National AIDS Programme,
Department of Public Health
Ministry of Health and Sports, Myanmar

Sexually Transmitted Infection Management Guideline

2017

World Health Organization
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Contents

PREFACE

Sexually Transmitted Infection (STI) is common infections in many countries. Nowadays, the STI infections are managed syndromically in most low and middle-income countries. In Myanmar, syphilis and other STIs remain prevalent. There is a need to update current STI guidelines based on the current STI situation in Myanmar as well as adapting new evidence-based international guidelines based on the current context. These guidelines aim to increase coverage of STI services in Myanmar.

STIs remain prevalent and continue to present a major burden of morbidity and mortality throughout the world, both directly, through their impact on quality of life, reproductive health, and child health, and indirectly, through their role in facilitating sexual transmission of HIV infection and their impact on national and individual economies. The STIs are major causes of adverse pregnancy outcomes. There are up to 35% of pregnancies among women with untreated gonococcal infection. In the absence of prophylaxis, 30 – 50% of infants born to mothers with untreated chlamydia or gonorrhoea develop opthalmia neonatorum which can lead to blindness. Syphilis can lead to fetal and neonate deaths due to stillbirths and congenital syphilis. Gonorrhoea and chlamydial infection remains to be an important cause of infertility. In addition the physical, psychological and social consequence of STIs severely compromise people's quality of life.

STIs are closely link to HIV. STI patients have an increased risk of transmitting and acquiring HIV. It is estimated that STIs increases the risk of HIV by 2 to 9 fold in some population. In Myanmar, early and effective treatment of STIs is one of the important strategies of National AIDS Programme.

Under Goal 3 of Sustainable Development Goals, there are an ambitious set of health related goals including to reduce the global maternal mortality, to end the epidemics communicable diseases including of AIDS and to ensure universal access to sexual and reproductive health-care services by 2030. Appropriate management of STIs contribute to attaining this goal. Moreover, adequate control of STIs will contribute the reducing disease and human sufferings.

STIs account of the ten most important causes for seeking health care services among adults. In the South East Asia region, there are increased problems of STI drug resistance and increased spread of infection due to large pool of sexually active population, high population mobility, changing epidemiology of STI, inadequate coverage of preventive interventions, poor treatment seeking behaviours and changes of trend of health seeking behaviours that most patients seek STI services in private sector. Inadequate screening and case management of STI, unavailability of STI drugs, low quality of drugs, and inappropriate use of antibiotic and limited laboratory facilities to make appropriate diagnosis are factors in the development STI drug resistance especially in *Neisseria gonorrhoea*.

The Syndromic Case Management is the cornerstone of STI management as well as essential for STI surveillance. Syndromic management remains to be the main approach in primary health care setting in both public and private sector. It also facilitates standardization in the delivery of STI services including procurement and capacity building.

For the future directions, the National AIDS/STD Control programme, Myanmar will strengthen Gonococcal Antimicrobial Surveillance System to inform the national treatment guidelines for low resource setting. We will continue to strengthen integration with the Global AMR initiative for AMR surveillance to ensure appropriate use of drugs. Myanmar will also strengthen laboratory support for etiologic diagnosis of STI. In the meantime, this guidelines focus on syndromic cases management in the context of limited availability of laboratory diagnosis.

Finally, National AIDS/STD Control Programme would like to thank to Ministry of Health and Sports for permitting to conduct the workshop for development of updated STI Guideline in line with global updates on STI management. We would like to express our sincere thanks to Assistant Directors, Regional HIV Officers from State and Regions, other departments and units of Ministry of Health, UN Organizations, International NGOs, National NGOs and WHO colleagues for development and updates of our latest guidelines.

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BACKGROUND

The National Guideline for management of Sexually Transmitted Infections (STI) in Myanmar was last updated in 2007. It was first developed in collaboration with UNICEF in 1994 and consequently the review and revised workshop for this guideline was done in 2004 in collaboration with WHO and all partners providing STIs services. The National AIDS Programme (NAP) further updated, developed and distributed manuals for syndromic management (2007) both in English and Myanmar. The STI Prevention & Control Programme started in Myanmar under DOH (department of health) in 1951 , initially with (7) AIDS/STI Teams and by 2009, expanded up to (47) Teams. These teams played a pivotal role in implementing AIDS/STI Prevention & Control activities in Myanmar. They are strategically located throughout the country. Currently STI teams rely on syndromic management rather than etiological diagnosis due to limited laboratory capacity. It will be essential to increase laboratory capacity to provide a minimum service package with STI laboratory, supported from regional reference laboratory/ies.

NAP with support of WHO has been leading the coordination role for future STI programme in Myanmar. Apart from AIDS/STI Prevention & Control Programme under DoPH, there are NGOs namely AMI, AHRN, Alliance, AZG, CARE, AFXB, Malteser, MAM, MANA, MDM, MSF-CH, MSI, PGK, PSI providing STI services. Global and regional guidelines for STI management have evolved over this period and there is increasing concern over antimicrobial resistance.

As STIs are known to increase the risk of HIV transmission and are associated with significant morbidity, updating the National Guideline of STI based on evidence-based recommendations from global WHO guidelines is an important activity of the National Strategic Plan for HIV/AIDS. A technical consultation of key staff of the STI Control Programme in Myanmar, National Health Laboratory and partners working on STI prevention and case management was organized in Nay Pyi Taw from 28th to 30th May 2014 to update the guidelines taking into considerations the experiences of STI service

provision, challenges and barriers faced. This national guideline is updated based on discussions and recommendations made during the consultation. The national experts considered the health-care settings especially at the primary health care level, availability of the drugs, convenience of the drug regimen, effectiveness, compliance of the patient, cost, side effects and drug interactions in developing the National STI Treatment Guidelines

1. INTRODUCTION

Sexually Transmitted Infections (STIs), previously known as Venereal Disease(s) are caused by a wide range of organisms including bacteria, viruses, protozoa, and ectoparasites. They are capable of causing local and/or systemic manifestations. Their portals of entry and common sites of infection are the skin and mucous membranes of the genitalia, and the mucosal linings of the urethra, cervix, vagina, rectum and oro-pharynx.

Systemic diseases like HIV infection, hepatitis B, cytomegalovirus infection, syphilis and gonorrhoea can disseminate through the blood stream. Thus, all body fluids, tissues and any discharge, secretions, mucous or other fluid, produced by or passing over an infected area, can be the portal of infection to other persons.

Because of reported antibiotic resistance found to some drugs used for STI case management, there is revision of guidelines based on the consensus of participants from the brainstorming workshop in Nay Pyi Taw in May 2014.

Over 20 pathogens can be spread by sexual transmission causing serious complications resulting in chronic ill health, infertility, disability and death as shown in Table 1.

Table 1: Sexually Transmitted Pathogens

Bacteria	Viruses	Other
Neisseria gonorrhoea; Chlamydia trachomatis; Treponema pallidum; Calymmatobacterium granulomatis; Ureaplasma urealyticum; Mycoplasma hominis; Gardnerella vaginalis and other vaginal bacteria; Group B streptococcus; Shigella spp.; Campylobacter spp.;	Human immunodeficiency viruses (HIV-1 and 2); Human T lymphotropic virus type I (HTLV-1); Herpes simplex virus type 2 (HSV-2); Human papillomavirus (multiple types); Hepatitis B virus; Cytomegalovirus; Molluscum contagiosum virus Human T lymphotrophic virus type II (HTLV-II); Hepatitis C virus; Herpes simplex virus type 1 (HSV-1); Human herpes virus type 8; (Kaposi's sarcoma-associated) Epstein-Barr virus (EBV); Hepatitis A virus;	Trichomonas vaginalis ; Phthirus pubis ; Candida albicans ; Sarcoptes scabiei ; Giardia lamblia; Entamoeba histolytica;

The link between STIs and HIV/AIDS is well established. The role of genital ulcerative diseases and genital inflammatory lesions as biological co-factors for enhancing HIV transmission is important to remember in the management of STIs. In addition, HIV alters the natural history of some STIs. For instance, HIV has also been isolated from the genital tract and from the exudates of genital ulcers in both males and females. The shedding of HIV in genital fluids is increased by inflammatory responses and exudates from lesions, making them more infective. Thus, treating STIs have shown to reduce the proportion of HIV shedding in genital secretion.

The syndromic approach recommended by WHO aims to provide STI services at first point of contact at all providers of health care services especially those at the grass-root level where the patient is needed. Here, the health-care provider needs not be an expert in the field of STIs, and with limited resources, and in the absence of laboratory support, should be able to deliver services to the patients with the expected outcome of

(a) a microbiologic cure
(b) alleviation of clinical manifestations
(c) prevention of serious complications and sequelae, both immediate and remote,
(d) prevention of transmission to other persons

The National STI Treatment Guidelines into considerations the health-care settings especially at the primary health care level, availability of the drugs mentioned, and convenience of the drug regimen, effectiveness, and compliance of the patient, cost, side effects and drug interactions in making these considerations.

WHY IS SYNDROMIC MANAGEMENT IMPORTANT?

A fundamental goal of the STI control programmes is early detection and treatment of the disease, preferably at the point of the patient's first contact with the health system. In developing countries, the laboratory diagnosis of most conditions can be difficult, and even in settings with access to reliable laboratory facilities, there are delays in releasing of laboratory results causing delays in initiating treatment. Moreover, delays in treatment result in loss of follow-up of a significant proportion of clients and in continued transmission of the infection. Majority of STI patients in almost all countries seek care in private facilities (private physicians, clinics, or pharmacies) and primary health care settings than in specialized STI clinics. It is therefore essential that, an effective and efficient public health approach is implemented. Syndromic approach is rapid, simple, accurate, and can be implemented on a large scale by health providers with diverse levels of expertise and training.

1.1. ESSENTIAL COMPONENTS OF MANAGEMENT OF STI PATIENTS

The components of comprehensive case management of patients with STIs include:

- Making a correct diagnosis by syndromic approach or with laboratory support
- Providing early and effective treatment and follow up
- Offering/referring for HIV counselling and testing as well as linkage for treatment and care
- Reducing/preventing future risk through education and counselling
- Promoting and providing condoms and,
- Ensuring that sexual partners are notified and treated

1.2. ESSENTIAL COMPONENTS OF SYNDROMIC MANAGE MENT

These include diagnosis and treatment based on syndromes, education on risk reduction, condom provision, counselling and HIV testing, partner notification and follow up as described below:

Syndromic case management (SCM) is based on the identification of syndromes (which consists of symptoms and easily recognized signs) and treatment. Under the simplified syndromic-based approach developed and promoted by WHO and currently being used, diagnosis is based on the identification of consistent groups to symptoms and easily recognized signs (syndromes). Treatment for each syndrome is directed towards the most common organisms responsible for the syndrome. A great majority of STIs present as urethral discharge/dysuria, genital ulcer/s, vaginal discharge and lower abdominal pain. When a patient comes with such a complaint, a case-management decision is made using the Flow-Chart.

1.3. SYNDROMIC DIAGNOSIS AND TREATMENT

The current methods of laboratory diagnosis of STI are often time consuming, unreliable, expensive, require sophisticated equipment and training. In addition, patients are required to return on or two days later for certain tests. This is not feasible in many settings, where patients must travel long distances

to receive health care. Even if they return, the probability of developing complications is increased and the period of infectivity is prolonged by this delay in therapy. Few health institutions in developing countries have the laboratory facilities required for accurate etiological diagnosis.

Under the simplified syndromic-based approach developed and promoted by WHO and currently being used in a large number of countries in the developing world, diagnosis is based on the identification of consistent groups to symptoms and easily recognized signs (syndromes) and the provision of effective treatment that will deal with the majority of organisms responsible for producing each syndrome. A great majority of STI fall under the categories of genital ulcer, vaginal discharge and urethral discharge. When a patient comes with such a complaint, a case-management decision is made using the Flow-Chart.

Syndromic case management performs well with urethral discharge and genital ulcer disease. However, because cervical infections and ano-genital infections are commonly asymptomatic, the performance of vaginal discharge and ano-rectal discharge syndromic approach is less than ideal. There is a need for simple and affordable laboratory diagnosis. As point-of-care laboratory testing becomes available for gonorrhoea and chlamydial infections, the issue of asymptomatic cervical infection and ano-genital infection could be address in the future.

However, it is important to note that syndromic management does not address asymptomatic and/or sub-clinical infections. This is more often seen in women. Cervical infections in particular are mostly asymptomatic. Therefore, where facilities are available screening both men and women who are most at risk for STIs are recommended. If laboratory facilities are available, appropriate tests could assist the healthcare provider to arrive at an etiological diagnosis. In such places all persons attending STI clinics should be screened for syphilis and offered counselling and testing for HIV.

Appropriate treatment of patients with STI is important to prevent the development of complications and sequelae and reduce the spread of infection. Wherever possible, single dose oral treatment is recommended as it ensures compliance. When prescribing multi-dose treatment, it is important to educate the patient on taking the full course of prescribed

drugs for treatment to be effective. Countries should establish and use national standardized treatment protocols for STIs to ensure that all patients receive adequate treatment at all levels of healthcare services. Treatment protocols are the same for both syndromic case management and etiologic management.

1.4. EDUCATION ON RISK REDUCTION AND CONDOM PROVISION

In every instance, the contact of STI patients with the health facility should be utilized to promote safer sexual behaviour and to educate patients on how to minimize or eliminate the risk of acquiring or transmitting STI/AIDS to others. They should be taught how to use condoms correctly. Condoms must be made available in all health facilities treating patients with sexually transmitted diseases, either free of charge or at an affordable price.

1.5. COUNSELLING, PARTNER NOTIFICATION AND FOLLOW-UP

Each patient should be properly counselled on a one-to-one basis about his/her risk behaviour, chances of acquiring STI/AIDS, and the process of safer sexual behaviour. The counselling services should be provided in a confidential manner. If counselling services cannot be undertaken during the routine outpatient sessions, it is necessary to schedule separate time (appointment) to provide this service. The patient should be encouraged to inform his/her partners of their possible infection and the need to refer them for evaluation and treatment.

1.6. HIV TESTING

Every STI patient should be offered or referred for counselling and HIV testing. During counselling, patients risk for HIV should be assessed.

2. PRACTICAL CONSIDERATIONS IN CASE MANAGEMENT

Routine STI care should be delivered through general health services. For individuals requesting health services for evaluation of STI, appropriate care consists of the following components.

2.1. HISTORY TAKING

Patients with problems relating to the genital area tend to be guarded and evasive in giving a history. With practice, the practitioner will be able to obtain a satisfactory history, in the short time available, in a busy outpatient clinic.

- Adopt a polite, friendly and non-judgmental attitude that would encourage the client to develop confidence and trust in you.
- Ask an open-ended question, such as "what brought you to the hospital?" to initiate a dialogue but thereafter ask brief, precise questions which call for a brief response, mostly of the "yes" or "no" type to save time.
- In order to make an accurate diagnosis it may be necessary to ask more questions during examination of even after, giving the patient privacy.
- Do not show annoyance if the patient's history has obvious discrepancies or keeps changing.
- Phrase your questions in such a way so as to minimize the opportunity for the patient to mislead you. For example, "when did you last have sex with someone?" is preferable to "did you have sex with someone?"
- History of partner's STI symptom and treatment taken should be inquired though they will not be obtained in every case because partner sometime hides about taking STI treatment.
- In some instances, the occupation of the partners can provide indirect indication of engaging in high risk behaviour.
- Reassure the patient, that all information will be kept confidential, and that they may wish not disclose anything and will not affect the services provide to them.

2.1.1 History of presenting symptom/s and sign/s

Obtain a detail history about the presenting symptom/s. Inquire about common symptoms like discharge from the urethra in a patient with genital ulcers, or recurring genital ulcers in a patient presenting with urethral discharge. If laboratory facilities permit, consider serological tests for syphilis (VDRL/RPR together with TPHA; if the patient is low risk, without history of syphilis, TPHA alone might be enough). Inquire about previous treatments as it may indicate whether the patient has already had suboptimal medication. It is also necessary to assess the risk of drug allergies and drug interactions. If the patient is to receive proper education and counselling, these must be preceded by behavioural risk assessment. Make sure that the patient feels that all the history will be kept strictly confidential.

Box 1 – Symptoms of STI

Females	Males
Dysuria, frequency, Vaginal discharge Genital ulceration Abnormal growth or mass in genital area Lower abdominal pain Inguinal lymphadenopathy Vulval itching Dyspareunia Perianal pain Anal discharge	Dysuria, frequency Urethral discharge Genital ulceration Abnormal growth or mass in genital area Acute scrotal swelling, pain Inguinal lymphadenopathy Perianal pain Anal discharge

2.1.2 Medical, obstetric and menstrual history

History of other illnesses, medication (current and past) and allergies to medication should be noted.

Box 2 – Medical, obstetric and menstrual history

Medical history	Menstrual history	Obstetric history
Other illness Medications Drug allergies	Date of last menstrual period Regular / irregular periods Missed or overdue period Pain during periods Excessive bleeding Post coital bleeding	Number of pregnancies and outcome Mode of delivery Contraception

2.1.3 Behavioural risk assessment

If the patient is to receive proper education and counselling, these must be preceded by behaviour risk assessment. ***Make sure that the patient is aware that the history will be kept strictly confidential.*** Inquire regarding the following:

Risk factors

(i) Marital status:
- Married, living together, single, separated, widowed

(ii) Occupation:
- Sex worker (male and female), seamen, workers in the tourist industry, transport workers, migrant workers, etc.

(iii) History of travel:
- Travel abroad (holidays, business or employment)
- Coming home only on weekends

(iv) Unprotected casual sexual encounters (other than with regular partner)

(v) Previous history of STI

(vi) Injections or blood transfusions

(vii) Substance abuse: alcohol, drugs (e.g., heroin)

(viii) Tattooing

(ix) Partner with symptoms suggestive of STIs; h/o partner's confirmed STI symptom and treatment taken h/o

(x) Multiple sexual partners

Moreover, partner's occupation (taxi driver, high way driver, migrant worker, waiter, trishaw driver, uniform service etc.…) should be asked for possibility indication of higher risk of acquiring an STI.

2.1.4 Sexual history

Sexual history must be taken from all patients before examining them and managing their sexual health problems. All individuals should be asked about the:

- Sex of the partner
- Type of exposure (oral, vaginal, anal)
- Use of condoms with any type of sex/partner
- Relationship to partner/s (spouse, regular non-spouse, casual)
- Problems or symptoms in the partner/s
- Date of last sexual intercourse
- Number of partners in the last three months

2.1.5 Clinical examination

This is an important step that will help health care providers to arrive at a probable diagnosis and prevent making an incorrect diagnosis based on the patient's history alone. Privacy and confidentiality should be ensured. Genital examination includes a bimanual and speculum examination of the genital tract for all female patients and rectal examination (including proctoscopy, if indicated and available) for patients (male & female) practicing receptive anal sex. In addition to genital examination, an adequate and appropriate general examination is also required.

2.1.6 Laboratory investigation, if available and indicated

The syndromic management of STI is based on the presumption that laboratory facilities are not available. Do not delay or withhold treatment because the laboratory investigations are incomplete or the results of tests are not available. If available, clients engaging in high-risk activities should be offered the VDRL test and the test for HIV accompanied by pre-test and post-test counselling. Treatment failures should be re-evaluated for possible re-infection and then referred to a facility providing adequate laboratory support.

2.2. DIAGNOSIS

On the basis of the history, clinical examination, and laboratory investigations (if available) that have been carried out,

- use the appropriate Flow-Chart for managing patients
- Be particularly careful when confronted with low abdominal pain and scrotal swelling
- Make certain that you are not dealing with a surgical emergency.

Early and Effective Treatment

Treat the patient using Flow-Charts and national treatment guidelines. While in most instances, treatment will be curative, with viral STI only palliative therapy is possible. Genital herpes is a good example where the therapy is only palliative. This fact must be properly explained to the patient and counselling provided, if needed.

2.3. COUNSELLING AND EDUCATION

Regarding the present episode of STI:

Educate the patient regarding his/her present STI, and how it was acquired. In conditions like recurrent genital herpes and recurrent vulvo-vaginitis, counselling is greatly needed, as the patients are usually very distressed. Patients should also be informed of the importance of taking the right dosage and duration of the medications prescribed.

Regarding the prevention of STI and HIV:

Explain to the patient the association between STI and HIV and that it is the same risk behaviour that is responsible for acquisition of these two conditions. Educate the patient on methods of risk reduction through safer sex including abstinence.

Regarding condom use:

Discuss the use of condoms for risk reduction. It is recommended to provide free condoms if feasible. It is necessary to demonstrate the correct way of wearing a condom. Desensitize the patient about condoms, especially if he is a regular risk-taker who should be a consistent condom user. Provide condoms if possible.

Counselling for STI:

Issues that should be addressed in a counselling session include:

- informing the partner(s) or spouse about the STI diagnosis (options: either the patient or the health care provider informs the partner(s) or spouse)
- assessing the patient's risk for HIV and assisting patient's decision on HIV testing
- learning about, and coming to terms with, worrisome complications of STIs, such as infertility and congenital syphilis
- dealing with an incurable STIs, such as genital herpes and genital warts which may be transmitted to the partner(s) or spouse even in the absence of visible lesions
- preventing future infections, including strategies to discuss and introduce condom use with partner(s) or spouse
- confidentiality, disclosure and the risk of violence or stigmatizing reactions from spouse, partner(s), family or friends and ways to overcome
- enabling patients to take control of their own life and their responsibilities for disease prevention.

2.4. CLINICAL FOLLOW UP

Clinical follow-up as appropriate is a part of comprehensive case management of STI. Patients should be advised to return if symptoms get worse or persist after prescribed period of therapy.

Patients with pelvic inflammatory disease are best reviewed in 2-3 days to assess response to therapy.

Those with severe genital ulcers should be encouraged to return after 3 days for review. If the ulcers have not healed in 7 days, treatment may have to be extended or patient may have to be referred to a higher facility.

Depending on available facilities, encourage patient to come for repeat syphilis serology and HIV counselling and testing.

Encourage patients to come back for follow- up visit especially when symptoms persist and to ensure that the patient has been cured.

2.5. IDENTIFICATION, NOTIFICATION AND EVALUATION OF SEXUAL PARTNER(S)

This is an important public health activity by which the partners of those identified as having STI are traced, informed of their probable exposure to infection, and offered medical and counselling services. The objective of this exercise is to break the chain of transmission. Partner notification should be considered whenever STI is diagnosed. In a categorized or specialized STI clinic, it may be possible to carry out a complete partner management programme.

2.6. OFFICIAL REPORTING OF THE CASE

Reporting of STI cases is required though this is often neglected. Confidential reporting of cases is necessary to have a better estimate of the burden of STI in the country. The type of STIs or syndrome, age and sex are essential variables that need to be reported regularly to the STI focal point at the health facility. Reports are the collated and submitted to the provincial focal point, which in turn reports to the national STI focal point. The information will be essential for STI programming and advocacy.

3. TREATMENT OF SPECIFIC INFECTIONS

3.1 GONOCOCCAL INFECTIONS

General considerations:

Gonococcal infection in men produces enough symptoms that cause the person to seek immediate treatment, which may prevent serious sequelae, but not soon enough to prevent transmission to other persons. Women, by virtue of their anatomical and physiological make-up, do not usually produce recognizable symptoms until complications such as pelvic inflammatory disease (PID) sets in. PID is one of the most serious clinical manifestations, whether symptomatic or asymptomatic, leading to infertility or ectopic pregnancy. (Untreated gonococcal infection in men can cause epididymitis and consequently may result to urethral stricture and infertility). Because of the emerging resistance data for gonococcal infections and reduced effectiveness of some medicines, good practice dictates that the choice of treatment depends on reliable local data on antimicrobial susceptibility.

It is essential that gonococcal antimicrobial resistance is monitored and treatment failure reported, to inform revisions in treatment recommendations.

3.1.1 Uncomplicated Gonococcal Infection

Recommended Regimen

Ceftriaxone 500 mg, IM, stat single dose

OR

Cefixime 400 mg, orally stat, single dose (Need AMR Monitoring whether the efficacy is still acceptable in Myanmar)

PLUS

As co-infection with C. trachomatis is common, it is advisable to add a regimen that is effective against C. trachomatis. In clinical trials, these recommended regimens have a cure rate of > 95% especially for anal and genital infections.

Azithromycin 1 gm, orally, single dose

OR

Doxycycline 100 mg, orally, twice a day for 7 days

It is important to note that dual therapy for gonorrhoea is recommended to reduce the likelihood of developing resistance, in addition to providing treatment for Chlamydial infection.

3.1.2 For Treatment Failure

Table 1 Working Case Definition for confirmed Treatment Failures: clinical and laboratory criteria

1	A gonorrhoea patient who returns for test of cure or who has persistent genital symptoms after having received treatment for laboratory-confirmed gonorrhoea with a recommended cephalosporin regimen (ceftriaxone or Cefixime in appropriate dose) AND
2	Remains positive for one of the following for N. gonorrhoeae: • Presence of intracellular Gram-negative diplococcic on microscopy taken at least 72 hours after completion of treatment; OR • Isolation of N. gonorrhoeae by culture taken at least 72 hours after completion of treatment; OR • Positive nucleic acid amplification test (NAAT) taken two to three weeks after completion of treatment AND
3	Denies sexual contact during the post-treatment follow-up period AND
4	Decreased susceptibility to cephalosporin used for treatment*: • Cefixime: MIC>0.25 mg/L • Ceftriaxone: MIC>0.125 mg/L

**Ideally, the pre- and post-treatment isolates should be examined with an appropriate and highly discriminatory molecular epidemiological typing method (to confirm an identical strain) and with genetic methods (to confirm the resistance determinants in order to show that the strain is truly resistant).*

Recommended Regimen

Ceftriaxone 1 gm IM stat (including pregnant women)

OR

Spectinomycin 2 gm, IM, single dose (contraindication to Pregnant Women)

PLUS

Azithromycin 2 gm oral stat

3.1.3 Treatment in Pregnancy

First Line Treatment

Ceftriaxone 500 mg, IM single dose

PLUS

Azithromycin 1-gram single dose (Azithromycin as first line treatment instead of Erythromycin)

3.1.4 Gonococcal Infection of the Pharynx

Ceftriaxone 500mg, IM, single dose (usually higher dosage needed for pharyngeal infection compared to uncomplicated GC.)

PLUS (dual therapy)

Azithromycin 1 gram single dose

Follow-Up

Because of the issue of emerging gonococcal antimicrobial resistance, patients are advised to follow up after treatment has been completed or if symptoms persist. Usually, patients who have been treated with any of the above treatment regimens need not return for a test of cure. Those patients who have persistent symptoms after treatment should be evaluated. If possible culture for N. gonorrhoeae and gonococci isolated should be tested for antimicrobial susceptibility. If infection is found to be present despite treatment with one of the recommended regimens, re-infection rather than treatment failure is the main problem. This calls for improved patient education, compliance on the part of the patient and referral of sex partners for proper management. It should be noted that persistent urethritis, cervicitis, or proctitis also might be due to C. trachomatis and other organisms.

Management of Sex Partners

Patients should be encouraged to bring their sex partners, especially marital partners, for evaluation and treatment. Sex partners of symptomatic patients should be evaluated and treated for both gonorrhoea and C. trachomatis infections if their last sexual contact with the patient was within 30 days of onset of the patient's symptoms.

Patients should be instructed to avoid sex and alcohol until patients and partners are cured and in the absence of microbiologic test of cure, this means until therapy is completed and patient and partner(s) are without symptoms.

Special Considerations

Pregnancy

Recommended treatment is to use cephalosporin, and in those patients who cannot tolerate this drug, a single dose of Spectinomycin 2 gm. IM, single dose can be used.

Gonococcal with HIV Infection

Persons with HIV infection and gonococcal infection should receive the same treatment as persons not infected with HIV.

Gonococcal Conjunctivitis

This is a serious condition that requires systemic therapy and local irrigation with saline or other appropriate solutions.

Recommended Regimens

Ceftriaxone 1 gm IM, as a single dose

3.1.5 Disseminated Gonococcal Infection (DGI)

It has been found that strains of N. gonorrhoeae that cause DGI tend to cause very little genital inflammation. Clinically diagnosed cases of DGI are rare in Myanmar but clinicians should be aware of the presenting features of petechial or pustular acral skin lesions, asymmetrical arthralgia, tenosynovitis or septic arthritis and sometimes complicated by hepatitis and rarely, by endocarditis or meningitis, especially in a patient with history of GC infection. Patients treated for DGI should also be treated for C. trachomatis infection. Hospitalization may be necessary for moribund patients or who cannot be relied on to comply with treatment.

Recommended Regimens

Ceftriaxone 1 gm, IM or IV, daily, for 7 days

Alternative Regimens

Cefotaxime 1 gm, IV, every 8 hours, for 7 days

OR

Ceftizoxime 1 gm, IV, every 8 hours, for 7 days

OR

Spectinomycin 2 gm, IM, every 12 hours, for 7 days

OR

Cefixime 400 mg, orally, twice a day, for 7 days

Management of Sex Partners

Management is the same as for patients with uncomplicated gonococcal infection.

3.1.6 Gonococcal Infections in Infants

GC infection among neonates usually results from peri-partum exposure to infected cervical exudates the mother, causing an acute illness beginning 2-5 days after birth.

Ophthalmia Neonatorum

Recommended Regimen

Ceftriaxone 50 mg/kg, IM, as a single dose, to a maximum of 75 mg

Alternative regimen

Spectinomycin 25 mg/kg, IM as a single dose, to a maximum of 75 mg

Ophthalmia Neonatorum Prophylaxis

Prevention

The diagnosis and treatment of gonococcal and chlamydial infections in pregnant women is the best method for preventing neonatal gonococcal and chlamydial disease. Since not all pregnant women receive proper prenatal care, local ocular prophylaxis is to be encouraged always in all health care settings.

Recommended Regimen

Erythromycin (0.5 %) ophthalmic ointment in a single application

OR

Tetracycline ophthalmic ointment (1 %) in a single application

OR

Silver nitrate (1 %) aqueous solution in a single application

(One of these preparations should be instilled into both eyes as soon as possible after delivery. All infants should receive this prophylaxis regardless of whether delivery is vaginal or caesarean. Caution should be taken to avoid touching eye tissue when applying the topical treatment)

Recommended Regimen for infants born to mothers with gonococcal infection

Ceftriaxone 50 mg/kg, IM as a single dose, to a maximum of 75 mg

Alternative regimen

Spectinomycin 25 mg/kg, IM as a single dose, to a maximum of 75 mg

Gonococcal Infections in Children

Sexual abuse is the most common cause of GC infection in this age group. Vaginitis, followed by ano-rectal and oro-pharyngeal infections are the common presenting features.

Recommended Regimen

Children who weigh > 45 kg should receive the same treatment as those recommended for adults.

Children who weigh < 45 kg should be given Ceftriaxone 50 mg / kg (maximum 250 mg) IM or IV, as a single dose

(For meningitis, the duration of treatment is increased to 10 -14 days and the maximum dose to 2 gm)

Alternative regimen

Spectinomycin 25 mg/kg IM as a single dose, to a maximum of 75 mg

***Mycoplasma genitalium* should be considered in the context of treatment for persistent urethral discharge**

Azithromycin, 1 gm PO in a single dose

OR

Azithromycin 500 mg PO stat then 250 mg for next 4 days

OR

Doxycycline, 100 mg PO bid for 7 days (less effective than previous time)

For the persistent urethritis, the treatment for mycoplasma infection can be added depending upon the location situation. The current magnitude of M. genitalium in Myanmar is currently not known. Persistent urethral discharge may be due to antimicrobial resistance in N. gonorrhoea (See treatment failure in N.gonorrhoea)

3.2 CHLAMYDIAL INFECTIONS

Although definite evidence is lacking, it is assumed that Chlamydial genital infection is common among patients attending with STI complaints at the peripheral level. At the same time, asymptomatic infection is also common among both men and women, especially among those who indulge in unprotected sex and who have new and multiple sex partners. The sequelae resulting from C. trachomatis infection in women include Pelvic Inflammatory Disease, ectopic pregnancy, and infertility. Cervical lesions usually precede upper reproductive tract infection leading to these serious complications and thus, it is widely accepted that treatment of cervical infection reduces the likelihood of the above complications.

Treatment of infected patients prevents transmission to sex partners, and in pregnant women, it may prevent transmission of C. trachomatis to infants during birth. Treatment of sex partners will reduce reinfection of the index patient and infection of other partners.

It is to be noted that co-infection with C. trachomatis is often seen in patients with gonococcal infection and thus, it is beneficial to give presumptive treatment of such patients for gonococcal infection, especially in places where there is no diagnostic test available.

Recommended Regimen for C. Trachomatis Infection

Azithromycin 1 gm, orally, single dose

OR

Doxycycline 100 mg, twice a day, for 7 days

Alternative Regimens

Erythromycin 500 mg, orally, four times a day, for 7 days

OR

Tetracycline 500 mg, oral, four times a day, for 7 days

The only drawback here is that the efficacy and safety of Azithromycin for persons up to 5 years of age is still in question. The advantage here is that single dosing is possible.

The efficacy of Ofloxacin is comparable to Doxycyline and azithromycin but costlier and cannot be used during pregnancy or with persons under 17 years of age, and also there is no convenience in dosing, compared to the other two drugs. Ofloxacin is the only quinolone with proven efficacy against chlamydial infection, however it is not effective against gonorrhoea, given the high rates if resistance in Asia.

Follow-Up

Retesting for chlamydia is usually not required, even if laboratory facilities are available, after completion of treatment with doxycycline or azithromycin, unless symptoms persist or re-infection is suspected. Retesting may be required if the drugs used are erythromycin. It may be possible to see some high rates of infection among women retested several months later and most of the time; it is due to re-infection from their sex partners.

Management of Sex Partners

Patients should be instructed to bring their sex partners for evaluation and treatment as follow:

- Sexual contacts of symptomatic patients should be investigated and treated if their last sexual exposure to the index patient was within 30 days of onset of index's symptoms.
- Sexual contacts of asymptomatic patients within 60 days of exposure should be investigated and treated.
- Treatment should be given to the last sex contact even if the last sexual exposure took place before the above mentioned time intervals.

Special Considerations

Pregnancy

Doxycycline is contraindicated.

Recommended Regimen for Pregnant Women

First Line Treatment

Azithromycin 1 gm, orally, as a single dose
(Azithromycin as first line treatment instead of Erythromycin)

HIV Infection

HIV positive patients with chlamydial infection should receive the same treatment regimen as those who are HIV negative.

Chlamydial Infection in Infants

Chlamydial infection in neonates results from perinatal exposure to the mother's infected cervix. Available data show that the prevalence of C. trachomatis infection in pregnant women usually is quite low (> 5%), regardless of race / ethnicity or socioeconomic status. Although neonatal ocular prophylaxis with silver nitrate solution or antibiotic eye preparations does not prevent transmission of C. trachomatis, it does prevent gonococcal ophthalmia and so this procedure should be encouraged to continue.

The clinical signs are due to involvement of mucous membranes of the eye, oropharynx, urogenital tract, and rectum. Conjunctivitis develops 5 - 12 days after birth and it is the commonest cause of conjunctivitis in neonates. Most cases of sub-acute, afebrile pneumonia at the age of 1 to 3 months are also attributable to C. trachomatis infection. Asymptomatic infections also can occur in the oropharynx, genital tract, and rectum of neonates.

Ophthalmia Neonatorum due to C. trachomatis

In the present health care settings, a Gram stained smear from the ocular exudates can be used to exclude GC infection, and if the smear is negative for GC, the following is recommended.

Recommended Regimen

Erythromycin 50 mg/kg/day, orally, divided into four doses daily for 14 days

(Topical antibiotic therapy alone is inadequate for treatment of chlamydial infection and it is not needed when systemic antibiotic is used.)

Follow - Up

Since the therapeutic efficacy of erythromycin is about 80%, a second course of treatment may be required. The possible concomitant chlamydial pneumonia should be considered in infected neonates. Thus, in treating a neonate with chest infection, especially with conjunctivitis, the treatment regimen should include antibiotics effective against C. *trachomatis*.

The mothers of infants thus treated and the sex partners of these women should be examined and treated accordingly.

3.3 SYPHILIS

General Considerations

Syphilis is a systemic disease caused by T. pallidum. The presenting features include ulcer or primary chancre in the Primary Stage; skin manifestations, mucocutaneous lesions and adenopathy in the Secondary Stage; and involvements of cardiovascular system, central nervous system and/ or gummatous lesions are classified as Tertiary Syphilis. Syphilis acquired within the preceding year is classified as Early Latent Syphilis, and all other cases of latent syphilis are known as Late Latent Syphilis or Latent Syphilis of Unknown Duration. Treatment for late latent syphilis including tertiary syphilis may require a longer duration of therapy as the organisms are dividing more slowly. Early syphilis consists of primary syphilis, secondary syphilis and early latent syphilis, while late syphilis consists of late latent syphilis and tertiary syphilis (neurosyphilis, cardiosyphilis and gumma).

The natural history of untreated syphilis is variable. Infection may remain latent throughout, or clinical features may develop at any time. The classification of syphilis is shown in Box 3. All infected patients should be treated. Penicillin remains the drug of choice for all stages of infection.

Box 3 Classification of Syphilis

Classification of Syphilis		
Stage	**Acquired**	**Congenital**
Early	Primary Secondary Latent	Clinical and latent
Late	Latent Benign tertiary Cardiovascula Neurosyphilis	Clinical and latent

Latent syphilis

This phase is characterized by the presence of positive syphilis serology or the diagnostic cerebrospinal fluid (CSF) abnormalities of neuro-syphilis in an untreated patient with no evidence of clinical disease. It is divided into early latency (within 2 years of infection), when syphilis may be transmitted sexually, and late latency, when the patient is no longer sexually infectious. Transmission of syphilis from a pregnant woman to her fetus, and rarely by blood transfusion, is possible for several years following infection.

Diagnostic Considerations

The use of Dark-field Examination and Direct Immunofluorescent Antibody Test of lesion exudates are necessary for the diagnosis of early syphilis. However, this is not feasible in most settings. It is therefore essential to treat all patients presenting with genital ulcer disease for primary syphilis.

Presumptive diagnosis can be made with two types of serologic tests for syphilis (a) non-treponemal tests like Venereal Disease Research Laboratory (VDRL) test and Rapid Plasma Reagin (RPR) test, and (b) treponemal tests like Fluorescent Treponemal Antibody Absorption (FTA-ABS) test, and Microhemagglutination Assay for Antibody to T. pallidum (TPHA, MHA-TP) test and Rapid Syphilis Test (RST). The use of one type of test alone is insufficient for proper diagnosis.

A patient who has a reactive treponemal test usually will have a reactive test for a lifetime, regardless of treatment or disease activity, which is being referred to as "serological scar". About 15 - 25 % of patients treated during the primary stage may revert to being serologically non-reactive after 2 - 3 years.

Treponemal test antibody titres correlate poorly with disease activity and should not be used as a marker for response to treatment.

Abnormal results of serologic testing e.g. unusually high, unusually low, and fluctuating titres have been noted with HIV infected persons.

Serological tests for syphilis are accurate and reliable for the diagnosis of syphilis and also for evaluation of response to therapy in most HIV infected persons.

General Consideration for Treatment

Parenteral penicillin G (sodium or potassium salt) is the preferred drug for treatment of all stages of syphilis. However, the preparations used (i.e. benzathine, aqueous procaine, or aqueous crystalline), the dosage, and the duration of treatment depend on the stage and clinical manifestations of the disease.

Recommended Regimen for Early Syphilis

For Adults

Benzathine penicillin G 2.4 million units, IM in a single dose, because of the volume involved, this dose is usually given as two injections as separate sites. (Penicillin remains the treatment of choice)

Alternate treatment:
Procaine Penicillin G 1.2 million units IM in single dose for 10 to 14 days

For Children

Benzathine penicillin G 50,000 units/kg, IM (up to adult dose of 2.4 million units), as a single dose

Other Management Considerations

- All patients with syphilis should be tested for HIV infection.
- Patients who have primary syphilis should be retested for HIV after 4-6 weeks if the first HIV test result was negative.
- Patients with syphilis who also have signs and symptoms suggesting neurologic disease should be fully evaluated and treated for neurosyphilis.

Follow - Up

Treatment failure can occur with any regimen and assessing response to treatment is difficult as there are no definite criteria for cure or failure exist.

Patients should be re-examined clinically and serologically at 1, 3, 6 months and again at 1 year including evaluation for HIV infection.

Re-treatment is indicated in patients with signs or symptoms that persist or recur or who have a sustained fourfold increase (two dilutions) in VDRL test (non-treponemal test)

Special Considerations

Penicillin Allergy

Doxycycline 100 mg, orally, 2 times a day for 2 weeks (If not pregnant)

OR

Ceftriaxone 1 gram IM once a day for 14 days IM

OR

Erythromycin 500 mg, orally, 4 times a day for 2 weeks and treat infant base on the clinical scenario (e.g. not Benzathine Penicillin 50,000 IU/kg body weight IM as single dose

(This regimen is for penicillin - allergic pregnant women)

3.3.1. Latent Syphilis

It is defined as those periods after infection with T. pallidum when patients are sero-reactive but show no other clinical evidence of the disease. The classification of Early Latent Syphilis is arbitrary unless there is definite evidence of acquiring syphilis within the preceding year like documented sero-conversion, a fourfold or greater increase in titre of a non-treponemal test and history of symptoms of primary or secondary syphilis. Thus, nearly all other patients have latent syphilis of unknown duration and they should be treated as if they had late latent syphilis.

Recommended Regimen

Early Latent Syphilis

Benzathine penicillin G 2.4 million units, IM, single dose

Late Latent Syphilis or Latent Syphilis of Unknown Duration

Benzathine penicillin G administered as three doses of 2.4 million units, IM 1 week intervals for 3 consecutive weeks (Benzathine penicillin G 7.2 million units total) - The interval between consecutive doses of benzathine penicillin should not exceed 14 days.

OR

Procaine penicillin 1.2 million units IM once daily for 20 days.

Special Considerations

Penicillin Allergy

Doxycycline 100 mg, orally, 2 times a day, for 4 weeks

OR

Erythromycin 500 mg, orally, 4 times a day for 4 weeks

Recommended Regimen for Infant and Children

Infant and children, aged more than 1 month, in whom syphilis is diagnosed should be evaluated whether the child has congenital or acquired syphilis from birth and maternal medical records, if available, and older children with acquired latent syphilis should be evaluated as for adults and treated as follows.

Early Syphilis in children

Benzathine penicillin G 50,000 units /kg, IM, (up to the adult dose of 2.4 million units), single dose

Late Latent Syphilis or Latent Syphilis of Unknown Duration

Benzathine penicillin G 50,000 units /kg, IM, (up to the adult dose of 2.4 million units), administered as three doses at one-week interval (total 150,000 units /kg up to the adult total dose of 7.2 million units)

Other Management Considerations

All patients with latent syphilis should be evaluated clinically for evidence of tertiary syphilis e.g. Aortitis, neurosyphilis, gumma, and iritis. Asymptomatic neuro-syphilis can be diagnosed 4 years before the onset of signs and symptoms.

HIV antibody testing should be done to all syphilis patients.

Follow - Up

VDRL test should be repeated at 6 months and again at 12 months.
Re-treatment is indicated if the patient develops signs and symptoms attributable to syphilis.

Special Considerations

Penicillin Allergy

Non-pregnant, penicillin-allergic patients should be given
Doxycycline 100 mg, orally, twice a day
The duration of therapy should be 2 weeks for Early Syphilis and 4 weeks for Latent Syphilis.

3.3.2. Tertiary (Late) Syphilis

Late Syphilis refers to patients with gumma and patients with cardiovascular involvement. Neurosyphilis is regarded as a separate entity.

Recommended Regimen

Benzathine penicillin G 7.2 million units total, administered as 3 doses of 2.4 million units IM, at 1 week intervals for 3 consecutive weeks.
(This regimen should be used in penicillin non-allergic patients without evidence of neurosyphilis)

3.3.3. Neurosyphilis

CNS can be involved during any stage of syphilis. Thus, CSF examination is mandatory in patients who present with clinical evidence of neurologic involvement. It can be used for both diagnosis as well as evaluation of response to anti-syphilitic therapy.

Recommended Regimen

Aqueous crystalline penicillin G, 18 - 24 million units daily, administered as 3 - 4 million units IV every 4 hours, for 10 - 14 days

Alternative Regimen

Procaine penicillin 2.4 million units, IM, daily
PLUS
Probenecid 500 mg, orally, 4 times a day, both for 10 - 14 days
(The duration of these regimens is shorter than that of the regimen used for late syphilis and thus some experts advocate administration of benzathine

penicillin 2.4 million units IM after completion of these neurosyphilis treatment regimens to provide a comparable total duration of therapy).

3.3.4. HIV Infected Persons with Syphilis

- Abnormal serologic responses have been noted among HIV infected persons when they acquire syphilis.i.e. the titres maybe higher than expected or false negative serologic results or delayed response to sero-reactivity may be noted.
- Both treponemal and non-treponemal serologic tests for syphilis are accurate for nearly all patients with syphilis and HIV co-infection
- HIV infected persons with syphilis are prone to have neurologic complications and also higher rates of treatment failure with current recommended treatment regimens
- No treatment regimen has been proved to be more effective in preventing development of neurosyphilis than those recommended for patients without HIV

3.3.5. Syphilis during Pregnancy

- Ideally, screening for syphilis serology should be a part of ante-natal care for every pregnant woman especially during the early trimester, and again at the time of delivery
- A woman with a history of repeated abortion, stillbirth, especially at 12 - 20 weeks of gestation should be tested for syphilis
- In health-care settings where utilization of prenatal care is not optimal, screening should be made possible by the use of rapid test kit for Syphilis (ICT) or RPR card test, and if found positive, treatment instituted at the time pregnancy is diagnosed
- Sero-reactive pregnant women should be considered infected unless adequate treatment has been taken and the sequential serologic titres have appropriately declined

Recommended Regimen

Pregnant Women with Early Syphilis

Preferred first choice

Benzathine penicillin G 2.4 million units (ATD) once intramuscularly

Second choice

Procaine penicillin 1.2 million units intramuscularly (ATD) once daily for 10 days

When benzathine or procaine penicillin cannot be used (e.g. due to penicillin allergy where penicillin desensitization is not possible) or are not available (e.g. due to stock-outs), use, with caution,

- Ceftriaxone 1 g intramuscularly once daily x 10-14 days OR
- Azithromycin 2 g once orally OR
- Erythromycin 500 mg orally 4 times daily x 14 days

Although erythromycin and azithromycin treat the pregnant women, it does not cross the placental barrier completely and as a result the fetus is not treated. It is therefore necessary to treat the newborn infant soon after delivery (see in congenital syphilis). Doxycycline should not be used in pregnant women. Because syphilis during pregnancy can lead to severe adverse complications to the fetus or newborn, stock-outs of benzathine penicillin for use in antenatal care should be avoided.

Pregnant women with late syphilis or unknown stage of syphilis:

Preferred first choice

Benzathine penicillin G 2.4 million units (ATD) weekly for three consecutive week

Second choice

Procaine penicillin 1.2 million units intramuscularly (ATD) once daily for 20 days

When benzathine or procaine penicillin cannot be used (e.g. due to penicillin allergy where penicillin desensitization is not possible) or are not available (e.g. due to stock-outs), use, with caution,

- Erythromycin 500 mg orally four times daily for 30 days.

These women should be advised to seek medical attention following treatment if they experience any change in fetal movements or if they start to

have contractions which may be due to Jarisch -Herxheimer reaction causing premature labour or fetal distress or both. Since treatment is to be given to prevent further fetal damage, this should not be a delay for therapy.

Follow -Up

Monthly serological check-up should be done until adequacy of treatment has been established by the appropriate antibody response for the stage of disease.

Alternative Regimen

There are no proven alternatives to penicillin. Desensitization, if possible, should be done before treating with penicillin.

Tetracycline and doxycycline are contraindicated during pregnancy, and erythromycin may be used but it cannot be relied upon to cure an infected fetus.

3.3.6. Congenital Syphilis

Infants should be evaluated for congenital syphilis if the mother has the following criteria: -

- The mother is sero-reactive (non-treponemal test confirmed by treponemal test, if possible)
- Had untreated syphilis at delivery (a woman who had been treated with a regimen other than those recommended in these guidelines for treatment of syphilis should be considered untreated)
- Serological relapse or re-infection suspected after treatment (antibody titre increases by at least two dilutions VDRL)
- Mother was treated with erythromycin or other non-penicillin regimen for syphilis during pregnancy
- Was treated for syphilis <1 month before delivery
- No definite history of taking adequate treatment for syphilis
- Gave history of taking appropriate penicillin regimen for early syphilis during pregnancy but VDRL did not reveal any decrease in antibody titre by at least two dilutions
- Gave history of taking appropriate treatment before pregnancy but had insufficient serologic follow-up to assure that they had responded favourably to treatment and are not currently infected (i.e. at least a

two-dilution decrease in VDRL test and a stable or declining antibody titres of < 1:4 for other patients)

Among infants born to a mother with a positive treponemal or non-treponemal syphilis test during pregnancy:

- Scenario 1: Infants with proven or highly probable disease
  - Abnormal physical exam consistent with congenital syphilis * or
  - Laboratory evidence of syphilis in infant (A serum quantitative non treponema serologic titre (RPR) that is fourfold higher than the mother's titre** Or A positive darkfield test or PCR of lesions or body fluid)
- Scenario 2: Infants with a normal physical examination but
  - Mother not treated / inadequate / not documented or
  - Mother treated with non-penicillin regimen or
  - Mother treated less than 4 weeks before delivery
- Scenario 3: Infants with a normal physical examination and
  - Mother treated appropriately during pregnancy
  - Mother has no evidence of re-infection or relapse

*If mother not tested, use scenario 1 if infant has abnormal physical exam consistent with congenital syphilis

** The absence of the fourfold or greater titre for a neonate does not exclude congenital syphilis

Recommended Regimens

Scenario 1 and 2

- Aqueous benzyl penicillin 50,000 unit/kg/dose intravenously every 12 hours during the first 7 days of life and every 8 hours thereafter for a total of 10 days (OR)
- Procaine penicillin 50,000 Unit/kg single daily dose intramuscularly for 10 days

If the treatment is missed for more than 1day, entire course should be restarted.

Scenario 3

For infants who are clinically normal and whose mothers had syphilis that was adequately treated with no signs of reinfection,

- Injection IM Benzathine penicillin G 50,000 unit/kg in single dose

The risk of transmission of syphilis to the fetus depends on a number of factors, including maternal titres from non-treponemal tests (e.g. RPR), timing of maternal treatment and stage of maternal infection, and therefore this recommendation is conditional.

Treatment of Older Infants and Children with Congenital Syphilis

After the new-born period, children diagnosed with syphilis should be reviewed and assessed as to whether the child has congenital or acquired syphilis. And any child who is thought to have congenital syphilis (or who has neurologic involvement) should be treated with

- Preferred first choice: Aqueous crystalline penicillin G, 50,000 units/kg/dose every 6 hours for 10 days
- Alternative: Ceftriaxone Injection for 10-14 days
  - Infants age ≥ 30 days, 75mg/kg IV/IM single daily dose
  - For children more than 1 year , 100 mg/kg IV/IM single daily dose

Follow - Up

After treatment, VDRL antibody titre should decline by 3 months of age and should be non-reactive at 6 months if the infant was not infected and the titres were the result of passive transfer of antibody from the mother. This passive transfer may be present for as long as one year. If these titres are found to be stable or increasing, evaluation and full investigations should be done and full treatment given.

Treated infants also should be followed every 2 -3 months to assure VDRL antibody titres decline and these infants should have become non-reactive by the age of 6 months, but the response may be slower for infants treated after the neonatal period.

Follow-up of children treated for congenital syphilis after the new-born period should be the same as that prescribed for congenital syphilis among neonates.

HIV Infection

Mothers of congenital syphilis should be tested for HIV. Infants born to mothers who have HIV infection should be referred for evaluation and appropriate follow-up.

3.4. CHANCROID

The causative organism is a Gram-negative facultative anaerobic bacillus, H. ducreyi. In the absence of supporting laboratory facilities, the following criteria are to be used: -

- Presence of one or more painful genital ulcers,
- Patient gives relevant history of sex exposure, usually within 1 week,
- Presence of multiple erosive ulcerations with regional lymphadenopathy,
- Suppurative inguinal lymphadenopathy is almost always pathognomic of chancroid

Recommended Regimens

Azithromycin 1 gm orally in a single dose

OR

Ceftriaxone 250 mg, IM, in a single dose

OR

Ciprofloxacin 500 mg orally twice a day for 3 days

OR

Erythromycin base 500 mg orally four times a day for 7 days

Notes: Ciprofloxacin should not be used for pregnant or lactating mothers and for persons < 18 years.

Wet dressing to clean the ulcer by normal saline may help shorten the healing time

Other Management Considerations

Persons who are uncircumcised and HIV infected persons might not respond as well to treatment as those who are circumcised or HIV negative.

HIV infection should be tested at the time of diagnosis of cancroid. Re-testing should be done after 4-6 weeks if the initial tests for syphilis and HIV were negative.

Follow-Up

Patients should be re-examined 3 - 7 days after initiation of treatment. Ulcers improve symptomatically within 3 days and complete healing take place in about two weeks. If there is no clinical improvement, review should be made whether (a) diagnosis is correct, (b) co-infection with another STI agent exists, (c) the patient is infected with HIV, (d) treatment was not taken as

instructed, or (e) the H. ducreyi strain from that particular patient develops resistance to the antimicrobial drug used. The clinical resolution of fluctuant lymphadenopathy takes place slower than that of the ulcers and may require needle aspiration through adjacent intact skin and they should never be incised.

Management of Sex Partners

Sexual contacts of the patient within 10 days prior to development of the clinical signs and symptoms should be examined and treated whether they have clinical signs and symptoms or not.

Special Considerations

Pregnancy

In the light of current information, the use of ciprofloxacin during pregnancy is contraindicated. No adverse effects of chancroid on pregnancy outcome or on the foetus have been reported.

HIV Infection

HIV co-infected patients may require longer courses of therapy. Treatment failure or delayed or slow healing may occur especially after shorter-course treatment regimens. The use of erythromycin 7 days' course has been advocated by some experts in such patients.

3.5. LYMPHOGRANULOMA VENEREUM (LGV)

LGV is caused by the invasive serovar's L 1, L 2, or L 3 of C. trachomatis, and the clinical features are the presence of genital ulcer(s) which may or may not be recognizable, accompanied by tender inguinal and/or femoral lymphadenopathy that is usually unilateral, which, later, suppurates forming a multiple fistula.

The late stages of the disease are due to the blockage of the lymphatic channels causing distal oedema resulting in gross elephantiasis of the genitalia. Ano-rectal stricture may also occur due to para-colic lymphatic damage.

Recommended Regimens

Doxycycline 100 mg orally twice a day for 21 days

OR

Azithromycin 1 gran orally weekly for 3 weeks

Note: Fluctuant lymph nodes should be aspirated through health skin. Incision and drain may delay healing.

3.6. GRANULOMA INGUINALE (DONOVANOSIS)

It is a rare disease caused by the intracellular Gram-negative bacterium Calymmatobacterium granulomatis and it occurs in endemic form in certain tropical and developing countries, and it is not commonly seen in Myanmar.

The clinical features are painless, progressive, ulcerative lesions without regional lymphadenopathy and the high vascularity causes it to appear as a beefy red ulcer, which bleeds easily on touch.

The organism can be cultured only on a special media and the clinical diagnosis is made by the presence of dark-staining Donovan bodies on tissue crush preparation or biopsy.

Recommended Regimens

Doxycycline 100 mg orally twice a day for a minimum of 3 weeks

OR

Trimethoprim -sulfamethoxazole one double - strength tablet orally twice a day for a minimum of 3 weeks

Alternative Regimens

Ciprofloxacin 750 mg orally twice a day for a minimum of 3 weeks

OR

Erythromycin 500 mg orally four times a day for a minimum of 3 weeks

Pregnancy

Sulphonamides are relatively contraindicated in pregnancy. Erythromycin regimen can be used in conjunction with a parenteral aminoglycoside (e.g. gentamycin)

Note: Treatment should be continued until all lesions have completely epithelialized

3.7. GENITAL HERPES SIMPLEX Type 2

Genital herpes is a viral infection characterized by recurrence of the lesions and it has no cure. There are two serovars - HSV-1 and HSV-2 and most genital infections are caused by HSV -2. Many infected persons usually do not recognize signs suggestive of genital herpes and some will have symptoms shortly after infection and then never again. HSV type 1 (HSV-1) typically causes non-sexually-transmitted oral herpes infection. However, HSV-1 can also be transmitted to the genitals through oral sex and is increasingly noted as a cause of genital HSV, especially in high-income countries.

HSV -2 infection is normally seen after sexual contact in young adults who later develop acute vulvo-vaginitis, penile or peri-anal lesions. Culture-positive genital herpes simplex in a pregnant woman at the time of delivery is an indication for Caesarean section, as neonatal infection can be fatal.

Recurrence is a hallmark of herpes simplex infection and occurs at a similar site each time and usually, the outbreak of group of vesicles is preceded by a feeling of tingling or burning sensation. Some cases of first clinical episode of genital herpes are manifested by extensive disease that requires hospitalization.

Many cases of genital herpes are acquired from asymptomatic infected persons at the time of sexual contact. Moreover, the signs and symptoms in the infected person are so mild that they might not recognize that they have the infection, and because of the intermittent viral shedding in the genital tract, the infection is passed on to other persons.

Present day systemic anti-viral drugs do not eradicate the latent virus or affect the risk, frequency, or severity of recurrences after the drug is discontinued. The three anti-viral drugs are: acyclovir, valacyclovir, and famciclovir. Topical therapy with acyclovir is less effective than the systemic drug and its use should be discouraged.

Recommended Regimens for First Episode of Genital Herpes

Acyclovir 400 mg orally three times a day for 10 days

OR

Valacyclovir 500 mg orally twice a day for 10 days

OR

Famciclovir 250 mg orally three times a day for 10 days
(This treatment may be extended if healing is not complete after 10 days of therapy.)

Given that follow-up visits may not be possible during the course of treatment and symptoms of the first clinical episode may be prolonged, therapy is provided for 10 days. Although the benefits of the medicines are probably similar, the costs of valacyclovir and famciclovir are higher than aciclovir, and therefore acyclovir is preferred. The choice of medicine may also depend on compliance considerations.

Recurrent Clinical Episodes of Genital Herpes Simplex Virus Infection

Two types of treatment regimens are available for recurrent herpes:

Episodic Therapy

Treatment is started during the prodromal or within one day after onset of genital lesions.

Acyclovir 400 mg orally three times a day for 5 days

OR

Acyclovir 800 mg orally twice a day for 5 days

OR

Valacyclovir 500 mg orally twice a day for 3 days

OR

Famciclovir 250 mg orally twice a day for 5 days

Daily Suppressive Therapy

When to provide suppressive treatment

Individuals who have frequent recurrences (e.g. 4–6 times a year or more), severe symptoms or episodes which cause distress will likely choose suppressive therapy over episodic therapy.

It reduces the frequency of recurrences by > 75 %. Acyclovir orally has been known to be used for as long as 6 years with no ill effects upon its safety and efficacy, but, as for the other two drugs, limited experience prevents recommendation of these drugs for over 1 year. Caution needed for daily suppressive therapy of Acyclovir to Pregnant women.

Acyclovir 400 mg orally twice a day

OR

Valacyclovir 500 mg orally once a day

OR

Famciclovir 250 mg orally twice a day

Comparative Studies of the Efficacy of the Three Drugs

Although the benefits of the medicines are probably similar, the costs of valaciclovir and famciclovir are higher than acyclovir, and therefore acyclovir is preferred. The choice of dosage may depend on compliance considerations.

Severe HSV Infection without complication

In majority of cases, sever HSV episode is treated similarly as first clinical episode of genital HSV infection.

Severe cases with complications such as disseminated infection, pneumonitis, hepatitis, or complications of the central nervous system should be hospitalized and IV therapy instituted.

Recommended Regimen

Acyclovir 5 - 10 mg/kg bodyweight IV every 8 hours for 5 - 7 days or until clinical cure is attained.

Management of Sex Partners

The symptomatic sex partners of patients who have genital herpes should be evaluated and treated in the same way as the index patients. For asymptomatic sex partners, evaluation and counselling, together with health education, should be provided with a view to encourage them to seek medical attention the moment skin lesions appear.

Special Considerations

HIV Infection

Like other viral infections, lesions due to HSV are common among HIV-infected patients and may be very severe, extensive, painful, and atypical.

Intermittent or suppressive therapy with oral anti-viral agents is often beneficial but increased dosage is required Valacyclovir 8 gm per day has been known to be associated with a syndrome resembling haemolytic uremic syndrome or thrombotic thrombocytopenic purpura. However, recommended dosages

for genital herpes are safe for use in HIV-infected persons.

Episodic therapy for recurrent clinical episode of genital HSV infection
Dosages for people living with HIV and people who are immunocompromised:
Acyclovir 400 mg orally three times a day for 5 days
OR
Valacyclovir 500 mg orally twice a day for 5 days
OR
Famciclovir 500 mg orally twice a day for 5 days

Suppressive therapy for recurrent clinical episodes of genital HSV that are frequent, severe and cause distress

Dosages for people living with HIV and people who are immunocompromised:
Acyclovir 400 mg orally twice a day
OR
Valacyclovir 500 mg orally twice a day
OR
Famciclovir 500 mg orally twice a day

Pregnancy

The safety of systemic acyclovir and other two drugs are still under investigation but current registry findings do not indicate an increased risk for major birth defects after acyclovir therapy. Thus, the first clinical episode of genital herpes during pregnancy may be treated with oral acyclovir and IV route is reserved for life-threatening maternal HSV infection. However, routine administration of acyclovir to pregnant women who have a history of recurrent genital herpes is not recommended in the light of present situation.

3.8. HUMAN PAPILLOMAVIRUS INFECTION (HPV)

Genital Warts (Condylomata accuminata)

Exophytic genital and anal warts are benign growths due to HPV types 6 or 11. Other types like 16, 18, 31, 33, and 35 have been known to be associated with genital dysplasia and carcinoma.

Treatment Regimens

The aim of treatment is removal of these exophytic growths. Treatment is guided by the available resources, and the experience of the health-care

provider. None of the available treatments is superior to the other treatments and no single treatment is ideal for all patients or all warts.

Considerations, before therapy, should include wart size, wart number, anatomic site, wart morphology, patient preference, cost of treatment, convenience, adverse effects and provider experience. The available treatments for visible ano-genital warts are either patient-applied or provider -administered therapy.

Provider - Administered Regimens

Podophyllin resin 10% - 25% in compound tincture of benzoin can be used. A small amount is applied and allowed to air. It should be washed off 1 - 4 hours after application to reduce local irritation. It is repeated weekly if necessary.

OR

Podophyllotoxin 0.5%, the active constituent of podophyllin resin is recommended if available. The use of podophyllin and podophylotoxin in pregnancy is not to be encouraged.

OR

Trichloroacetic acid (TCA) or Bichloroacetic acid (BCA) 80% - 90% can be used. A small amount is applied to the wart only and allowed to dry. Talc powder or sodium bicarbonate can be used to remove unreacted acid if an excess amount has been used. This may be repeated weekly if necessary.

Electrocautery and cryotherapy with liquid nitrogen or cryoprobe under local anaesthesia is the common procedure performed by the health -care personnel.

Patient-applied regimens

Podophyllotoxin 0.5% solution or gel, twice daily for 3 days (total volume of podophyllotoxin should not exceed 0.5 ml per day), followed by 4 days of no treatment, the cycle repeated up to 4 times.

OR

Imiquimod 5% cream applied at bed time, left on overnight, 3 times a week for as long as 16 weeks.

The safety of both podophyllotoxin and imiquimod during pregnancy has not yet been established.

Follow-Up

Patients should be cautioned to watch for recurrences, which occur most frequently during the first 3 months. Earlier follow up visits may be useful for some patients to document the absence of warts, to monitor for or treat complication of therapy.

Management of Sex Partners

Treatment of sex partners is necessary only when they have exophytic warts. The use of condoms may prevent transmission to sex partners. Many experts agree that HPV infection may persist throughout a patient's lifetime in a dormant state and becomes infectious intermittently. Thus, subclinical infection can persist in both the patient and the sex partners at the same time and their contagiousness is very hard to determine.

Special Considerations

Pregnancy

Podophyllin and podophyllin preparations are contraindicated during pregnancy. Warts tend to proliferate and to become friable during pregnancy and many experts encourage removal of visible warts during pregnancy. Caesarean delivery should be considered if the pelvic outlet is obstructed of if vaginal delivery would result in excessive bleeding.

HIV Infection

Persons infected with HIV may not respond to therapy for HPV as well as person without HIV, and they may have more frequent recurrences after treatment.

HPV vaccinations:

HPV vaccination is recommended for young girls aged 9 to 13 with three doses of HPV vaccines over a period of 6 months.

3.9. TRICHOMONIASIS

The presenting gross clinical features are a diffuse, malodorous, yellow-green discharge with vulva irritation. Most men who are infected with T. vaginalis do not usually have symptoms and many women have fewer symptoms Diagnosis of vaginal trichomoniasis is usually performed by microscopy of vaginal secretion.

T. vaginalis infection may be associated with adverse pregnancy outcomes, especially premature rupture of the membranes and preterm delivery.

Recommended Regimen

Metronidazole 2 gm oral single dose

OR

Metronidazole 500 mg, oral, twice a day for 5 to 7 days

OR

Tinidazole 2gm single dose stat (which is more tolerable, less pill burden)

Follow-Up

Follow-up is usually unnecessary for men and women who become asymptomatic after treatment. Re-treatment may be given if treatment failure occurs or the dosage may be increased to 2 gm once a day for 3 - 5 days.

Management of Sex Partners

Sex partners should be treated with the same regimen until the patient and partner(s) are free from symptoms.

Special Considerations

Allergy, Intolerance, or Adverse Reactions

Adjust Alcohol Intake but there are no Effective alternatives in place of metronidazole are available.

Pregnancy

Pregnant women can use Tinidazole and Metronidazole in first trimester.

HIV Infection

Persons with HIV infection and trichomoniasis should receive the same treatment as persons without HIV.

3.10. BACTERIAL VAGINOSIS (BV)

BV is a clinical syndrome caused by the replacement of normal vaginal bacterial flora by a high concentration of anaerobic bacteria. Although it causes vaginal discharge or malodour, most of the women are asymptomatic. It is usually associated with having multiple sex partners, and women who have never been sexually active are rarely affected.

BV can be diagnosed by the use of clinical or Gram-stain criteria. Clinical criteria require three of the following symptoms or signs:

- a homogeneous, white, non-inflammatory discharge that smoothly coats the vaginal walls;
- the presence of clue cells on microscopic examination;
- a pH of vaginal fluid > 4.5; and
- a fishy odour of vaginal discharge before or after addition of 10% KOH (i.e., the whiff test)

Treatment of Bacterial Vaginosis

Here, the main aim is to relieve vaginal symptoms and signs, and therefore treatment is to be given to women who are symptomatic. As male sex partners are usually asymptomatic, preventing transmission to men is not a goal of therapy.

Recommended Regimens

Metronidazole 2 gm oral, single dose

OR

Metronidazole 500 mg, oral, twice a day for 5 to 7 days

OR

Tinidazole 2 gm stat (which is more tolerable, less pill burden)

OR

Patients should abstain from consuming alcohol during treatment with metronidazole and for 24 hours thereafter.

Pregnancy and BV

All symptomatic pregnant women should be tested and treated. BV has been associated with adverse pregnancy outcomes (e.g., premature rupture of the membranes, chorioamnionitis, preterm labour, preterm birth, postpartum endometritis, and post-caesarean wound infection). Some specialists prefer

using systemic therapy to treat possible subclinical upper genital tract infections among women at low risk for preterm delivery (i.e., those who have on history of delivering an infant before term). Existing data do not support the use of topical agents during pregnancy.

HIV Infection

HIV infected persons with BV should receive the same treatment as those who are HIV negative.

3.11. VULVO-VAGINAL CANDIDIASIS (VVC)

Candida albicans is the commonest organism among candida species to cause VVC and the clinical presentations are vaginal pruritus with erythema of the vagina or vulva and white discharge. Other symptoms may include vaginal soreness, vulvar burning, dyspareunia, and external dysuria. It should be noted that VVC usually is not sexually acquired or transmitted. If laboratory facilities are available, an initial diagnosis can be made from a wet preparation or Gram stain of vaginal discharge which will show the presence of yeasts or pseudohyphae.

Intravaginal Agents

Clotrimazole 500 mg, vaginal tablet, one tablet in a single application

OR

Clotrimazole 200 mg, vaginal tablets single dose, one tablet for 3 days

OR

(but there is concerns for FSW if they use Clotrimazole vaginal tablet (which is oil based) and there is risk of condom rupture).

Miconazole 100 mg vaginal suppository, one suppository for 7 days,

OR

Nystatin 100,000 - unit vaginal tablet, one tablet for 14 days,

OR

Fluconazole 150 mg oral tablet, one tablet, single dose

OR

Ketoconazole 200mg OD for 7 days

Alternative:

Fluconazole 150 mg oral tablet, one tablet, single dose

Single dose treatment should be reserved for uncomplicated mild to moderate cases and multi-day regimens (3- 7) days are to be used for severe or complicated VVC.

Follow-Up

Patients should report back only if symptoms persist or recur.

Management of sex partners

VVC is not generally transmitted through sexual intercourse and thus, routine treatment of sex partners is not necessary. A few male sex contacts may have balanitis characterized by erythematous areas on the glans penis accompanied by pruritus and irritation. It should be treated with topical anti-fungal agents.

Special Considerations

Pregnancy

VVC is common during pregnancy in which case only topical azole therapies should be used.

HIV Infection

Acute VVC is common in women with HIV infection and may be more severe for these women than for other women. Management is the same as for women without HIV infection.

3.12. ECTOPARASITIC INFECTIONS

Pediculosis

Infestation with lice can take place in the head (pediculosis capitis), on the body (pediculosis corporis - found in the seams of clothes), and in the pubic area (pediculosis pubis). They induce intense itching, which, through scratching, results in excoriation and secondary infection. The pubic louse is transmitted mainly through sexual contact and commonly seen in young adults.

Recommended Regimens

Permethrin 1 % cream applied to affected areas and washed off after 10 minutes or Lindane (gamma-benzene hexachloride) 1 % shampoo applied

for four minutes and then thoroughly washed off (not recommended for pregnant or lactating mother or for children < 2 years of age).

Scabies

The scabies mite, Sarcoptes scabiei, is spread by direct physical transfer, including sexual contact. It is characterised by intense nocturnal pruritus and the presence of burrows in the skin lesions and the mite can be demonstrated from the end of a burrow.

Recommended Regimens

Permethrin cream 5% can be applied to all areas from the neck down and washed off after 8-14 hours.

OR

Lindane 1% 1 oz. of lotion or 30 gm of cream applied thinly to all areas of the body from the neck down and washed off thoroughly after 8 hours.

Alternative Regimens

The alternatives are malathion, monosulfiram (Tetmosol), crotamiton (Eurax), benzyl benzoate (Burscabe), and 10% sulphur ointment.

Other Management Considerations

Personal cleanliness is essential and beddings, clothing's should be thoroughly washed and heat dried. Fumigation of living areas is not necessary.

Follow - Up

Re-treatment is indicated after one week for patients who are still symptomatic. Patients who are not responding to one regimen may be tried with another alternative regimen.

Management of Sex Partners and Household Contacts

Both sexual and close household contacts within the last month should be examined and treated.

Special Considerations

Pregnant Women, Infants, and Young Children

Lindane should not be used for this group but may be treated with permethrin, crotamiton (Eurax) or sulphur ointment.

HIV Infection

HIV infected persons with uncomplicated infection should receive the same treatment as persons without HIV infection. Immunosuppressed patients are at increased risk for an extensive crusted eruption known as "Norwegian scabies", where the skin lesions are teeming with the mites. Management should be done in consultation with a specialist (Ivermectin 200 microgram / kg orally repeated in 2 weeks)

3.13. HEPATITIS B (HBV)

Hepatitis B is a sexually transmitted disease commonly seen in male homosexuals and it has been estimated that it accounts for two-thirds of new HBV cases (need source of information) annually with 6% - 10% becoming chronic HBV carriers. These persons are capable of transmitting HBV to others and are at risk for developing fatal complications like cirrhosis of the liver and hepatocellular carcinoma.

Prevention

Infection of both adults and neonates can be readily prevented with a safe and effective vaccine, and the following high risk group for acquiring HBV are to be recommended for vaccination: -

- Sexually active homosexual and bisexual men with multiple sex partners
- Sex partners of HBV patients and carriers
- Injecting drug users
- Men and women diagnosed as having recently acquired another STI

In general, they should be advised of their risk for HBV infection (as well as HIV) and the means to reduce their risk i.e. no. of sexual partner, in sexual relationship, use of condoms, disposable sterile drug injecting equipment and HBV vaccination.

Special Considerations

Pregnancy

Pregnancy is not a contraindication to HBV vaccination.

HIV Infection

HIV infected persons are more likely to become chronic HBV carriers and they may develop impaired response to HBV vaccine, and re-vaccination may have to be considered for those who do not respond to vaccination initially.

4. SYNDROMIC MANAGEMENT

4.1 GENITAL DISCHARGE

4.1.1. Urethral Discharge

Clinical Features:	Burning micturition Mucoid/Mucopurulent/Purulent-urethral discharge Asymptomatic infection common
Common Organisms	N. gonorrhoeae C. trachomatis Ureaplasma urealyticum T. vaginalis

Diagnosis:

If laboratory facilities are available: Gram-stained smear from urethral swab will be useful to confirm the presence of gonococcal infections in men.

Presence of gram negative intracellular diplococci): - Gonococcal urethritis (GCU)

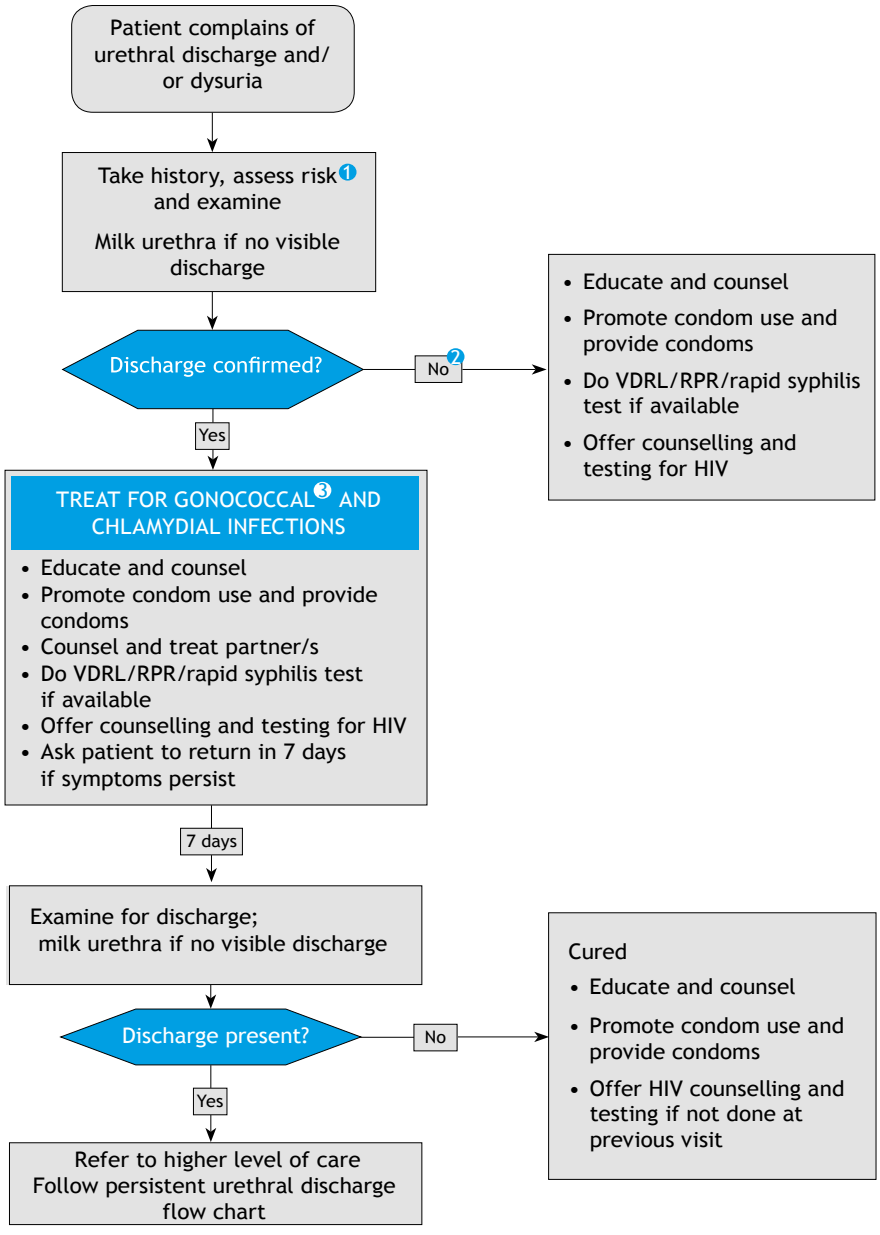
Absence of gram negative intracellular diplococci with polymorphonuclear cells > 5 per oil immersion field: - Non-gonococcal urethritis (NGU)

Management:

Treatment should be given depending on the laboratory results.

If laboratory facilities are not available, treat for both GC and NGU infections.

Figure 1 Urethral Discharge



1 Assess risk for
• unprotected sex • Condom breakage or slippage • New partner
2 If feasible, encourage patient to return the following day after holding the urine for 4 hours and reassess for discharge.
3 If microscopy is available, do Gram stain on urethral smear.
If Gram-negative intracellular diplococci are seen, treat for gonococcal and chlamydial infections.
If no Gram-negative diplococci are seen, treatment for chlamydial infection only may be considered.

Recommended regimen for urethral discharge syndrome: -

Ceftriaxone 500 mg IM single dose

OR

Cefixime 400 mg, oral, single dose

OR

Spectinomycin 2 gm, IM as a single dose

PLUS

Azithromycin 1 gm, oral, single dose

OR

Doxycycline 100 mg, oral, twice a day for 7 days

Follow-Up for Patients Who Have Urethritis

Instruct the patient to return for follow-up if urethritis persists or recurs after complete treatment. Symptoms alone, without any history of sexual re-exposure or laboratory evidence of urethral inflammation, are not an indication for re-treatment.

Management of Partners

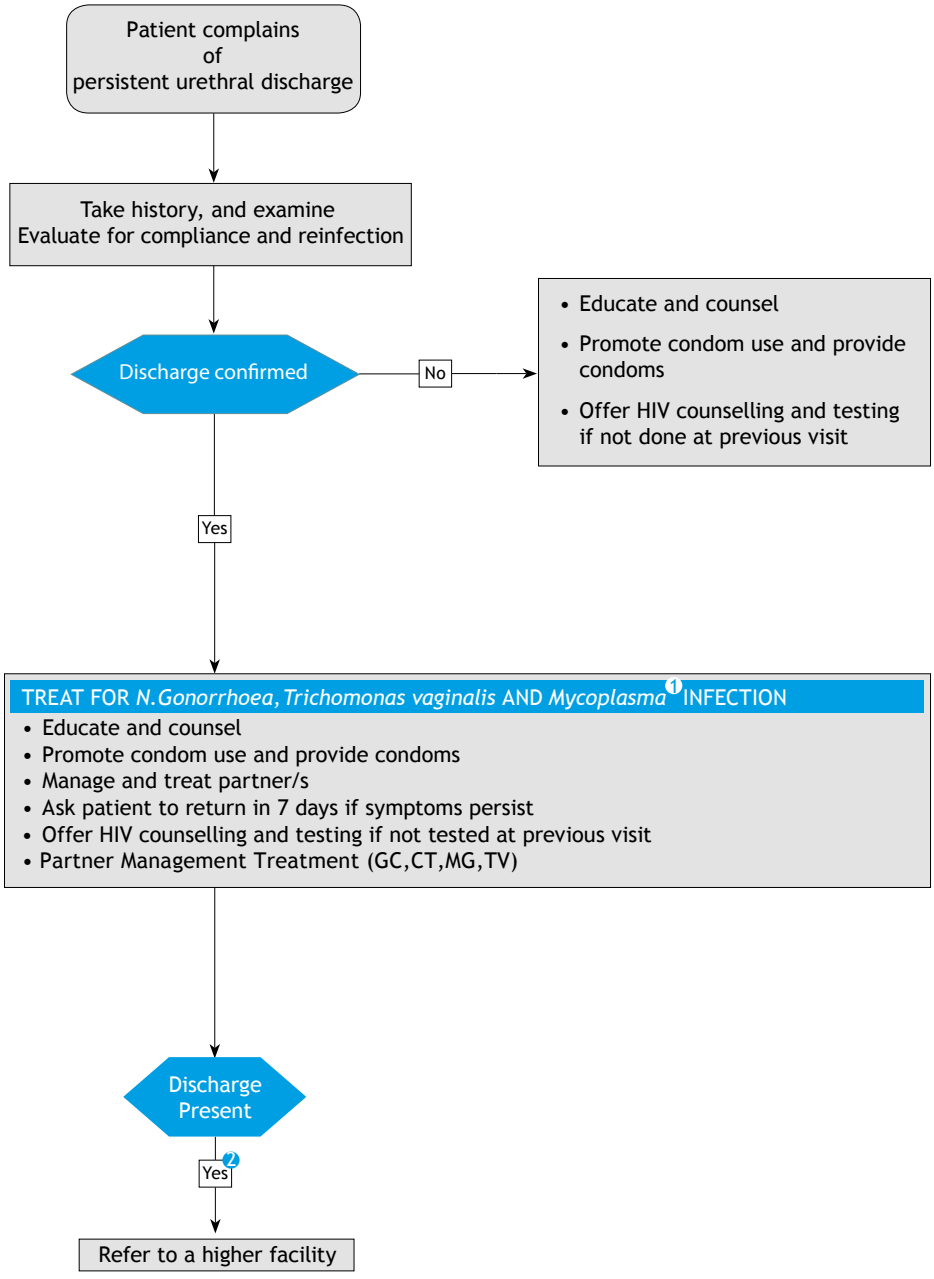
All sexual partners within the last 30 days should be referred by the patient for evaluation and treatment. Patients should be encouraged to bring their marital partners to the clinic as, most of the time; the patient can hardly find the sexual contact after the sexual encounter, either casually or on a paid basis.

Persistent Urethritis

Recurrent or persistent urethritis is a common clinical condition seen in Myanmar in STI patients who have been treated for gonorrhoea as well as for non-gonococcal urethritis. Most of the time, the laboratory evidence is negative for gonorrhoea and yet the patient returns with symptoms and signs of urethral discharge which is very disturbing and frustrating. Objective signs of urethritis should be present before starting antimicrobial therapy. Patients who have persistent urethritis should be retreated with the initial regimen if bad compliance is suspected or if there is a history of re-exposure to an untreated sex partner(s). If possible, a wet mount preparation should be made and examined for T. vaginalis. Usually, urologic examination is negative for a specific etiology.

The following treatment regime is recommended for a patient with good compliance and in whom re-exposure can be excluded: -

Figure 2. Persistent Urethral Discharge



1 Add treatment for *Mycoplasma* infection depending on the local situation.
2 Consider infection with cephalosporin-resistant *Neisseria gonorrhoeae* refer for GC culture and AMR surveillance.

Recommended Treatment for Persistent Urethritis

Injection Ceftriaxone 500 mg

PLUS

Azithromycin 2 grams

PLUS

Metronidazole 2 gm, oral, single dose

OR

Tinidazole 2gm, oral, as a single dose

OR

Metronidazole 400 or 500 mg, twice daily, for 7 days

Special Considerations

HIV Infection: - Urethritis syndrome including gonococcal, Chlamydia, non-gonococcal, non-Chlamydia urethritis are known to facilitate HIV transmission. Patients with NGU who are HIV-positive should receive the same treatment regime as those who are HIV- negative.

4.1.2 Abnormal Vaginal Discharge

A spontaneous complaint of abnormal vaginal discharge (in terms of quantity, colour or odour) is most commonly a result of a vaginal infection. It may, in rare cases, be caused by mucopurulent STI related cervicitis. T. vaginalis, C. albicans and bacterial vaginosis (BV) are the commonest causes of vaginal infection. N. gonorrhoeae and C. trachomatis cause cervical infection. The clinical detection of cervical infection is difficult because a large proportion of women with gonococcal or chlamydial cervical infection is asymptomatic. The symptom of abnormal vaginal discharge is highly indicative of vaginal infection, but poorly predictive for cervical infection. Thus, all women presenting with vaginal discharge should receive treatment for trichomoniasis and BV.

Among women presenting with discharge, one can attempt to identify those with an increased likelihood of being infected with N. gonorrhoeae and/or C. trachomatis. To identify women at greater risk, therefore, of cervical infection, an assessment of a woman's risk status may be useful, especially when risk factors are adapted to the local situation. Given that microscopy requires special training, is time consuming and adds relatively little given the amount of time and resources it requires, it is generally not recommended

at the primary health care level. However, in settings where Gram stain can be carried out in an efficient manner, such as a referral clinic, identification of Gram-negative intracellular diploccoci and/or T. vaginalis can be attempted.

Knowledge of the local prevalence of gonococcal and/or chlamydia in women presenting with vaginal discharge is important when making the decision to treat for cervical infection. The higher the prevalence, the stronger the justification for treatment. Women with a positive risk assessment have a higher likelihood of cervical infection than those who are risk negative. Women with vaginal discharge and a positive risk assessment should, therefore, be offered treatment for gonococcal and chlamydia cervicitis.

Where resources permit, the use of laboratory tests to screen women with vaginal discharge should be considered. Such screening could be applied to all women with discharge or selectively to those with discharge and a positive risk assessment.

Recommended treatment for abnormal vaginal discharge

Cervical Infection

Women with vaginal discharge and a positive risk assessment or in settings with high prevalence of gonorrhoea and /or chlamydial infection, should be treated for gonococcal and chlamydia cervicitis as follow:

Ceftriaxone 500 mg IM single dose

OR

Cefixime 400 mg, oral, single dose

OR

Spectinomycin 2 gm, IM, single dose

PLUS

Azithromycin 1 gm, oral, single dose

OR

Doxycycline 100 mg, oral, twice a day for 7 days

OR

Erythromycin 500 mg, oral, four times a day for 7 days

OR

Tetracycline 500 mg, oral, four times a day for 7 days

Vaginal Infection

Vaginitis is characterised by a vaginal discharge, or vulvar itching and irritation and a vaginal odour may be present. The three common diseases are trichomoniasis (due to T. vaginalis), bacterial vaginosis (BV) (caused by replacement of the normal vaginal flora by an overgrowth of anaerobic microorganisms and Gardnerella vaginalis), and candidiasis (usually due to Candida albicans).

Recommended treatment for vaginitis (BV and TV)

Metronidazole 2 gm, oral, single dose

OR

Tinidazole 2gm, oral, single dose

OR

Metronidazole 500 mg, oral, twice a day for 7 days

And treat for C. albicans where indicated

Clotrimazole 500 mg, vaginal tablet, one tablet in a single application,

OR

Clotrimazole 200 mg, vaginal tablets, one tablet for 3 days,

OR

Miconazole 200 mg vaginal suppository, one suppository for 3 days,

OR

Miconazole 100 mg vaginal suppository, one suppository for 7 days,

OR

Nystatin 100,000 - unit vaginal tablet, one tablet for 14 days,

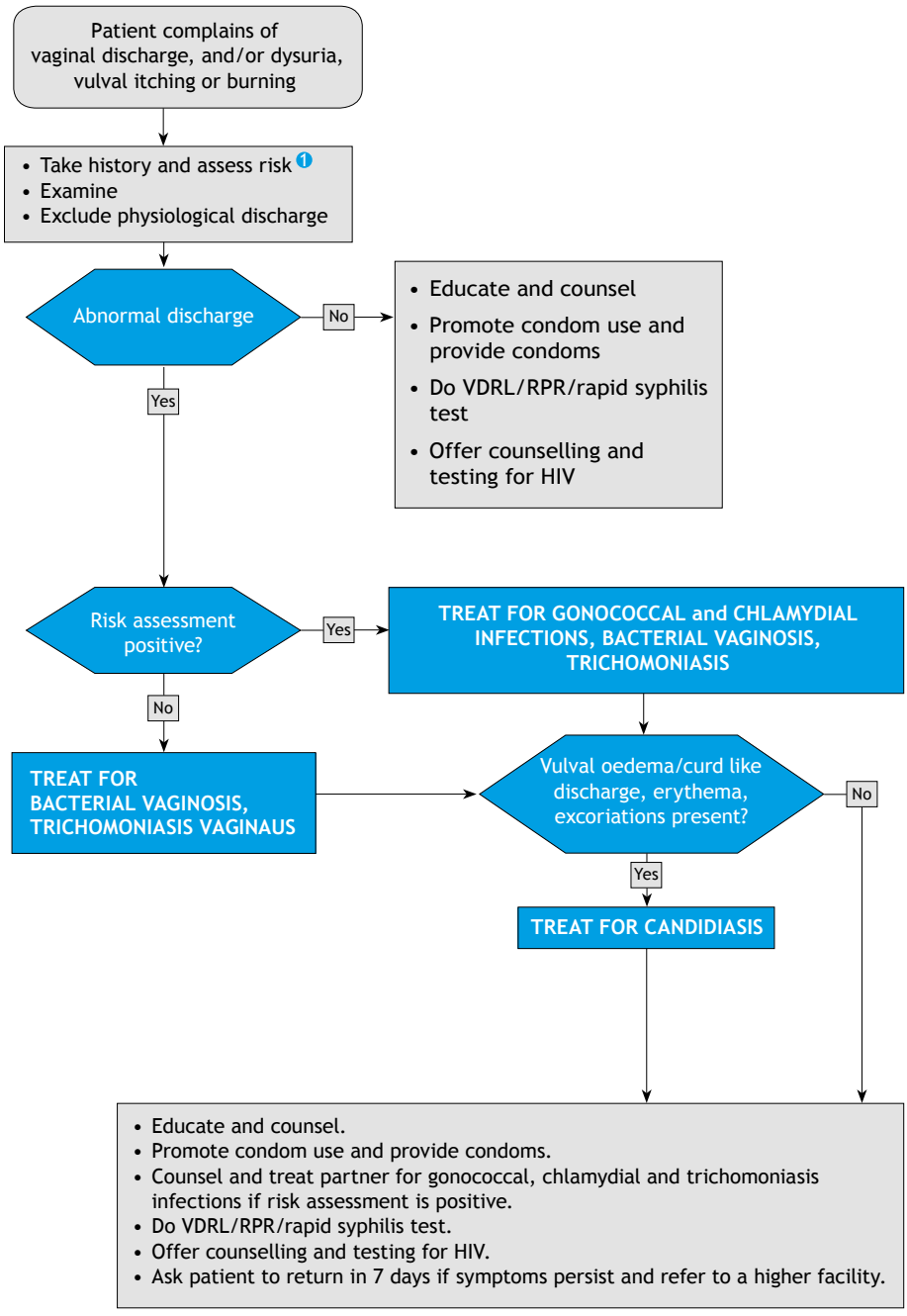
OR

Fluconazole 150 mg oral tablet, one tablet, single dose

OR

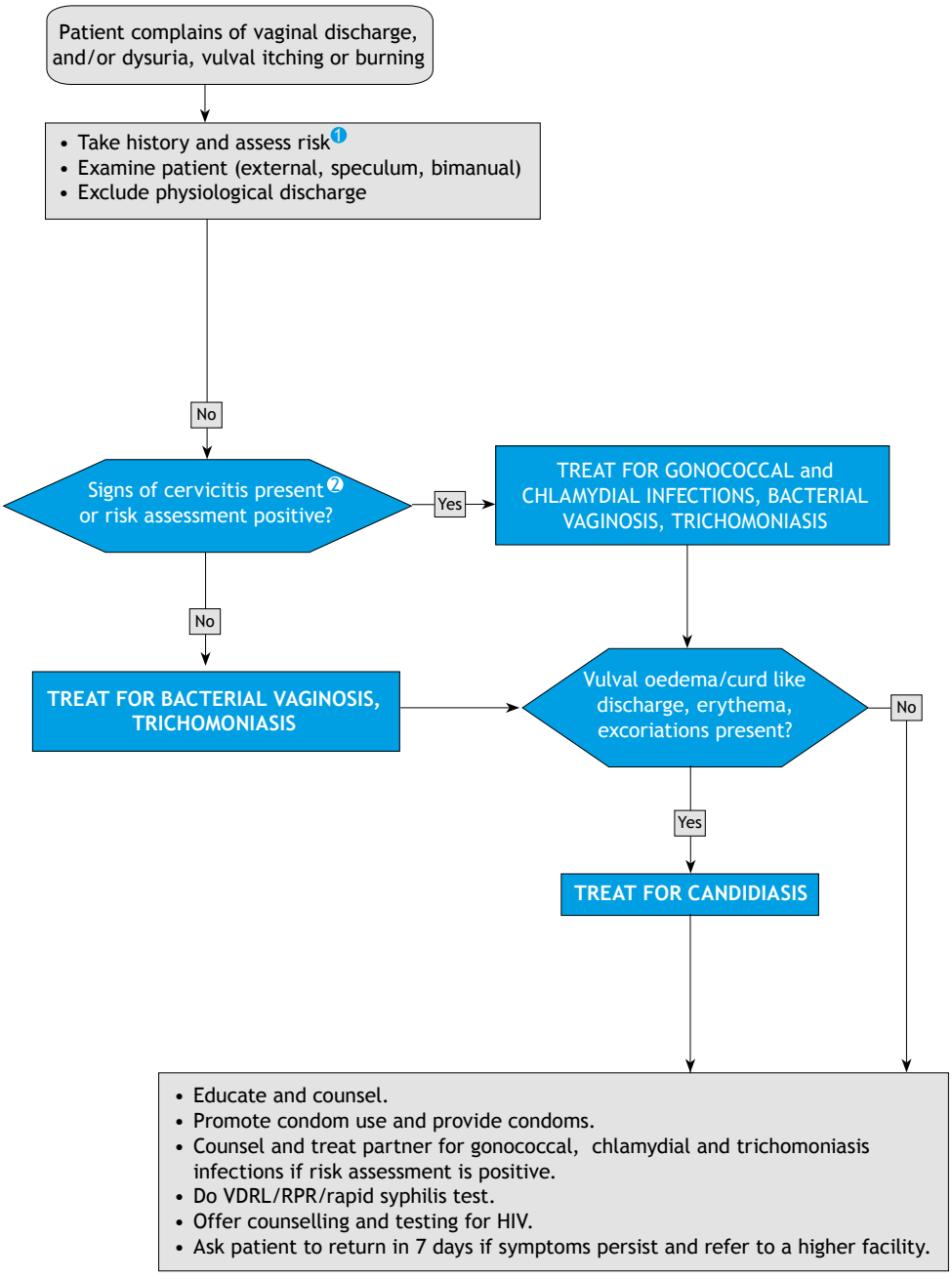
Ketoconazole 200mg OD for 7 days

Figure 3 Vaginal Discharge



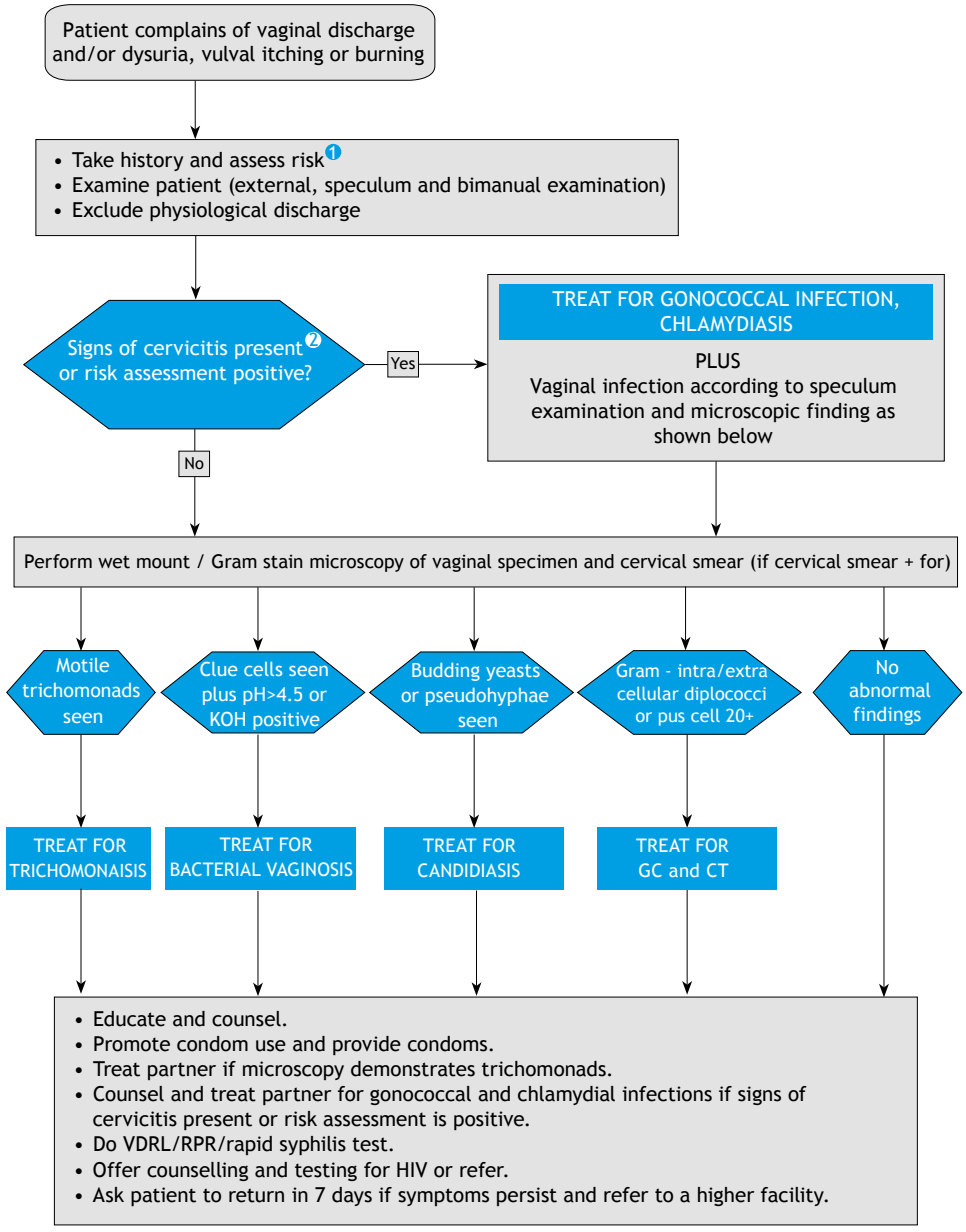
1 Risk factors such as multiple partners and partner with symptoms are frequently associated with cervicitis.

Figure 4 Vaginal Discharge with Speculum Examination



1 Risk factors such as multiple partners and partner with symptoms are frequently associated with cervicitis.
2 Signs of cervicitis include cervical mucopus/erosion, easily induced cervical bleeding.

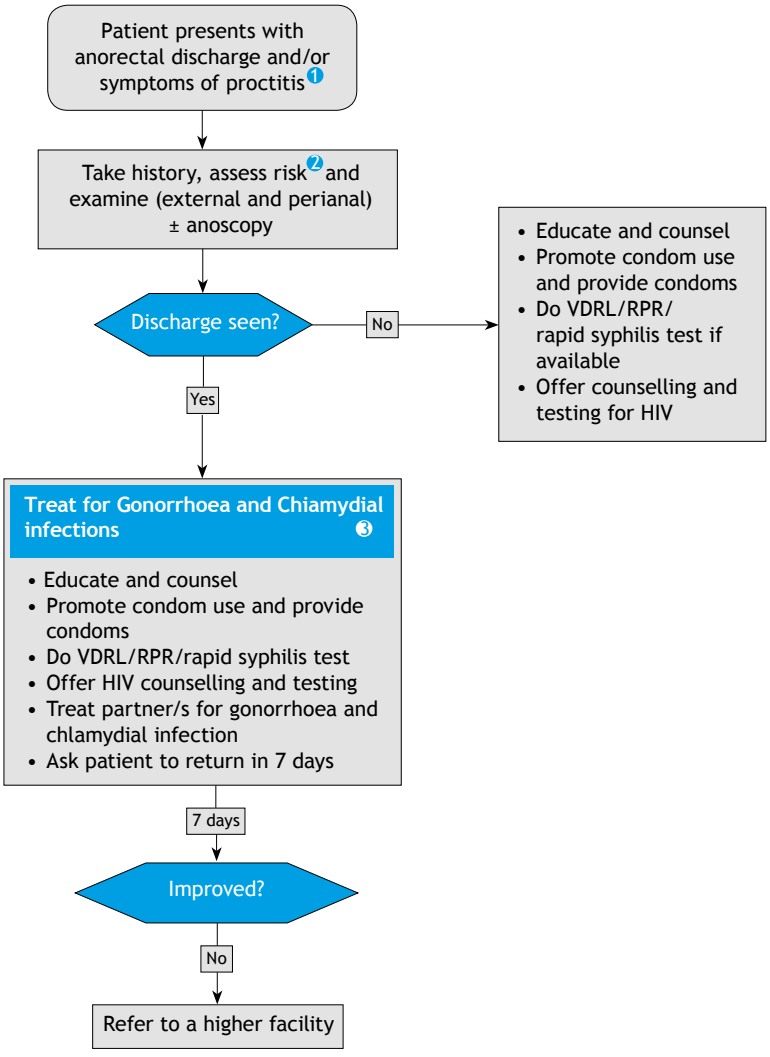
Figure 5 Vaginal Discharge with Speculum and Laboratory Diagnosis



1 Risk factors such as multiple partners and partner with symptoms are frequently associated with cervicitis.
2 Signs of cervicitis include cervical mucopus/erosion, easily induced cervical bleeding.

4.1.3. Anorectal Discharge

Figure 6 Ano-rectal Discharge



1 Symptoms of proctitis include perianal pain, mucopurulent anal discharge, anorectal bleeding, constipation, sensation of rectal fullness or of incomplete defecation, tenesmus and discomfort.
2 Receptive anal sex during past 6 months, insertive partner has STI, multiple partners, unprotected sex (risk factors need to be validated according to the country setting)
3 If syphilis serology results are available and are positive, treat patient and partner/s for syphilis.

Recommended Regimen for C. Trachomatis Infection

Doxycycline 100 mg, twice a day, for 7 days

OR

Azithromycin 1 gm, orally, single dose

Recommended Regimen for Gonorrhoea Infection

Ceftriaxone 500 mg, IM, stat single dose

OR

Cefixime 400 mg, orally stat, single dose (Need AMR Monitoring whether the efficacy is still acceptable in Myanmar)

PLUS

As co-infection with C. trachomatis is common, it is advisable to add a regimen that is effective against C. trachomatis. In clinical trials, these recommended regimens have a cure rate of > 95% especially for anal and genital infections.

4.2. GENITAL ULCERATIVE DISEASES

The common genital ulcerative diseases seen in the local health settings are syphilis, chancroid and genital herpes. The demographic situation in Myanmar has not been established scientifically yet and the reports compiled by the health personnel concerned, with the available limited resources, do not reveal the true situation at any given time.

At the peripheral level, diagnosis is based mainly on history and physical examination except at the categorical STI clinics, which are few in number to provide adequate etiology services for the whole country, and even in these clinics, laboratory facilities are still limited such as facilities for culture methods. Ideally, evaluation of a person with genital ulcerative disease should include a serologic test for syphilis, Dark-field examination or direct immunofluorescence test for T. pallidum, culture or antigen test for HSV and culture for H. ducreyi. In addition to this, HIV testing should be included especially for those with syphilis or chancroid.

After examination to confirm the presence of genital ulceration, treatment appropriate to local aetiologies and antimicrobial sensitivity patterns should be given. In areas where both syphilis and chancroid are prevalent, for example, patients with genital ulcers should be treated for both conditions at the time of their initial presentation, to ensure adequate therapy in case of loss to follow-up.

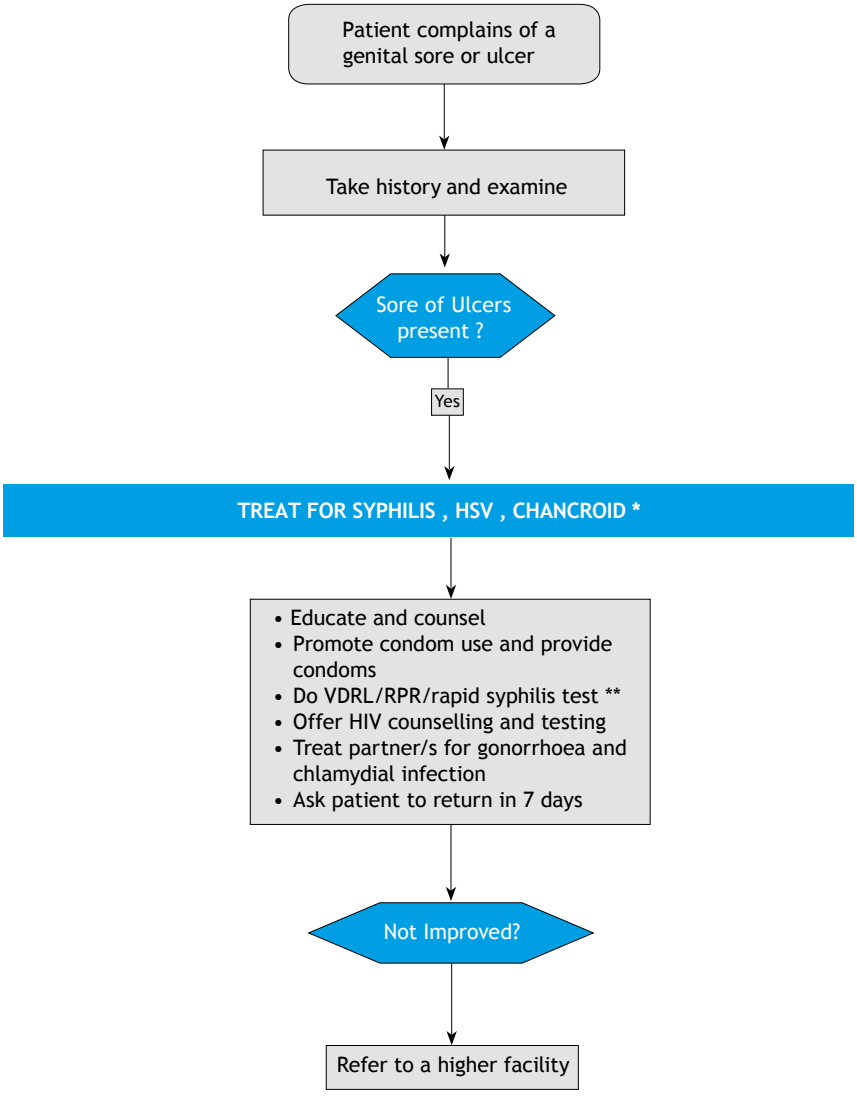
Genital ulcers and HIV infection

There have been a number of anecdotal reports in the literature suggesting that the natural history of syphilis may be altered as a result of concomitant HIV infection.

Some reports have indicated atypical presentations of both primary and secondary syphilis lesions. Some have noted an increase in treatment failure rates among patients with early syphilis who are treated with single-dose therapies of penicillin.

In chancroid, atypical lesions have been reported in HIV-infected individuals. The lesions tend to be more extensive, or multiple lesions may form that are sometimes accompanied by systemic manifestations such as fever and chills. Reports of rapidly aggressive lesions have been noted by some clinicians. This emphasizes the need for early treatment, especially in HIV-infected individuals. There is evidence to suggest that HIV infection may increase rates of treatment failure in chancroid, especially when single-dose therapies are given. More researches are needed to confirm these observations. In immunosuppressed individuals, herpes simplex lesions may present as persistent multiple ulcers that require medical attention, as opposed to the self-limiting vesicles and ulcers, which occur in immune-competent individuals. Thus, antiviral treatment is particularly important in such instances, to be given therapeutically or prophylactically to offer comfort to the patient. Adequate education needs to be given to the patient as well, to explain the nature and purpose of treatment and in order to avoid false expectations of cure.

Figure 7 Genital Ulcer Diseases



* The patient will be treated for both Syphilis and Chancroid because they were highly infections. Herpes infection can be diagnosed from history taking and examination .

** Syphilis may be negative in early syphilis.

Recommended treatment for genital ulcers syndrome: Treat for syphilis and chancroid

Benzathine penicillin G 2.4 million units IM in a single dose

PLUS

Azithromycin 1 gm orally in a single dose

OR

Ceftriaxone 250 mg, IM, in a single dose

OR

Ciprofloxacin 500 mg orally twice a day for 3 days

OR

Erythromycin base 500 mg orally four times a day for 7 days

PLUS

Genital Herpes Simplex Management

Acyclovir 400 mg orally three times a day for 10 days

OR

Valacyclovir 500 mg orally twice a day for 10 days

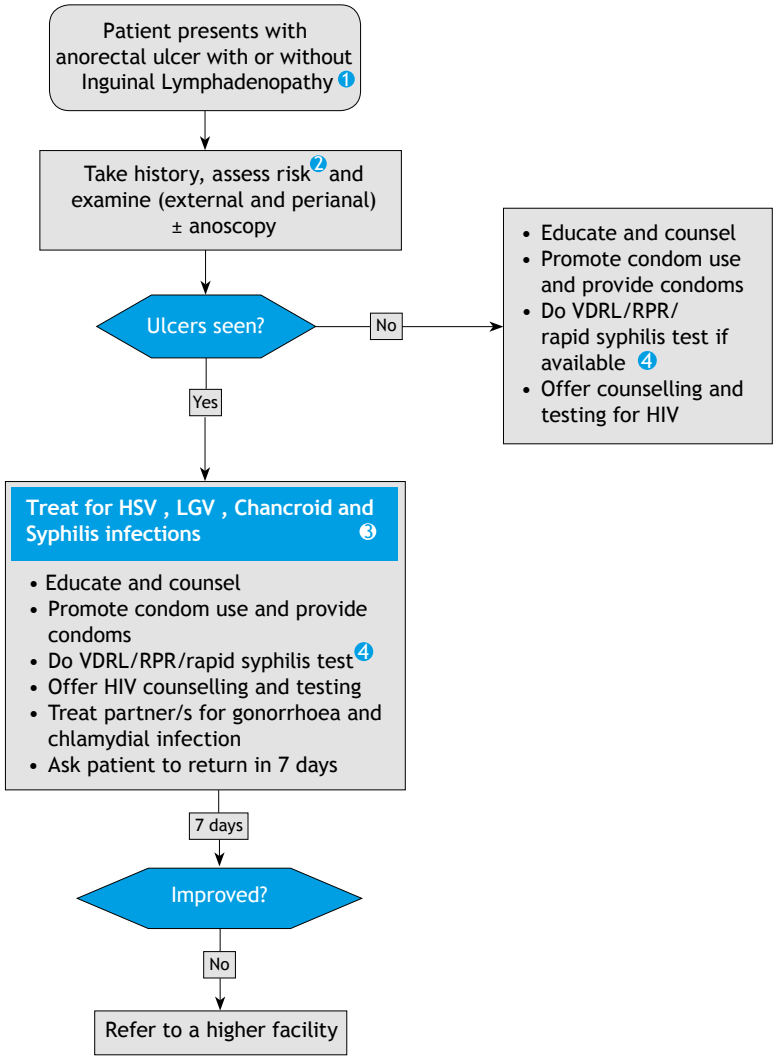
OR

Famciclovir 250 mg orally three times a day for 10 days

Specific treatment for herpes genitalis is recommended as it offers clinical benefits to most symptomatic patients. Health education and counselling regarding the recurrent nature of genital herpes lesions, the natural history, sexual transmission, probable perinatal transmission of the infection and available methods to reduce transmission, are an integral part of genital herpes management.

4.2.1 Ano-rectal Ulcer

Figure 8: Ano-rectal Ulcer



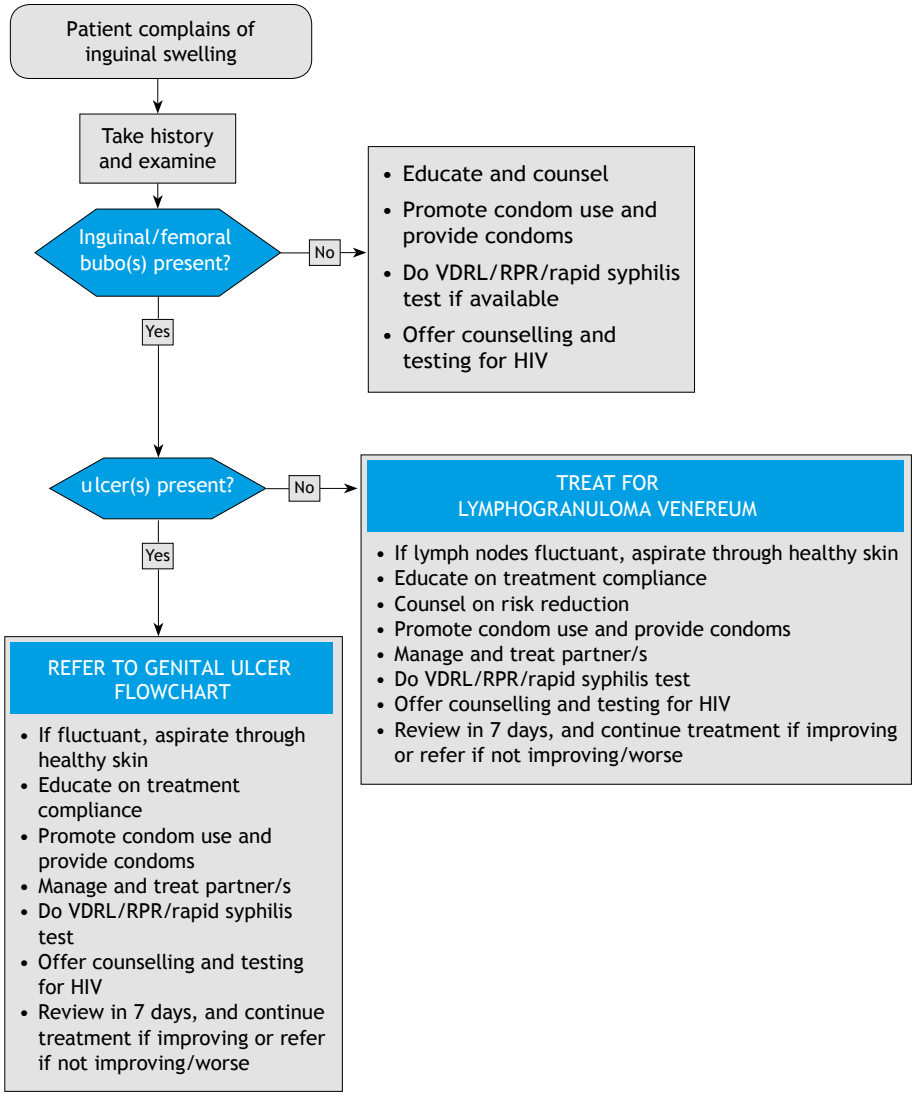
1 Symptoms of proctitis include perianal pain, mucopurulent anal discharge, anorectal bleeding, constipation, sensation of rectal fullness or of incomplete defecation, tenesmus and discomfort.
2 Receptive anal sex during past 6 months, insertive partner has STI, multiple partners, unprotected sex (risk factors need to be validated according to the country setting)
3 Treat for *Mycoplasma* infection depending on the local situation.
4 If syphilis serology results are available and are positive, treat patient and partner/s for syphilis.

Include treatment recommendations for HSV, Chancroid and Syphilis (As in genital ulcer disease)

4.3. INGUINAL BUBO

Inguinal and femoral buboes are localised enlargements of the lymph nodes in the groin area, which are painful and may be fluctuant. They are frequently associated with LGV and chancroid. In many cases of chancroid, an associated genital ulcer is visible. Non-sexually transmitted local and systemic infections (e.g. infections of the lower limb or tuberculous lymphadenopathy) can also cause swelling of inguinal lymph nodes.

Figure 9 Inguinal Bubo



Recommended treatment for inguinal bubo

Doxycycline, 100mg orally, twice daily for 21 days

OR

Erythromycin, 500 mg orally, four times daily for 21 days' Fluctuant lymph nodes should be aspirated through healthy skin. Incision and drainage or excision of nodes may delay healing and should not be attempted.

4.4. SWELLING OF THE SCROTUM

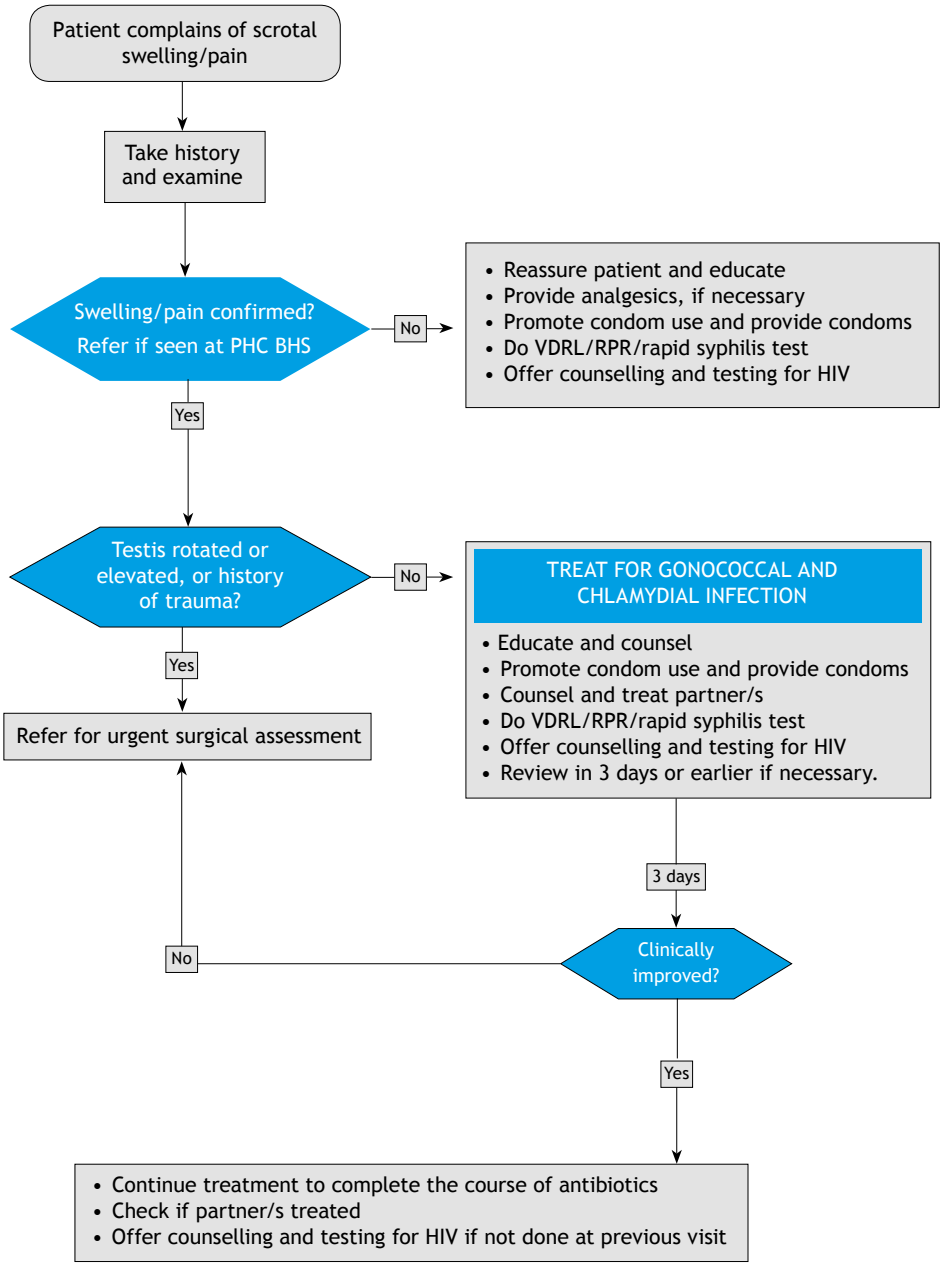
The common organisms responsible for epididymitis in men < 35 years of age are N. gonorrhoeae and C. trachomatis, and E. coli infection is common among male homosexuals, especially insertive partners during anal sex.

Typical presenting features are unilateral testicular pain and tenderness, and swelling of the testis. Testicular torsion should be excluded especially if the onset of pain is sudden, severe and with very little evidence of urethritis or urinary tract infection.

In older men, where there may have been no risk of a sexually transmitted infection, other general infections may be responsible, for example, Escherichia coli, Klebsiella spp. or Pseudomonas aeruginosa. A tuberculous orchitis, generally accompanied by an epididymitis, is always secondary to lesions elsewhere, especially in the lungs or bones.

In pre-pubertal children, the usual etiology is coliform, pseudomonas infection or mumps virus. Mumps epididymo-orchitis is usually noted within a week of parotid enlargement.

Figure 10 Scrotal Swelling



Recommended Regimens

Ceftriaxone 500 mg IM in single dose

PLUS

Doxycycline 100 mg orally twice a day for 14 days

(This regimen will cover both gonococcal and chlamydial infection)

Alternative Regimen

Spectinomycin 2 gm IM

PLUS

Azithromycin 250 mg bid for 3 days

OR

Erythromycin 500 mg, four times a day for 14 days

Supportive measures like bed rest, scrotal elevation, and analgesics, are recommended until fever and local inflammation have subsided.

Follow - Up

If there is no improvement, the differential diagnosis includes tumour, abscess, infarction, testicular cancer, and tuberculosis or deep fungus infection.

Management of Sex Partners

Sex partners of these patients should be evaluated and treated especially if the sexual contact with the index patient was within the last 60 days preceding onset of symptoms in the patient.

Special Considerations

HIV Infection: - Patients with HIV infection and uncomplicated epididymitis should be treated with the same regimen as persons without HIV.

4.5. PELVIC INFLAMMATORY DISEASE (PID)

STI organisms, especially N. gonorrhoeae and C. trachomatis, are the main causes of PID and other organisms like vaginal anaerobes, G. vaginalis, H. influenzae, enteric Gram negative rods, and some streptococci species may also cause PID.

Clinical features of Lower Abdominal Pain in Female (PID):

Symptoms	:	Dyspareunia Lower Abdominal pain Irregular bleeding
Signs	:	Abnormal vaginal or cervical discharge Lower abdominal tenderness on palpation/cervical motion tenderness Temperature more than 38C
Common causes	:	Gonorrhoea, Chlamydia infection and mixed anaerobes

Since there is a wide range of variations in symptoms and signs, it is with difficulty that diagnosis of acute PID is made. Many women with PID often exhibit mild symptoms that are not easily recognized. Thus, delay in diagnosis and treatment probably contributes to serious sequelae. At the present health care settings, no single historical, physical or laboratory finding is both sensitive and specific for diagnosis of acute PID.

The following recommendations for diagnosis of PID are intended to promote awareness of health care providers to recognize when PID should be suspected and when to obtain additional information to clinch the diagnosis.

Diagnostic Criteria

Minimum criteria are

- Lower abdominal tenderness
- Adnexal tenderness
- Cervical motion tenderness

Additional criteria supporting the diagnosis of PID include

- Fever, > 101 F or 38.3 C
- Abnormal cervical or vaginal mucopurulent discharge
- Presence of WBC on microscopy of vaginal secretion
- Elevated erythrocyte sedimentation rate
- Laboratory documentation of cervical infection with N. gonorrhoeae or C. trachomatis

Management of PID

It is recommended that all patients with severe clinical signs be hospitalized so that supervised treatment with parenteral antibiotics can be initiated. Oral therapy can be started within 24 hours of clinical improvement. Criteria for hospitalization include:

- The diagnosis is uncertain, and surgical conditions like appendicitis and ectopic pregnancy cannot be excluded
- Pelvic abscess is suspected
- Patient is pregnant
- No clinical response to oral antimicrobial therapy
- Patient unable to follow or tolerate an out-patient oral regimen
- Patient has severe illness, nausea, vomiting or high fever

OPD treatment Regimes

Ceftriaxone 500 mg IM once

PLUS

Doxycycline 100 mg orally twice a day for 14 days

PLUS

Metronidazole 400-500 mg, orally twice a day for 14 days

Parenteral Regimen (In patient)

Cefoxitin 2 gm IV every 6 hours

OR

Cefotetan 2 gm IV every 12 hours

PLUS

Doxycycline 100 mg orally every 12 hours for 14 days

PLUS

Metronidazole 400-500 mg orally twice a day for 14 days

NOTE: Either of these regimens can be used. Parenteral therapy may be discontinued 24 hours after the patient improves clinically and oral therapy can be continued with doxycycline 100 mg orally twice a day to complete a total of 14 days of treatment.

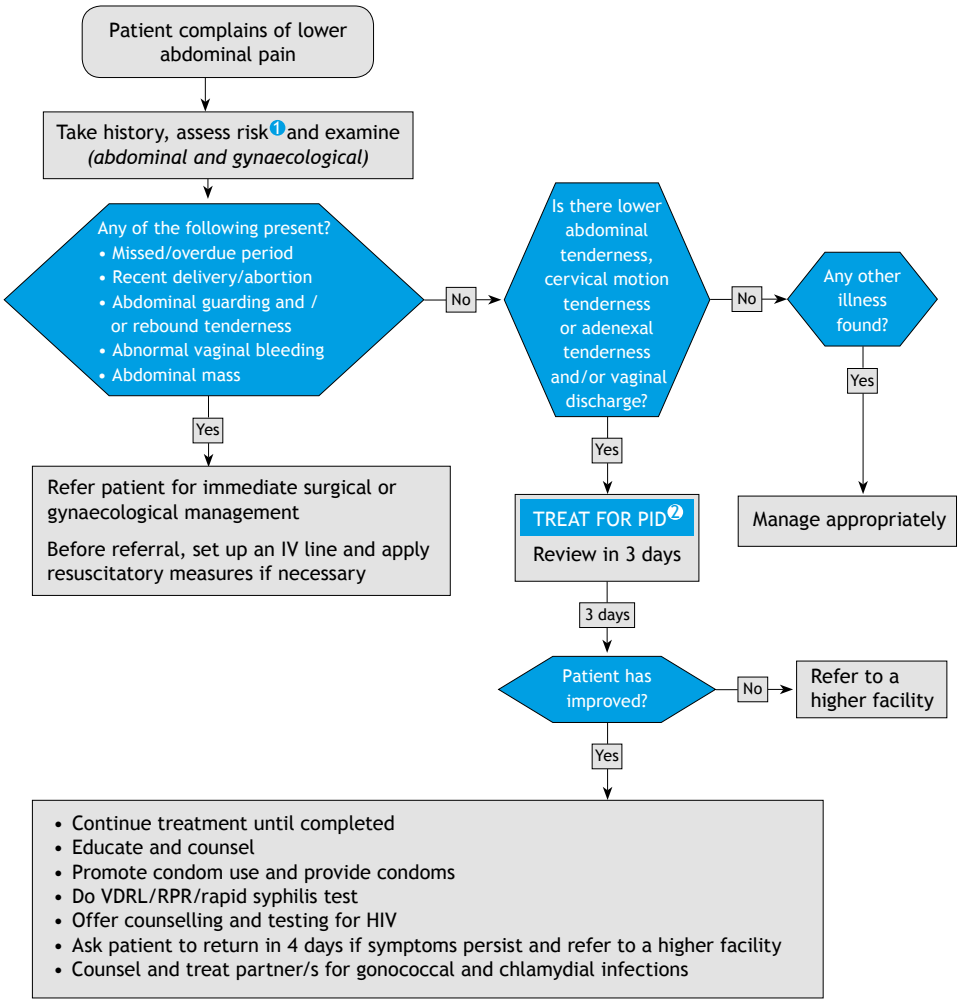
Follow-Up

Clinical improvement should be seen within 3 - 5 days from the start of therapy (defervescence, reduction in direct or rebound tenderness and reduction in uterine, adnexal and cervical motion tenderness. Patients who do not show any clinical improvement may need further diagnostic work up, or surgical intervention, or both.

Management of Sex Partners

Evaluation and treatment of sex partners of patients with PID is compulsory because of the risk for reinfection of urethral gonococcal or chlamydial infection from the partner.

Figure 11 Lower Abdominal Pain



1 Risk factors such as multiple partners and partner with STI symptoms are frequently associated with cervicitis.

2 **Patients with acute PID should be referred for hospitalization, when:**
- they have severe illness, nausea and vomiting, and/or high fever (>38°C)
- the patient is pregnant
- the patient is unable to follow or tolerate an outpatient regimen
- the patient has failed to respond to outpatient therapy, or
- there are clinical signs of tubo-ovarian abscess or pelvic peritonitis

Special Considerations

Pregnancy : Pregnant women with suspected PID should be hospitalized and treated with parenteral antibiotics.

HIV Infection : HIV infected women who develop PID should be treated aggressively and they may need surgical intervention.

4.6. NEONATAL CONJUNCTIVITIS

Neonatal conjunctivitis (ophthalmia neonatorum) can lead to blindness when caused by N. gonorrhoeae and treatment is delayed. The most important sexually transmitted pathogens which cause ophthalmia neonatorum are N. gonorrhoeae and C. trachomatis. In developing countries, N. gonorrhoeae accounts for 20–75% and C. trachomatis for 15–35% of cases brought to medical attention. Other common causes are Staphylococcus aureus, Streptococcus pneumoniae, Haemophilus spp. and Pseudomonas spp. Newborn babies are generally presented because of redness and swelling of the eyelids or "sticky eyes", or because of discharge from the eye(s).

As the clinical manifestations and possible complications of gonococcal and chlamydial infections are similar, in settings where it is impossible to differentiate between the two infections, treatment should be provided to cover both. This would include single-dose therapy for gonorrhoea and multiple dose therapy for chlamydia.

Recommended treatment for neonatal conjunctivitis

Ceftriaxone 25-50 mg/kg IM as a single dose, to a maximum of 75 mg

OR

Spectinomycin 25 mg/kg IM as a single dose, to a maximum of 75 mg

PLUS

Erythromycin 50 mg/kg/day, oral, divided into four doses daily for 14 days

4.7. SYPHILIS TESTING FLOW CHARTS

Mother-to-child transmission of syphilis (congenital syphilis) is usually devastating to the foetus if maternal infection is not detected and treated sufficiently early in pregnancy. Most untreated primary and secondary syphilis infections in pregnancy result in severe adverse pregnancy outcomes, often foetal deaths and in congenital syphilis. Latent (asymptomatic) syphilis infections in pregnancy also cause serious adverse pregnancy outcomes in more than half of cases.

Severe adverse pregnancy outcomes and congenital syphilis is preventable, however, and elimination of mother-to-child transmission of syphilis can be achieved through implementation of effective early screening and treatment strategies for syphilis in pregnant women. The fetus can be easily cured with

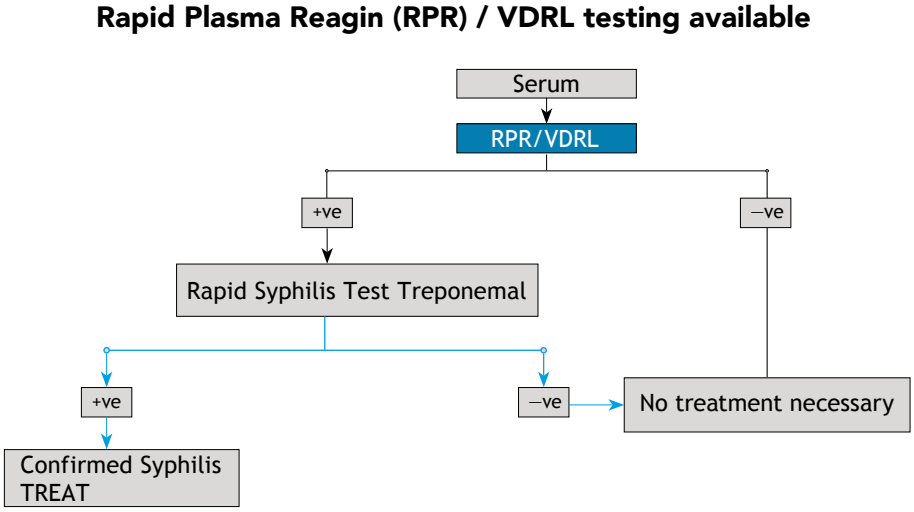
treatment, and the risk of adverse outcomes to the fetus is minimal if the mother receives adequate treatment during early pregnancy ideally before the second trimester. There are indications that mother to child transmission of syphilis is beginning to decline globally due to increased efforts to screen and treat pregnant women for syphilis.

Syphilis Screening by only Rapid Test

In settings in which RPR and TPHA test is being implemented successfully, including adequate access to current syphilis testing and treatment, high coverage or pregnant women being screened and good quality test, then continue the same flowchart. The treponemal RST can be introduced as a rapid method of confirming RPR seropositive tests, either as a laboratory-based confirmatory test or at the same facility where the RPR is being performed.

This allows for confirmatory testing or treatment to be initiated at the first visit – same day testing and treatment. The use of the treponemal RST at the primary point-of-care also avoids transportation of samples to a laboratory and saves on laboratory time and cost. Additionally, in a few areas where current diagnosis depends on non-treponemal testing alone, the addition of RSTs to the clinical flowchart avoids the overtreatment of persons with biological false positive results.

Figure 12 Syphilis Screening by only Rapid Test



Syphilis Screening started with Serological Testing

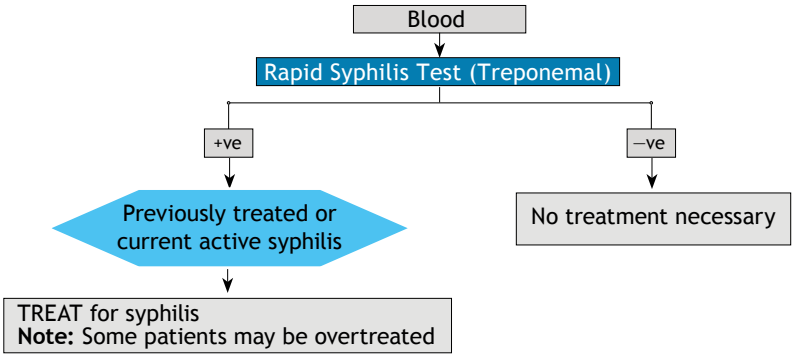
In settings in which no RPR testing is being performed and where it would not be feasible to introduce it consider rapid syphilis test (treponemal test) This applies to remote areas without the prerequisite facilities for the RPR, such as electricity for refrigeration of reagents, rotator and blood centrifugation, or even in some urban settings with a high turnover rate of patients where RPR testing becomes impractical. In this case the treponemal RST result is used to direct treatment for syphilis. This is particularly relevant for screening pregnant women in poorly-resourced areas and can be perfomed by a trained midwife.

While this approach fails to identify those with active syphilis and will consequently lead to overtreatment of some patients who have been cured and not re-infected, it has the overwhelming advantage that it will prevent congenital infection in the majority of pregnant women at risk of infection with syphilis (Figure 13). Women who test positive with a treponemal RST will most likely be still positive at a subsequent pregnancy. Therefore, either they should be assessed with a quantitative RPR test, where available, or be offered treatment for syphilis without a repeat treponemal RST, especially if the risk of reinfection is assessed to be high.

For treatment of syphilis in pregnancy, refer them to the appropriate treatment page.

Figure 13 Syphilis Screening started with Serological Testing

Only syphilis rapid test available , no Rapid Plasma Reagin (RPR) testing available or possible (midwife for ANC testing ???)



Note
1. The treponemal test does not distinguish between previously adequately treated and untreated syphilis.
2. The sensitivity of treponemal RDTs is reduced with whole blood. Serum performs better.
3. In pregnant women, subsequent testing will likely be still seropositive, therefore, previously RDT-positive women could be treated without re-testing if risk of reinfection is considered high. Alternatively, seek quantitative RPR testing.

REFERENCES:

1. **Global Action Plan to control the spread and impact of Antimicrobial Resistance in Neisseria Gonorrhoea by World Health Organization**

2. **Regional Strategy for the Prevention and Control of Sexually Transmitted Infections 2007 to 2015 by World Health Organization**

3. **Management of Sexually Transmitted Infections, Regional Guidelines by WHO Regional Office for South East Asia**

4. **Elimination of New Paediatric HIV infections and Congenital Syphilis in Asia Pacific 2011-2015**

5. **Regional Health Sector Strategy on HIV 2011-2015**

6. **Sexually Transmitted Diseases Treatment Guidelines, Center for Disease Control and Prevention, 2015**