Management of
SEXUALLY TRANSMITTED INFECTIONS
REGIONAL GUIDELINES

2011

World Health Organization
Regional Office for South-East Asia
# Contents

Acknowledgements
Preface
Acronyms and abbreviations
Introduction

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>MANAGEMENT OF STI PATIENTS: ESSENTIAL COMPONENTS</td>
<td>2</td>
</tr>
<tr>
<td>2.</td>
<td>PRACTICAL CONSIDERATIONS IN STI DIAGNOSIS AND TREATMENT</td>
<td>5</td>
</tr>
<tr>
<td>2.1</td>
<td>History-taking</td>
<td>5</td>
</tr>
<tr>
<td>2.2</td>
<td>Clinical examination</td>
<td>7</td>
</tr>
<tr>
<td>2.3</td>
<td>Laboratory diagnosis</td>
<td>8</td>
</tr>
<tr>
<td>2.4</td>
<td>Correct diagnosis</td>
<td>8</td>
</tr>
<tr>
<td>2.5</td>
<td>Early and effective treatment</td>
<td>8</td>
</tr>
<tr>
<td>2.6</td>
<td>Education</td>
<td>9</td>
</tr>
<tr>
<td>2.7</td>
<td>Counselling</td>
<td>9</td>
</tr>
<tr>
<td>2.8</td>
<td>Clinical follow up</td>
<td>10</td>
</tr>
<tr>
<td>2.9</td>
<td>Official reporting of cases</td>
<td>11</td>
</tr>
<tr>
<td>3.</td>
<td>SYNDROMES OF SEXUALLY TRANSMITTED INFECTIONS</td>
<td>13</td>
</tr>
<tr>
<td>3.1</td>
<td>Urethral discharge</td>
<td>13</td>
</tr>
<tr>
<td>3.2</td>
<td>Persistent urethral discharge</td>
<td>16</td>
</tr>
<tr>
<td>3.3</td>
<td>Genital ulcer</td>
<td>18</td>
</tr>
<tr>
<td>3.4</td>
<td>Vaginal discharge</td>
<td>28</td>
</tr>
<tr>
<td>3.5</td>
<td>Anorectal discharge</td>
<td>36</td>
</tr>
<tr>
<td>3.6</td>
<td>Lower abdominal pain</td>
<td>40</td>
</tr>
<tr>
<td>3.7</td>
<td>Scrotal swelling</td>
<td>42</td>
</tr>
<tr>
<td>3.8</td>
<td>Inguinal bubo</td>
<td>44</td>
</tr>
<tr>
<td>3.9</td>
<td>Neonatal conjunctivitis</td>
<td>47</td>
</tr>
</tbody>
</table>
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This work was coordinated by Dr Iyanthi Abeyewickreme (WHO/SEARO HIV/AIDS Unit), edited by Dr Bandana Malhotra, and designed and typeset by Netra Shyam.
Sexually transmitted infections (STIs) continue to be of major public health concern in developing countries. In 2005, of the estimated 448 million cases of bacterial STIs in the world, 71 million were in the South-East Asia Region (SEAR). Of these, trichomoniasis was the most prevalent (38.6 million), followed by gonorrhoea (22.7 million), while chlamydial infections (6.6 million) and syphilis (2.9 million) had a relatively lower prevalence. Failure to adequately treat STI at an early stage may lead to serious complications and sequelae such as infertility, ectopic pregnancy, anogenital cancers and premature death. In addition, STIs have been found to increase the risk of sexual transmission and acquisition of HIV infection.

Among men who have sex with men and transgender populations, an increasing prevalence of STI, particularly anorectal infections, has been reported from countries in SEAR. The recent emergence of strains of Neisseria gonorrhoeae that show poor response to third-generation cephalosporins is another cause for concern, as these drugs are the last remaining option for effective treatment of gonorrhoea.

Control of STI is the responsibility of national AIDS/STI programmes in countries, though the lack of laboratory facilities for etiological diagnosis of STI syndromes has hampered effective STI control. Almost all countries in the Region have national guidelines for the management of STI, based on either syndromic management or etiological diagnosis or both. However, only a few countries have updated/revised their management guidelines recently, despite the global advances in therapeutics, diagnostics, vaccines and barrier methods. Access to these technologies remains limited in SEAR countries.

Flow Charts on the management of sexually transmitted diseases was published by WHO SEARO in 2000. These new regional guidelines for STI management have been developed taking into consideration the new technologies and therapeutics that are now available or can be made available even with limited resources. These guidelines should be regarded as a source of clinical guidance. However, as the epidemiology of STI is constantly changing, it is recommended that countries conduct local, quality studies to update their national guidelines to best respond to the local epidemiological situation.

Dr Sangay Thinley
Director, Department of Communicable Diseases
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART</td>
<td>antiretroviral therapy</td>
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<tr>
<td>BSS</td>
<td>behavioural surveillance survey</td>
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<tr>
<td>BV</td>
<td>bacterial vaginosis</td>
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<tr>
<td>COC</td>
<td>combined oral contraceptive pill</td>
</tr>
<tr>
<td>CT</td>
<td><em>Chlamydia trachomatis</em></td>
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<tr>
<td>Cu-IUD</td>
<td>copper-bearing intrauterine device</td>
</tr>
<tr>
<td>DFATP</td>
<td>direct fluorescent antibody staining of <em>Treponema pallidum</em></td>
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<tr>
<td>DMPA</td>
<td>depot medroxyprogesterone acetate</td>
</tr>
<tr>
<td>ECP</td>
<td>emergency contraceptive pill</td>
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<tr>
<td>FTA-ABS</td>
<td>fluorescent treponemal antibody absorption (test for syphilis)</td>
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<tr>
<td>GUD</td>
<td>genital ulcer disease</td>
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<tr>
<td>HCP</td>
<td>health-care provider</td>
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<td>HPV</td>
<td>human papillomavirus</td>
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<tr>
<td>HSV</td>
<td>herpes simplex virus</td>
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<tr>
<td>IBBS</td>
<td>integrated biological and behavioural survey</td>
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<tr>
<td>ICT</td>
<td>immunochromatographic</td>
</tr>
<tr>
<td>Ig</td>
<td>immunoglobulin</td>
</tr>
<tr>
<td>IUD</td>
<td>intrauterine device</td>
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<tr>
<td>LGV</td>
<td>lymphogranuloma venereum</td>
</tr>
<tr>
<td>LNG-IUS</td>
<td>levonorgestrel-releasing intrauterine system</td>
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<tr>
<td>NET-EN</td>
<td>norethisterone enantate</td>
</tr>
<tr>
<td>NG</td>
<td><em>Neisseria gonorrhoeae</em></td>
</tr>
<tr>
<td>NGU</td>
<td>non-gonococcal urethritis</td>
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<tr>
<td>OCP</td>
<td>oral contraceptive pill</td>
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<tr>
<td>Pap</td>
<td>Papanicolaou</td>
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<td>PID</td>
<td>pelvic inflammatory disease</td>
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<td>PML</td>
<td>polymorphonuclear leukocyte</td>
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<tr>
<td>POC</td>
<td>point-of-care (test)</td>
</tr>
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<td>POP</td>
<td>progesterone-only pill</td>
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<tr>
<td>QRNG</td>
<td>quinolone-resistant <em>N. gonorrhoeae</em></td>
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<tr>
<td>RDT</td>
<td>rapid diagnostic test</td>
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<tr>
<td>RPR</td>
<td>rapid plasma reagin (test for syphilis)</td>
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<td>SCM</td>
<td>syndromic case management</td>
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<td>STI</td>
<td>sexually transmitted infection</td>
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<tr>
<td>TPHA</td>
<td><em>Treponema pallidum</em> haemagglutination assay (test for syphilis)</td>
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<tr>
<td>TP-PA</td>
<td><em>Treponema pallidum</em> particle agglutination assay (for syphilis)</td>
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<tr>
<td>TV</td>
<td><em>Trichomonas vaginalis</em></td>
</tr>
<tr>
<td>VDRL</td>
<td>Venereal Disease Research Laboratory (test for syphilis)</td>
</tr>
</tbody>
</table>
INTRODUCTION

A fundamental goal of sexually transmitted infection (STI) control programmes is early detection and treatment of infections, preferably at the time of the patient’s first contact with the health system. Delays in treatment result in loss to follow up of a considerable proportion of patients, and in continued transmission of infection. Therefore, it is necessary to have an effective and efficient public health tool that is accurate, rapid, inexpensive and simple. It should also be implementable on a large scale by health-care providers with diverse levels of expertise and training in detecting STIs early and managing them effectively.
The components of comprehensive case management of patients with STIs include the following:

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

1.1 DIAGNOSIS AND TREATMENT

Syndromic case management (SCM) is based on the identification of syndromes (which consist of symptoms and easily recognized signs) and treatment for these. Treatment for each syndrome is directed towards the most common organisms responsible for the syndrome.

A majority of STIs present with symptoms such as urethral discharge/dysuria, genital ulcer/s, vaginal discharge and lower abdominal pain. When a patient comes with such complaints, the management can be decided according to the clinical management flowchart for the symptom.

However, it is important to note that syndromic management does not address asymptomatic and/or subclinical infections. These are more often seen in women. Cervical infections in particular are most often asymptomatic. Therefore, where facilities are available, screening of both men and women who are most at risk for STIs is recommended.

If laboratory facilities are available, appropriate tests can assist the healthcare provider in arriving at an etiological diagnosis. In such settings, 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 multidose 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 the health-care services. Treatment protocols should be the same for both SCM and etiological management.

1.2 EDUCATION ON RISK REDUCTION AND CONDOM PROMOTION AND PROVISION

In every instance, contact of STI patients with the health facility should be utilized to carry out a proper risk assessment and promote safer sexual behaviour through education and counselling. This would minimize or eliminate the risk of acquiring STI/HIV infection and/or transmitting it to others.

*The male latex condom is the single most efficient technology available to reduce the transmission of sexually transmitted pathogens including HIV.* The female condom is also effective and safe but has yet to achieve its full potential with regard to use.

Persons attending health facilities for STI care should be taught how to use condoms correctly. Condoms must be available at health-care facilities treating persons with STI, and should be issued free of charge or at an affordable cost. Condoms should be stored in a dry environment away from sources of direct heat to ensure the safety and efficacy recommended by the manufacturer.

1.3 COUNSELLING, PARTNER NOTIFICATION, TREATMENT AND FOLLOW UP

Each patient should be properly counselled on a one-to-one basis about his/her risk behaviour, chances of acquiring STI/HIV infection, and the process of adopting safer sexual practices. Counselling should be provided in a confidential manner. If necessary, the patient should be referred for counselling to an appropriate facility.
The patient should be encouraged to inform the sexual partner/s of their possible risk of being infected and the need to attend services (or refer them) for evaluation, treatment and counselling.

Clinical follow up is an important part of comprehensive case management of STIs. It helps to assess compliance and response to treatment, partner management (if partners have been treated), exclude reinfection and reinforce safer sexual behaviours.

1.4 HIV TESTING

Every STI patient should be offered or referred for counselling and HIV testing. During counselling, the patient’s risk for acquiring HIV infection should be assessed.
Individuals seeking care for STIs should receive a comprehensive care package, which includes the following.

2.1 HISTORY-TAKING

Patients with problems relating to the genital area tend to be guarded and evasive while giving a history. With practice, the health-care provider (HCP) will be able to obtain a satisfactory history. During history-taking, the following points should be kept in mind:

- Ensure privacy and confidentiality; make sure that the patient is aware that the history will be kept strictly confidential.
- Adopt a polite, friendly and non-judgemental attitude that would encourage the patient to develop confidence and trust in you.
- Ask an open-ended question, such as “What brought you to hospital?” to initiate a dialogue.
- Phrase your questions in a way such that the opportunity for the patient to mislead you is minimized. For example, “When did you last have sex with someone?” is preferable to “Did you have sex with someone?”
- Once the subject is broached and patient comfortable, closed-ended questions (calling for “yes” or “no” answers) can be helpful in eliciting brief answers, for example, “Do you have pain?”
- In order to make an accurate diagnosis it is often necessary to ask more questions during the examination.
- Do not show annoyance if the patient’s history has obvious discrepancies or keeps changing.

2.1.1 HISTORY OF PRESENTING SYMPTOM/S AND SIGN/S

Obtain a detailed history of the presenting symptom/s. Enquire about the presence of other symptoms that are common, such as discharge from the urethra in a patient with genital ulcers, or recurring genital ulcers in a patient presenting with urethral discharge.
2.1.2 MEDICAL, OBSTETRIC AND MENSTRUAL HISTORY

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

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 about the following:
Risk factors

- Civil status: married, living together, single, separated, widowed
- Occupation: sex workers (male and female), seamen, workers in the tourist industry, transport workers, migrant workers, etc.
- Travel: travelled abroad (holidays, business or employment); coming home only on weekends
- Unprotected casual sexual encounters (other than with regular partner)
- Previous history of STI
- History of injections or blood transfusions
- Substance use: alcohol, drugs (e.g. heroin)
- Tattooing
- Partner with symptoms suggestive of STI
- Multiple sexual partners

**2.1.4 SEXUAL HISTORY**

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

- Sex of the partner
- Type of exposure (oral, vaginal, anal)
- Use of condoms with any type of 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 past three months

**2.2 CLINICAL EXAMINATION**

This is an important step that helps HCPs arrive at a probable diagnosis and prevents them from making an incorrect diagnosis based on the patient’s history alone. Inform the patient that you will do a genital examination and obtain the patient’s permission to do so. Ensure *privacy* during the examination. Always have a female attendant when examining a female patient (particularly if the HCP is a male).
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 and female) practising receptive anal sex.

In addition to genital examination, an adequate and appropriate general examination is also required.

◆ 2.3 LABORATORY DIAGNOSIS

If laboratory facilities are available, use appropriate, available tests to confirm a probable diagnosis. In particular, the Venereal Disease Research Laboratory (VDRL)/rapid plasma reagin (RPR)/rapid treponemal test, Gram stain and wet mount can assist in the diagnosis. If HIV testing facilities are available, offer HIV counselling and testing or refer the patient for this.

Syndromic case management of STIs is based on the presumption that laboratory facilities are not always available. Do not delay or withhold treatment because laboratory investigations are incomplete or the results of the tests are not available.

◆ 2.4 CORRECT DIAGNOSIS

On the basis of the history, clinical examination and laboratory investigations (if available) that have been carried out, the following actions must be taken.

- Use the appropriate flowchart for managing the patient.
- Be particularly careful when confronted with a patient with lower abdominal pain and scrotal swelling.
- Be certain that you are not dealing with a surgical emergency. Arrange for early follow up if uncertain.

◆ 2.5 EARLY AND EFFECTIVE TREATMENT

Treat the patient using the appropriate flowchart and national STI treatment guidelines. While treatment will be curative in most instances, only palliative therapy is possible in the case of viral STIs.
When prescribing medication, educate patients on the following:

- **Compliance** — educate the patient on the importance of taking the treatment as prescribed. The full course of treatment should be taken even if the patient feels better after a few doses.
- **Side-effects** — patients may stop therapy due to adverse effects unless they have been previously informed of possible adverse effects. Advise the patient to come back if these effects are intolerable.
- **Treatment failure** — re-evaluate for possible non-compliance or reinfection. If neither seems likely, then refer to a facility providing adequate laboratory support.

### 2.6 EDUCATION

**Regarding the present episode of STI**

Educate the patient on his/her present STI and how it was acquired, that bacterial STIs are curable, viral STIs recur, the effects of not taking treatment properly, etc. Patients with recurrent genital herpes and recurrent vulvo-vaginitis are usually very distressed and need repeated counselling sessions.

**Regarding the prevention of STI and HIV**

Explain to the patient the association between STI and HIV, and that the same risk behaviours can lead to acquisition and/or transmission of both these conditions. Educate the patient on the methods of risk reduction through safer sex practices including abstinence.

**Regarding condom use**

Discuss the use of condoms for risk reduction. Provide free condoms if feasible and available. Demonstrate on a dildo or other suitable object the correct way of using a condom and develop the patient’s skills in correct use. Desensitize the patient about condoms, especially if he is a regular risk-taker who should be consistently using condoms.

### 2.7 COUNSELLING

Counselling is an interactive confidential process where an HCP helps a patient to reflect on issues associated with STI and to explore possible lines
of action. Counselling is more time-consuming than providing information, and also requires more empathy and understanding from health-care workers.

In a counselling session, the following issues should be addressed:

- Inform the partner(s) or spouse about the diagnosis of STI (options: either the patient or the HCP informs the partner(s) or spouse).
- Assess the patient’s risk for HIV and assist the patient in making a decision to undergo HIV testing.
- Help the patient to learn about, and come to terms with, worrisome complications of STIs, such as infertility and congenital syphilis.
- How to deal with an incurable STI, such as herpes genitalis or genital warts, which may be transmitted to the partner(s) or spouse.
- How to prevent future infections, including strategies for discussing and introducing condom use with the partner(s) or spouse.
- Tell the patient about confidentiality, disclosure and the risk of violence or stigmatizing reactions from the spouse, partner(s), family or friends and ways to overcome these.
- Enable patients to take control of their own lives and understand their responsibilities for disease prevention.

2.8 CLINICAL FOLLOW UP

Appropriate clinical follow up is a part of the comprehensive case management of STI. Patients should be advised to return if symptoms get worse or persist after the prescribed period of therapy.

Patients with pelvic inflammatory disease are best reviewed in 2–3 days to assess their 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 the patient referred to a higher facility.

Depending on the available facilities, encourage the patient to come for repeat syphilis serology and HIV counselling and testing.
2.9 OFFICIAL REPORTING OF CASES

Reporting of STI is required in most countries, though this is often neglected. The lack of data on the incidence and prevalence of STIs in most countries is attributed to poor reporting. Reporting should be done on an anonymous basis. (See Annex 4)
3. Syndromes of sexually transmitted infections

3.1 URETHRAL DISCHARGE

The major pathogens causing urethral discharge are *Neisseria gonorrhoeae* (*N. gonorrhoeae*) and *Chlamydia trachomatis* (*C. trachomatis*). Treatment should provide cover for both pathogens, as dual infection with *N. gonorrhoeae* and *C. trachomatis* is common. Both infections may lead to complications as well as facilitate HIV transmission and acquisition. Additional causes of urethral discharge are infections due to *Trichomonas vaginalis* (*T. vaginalis*) and *Mycoplasma genitalium* (*M. genitalium*).

Male patients complaining of urethral discharge and/or dysuria should be examined for evidence of discharge. If discharge is not seen, the urethra should be gently massaged along the ventral aspect of the penis towards the meatus. If discharge is seen and microscopy is available, examination of a Gram-stained urethral smear may show an increased number of polymorphonuclear leukocytes (PML) and the presence of gonococci (Gram-negative intracellular diplococci). In symptomatic males, ≥5 PML per high power field (x1000) is indicative of urethritis. The presence of gonococci indicates gonococcal urethritis. Gonococcal and non-gonococcal urethritis (NGU) can coexist.

If discharge is seen, treat syndromically, even if microscopy is not available.

If discharge is not seen, encourage the patient to come back the following day after holding the urine for 4 hours and re-evaluate.

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**To treat for gonococcal infection, use**

- **Cefixime**, 400 mg orally, as a single dose
  
  OR

- **Ceftriaxone**, 250 mg by intramuscular injection as a single dose

  PLUS

**To treat for chlamydial infection, use**

- **Doxycycline**, 100 mg orally twice daily for 7 days
  
  OR

- **Azithromycin**, 1 g orally, as a single dose
It is not recommended that azithromycin be used as a stand-alone therapy for gonorrhoea because of the rapid emergence of resistance. However, if the drug is to be used in this context, the dose should be 2 g, even though this dose may give rise to gastrointestinal side-effects.

**QUINOLONES**

Quinolone-resistant *N. gonorrhoeae* (QRNG) has spread across the globe and is now common (>70% of infections) in South-East Asia. Therefore, it is recommended that ciprofloxacin no longer be used for the treatment of gonorrhoea and that, where it is used, this is done under careful monitoring for antimicrobial susceptibility of *N. gonorrhoeae*.
Patient complains of urethral discharge and/or dysuria

Take history, assess risk and examine
Milk urethra if no visible discharge

Discharge confirmed?

Yes

TREAT FOR GONOCOCCAL AND CHLAMYDIAL INFECTIONS
- Educate and counsel
- Promote condom use and provide condoms
- Counsel and treat partner/s
- Do VDRL/RPR/rapid syphilis test if available
- Offer counselling and testing for HIV
- Ask patient to return in 7 days if symptoms persist

No

Any other genital condition?

Yes

Use appropriate flowchart and/or treat appropriately

No

Cured
- Educate and counsel
- Promote condom use and provide condoms
- Offer HIV counselling and testing if not done at previous visit

Take history; examine for discharge; milk urethra if no visible discharge

Discharge present?

Yes

Follow flowchart for persistent urethral discharge

No

7 days

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.
4 See p. 69 for serological tests for syphilis.
3.2 PERSISTENT URETHRAL DISCHARGE

Persistent or recurrent symptoms of urethritis may result from drug resistance, poor compliance with the prescribed medication or reinfection. In some cases, there may be infection with *T. vaginalis* and/or *M. genitalium*.

New evidence suggests that, in some geographical areas, there is a high prevalence of *T. vaginalis* in men with urethral discharge. Where symptoms persist or recur after adequate treatment for gonorrhoea and chlamydia (both in the index patient and partner/s), the patient should be treated for *T. vaginalis* and/or *M. genitalium* if the local epidemiological pattern so indicates. If the symptoms persist at follow up, the patient must be referred.

The decreasing susceptibility of *N. gonorrhoeae* to cefixime and ceftriaxone has led to treatment failures. These have now been reported from Japan, Norway, Hong Kong, the United Kingdom and United States of America. If decreased susceptibility to cefixime or ceftriaxone is suspected, it is very important to refer the patient to a laboratory where facilities are available to culture the organism (*N. gonorrhoeae*) and perform antimicrobial susceptibility testing.

To treat for *T. vaginalis* infection, use

**Metronidazole**, 400 mg orally twice daily for 7 days

**OR**

**Tinidazole**, 500 mg orally twice daily for 5 days

**PLUS**

To treat for *M. genitalium* infection, use

**Azithromycin** 500 mg orally as a single dose and 250 mg daily for 4–6 days
FIGURE 2. MANAGEMENT OF PERSISTENT/RECURRENT URETHRAL DISCHARGE IN MEN
N.B. This flowchart assumes that the patient has received and taken effective therapy for gonorrhoea and chlamydial infection prior to this consultation.

Patient complains of persistent/recurrent urethral discharge

Take history, and examine
Milk urethra if necessary

Discharge confirmed?

Yes

Does history confirm reinfection or poor compliance?

Yes

Any other genital condition?

Yes

Use appropriate flowchart and/or treat appropriately

No

Discharge confirmed?

No

Any other genital condition?

Yes

TREAT FOR Trichomonas vaginalis AND/OR Mycoplasma INFECTION

- Educate and counsel
- Promote condom use and provide condoms
- Manage and treat partner/s
- Ask patient to return in 7 days if symptoms persist
- Offer HIV counselling and testing if not tested at previous visit

No

Improved?

Yes

Refer to a higher facility

No

Improved?

Yes

TREAT FOR Trichomonas vaginalis AND/OR Mycoplasma INFECTION

- Educate and counsel
- Promote condom use and provide condoms
- Check if partner/s has been treated

No

Refer to a higher facility

1 Add treatment for Mycoplasma infection depending on the local situation.
2 Consider infection with cephalosporin-resistant Neisseria gonorrhoeae.
3.3 GENITAL ULCER

Common STIs that present with genital ulcer/s are genital herpes, syphilis and chancroid. More than one of these diseases can be present in a patient who has genital ulcers. The clinical differential diagnosis of genital ulcer is not accurate, particularly in settings where several causes are prevalent.

Genital herpes, syphilis and chancroid have been associated with an increased risk for transmission and acquisition of HIV infection. The clinical manifestations and pattern of genital ulcer disease (GUD) may be further altered in the presence of HIV infection.

3.3.1 GENITAL HERPES

Genital herpes is caused by herpes simplex virus type-2 (HSV-2) or HSV-1. Recent reports from countries of South-East Asia indicate that GUD is more frequently a result of infection with HSV-2. Symptomatic patients with genital herpes present with multiple, painful, vesicular or ulcerative genital lesions.

There is no known cure for genital herpes, but the course of symptoms can be modified if systemic therapy with acyclovir or its analogues is started as soon as possible following the onset of symptoms. Treatment can be expected to reduce the formation of new lesions, duration of ulcers, time required for healing and viral shedding. However, it does not appear to influence the frequency and severity of recurrences.

Topical therapy with acyclovir produces only minimal shortening of the duration of symptomatic episodes and is not recommended.

To treat for the first clinical episode of genital herpes, use

- **Acyclovir**, 400 mg orally, 3 times daily for 7 days
  OR
- **Acyclovir**, 200 mg orally, 5 times daily for 7 days
  OR
- **Valaciclovir**, 1 g orally, twice daily for 7 days
  OR
- **Famciclovir**, 250 mg orally, 3 times daily for 7 days
Recommended regimen for severe disease
Acyclovir, 5–10 mg/kg IV, every 8 hours for 5–7 days or until clinical resolution is attained

Recurrent episodes of genital herpes
Most patients with a first episode of genital herpes will have recurrent episodes of genital lesions. Generally, recurrences are self-limiting and cause minor symptoms. If the recurrences are frequent or the symptoms severe or the patient is in distress, episodic therapy can be given. Episodic therapy will shorten the duration of genital lesions. Such patients should be provided antiviral therapy, or a prescription for therapy, so that treatment can be initiated at the first sign of a prodrome or genital lesions.

To treat for a recurrent episode of genital herpes, use

- **Acyclovir**, 400 mg orally, 3 times daily for 5 days
  - OR
  - **Acyclovir**, 200 mg orally, 5 times daily for 5 days
    - OR
    - **Valaciclovir**, 500 mg orally, twice daily for 5 days
      - OR
      - **Famciclovir**, 125 mg orally, twice daily for 5 days

Suppressive therapy for recurrent genital herpes
If the patient complains of repeated recurrences, “suppressive therapy” is indicated. Individual assessment of patients is required before initiating suppressive therapy.

To suppress recurrent episodes of genital herpes, use

- **Acyclovir**, 400 mg orally, twice daily, for one year
  - OR
  - **Valaciclovir**, 500 mg orally, once daily, for one year
    - OR
    - **Famciclovir**, 250 mg orally, twice daily, for one year
Duration of suppressive therapy

Suppressive therapy may be discontinued after a maximum of a year and the frequency of recurrences reassessed. It is preferable to observe at least two recurrences during the period of assessment. Patients who continue to have unacceptably high rates of recurrence may be restarted on treatment. Suppressive therapy has not been associated with the emergence of clinically significant acyclovir resistance among immunocompetent patients.

HSV and HIV coinfection

In patients with HIV infection, lesions due to HSV infection may present as persistent multiple ulcers that require treatment, unlike the self-limiting vesicles and ulcers that occur in HIV-negative patients. Therefore, antiviral therapy is particularly important for patients with HIV and genital herpes. Adequate education and counselling need to be given to the patient as well as an explanation of the nature and purpose of treatment in order to avoid false expectations of cure, and minimize further transmission to sexual partners.

There are indications that specific treatment for herpes genitalis in HIV-infected individuals results in quicker healing of ulcers and, possibly, in reduced shedding of HIV. It is recommended that, in HIV-infected patients, treatment for herpes be initiated as soon as possible after the lesions occur or recur, and continued for at least a week. Subsequently, patients may benefit from chronic suppressive therapy.

Recommended regimen in severe genital herpes and coinfection with HIV

Acyclovir, 5-10 mg/kg IV, every 8 hours for 5-7 days or until clinical resolution is attained

3.3.2 SYPHILIS

Syphilis is a systemic disease caused by the spirochaete Treponema pallidum (T. pallidum). The infection can be classified as congenital or acquired. Congenital syphilis is transmitted from an infected mother to her child in utero.
Acquired syphilis is divided into early and late syphilis. Early syphilis comprises the primary, secondary and early latent stages. Late syphilis refers to late latent syphilis, and gummatous, neurological and cardiovascular syphilis.

Primary syphilis is characterized by an ulcer or chancre at the site of infection or inoculation. Secondary syphilis manifests as a skin rash, condylomata lata, mucocutaneous lesions and generalized lymphadenopathy.

As its name implies, latent syphilis has no clinical manifestations. Early latent syphilis is infection of less than two years’ duration. An infection that is of more than two years’ duration without clinical evidence of treponemal infection is referred to as late latent syphilis. WHO has based this division on the infectiousness of syphilis and its response to therapy. The early stages are more infectious but respond better to treatment.

In areas with a high prevalence of syphilis, a reactive serological test may only be a reflection of a previous infection. This may give a misleading picture of the patient’s present condition. A negative serological test does not necessarily exclude primary syphilis as seroreactivity may take 2–3 weeks to show up. (See pages 69 to 75)

**To treat for primary, secondary and early latent syphilis, use**

- **Benzathine benzylpenicillin G**, 2.4 million IU by intramuscular injection as a single dose
  - **OR**
  - **Procaine benzylpenicillin**, 1.2 million IU by intramuscular injection, daily for 10 consecutive days
  - **OR**
  - **Azithromycin**, 2 g orally as a single dose

Azithromycin is an effective treatment option for early syphilis. However, attention should be paid to the emergence of resistance to this macrolide antibiotic in *T. pallidum*, as chromosomal mutations confer resistance to it. *Close follow up of patients treated with azithromycin is essential, with repeated testing and physical examination to detect treatment failures.*
Alternative regimens for penicillin-allergic non-pregnant patients

Azithromycin, 2 g orally single dose

OR

Doxycycline, 100 mg orally, twice daily for 14 days

To treat for late latent syphilis, use

Benzathine benzylpenicillin, 2.4 million IU by intramuscular injection, once weekly for 3 consecutive weeks

OR

Procaine benzylpenicillin, 1.2 million IU by intramuscular injection, once daily for 21 consecutive days

Alternative regimens for penicillin-allergic non-pregnant patients

Doxycycline, 100 mg orally, twice daily for 30 days

OR

Tetracycline, 500 mg orally, 4 times daily for 30 days

Syphilis in pregnancy

Pregnant women should be regarded as a separate group requiring close surveillance, in particular, to detect possible reinfection after treatment has been given. It is also important to treat their sexual partner(s). Pregnant patients at all stages of pregnancy, who are not allergic to penicillin, should be treated with penicillin according to the dosage schedules recommended for the treatment of non-pregnant patients at a similar stage of the disease.
Alternative regimen for penicillin-allergic pregnant patients

**Azithromycin**, 2 g orally as a single dose

**OR**

**Erythromycin***, 500 mg orally, 4 times daily for 14 days

* Erythromycin base, ethyl succinate or stearate can be given. Erythromycin estolate is contraindicated in pregnancy.

The effectiveness of erythromycin at all stages of syphilis and its ability to prevent the stigmata of congenital syphilis are both highly questionable, and many treatment failures have been reported.

Penicillin desensitization of pregnant women with syphilis requires that the procedure be performed in a hospital setting. This is not feasible at most primary health-care settings and cannot be recommended as a routine procedure.

Follow up of patients treated for syphilis

The follow up of patients treated for early syphilis should be based on available medical services and resources. The clinical condition of the patients should be assessed and attempts made to detect reinfection during the first year after therapy. Patients with early syphilis who have been treated with appropriate doses and preparations of benzathine benzylpenicillin should be evaluated clinically and serologically, using a non-treponemal test (e.g. RPR and VDRL) after three months to assess the results of therapy (see p. 67 for serological tests for syphilis.) A second evaluation should be performed after six months and, if indicated by the results at this point, again after 12 months to reassess the condition of the patient and detect possible reinfection.

Follow up of pregnant patients treated for syphilis

Following treatment, quantitated non-treponemal serological tests should be performed at monthly intervals until delivery, and re-treatment should be undertaken if there is serological evidence of reinfection or relapse.
Syphilis and HIV coinfection

Anecdotal reports have suggested 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 penicillin regimens.

3.3.3 CHANCROID

Chancroid is caused by the Gram-negative bacillus Haemophilus ducreyi. Patients with chancroid usually present with painful genital ulcer/s with or without inguinal lymphadenopathy.

Since there are limited data on the current prevalence of chancroid in countries of South-East Asia, the decision to treat for chancroid depends on the local epidemiology of the infection.

To treat for chancroid, use

- **Azithromycin**, 1 g orally, as a single dose
  - OR
- **Ceftriaxone**, 250 mg by intramuscular injection as a single dose
  - OR
- **Ciprofloxacin**, 500 mg orally, twice daily for 3 days
  - OR
- **Erythromycin** base, 500 mg orally, 4 times daily for 7 days
3.3.4 GRANULOMA INGUINALE (DONOVANOSIS)

Donovanosis is caused by the intracellular Gram-negative bacterium *Klebsiella granulomatis* (previously known as *Calymmatobacterium granulomatis*). The disease presents clinically as painless, progressive, ulcerative lesions without regional lymphadenopathy. The lesions are highly vascular and bleed easily on contact. **Treatment should be continued until all the lesions have completely epithelialized.**

---

**To treat for granuloma inguinale, use**

- **Azithromycin**, 1 g orally on the first day, then 500 mg orally, once a day
  - OR
- **Doxycycline**, 100 mg orally, twice daily
  - OR
- **Erythromycin**, 500 mg orally, 4 times daily
  - OR
- **Tetracycline**, 500 mg orally, 4 times daily
  - OR
- **Trimethoprim** 80 mg / **sulfamethoxazole** 400 mg, 2 tablets orally, twice daily

**Treatment should be continued until all lesions have completely epithelialized**

---

3.3.5 LYMPHOGRANULOMA VENEREUM

Lymphogranuloma venereum (LGV) is caused by *Chlamydia trachomatis* serovars L1, L2 or L3. The most common clinical manifestation of LGV is tender inguinal and/or femoral lymphadenopathy that is typically unilateral. Sometimes a genital ulcer or papule occurs at the site of inoculation, which is self-limiting.
To treat for LGV, use

**Doxycycline**, 100 mg orally, twice daily for 14 days

**OR**

**Erythromycin**, 500 mg orally, 4 times daily for 14 days

**OR**

**Tetracycline**, 500 mg orally, 4 times daily for 14 days

---

**Syphilitic chancre of the coronal sulcus**

Syphilitic chancre is usually painless, hence could be missed by patient

**Primary penile herpes; ulcerative stage**

**Primary vulvar herpes; larger ulceration due to coalescence of several vesicles**

---

**Management of genital ulcer disease**

<table>
<thead>
<tr>
<th>Management of genital ulcer disease</th>
<th>Management of genital herpes simplex</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Treat for syphilis, genital herpes and, depending upon local epidemiology, either chancroid, granuloma inguinale or lymphogranuloma venereum</td>
<td></td>
</tr>
<tr>
<td>• Aspirate any fluctuant gland if required through surrounding healthy skin (surgical incision should be avoided)</td>
<td></td>
</tr>
<tr>
<td>• Educate and counsel on risk reduction</td>
<td></td>
</tr>
<tr>
<td>• Offer syphilis serological testing (see p. 69) and HIV serological testing where appropriate facilities and counselling are available</td>
<td></td>
</tr>
<tr>
<td>• Promote and provide condoms</td>
<td></td>
</tr>
<tr>
<td>• Review in 7 days</td>
<td></td>
</tr>
<tr>
<td>• Advise on basic care of the lesion (keep ulcers clean and dry) and genital hygiene</td>
<td></td>
</tr>
<tr>
<td>• Provide or prescribe specific antiviral treatment for herpes according to local policy</td>
<td></td>
</tr>
<tr>
<td>• Educate and counsel on compliance, risk reduction, natural history of HSV-2 infection, sexual transmission, prenatal transmission and risk of HIV transmission or acquisition</td>
<td></td>
</tr>
<tr>
<td>• Offer serological testing for syphilis (see p. 69) and HIV where appropriate facilities and counselling are available</td>
<td></td>
</tr>
<tr>
<td>• Promote and provide condoms</td>
<td></td>
</tr>
<tr>
<td>• Advise to return in 7 days or sooner if there is clinical deterioration</td>
<td></td>
</tr>
</tbody>
</table>
1 If history of recurrent episodes of ulcer/s present, consider HSV suppressive therapy if >6 recurrences per year.

2 Treat for chancroid where it is prevalent.

3 See p. 69 for serological tests for syphilis.
3.4 VAGINAL DISCHARGE

A spontaneous complaint of a change in vaginal discharge (in terms of quantity, colour or odour) is most commonly due to vaginitis but may also be due to cervicitis. *Trichomonas vaginalis* (TV), bacterial vaginosis (BV) and *Candida albicans* are the commonest causes of vaginal discharge. Women with *Neisseria gonorrhoeae* (NG) and/or *Chlamydia trachomatis* (CT) infections of the cervix may present with abnormal vaginal discharge. The symptom of vaginal discharge is highly indicative of vaginal infection, but poorly predictive of cervical infection.

As clinical differentiation between vaginitis and cervicitis may be difficult, all women presenting with abnormal vaginal discharge should be treated for trichomoniasis and BV if microscopy facilities are not available. As asymptomatic TV infection is not uncommon in males, treatment is recommended of the male partners of women with confirmed TV infection and partners of women with recurrent vaginal discharge.

Among women with vaginal discharge, assessment of the risk status may help to identify those at greater risk for cervical infection. Risk factors such as having multiple partners or a partner with symptoms suggestive of STI are frequently associated with cervicitis. Risk factors should be validated and correlated with the local situation. Women with a positive risk assessment have a higher likelihood of cervical infection than those with a negative risk assessment. Women with vaginal discharge and a positive risk assessment should, therefore, be treated for gonococcal and chlamydial cervicitis as well as for vaginitis.

Syndromic management of vaginal discharge is neither specific nor sensitive for cervical infections due to gonorrhoea or chlamydia, especially among low-risk women.

If available, use laboratory tests to screen women with vaginal discharge for STIs. A wet mount should be done of discharge from the posterior fornix for TV, and Gram stain of a vaginal smear taken from the anterior fornix or lateral vaginal walls for BV and candidiasis. An endocervical smear for NG and CT should be examined in all women with discharge or selectively in those with discharge and a positive risk assessment.
3. Syndromes of sexually transmitted infections

3.4.1 TRICHEMONIASIS

The flagellated protozoan, *T. vaginalis*, is almost exclusively sexually transmitted in adults. Although the majority of women infected with *T. vaginalis* tend to be asymptomatic, some have symptoms characterized by a diffuse, yellow-green, offensive vaginal discharge and vulval itching. Similarly, most men infected with *T. vaginalis* are asymptomatic, but some present with urethral discharge.

Management of sexual partners

The sexual partner/s should be notified and treated, and patients should be advised against sexual intercourse until both the index patient and the partner/s have completed treatment.

3.4.2 BACTERIAL VAGINOSIS

BV is a clinical syndrome resulting from replacement of the normal hydrogen peroxide (H$_2$O$_2$)-producing *Lactobacillus* sp. in the vagina with high concentrations of anaerobic bacteria, such as *G. vaginalis* and *Mycoplasma hominis*. The cause of the microbial alteration is not fully understood.

Whereas trichomoniasis is an STI, BV is an endogenous reproductive tract infection. Treatment of sexual partners has not been demonstrated to be of benefit. It is recommended that predisposing factors such as the use of antiseptic/antibiotic vaginal preparations or vaginal douching be reduced or eliminated.

3.4.3 CANDIDIASIS

In the majority of cases, vulvovaginal candidiasis is caused by *Candida albicans* (*C. albicans*). Up to 20% of women with the infection may be asymptomatic. If symptoms occur, they usually consist of itching of the vulva, soreness and a non-offensive vaginal discharge, which may be curdy. Clinical examination may reveal vulval erythema (redness) or excoriations from scratching and oedema of the vulva.
Vulvovaginal candidiasis is usually not acquired through sexual intercourse. Although treatment of sexual partners is not recommended, it may be considered for women who have recurrent infection. A minority of male partners may have balanitis, which is characterized by erythema of the glans penis or inflammation of the glans penis and foreskin (balanoposthitis).

**Recurrent candidiasis**

It is recommended that predisposing factors such as the use of antibiotics and antiseptic/antibiotic vaginal preparations or vaginal douching be reduced or eliminated. Simultaneous treatment of a rectal focus with oral nystatin or fluconazole is not useful in preventing recurrences. Other underlying factors for recurrent vulvovaginal candidiasis include uncontrolled diabetes mellitus, immunosuppression and corticosteroid use.

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**To treat for cervicitis (due to NG and CT), use**

- **Cefixime**, 400 mg orally, as a single dose
- **Ceftriaxone**, 250 mg by intramuscular injection, as a single dose
  - PLUS
  - **Doxycycline**, 100 mg orally, twice daily for 7 days
  - OR
  - **Azithromycin**, 1 g orally, as a single dose
  - OR
  - **Erythromycin**, 500 mg orally, 4 times daily for 7 days

---

**To treat for vaginitis (BV, TV), use**

- **Metronidazole**, 400 mg orally twice daily for 7 days
- OR
- **Tinidazole**, 500 mg orally twice daily for 5 days
To treat for candidiasis, use

- **Miconazole** or **clotrimazole**, 200 mg vaginal pessaries intravaginally daily for 3 days
  - **OR**
  - **Clotrimazole**, 500 mg vaginal pessaries intravaginally as a single dose
  - **OR**
  - **Nystatin vaginal pessaries** 100 000 IU intravaginally daily for 14 days
  - **OR**
  - **Fluconazole**, 150 mg orally, as a single dose

**Note**
- Doxycyclines are contraindicated in pregnancy.
- Patients taking metronidazole should be cautioned to avoid alcohol for the duration of treatment and for at least 48 hours afterwards.
- Although metronidazole has previously not been recommended for use in the first trimester of pregnancy, studies and meta-analyses have not demonstrated a consistent association between metronidazole use during pregnancy and teratogenic or mutagenic effects in newborns.

**3.4.3 PHYSIOLOGICAL DISCHARGE**
A healthy woman may have a variable amount of clear and white discharge from her vagina. The discharge usually increases before and after menstruation, and becomes more watery when a woman is in the middle of her menstrual cycle. It also increases during pregnancy, while taking oral contraceptive pills (OCP) and when an intrauterine device (IUD) is in place.
Patient complains of vaginal discharge, dysuria, vulval itching or burning

- Take history and assess risk
- Examine
- Exclude physiological discharge

Abnormal discharge or vulval erythema?

Any other genital condition?

Use appropriate flowchart and/or treat appropriately

Lower abdominal tenderness?

Use flowchart for lower abdominal pain

Risk assessment positive?

TREAT FOR GONOCOCCAL and CHLAMYDIAL INFECTIONS, BACTERIAL VAGINOSIS, TRICHOMONIASIS

TREAT FOR BACTERIAL VAGINOSIS, TRICHOMONIASIS

Vulval oedema/curd-like discharge, erythema, excoriations present?

TREAT FOR CANDIDIASIS

1 Risk factors such as multiple partners and partner with symptoms are frequently associated with cervicitis.
2 See p. 69 for serological tests for syphilis.
Patient complains of vaginal discharge, dysuria, vulval itching or burning

- Take history and assess risk
- Examine patient (external, speculum, bimanual)
- Exclude physiological discharge

Lower abdominal tenderness or cervical motion tenderness present?

- No

- Yes
  - Use flowchart for lower abdominal pain

Signs of cervicitis present or risk assessment positive?

- No
  - TREAT FOR BACTERIAL VAGINOSIS, TRICHOMONIASIS

- Yes
  - TREAT FOR GONOCOCCAL and CHLAMYDIAL INFECTIONS, BACTERIAL VAGINOSIS, TRICHOMONIASIS

Vulval oedema/curd-like discharge, erythema, excoriations present?

- No

- Yes
  - TREAT FOR CANDIDIASIS

- Educate and counsel.
- Promote condom use and provide condoms.
- Counsel and treat partner for gonococcal, chlamydial and trichomoniasis infections if risk assessment is positive.
- Do VDRL/RPR/rapid syphilis test.
- Offer counselling and testing for HIV.
- Ask patient to return in 7 days if symptoms persist and refer to a higher facility.

1 Risk factors such as multiple partners and partner with STI symptoms are frequently associated with cervicitis.
2 Signs of cervicitis include cervical mucopus/erosion, easily induced cervical bleeding.
3 See p. 69 for serological tests for syphilis.
Patient complains of vaginal discharge, dysuria, vulval itching or burning

• Take history and assess risk
• Examine patient (external, speculum and bimanual examination)
• Exclude physiological discharge

Lower abdominal tenderness or cervical motion tenderness present?

Yes

Use flowchart for lower abdominal pain

No

Signs of cervicitis present or risk assessment positive?

Yes

TREAT FOR GONOCOCCAL INFECTION, CHLAMYDIA

PLUS
Vaginal infection according to speculum examination and microscopic findings as shown below

No

Perform wet mount / Gram stain microscopy of vaginal specimen

Motile trichomonads seen

TREAT FOR TRICHOMONIASIS

Clue cells seen plus pH>4.5 or KOH positive

TREAT FOR BACTERIAL VAGINOSIS

Budding yeasts or pseudohyphae seen

TREAT FOR CANDIDIASIS

No abnormal findings

No

• Educate and counsel.
• Promote condom use and provide condoms.
• Treat partner if microscopy demonstrates trichomonads.
• Counsel and treat partner for gonococcal and chlamydial infections if signs of cervicitis present or risk assessment is positive.
• Do VDRL/RPR/rapid syphilis test.
• Offer counselling and testing for HIV or refer.
• Ask patient to return in 7 days if symptoms persist and refer to a higher facility.

1 Risk factors such as multiple partners and partner with STI symptoms are frequently associated with cervicitis.
2 Signs of cervicitis include cervical mucopus/erosion, easily induced cervical bleeding.
3 See p. 69 for serological tests for syphilis.
3.5 ANORECTAL DISCHARGE

Men and women who practise unprotected receptive anal intercourse are at risk for getting sexually transmitted anorectal infections. These infections may lead to symptomatic or asymptomatic distal proctitis (inflammation of the distal 10–12 cm of the rectum). *N. gonorrhoeae*, *C. trachomatis* (including LGV serovars), *T. pallidum* and HSV are the common sexually transmitted pathogens that may cause proctitis.

Acute proctitis can present with pain, tenesmus, mucopurulent anal discharge, anorectal bleeding, constipation, sensation of rectal fullness or of incomplete defecation, perianal pain or discomfort. Chronic proctitis due to LGV can present with a history of mucus-streaking of the stool, constipation and feeling of incomplete defecation.

Anoscopic examination may reveal the presence of mucopus in the rectum, rectal mucosal oedema and contact bleeding in patients with gonococcal and chlamydial proctitis. In syphilis-, herpes- and LGV-related proctitis, rectal ulceration can be seen. Granulomatous inflammatory masses also may be seen in LGV.

---

To treat for gonococcal rectal infection, use

- **Ceftriaxone**, 250 mg by intramuscular injection as a single dose
- **Cefixime**, 400 mg orally as a single dose

---

To treat for chlamydial rectal infection, use

- **Doxycycline**, 100 mg orally, twice daily for 7 days
- **Azithromycin**, 1 g orally in a single dose
### To treat for herpetic proctitis, use

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Dosage and Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acyclovir</td>
<td>400 mg orally, 3 times daily for 7 days OR 200 mg orally, 5 times daily for 7 days OR 1 g orally, twice daily for 7 days OR 250 mg orally, 3 times daily for 7 days</td>
</tr>
<tr>
<td>Valaciclovir</td>
<td>1 g orally, twice daily for 7 days</td>
</tr>
<tr>
<td>Famciclovir</td>
<td>1 g orally, twice daily for 7 days</td>
</tr>
</tbody>
</table>

### To treat for proctitis due to syphilis, use

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Dosage and Administration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzathine benzylpenicillin G</td>
<td>2.4 million IU by intramuscular injection as a single dose OR 2 g orally as a single dose OR 500 mg daily for 10 days OR 1.2 million units by intramuscular injection daily for 10 consecutive days</td>
</tr>
<tr>
<td>Azithromycin</td>
<td>2 g orally as a single dose</td>
</tr>
<tr>
<td>Azithromycin</td>
<td>500 mg daily for 10 days</td>
</tr>
</tbody>
</table>

### Alternative regimens for penicillin-allergic patients

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Dosage and Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doxycycline</td>
<td>100 mg orally, twice daily for 14 days OR 2 g orally as a single dose OR 500 mg daily for 10 days</td>
</tr>
<tr>
<td>Azithromycin</td>
<td>2 g orally as a single dose</td>
</tr>
<tr>
<td>Azithromycin</td>
<td>500 mg daily for 10 days</td>
</tr>
</tbody>
</table>

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3. Syndromes of sexually transmitted infections
Alternative regimen for penicillin-allergic pregnant patients

**Erythromycin**, 500 mg orally, 4 times daily for 14 days

* Erythromycin base, ethyl succinate or stearate can be given. Erythromycin estolate is contraindicated in pregnancy.

To treat for proctitis due to LGV, use

**Doxycycline**, 100 mg orally twice daily for 21 days

Patients should be advised to avoid receptive anal sex until the patient and the partner(s) are completely treated. Patients should be educated on consistent condom use for prevention of sexually transmitted proctitis.
Symptoms of proctitis include perianal pain, mucopurulent anal discharge, anorectal bleeding, constipation, sensation of rectal fullness or of incomplete defecation, tenesmus and discomfort.

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)

Treat for Mycoplasma infection depending on the local situation.

If syphilis serology results are available and are positive, treat patient and partner/s for syphilis. See p. 69 for serological tests for syphilis.
3.6 LOWER ABDOMINAL PAIN

Lower abdominal pain is often the presenting feature in women with pelvic inflammatory disease (PID). The term PID refers to infections of the female upper genital tract. PID includes endometritis, salpingitis, tubo-ovarian abscess and pelvic peritonitis.

Ascending infection from the cervix caused by NG and CT, and anaerobic bacteria may lead to PID. Treatment for PID includes treatment for NG, CT and anaerobic bacteria. Facultative Gram-negative rods and *Mycoplasma hominis* have also been implicated in PID.

Symptoms suggestive of PID include abdominal pain, dyspareunia, vaginal discharge, menometrorrhagia, dysuria, dysmenorrhoea, fever, and sometimes nausea and vomiting. Serious complications of PID include infertility and ectopic pregnancy.

To treat for gonococcal infection, use

- **Ceftriaxone**, 250 mg by intramuscular injection, as a single dose
  
  OR

- **Cefoxitin**, 2 g by intramuscular injection, as a single dose

  PLUS

To treat for chlamydial infection, use

- **Doxycycline**, 100 mg orally, twice daily for 14 days
  
  OR

- **Erythromycin**, 500 mg orally, 4 times a day for 14 days

  PLUS

To treat for anaerobic infection, use

- **Metronidazole**, 400 mg orally twice daily for 14 days
Patient complains of lower abdominal pain

Take history, assess risk and examine (abdominal and gynaecological)

Any of the following present?
• Missed/overdue period
• Recent delivery-abortion
• Abdominal guarding and/or rebound tenderness
• Abnormal vaginal bleeding
• Abdominal mass

Yes

Refer patient for immediate surgical or gynaecological management
Before referral, set up an IV line and apply resuscitatory measures if necessary

No

Is there lower abdominal tenderness, cervical motion tenderness or adnexal tenderness and vaginal discharge?

No

Any other illness found?

Yes

TREAT FOR PID
Review in 3 days

3 days

Patient has improved?

No

Refer to a higher facility

Yes

Manage appropriately

• Continue treatment until completed
• Educate and counsel
• Promote condom use and provide condoms
• Do VDRL/RPR/rapid syphilis test
• Offer counselling and testing for HIV
• Ask patient to return in 4 days if symptoms persist and refer to a higher facility
• Counsel and treat partner/s for gonococcal and chlamydial infections

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
3 See p. 69 for serological tests for syphilis.
3.7 SCROTAL SWELLING

Inflammation of the epididymis (epididymitis) usually presents as unilateral testicular pain and swelling of acute onset, often with tenderness of the epididymis and vas deferens. Occasionally, there could be erythema and oedema of the overlying scrotal skin. The adjacent testis is also often inflamed (orchitis) giving rise to epididymo-orchitis.

*N. gonorrhoeae* and *C. trachomatis* are the common sexually transmitted causes of epididymitis. If quick and effective treatment is not given, fibrous scarring and destruction of testicular tissue may lead to infertility. Other infectious causes of epididymitis include tuberculosis, filariasis, and infections due to *Escherichia coli*, *Klebsiella* spp. or *Pseudomonas aeruginosa*.

In young people, testicular torsion should be suspected when the onset of scrotal pain is sudden and severe. It is a surgical emergency that needs urgent referral to a hospital. It is important to consider other non-infectious causes of scrotal swelling, such as trauma and tumour.

Scrotal swelling may also occur due to hydrocele, hernia and varicocele.

To treat for gonococcal infection, use

Ceftriaxone, 250 mg by intramuscular injection as a single dose

PLUS

To treat for chlamydial infection, use

Doxycycline, 100 mg orally, twice daily for 10 days

Supportive therapy: bed rest, antipyretics and analgesics, and scrotal support until local inflammation and fever subside
Patient complains of scrotal swelling/pain

Take history and examine

Swelling/pain confirmed?

Yes

Testis rotated or elevated, or history of trauma?

Yes

Refer for urgent surgical assessment

No

No

Clinically improved?

Yes

• Continue treatment to complete the course of antibiotics
• Check if partner/s treated
• Offer counselling and testing for HIV if not done at previous visit

3 days

No

• Reassure patient and educate
• Provide analgesics, if necessary
• Promote condom use and provide condoms
• Do VDRL/RPR/rapid syphilis test
• Offer counselling and testing for HIV

TREAT FOR GONOCOCCAL AND CHLAMYDIAL INFECTION

Yes

• Educate and counsel
• Promote condom use and provide condoms
• Counsel and treat partner/s
• Do VDRL/RPR/rapid syphilis test
• Offer counselling and testing for HIV
• Review in 3 days or earlier if necessary.

1 See p. 69 for serological tests for syphilis
3.8 INGUINAL BUBO

This is a painful, fluctuant, swelling of the lymph nodes (bubos) in the inguinal (groin) region. They are frequently associated with LGV and chancroid. In many cases of chancroid, an associated 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 the inguinal lymph nodes and need to be considered in the differential diagnosis.

Occasionally, the bubo might have ruptured and a sinus discharging pus may be present. Enlarged lymph nodes that are not acutely inflamed do not fall into the definition of a bubo.

To treat for chancroid, use

Azithromycin, 1 g orally as a single dose

OR

Ciprofloxacin, 500 mg orally, twice daily for 3 days

To treat for LGV, use

Doxycycline, 100 mg orally, twice daily for 14 days

OR

Erythromycin, 500 mg orally, four times daily for 14 days

Note

• Some cases may require longer treatment than the 14 days recommended above.

• Fluctuant lymph nodes should be aspirated through healthy skin. Incision and drainage or excision of nodes may delay healing and should not be attempted.

• Where there is doubt and/or treatment failure, referral for diagnostic biopsy is advisable.

Lymphogranuloma venereum; inguinal syndrome with typical “groove” sign.
Patient complains of inguinal swelling

Take history and examine

Inguinal/femoral bubo(s) present?

Yes

TREAT FOR CHANCROID

- If fluctuant, aspirate through healthy skin
- Educate on treatment compliance
- Promote condom use and provide condoms
- Manage and treat partner/s
- Do VDRL/RPR/rapid syphilis test
- Offer counselling and testing for HIV
- Review in 7 days, and continue treatment if improving or refer if not improving/worse

No

Any other genital condition?

Yes

TREAT FOR LYMPHOGRANULOMA VENEREUM

- If lymph nodes fluctuant, aspirate through healthy skin
- Educate and counsel
- Promote condom use and provide condoms
- Do VDRL/RPR/rapid syphilis test
- Offer counselling and testing for HIV
- Review in 7 days, and continue treatment if improving or refer if not improving/worse

No

Ulcer(s) present?

Yes

Use appropriate flowchart and/or treat appropriately

No
3.9 NEONATAL CONJUNCTIVITIS

In neonatal conjunctivitis or ophthalmia neonatorum, a neonate develops purulent conjunctivitis (redness and swelling of the eyelids and/or discharge) in one or both eyes within four weeks of birth.

The most important sexually transmitted pathogens that cause ophthalmia neonatorum are *N. gonorrhoeae* and *C. trachomatis*. Delayed treatment for ophthalmia neonatorum caused by *N. gonorrhoeae* can lead to blindness, and infections with *C. trachomatis* can lead to impaired vision.

As the clinical manifestations and possible complications of gonococcal and chlamydial infections are similar, in settings where it is not possible to differentiate between the two infections, treatment should be provided to cover both.

To treat for gonococcal conjunctivitis, use

- **Ceftriaxone**, 50 mg/kg by intramuscular injection as a single dose, to a maximum of 125 mg total dose
  
  OR

- **Kanamycin**, 25 mg/kg by intramuscular injection as a single dose, to a maximum of 75 mg total dose
  
  OR

- **Spectinomycin**, 25 mg/kg by intramuscular injection as a single dose, to a maximum of 75 mg total dose

PLUS

To treat for chlamydial conjunctivitis, use

- **Erythromycin syrup**, 50 mg/kg per day orally, in 4 divided doses for 14 days
Note:

- When there is visible discharge, advise the mother to clean the baby’s eyes starting from the inner to the outer aspect of the eyes with boiled cooled water or sterile saline if available, using a clean, soft cotton wick.

- Single-dose ceftriaxone and kanamycin have proven efficacy; therefore, addition of tetracycline eye ointment to these is of no documented benefit.

- Topical antibiotic treatment alone is inadequate for the treatment of chlamydial infection, and would not take care of infection in other sites such as chlamydial pneumonia.

- The mothers of infants who have gonococcal or chlamydial conjunctivitis should be treated for these infections appropriately, and their sex partners should also be evaluated and treated.
Neonate with eye discharge

Take history and examine

Bilateral or unilateral eye discharge and/or swollen eyelids?

No
- Reassure mother
- Advise to return if necessary

Yes

TREAT BABY FOR GONORRHOEA AND CHLAMYDIAL INFECTION
TREAT MOTHER AND PARTNER(S) FOR GONORRHOEA

- Educate and counsel mother and her partner/s
- Promote condom use and provide condoms
- Do VDRL/RPR/rapid syphilis test on mother
- Offer HIV counselling and testing to mother
- Advise mother to return with baby in 3 days

3 days

Improved?

No
- Refer to a higher facility

Yes

- Continue treatment until completed
- Reassure mother
- Check on partner treatment

1 See p. 69 for serological tests for syphilis
3.10 GENITAL WARTS

Anogenital warts, also known as condylomata acuminata, are caused by various genotypes of human papillomavirus (HPV). Most genital warts are benign and are caused by HPV types 6 and 11. HPV types 16 and 18 are more commonly associated with malignant lesions.

Genital warts are usually transmitted sexually. Vertical transmission from mother to child during delivery is also possible.

Genital warts usually appear as single or multiple growths. Soft and non-keratinized warts are seen on warm, moist, non-hair-bearing skin. Firm and keratinized warts are usually seen on dry hairy skin. Warts are painless and do not cause serious complications, except when they cause obstruction, especially in pregnant women.

Many warts in the same area may produce a cauliflower-like appearance. During pregnancy and in the presence of a discharge, they may grow more rapidly and disseminate.

Sexual partner(s) should be examined for evidence of warts. Patients with anogenital warts should be made aware that they are contagious to sexual partners. The use of condoms is recommended to help reduce transmission.

Sites
In men — subpreputual area, coronal sulcus, inside the urethral meatus, shaft of the penis, perineum and anus
In women — vulva, vaginal wall, cervix, perineum and anus

Diagnosis is by clinical appearance.

Treatment for external genital and perianal warts

There is no specific antiviral chemotherapy effective against HPV. No treatment is completely satisfactory. Local treatment will remove the wart but recurrences may occur. This should be explained to the patient before commencing therapy.
I. Chemical methods

a. Podophyllin 25% in compound tincture of benzoin, to be applied by the HCP carefully to the warts, avoiding normal tissue.

The patient should be instructed to wash the podophyllin off after 4–6 hours. Treatment is repeated once a week.

If warts persist after six to eight applications, refer the patient to a higher facility.

b. Podophyllotoxin 0.5% solution/gel could be applied by the patient using a cotton swab to visible genital warts twice a day for 3 days, followed by 4 days of no therapy.

This cycle may be repeated, as necessary, for up to 4–5 cycles.

The total volume of podophyllin/podophyllotoxin should be limited to 0.5 ml per day and the total wart area treated should not be more than 10 cm².

The use of podophyllin/podophyllotoxin is contraindicated during pregnancy and lactation.

c. 80–90% trichloroacetic acid (TCA) can be applied by the HCP carefully to the warts, avoiding normal tissue, followed by powdering of the treated area with talc or sodium bicarbonate to remove excess acid. Repeat application at weekly intervals.

TCA causes immediate chemical cauterization. It is not absorbed systemically and therefore can be safely used in pregnancy.

If the warts persist after two months of treatment with podophyllin, podophyllotoxin or TCA, refer the patient to a higher facility for further management.

d. Imiquimod 5% cream can be applied by the patient with a finger/cotton swab at bedtime, left on overnight, 3 times a week on every other day for as long as 16 weeks. The treated area should be washed with soap and water 6–10 hours after application.

The safety of podophyllotoxin and imiquimod during pregnancy has not been established.
Physical methods

a  **Cryotherapy** can be given with liquid nitrogen, solid carbon dioxide or a cryoprobe. Repeat applications every 1–2 weeks. Cryotherapy is non-toxic, does not require anaesthesia and, if carried out properly, does not result in scarring.

b  **Electrosurgery**

c  **Surgical removal**

Physical methods for treating genital warts may not be feasible at the primary health-care level.

Management of vaginal and/or cervical warts, urethral meatal warts and anal warts in men and women should be undertaken in a higher facility (e.g. STI or dermatology clinic).

3.11 SCREENING FOR CERVICAL CANCER

Cervical cancer is a recognized complication of infection with a few specific high-risk strains of HPV (e.g. HPV 16, 18, 31, 33, etc.). It is the second most common cancer among women worldwide, with an estimated 500 000 new cases annually. Screening and treatment in the early stages (cervical dysplasia) is effective in reducing morbidity and mortality from cervical cancer.

Cytology by Papanicolaou (Pap) smear is currently recommended as a screening tool for cervical cancer. Screening for cervical cancer is also an opportunity to look for signs of other cervical infection. Visual inspection with acetic acid or Lugol iodine may also be used for screening if facilities for Pap smear screening are not available.

It is recommended practice to examine the cervix in all female patients with STI, and to regularly examine Pap smears of the cervix in this population. However, a large percentage of smears in adolescents may incorrectly appear to be abnormal.

*All women with genital warts should be referred to an appropriate facility for cervical cancer screening.*
Prevention vaccines

Vaccines against HPV are now available, and offer protection against HPV types 16 and 18, the types which cause 70% of cervical cancers. The current HPV vaccines can be administered to girls aged 11–12 years. The benefits of vaccination are greatest if administered before the onset of sexual activity. Current vaccines are administered in three doses over a 6-month period, with the second dose given 1–2 months after the first dose, and the last dose given at 6 months after the first dose. Women who have been vaccinated against HPV infection should continue to undergo routine cervical cancer screening because the vaccines do not cover all the oncogenic types of HPV.
STIs are among the most important causes of maternal morbidity and perinatal morbidity and mortality. The consequences of STI can be severe and life-threatening, such as PID, ectopic pregnancy and adverse pregnancy outcomes including abortion, stillbirth, preterm birth and congenital infections (due to syphilis, HSV, hepatitis B virus and HIV).

### 4.1 STI IN PREGNANCY

The interactions between STI and pregnancy include the effects of pregnancy on STI and of the STI on pregnancy. The latter is more important because STI may affect the outcome of pregnancy.

<table>
<thead>
<tr>
<th>STI</th>
<th>Effect of STI on pregnancy and neonate</th>
<th>Effect of pregnancy on STI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gonorrhoea</td>
<td>Prematurity, Premature rupture of membranes, Chorioamnionitis, Postpartum sepsis, Conjunctivitis in the newborn</td>
<td>Disseminated gonococcal infection is reported to be more common</td>
</tr>
<tr>
<td>Chlamydial infection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Syphilis</td>
<td>Abortion, Intrauterine growth retardation, Stillbirth, Congenital syphilis</td>
<td>No effect</td>
</tr>
<tr>
<td>Herpes simplex virus (HSV) infection</td>
<td>Abortion, Intrauterine growth retardation, Premature delivery, Congenital HSV, Neonatal herpes</td>
<td>Longer duration of symptoms, Primary infection more severe, Dissemination may occur</td>
</tr>
<tr>
<td>Human papillomavirus infection (genital warts)</td>
<td>Laryngeal papillomatosis (rare)</td>
<td>Increase in size and number of warts</td>
</tr>
</tbody>
</table>

Management of Sexually Transmitted Infections: Regional Guidelines
Antenatal clinic visits provide opportunities for preventing and detecting STIs. Therefore, women should be encouraged to attend antenatal clinics early in pregnancy.

Since most STIs are asymptomatic in women, screening facilitates the identification of STIs in pregnant women. HCPs should facilitate the screening of pregnant women considered to be at high risk for STIs, since early detection and appropriate treatment of STIs prevents mother-to-child transmission of infection during pregnancy and delivery.

4.1.1 SCREENING FOR SYPHILIS

Syphilis remains a leading cause of perinatal mortality and morbidity in the South-East Asia Region, despite available and affordable technology for diagnosing and treating infection in pregnant women. An estimated two thirds of pregnancies among women with early untreated syphilis end in abortion, stillbirth or neonatal infection.

All pregnant women should be routinely screened for syphilis with VDRL/RPR or rapid treponemal test at the first antenatal visit or as early as possible thereafter.

Re-testing in the third trimester is also recommended, if feasible, to detect infection acquired during pregnancy, particularly among women at high risk.
As biological false-positive VDRL/RPR tests may occur during pregnancy, positive results should be confirmed with specific treponemal tests such as the *Treponema pallidum* haemagglutination (TPHA)/*Treponema pallidum* particle agglutination assay (TP-PA) or fluorescent treponemal antibody absorption (FTA-ABS) test.

All mothers with syphilis should be treated appropriately according to the stage of syphilis. Attempts should be made to complete treatment before 36 weeks of gestation.

**All asymptomatic infants born to seropositive women who have been treated according to the stage of syphilis and completed treatment more than four weeks before delivery, should be treated with a single prophylactic dose of benzathine penicillin G 50 000 IU/kg intramuscularly.**

Infants with suspected congenital syphilis, those born to mothers treated less than four weeks before delivery, mothers treated with non-penicillin regimens or not treated or inadequately treated or who have no record of having been treated, should be treated as for congenital syphilis with intravenous penicillin.

## 4.1.2 SCREENING FOR VAGINAL INFECTIONS

<table>
<thead>
<tr>
<th>Indications for screening</th>
<th>Available tools</th>
<th>Recommended approach</th>
</tr>
</thead>
</table>
| Asymptomatic pregnant women with a history of spontaneous abortion or preterm delivery should be screened for bacterial vaginosis (BV) and trichomoniasis | Gram-stained microscopic examination of a vaginal smear  
Wet mount of vaginal fluid in a drop of normal saline | Although metronidazole is not recommended for use in the first trimester of pregnancy, treatment may be given in cases where early treatment has the best chance of preventing adverse pregnancy outcomes |

Pregnant women with **symptomatic** vaginal discharge in the second or third trimester should be treated (without screening) for BV, trichomoniasis and yeast infection. Fluconazole is not recommended for use in pregnancy.
**Pregnant women**

- with a positive risk assessment and vaginal discharge
- who have a partner with urethral discharge
- with signs of cervical infection (mucopurulent cervical discharge or cervical friability) should be treated for gonorrhoea and chlamydial infection according to the flowcharts for vaginal discharge. Their partners should also receive treatment.

**4.1.3 MANAGEMENT OF STI IN PREGNANCY**

The management is the same as for non-pregnant women.

- Offer recommended therapy (certain drugs are contraindicated in pregnancy).
- Educate and counsel the patient.
- Encourage partner referral and management.
- Follow up the patient.
- Assess the baby as soon as possible after delivery for any effect of maternal STI.

It is important to educate the couple regarding prevention of STIs during the course of pregnancy, as STIs acquired during pregnancy may lead to adverse pregnancy outcomes.
The family planning visit is an opportunity to prevent not only unwanted pregnancies but also infections (dual protection). It also provides an opportunity to detect silent STIs and offer treatment to symptomatic women (and their partners), who may not otherwise use the health services.

In a family planning clinic setting, condom and IUD are two contraceptive methods that have links to STIs. Correct and consistent use of condoms prevents both pregnancy and STIs.

Insertion of an IUD can lead to ascending infection with organisms that cause STI such as *N. gonorrhoeae* and *C. trachomatis*, as well as other organisms that do not cause STI. When organisms that cause STI infect the upper genital tract, they can lead to complications such as PID, infertility and ectopic pregnancy.

The most effective way to prevent these complications is to prevent upper genital tract infections from occurring. This includes the following:

- STI prevention and management (promotion and provision of condoms and management of symptoms according to the SCM flowcharts)
- Safe performance of transcervical procedures such as insertion of IUD
- Practice of standard precautions during procedures.

**5.1 SAFE TRANSCERVICAL PROCEDURES (INSERTION OF IUD)**

1. Rule out cervical infection before undertaking the procedure.
2. Use an aseptic technique.
   - Wash hands.
   - Wear gloves, both during the procedure and while handling contaminated waste materials or used instruments.
   - Decontaminate, clean and disinfect (high-level) all instruments (e.g. specula, forceps and uterine sounds).
   - Clean the cervix and vagina.
• Use a “no touch” technique. This means avoiding contamination of the uterine sound or other instruments by inadvertently touching the vaginal wall or speculum blades.

#### 5.1.1 CERVICAL INFECTION

Though infection prevention procedures can reduce the chances of introducing infection from the outside during transcervical procedures, they do not prevent existing gonorrhoea or chlamydial infection from ascending to the uterus and beyond. Women with signs of cervical infection (mucopurulent cervical discharge or cervical friability) should be treated for gonorrhoea and chlamydial infection. Their partners should also receive treatment. Insertion of the IUD must be delayed until the infection is cured.

Women with lower abdominal pain, and uterine, adnexal or cervical motion tenderness should be treated for PID using the flowchart for lower abdominal pain and counselled on an appropriate contraceptive method. **IUD is not recommended for women who are at high individual risk for gonorrhoea or chlamydial infection, unless other more appropriate methods are unavailable or unacceptable.**

Counselling on dual protection is also part of family planning services. Consistent and correct use of condoms not only protects against an unwanted pregnancy but is also effective in preventing STIs, and is the only single method that provides effective **dual protection**.

#### 5.2 PRIVATE HEALTH-CARE PROVIDERS AND STI MANAGEMENT

Although public sector STI care services are available in almost all countries of the South and South-East Asia Region, they may not always be accessible and acceptable to everyone. The private HCP is usually the first port of call for most persons with STIs.

Private providers are more acceptable to people because they are perceived to offer better access and confidentiality, and are less stigmatizing than public sector services. Therefore, they are in a unique position to offer comprehensive STI care services.
The syndromic approach to management of STIs overcomes many obstacles to the provision of good-quality and efficient services by private HCPs. The SCM flowcharts should be used to manage STIs.

Health-care services providing treatment for STIs form an important entry point for HIV prevention. Therefore, private HCPs should encourage testing for syphilis, and counselling and testing for HIV to all persons attending for STI care.

In addition, as accepted community leaders, private HCPs have an important role to play in educating the public on STI/HIV and assisting the public sector in preventive programmes.

STI case reporting is another important area that needs active involvement of private HCPs. This reflects the disease burden in the country. Knowledge of this is very important in effective planning and implementation of prevention and care activities in the community. However, in most countries of the Region, STI case reporting by private HCPs is non-existent.

**Box 3: Private health-care provider’s role in STI management**

- Manage STIs using the SCM flowcharts and laboratory services, if available.
- Provide counselling on preventive measures and promote use of condoms.
- Encourage testing for syphilis and testing and counselling for HIV.
- Prevent mother-to-child transmission of STI/HIV.
- Manage STI in the sexual partner.
- Report all STI cases.
While choosing a suitable method of contraception for sexually active women, the interaction between contraceptives and STI/HIV has to be taken into consideration, as the choice of contraceptive affects the risk of STIs, and the perception of STI risk affects contraceptive choice.

Though consistent and correct use of the male and female condoms provides dual protection from pregnancy and STIs and HIV, they are not widely used as a method of contraception. The failure rate is also high compared with other methods. Hormonal contraceptives, intrauterine systems and IUDs are widely used and highly effective in preventing pregnancy but they do not protect against STIs and HIV. Therefore, women with high-risk sexual behaviour using contraceptive methods other than condoms should be counselled about the additional use of condoms for the prevention of STIs and HIV.

All women being considered for contraception should have an appropriate medical and sexual history taken as part of routine assessment. Transmission of HIV and other STIs must also be discussed and screening for STIs should be offered where appropriate. Safe sex should always be promoted when prescribing contraception for women at risk for HIV/STI.

Standard medical eligibility criteria have to be taken into consideration when choosing an appropriate contraceptive for an individual woman. Medical eligibility criteria provide recommendations on whether an individual can safely use the contraceptive method with the existing medical condition/s. Individuals who are on a permanent method of contraception should use condoms correctly and consistently for prevention of STIs and HIV if they engage in high-risk behaviour.

Medical eligibility for each contraceptive method is classified into four categories:

Category 1   a condition for which there is no restriction on the use of the contraceptive method
Category 2   a condition where the advantages of using the method generally outweigh the theoretical or proven risks
Category 3   a condition where the theoretical or proven risks usually outweigh the advantages of using the method

Category 4   a condition that represents an unacceptable health risk if the contraceptive method is used.

6.1 CONTRACEPTIVES AND STIs

Hormonal contraceptive methods such as combined oral contraceptive pills (COC), combined contraceptive patch, progesterone-only pills (POP), injectable depot medroxyprogesterone acetate (DMPA) and progestogen-only subdermal implants are recommended for use in women with STIs or those who are at risk for having STIs.

Hepatic enzyme-inducing drugs can lower the efficacy of oral COC, POP and combined contraceptive patch. An additional contraceptive precaution should be recommended, such as using condoms for 4–8 weeks after stopping the drugs. For women on enzyme-inducing drugs, the dose of oral COC should be adjusted to provide ethinylestradiol 50 mcg or more daily.

The broad-spectrum antibiotics doxycycline and ampicillin, which are not liver enzyme inducers, can also reduce the efficacy of COC. Short-term use (less than 3 weeks) of these antibiotics may alter the gut flora, which affects the enterohepatic circulation of oral hormonal contraceptives and reduces their efficacy. Extra precautions (use of condoms) will be needed while taking a short course of these antibiotics and for one week after. Long-term use (more than 3 weeks) of such antibiotics does not require additional protection. The efficacy of POP is not affected by antibiotics that do not induce hepatic enzymes. The effectiveness of DMPA is unaffected by antibiotics and enzyme-inducing drugs.

The presence of cervicitis is considered as a category 4 condition, which represents an unacceptable health risk if the contraceptive method is used. Therefore, insertion of an IUD is not recommended for women with cervicitis.
6.2 CONTRACEPTIVES AND HIV

Dual protection with a barrier method (condoms) and either a hormonal contraceptive or an intrauterine system or device is the most effective way to prevent pregnancy as well as transmission of HIV. If women with HIV decide to use condoms alone for both prevention of onward transmission of HIV and pregnancy, they should be educated on the use of emergency contraception in the event of condom breakage or slippage.

6.2.1 COMBINED ORAL CONTRACEPTIVE PILL

COC is safe and effective for women with HIV who are not on any liver enzyme-inducing drugs and who are not on antiretroviral therapy (ART). For women on ART, liver enzyme-inducing drugs such as protease inhibitors (e.g. lopinavir, ritonavir) and non-nucleoside reverse transcriptase inhibitors (e.g. nevirapine) may reduce the efficacy of COC.

6.2.2 PROGESTOGEN-ONLY PILL

POP is recommended for women with HIV who are not on ART. Antiretroviral drugs have the potential to decrease the bioavailability of POP, thereby reducing contraceptive efficacy.

6.2.3 LONG-ACTING INJECTABLE PROGESTOGENS

DMPA and norethisterone enantate (NET-EN) can be used in HIV-infected women even if they are taking ART without loss of contraceptive efficacy. The metabolism of these contraceptives is unaffected by liver enzyme-inducing drugs. DMPA and NET-EN should continue to be given at the usual intervals of 12 and 8 weeks, respectively.

6.2.4 PROGESTOGEN-ONLY SUBDERMAL IMPLANTS

The etonorgestrel implant is an extremely effective contraceptive. It retains its efficacy for three years, and is a safe and effective method of contraception for women with HIV who are not on ART.
6.2.5 INTRAUTERINE CONTRACEPTION – LEVONORGESTREL INTRAUTERINE SYSTEM

The levonorgestrel-releasing intrauterine system (LNG-IUS) lasts for five years. HIV-positive women may be offered an IUS after STI screening and excluding the risk of STIs in future. For women with HIV, both on and off ART, the advantages of using this method generally outweigh the theoretical or proven risks.

6.2.6 COPPER-BEARING INTRAUTERINE DEVICES

Copper-bearing intrauterine devices (Cu-IUD) retain their efficacy for five to 10 years, depending on the device. IUD use is a safe and effective method of contraception for women living with HIV, provided they are not at risk for STIs.

6.2.7 BARRIER METHODS

Latex male condom

Women with HIV should use condoms together with other methods of contraception to prevent onward transmission of HIV. Condoms are the most effective when used consistently and correctly. They can only be used once. Only water-based lubricants should be used with condoms. Oil-based lubricants such as massage oils, baby oil, lotions or petroleum jelly weaken the condom, causing it to tear or break.

Clotrimazole, econazole and miconazole cream and pessaries used for vulvovaginal candidiasis can damage the male latex condom. The possible effects on condoms should be communicated to the user when prescribing these preparations.

Female condom

It can be inserted up to eight hours before sexual intercourse. It is effective in preventing pregnancy, STIs and HIV when used consistently and correctly. Both water- and oil-based lubricants can be used.
6.2.8 EMERGENCY CONTRACEPTION IN HIV-INFECTED WOMEN

Women with HIV infection not on ART may be offered levonorgestrel in a dose of 1.5 mg, preferably as a single dose within 72 hours of sexual intercourse, or a Cu-IUD inserted as an alternative within five days of unprotected intercourse.

In women on ART or other liver enzyme-inducing drugs, an emergency IUD is the preferred option for emergency contraception, as this method is unaffected by concomitant drug use. If this is not acceptable or appropriate, the dose of levonorgestrel should be doubled, i.e. levonorgestrel 3 mg should be given as soon as possible or within 72 hours of unprotected sex.

6.3 EMERGENCY CONTRACEPTIVE METHODS

These are generally recommended for “emergency” use and not as a primary means of contraception. These methods prevent pregnancy after unprotected sexual intercourse in women who do not practise a satisfactory method of contraception or when their usual method of contraception has failed.

6.3.1 EMERGENCY CONTRACEPTIVE PILL (LEVONOGESTREL 750 μg)

An emergency contraceptive pill (ECP) is effective if taken within 72 hours of unprotected sexual intercourse. Taking it as soon as possible increases the efficacy. It may also be used between 72 and 120 hours after unprotected sexual intercourse but the efficacy decreases with time. Levonorgestrel in a dose of 1.5 mg as a single dose is recommended. If the woman vomits within 2 hours of taking a levonorgestrel-only ECP, she should take a further dose as soon as possible.

6.3.2 COPPER INTRAUTERINE DEVICE

This can be used within five days of unprotected intercourse as an
emergency contraceptive. However, when the time of ovulation can be estimated, the Cu-IUD can be inserted even five days after intercourse, if necessary, as long as the insertion does not occur more than five days after ovulation.
On-site laboratory facilities, if available, assist in the diagnosis and treatment of STIs. However, in many primary health-care settings, these are not available or feasible. Where such facilities are available, the following simple laboratory tests could be performed and the results made available within a short period of time (generally within one hour).

1. Saline wet mount

Place secretions collected from the posterior fornix of the vagina with a swab onto 1 or 2 drops of normal saline on a glass slide and mix. Cover with a cover slip and examine immediately under the microscope (100X magnification) for the typical jerky movements of motile trichomonads.

Motility of ovoid bodies is suggestive of trichomoniasis

Clue cells on normal saline solution wet mount preparation (high power field)

2. KOH wet smear

Place vaginal secretions onto a drop of 10% KOH on a glass slide and mix. Place a cover slip and examine at 400X magnification to look for yeast cells.

3. Whiff test

Place vaginal secretions on a glass slide and add 1 drop of 10% KOH. Sniff the specimen and note if there is a characteristic fishy amine odour.

4. Gram stain

Take a sample of discharge from the urethra in males and from the endocervix in females using swabs and roll the swabs onto glass slides.
Prepare slides according to following instructions:

- Heat to fix.
- Stain with crystal violet, leave for 60 seconds and rinse.
- Stain with iodine, leave for 60 seconds and rinse.
- Decolourize with acetone—ethanol for a few seconds (until the liquid runs clear).
- Stain with safranin for 60 seconds and rinse.
- Gently blot dry and examine under the microscope (oil immersion 1000X magnification).

**Vaginal smear**

a. **Candidiasis**: Gram-positive spores or pseudohyphae seen
b. **Bacterial vaginosis**: Clue cells — Gram-variable coccobacilli attached to vaginal epithelial cells — are seen

![Pseudohyphae and spores of Candida on Gram-stained smear](image1)

![Clue cells on safranin-stained smear (oil field)](image2)

**Clinical criteria for diagnosis of bacterial vaginosis (BV)**

The diagnosis of BV is based on the presence of at least three of the four following criteria:

- Homogeneous white—grey discharge that sticks to the lateral vaginal walls
- Vaginal fluid pH >4.5
- Release of fishy amine odour from the vaginal fluid when mixed with 10% potassium hydroxide (positive whiff test)
- “Clue cells” visible on microscopy — at least 20% of vaginal epithelial cells.
5. Serological tests for syphilis

A presumptive diagnosis can be made from serological tests for syphilis in both symptomatic and asymptomatic individuals. Two types of serological tests are available.

Non-treponemal tests, such as the microscopic VDRL and the macroscopic RPR tests. These tests may be used as qualitative or quantitative tests to detect immunoglobulin (Ig)M or IgG antibodies to lipoidal material released from damaged host cells or cardiolipin-like material from the treponemes. These antibodies can also be produced in some acute or chronic diseases in which tissue damage occurs. Thus, these tests are not specific for treponemal infections and can give false-positive results in conditions such as acute febrile viral infections and some chronic autoimmune diseases.

Non-treponemal tests may be negative for up to 4 weeks after the chancre of primary syphilis first appears. To exclude syphilis, it is recommended that the tests be repeated at 1 and 3 months in persons with suspicious lesions who initially test negative. A negative non-treponemal test at 3 months of onset of the primary chancre virtually excludes the diagnosis of syphilis.

Non-treponemal tests can be used to monitor the response to treatment by performing quantitative testing. Titres will decrease following effective treatment or increase in untreated active infection. A fourfold or higher
change in titre, equivalent to a change of at least two dilutions, for example, from 1:16 to 1:4 for effective positive response to treatment or from 1:8 to 1:32 for continued active infection, would be considered significant between two sequential non-treponemal test results using the same testing method (e.g. VDRL or RPR), preferably by the same laboratory.

*Treponemal tests* such as TPHA, TP-PA and the FTA-ABS detect antibodies formed specifically to the antigenic determinants of the treponemes. Classically, these tests are used as confirmatory tests following the non-treponemal tests. Characteristically, treponemal tests remain positive for the patient’s lifetime regardless of the outcome of treatment. Thus, a positive treponemal test does not distinguish between active infection and prior treated infection.

**Rapid diagnostic tests**

In the past decade, a number of point-of-care (POC), rapid diagnostic tests (RDTs) for syphilis have been developed. These RDTs can give a result in 10—15 minutes, and they can be performed in any setting as opposed to the RPR, which requires refrigeration facilities for storing reagents, a rotator and a centrifuge. The sensitivity of the rapid tests ranges from 85% to 98% and the specificity from 93% to 98% when compared against the TPHA or TP-PA as reference standards. In general, tests with higher sensitivities tend to have lower specificities and vice versa.

Most of the initial range of RDTs are *Treponema*-specific tests that use *T. pallidum* antigens to detect *Treponema*-specific antibodies. Thus, the results reflect those generated by specific treponemal tests as described above. Many of the tests use immunochromatographic (ICT) strips. A test strip is impregnated with treponemal antigens that react with antibodies to syphilis in whole blood or serum.

More recently, tests that can detect antibody against cardiolipin-like materials have been developed, and they have been combined with the same device as the treponemal RDTs. These dual rapid tests provide both a screening (RPR equivalent) and confirmatory (TPHA/TP-PA equivalent) component. However, these dual rapid tests have not yet been sufficiently evaluated and field-tested.
Introducing rapid diagnostic tests into the testing system

The decision to introduce *Treponema*-based RDTs for syphilis into the national system should be based on a careful assessment of the quality, coverage and efficacy of the existing system of testing. The following points should be taken into consideration:

1. **Access:** an assessment should be made of the proportion of persons at risk and pregnant women who have access to syphilis testing.
2. **Quality of testing:** the quality of testing should be assessed to ensure accuracy of results.
3. **Treatment of seroreactive individuals:** the proportion of persons tested and who receive the test results and obtain treatment in a timely manner (ideally during the same visit) should be determined.

If all of the three elements above are working satisfactorily, then there may be no justification to change to a new system. If any one of the elements is not working, then efforts should be made to rectify the inadequacies. If the problems cannot be resolved, consideration should be given to introducing the new system.

Once a decision has been made to introduce RDTs, it is important to be fully conversant with the type of test selected, how it will be used and at what level of the health-care system the test result will be interpreted. *Treponema*-based RDTs can be performed in any setting by a suitably trained HCP. If the existing testing system is functioning well with the RPR test, there may be no need to replace it with RDTs. In this case, the *Treponema*-based RDT could, however, be introduced as the confirmatory test for the RPR, either as a laboratory-based or as a primary POC test.

General considerations in using serological tests for syphilis

RDTs can be incorporated into the existing system in three different ways.

**Option 1**

The first is in settings in which the RPR test is being successfully implemented. The *Treponema*-based RDT can be introduced as a rapid method for confirming seropositive test results of RPR, either laboratory-based or at the same facility where the RPR is being performed (Figure 12).
A seropositive RPR accompanied by a seropositive treponemal RDT confirms the presumptive diagnosis of syphilis in much the same way as current systems of RPR and TPHA/TP-PA. This allows for confirmatory testing or treatment to be initiated at the first visit — same-day testing and treatment. The use of the treponemal RDT at the primary POC also avoids transportation of samples to a laboratory and saves on laboratory time and costs. Additionally, in a few areas where current diagnosis depends on non-treponemal testing alone, the addition of RDTs to the clinical algorithm avoids overtreatment of persons with biological false-positive results.

Option 2

The second option is in settings where no RPR testing is performed and where it would not be feasible to introduce it. This applies in remote areas without the requisite facilities for the RPR test, such as electricity...
FIGURE 13. NO RAPID PLASMA REAGIN (RPR) TESTING AVAILABLE OR POSSIBLE

Blood

Treponemal RDT

+ve

Previously treated or current active syphilis

TREAT for syphilis
Note: Some patients may be overtreated

-ve

No treatment necessary

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 possibly still be seropositive, therefore, RDT-positive women could be treated without re-testing if risk of reinfection is considered high. Alternatively, seek quantitative RPR testing.

for refrigeration of reagents, rotator and blood centrifugation. Even in urban settings with a high turnover rate of patients, RPR testing becomes impractical. In this case, the treponemal RDT result is used to direct treatment for syphilis. This is particularly relevant for screening pregnant women in poorly resourced areas in countries with a high prevalence of syphilis.

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 reinfected, it has the overwhelming advantage that it will prevent congenital infection in the majority of pregnant women at risk for infection with syphilis (Figure 13).
Option 3

With the development of lower priced treponemal RDTs, their sensitivity (which is better than that of the RPR), and the fact that treponemal tests become positive slightly before the non-treponemal tests, the treponemal RDT can be used as the first test to screen for syphilis. A test that is negative on the treponemal RDT can then be regarded as negative for syphilis. If the test is reactive, the specimen can be retested with the RPR test. If the latter is also positive, a presumptive diagnosis of syphilis can be made and treatment given. If the RPR is negative, it can be repeated after about a month to exclude persons with early syphilis whose RPR test may still be negative. Such patients will become RPR positive after a month or so of the onset of a primary chancre. Thus, a repeat test in four to six weeks is advisable and treatment given as for early syphilis, if found to be positive at that stage.

In pregnant women, however, immediate treatment should be given at the first positive test to prevent adverse outcomes of pregnancy. A single dose of benzathine penicillin will be sufficient to prevent such a tragic event. The woman can proceed for further testing with the RPR and treated appropriately for syphilis in her own right according the determined stage of her infection (Figure 14).

Interpretation of test results for syphilis

Figure 15 shows an overview of the reactivity of non-treponemal and treponemal serological tests for syphilis, and the effect of successful treatment. Serological tests for syphilis give only a presumptive diagnosis of syphilis and must be interpreted in conjunction with a good sexual history of the individual, a physical examination, the stage of the disease, any other underlying diseases or infections and the possibility of false-positive or false-negative reactions. If possible, positive non-treponemal tests should be quantified. Above all, all the tests require rigorous standardization with negative and positive control sera.
7. Laboratory tests

FIGURE 14. RAPID PLASMA REAGIN (RPR) TESTING AVAILABLE

Blood

Treponemal RDT

+ve

Treat pregnant women to prevent congenital syphilis?

RPR

+ve

Confirmed syphilis TREAT

+ve

Probable early syphilis TREAT for early syphilis

−ve

No treatment necessary

−ve

Re-test in 4–6 weeks

−ve

No treatment necessary
FIGURE 15. REACTIVITY OF SEROLOGICAL TESTS BY STAGE OF SYphilIS AND EFFECT OF TREATMENT

<table>
<thead>
<tr>
<th></th>
<th>Early syphilis</th>
<th>Late syphilis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Primary</td>
<td>Secondary</td>
</tr>
<tr>
<td>Non-treponemal</td>
<td>Negative</td>
<td>Always</td>
</tr>
<tr>
<td>syphilis serology-</td>
<td>becoming</td>
<td>positive</td>
</tr>
<tr>
<td>Untreated</td>
<td>positive</td>
<td></td>
</tr>
<tr>
<td>Treponemal</td>
<td>Negative</td>
<td>Always</td>
</tr>
<tr>
<td>syphilis serology-</td>
<td>becoming</td>
<td>positive</td>
</tr>
<tr>
<td>Untreated</td>
<td>positive</td>
<td></td>
</tr>
</tbody>
</table>

EFFECT OF TREATMENT BY STAGE OF INFECTION

<table>
<thead>
<tr>
<th></th>
<th>Non-treponemal</th>
<th>Treponemal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>syphilis serology—</td>
<td>syphilis serology—</td>
</tr>
<tr>
<td>Untreated</td>
<td>Treated</td>
<td>Treated</td>
</tr>
<tr>
<td></td>
<td>Becomes</td>
<td>Remains</td>
</tr>
<tr>
<td></td>
<td>negative</td>
<td>positive</td>
</tr>
<tr>
<td></td>
<td>Becoming</td>
<td>If initially</td>
</tr>
<tr>
<td></td>
<td>negative</td>
<td>positive</td>
</tr>
<tr>
<td></td>
<td>Becoming</td>
<td></td>
</tr>
<tr>
<td></td>
<td>negative</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remains</td>
<td></td>
</tr>
<tr>
<td></td>
<td>positive</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remains</td>
<td></td>
</tr>
<tr>
<td></td>
<td>positive</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remains</td>
<td></td>
</tr>
<tr>
<td></td>
<td>positive</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remains</td>
<td></td>
</tr>
<tr>
<td></td>
<td>positive</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Results</td>
<td></td>
</tr>
<tr>
<td></td>
<td>unchanged</td>
<td></td>
</tr>
</tbody>
</table>

Negative serological test | Positive serological test
Annexes
1. Remove the condom from the package carefully, to avoid tearing.

2. Squeeze the air out of the tip of the condom.

3. Unroll the condom onto the erect penis.

4. After ejaculation, withdraw the penis from the vagina while the penis is still erect. Hold on to the rim of the condom while withdrawing to prevent it from slipping off and the semen spilling into the vagina.

5. Remove the condom from the penis, and tie a knot in it to prevent spills or leaks. Dispose of condom safely (where it cannot cause any hazard).
The female condom is a soft, loose-fitting sheath with a flexible polyurethane ring at each end. The inner ring at the closed end is inserted into the vagina. The outer ring at the open end remains outside the vagina during intercourse and covers the outer genitalia.

1. Remove the female condom from the package and rub it between two fingers to make sure the lubricant is evenly spread inside the sheath. If you need more lubrication, squeeze two drops of the extra lubricant included in the package into the condom sheath.

2. The closed end of the female condom will go inside your vagina. Squeeze the inner ring (closed end) between your thumb and middle finger. Insert the ring into your vagina.

3. Using your index finger, push the sheath all the way into your vagina as far as it will go. It is in the right place when you cannot feel it. Do not worry, it cannot go too far.

4. The ring at the open end of the female condom should stay outside your vagina and rest against your labia (the outer lip of the vagina). Be sure the condom is not twisted. Once you begin to engage in intercourse, you may have to guide the penis into the female condom. If you do not, be aware that the penis could enter the vagina outside of the condom’s sheath. If this happens, you will not be protected.

5. After intercourse, you can safely remove the female condom at any time. If you are lying down, remove the condom before you stand up to avoid spillage. Dispose of the female condom safely (where it cannot cause any hazard). Do not re-use it.
### Annex 3: Case Definitions for Selected Sexually Transmitted Infections and Syndromes

<table>
<thead>
<tr>
<th>Case Definition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Genital ulcer disease</strong></td>
<td>An ulcer (a visible break in the skin) on the penis, scrotum or rectum in men, and on the labia, vagina, cervix and rectum in women. Genital ulcer disease syndrome can be caused by syphilis, chancroid, lymphogranuloma venereum, granuloma inguinale or genital herpes.</td>
</tr>
<tr>
<td><strong>2. Urethral discharge</strong></td>
<td>A discharge in men (with or without dysuria) seen at the urethral meatus with or without milking/squeezing the urethra. Urethral discharge syndrome is commonly caused by <em>Neisseria gonorrhoeae</em> or <em>Chlamydia trachomatis</em>; other infectious agents associated with the urethral discharge syndrome include <em>Mycoplasma genitalium</em>, <em>Ureaplasma urealyticum</em> and <em>Trichomonas vaginalis</em>.</td>
</tr>
<tr>
<td><strong>3. Vaginal discharge</strong></td>
<td>An abnormal vaginal discharge with change in quantity, consistency, colour or odour (with or without vulval itching or burning). Vaginal discharge syndrome is commonly caused by trichomoniasis, bacterial vaginosis and vulvovaginal candidiasis; it is less frequently caused by gonococcal or chlamydial cervical infection.</td>
</tr>
<tr>
<td><strong>4. Lower abdominal pain in women</strong></td>
<td>Pain in the lower part of the abdomen, if accompanied by abnormal vaginal discharge, marked pelvic tenderness and cervical motion tenderness with or without fever, is suggestive of pelvic inflammatory disease.</td>
</tr>
<tr>
<td><strong>5. Anorectal infections</strong></td>
<td>Infections of anus and anal canal involving the stratified squamous epithelial layer (for example, due to human papillomavirus, herpes simplex virus, syphilis).</td>
</tr>
<tr>
<td>6. Urethritis</td>
<td>Inflammation of the urethra characterized by dysuria and urethral discharge with microscopic evidence of more than five white blood cells per high power field</td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>7. Proctitis</td>
<td>Inflammation of the rectum extending from the dentate line to the rectosigmoid junction caused by infections such as gonorrhoea, chlamydial infection, herpes simplex virus</td>
</tr>
</tbody>
</table>
| 8. Gonorrhoea       | Probable  
Microscopic demonstration of Gram-negative intracellular diplococci in a sample from the endocervix or urethra or rectum  
Confirmed  
Isolation by culture of oxidase-positive, Gram-negative intracellular diplococci confirmed by sugar utilization or demonstration of *Neisseria gonorrhoeae*-specific DNA in a clinical specimen (from the endocervix, urethra, rectum or pharynx) by a properly evaluated nucleic acid detection test |
| 9. Infection due to *Chlamydia trachomatis* (genital) | A positive culture, direct fluorescent antibody test or antigen detection test for *Chlamydia trachomatis* (CT), or demonstration of *Chlamydia trachomatis*-specific DNA from a urethral, cervical, vaginal or urine sample by a properly evaluated nucleic acid detection test |
| 10. Chancroid       | Infection caused by *Haemophilus ducreyi* characterized by painful genital ulceration and inflammatory inguinal adenopathy confirmed by identification of *Haemophilus ducreyi* by culture or nucleic acid test in ulcer exudate |
| 11. Genital herpes  | Probable  
A history of one or more previous episodes of similar genital lesions or blisters |
<table>
<thead>
<tr>
<th>Case Definition</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>11. Genital herpes</strong> (continued)</td>
<td>Confirmed</td>
</tr>
<tr>
<td>A positive culture or demonstration of HSV-specific DNA by nucleic acid tests in blister/ulcer exudate</td>
<td></td>
</tr>
<tr>
<td><strong>12. Syphilis — primary and secondary</strong></td>
<td>Probable</td>
</tr>
<tr>
<td>An illness with ulcers (primary) or mucocutaneous lesions (secondary) and a reactive serological test (non-treponemal or treponemal). Primary syphilis lesions may occur on sites other than in the ano-genital area.</td>
<td></td>
</tr>
<tr>
<td>Confirmed: Demonstration of <em>Treponema pallidum</em> in clinical specimens by dark-field microscopy, direct fluorescent antibody staining of <em>Treponema pallidum</em> (DFATP), nucleic acid test or equivalent methods</td>
<td></td>
</tr>
<tr>
<td><strong>13. Syphilis — latent</strong></td>
<td></td>
</tr>
<tr>
<td>Positive serological tests for syphilis in the absence of clinical signs or symptoms of syphilis</td>
<td></td>
</tr>
<tr>
<td>Latent syphilis may be further characterized as early latent, if there is evidence that the infection was acquired within the previous 24 (or 12) months and late latent, if there is evidence that the infection was acquired earlier.</td>
<td></td>
</tr>
<tr>
<td><strong>14. Lymphogranuloma venereum</strong></td>
<td>Infection with L1, L2 or L3 serovars of <em>Chlamydia trachomatis</em> characterized by genital lesions, suppurative regional lymphadenopathy or haemorrhagic proctitis</td>
</tr>
<tr>
<td><strong>15. Granuloma inguinale</strong></td>
<td>A slowly progressive ulcerative disease of the skin and lymphatics of the genital and perianal area caused by infection with <em>Klebsiella granulomatis</em></td>
</tr>
<tr>
<td>16. <em>Trichomonas vaginalis</em> infection</td>
<td>The presence of typical trichomonads on microscopy of a wet mount of a genital swab or urine from women, or the presence of typical trichomonads detected in a cervical smear, or isolation by culture of <em>Trichomonas vaginalis</em> or demonstration of <em>Trichomonas vaginalis</em>-specific DNA from a urethral, cervical, vaginal or urine sample by a properly evaluated nucleic acid detection test.</td>
</tr>
<tr>
<td>17. Bacterial vaginosis</td>
<td>Infection where the normal balance of bacteria in the vagina is disrupted and replaced by an overgrowth of <em>Gardnerella vaginalis</em>, <em>Bacteroides</em>, <em>Mobiluncus</em> and <em>Mycoplasma hominis</em>. It is sometimes accompanied by abnormal discharge, odour, pain, itching or burning.</td>
</tr>
<tr>
<td>18. Candidiasis</td>
<td>Infection due to overgrowth of <em>Candida</em> spp. (example, <em>Candida albicans</em>, <em>Candida glabrata</em>) in the vagina presenting with pruritus, abnormal discharge and erythema, confirmed by the presence of pseudohyphae on a wet mount or Gram-stained smear or a positive culture for <em>Candida</em>.</td>
</tr>
<tr>
<td>19. Scrotal swelling</td>
<td>Unilateral testicular pain and swelling of acute onset, often with tenderness of the epididymis and vas deferens.</td>
</tr>
</tbody>
</table>
| 20. Cervicitis | Cervical inflammation that is not the result of infection with *Neisseria gonorrhoeae* or *Trichomonas vaginalis*. Cervical inflammation is defined by the presence of one of the following criteria:  
- Mucopurulent secretion (from the endocervix) that is yellow or green when viewed on a white, cotton-tipped swab (positive swab test). |
<table>
<thead>
<tr>
<th><strong>20. Cervicitis (continued)</strong></th>
<th>- Induced endocervical bleeding (bleeding when the first swab is placed in the endocervix)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>21. Anogenital warts</strong></td>
<td>An infection characterized by the presence of visible, exophytic (raised) warty growths on the internal or external genitalia, perineum or perianal region</td>
</tr>
</tbody>
</table>
| **22. Ophthalmia neonatorum** | **Probable**  
Unilateral or bilateral conjunctivitis in a newborn (within four weeks of delivery)  
**Confirmed**  
Unilateral or bilateral conjunctivitis in a newborn (within four weeks of delivery) with an ocular specimen that is positive for *Neisseria gonorrhoeae* or *Chlamydia trachomatis* |
## Annex 4: STI Recording and Reporting Forms

### Annex 4.1: Tally Sheet for STI Cases Based on Syndromic Diagnosis

<table>
<thead>
<tr>
<th>Name of Health Facility</th>
<th>Dates: From</th>
<th>To</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Syndromic Diagnosis</th>
<th>Number of Cases by Sex and Age Group</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MALES (Age in Years)</td>
<td>FEMALES (Age in Years)</td>
</tr>
<tr>
<td>Urethral discharge</td>
<td>0000 0000 0000 0000 0000 0000 0000</td>
<td>0000 0000 0000 0000 0000 0000 0000</td>
</tr>
<tr>
<td>Genital ulcers</td>
<td>0000 0000 0000 0000 0000 0000 0000</td>
<td>0000 0000 0000 0000 0000 0000 0000</td>
</tr>
<tr>
<td>Vaginal discharge</td>
<td>0000 0000 0000 0000 0000 0000 0000</td>
<td>0000 0000 0000 0000 0000 0000 0000</td>
</tr>
<tr>
<td>Lower abdominal pain (women)</td>
<td>0000 0000 0000 0000 0000 0000 0000</td>
<td>0000 0000 0000 0000 0000 0000 0000</td>
</tr>
<tr>
<td>Inguinal bubo</td>
<td>0000 0000 0000 0000 0000 0000 0000</td>
<td>0000 0000 0000 0000 0000 0000 0000</td>
</tr>
<tr>
<td>Acute scrotal swelling</td>
<td>0000 0000 0000 0000 0000 0000 0000</td>
<td>0000 0000 0000 0000 0000 0000 0000</td>
</tr>
<tr>
<td>Neonatal conjunctivitis</td>
<td>0000 0000 0000 0000 0000 0000 0000</td>
<td>0000 0000 0000 0000 0000 0000 0000</td>
</tr>
<tr>
<td>Other STI</td>
<td>0000 0000 0000 0000 0000 0000 0000</td>
<td>0000 0000 0000 0000 0000 0000 0000</td>
</tr>
<tr>
<td>Total</td>
<td>0000 0000 0000 0000 0000 0000 0000</td>
<td>0000 0000 0000 0000 0000 0000 0000</td>
</tr>
</tbody>
</table>

For every STI patient, cross one “0” vertically in the appropriate cell according to the syndrome, sex and age, like this Ø. Cross only at the first visit for the current episode. Do not cross for the follow-up visit of the current episode. If the patient comes with another episode of STI, cross again. At the end of each month, calculate the total horizontally and vertically. One sheet is usually enough for one month. However, add more sheets if necessary.
### ANNEX 4.2: TALLY SHEET FOR STI CASES BASED ON ETIOLOGICAL DIAGNOSIS

#### NAME OF HEALTH FACILITY

#### DATES: FROM TO

<table>
<thead>
<tr>
<th>ETIOLOGICAL DIAGNOSIS</th>
<th>MALES (AGE IN YEARS)</th>
<th>FEMALES (AGE IN YEARS)</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0—4</td>
<td>5—14</td>
<td>15—19</td>
</tr>
<tr>
<td>Syphilis</td>
<td>0000</td>
<td>0000</td>
<td>0000</td>
</tr>
<tr>
<td>Gonorrhoea</td>
<td>0000</td>
<td>0000</td>
<td>0000</td>
</tr>
<tr>
<td>Lymphogranuloma venereum</td>
<td>0000</td>
<td>0000</td>
<td>0000</td>
</tr>
<tr>
<td>Non-gonococcal urethritis</td>
<td>0000</td>
<td>0000</td>
<td>0000</td>
</tr>
<tr>
<td>Chancroid</td>
<td>0000</td>
<td>0000</td>
<td>0000</td>
</tr>
<tr>
<td>Trichomoniasis</td>
<td>0000</td>
<td>0000</td>
<td>0000</td>
</tr>
<tr>
<td>Pelvic inflammatory disease (women)</td>
<td>0000</td>
<td>0000</td>
<td>0000</td>
</tr>
<tr>
<td>Bacterial vaginosis (women)</td>
<td>0000</td>
<td>0000</td>
<td>0000</td>
</tr>
<tr>
<td>Candidiasis</td>
<td>0000</td>
<td>0000</td>
<td>0000</td>
</tr>
<tr>
<td>Genital herpes</td>
<td>0000</td>
<td>0000</td>
<td>0000</td>
</tr>
<tr>
<td>Granuloma inguinale</td>
<td>0000</td>
<td>0000</td>
<td>0000</td>
</tr>
<tr>
<td>ETILOGICAL DIAGNOSIS</td>
<td>MALES (AGE IN YEARS)</td>
<td>FEMALES (AGE IN YEARS)</td>
<td>TOTAL</td>
</tr>
<tr>
<td>-----------------------</td>
<td>----------------------</td>
<td>------------------------</td>
<td>-------</td>
</tr>
<tr>
<td></td>
<td>0—4</td>
<td>5—14</td>
<td>15—19</td>
</tr>
<tr>
<td>Genital warts</td>
<td>0000</td>
<td>0000</td>
<td>0000</td>
</tr>
<tr>
<td>Neonatal conjunctivitis</td>
<td>0000</td>
<td>0000</td>
<td>0000</td>
</tr>
<tr>
<td>Other STI</td>
<td>0000</td>
<td>0000</td>
<td>0000</td>
</tr>
<tr>
<td>Total</td>
<td>0000</td>
<td>0000</td>
<td>0000</td>
</tr>
</tbody>
</table>

For every STI patient, cross one “0” vertically in the appropriate cell according to the diagnosis, sex and age, like this Ø. Cross only at the first visit for the current episode. Do not cross for the follow-up visit of the current episode. If the patient comes with another episode of STI, cross again. At the end of each month, calculate the total horizontally and vertically. One sheet is usually enough for one month. However, add more sheets if necessary.
### ANNEX 4.3: STI REPORT BASED ON SYNDROMIC DIAGNOSIS

**COUNTRY**  
**PERIOD OF REPORT:**  
**DATE OF REPORT:**

<table>
<thead>
<tr>
<th>SYNDROMIC DIAGNOSIS</th>
<th>NUMBER OF CASES BY SEX AND AGE GROUP</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MALES (AGE IN YEARS)</td>
<td>FEMALES (AGE IN YEARS)</td>
</tr>
<tr>
<td></td>
<td>0—4</td>
<td>5—14</td>
</tr>
<tr>
<td>Urethral discharge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vaginal discharge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Genital ulcer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower abdominal pain (women)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scrotal swelling</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inguinal bubo</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neonatal conjunctivitis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### RESULTS OF SEROLOGICAL TESTS FOR SYphilis

<table>
<thead>
<tr>
<th>PERSONS TESTED</th>
<th>DURING THIS PERIOD</th>
<th>CUMULATIVE FOR THIS YEAR</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. tested</td>
<td>No. positive</td>
<td>No. tested</td>
</tr>
<tr>
<td>Blood donors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pregnant women</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STI patients</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. This STI report should be based on syndromic diagnosis.  
2. Only new cases diagnosed during the period should be reported.  
3. The report should include data from all treatment facilities, public and private.  
4. The report should be forwarded quarterly and annually.
ANNEX 4.4: STI REPORT BASED ON ETIOLOGICAL DIAGNOSIS

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>PERIOD OF REPORT:</th>
<th>DATE OF REPORT:</th>
</tr>
</thead>
</table>

**ETIOLOGICAL DIAGNOSIS**

<table>
<thead>
<tr>
<th>Number of Cases by Sex and Age Group</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MALES (AGE IN YEARS)</strong></td>
<td><strong>FEMALES (AGE IN YEARS)</strong></td>
</tr>
<tr>
<td><strong>Syphilis</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Gonorrhoea</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Lymphogranuloma venereum</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Non-gonococcal infections</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Chancroid</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Trichomoniasis</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Pelvic inflammatory disease (women)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Bacterial vaginosis (women)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Candidiasis</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Genital herpes</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Granuloma inguinale</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Genital warts</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Neonatal conjunctivitis</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Other STI</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
</tr>
</tbody>
</table>

**RESULTS OF SEROLOGICAL TESTS FOR SYPHILIS**

<table>
<thead>
<tr>
<th>PERSONS TESTED</th>
<th>DURING THIS PERIOD</th>
<th>CUMULATIVE FOR THIS YEAR</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. tested</td>
<td>No. positive</td>
<td>No. tested</td>
</tr>
<tr>
<td><strong>Blood donors</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pregnant women</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>STI patients</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Others</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. This STI report should be based on etiological diagnosis.
2. Only new cases diagnosed during the period should be reported.
3. The report should include data from all treatment facilities, public and private.
4. The report should be forwarded quarterly and annually.
## ANNEX 4.5: CLINIC-BASED STI REGISTER

### SEX WORKER REGISTER (TO ADAPT)

<table>
<thead>
<tr>
<th>Demographics (complete all)</th>
<th>Visit (tick 1 or more)</th>
<th>Syndrome (tick 1 or more)</th>
<th>Treatment (tick 1 or more)</th>
<th>Prevention / screening (tick 1 or more)</th>
<th>Lab / other needs (optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID Number</td>
<td>Sex (M, F, T)</td>
<td>Age (years)</td>
<td>1st clinic visit</td>
<td>Check up</td>
<td>Syndrome</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>4</td>
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<td>5</td>
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<td>11</td>
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<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fill in date once per day. Start new page each day. ID numbers from cards.

Sex/gender (transgender) Indicate if:

- 1st clinic visit
- Check up
- Syndrome
- Partner referral
- Follow up for previous STI (within 2 weeks)

VCD: vaginal/cervical discharge
GUD: genital ulcer disease
LAP: lower abdominal pain
UD: urethral discharge
ARD: anorectal discharge

Rx1 = Cervicitis, UD, ARD or presumptive treatment
Rx2 = Vaginitis treatment
Rx3 = GUD treatment
Rx4 = GUD (herpes) treatment
Rx5 = LAP treatment
Rx6 = UD second-line treatment (adapt if using STI packs)

Reinforce importance of condom use/risk reduction and offer condoms. Treatment for regular partners should be offered for clients with GUD or LAP. Date of next visit should be marked on card.

Note: additional services provided.
# Annex 5: UNAIDS/WHO Recommendations for Core Surveillance in Different Epidemic Settings

<table>
<thead>
<tr>
<th>Epidemic State</th>
<th>HIV Surveillance</th>
<th>STI Surveillance</th>
<th>Behavioural Surveillance and Population Size Estimation</th>
</tr>
</thead>
</table>
| **Low Level** | 1. HIV advanced infection reporting  
2. HIV case reporting  
3. Facility- or community-based HIV sentinel surveillance for key populations at higher risk for HIV exposure | 1. STI case reporting  
2. Facility- or community-based STI sentinel surveillance for key populations at higher risk for STI exposure  
3. ANC syphilis surveillance | 1. Mapping-based size estimation of high-risk groups  
2. Biobehavioural surveys of key populations at higher risk for HIV and STI exposure (e.g. BSS, IBBS) |
| **Concentrated** | 1. HIV advanced infection reporting  
2. HIV case reporting  
3. Facility- or community-based HIV sentinel surveillance for key populations at higher risk for HIV exposure  
4. ANC sentinel surveillance for HIV | 1. STI case reporting  
2. Facility- or community-based STI sentinel surveillance for key populations at higher risk for STI exposure  
3. ANC sentinel surveillance for syphilis | 1. Mapping-based size estimation of high-risk groups  
2. Biobehavioural surveys of key populations at higher risk for HIV and STI exposure (e.g. BSS, IBBS) and inclusion of biological markers in highest priority sites, where feasible |
| **Generalized** | 1. HIV advanced infection reporting  
2. HIV case reporting  
3. Facility- or community-based HIV sentinel surveillance for key populations at higher risk for HIV exposure  
4. ANC sentinel surveillance for HIV  
5. General population surveys (with behavioural and biological markers, including STI) | 1. STI case reporting  
2. Facility- or community-based STI sentinel surveillance for key populations at higher risk for STI exposure  
3. ANC sentinel surveillance for syphilis | 1. Characterization and size estimation of high-risk groups including profile of general population with multiple/concurrent sex partners  
2. Biobehavioural surveys of risk behaviours, HIV and STI of key populations at higher risk for HIV and STI exposure, especially proxy groups for general population with multiple/concurrent sexual partners  
Repeated behavioural surveys in groups considered to engage in high-risk behaviour for acquiring HIV infection  
Repeated risk behaviour surveys in the general population with a focus on young people |

ANC antenatal clinic, BSS behavioural surveillance survey, IBBS integrated biological and behavioural survey

---

1 In all three epidemic states, STI surveillance serves as:
- An early warning system for HIV infection and emergence of HIV in new groups or new geographical areas
- An evaluation tool for HIV prevention programmes.

Sexually transmitted infections (STIs) continue to be of major public health concern in the South-East Asia Region of WHO (SEAR). Failure to adequately treat STI at an early stage may lead to serious complications and sequelae. STIs have also been found to increase the risk of sexual transmission and acquisition of HIV infection. The rise in incidence of anorectal infections among men who have sex with men, and the increasing lack of response to third-generation cephalosporins in SEAR countries are other areas of concern.

Almost all countries in the Region have national guidelines for the management of STI, based on either syndromic management or etiological diagnosis or both. However, only a few countries have updated/revised their management guidelines recently. These new regional guidelines for STI management take into consideration the new technologies and therapeutics that are now available.