Malawi Guidelines for Management of Sexually Transmitted Infections 2025

An electronic copy of this guideline is available on the website (www.hiv.health.gov.mw) of the Department for HIV and AIDS of the Ministry of Health.

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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. Malawi has one of the highest STI incidence rates in the world. Investment in STI control will therefore contribute to the achievement of several Sustainable Development Goals.

Population-based surveys such as the Malawi Population HIV Impact Assessment (MPHIA) and the Malawi Demographic and Health Survey (MDHS) showed that only about half of all people with STI symptoms seek professional treatment. It is unclear to what extent the significant increase in STI patients that is seen in routine program data in recent years represents improved health seeking behaviour or an actual increase in STI incidence. The annual number of STI cases treated in Malawi increased by 20% between 2022 and 2023 (from 445,000 to 534,000). Scale-up of HIV pre-exposure prophylaxis (PrEP) has the potential of further fuelling STI transmission due to the likely decrease in condom use among high-risk populations.[1] At the same time, scheduled PrEP continuation visits offer the opportunity for active STI screening and effective treatment. Emerging antimicrobial resistance of Neisseria gonorrhoea is an increasing challenge of the STI program (Gentamicin susceptibility in Neisseria gonorrhoea in Malawi, UNC project, 2019 and Fleming Grant Country Report,2021).

The Malawi Government adopted the Syndromic Management Approach for STIs in 1992. This edition replaces the 2017 version of the guidelines and maintains the pragmatic principles of the syndromic management of STIs. Given that the majority of STIs are asymptomatic, systematic screening of high-risk populations with new diagnostic tools and routine monitoring for antimicrobial resistance will be scaled up as these tests become available and more affordable. Etiological screening and treatment of asymptomatic STIs is expected to make a significant contribution towards reducing the STI burden at the population level while the public health benefits of the syndromic management approach must be maintained and consolidated.

STIs can increase the HIV transmission risk. Effective STI screening and treatment therefore remain a key HIV prevention strategy. There is a particular need for reinforcing primary prevention among the general population, including adolescents and key populations.

This new edition of the Malawi STI management guidelines aims to significantly reduce the health and socioeconomic burden caused by STIs through improved quality and scale of comprehensive STI services in the public and private health sector.

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Secretary for Health

[1] Matthew Quaife, et al., Risk compensation and STI incidence in PrEP programmes, The Lancet HIV, Volume 7, Issue 4, 2020, Pages e222-e223, ISSN 2352-3018,https://doi.org/10.1016/S2352-3018(19)30333-9.

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Acronyms and Abbreviations

AIDS	Acquired immunodeficiency syndrome
ANRI	Ano-rectal infections
AVD	Abnormal vaginal discharge
AVT	Antiviral treatment (for hepatitis B)
BA	Balanitis
BD	Twice daily, prescribed doses to be taken approx. 12-hourly
BU	Bubo (enlarged inguinal lymph nodes syndrome)
CSF	Cerebrospinal fluid
CT	Chlamydia trachomatis
FGS	Female genital schistosomiasis (cause: Schistosoma haematobium)
GS	Genital schistosomiasis
GUD	Genital ulcer disease
HIV	Human immunodeficiency virus
HTS	HIV testing service
LAP	Lower abdominal pain in women
LGV	Lymphogranuloma venereum (cause: Chlamydia trachomatis)
MGS	Male genital schistosomiasis
MOH	Ministry of Health
Mpox	Previously called “monkey pox” virus infection
MUDS	Male urethral discharge syndrome (also called UD)
NG	Neisseria gonorrhoea
OD	Once daily, prescribed doses to be taken approx. 24-hourly
PBFW	Pregnant or breastfeeding women
PID	Pelvic inflammatory disease
PITC	Provider-initiated testing and counselling for HIV, syphilis and hepatitis B
PrEP	HIV pre-exposure prophylaxis
QDS	Four times a day, prescribed doses to be taken approx. 6-hourly
SS	Scrotal swelling
STI	Sexually transmitted infection
TDS	Three times per day, prescribed doses to be taken approx. 8-hourly
TV	Trichomonas vaginalis
UD	Urethral discharge syndrome in men (also called MUDS)
USAID	United States Agency for International Development
VDRL	Venereal Disease Research Laboratory (lab based syphilis assay)
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, causes delays treatment initiation and can be impractical in resource-constrained countries. Even when laboratory facilities are available, it may take several days to receive the results, causing patients to fail or delay initiation of treatment while continuing to transmit the infection to others.

Entirely different STI pathogens (viruses, bacteria, protozoa) may cause very similar clinical symptoms and it is usually not possible to diagnose the specific underlying infection without lab testing. Syndromic STI Management is based on grouping infections with a similar clinical picture into 8 STI Syndromes. Each syndrome is empirically treated for all common underlying causes using standard prescriptions. For example, the most common causes for urethral discharge (UD) are Chlamydia trachomatis (C. trachomatis), Neisseria gonorrhea (N. gonorrhea) or Trichomonas vaginalis (TV). Most patients with UD can therefore 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.

New information from surveillance, research, and emerging needs merited review and update of the Malawi STI guidelines. There have been advances in prevention tools, such as HPV vaccines. Diagnostic tests for STIs are also becoming more accessible and affordable, 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.

1.2 Policy context

The national STI control program is affiliated to Prevention Division of the Directorate of HIV, STI and Viral Hepatitis in the MoH.

1.3 Target audience

These guidelines are written for public and private sector medical doctors, clinical officers, medical assistants, nurses, and pre-service trainees. The document is also for use policy makers, funders and advocates in the implementation of STI services in Malawi.

1.4 Burden of STI syndromes

Figure 1 shows the distribution of STI syndromes diagnosed and treated in Malawi in 2023. The most common syndromes are: AVD (31%), UD (27%), GUD (11%) and LAP (10%). These 4 syndromes account for almost 90% of STI cases managed. A complete set of the syndromes along with possible causes is listed in Table 1.

Figure 1:Distribution of STI syndromes diagnosed and treated in Malawi in 2023 (n = 534,196)

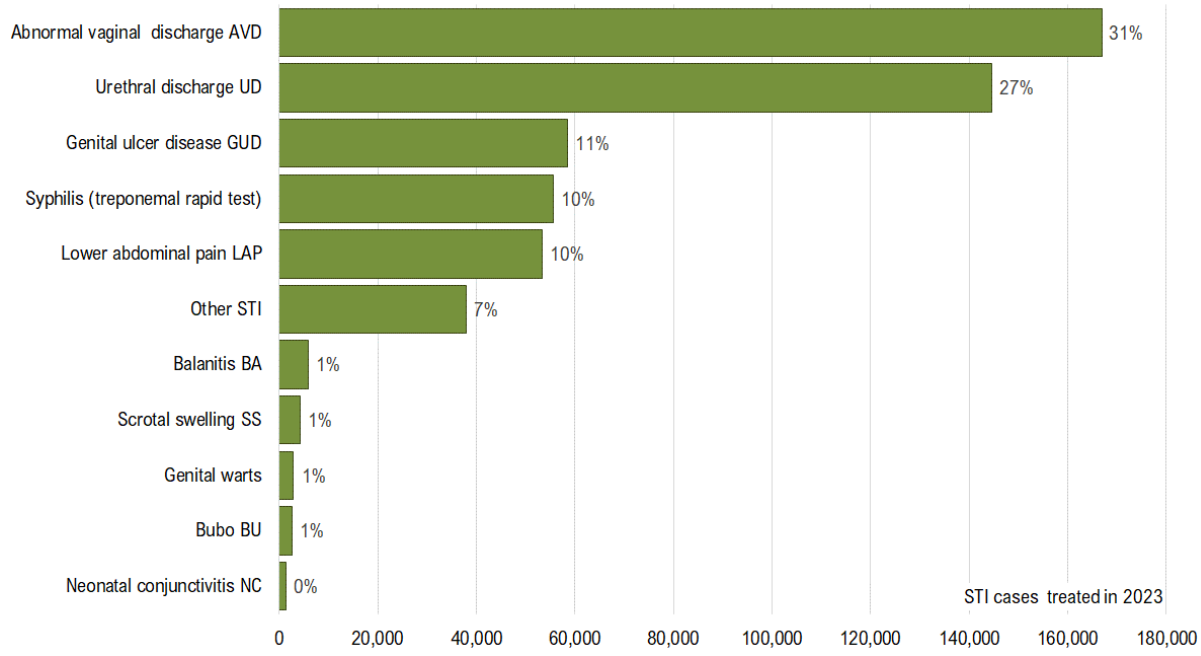


Table 1: STI syndromes with clinical signs, underlying causes and differential diagnoses

Presenting complaint / symptoms	Examination signs	Pathogens / causes	Differential diagnoses	Syndrome
Sores on the penis / scrotum / labia / vagina / cervix / anus / rectum	● Ulcers or sores (visible break in the skin) ● Blisters ● With or without bubo	● Herpes simplex virus ● Treponema pallidum (syphilis) ● Haemophilus ducreyi (chancroid) ● Klebsiella granulomatis (granuloma inguinale) ● Chlamydia trachomatis biovar ● LGV (lymphogranuloma venereum)	● Genital schistosomiasis	GUD
Urethral discharge +/-dysuria (painful urination)	● Discharge from meatus urethrae, spontaneous or with 'milking'	● Neisseria gonorrhoeae ● Chlamydia trachomatis ● Trichomonas vaginalis	● Genital schistosomiasis	MUDS (previously: UD)
Lower abdominal pain in women +/-abnormal vaginal discharge	● Fever ● Lower abdominal tenderness on palpation ● Rebound tenderness, guarding ● Vaginal discharge / bleeding ● Cervical excitation / tenderness ● Pelvic mass	● Neisseria gonorrhoeae ● Chlamydia trachomatis ● Other Bacteroides species	● Ectopic pregnancy ● Incomplete abortion ● Appendicitis ● Genital schistosomiasis	Pelvic inflammatory disease
Abnormal vaginal discharge **Vulval swelling / itching**	● Abnormal vaginal discharge ● Inflammation of vulva, vagina and/or cervix ● Pain on cervical movement	● Trichomonas vaginalis ● Candida albicans ● Bacterial vaginosis ● Neisseria gonorrhoeae ● Chlamydia trachomatis	● Genital schistosomiasis	AVD

Presenting complaint / symptoms	Examination signs	Pathogens / causes	Differential diagnoses	Syndrome
Painful testes +/-swelling +/- urethral discharge	● Swollen/ tender/ red scrotum ● Urethral discharge ● Fever	● Neisseria gonorrhoeae ● Chlamydia trachomatis	● Trauma ● Testicular torsion ● Mumps ● Tuberculosis ● Genital schistosomiasis	SS
Swelling and pain in the groin	● Swollen inguinal lymph nodes +/- ulceration or sinuses	● Haemophilus ducreyi (chancroid) ● Klebsiella granulomatis (granuloma inguinale)	● Lower limb infection ● Tuberculosis ● Kaposi sarcoma ● Genital schistosomiasis	Inguinal bubo
Itching and pain of the glans penis	● Redness/ swelling/ discharge on the glans/ foreskin	● Candida albicans ● Trichomonas vaginalis	● Other bacterial infection ● Irritant or allergic dermatitis (latex, soap, cream)	Balanitis
Discharging, swollen eyes in neonate	● Red, swollen putrid eyes	● Neisseria gonorrhoeae ● Chlamydia trachomatis	● Other bacterial infection (staph, strep, haemoph.)	Neonatal conjunctivitis

2 STI prevention

Key Facts 1: STI prevention

- **Reduce STI exposure risk**
  - Reduce number of sex partners.
  - Avoid high-risk behaviours: anal sex; sex under the influence of alcohol / drugs; genital trauma.
  - Promote condoms: emphasize consistent and correct use during all sexual activity (penile-vaginal, oral, anal).
- **Encourage regular testing:** offer routine STI screening, particularly for high-risk populations, to identify and treat infections early, even if there are no symptoms.
  - Most STIs are asymptomatic:
    - Chlamydia: **66%** of men and **85%** of women have no symptoms
    - Gonorrhoea: **50%** of men and **65%** of women have no symptoms
    - Syphilis: **60-70%** of new infections go unnoticed
  - Asymptomatic STI patients can transmit to others.
  - STIs are several hundred times more easily transmitted than HIV
- **Ensure complete treatment:** Stress the importance of completing the full course of prescribed medication to avoid recurrence and the risk of antibiotic resistance.
  - Complete partner treatment is needed to avert re-infection (ping-pong effect[2]).
  - Do not resume condomless sex before all partners have completed STI treatment.
- **Promote vaccination:** Encourage vaccination against preventable STIs, such as HPV and hepatitis B. Include these in routine immunization programs where possible.
- **Promote VMMC** for all non-circumcised men with an STI, or treated as partners of an STI index patient
- **Offer pre-exposure prophylaxis (PrEP)** for HIV prevention and post-exposure prophylaxis **(PEP**) for recent potential exposure to HIV.
- **Integrate STI services** into HIV and sexual and reproductive health services to improve access and uptake, and to reduce stigma.

2.1 STI partner services

Key Facts 2: STI partner services

- STI partner services must always be informed, voluntary and never coercive.
- Protect patient and partner privacy. Record only information that is strictly necessary for service delivery. Restrict access to records for authorized personnel only.

[2] Ping-pong (table tennis) effect: back and forth cycle of re-infection if not all sexual partners are treated at the same time and abstain from condomless sex until treatment is complete

- Passive referral using STI partner referral slips is the most practical option at most facilities.
    - Provider-assisted strategies may be needed for tracing partners whom the patient did not know well.
    - Take advantage of already scheduled HIV active index testing or social network testing to integrate active STI partner notification and referral.

2.1.1 Patient education and consent

- **Explain**: partners are often "silently infected" (have no symptoms) but suffer long term harms if left untreated.
- **Emphasize:** it is in the own interest of the index patient to have all partners complete STI treatment to avert re-infection (ping-pong effect[Error! Bookmark not defined.]).
- **Stress** the importance of abstaining from condomless sex until the patient and all partners have completed their treatment, and all symptoms have fully resolved.
- **Explain** the available options for partner notification and referral.
- **Explain:** partners are free to attend any facility with STI services of their choice.
    - They are not required to come to the same clinic that issued the referral slip.
    - **Emphasize** the importance of bringing the slip to the clinic to ensure the correct treatment can be given
- **Proceed** only if the patient has given verbal consent.

2.1.2 Implementing partner notification and treatment

- Take a sexual history focusing on the **5 P's**:
    1. **Partners:** remember all sexual partners during the last 6 months. There is no need to disclose names or personal details. What is the total number of partners? How many can be notified with STI referral slips?
    2. **Practices:** ask about the type of sexual contact during the last 6 months (vaginal, oral, anal insertive or receptive). Do your partners have other sex partners?
    3. **Protection from STIs:** past condom use (male, female, consistent / selective). Have you received or would you consider vaccinations (if eligible: HBV, HPV) or HIV pre-exposure prophylaxis (PrEP)?
    4. **Past history of STIs:** Have you ever had an STI or been tested for syphilis? What STI treatment was received and when?
    5. **Pregnancy intention:** Do think you want (more) children at some point? How important is it to prevent pregnancy at this time? Are you and/or your partner using any birth control? Do you need any information on birth control?
- Issue one separate **STI referral slip** for each partner with recent unprotected sexual contact (penile-vaginal, oral, anal).
    - Record the STI diagnosis of the index patient for appropriate partner treatment.
    - Issue STI referral slips for all, including partners who may be actively traced by a health worker.
- Highest priority for STI partner referral:

- Partners of pregnant women who tested positive for syphilis due to the severe adverse birth outcomes
- Partners of AGYW diagnosed with chlamydial infections or vaginal discharge due to the risk of infertility
- MSM with MUDS / gonorrhoea and multiple partners due risk of antimicrobial resistance

- **Treat** all partners (symptomatic or asymptomatic)
  - Asymptomatic partners: follow the specific instruction for partner treatment under the syndrome of the index patient.
  - Symptomatic partners: treat the diagnosed syndrome

2.2 Intimate partner violence care

- Routinely ask all STI patients and sexual partners about experience of violence.
- Offer immediate support and appropriate referral.
- Offer emergency contraception if needed.

3 STI service integration

3.1 STI and HIV services

Key Facts 3: HIV in STI patients

- **All** STI patients have **biological evidence** for recent unprotected sex with a partner at high risk of HIV infection.
- STIs **increase the HIV transmission and acquisition risk** up to 5 times due to increased HIV viral shedding, replication and break in the skin and mucosal barrier.
- HIV status and treatment information always has implications for treatment and referral.
- 501,000 STI patients treated in Malawi in 2023
    - 91% HIV status ascertained → 9% missed opportunity for HIV prevention and treatment referral
    - 84% new negative: **all** in need of HIV prevention referral
    - 16% HIV positive. Among these, 11% newly diagnosed and need to start ART; 3% previously diagnosed but currently not on ART (need to reinitiate ART asap).
- About 1% of STI patients with a negative HIV rapid test may have acute HIV infection (in "window period") and will seroconvert.
- STI services are a convenient entry point for effective HIV prevention and treatment.
    - High proportion of key populations can be served without need for disclosure of stigmatized behaviour (no questions asked = everyone is at risk).
    - High motivation for prevention service uptake due to STI experience.

3.1.1 HIV status ascertainment

- Routinely ascertain HIV and ART status for all STI index patients and partners.
    - Ask for HIV testing and treatment history, review health passport.
    - Never tested or tested negative for HIV in the past (regardless how recent): offer new HIV test. Use routine opt-out strategy.
    - Do not use coercion. Emphasize STI will be treated regardless of HIV testing.

3.1.2 Referral for HIV prevention and treatment services

- Offer male and/or female condoms for 1-3 months for personal use, based on individual demand, regardless of HIV status.
    - Condoms may need to be rationed if facility stocks are low
- Previously diagnosed / known HIV positive:
    - Reinforce need for good adherence if already on ART
    - Active referral for ART re-initiation if currently not on ART
- New positive: active referral for ART initiation as soon as possible
- New negative: explain and offer / refer for effective HIV prevention options (PrEP, VMMC, consistent condom use)

- Recommend VMMC for all uncircumcised men. Make VMMC clinic appointment in 2 weeks when STI is expected to have healed.
- Offer integrated PrEP services in STI clinic or refer to other PrEP delivery location.

- Assess family planning needs and refer as appropriate.

3.2 STI and viral hepatitis services

Key Facts 4: Hepatitis B in STI patients

- Hepatitis B virus (HBV) is mostly transmitted during childbirth and in early childhood. Sexual transmission accounts for only 15-30%.
- Most people clear acute HBV infection without treatment.
- The risk of developing chronic infection depends on the age when the virus is acquired:
  - 90% when infected at birth
  - 30% when infected under five years of age
  - 5% when infected as an older child or adult (if not immunocompromised)
- 25% of people with chronic HBV infection develop cirrhosis and liver cancer.
  - 65% of people with chronic HBV infection have no symptoms.
  - Timely diagnosis of chronic infection and anti-HBV treatment prevents mother-to-child transmission and progression to cirrhosis and liver cancer.
  - Patients with a positive HBV rapid test need further lab tests to decide if antiviral treatment (AVT) is needed. Exception: HBV positive women are universally eligible for AVT throughout pregnancy to prevent infant transmission.
- HBV is preventable through immunization. Routine infant HBV vaccination was started in 2002 in Malawi.
  - As of 2024, almost all under 22-year-olds have completed HBV infant vaccination and don't need to be routinely tested for HBV.
- HBV vaccination should be given to all hepatitis B surface antigen (HBsAg) negative high-risk people:
  - Health workers, sex workers, men who have sex with men, prisoners, people who inject drugs, pre-exposure prophylaxis (PrEP) clients, transgender people, and household contacts of people with chronic HBV infection.

- Offer routine HBV testing to all STI patients who have not previously completed HBV vaccination.
  - A single rapid diagnostic test for hepatitis B surface antigen (HBsAg) is used for HBV screening.
- Refer all HBsAg positive patients for clinical assessment to determine the need for treatment and follow-up.
- Offer HBV vaccination to all HBsAg negative persons from high-risk groups.

Key Facts 5: Hepatitis C in STI patients

- Hepatitis C virus (HCV) is mainly transmitted through blood products, exposure to needles, and only rarely through sexual relations.
- HCV prevalence in Malawi is thought to be low except in people who inject drugs and share needles.
    - Routine HCV testing for STI patients is not indicated.

4 STI history and physical examination

Objectives:

- Make an accurate syndromic STI diagnosis.
- Diagnose potential non-STI causes for the symptoms, for example genital schistosomiasis.
- Ascertain HIV infection and antiretroviral treatment status.
- Offer effective STI, HIV and HBV prevention interventions

Strategy:

- Ask open-ended questions
- Ensure privacy and confidentiality
- Inform the patient about the need for genital exam and 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.
- For patients identified to be at risk of genital schistosomiasis undertake verbal screening and refer for testing and screening/diagnosis. Offer presumptive treatment with Praziquantel where screening is not available.
- Provide / refer for counselling for HIV prevention and treatment depending on HIV status

5 STI syndrome diagnosis and management

These guidelines include key facts, diagnosis and standard treatment protocols for each of the 9 defined STI syndromes and additional genital diseases with similar symptoms.

- **STI syndromes**: genital ulcer disease (GUD), male urethral discharge syndrome (MUDS, previously: UD), abnormal vaginal discharge (AVD), lower abdominal pain in women (LAP), scrotal swelling, (SS), inguinal bubo (BU), balanitis (BA) neonatal conjunctivitis (NC) and ano-rectal infections (ANRI)
- **Related conditions**: genital warts, cervical cancer, serologically diagnosed syphilis, genital schistosomiasis

5.1 Genital Ulcer Disease (GUD)

Key Facts 6: Genital ulcer disease (GUD)

- **Main symptoms**: Single or multiple sores, ulcers or blisters on any part of penis, vulva, vagina and surrounding skin.
- **Most common causes** in Malawi: Herpes simplex virus type 2, syphilis, chancroid (Haemophilus ducreyi)
- **Less common**: Lymphogranuloma venereum, granuloma inguinale, Schistosoma haematobium (not sexually transmitted)
- Clinical picture and **symptoms vary greatly** (number/ shape of ulcers, pain, duration, etc.).
    - Underlying cause cannot be reliably diagnosed from clinical picture.
- **Syphilis rapid tests** (treponemal test) have **no value** for confirming / excluding syphilis in GUD patients. They do not influence treatment decisions. See details in **section 6.3** on **page 51**.

5.1.1 Diagnosis and treatment of GUD index patient

Figure 2: Examination findings in GUD

HSV-2 blisters	Ulcer glans penis	Ulcer sulcus	Condyloma lata (secondary syphilis)	Ulcer penis
				

Herpes simplex 2 on scrotum

- Treat according to **Figure 3 i**f genital sores / ulcers are confirmed on examination.
    - Always prescribe a complete treatment course.
    - Add empirical treatment of genital schistosomiasis for women with compatible symptoms (vaginal sores) and potential exposure. See **section 6.4** on **page 57**.
- Use the standard syndromic treatment regimen unless the patient has special indications for extended treatment or contraindications, or if standard drugs are unavailable:
    - First or severe episode of genital herpes requires extended course of acyclovir.
    - Ciprofloxacin and doxycycline should be avoided in PBFW and children.
    - Select **one** alternative regimen for each underlying infection from **Table 2**.
- Note: Other STI syndromes may also be present.
    - Add the standard treatment for the additional syndrome.
    - **Do not increase / duplicate the dose of individual antibiotics if they are used for both syndromes.**

Figure 3: Genital ulcer disease (GUD) flowchart

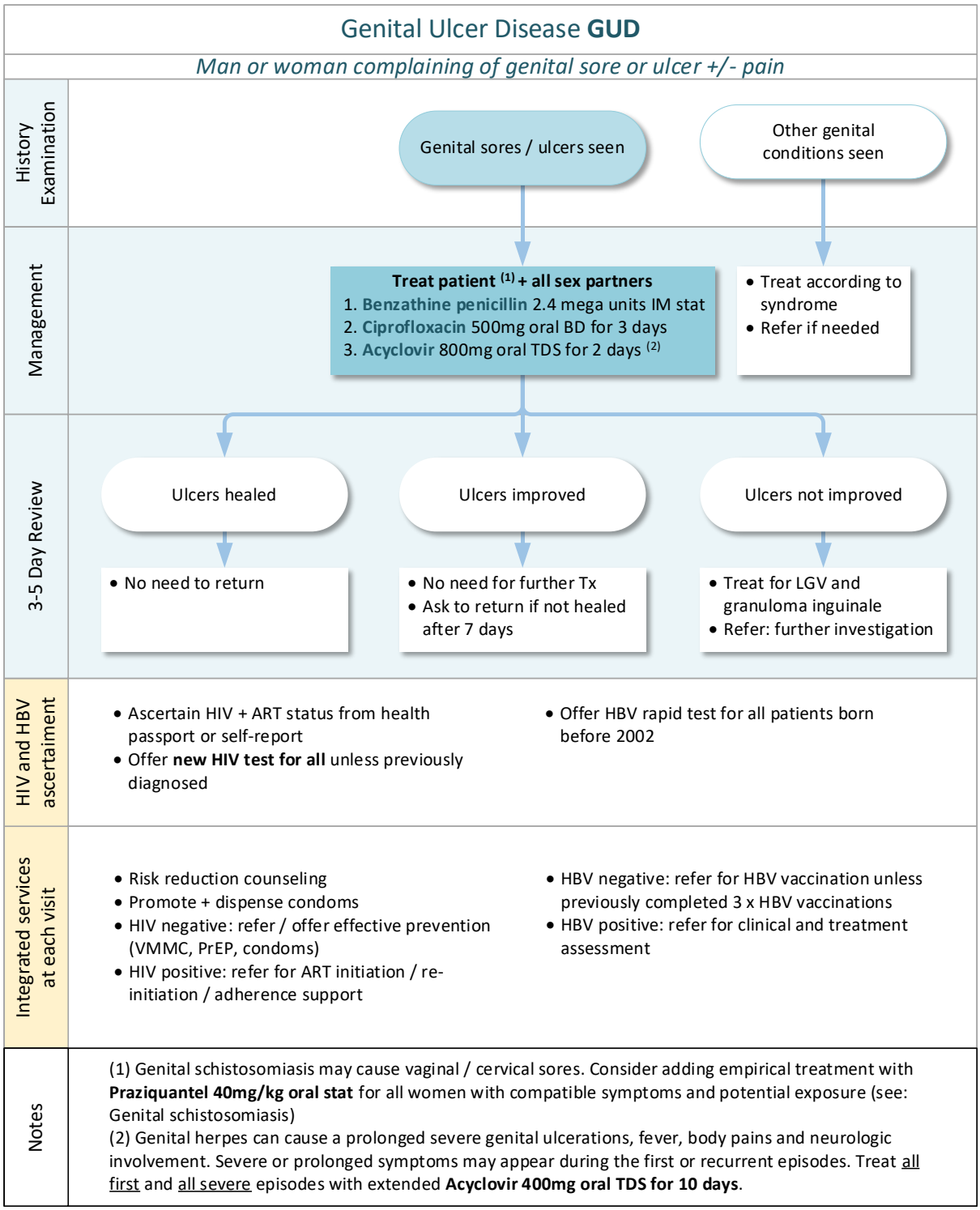


Table 2: Standard and alternative treatment regimens for GUD by underlying infection

Infections covered	Regimens: select only 1 drug per infection	Line	Use in PBFW, children 0-14
Syphilis (assumed: early)	Benzathine penicillin 2.4 mega units IM stat	*Standard*	✓[3]
	Doxycycline 100 mg oral BD for 14 days	*Alternative*	✗
	Erythromycin 500 mg oral QDS for 14 days	*Alternative*	✓[4]
Chancroid	Azithromycin 1000 mg oral stat	*Standard*	✓
	Ciprofloxacin 500 mg oral BD for 3 days	*Alternative*	✗
	Ceftriaxone 500 mg IM stat	*Alternative*	✓
	Erythromycin 500 mg oral QDS for 7 days	*Alternative*	✓
Genital herpes First/ severe episode	Acyclovir 400 mg oral TDS for 10 days	*Standard*	✓
	Valaciclovir 500 mg oral BD for 10 days	*Alternative*	✓
Recurrent/ mild episode	Acyclovir 800 mg oral TDS for 2 days	*Standard*	✓
	Valaciclovir 500 mg oral BD for 3 days	*Alternative*	✓
Differential diagnoses for treatment resistant GUD			
Granuloma inguinale *(continue regimen until lesions have healed)*	Azithromycin 1000 mg oral stat, followed by 500 mg oral OD until healed	*Standard*	✓
	Doxycycline 100 mg oral BD until healed	*Alternative*	✗
	Erythromycin 500 mg oral QDS until healed	*Alternative*	✓
	Sulfamethoxazole / trimethoprim 800 / 160 mg oral BD until healed	*Alternative*	✓
Lymphogranuloma venereum	Doxycycline 100 mg oral BD for 21 days	*Standard*	✗
	Azithromycin 1000 mg oral, once weekly for 3 weeks	*Alternative*	✓

5.1.2 GUD partner treatment

- **Symptomatic partners:** treat according to the diagnosed syndrome or specific conditions.
- **Asymptomatic partners:**
    - Index patient treated for uncomplicated GUD: **Benzathine penicillin 2.4 mega units** IM stat + **Azithromycin 1000mg** oral stat
    - Index patient treated for treatment resistant GUD: **Azithromycin 1000 mg** oral stat + **Doxycycline 100 mg** oral BD for 21 days

[3] In pregnant women with late syphilis or an unknown duration of infection: benzathine penicillin G 2.4 mega units IM once weekly for three consecutive weeks (max. 14 days between doses).
[4] Although erythromycin treats the pregnant woman, it does not cross the placental barrier completely and as a result the foetus is not treated. It is therefore necessary to treat the newborn infant soon after delivery.

5.2 Male urethral discharge syndrome (MUDS, previously: UD)

Key Facts 7: Male urethral discharge syndrome (MUDS)

- **Main symptoms**: putrid discharge from meatus penis, spontaneous or after "urethral milking"
    - Painful / frequent urination may be present or absent
    - Testes and/or epididymis may be affected (tenderness, swelling)
- **Most common causes** in Malawi: Neisseria gonorrhoeae[5], Chlamydia trachomatis
- **Rare**: Trichomonas vaginalis, Mycoplasma genitalium. Consider Schistosoma haematobium (not sexually transmitted) if haematuria / painful / frequent urination.
- The infections causing MUDS in men are mostly asymptomatic in women or cause other symptoms.
    - Treatment of all sex partners is needed to avert re-infection.
- **Routine syphilis screening** (treponemal rapid test) is useful in men with MUDS to diagnose and treat asymptomatic syphilis infection. See details in **section 6.3** on **page 51**.

5.2.1 Diagnosis and treatment of MUDS index patients

Figure 4: Examination findings in MUDS

- Treat according to **Figure 5** if putrid discharge from the meatus penis is confirmed on examination. "Milk" urethra if no spontaneous discharge is seen.
    - Always prescribe a complete treatment course.
    - Add empirical treatment of genital schistosomiasis for men with compatible symptoms and potential exposure. See **section 6.4** on **page 57**.
    - Collect urethral swab for culture and sensitivity testing if discharge persists despite completion of initial treatment. [5]
- Use the standard syndromic treatment regimen unless the patient has special indications for extended treatment or contraindications, or if standard drugs are unavailable:

[5] N. gonorrhoea rapidly develops antibiotic resistance. Persistent MUDS may be due to resistance against standard antibiotics. Antibiotic selection for re-treatment and surveillance needs sensitivity testing.

- Avoid doxycycline in PBFW (treated as partners) and children.
- Select **one** alternative regimen for each underlying infection from **Table 3**.

- Routinely offer syphilis rapid test for potential concurrent (asymptomatic) syphilis infection.
  - Syphilis does not typically cause urethral discharge and is often asymptomatic.
  - See **Section 6.3** on **page 51** for management of serologically diagnosed syphilis.
- Note: Other STI syndromes may also be present.
  - Add the standard treatment for the additional syndrome.
  - Do not increase / duplicate the dose of individual antibiotics if they are used for both syndromes.

Figure 5: Male urethral discharge syndrome (MUDS) flowchart

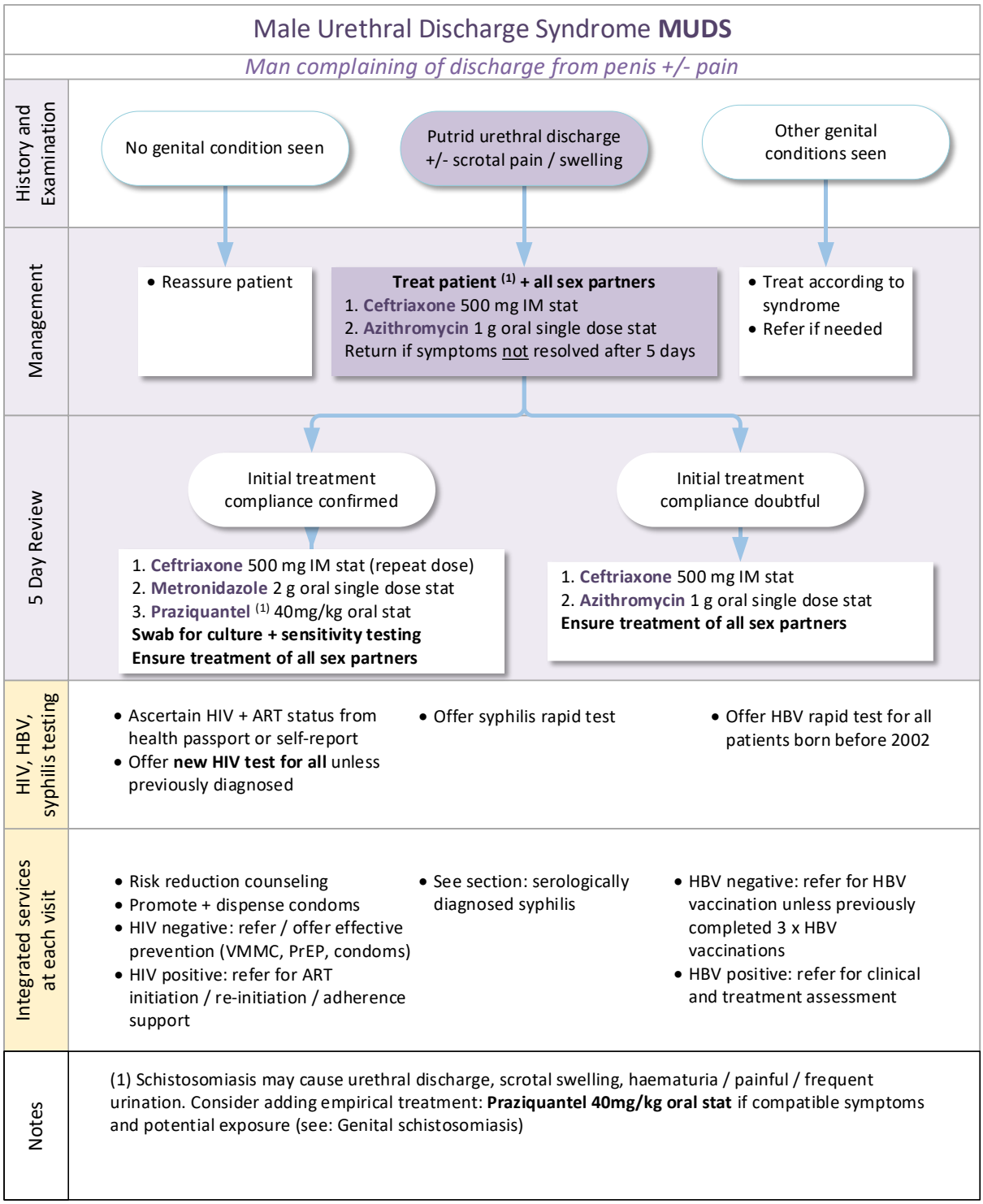


Table 3: Standard and alternative treatment regimens for MUDS by underlying infection

Infections covered	Regimens: select only 1 drug per infection	Line	Use in PBFW, children 0-14[6]
Neisseria gonorrhoea	Ceftriaxone 500 mg IM stat	*Standard*	✓
	Gentamicin 240 mg IM stat	*Alternative*	✗
Chlamydia trachomatis	Azithromycin 1000 mg oral stat	*Standard*	✓
	Doxycycline 100 mg oral BD for 7 days	*Alternative*	✗
	Erythromycin 500 mg oral QDS for 7 days	*Alternative*	✓
Differential diagnoses for persistent / recurrent MUDS			
Trichomonas vaginalis	Metronidazole 2000 mg oral stat[7]	*Standard*	(✓)
	Tinidazole 2000 mg oral stat	*Alternative*	✓
	Metronidazole 400 mg oral BD for 5 days	*Alternative*	✓

5.2.2 MUDS partner treatment

- **Symptomatic partners:** treat according to the diagnosed syndrome or specific conditions.
- **Asymptomatic partners:**
    - Index patient treated for uncomplicated MUDS: **Ceftriaxone 500 mg** IM stat + **Azithromycin 1000 mg oral stat**
    - Index patient treated for persistent / recurrent MUDS: **Ceftriaxone 500 mg** IM stat + **Metronidazole 2000 mg** oral stat

[6] Pregnant or breastfeeding women may be treated as partners of MUDS patients
[7] Single stat dose of 2000 mg metronidazole may not be sufficient for women (MUDS partner treatment). Use tinidazole 2000 mg oral stat or metronidazole 400 mg oral BD for 5 days for women.

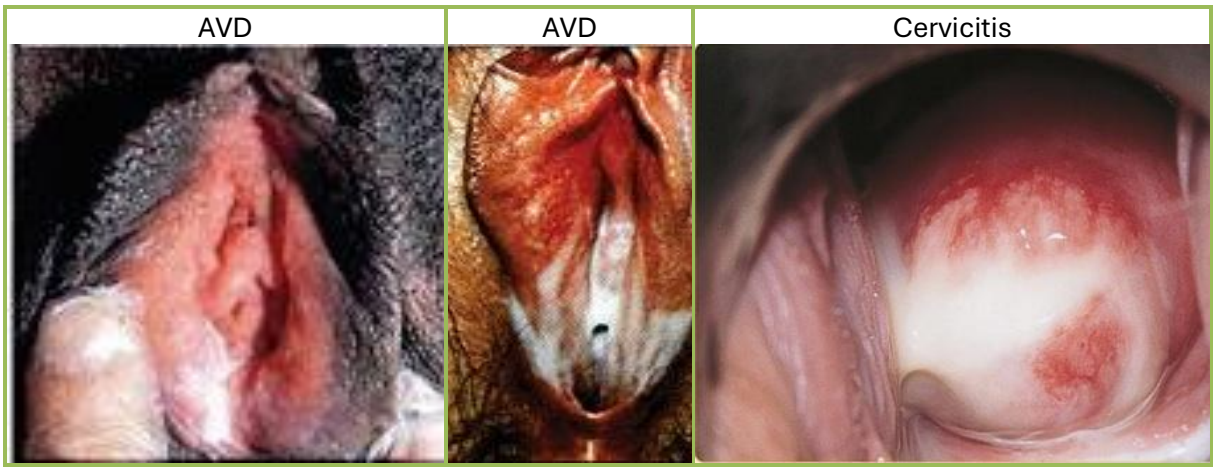
5.3 Abnormal Vaginal Discharge (AVD)

Key Facts 8: Abnormal vaginal discharge (AVD)

- **Main symptoms**: vaginal discharge with abnormal quantity / consistency / colour / odour
  - +/- Itching, soreness, swelling, pain during intercourse, painful urination
  - +/- Lower abdominal / pelvic pain. If seen: manage as LAP (see **section 5.4** on **page 28**)
- Causes include several sexually and non-sexually transmitted infections that may look similar clinically. Use sexual risk assessment to decide what to treat.
  - **Sexually transmitted:** Trichomonas vaginalis, Neisseria gonorrhoea, Chlamydia trachomatis. These can spread to cervix, uterus, fallopian tubes, ovaries and pelvis and present as LAP / pelvic inflammatory disease. Treatment of all sex partners is needed to avert re-infection.
  - **Non-sexually transmitted**: Candida albicans, bacterial vaginosis (anaerobe bacteria, commonly causing foul odour), genital schistosomiasis
- **Routine syphilis screening** (treponemal rapid test) is useful in women with AVD to diagnose and treat asymptomatic syphilis infection. See details in **section 6.3** on **page 51**.

5.3.1 Diagnosis and treatment of AVD index patient

Figure 6: Examination finding in AVD



- Treat according to **Figure 7 i**f abnormal vaginal discharge is confirmed on examination.
- Take a sexual history to decide whether to treat for **STI or non-STI causes**
- **Treat for STI causes** of AVD if:
  - Partner has STI symptoms and/or if the woman had recent condomless sex with high-risk partner(s)
  - Any sign of cervical infection: reddening / purulent cervical discharge/ erosion / friability / easy bleeding

- Issue STI referral slips for all partners with recent unprotected sexual contact (penile-vaginal, oral, anal).
    - Emphasize the importance of complete partner treatment to avert re-infection (ping-pong effect). Explain: partners may be "silently infected" (have no symptoms).
    - Treat all partners (symptomatic or asymptomatic) using the standard syndromic treatment regimen.
- Always perform pelvic and lower abdominal palpation for signs of pelvic inflammatory disease. Always perform speculum exam for women with AVD to rule out cervical cancer, etc.
    - Follow LAP management if any tenderness is present (see **section 5.4** on **page 28**)
    - Always prescribe a complete treatment course.
    - Add empirical treatment of genital schistosomiasis for women with compatible symptoms and potential exposure. See **section 6.4** on **page 57**.
- Use the standard syndromic treatment regimen unless the patient has special indications for extended treatment or contraindications, or if standard drugs are unavailable:
    - Select **one** alternative regimen for each underlying infection from **Table 4**.
    - Doxycycline should be avoided in PBFW and children. Clindamycin is safe in pregnancy but should be avoided while breastfeeding.
- Routinely offer syphilis rapid screen for potential concurrent (asymptomatic) syphilis infection.
    - Syphilis does not typically cause vaginal discharge and is often asymptomatic.
    - See **Section 6.3** on **page 51** for management of serologically diagnosed syphilis.
- Note: Other STI syndromes may also be present.
    - Add the standard treatment for the additional syndrome.
    - Do not increase / duplicate the dose of individual antibiotics if they are used for both syndromes.

Figure 7: Abnormal vaginal discharge (AVD) flowchart

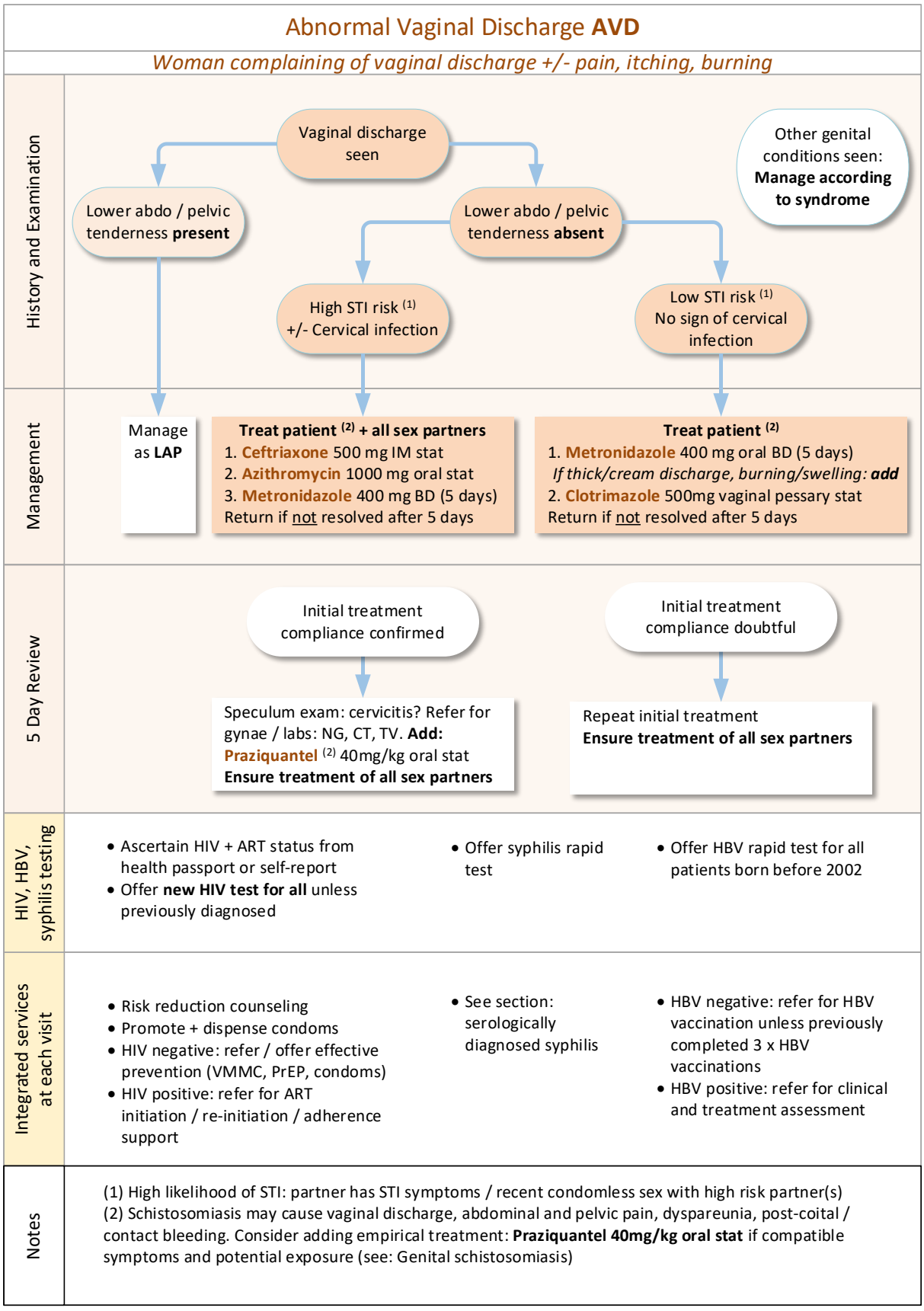


Table 4: Standard and alternative treatment regimens for AVD by underlying infection

Infections covered	Regimens: select only 1 drug per infection	Line	Use in PBFW, children 0-14
Non- STI causes (women with low STI risk and no sign of cervicitis)			
Bacterial vaginosis (anaerobe bacteria)	Metronidazole 400 or 500 mg oral BD for 7 days	*Standard*	✓
	Metronidazole 200 or 250 mg oral TDS for 7 days	*Alternative*	✓
	Metronidazole 0.75% / 5 g vaginal gel BD for 7 days	*Alternative*	✓
	Clindamycin 300 mg oral BD for 7 days	*Alternative*	(✓)[8]
Candida albicans (yeast infection)	Clotrimazole 500 mg vag. pessary stat	*Standard*	✓
	Clotrimazole 100 mg vag. pessary at night for 5 nights	*Alternative*	✓
	Fluconazole 150 or 200 mg oral stat	*Alternative*	✓
	Miconazole 200 mg vag. pessary at night for 3 nights	*Alternative*	✓
Schistosomiasis (female genital)	Praziquantel 40mg/kg oral stat	*Standard*	(✓)[9]
STI causes (women with high STI risk and/or cervicitis)			
Trichomonas vaginalis	Metronidazole 2000 mg oral stat	*Standard*	✓
	Tinidazole 2000 mg oral stat	*Alternative*	✓
	Metronidazole 400 mg oral BD for 5 days	*Alternative*	✓
Chlamydia trachomatis	Azithromycin 1000 mg oral stat	*Standard*	✓
	Doxycycline 100 mg oral BD for 7 days	*Alternative*	✗
	Erythromycin 500 mg oral QDS for 7 days	*Alternative*	✓
Neisseria gonorrhoea	Ceftriaxone 500 mg IM stat	*Standard*	✓
	Gentamicin 240 mg IM stat	*Alternative*	✗

5.3.2 AVD partner treatment

- **Symptomatic partners:** treat according to the diagnosed syndrome or specific conditions.
- **Asymptomatic partners:**
    - Index patient treated for AVD with low STI risk: **no routine treatment for partners**
    - Index patient treated for AVD with high STI risk +/- cervicitis: **Ceftriaxone 500 mg** IM stat + **Azithromycin 1000mg** oral stat + **Metronidazole 2000 mg** oral stat

[8] Clindamycin is safe in pregnancy but should be avoided during breastfeeding.
[9] Although the risk is likely low, avoid praziquantel in 1st pregnancy trimester. See **Section 6.4** on **page 49**

5.4 Lower abdominal pain in women (LAP)

Key Facts 9: Lower abdominal pain (LAP) in women

- **Main symptoms**: Lower abdominal / pelvic pain, often bilateral
  - +/- Vaginal discharge with abnormal quantity / consistency / colour / odour
  - +/- Irregular menstrual bleeding
  - +/- Itching, soreness, swelling, pain during intercourse, painful urination
  - +/- Fever / chills / general malaise
- LAP may be caused by a wide range of different conditions. Mild forms of LAP with non-specific causes are common and only need symptomatic treatment. Severe causes are medical emergencies.
  - **Pelvic inflammatory disease** (**PID**, STI and non-STI causes): cervicitis, endometritis, salpingitis, tubo-ovarian abscess, pelvic peritonitis
  - **Gynaecological / obstetric**: dysmenorrhoea, endometriosis, fibroids, pregnancy (normal or ectopic), abortion / miscarriage (uterine injury, sepsis), ovarian cyst / torsion, cancer (cervix, uterus, ovarian), etc.
  - **Surgical**: appendicitis, diverticulitis, bowel cancer, etc.
  - **Other:** urinary tract infection, gastroenteritis, etc.
- **PID** may be caused by STI and non-STI that look similar clinically. All can spread to cervix, uterus, fallopian tubes, ovaries and peritoneum.
  - **Sexually transmitted:** Neisseria gonorrhoea, Chlamydia trachomatis. Treatment of all sex partners is needed to avert re-infection.
  - **Non-sexually transmitted**: anaerobe / gram-negative bacteria, Mycoplasma, Streptococcus, Schistosoma haematobium
- Syndromic PID treatment covers all common STI and non-STI causes due to the potential severity of PID and difficulty with identifying the underlying cause.
- **Routine syphilis screening** (treponemal rapid test) is useful in women with AVD to diagnose and treat asymptomatic syphilis infection. See details in **section 6.3** on **page 51**.

5.4.1 Diagnosis and treatment of LAP index patient

- Take a full history for the presenting complaint.
  - Missed / overdue period; do pregnancy test if available
  - Vaginal bleeding
  - Recent delivery, miscarriage or abortion
  - Fever / chills
- Always perform abdominal pelvic and palpation and speculum exam.
  - **Danger signs:** abdominal guarding / rebound tenderness; fever >38 °C; palpable mass; heavy bleeding

- Bimanual digital vaginal exam: cervical motion tenderness? Vaginal discharge? Colour and consistency of discharge on glove?
- Cervical lesion?

- Treat according to **Figure 8 i**f pelvic tenderness is confirmed on examination.
- **Any danger signs seen**:
  - Urgent referral for OB-GYN or surgical assessment
  - Set up IV-line, resuscitation measures if necessary
- No danger sign but cervical excitation / abdominal tenderness / vaginal discharge
  - Always prescribe a complete syndromic treatment course for LAP.
  - Add empirical treatment of genital schistosomiasis for if compatible symptoms and potential exposure. See **section 6.4** on **page 57**.
- Use the standard syndromic treatment regimen unless the patient has special indications for extended treatment or contraindications, or if standard drugs are unavailable:
  - Select **one** alternative regimen for each underlying infection from **Table 4**.
  - **Avoid doxycycline in PBFW and children. Clindamycin is safe in pregnancy but should be avoided while breastfeeding.**
- Always give review appointment after 3 days
- Routinely offer syphilis rapid screen for potential concurrent (asymptomatic) syphilis infection.
  - Syphilis does not typically cause LAP and is often asymptomatic.
  - See **Section 6.3** on **page 51** for management of serologically diagnosed syphilis.
- Note: Other STI syndromes may also be present.
  - Add the standard treatment for the additional syndrome.
  - Do not increase / duplicate the dose of individual antibiotics if they are used for both syndromes.

Figure 8: Lower abdominal pain (LAP) flowchart

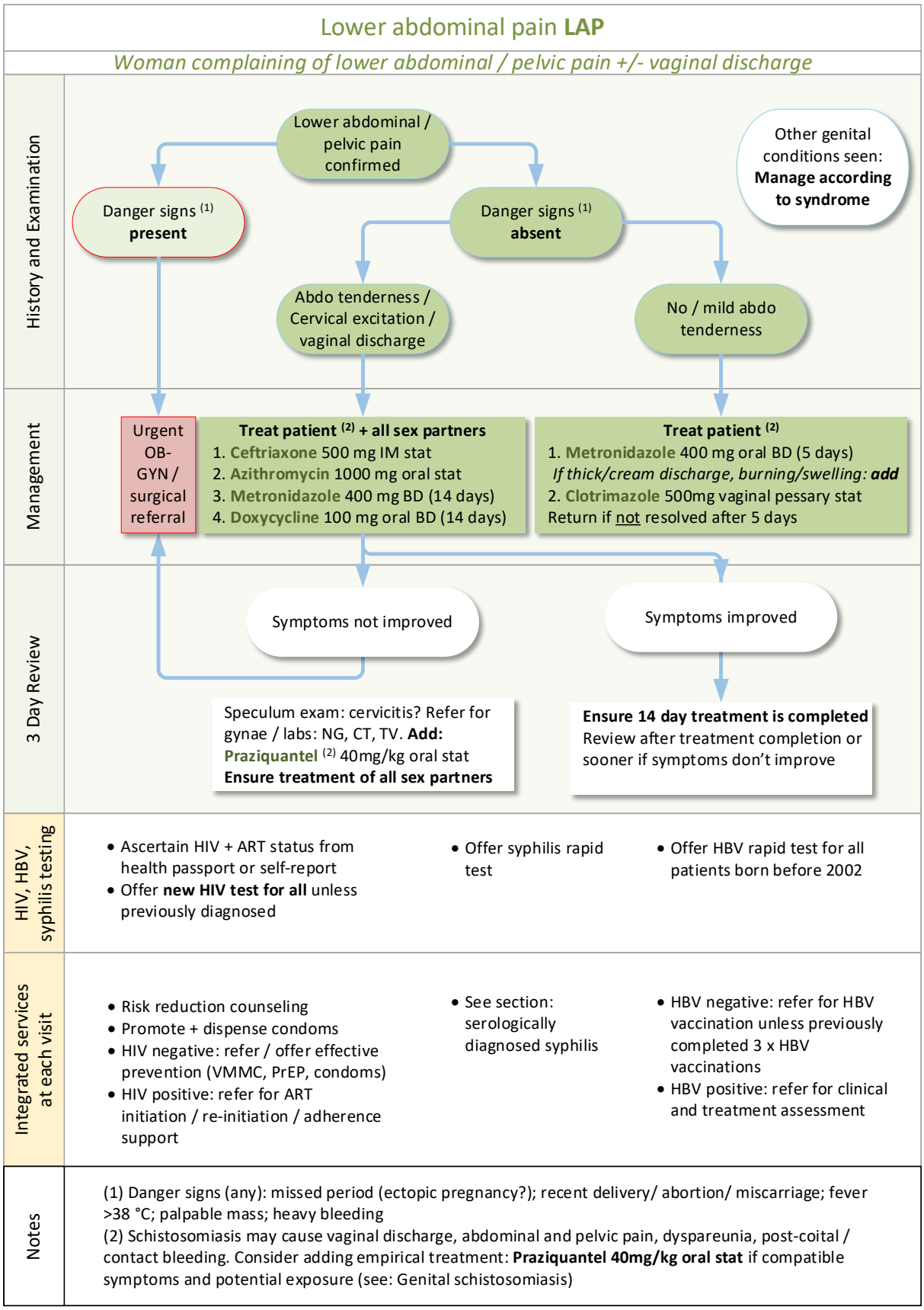


Table 5: Standard and alternative treatment regimens for LAP by underlying infection

Infections covered	Regimens: select only 1 drug per infection	Line	Use in PBFW, children 0-14
Mild / no abdominal tenderness			
Bacterial vaginosis (anaerobe bacteria)	Metronidazole 400 or 500 mg oral BD for 7 days	*Standard*	✓
	Metronidazole 200 or 250 mg oral TDS for 7 days	*Alternative*	✓
	Metronidazole 0.75% / 5 g vaginal gel BD for 7 days	*Alternative*	✓
	Clindamycin 300 mg oral BD for 7 days	*Alternative*	(✓)[10]
Candida albicans (yeast infection)	Clotrimazole 500 mg vag. pessary stat	*Standard*	✓
	Fluconazole 150 or 200 mg oral stat	*Alternative*	✓
	Miconazole 200 mg vag. pessary at night for 3 nights	*Alternative*	✓
Schistosomiasis (female genital)	Praziquantel 40mg/kg oral stat	*Standard*	(✓)[11]
Abdominal tenderness / cervical excitation / vaginal discharge			
Neisseria gonorrhoea	Ceftriaxone 500 mg IM stat	*Standard*	✓
	Gentamicin 240 mg IM stat	*Alternative*	✗
Chlamydia trachomatis	Azithromycin 1000 mg oral stat	*Standard*	✓
	Doxycycline 100 mg oral BD for 14 days	*Alternative*	✗
	Erythromycin 500 mg oral QDS for 14 days	*Alternative*	✓
Ascending anaerobe infection	Metronidazole 400 or 500 mg oral BD for 14 days	*Standard*	✓
	Metronidazole 200 or 250 mg oral TDS for 14 days	*Alternative*	✓

5.4.2 LAP: male partner treatment

- **Symptomatic partners:** treat according to the diagnosed syndrome or specific conditions.
- **Asymptomatic partners:**
    - **Ceftriaxone 500 mg** IM stat + **Azithromycin 1000mg** oral stat + **Doxycycline 100mg** oral BD for 14 days

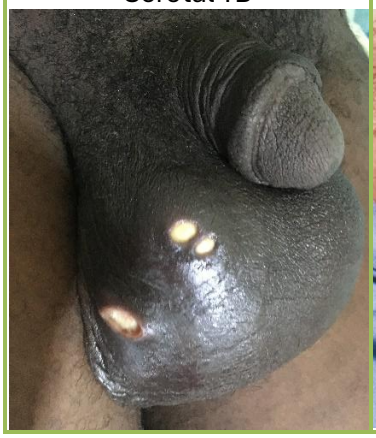
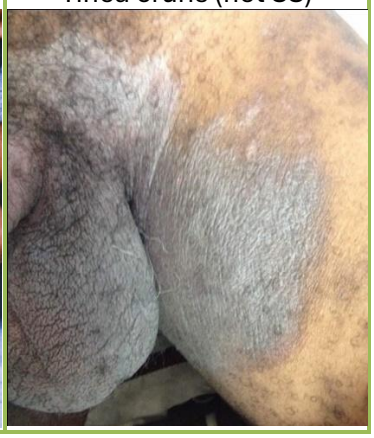
[10] Clindamycin is safe in pregnancy but should be avoided during breastfeeding.
[11] Although the risk is likely low, avoid praziquantel in 1st pregnancy trimester. See **Section 6.4** on **page 49**

5.5 Acute Scrotal Swelling (SS)

Key Facts 10: Scrotal swelling (SS)

- **Main symptoms**: Acute, one-sided pain and swelling of the scrotum
  - +/- tenderness of epididymis, testis and vas deferens
  - +/- reddening and oedema of scrotal skin
  - +/- urethral discharge
  - + / - fever
- **SS** may be caused by STI, non-STI and surgical conditions that look similar clinically.
  - **Sexually transmitted:** Neisseria gonorrhoea, Chlamydia trachomatis. Most common in men under 35 years. Treatment of all sex partners is needed to avert re-infection.
  - **Non-sexually transmitted infections**: E. coli, other gut bacteria, Schistosoma haematobium, mumps orchitis, M. tuberculosis
  - **Testicular torsion, trauma** and **inguinal hernia** are surgical emergencies
- **Routine syphilis screening** (treponemal rapid test) is useful in men with SS to diagnose and treat asymptomatic syphilis infection. See details in **section 6.3** on **page 51**.

Figure 9: Examination findings in SS

Scrotal TB	Syphilis gummas	Tinea cruris (not SS)
		

5.5.1 Diagnosis and treatment of SS index patients

- Examine for surgical emergencies. Refer for immediate assessment if these conditions cannot be ruled out with confidence.
  - **Testicular torsion / trauma:** sudden onset severe scrotal pain, often with nausea and vomiting. High-riding testicle / abnormal lie.
  - **Inguinal hernia:** lump or bulge in groin / scrotum, more prominent when coughing or straining, receding when lying down, nausea and vomiting, bowel obstruction
- Scrotal pain / swelling confirmed (after surgical emergency was ruled out)
  - Always prescribe a complete syndromic treatment course for SS.

- Severe pain / swelling: bed rest, elevate scrotum, cold compresses, analgesic medicines (e.g. paracetamol, ibuprofen, diclofenac).
- Review after 3-7 days
- Investigate for TB if no improvement on standard antibiotics (e.g. Xpert on urine or semen sample)
- Add empirical treatment of genital schistosomiasis for if compatible symptoms and potential exposure. See **section 6.4** on **page 57**.

- Use the standard syndromic treatment regimen unless the patient has special indications for extended treatment or contraindications, or if standard drugs are unavailable:
  - Select **one** alternative regimen for each underlying infection from **Table 6**.
- Routinely offer syphilis rapid screen for potential concurrent (asymptomatic) syphilis infection.
  - Syphilis does not typically cause SS and is often asymptomatic.
  - Tertiary syphilis can manifest as gummas (thick fibrotic tissue +/- necrosis) on the scrotum and testes. This may look similar to Kaposi sarcoma, testicular cancer, etc.
  - See **Section 6.3** on **page 51** for management of serologically diagnosed syphilis.
- Note: Other STI syndromes may also be present.
  - Add the standard treatment for the additional syndrome.
  - Do not increase / duplicate the dose of individual antibiotics if they are used for both syndromes.

Figure 10: Scrotal swelling (SS) flowchart

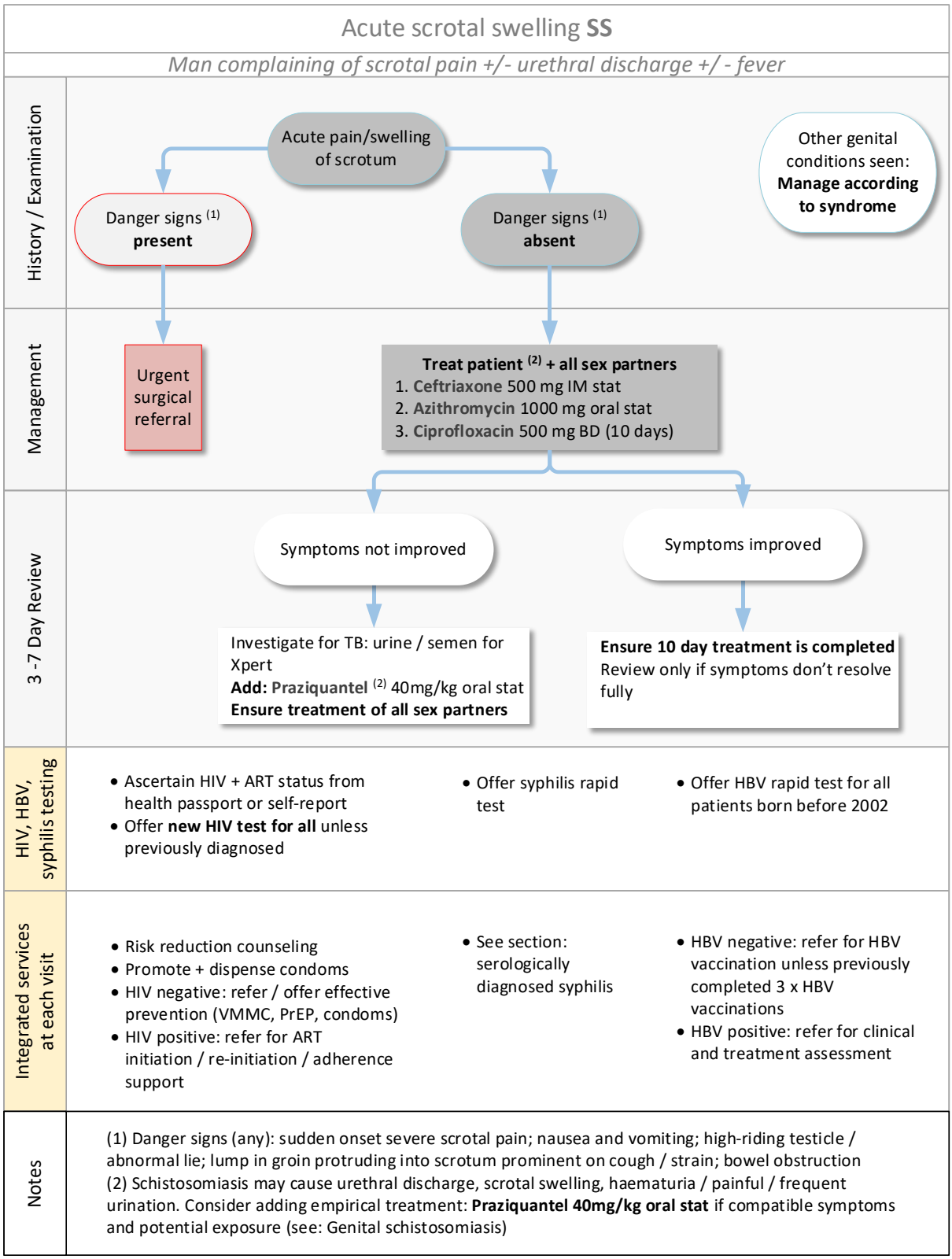


Table 6: Standard and alternative treatment regimens for SS by underlying infection

Infections covered	Regimens: select only 1 drug per infection	Line	Use in PBFW, children 0-14
Neisseria gonorrhoea	Ceftriaxone 500 mg IM stat	*Standard*	✓
	Gentamicin 240 mg IM stat	*Alternative*	✗
Chlamydia trachomatis	Azithromycin 1000 mg oral stat	*Standard*	✓
	Doxycycline 100 mg oral BD for 7 days	*Alternative*	✗
	Erythromycin 500 mg oral QDS for 7 days	*Alternative*	✓
E. coli / enteric bacteria	Ciprofloxacin 500mg BD for 10 days	*Standard*	✗
	Levofloxacin 500mg OD for 10 days	*Alternative*	✗
Schistosomiasis (male genital)	Praziquantel 40mg/kg oral stat	*Standard*	(✓)[12]

5.5.2 SS partner treatment

- **Symptomatic partners:** treat according to the diagnosed syndrome or specific conditions.
- **Asymptomatic partners:**
    - **Ceftriaxone 500 mg** IM stat + **Azithromycin 1000mg** oral stat + **Doxycycline 100mg** oral BD for 7 days

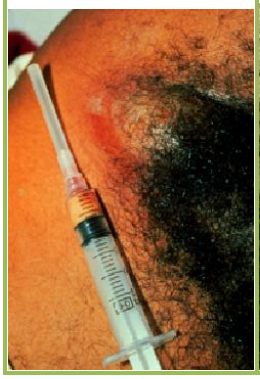
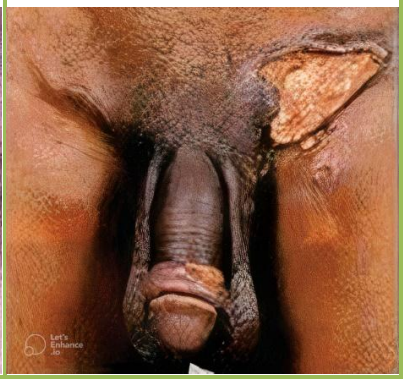
5.6 Inguinal Bubo (BU)

Key Facts 11: Inguinal bubo (BU)

- **Main symptoms**: Single or multiple enlarged lymph nodes in groin, often painful, sometimes fluid filled
    - +/- genital ulcers / sores
    - +/- genital discharge
- BU may be caused by a wide range of different conditions that look similar clinically.
    - **Sexually transmitted:** Haemophilus ducreyi (chancroid); Herpes simplex virus 2 (genital herpes); Treponema pallidum (syphilis); Chlamydia trachomatis serovars L1, L2, L3 (lymphogranuloma venereum); Klebsiella granulomatis (granuloma inguinale)
    - **Non-sexually transmitted:** M. tuberculosis; Kaposi sarcoma; lymphoma; leg infection; etc.
- Avoid spontaneous rupture of buboes as this leads to slow healing fistulas / ulcers. Avoid surgical incision & drainage as this delays healing.
- **Routine syphilis screening** (treponemal rapid test) is useful in BU patients without genital ulcers to diagnose and treat asymptomatic syphilis infection. See details in **section 6.3** on **page 51**.

[12] Although the risk is likely low, avoid praziquantel in 1st pregnancy trimester. See **Section 6.4** on **page 49**

Figure 11: Examination findings in BU

Chancroid bubo	Lymphogranuloma venereum	
		

5.6.1 Diagnosis and treatment of BU index patient

- Confirm inguinal lymph node swelling. Rule out non-STI causes.
- **Genital ulcers / sores present:** treat as **GUD** (see **Chapter 5.1.1** on **page 16**)
- **Ulcers or sores absent:**
    - Treat for presumed chancroid or lymphogranuloma venereum.
    - Always prescribe a complete syndromic treatment course for BU.
    - If the bubo is fluid filled, it must be aspirated by a trained health-care person using a syringe with 18- or 19-gauge needle. Always puncture the bubo through adjacent healthy skin, not through inflamed skin.
    - Review after 3-7 days. Repeat fluid aspiration if necessary.
    - Investigate for TB if no improvement on standard antibiotics (e.g. Xpert on aspirate)
- Use the standard syndromic treatment regimen unless the patient has special indications for extended treatment or contraindications, or if standard drugs are unavailable:
    - Select **one** alternative regimen for each underlying infection from **Table 7**.
- Routinely offer syphilis rapid screen for potential concurrent (asymptomatic) syphilis infection.
    - Primary syphilis may cause noticeable ulcers but is often asymptomatic. See **Genital Ulcer Disease (GUD)**
    - Condyloma lata are flat wart-like skin lesions in warm, moist areas. (Secondary syphilis)
    - Tertiary syphilis can manifest as gummas (thick fibrotic tissue +/- necrosis) anywhere on the skin or inside organs. This may look similar to Kaposi sarcoma, testicular cancer, etc.
    - See **Section 6.3** on **page 51** for management of serologically diagnosed syphilis.
- Note: Other STI syndromes may also be present.
    - Add the standard treatment for the additional syndrome.
    - Do not increase / duplicate the dose of individual antibiotics if they are used for both syndromes.

Figure 12: Bubo (BU) flowchart

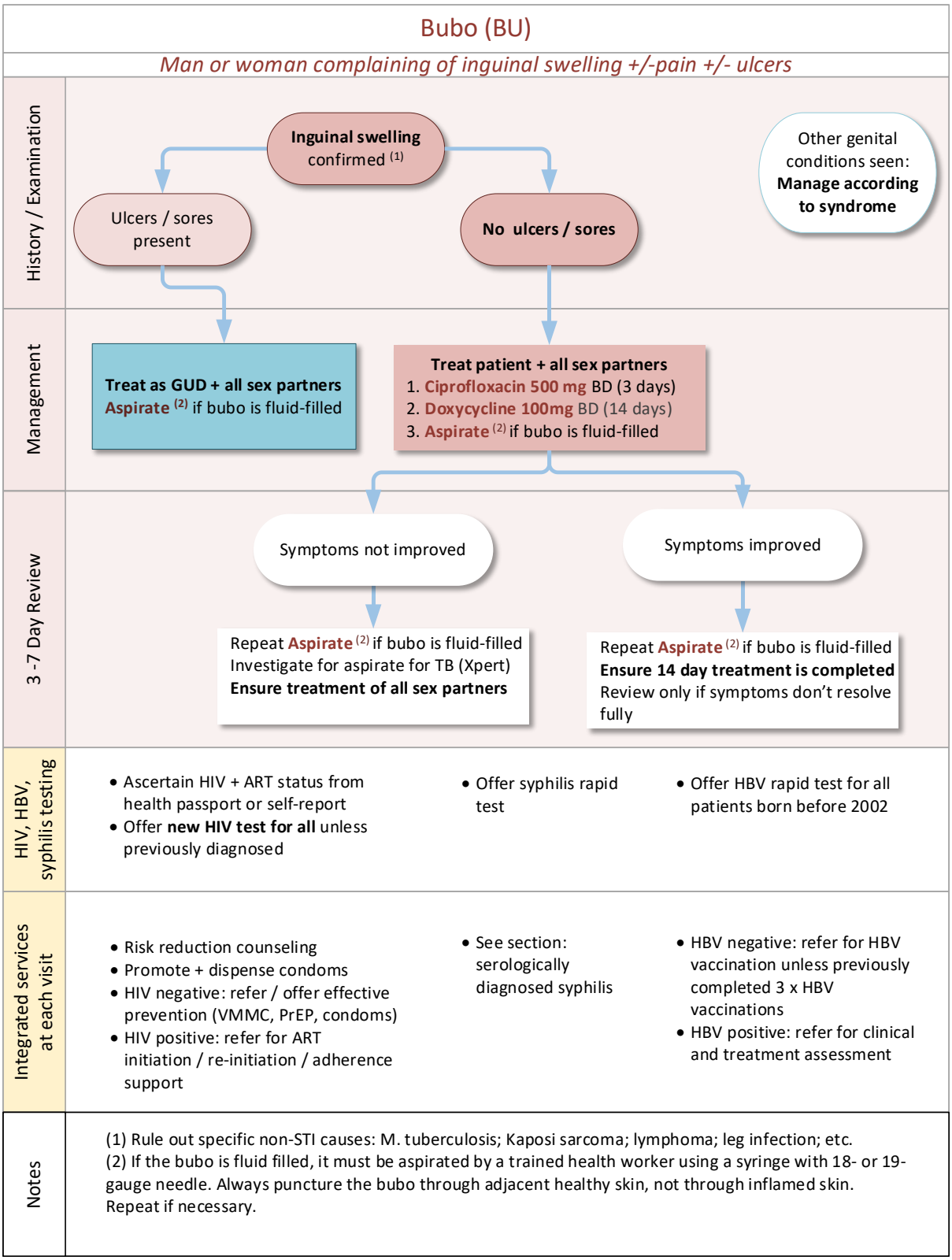


Table 7: Standard and alternative treatment regimens for BU by underlying infection

Infections covered	Regimens: select only 1 drug per infection	Line	Use in PBFW, children 0-14
Bubo without genital ulcers			
Chancroid	Azithromycin 1000 mg oral stat	*Standard*	✓
	Ciprofloxacin 500 mg oral BD for 3 days	*Alternative*	✗
	Ceftriaxone 500 mg IM stat	*Alternative*	✓
	Erythromycin 500 mg oral QDS for 7 days	*Alternative*	✓
Lymphogranuloma venereum	Doxycycline 100 mg oral BD for 14 days	*Standard*	✗
	Erythromycin 500 mg oral QDS for 14 days	*Alternative*	✓
Bubo with genital ulcers: treat as GUD see **Table 2** ***on*** **page 19**			

5.6.2 BU partner treatment

- **Symptomatic partners:** treat according to the diagnosed syndrome or specific conditions.
- **Asymptomatic partners, index patient without ulcers:**
    - **Ciprofloxacin 500 mg** oral BD for 3 days + **Doxycycline 100 mg** oral BD for 14 days
- **Asymptomatic partners, index patient with ulcers** (treatment same as GUD partner treatment):
    - Index patient treated for uncomplicated GUD: **Benzathine penicillin 2.4 mega units** IM stat + **Azithromycin 1000mg** oral stat
    - Index patient treated for treatment resistant GUD: **Azithromycin 1000 mg** oral stat + **Doxycycline 100 mg** oral BD for 21 days

5.7 Balanitis / Balanoposthitis (BA)

Key Facts 12: Balanitis (BA)

- **Main symptoms**: Redness, swelling, itching, burning, pain of the glans penis / foreskin:
  - +/- discharge
  - +/- unpleasant odour
- BA may be caused by different conditions that look similar clinically. Mostly caused by poor hygiene / tight foreskin (phimosis) leading to non-specific bacterial or fungus infections.
  - **Non-sexually transmitted causes (most common):** Candida[13]; Staphylococcus; Streptococcus; Gardnerella vaginalis; E. coli etc.
  - **Sexually transmitted:** Candida [13]; Herpes simplex virus 2 (genital herpes); syphilis; chancroid (Haemophilus ducreyi); lymphogranuloma venereum (Chlamydia trachomatis); granuloma inguinale (Klebsiella granulomatis)
- Recommend circumcision if foreskin is not easily retractable (after BA is fully healed).
  - Note: Recommend VMMC for <u>all</u> non-circumcised STI patients
- **Routine syphilis screening** (treponemal rapid test) is useful in BA patients to diagnose and treat asymptomatic syphilis infection. See details in **section 6.3** on **page 51**.

Figure 13: Examination findings in Balanitis (BA)

5.7.1 Diagnosis and treatment of BA

- Confirm superficial inflammation / rash on foreskin +/- glans.
  - Educate: wash the glans and under the foreskin daily with mild soap.
  - Note: some cheap soap (bar and liquid) may further irritate skin.
- **Genital ulcers / sores present:** treat as **GUD** (see **Chapter 5.1.1** on **page 16**)
- **Ulcers or sores absent:**
  - Treat for candidiasis.
  - Always prescribe a complete syndromic treatment course for BA.
  - Review only if no improvement after 3-7 days.

[13] Candidiasis can be sexually transmitted but is not strictly considered an STI

- Use the standard syndromic treatment regimen unless the patient has special indications for extended treatment or contraindications, or if standard drugs are unavailable:
    - Select **one** alternative regimen for each underlying infection from **Table 7**.
- Routinely offer syphilis rapid screen for potential concurrent (asymptomatic) syphilis infection.
    - Primary syphilis may cause noticeable ulcers but is often asymptomatic. See **Genital Ulcer Disease (GUD)**
    - Condyloma lata are flat wart-like skin lesions in warm, moist areas. (Secondary syphilis)
    - Tertiary syphilis can manifest as gummas (thick fibrotic tissue +/- necrosis) anywhere on the skin or inside organs. This may look similar to Kaposi sarcoma, testicular cancer, etc.
    - See **Section 6.3** on **page 51** for management of serologically diagnosed syphilis.
- Note: Other STI syndromes may also be present.
    - Add the standard treatment for the additional syndrome.

Do not increase / duplicate the dose of individual antibiotics if they are used for both syndromes.

Figure 14: Balanitis (BA) flowchart

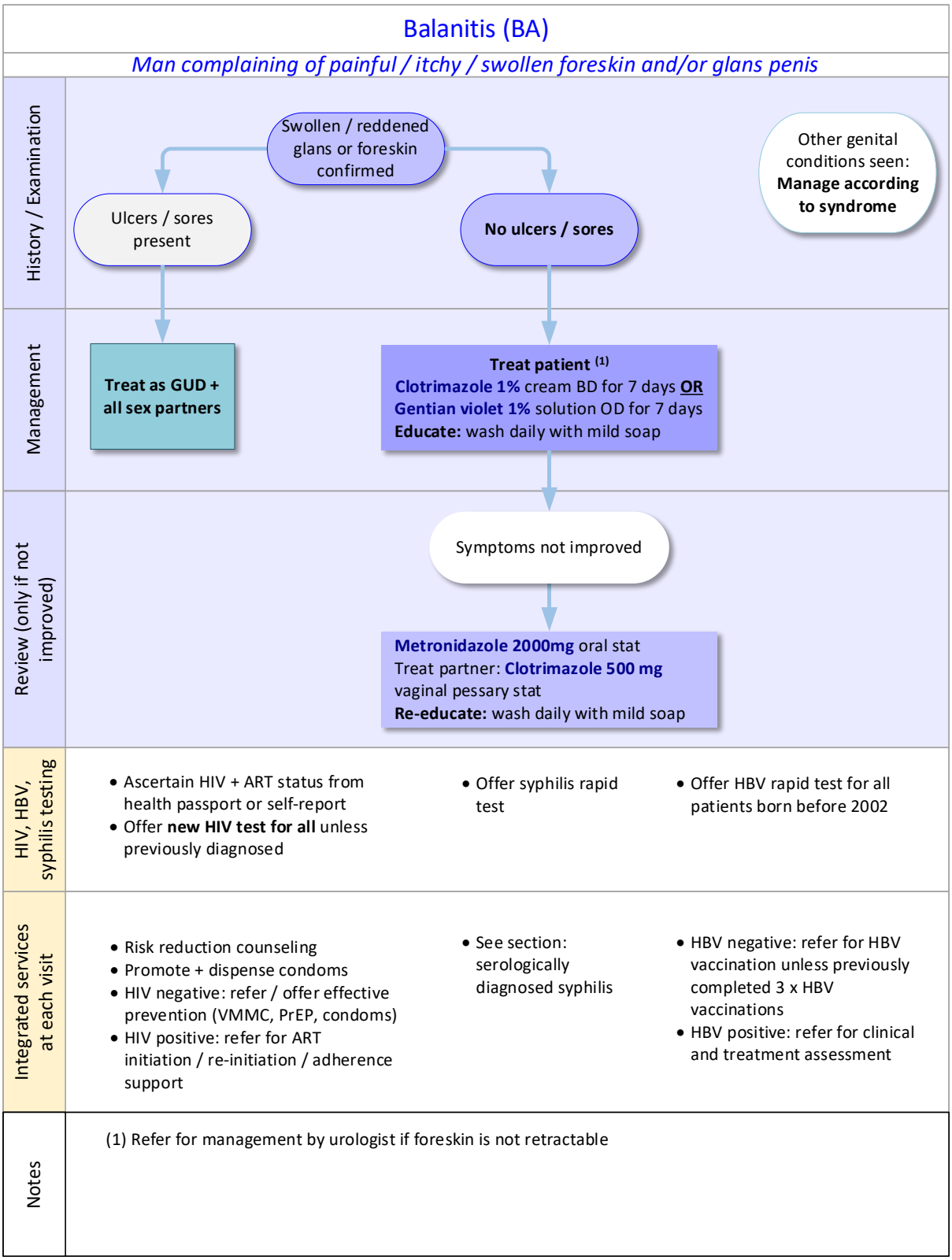


Table 8: Standard and alternative treatment regimens for BA by underlying infection

Infections covered	Regimens: select only 1 drug per infection	Line	Use in PBFW, children 0-14
Candida albicans (yeast infection)	Clotrimazole 1% cream BD for 7 days	*Standard*	✓
	Gentian violet 1% aqueous solution OD for 7 days	*Alternative*	✓
	Miconazole 2% cream BD for 7 days	*Alternative*	✓
	Nystatin cream BD for 7 days	*Alternative*	✓
	Fluconazole 150 mg oral stat	*Alternative*	✓
Trichomonas vaginalis	Metronidazole 2000 mg oral stat	*Standard*	✓
	Tinidazole 2000 mg oral stat	*Alternative*	✓
	Metronidazole 400 mg oral BD for 5 days	*Alternative*	✓

5.7.2 BA partner treatment

- Routine partner treatment is not usually needed.
    - If BA fails to improve or re-occurs: treat partners for presumed vaginal candidiasis with Clotrimazole vaginal pessary (500mg stat or 100mg at night for 5 nights).
- **Symptomatic partners:** treat according to the diagnosed syndrome or specific conditions.

5.8 Neonatal Conjunctivitis (NC)

Key Facts 13: Neonatal conjunctivitis (NC)

- **Main symptoms**: Discharge, swelling, redness of lid / conjunctiva in one or both eyes during first 4 weeks of life:
    - Purulent / mucoid or watery discharge (tearing)
    - +/- ulcerations of corneal / conjunctiva
- NC is a very serious condition that can cause blindness if not appropriately managed.
    - Refer immediately to a District or Central Hospital for treatment by an experienced clinician/nurse or paediatrician.
- Causes include maternal STI, non-STI bacterial infections, chemical irritation or malformations of the tear duct.
    - **Sexually transmitted (most common):** Neisseria gonorrhoea, Chlamydia trachomatis; Herpes simplex 2
    - **Non-sexually transmitted infections:** Staphylococcus; Pseudomonas aeruginosa
    - **Chemical irritation:** Silver nitrate; antibiotic eye drops / ointments.
- Routine prophylaxis with antiseptic or antibiotic eye ointment for all newborns is very effective in preventing NC.
- NC is more common in neonates of HIV infected mothers.

Figure 15: Examination findings in NC

Neonatal conjunctivitis

5.8.1 Prevention of NC

- Routinely screen pregnant women for cervicitis and treat following **Section 5.3.1**
- Apply antibiotic or antiseptic eye ointment as part of routine newborn care
    - Tetracycline 1% or erythromycin 0.5% or silver nitrate 1%

5.8.2 Diagnosis and treatment of NC

- Confirm discharge, swelling, redness of lid / conjunctiva in one or both eyes
    - Check for ulcerations of the cornea / conjunctiva
- Medical emergency. Treat by experienced paediatrician, clinical officer or nurse at District or Central Hospital.
    - Look for disseminated disease (arthritis, meningitis, sepsis, anorectal infection)
- Rinse eyes with sterile isotonic saline solution every 2 hours until improved.
    - Avoid cross-contamination by frequent hand washing and changing of gloves.
    - Do not cover / patch eyes.
    - Do not give topical antibiotics or antiseptic drops / ointments.
- Give complete antibiotic treatment for gonorrhoea and chlamydia (see **Figure 16**).
- Use the standard syndromic treatment regimen unless the patient has special indications for extended treatment or contraindications, or if standard drugs are unavailable:
    - Select **one** alternative regimen for each underlying infection from **Table 9**.
- Routinely offer syphilis rapid screen to the mother for potential concurrent (asymptomatic) syphilis infection.
    - Syphilis can infect any part of the eye but is not typically responsible for NC.
    - See **Section 6.3** on **page 51** for management of serologically diagnosed syphilis.

Figure 16: Neonatal conjunctivitis (NC) flowchart

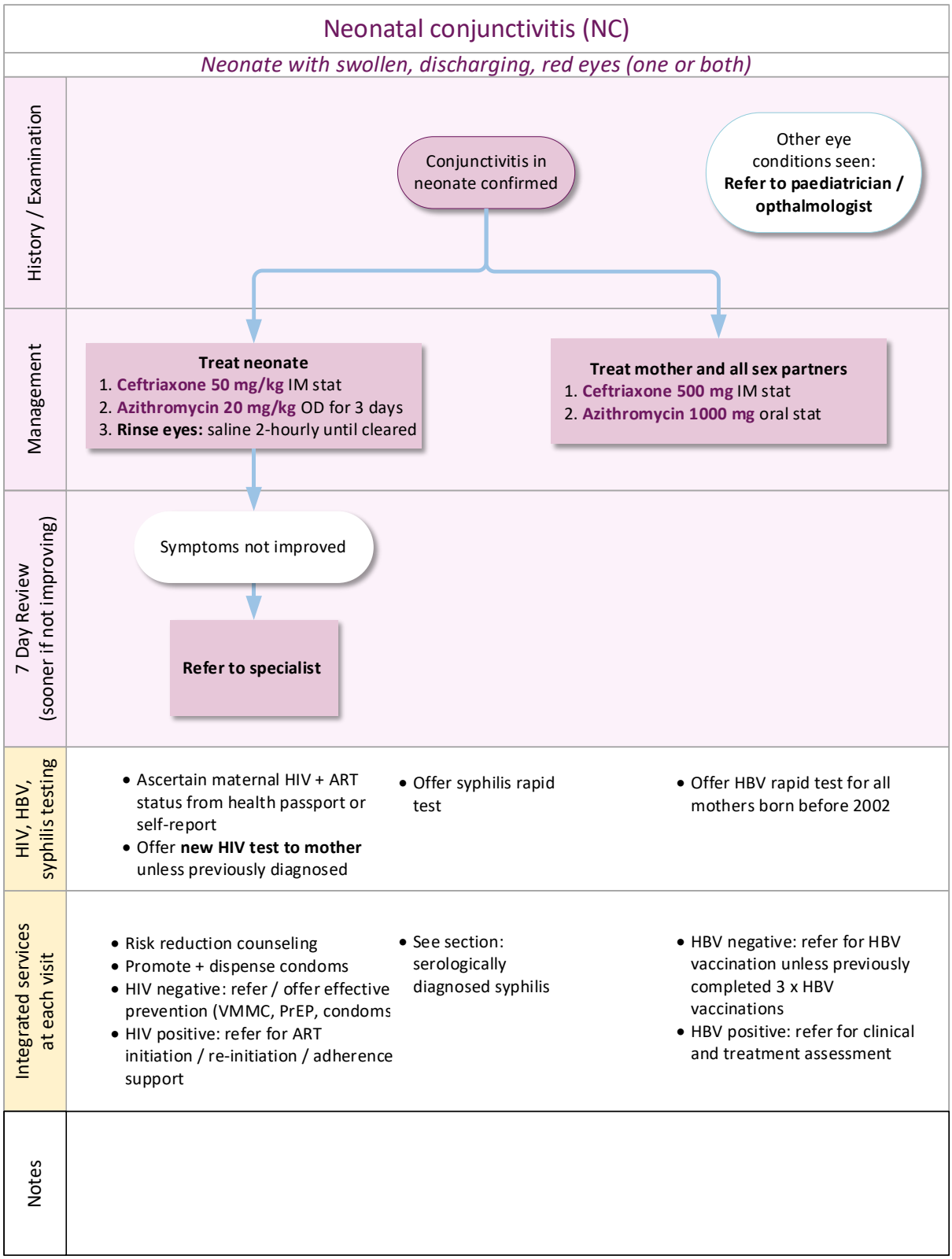


Table 9: Standard and alternative treatment regimens for NC by underlying infection

Infections covered	Regimens: select only 1 drug per infection	Line	Use in PBFW, children 0-14
Treatment of neonate			
Neisseria gonorrhoea	Ceftriaxone 50 mg / kg IM stat	*Standard*	✓
	Gentamicin 5 mg / kg IM stat	*Alternative*	✓
Chlamydia trachomatis	Azithromycin 20 mg / kg oral OD 3 days	*Standard*	✓
	Erythromycin 12.5 mg / kg oral QDS for 14 days	*Alternative*	✓
Treatment of mother and her sex partner(s)			
Neisseria gonorrhoea	Ceftriaxone 500 mg IM stat	*Standard*	✓
	Gentamicin 240 mg IM stat	*Alternative*	✗
Chlamydia trachomatis	Azithromycin 1000 mg oral stat	*Standard*	✓
	Doxycycline 100 mg oral BD for 7 days	*Alternative*	✗
	Erythromycin 500 mg oral QDS for 7 days	*Alternative*	✓

5.8.3 NC parent treatment

- **Symptomatic mothers / sex partners:** treat according to the diagnosed syndrome or specific conditions.
- **Asymptomatic mother / sex partners:** treat for gonorrhoea and chlamydia.
    - **Ceftriaxone 500 mg** IM stat + **Azithromycin 1000 mg oral stat**

5.9 Ano-Rectal Infections (ARI)

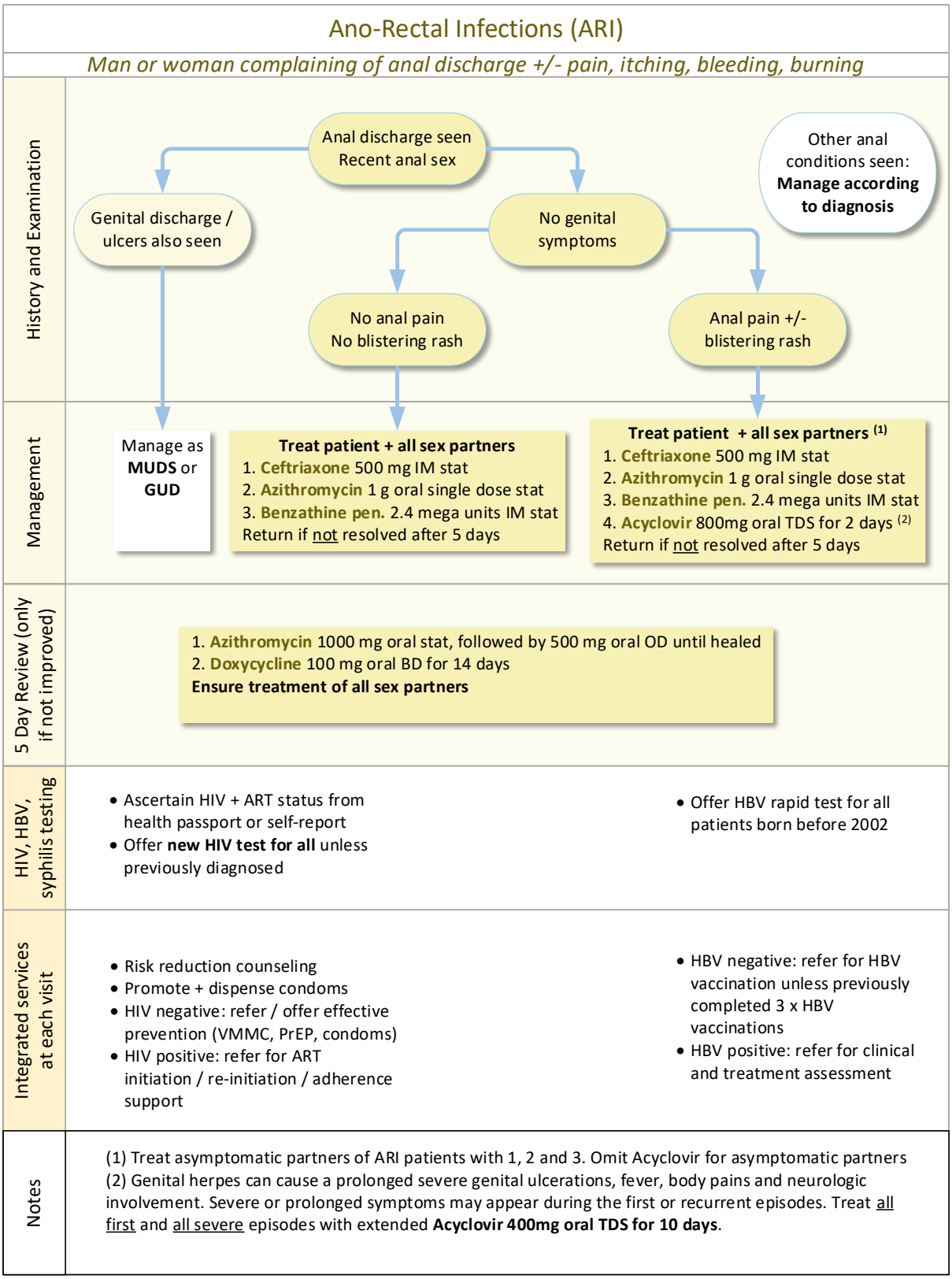
Key Facts 14: Ano-rectal infections (ARI)

- **Main symptoms** (any): anorectal pain, itching, discharge, bleeding, sensation of rectal fullness, tenesmus, constipation and mucus streaking of stools
    - ARI can also be asymptomatic
- Transmission by receptive anal sex
- Diagnosis:
    - Visual inspection of the anus: discharge, ulcers, external warts
    - If acceptable: digital anal examination for ulcers
- Most STIs that cause GUD and MUDS can also cause ARI.
    - Neisseria gonorrhoea; Chlamydia trachomatis; Herpes simplex 2
    - Lymphogranuloma venereum; syphilis; mycoplasma genitalium
- Syndromic treatment is the same as for GUD and MUDS.
- **Syphilis rapid tests** (treponemal test) have **no value** for confirming / excluding syphilis in ARI patients. They do not influence treatment decisions. Syphilis is covered by syndromic treatment. See details in **section 6.3** on **page 51**.

5.9.1 Diagnosis and treatment of ARI

- Treat according to **Figure 17 i**f anal discharge is seen in a patient with receptive anal sex in the last 6 months. Examine for skin lesions and ulcers.
    - Consider non-STI causes: haemorrhoids, fissures, inflammatory bowel disease, amoebiasis, etc.
    - Add empirical treatment of rectal schistosomiasis if compatible symptoms and potential exposure. See **section 6.4** on **page 57**.
- Syndromic ARI treatment covers Neisseria gonorrhoea, Chlamydia trachomatis, syphilis, chancroid
    - Add acyclovir if pain and/or blisters are present to cover Herpes simplex 2
    - If not improved after 5 days: retreatment covers LGV and granuloma inguinale
    - Always prescribe a complete treatment course.
- Use the standard syndromic treatment regimen unless the patient has special indications for extended treatment or contraindications, or if standard drugs are unavailable:
    - Avoid doxycycline in PBFW (treated as partners) and children.
    - Select **one** alternative regimen for each underlying infection from **Table 2** or **Table 3**.
- Note: Other STI syndromes may also be present.
    - Add the standard treatment for the additional syndrome.
    - Do not increase / duplicate the dose of individual antibiotics if they are used for both syndromes.

Figure 17: Ano-rectal infection (ARI) flowchart



5.9.2 ARI partner treatment

- **Symptomatic partners:** treat according to the diagnosed syndrome or specific conditions.
- **Asymptomatic partners:**
    - **Ceftriaxone 500 mg** IM stat + **Azithromycin 1000 mg** oral stat **+ Benzathine penicillin 2.4 mega units** IM stat

6 STI with identified specific causes

6.1 Genital warts

Key Facts 15: Genital warts

- **Main symptoms**: Small growths or bumps on the skin of the genital or anal areas:
  - smooth, flat, raised, or like cauliflower
  - +/- itching, discomfort, pain, bleeding
- Caused by the sexually transmitted Human papilloma virus (HPV) type 6 or 11.
  - Different from HPV types that cause cervical and penile cancer.
  - HPV infection is not curable.
  - HPV infected people without symptoms can transmit the infection.
- Genital warts commonly re-occur after removal
- HPV vaccination and condoms are the only effective prevention methods.
  - The same HPV vaccine given for cervical cancer prevention is also effective for genital warts
  - The vaccine is most effective when given before a person becomes sexually active because HPV exposure is very common. However, it still provides benefits for sexually active people.

Figure 18: Examination findings for genital warts

6.1.1 Diagnosis and treatment of genital warts

- Treat by chemical or physical removal. Repeated treatment is usually needed.
- **Note:** treat only external warts with simple chemical or physical removal. Warts located on urethra, vagina, cervix or anus require specialist treatment.

Chemical removal options:

- For all chemical options:

- Apply directly to warts. Spare normal skin.
- Repeat weekly. Switch to other method if no improvement after 4-6 weeks

- **Compound podophyllin paint 0.5%**:
  - **Caution:** 5ml maximum dose per application; treat large areas in separate sessions; do not use in pregnant or breastfeeding women
  - Allow to dry to avoid rubbing off onto normal skin.
  - Wash off after 4 hours
- **Silver nitrate stick:**
  - Alternative to podophyllin; may be used by pregnant or breastfeeding women
  - Do not wash for 6-8 hours
- **Trichloroacetic acid (TCA) 80-90%:**
  - Wash off after 4 hours
- **Imiquimod 5% cream:**
  - Apply with a finger at bedtime every second day, leave overnight
  - Continue for up to 16 weeks

Physical removal:

- Options: cryotherapy (liquid nitrogen, carbon dioxide), electro-cautery, surgical removal
- **Caution:** do not cut away genital warts with scalpel, scissors, razor, etc. to avoid excessive bleeding.
- Routinely offer syphilis rapid test for potential concurrent (asymptomatic) syphilis infection.
  - Syphilis does not cause genital warts, but condyloma lata which can look similar.
  - See **Section 6.3** on **page 51** for management of serologically diagnosed syphilis.
- Note: Other STI syndromes may also be present.
  - Add the standard treatment for the additional syndrome.

6.1.2 Genital warts partner treatment

- Routine partner treatment is not usually needed.
  - HPV type 6 and 11 is easily transmitted and often asymptomatic, so sexual partners are likely already infected.
  - HPV vaccination may be offered to asymptomatic partners.
- **Symptomatic partners:** treat according to the diagnosed syndrome or specific conditions.

6.2 Cancer of the cervix

Key Facts 16: Cervical cancer (CxCa)

- Almost all sexually active people get infected with human papilloma virus (HPV), usually without symptoms. 90% of people control HPV infection without treatment.
- Persistent HPV infection with high-risk HPV types can cause cancer of the vulva, vagina, mouth/throat, penis and anus.
- Almost all CxCa is caused by persistent human papilloma virus (HPV) infection.
- **Main symptoms**: Early stages of CxCa are asymptomatic. More advanced CxCa can present like AVD and LAP. Speculum exam is essential to avoid missing CxCa.
- Routine screening methods include visual Inspection of the cervix with acetic acid (VIA); Papanicolaou smear (histopathologist at Central Hospitals; HPV DNA testing (Xpert)
- Early detection and treatment are critical for a good prognosis
- HPV vaccination is very effective in preventing CxCa and genital warts
    - Vaccination is scheduled for girls aged 9-14 years before first sex

- Follow Malawi Cervical Cancer Guidelines for prevention, screening and treatment
- Consider genital schistomiasis as a differential diagnosis for cervical cancer. See **section 6.4** on **page 57**.

6.3 Syphilis (serologically diagnosed)

Key Facts 17: Syphilis symptoms, testing and treatment

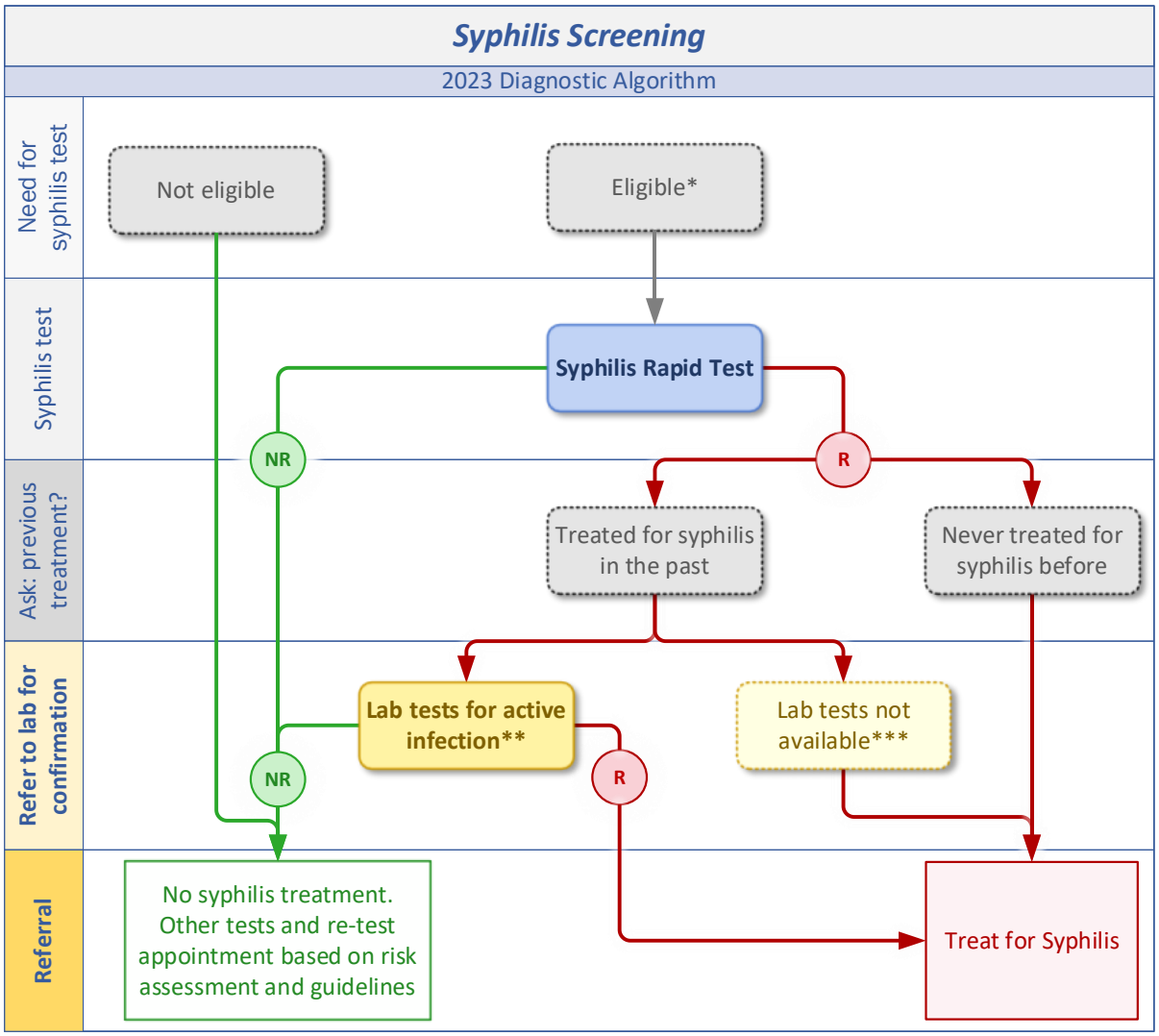
- **Main symptoms**: Wide range, depending on stage
    - **Primary syphilis** approx. 3 weeks after getting infected
        - Chancre: painless ulcer at site of infection (genitals, anus, mouth). Up to 30% go unnoticed.
    - **Secondary syphilis** 2-8 weeks after chancre has healed
        - Widespread rash anywhere on body, incl. palms of hands/ soles of feet
        - Condylomata lata: Moist, wart-like, in warm moist areas; highly infectious
        - Mucous patches: Flat, white / grey patches in mouth, throat, or genital areas.
        - Alopecia: "moth-eaten" patchy hair loss
    - **Tertiary (late) syphilis** 3-10 years after initial infection (untreated)
        - Gummas: soft, tumour-like growths on the skin or internal organs (rare)
        - Spread to many organs may cause irreparable damage: skin, heart, nerves, brain, eyes, liver, spleen, kidneys, bones, joints.
- Bacterial infection caused by *Treponema pallidum*
    - Transmission: sex (vaginal, oral, anal); mother-to-infant via placenta; blood transfusion
- Use **syphilis rapid tests** (treponemal test) only for targeted investigation (e.g. skin clinic) and screening of high-risk groups (STI patients and their partners, pregnant women, key populations).
    - **Syphilis rapid tests** (treponemal test) have **no value** for confirming / excluding syphilis in GUD and ARI patients. They do not influence treatment decisions (see: **Key Facts 6** and **Key Facts 14**)
- See **Figure 20** for syphilis testing and management strategy.
- Positive syphilis rapid test does not distinguish a current (active) from a cured infection.
    - Rapid test usually remains positive for life after cured infection. Without lab-based confirmation of active infection, re-testing of previously treated people leads to repeated, mostly unnecessary, re-treatment. However, presumptive re-treatment is justified to avoid damage from untreated infection.
    - A new combined treponemal / non-treponemal rapid test will be introduced as soon as available. This combined test can accurately diagnose / exclude active infection.
- **Penicillin** is the most effective drug
    - No antimicrobial resistance known.
    - Penetrates placenta (prevents congenital syphilis)
    - True penicillin allergy is rare (about 3% of people)

Figure 19: Examination findings secondary syphilis

6.3.1 Diagnosis and treatment of syphilis

- Follow the flowchart in **Figure 20** for syphilis testing and interpretation.
    - Syphilis <u>treatment is not needed</u> if the confirmatory syphilis test is negative (=does not show active infection).
    - Routinely (re-)treat if lab test for confirmation of active infection is not available.
- Use the standard regimen for early or late syphilis unless the patient has contraindications, or if standard drugs are unavailable (see **Table 10**).
    - Always prescribe a complete treatment course.
    - Treat for late syphilis if the duration since primary infection is not known.
    - Avoid doxycycline in PBFW and children.
- Refer patients with (suspected) tertiary syphilis for specialist management.
    - Psychiatric / neurological / eye / ear symptoms
    - Cardiovascular: aortitis / aneurysm, heart failure
    - Bone / joint pain +/- swelling
- Note: Other STI syndromes may also be present.
    - Add the standard treatment for the additional syndrome.
    - <u>Do not</u> increase / duplicate the dose of individual antibiotics if they are used for both syndromes.

Figure 20: Flowchart for syphilis testing, interpretation and treatment



Eligibility for syphilis testing: see **Table 5** in Integrated Testing Guidelines for who and when to test for syphilis.

****Lab test for active infection***: Clients with a previous syphilis infection usually have a positive rapid test for life, even if the infection was cured. Additional lab tests (RPR or VDRL) are needed to confirm a new, active syphilis infection.

*****Lab tests not available:*** Lab tests for confirmation of active syphilis infection may not be available at all sites. In this case, refer for presumptive syphilis treatment to ensure that any potentially new syphilis infection is treated.

Table 10: Standard and alternative treatment regimens for early and late syphilis

Infections covered	Regimens: select only 1 drug per indication	Line	Use in PBFW, children 0-14
Early syphilis[14]	Benzathine penicillin 2.4 mega units IM stat (single dose)	*Standard*	✓
	Doxycycline 100 mg oral BD for 14 days	*Alternative*	✗
	Procaine penicillin 1.2 mega units IM OD for 10 days	*Alternative*	✓
	Ceftriaxone 1000mg IM OD for10 days	*Alternative*	✓
	Erythromycin 500 mg oral QDS for 14 days	*Alternative*	✓[15]
Late syphilis / unknown duration[16] (excl. neuro-syphilis)	Benzathine penicillin 2.4 mega units IM, 3 doses, 7 days apart (max. 14 days)	*Standard*	✓
	Doxycycline 100 mg oral BD for 28 days[17]	*Alternative*	✗
	Procaine penicillin 1.2 mega units IM OD for 20 days	*Alternative*	✓
	Erythromycin 500 mg oral QDS for 30 days	*Alternative*	✓[15]
Neuro-syphilis	Aqueous crystalline penicillin G, 3 mega units IV, 4-hourly for 14 days	*Standard*	✓
	Ceftriaxone 2000mg IM OD for 14 days	*Alternative*	✓
Early congenital syphilis[18]	Aqueous crystalline penicillin G, 100,000-150,000 units/kg/day IV for 10 days	*Standard*	✓
	Procaine penicillin 50,000 units/kg/day IM OD for 10 days	*Alternative*	✓
Late congenital syphilis[18]	Benzathine penicillin 50,000 units/kg IM 3 doses, 7 days apart (max. 14 days)	*Standard*	✓

[14] **Primary, secondary and tertiary syphilis** of max. 2-year duration since primary infection (chancre)
[15] Although erythromycin treats the pregnant woman, it does not penetrate the placenta. It is therefore necessary to treat the newborn infant soon after delivery.
[16] S**yphilis** of unknown or more than 2-year duration since primary infection (chancre)
[17] Doxycycline is not effective for neurosyphilis.
[18] Early congenital syphilis: within first 24 months of life. Late: age 2 years or older

6.3.2 Congenital Syphilis

Key Facts 18: Congenital syphilis

- **Main symptoms** range widely, depending on stage
    - **Asymptomatic**: 60-90% of infants with congenital syphilis have no signs at birth; signs may appear weeks or months later
    - **Early** congenital syphilis: usual onset with first weeks of life (age under 2 years)
        - Rash: small, red flat or raised bumps, often on palms/soles of hands/feet; +/- peeling skin around mouth, genitals, anus
        - Enlarged liver and spleen, often leading to jaundice (yellow skin and eyes)
        - Bone / joint swelling and pain
        - Snuffles: nasal discharge (often bloody, highly infectious)
        - Failure to thrive, fever, anaemia
        - Swollen lymph nodes
        - Meningitis +/- seizures.
    - **Late** congenital syphilis: usually seen at age 5-15 years (min. age 2+ years)
        - Hutchinson's teeth: notched, peg-shaped upper central incisors.
        - Cornea inflammation; vision problems or blindness.
        - Neurological: hearing loss, intellectual disability, seizures
        - Bone and joint abnormalities: leg, skull, nose deformities
        - Gummatous lesions: soft, tumour-like growths on the skin, bones, or organs
- Transmission in uterus; breastfeeding transmission only if open sores on mother's breast.
- A positive **Syphilis rapid test** (treponemal test) in an infant cannot distinguish maternal (previous or current active) from active infant infection because maternal antibodies are transferred via the placenta.
    - Maternal syphilis antibodies persist for up to 15 months in the infant. A positive syphilis rapid test in older children who have not previously treated for syphilis confirms active congenital syphilis infection.
    - A new combined treponemal / non-treponemal rapid test will be introduced as soon as available. This combined test can accurately diagnose / exclude active infection.

6.3.3 Diagnosis and treatment of congenital syphilis

Table 11: Definition of presumed congenital syphilis

Mother syphilis rapid test positive **AND**		
Mother not or insufficiently treated (any of the 3 conditions) ● Maternal treatment started within 30 days before delivery ● Maternal treatment incomplete ● Mother treated with non-penicillin regimens	**OR**	**Infant** with any clinical syphilis signs

- Wear gloves when examining neonates for syphilis as lesions are highly infectious. Handle with gloves until at least 24 hours after starting treatment.

Infants with confirmed or presumed congenital syphilis:

- If experienced clinician or nurse is available to insert venous canula:
    - Give **aqueous benzyl penicillin** 100 000–150 000 U/kg/day intravenously for 10–15 days
    - Otherwise: give **procaine penicillin** 50 000 U/kg/day single dose intramuscularly for 10–15 days.
- Expect good response to adequate penicillin treatment, but recovery of severely ill infants may take weeks or months

Infants without clinical signs of syphilis AND whose mothers have completed adequately penicillin treatment

- Review infant for clinical signs of syphilis infection at 1 and 2 months and later if any symptoms are noticed by the mother.
    - Positive syphilis rapid test in a previously untreated child 12+ months old is likely active syphilis. Treat all of these as early or late congenital syphilis.

6.3.4 Treatment of mother and her sexual partners

- Treat the mother and all sexual partners for early or late syphilis (see **Table 10**)
- Treat for late syphilis if the duration since primary infection is not known.

6.4 Genital schistosomiasis

Key Facts 19: Genital schistomiasis

- Schistosomiasis is a parasitic infection that is acquired by skin contact with water from places with water snails (intermediate host)
    - Parasites bore through skin. This is painless and rarely noticed.
- Schistosoma haematobium is **highly prevalent across Malawi**[19]; **27%** of women in a population survey in Southern Malawi had female genital schistosomiasis (FGS) lesions[20]
- Schistosomiasis may be asymptomatic or cause symptoms that can be **clinically indistinguishable from STIs / cervical cancer** (see **Section 6.4.2**)
- FGS may increase risk of HIV and HPV acquisition [10–14].
- Schistosomiasis **treatment** (praziquantel) is simple, well tolerated, cheap and effective.

6.4.1 Exposure history

- Ask if the patient has ever had skin contact with water from rivers, lakes, ponds, paddies, etc.
    - Bathing, washing, fishing, swimming, walking through/crossing
- Living / working / visiting areas with natural water bodies makes potential exposure likely.

6.4.2 Symptoms and examination

- **In men:** haematuria, dysuria, dyspareunia, lower abdominal pain, proctitis (rectal pain, bleeding, ulceration)
- **In women:** abnormal vaginal discharge, abdominal and pelvic pain, dyspareunia, post-coital / contact bleeding, proctitis (rectal pain, bleeding, ulceration)
    - Complications: infertility, ectopic pregnancies, abortion, premature birth and low birthweight [4].
- Diagnostic tests for ruling out schistosomiasis are not usually available. Use histology if available.
- Examination:
    - Colposcopy with good light source / magnification
    - Changes on cervix, fornix and/or vaginal mucosa may be subtle
    - Look for: grainy sandy patches, homogenous yellow patches, abnormal blood vessels, rubbery papules

[19] Makaula, Peter et al. “Schistosomiasis in Malawi: a systematic review.” Parasites & vectors vol. 7 570. 10 Dec. 2014, doi:10.1186/s13071-014-0570-y

[20] Lamberti, Olimpia et al. “Female genital schistosomiasis burden and risk factors in two endemic areas in Malawi nested in the Morbidity Operational Research for Bilharziasis Implementation Decisions (MORBID) cross-sectional study.” PLoS neglected tropical diseases vol. 18,5 e0012102. 8 May. 2024, doi:10.1371/journal.pntd.0012102

Figure 21: Colposcopy findings in female genital schistosomiasis

Grainy sandy patches	Homogenous yellow patches	Abnormal blood vessels	Rubbery papules
			

6.4.3 Empirical treatment

- **Consider schistosomiasis**:
    - In all women presenting with AVD, LAP, vaginal ulcers/ bleeding, vaginal / cervical tumours
    - In men presenting with haematuria, dysuria, dyspareunia, lower abdominal pain
    - Patients with ano-rectal infections failing to improve with syndromic ARI treatment
    - Particularly if symptoms persist after STI syndromic treatment
- Routinely add schistosomiasis treatment to STI syndromic treatment if symptoms are compatible and praziquantel is available.
    - **40mg praziquantel per kg bodyweight** as single dose

6.5 Mpox

Key Facts 20: Mpox

- Caused by the monkeypox virus, closely related to the smallpox virus (eradicated 1979).
- **Increased vigilance in STI clinics is essential due to similarity with other STIs**
    - In patients with compatible symptoms: use gloves, gown, mask; submit swabs from skin lesions for PCR testing by reference lab.
- July 2024: Mpox declared *public health emergency of international concern*
    - No confirmed Mpox cases in Malawi, but risk of import from Central and East African countries (October 2024)
    - Enhanced surveillance, lab testing (national reference lab at PHIM), health education
- **Transmission**: close physical or sexual contact with skin lesions, body fluids, or contaminated materials like bedding and clothing.
    - Less common: respiratory droplets during prolonged face-to-face contact
    - Not exclusively an STI
    - Rapid spread has been seen in MSM, FSW, crowded living conditions such as refugee camps, but MPox is not exclusive to any group.
- **Incubation Period:** 5 - 21 days
- **Symptoms**: fever, headache, muscle aches, swollen lymph nodes, exhaustion
    - Skin rash appears after 1-3 days, often on the face, hands, feet, and genital area. Macules → pustules → scabs
    - Rash may resemble herpes simplex or syphilis
    - Can lead to secondary bacterial infections, pneumonia, or encephalitis
- **Prevention:** avoiding close contact with infected individuals and contaminated materials.
    - Use condoms, although condoms alone may not prevent transmission due to the nature of skin contact.
    - Smallpox vaccine (ACAM2000 or Jynneos) is effective in preventing MPox.
- **Diagnosis:** Clinical diagnosis based on symptoms, confirmed through laboratory tests such as PCR of skin lesion samples.
- **Treatment:** symptomatic to relieve symptoms. In severe cases, antivirals like tecovirimat (TPOXX) may be used, though access is limited.