,000 units/kg IM stat; repeat after 1 week If maternal treatment for syphilis was inadequate (e.g. Erythromycin in case of Penicillin allergy), unknown, or was completed less than 4 weeks before delivery, the infant should be treated for congenital syphilis at birth, regardless of the presence of symptoms.	*Children under the age of 2 usually respond well to adequate doses of penicillin, but recovery may be slow in seriously ill children*

5.3 Appendix 4: Glossary

Asymptomatic	Without symptoms
Carrier	One who harbours infections micro-organisms without showing signs and symptoms
Client management	A process through which the provider addresses both the presenting medical problem and the psycho-social issues related to that problem.
Contact	A person known or believed to have been exposed to an infectious disease.
Contact Tracing	Means of identifying sex contacts of the index client so that they can get early treatment, thereby controlling the spread of STIs.
Defilement	Sexual intercourse with a person below the age of 13
HIV Testing Services	HIV testing services (HTS) include pre-test information, post-test counselling, linkage to appropriate HIV prevention, care and treatment services and other clinical and support services, quality HIV testing, accurate test results and diagnosis, and coordination with laboratory services to support quality assurance.
Index Client	The person who comes to the health facility with signs and symptoms of STIs.
Partner Notification	The process of informing the sex partner(s) of an STI client to come for treatment. Is done by the client rather than health centre staff
Primary Sexual Contact	The person from whom the index client acquired the infection.
Rape	Non-consensual sex between adults

Secondary Sexual Contact	The person or persons that the index client has had sex with since contracting the STI, who may have been infected by the client.
Screening	The process of examining and testing a client for the possibility of a disease when client is not presenting with a health problem
Sex Partner	Any person with whom one has had sex.
Syndrome	A group of signs and symptoms
Syndromic Approach to STI	An approach to the diagnosis and treatment of clients with STIs using commonly occurring signs and symptoms (syndromes) rather than laboratory tests.
Voluntary Counselling & Testing (VCT)	Commonly refers to counselling for HIV testing, and it is the process by which an individual undergoes counselling to enable him or her to make an informed choice about being tested for HIV. This decision must be entirely the choice of the individual and he or she must be assured that the process will be confidential.
Youth Friendly Services	High quality health services that are relevant, accessible, attractive, affordable, appropriate and acceptable to the youth

5.4 Appendix 5: Drug Information

Drug	Description	Indication	Side effects	Client information	Interaction	Contraindication	Notes
Benzathine Penicillin	Benzathine Penicillin is a long-acting intra-muscular form of penicillin. It is usually used in doses of 2.4 Mega units (8ml) as a single dose or three doses at weekly intervals for the treatment of syphilis. It should never be given intravenously.	Genitourinary Diseases.	• Painful at injection site. (Swirl to dissolve the contents of the vial, don't shake) • Skin rashes • Diarrhoea • Allergic reaction is serious due to prolonged action.	Can be used in pregnancy and lactation.		If there is any history of allergies to penicillin's.	

Drug	Description	Indication	Side effects	Client information	Interaction	Contraindication	Notes
Doxycycline	Doxycyline is a broad spectrum antibiotic of the tetracycline group. It is preferred to other Tetracyclines as it is better absorbed, can be taken daily or twice daily and has fewer side effects. It comes in capsules of 100 mg.	Urethral Discharge,	• Vomiting • Nausea • Flatulence. • Discoloration of teeth and retardation of bone growth in children.	To be taken with food.	• May reduce the effect of oral contraceptives. • Absorption of doxycycline is reduced in the presence of antacids, iron, magnesium, calcium or zinc supplements • Carbamazepine (tegretol) and phenytoin may lower the blood level of doxycycline. • Avoid use in clients taking diuretics.	Contraindicated in pregnancy, lactation and children less than 8 years old. Erythromycin should be used as an alternative in pregnancy.	Erythromycin may fail in preventing congenital infections.
Erythromycin	Erythromycin is a macrolide. It is a useful alternative for penicillin-allergic clients and in management of STIs in pregnancy. It comes in 250mg tablets/capsules.	It is an alternate choice for Benzathine Penicillin where there is penicillin allergy, genital ulcers and PID. In pregnancy it is used in place of Doxycycline	• Nausea, • Vomiting, • Diarrhoea, cramps (dose related). • Serious cholestatic jaundice. • Possible oral contraceptive failure.	Recommended alternative in pregnancy and lactation.	• Raises the serum levels of carbamazepine (Tegretol), theophylline. • Reduces the effects of penicillin. • Increased tendency to bleeding with Warfarin.	Contraindicated in liver disease.	If Erythromycin is used for the treatment of syphilis in pregnant women who are allergic to Penicillin, congenital syphilis may not be prevented and the newborn should be treated, regardless of the presence of symptoms. The baby is treated with Benzathine Penicillin 50,000 units/kg IM in a single dose.
Gentamicin	Gentamicin is in the group of aminoglycosides. Preparation, 40mg/2 ml, 80mg/2mls vials administered IM.	Antibiotic mainly used for Gram-negative bacteria	• In extreme high doses can cause hearing impairment. • Renal impairmen	Well tolerated in pregnancy		Not known	

Drug	Description	Indication	Side effects	Client information	Interaction	Contraindication	Notes
Metronidazole (Flagyl)	Metronidazole is an antibiotic effective against anaerobic bacteria and certain protozoa, e.g., *Trichomonas vaginalis.* It is useful in the treatment of some STIs and gynaecological infections. A stat dose is given in the management of vaginal discharges, but PID is treated with smaller doses over 5 - 10 days.It comes in tablets of 200mg and 400mg.	• GUS • Lower abdominal pain. • Candida overgrowth	• Metallic taste in mouth. • Rash, urticaria, itching. • Headache and dizziness.	• Causes discoloration of urine. • Should be taken with or directly after meals. • Do not take alcohol for 72 hours (3 days) after last dose.	• Raises the blood levels of Phenytoin and Warfarin. • Phenobarbitol reduces the side effects of metronidazole. • Interacts with alcohol to cause flushing, sweating, abdominal cramps, nausea and vomiting.	• Contraindicated in the 1st trimester of pregnancy and during lactation. • Avoid in epileptics or clients with decreased cardiac function.	
Clotrimazole	In preparations of 500mg vaginal pessaries or topical creams.	Abnormal vaginal discharge (to cover candidiasis)	Relatively rare.				Dose administration Insert one pessary single dose. Dose may be doubled or adjusted for severe infections. Patients should be carefully advised on use of the applicator.
Acyclovir	Acyclovir is used to treat herpes infection of the genitals and skin. It does not cure herpes infections but decreases pain	Herpes Simplex Virus infection.	• upset stomach, • Headache • vomiting and loose stools				Dose Administration: 800 mg 8-hourly for 2 days.

Drug	Description	Indication	Side effects	Client information	Interaction	Contraindication	Notes
	and itching and promotes healing.						
Azithromycin	Azithromycin is a macrolide with activity against both gram positive and gram negative organisms. Good tissue concentration and longer tissue half-life.	Chancroid, Urethral discharge/ LGV	Fewer GIT upsets (stomach, vomiting and loose stools)				Dose /Administration: Single dose of 1g preferred for chlamydial infections. If data of susceptibility are available, then a 2-gram single oral dose can be used to treat gonococcal infections.

5.5 Appendix 6: Basic Infection Prevention Methods

Antiseptic measures: Prevention of infection by killing or inhibiting the growth of micro-organisms on skin and other body tissues using chemicals.

Hand washing: The single most important infection prevention procedure. Washing with plain soap or detergent

Gloving: As a precaution, gloves should be worn by all staff prior to contact with blood and body fluids from any client

Decontamination: The first step in handling soiled equipment, instruments, reusable gloves and other items. It makes objects safer to handle for staff before cleaning them.

Cleaning: Crucial step in providing safe infection-free equipment and instruments A thorough cleaning of equipment and instruments with detergent and water physically removes organic material such as secretions or oil.

High-Level Disinfection (HLD): When sterilisation is not suitable, high level disinfection is the only acceptable alternative. HLD destroys micro-organisms including HBV and HIV but does not kill bacterial endospores and thus will not achieve sterilisation. HLD boiling for 20 minutes or chemicals for the same durations

Sterilisation: Completely destroys all micro-organisms done after decontamination, can use chemical or steam under pressure.

5.5.1 Principles of Universal Precautions in Infection Prevention

- Assume all blood and other body fluids to be infectious.
- Clean and cover any sores or cuts on your hands with waterproof plaster.
- Wash your hands with soap and water after your work with one client and before you start with the next one.
- Wash with soap and water after an accidental exposure to blood, semen, vaginal and body fluids containing blood.
- Wear gloves any time in contact with blood, semen, vaginal secretions and body fluids or if pus is likely.
- Take extra precautions to avoid getting stabbed with needles, blades or sharp instruments.
- Put needles and blades in a sharp container immediately after use.
- Do not detach needles from syringes at this step.
- Never recap needles.
- Decontaminate all reusable instruments immediately after use.
- Thoroughly clean all reusable instruments after decontamination.
- Correctly disinfect or sterilise all reusable instruments after decontamination and cleaning them.
- Immediately clean-up any spills of body fluids/blood using 0.5% chlorine solution.
- Dispose off contaminated rubbish in a container that has a tight cover and burn or bury it.
- Handle dirty linen correctly.

Appendix 7: Condom Care



Do NOT keep your condom in a tight pocket or in your wallet for a long period—it's too hot. Do NOT use condoms which are dry, dirty, brittle, yellowed, sticky, melted or damaged.

Instead...

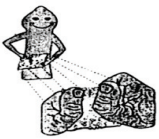


Condoms should be stored in a cool, dark, dry place away from sunlight, moisture and heat.



Do NOT use grease, oils, lotions, or petroleum jelly to make condoms slippery—the oils cause the condom to break.

Instead...



Tear the condom open carefully using the guides in the package.



Do NOT pull the condom tight over the head of the penis—it may cause the condom to burst.

Instead...



It is ALWAYS PREFERABLE to ensure that woman partners are naturally lubricated and moist before vaginal sex.
In dry sex the condom may break.



Do NOT use your teeth or other sharp objects to open the package—it may tear the condom.

Instead...



Squeeze the air out of the tip of the condom as you put it on to leave space for the semen to collect.

Appendix 8: Photo-gallery of STIs

Genital ulcer disease







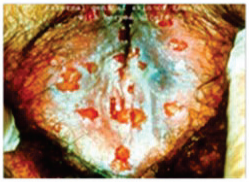



Syphilis rash – secondary syphilis

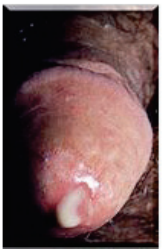



Genital herpes






Urethral discharge in men







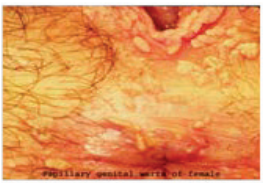
Abnormal vaginal discharge





Genital warts

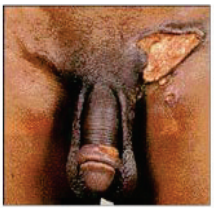








Bubo





Scrotal Swelling





Balanitis




Neonatal conjunctivitis





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