

A Practical Guide to Case Management of Sexually Transmitted Diseases for Health Care Personnel



WORLD HEALTH ORGANIZATION
Regional Office for the Eastern Mediterranean

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Case Management
of Sexually Transmitted Diseases
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1998

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1. INTRODUCTION

Sexually transmitted diseases (STDs) are infectious diseases of major public health importance. Their prevalence throughout the world is high. The importance of these infectious diseases lies in the fact that they can cause complications in those people who have become infected, they can remain asymptomatic in the body for long periods of time and they can cause fetal and neonatal infection. With the advent of the pandemic of infection with the human immunodeficiency virus (HIV), the importance of STD has been greatly heightened as HIV infection is yet another STD. To date there is no known cure for HIV infection and people with HIV infection will ultimately develop acquired immunodeficiency syndrome (AIDS) and die from this.

The interrelationships between HIV infection and the other STDs are many. HIV infection is yet another STD. It is acquired and transmitted in the same way as all other STDs. The primary prevention of both HIV infection and other STDs is the same. Most important is the fact that other STDs facilitate the transmission and acquisition of HIV infection.

People with STD, apart from the innocent spouses in a stable relationship, have become infected through their own risky sexual behaviour. Therefore whenever a patient presents with an STD it is imperative for the health care provider to take the opportunity of educating the patient about risk reduction, safer sexual behaviour and safer sexual acts. It should be remembered that the patient who has a treatable STD this time may well present the next time with HIV infection, since the mode of acquisition of HIV infection is the same as that for other STDs.

Patients with STD may seek care in the private or public sectors and also in the formal or informal sectors. Usually people with STD will attend those facilities which they consider provide care that is acceptable to them. Such care should be effective and should be non-stigmatizing and non-discriminating. Patients with STD seek care when they have symptoms. The care that is offered to them should therefore relieve the patients of their symptoms as quickly as possible. Such care should also prevent complications and should render the patient non-infectious as soon as possible.

This practical guide is designed for the use of all health care providers. Through the syndromic approach people with STD may be managed effectively and appropriately at the point of first contact with a health facility. They do not need to be referred to special STD clinics nor do they require sophisticated laboratory tests before effective care is provided. Practical details of the provision of effective and acceptable care for people with STD are outlined. In the syndromic case management approach a patient with an STD is managed as a "whole" and not just simply provided with antibiotics for the infection that he/she has acquired.

2. COMPONENTS OF STD CASE MANAGEMENT

In the syndromic case management approach people with STD are provided with the total care “package” and not simply antibiotics for the infection. The total management package should be given in order to make sure that the patient understands his/her illness, and can take steps to avoid acquiring the infection again in future. Also in so doing the patient is made fully aware that HIV infection, for which there is no cure, is acquired in exactly the same way as any other STD and the person who has acquired STD this time may well acquire HIV infection the next time.

In providing care for persons with STD all health care providers should make sure that the patient is managed comprehensively. The various components of comprehensive syndromic case management include the following steps.

1. Make a syndromic diagnosis through history taking and examination.
2. Give the patient the appropriate antibiotics for the STD syndrome.
3. Assess the patient's personal risk status for STD.
4. Provide health education on:
 - the nature of the infection and possible complications
 - the mode of transmission of infection
 - the relationship between HIV infection and other STDs
 - the importance of treatment compliance
 - risk reduction through safer sexual behaviour and safer sex acts
 - the proper use of condoms, and
 - how partner(s) may also be treated.
5. Give the patient a supply of condoms.
6. Arrange for partner(s) to receive treatment.
7. Arrange for a follow-up examination.

3. MAKING A SYNDROMIC DIAGNOSIS

In order to make a syndromic diagnosis of STD you will need to take a history and then to examine the patient. There are a large number of pathogens that can be transmitted from one person to another during sexual intercourse. Each of these pathogens can cause a disease. It is difficult to make an exact diagnosis of the STD by etiology unless sophisticated laboratory facilities are available. Fortunately, however, a number of different pathogens often produce a common set of symptoms and signs. As an example, genital ulcer disease is caused by syphilis, chancroid and genital herpes infection. In addition, in some parts of the Region genital ulcers are sometimes the result of granuloma inguinale or lymphogranuloma venereum. Similarly urethral discharge in males is commonly due to gonococcal or chlamydial infection. Other less common causes of urethral discharge include infection with *Trichomonas vaginalis*, *Candida albicans* and *Ureaplasma urealyticum*. To make an exact etiologic diagnosis of the cause of a symptom related to STD requires special laboratory tests which are often not available at the primary care level and for these tests to be carried out one may need to send specimens to a specialized diagnostic laboratory. The results may take a few days to come back and in the meantime, if the patient has not been treated, there is a likelihood of him/her developing complications and of spreading the infection to others.

An important aspect in the control of STD is the rapid and effective treatment of individuals presenting to health facilities with symptoms. Effective treatment should be available at the time of first contact of the patient with a health facility. Patients should not be told to visit clinics especially designated to treat STD as this may lead to stigmatization and consequently the health care provided will not be acceptable.

In some primary care facilities some laboratory facilities are available. These can, and should, be made use of. Many clinics will have facilities to carry out a microscopic examination of exudates. In such situations the laboratory should be useful. However, it should be noted that the results of simplified tests may not be relied upon totally. As an example, if a male patient with urethral discharge attends a clinic, the clinician may take a smear of the urethral discharge and arrange for a microscopic examination of the Gram-stained exudate. The results of such an examination may be interpreted as follows:

- Result is negative, i.e. there are no polymorphonuclear leucocytes, commonly known as pus cells, in a number of different fields examined;
- Result is positive, i.e. there are numerous pus cells in different fields examined. This tells us that the patient has urethritis. In order to find out the cause of the discharge numerous fields need to be examined for organisms. If intracellular, Gram-negative diplococci are found, it may be concluded that the patient has gonococcal infection. However, it cannot be concluded that the patient does not also have chlamydial infection. If numerous pus cells in a smear of urethral exudate are found then it can be concluded that the patient has urethritis. If, however, there are no intracellular Gram-negative diplococci to be found then it can be concluded that the patient has nongonococcal urethritis. An etiologic diagnosis can only be certain if the organisms were either cultured or detected by enzyme-linked immunosorbent assay (ELISA) or ligase chain reaction (LCR). These tests are expensive and are too complicated to perform at the primary care level.

In clinical practice you will find that mixed infections and multiple infections occur very commonly, and unless you carry out a whole range of laboratory tests in every patient you may not pick up every infection. It is much more cost-effective to treat for the common causes of an STD syndrome. In the syndromic approach to the management of STD you will need to treat patients for more than one infection at the same time. Because of the confusion that laboratory tests may cause, it is safest to treat all male patients with urethral discharge for both gonococcal and chlamydial infection in the first place. This approach will cure over 99% of subjects, and amongst those that do not respond to this treatment special tests may be carried out.

4. STD SYNDROMES

A number of different STD pathogens produce a common set of symptoms and signs. A consistent pattern of symptoms and signs is known as a syndrome. As an example the syndrome of genital ulcer is caused by syphilis, chancroid, genital herpes, granuloma inguinale and lymphogranuloma venereum. Etiologic studies need to be performed in order to provide information as to which of the pathogens are more prevalent. Once this information is known guidelines can be developed on the specific treatment of the syndrome. Table 1 gives a list of the common STD syndromes and their causes. It is important to know what the main patterns of STD are in the country and also what the chief causes of the STD syndromes are. Once this information is available then it is quite easy to develop appropriate guidelines.

People with STD attend health facilities because they have developed symptoms. For them the most important thing is that their symptoms are relieved as quickly as possible and with the least amount of “fuss”. People with STD will attend health facilities if they find that the service provided is acceptable and that the facilities are accessible. The provision of acceptable and accessible care for persons with STD may be achieved through syndromic case management of STD.

Table 1 Common STD syndromes and their causes

Patient will complain of (i.e. symptoms)	Abnormality that you may find (i.e. signs)	STD syndrome (i.e. diagnosis)	Causes of syndrome
Urethral discharge Burning when passing urine	Discharge coming out of the urethra	Urethral discharge	Gonorrhoea Chlamydial infection Trichomoniasis Candidiasis Ureaplasma
Sores on genitals Pain in genitals	Ulcers or sores on the genitals	Genital ulcer	Genital herpes Syphilis Trauma Chancroid Granuloma inguinale Lymphogranuloma venereum
Vaginal discharge Vaginal or vulval itchiness	Vaginal discharge	Vaginal discharge	Candidiasis Trichomoniasis Vaginosis (Gardnerella) Gonorrhoea Chlamydial infection
Lower abdominal pain in women	Lower abdominal tenderness on palpation Vaginal discharge Cervical excitation tenderness Pelvic mass	Lower abdominal pain	Pelvic inflammatory disease (which is caused by gonococcal, chlamydial and anaerobic bacterial infection) Ectopic pregnancy Incomplete abortion Appendicitis
Swelling and pain in one or both testes	Swollen scrotum Swollen and tender testis	Acute scrotal swelling	Gonococcal, chlamydial or bacterial infection Trauma Torsion of the testis Mumps orchitis
Swelling and pain in the inguinal region	Hot, tender, painful, swollen inguinal lymph nodes Abscess formation in inguinal lymph nodes	Inguinal bubo	Chancroid Lymphogranuloma venereum
Baby aged less than 1 month has discharging eyes	Pus discharging from eyes Purulent conjunctivitis	Ophthalmia neonatorum	Gonococcal, chlamydial and bacterial infection

5. HISTORY TAKING AND EXAMINATION

5.1 General

In order to make a diagnosis of any condition a history needs to be taken from the patient and a physical examination needs to be carried out. When talking to the patient make sure that privacy is maintained. The patient must feel that whatever he/she says will be treated in the strictest confidence. The patient should be assured of this. Make sure that the conversation with the patient cannot be overheard by passers-by.

In taking a history the usual approach is to greet the patient and make sure that the patient is comfortable. At a primary care clinic, because you will have to deal with a large number of patients with all kinds of illnesses, you may not have enough time to take a full and detailed history and this may not be necessary. However, you should obtain all the relevant points from the history. A scheme that you may follow in taking a history is given below.

5.2 History taking

The following scheme may be followed in taking a history from persons with STD who present to a health centre.

a) General details

Name, age, sex, occupation, marital status, number of children, spouse's occupation, whether living away from spouse or not.

In order to obtain this information ask the following questions in the most appropriate and culturally acceptable way:

- *What is your name?*
- *Where do you live? [or What is your address?]*
- *Are you single or married? [Probe: Are you divorced or widowed?]*
- *How old are you? [or When were you born?]*
- *Are you employed?*
- *If the patient is employed ask: What work do you do?*
- *Is your spouse (husband/wife) employed?*
- *If spouse is employed ask: What work does he/she do?*
- *Do you and your spouse always live together? Are there times when you stay away from your spouse?*

b) Presenting illness

Make a list of the patient's presenting symptoms with duration and progression. You need to know what the patient's symptoms are, how long they have been there and how they have progressed. In order to obtain this information ask the following questions:

- *What is the matter with you today? [or What has brought you to come and see us today?]*
- *When did this problem start?*

- *How did it start?*
- *Is it getting worse?*

Then you should ask specifically about certain symptoms relating to STD unless the patient has already mentioned these. Ask the patient the following questions:

- *Do you have an unusual discharge from the genitals? If yes, When did this start?*
- *Do you have a sore on the genitals? If yes, When did it start? and, Is it painful to touch?*
- *Do you have swelling in the groins (inguinal area)? If yes, Is it painful?*
- *Do you have burning when you pass urine? If yes, When did this start?*

In women, ask the following questions in addition :

- *Do you have an unusual vaginal discharge? If the patient has a vaginal discharge ask the colour of the discharge and whether it is malodorous.*
- *Do you have pain deep down in the pelvis (lower abdomen)?*
- *Do you have pain during sexual intercourse?*
- *Do you have pain when you have your menses? If yes, When does it start and how long does it last?*
- *Do you have abnormal vaginal bleeding?*
- *Are your periods quite regular?*
- *When was your last period?*
- *Have you missed a period?*
- *Have your periods been delayed or late?*

In case you may not have covered all symptoms, let the patient say anything else that he/she wants. Ask the patient:

- *Do you have any other problems?*

c) Past medical history

Find out if the patient has had STD previously and how and where the episodes were treated. Find out the results of any tests carried out and the effect of treatment. Also find out if the patient has any other medical or surgical condition, whether he/she is taking any medication at the present time and whether the patient is allergic to any drugs. This information may be obtained by asking the following questions:

- *Have you ever had a similar illness before?*
- *Have you ever had a sore on the genital area or a discharge from the genitals before? If yes, Where did you go for treatment?*
- *What symptoms did you have?*
- *Were you cured with the treatment?*

- *Did you have any tests carried out then? If yes, What were the results of the tests performed?*
- *Have you had any operations before? If yes, Describe these with type of operation, dates and place of operations.*
- *Are you taking any kind of medication now? If yes, Describe the medication.*
- *Are you allergic to any kind of medication? Ask specifically about penicillin and sulfonamide allergy.*

d) Sexual history

This part of the history taking is the most sensitive. You as the clinician should not be embarrassed when asking the questions. You may overcome the patient's shyness by explaining to him/her that you will now be asking a few very personal questions. Reassure the patient that whatever he/she says will be kept completely confidential. Make sure that the patient realizes that he/she will not be overheard by other patients, other staff and by passers-by. Ask the following questions in a polite and culturally acceptable way:

- *When was the last time that you had sexual intercourse? Note the date. Then ask:
Who was this with?*
- *Then ask: Before this date (i.e. the date that the patient last had sexual intercourse) when was the last time you had sex? Note the date. Then ask:
Who was this with?*
- *Does your partner have a sore on the genitals or a discharge from the genitals?*

5.3 Examination

a) Examining men

When examining male patients make sure that the patient is examined in privacy and in a good light. The patient should remove his clothes so that he is stripped from the chest down. He need not take off all the clothes. The patient should be examined while lying on a couch. Cover the patient with a clean sheet and expose those areas that you are examining at the present moment. If however you do not have a couch for him to lie on, then he may initially be examined seated and then standing. Do the following:

- *Inspect the skin of the entire body looking for rashes, sores, swellings, warts and pubic lice. Note down any abnormal findings.*
- *Make the patient sit up on the couch and palpate for enlarged lymph nodes in the anterior and posterior triangles of the neck, the supraclavicular fossae, the axillae and the epitrochlear regions. Note the size and number of lymph nodes and whether they are painful or not.*
- *Examine the oral cavity and throat and look for sores and ulcers in the mouth.*
- *Let the patient lie down on the couch and palpate the abdomen for any mass or visceral enlargement.*

- *Inspect the genital area for rashes, sores, swellings, pubic lice and warts. Note particularly any urethral discharge and determine whether the discharge is coming from the urethra or from under the foreskin in uncircumcised men.*
- *Inspect the pubic hairs for nits and lice.*
- *Examine the penis noting any rashes, sores or warts. Ask the patient to retract the foreskin if present and inspect the glans penis, coronal sulcus, frenulum of the glans penis and the urethral meatus.*
- *Inspect the buttocks, the perineum, the perianal skin and the anus. Look carefully for sores, rashes, discharge or warts.*
- *Palpate the scrotum feeling for individual parts of the anatomy, i.e., the testis, the epididymis, the spermatic cord and the inguinal canal on both sides.*
- *Palpate the groins for enlarged lymph nodes and note the size of the lymph nodes and whether they are tender to palpation.*
- *If there is no obvious urethral discharge then squeeze the urethra forwards to see if you are able to express any discharge.*

b) Examining women

If you are a male health worker and you have to examine a female patient make sure that you have a woman present during the interview and examination.

When examining female patients make sure that the patient is examined in privacy and in a good light. The patient should remove her clothes from the chest down. The patient should be examined on a couch. Do the following:

- *Inspect the skin of the entire body looking for rashes, sores, swellings, warts and pubic lice. Note down any abnormal findings.*
- *Make the patient sit up on the couch and palpate for enlarged lymph nodes in the anterior and posterior triangles of the neck, the supraclavicular fossae, the axillae and the epitrochlear regions. Note the size and number of lymph nodes and whether they are painful or not. Examine the breasts for lumps.*
- *Examine the oral cavity and throat and look for sores and ulcers inside the mouth.*
- *Let the patient lie down, then palpate the abdomen for any mass or visceral enlargement. Note any areas of tenderness. Palpate deep down in the pelvis*
- *Ask the patient to bend her knees and to separate them so that you can examine the external genitalia. Inspect the genital area for rashes, sores, swellings, pubic lice and warts. Note any obvious vaginal discharge. Note the colour and odour of the discharge and the amount of discharge.*
- *Inspect the pubic hairs for nits and lice.*
- *Inspect the buttocks, the perineum, the perianal skin and the anus. Note any sores or rashes present.*

- *Palpate the groins for enlarged lymph nodes and note the size of the lymph nodes and whether they are tender to palpation.*

The examination of the female patient can end at this point if you do not have the facilities to carry out a digital bimanual examination and a speculum examination. In addition you may not be able to perform this examination if the examination is not acceptable to the patient. If, however, this is possible then proceed to carry out a speculum and bimanual digital examination.

Carrying out a speculum and digital examination

- *Explain to the patient that you will now be examining her from the inside. Explain that you will be inserting a clean metal "tube" inside the vagina in order to look directly at the mouth of the womb, i.e. the cervix, and you will look for any discharge or sores that may be present there and that the examination will not be painful.*
- *Make sure to cover the patient with a sheet and expose only those parts that you are examining.*
- *Ask the patient to lie down on the couch and to bend and separate her knees. Separate the labia and look for vaginal discharge, genital ulcers and warts.*
- *Do not hurt your patient.*
- *Insert a bivalve speculum into the vagina and visualize the vaginal epithelium and the cervix. Look carefully for ulcers, warts and cervical and vaginal discharge. If a discharge is present, note its characteristics. Look specifically at the cervix to see whether there is mucopus coming from the cervix. If there is a lot of discharge in the vagina it may be necessary to wipe the cervix with a swab of cotton wool and then to see whether there is mucopus coming from the cervix. A good, bright light source is necessary in order to inspect inside the vagina. When you have completed inspecting the vagina and the cervix remove the speculum.*
- *After removing the speculum you should carry out a bimanual digital examination of the pelvic organs. This examination is carried out with two fingers inside the vagina and with the other hand placed on the lower abdomen. With your fingers inside the vagina and the other hand on the abdomen examine the pelvis for swellings and tenderness. Check for cervical excitation tenderness by gently moving the cervix laterally.*

5.4 Making a syndromic diagnosis

Once you have completed the history and examination you must decide whether the patient has an STD, whether he/she has another illness not related to STD, or whether he/she has no illness at all and is simply worried about STD.

If the patient has an illness unrelated to STD, treat him/her accordingly. If the patient has no signs of STD and is simply worried about STD, then assess his/her risk status and advise him/her accordingly as described in Section 7.7. If the patient has an STD, then you need to decide whether he/she has one or more of the following syndromes:

- Urethral discharge in men
- Genital ulcer

- Vaginal discharge in women
- Lower abdominal pain in women
- Acute scrotal swelling in men
- Inguinal bubo.

Once you have arrived at a decision as to what the patient has you can treat him/her according to the national guidelines. Standard treatment guidelines are described in the next section. Flow-charts for the management of each of the STD syndromes are also presented.

6. PROVIDING THE APPROPRIATE ANTIBIOTICS

NOTE. The treatment recommendations for the various STD syndromes vary from country to country. Follow the national guidelines and recommendations if these are available. The choice of the antibiotics will depend on their availability, cost and effectiveness. However, in general the antimicrobial agents given below are recommended. The drugs have been listed in order of preference.

6.1 Urethral discharge in men

Refer to the flow-chart for urethral discharge (Figure 1). This flow-chart gives guidance on the management of men presenting with urethral discharge. The flow-chart instructs you first to take a history and then to examine the patient. You need to decide whether or not the patient has a discharge. If you find that the patient has a discharge, then treat the patient for both gonococcal and chlamydial infection.

For **gonococcal infection** give:

Ceftriaxone 250 mg intramuscularly (IM) in a single dose, *or*

Spectinomycin 2 g IM in a single dose, *or*

Ciprofloxacin 500 mg orally in a single dose, *or*

Cefixime 400 mg orally in a single dose, *or*

Kanamycin 2 g IM in a single dose, *or*

Thiamphenicol 2.5 g orally daily for 2 days, *or*

Sulfamethoxazole 400 mg/trimethoprim 80 mg 10 tablets orally daily for 3 days.

PLUS for **chlamydial infection** give:

Tetracycline 500 mg orally 4 times daily for 7 days, *or*

Doxycycline 100 mg orally twice daily for 7 days, *or*

Erythromycin 500 mg orally 4 times daily for 7 days.

NOTE. Penicillin is not recommended in the management of urethritis as the penicillin resistance rate of *N. gonorrhoeae* is unacceptably high.

6.2 Genital ulcers in men and women

The flow-chart in Figure 2 gives guidance for the management of genital ulcers in men and women. This flow-chart again is a relatively simple one in that it instructs you to take a history and confirm, after examination, the presence of genital ulcers. If genital ulcers are present then you are advised to treat the patient for *both* syphilis and chancroid as detailed below.

For **syphilis** give:

Benzathine benzylpenicillin 2.4 million units IM in two sites at one session, *or*

Procaine benzylpenicillin 1.2 million units IM daily for 10 days, *or*

For non-pregnant adults who are allergic to penicillin give tetracycline 500 mg orally 4 times daily for 15 days, *or*

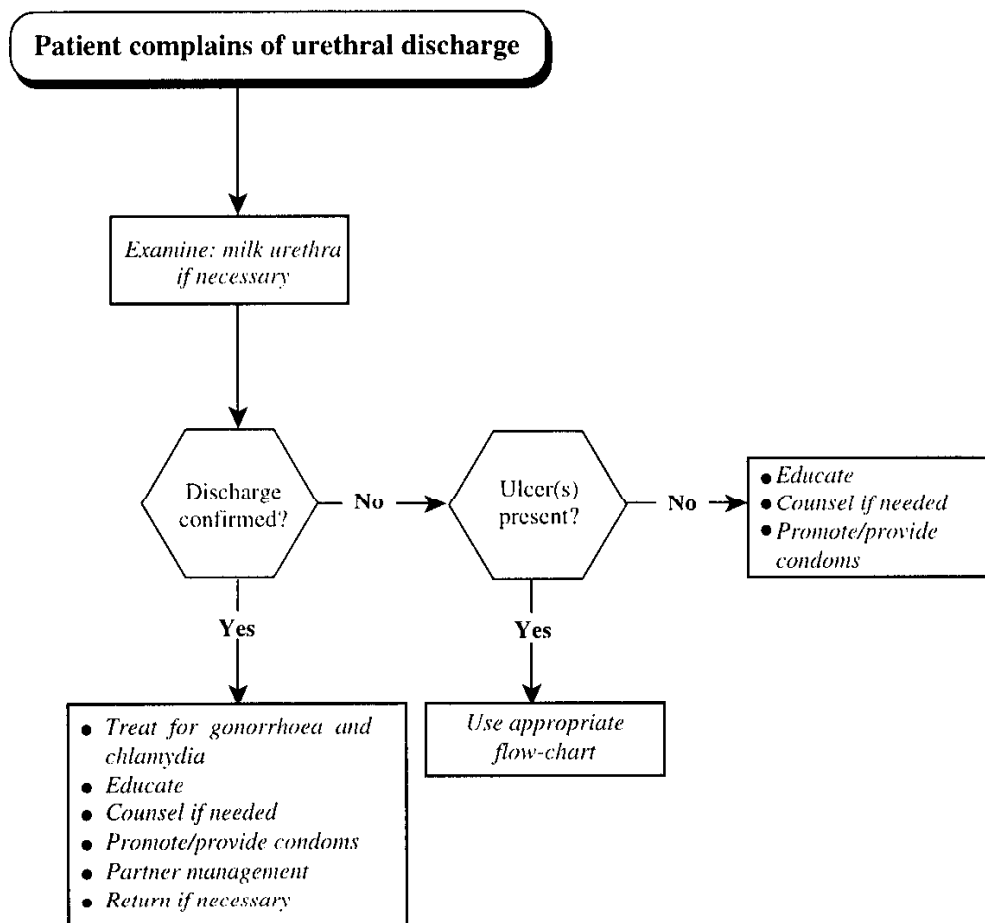


Figure 1 Flow-chart for the management of urethral discharge in men

Doxycycline 100 mg orally twice daily for 15 days, *or*

For pregnant women who are allergic to penicillin give erythromycin 500 mg orally 4 times daily for 15 days.

PLUS for *chancroid* give:

Erythromycin 500 mg orally 3 times daily for 7 days, *or*

Ciprofloxacin 500 mg orally in a single dose, *or*

Ceftriaxone 250 mg IM in a single dose, *or*

Spectinomycin 2 g IM in a single dose, *or*

Sulfamethoxazole 400 mg/trimethoprim 80 mg 2 tablets orally twice daily for 7 days.

NOTE. Tetracycline, doxycycline, metronidazole, ciprofloxacin and sulfamethoxazole/trimethoprim should not be used during pregnancy and lactation.

6.3 Vaginal discharge

In women presenting with vaginal discharge decide whether the woman is at risk for cervicitis. A woman is at risk for cervicitis if she says that her partner has either urethral discharge or genital ulcers or if she is herself unmarried. Such women should be treated for cervicitis and vaginitis. If the woman has a vaginal discharge and does not have any one of the risk characteristics for cervicitis then she should be treated for vaginitis only. The treatment of cervicitis includes treatment for gonococcal and chlamydial infection. The treatment for vaginitis includes treatment for trichomoniasis and candidiasis (note that the treatment for trichomoniasis will also cover for bacterial vaginosis). The flow-chart in Figure 3 gives guidance on the management of vaginal discharge in women.

The treatment for cervicitis includes treatment for gonococcal and chlamydial infection.

For *gonococcal infection* give:

Ceftriaxone 250 mg IM in a single dose, *or*

Spectinomycin 2 g IM in a single dose, *or*

Ciprofloxacin 500 mg orally in a single dose, *or*

Cefixime 400 mg orally in a single dose, *or*

Kanamycin 2 g IM in a single dose, *or*

Thiamphenicol 2.5 g orally daily for 2 days, *or*

Sulfamethoxazole 400 mg/trimethoprim 80 mg 10 tablets orally daily for 3 days.

PLUS for *chlamydial infection* give:

Tetracycline 500 mg orally 4 times daily for 7 days, *or*

Doxycycline 100 mg orally twice daily for 7 days, *or*

Erythromycin 500 mg orally 4 times daily for 7 days.

The treatment for vaginitis includes treatment for trichomoniasis and candidiasis.

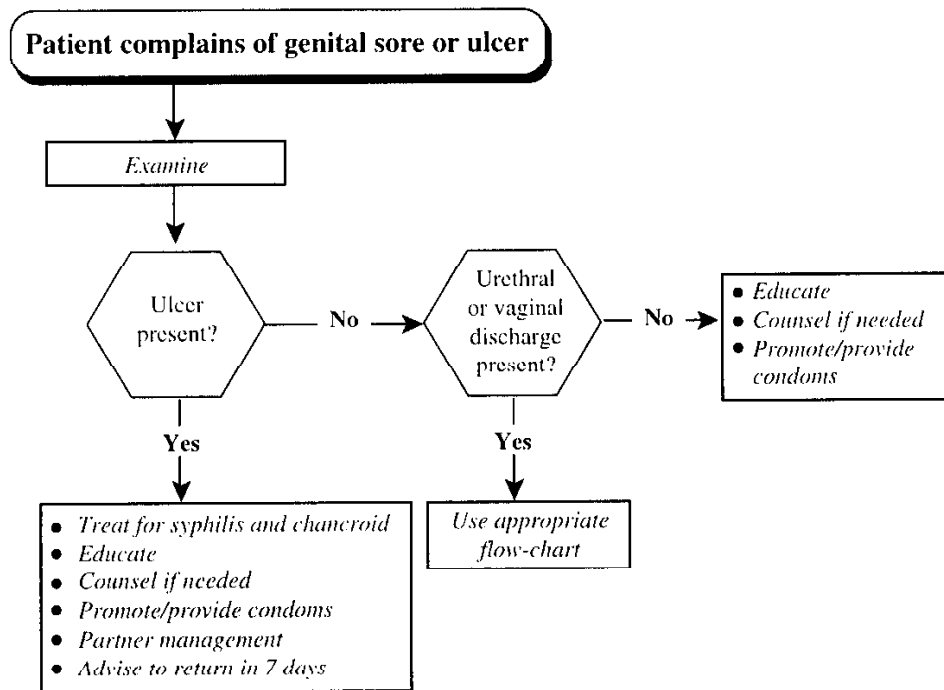


Figure 2 **Flow-chart for the management of genital ulcers in men and women**

For **trichomoniasis** give:

Metronidazole 2 g orally in a single dose, *or*

If no response, Metronidazole 400 to 500 mg orally twice daily for 7 days, *or*

In pregnant women give clotrimazole pessaries 200 mg inserted into the vagina each night for 3 nights.

PLUS for **candidiasis** give:

Nystatin pessaries 100 000 units, 2 inserted into the vagina each night for 2 weeks, *or*

Clotrimazole pessaries 200 mg inserted into the vagina each night for 3 nights, *or*

Miconazole pessaries 200 mg inserted into the vagina each night for 3 nights, *or*

Fluconazole 150 mg orally in a single dose, *or*

Itraconazole 200 mg orally in a single dose.

NOTE. Tetracycline, doxycycline, metronidazole, ciprofloxacin and sulfamethoxazole/trimethoprim should not be used during pregnancy and lactation.

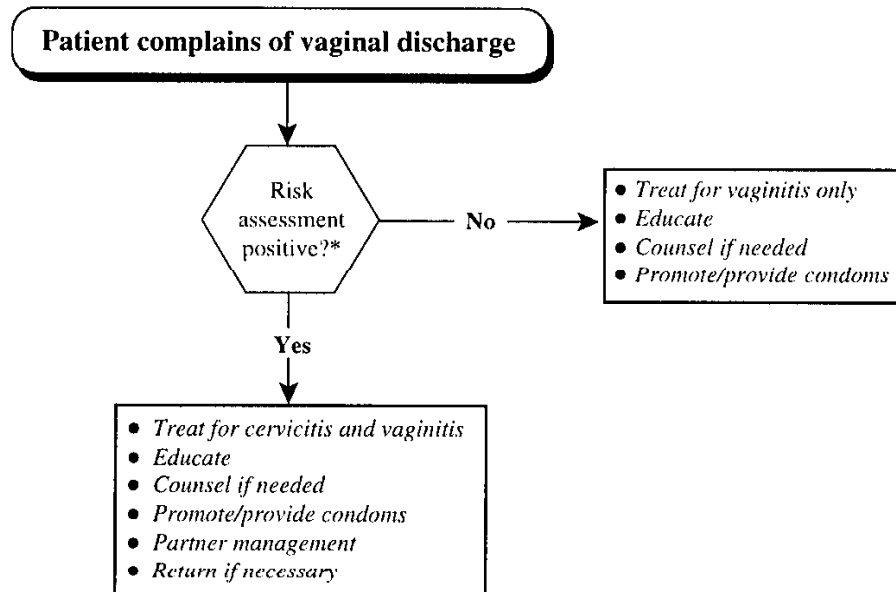
6.4 Lower abdominal pain in women

Lower abdominal pain is an extremely common symptom in women. One cause of lower abdominal pain in women is pelvic inflammatory disease (PID). PID is defined as infection of the female genital tract above the internal os of the cervix and implies endometritis, salpingitis, adnexitis, tubo-ovarian abscess and pelvic peritonitis. PID is caused by ascending infection from the cervix and vagina. The pathogens that cause PID include *Neisseria gonorrhoeae*, *Chlamydia trachomatis* and some of the anaerobic bacteria. PID is a serious consequence of STD and is a significant cause of morbidity and even mortality in women.

Women with PID may require admission to hospital for intravenous therapy or even surgery. Therefore all women who present with a lower abdominal pain in whom the following symptoms and/or signs are found should be referred for specialist attention:

- missed, overdue or delayed period
- active vaginal bleeding
- recent history, in the last 6 weeks, of miscarriage, abortion or delivery
- abdominal guarding or rebound tenderness
- pallor
- severely ill
- shock and hypotension.

These instructions are summarized in Figure 4 which is the flow-chart for the management of lower abdominal pain in women. Women with PID should be treated for gonococcal, chlamydial and anaerobic bacterial infection.



* Risk assessment for cervicitis is **positive** if the patient states that her partner has symptoms of STD or if she is a single woman

Figure 3 Flow-chart for the management of vaginal discharge

On an ambulatory basis the following treatment is recommended.

For **gonococcal infection** give:

Ceftriaxone 250 mg IM in a single dose, *or*

Spectinomycin 2 g IM in a single dose, *or*

Ciprofloxacin 500 mg orally in a single dose, *or*

Cefixime 400 mg orally in a single dose, *or*

Kanamycin 2 g IM in a single dose.

PLUS for **chlamydial infection** give:

Tetracycline 500 mg orally 4 times daily for 10 days, *or*

Doxycycline 100 mg orally twice daily for 10 days.

PLUS for **anaerobic bacterial** infection give:

Metronidazole 500 mg orally 3 times daily for 10 days.

For patients needing hospitalization the following treatment is recommended.

Intravenous fluids

PLUS

Ceftriaxone 250 mg IM or intravenously (IV) twice daily for 5 days

PLUS

Doxycycline 100 mg IV twice daily for 4 days, then 100 mg twice daily orally for 10 days

PLUS

Metronidazole 500 mg orally 3 times daily for 14 days

or

Intravenous fluids

PLUS

Ciprofloxacin 500 mg orally twice daily for 5 days

PLUS

Doxycycline 100 mg IV twice daily for 4 days, then 100 mg twice daily orally for 10 days

PLUS

Metronidazole 500 mg orally 3 times daily for 14 days.

For severely ill patients the following treatment is recommended.

Intravenous fluids

PLUS

Gentamicin 1.5 g/kg body weight IV three times daily for 5 days

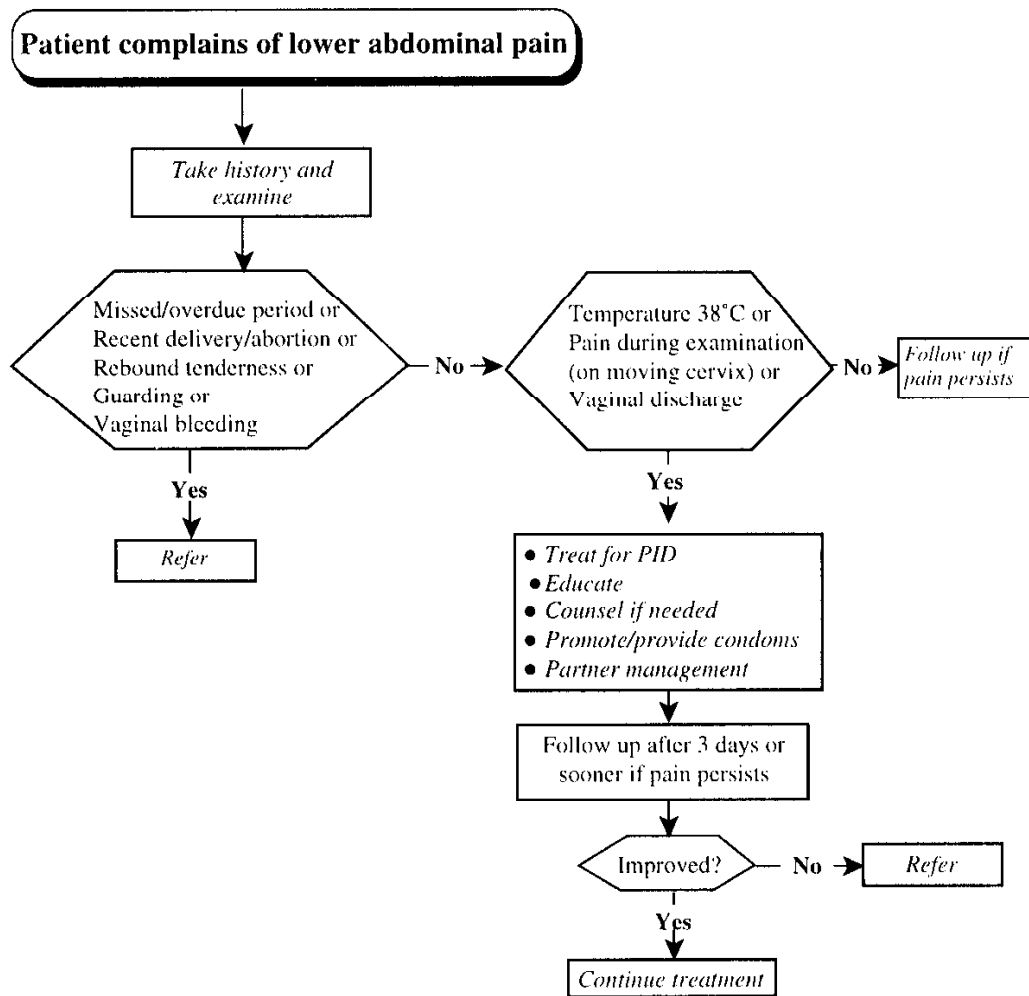


Figure 4 Flow-chart for the management of lower abdominal pain in women

PLUS

Clindamycin 900 mg IV 3 times daily for 5 days.

AFTER 5 DAYS

Commence doxycycline 100 mg orally twice daily for 10 days, together with metronidazole 500 mg orally 3 times daily for 10 days.

6.5 Inguinal bubo in men and women

An inguinal bubo is due to acute inflammation of the inguinal lymph nodes. This may occur in persons with chancroid, lymphogranuloma venereum and in persons with septic skin lesions on the thighs, legs, buttocks and genitals. When managing patients with inguinal bubo carry out a careful examination looking for septic lesions on the skin and for sores on the genitals. The flow-chart for the management of inguinal bubo is shown in Figure 5.

For persons with a bubo and genital ulcer give the treatment that you would normally give to persons with the syndrome of genital ulcer. This includes treatment for both syphilis and chancroid.

For **syphilis** give:

Benzathine benzylpenicillin 2.4 million units IM in two sites at one session, *or*

Procaine benzylpenicillin 1.2 million units IM daily for 10 days, *or*

For non-pregnant adults who are allergic to penicillin give tetracycline 500 mg orally 4 times daily for 15 days, *or*

Doxycycline 100 mg orally twice daily for 15 days, *or*

For pregnant women who are allergic to penicillin give erythromycin 500 mg orally 4 times daily for 15 days.

PLUS for **chancroid** give:

Erythromycin 500 mg orally 3 times daily for 7 days, *or*

Ciprofloxacin 500 mg orally in a single dose, *or*

Ceftriaxone 250 mg IM in a single dose, *or*

Spectinomycin 2 g IM in a single dose, *or*

Sulfamethoxazole 400 mg/trimethoprim 80 mg 2 tablets orally twice daily for 7 days.

NOTE: Tetracycline, doxycycline, metronidazole, ciprofloxacin and sulfamethoxazole/trimethoprim should not be used during pregnancy and lactation.

For persons with a bubo and NO genital ulcer give treatment for **Lymphogranuloma venereum** as follows:

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

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

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

Sulfadiazine 1 g orally 4 times daily for 14 days.

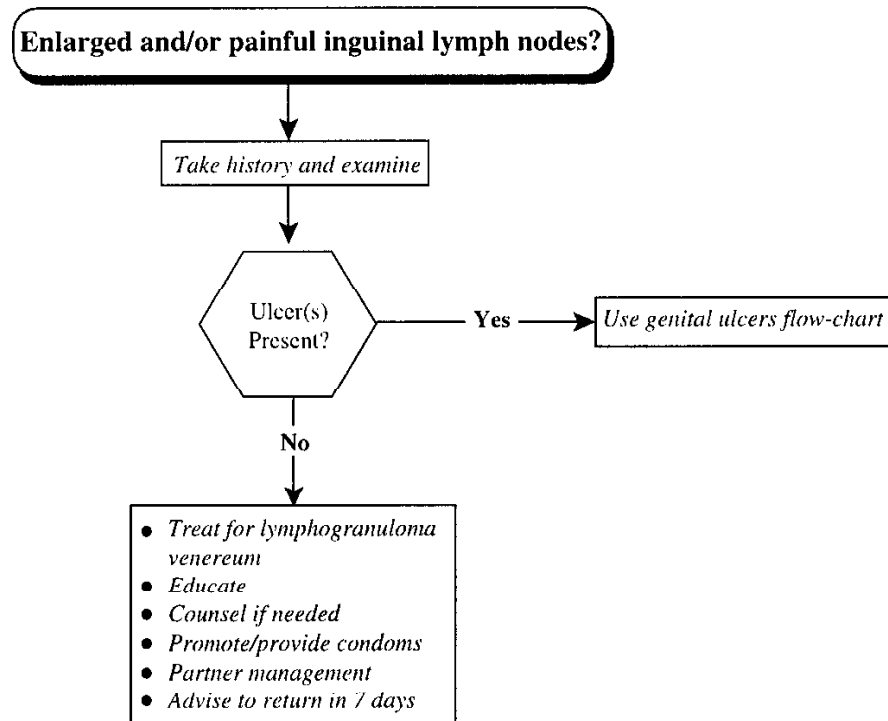


Figure 5 **Flow-chart for the management of inguinal bubo**

Bubo aspiration. If on examination you find a bubo, palpate the bubo to see whether it is fluctuant. A fluctuant bubo feels like a swelling that contains fluid. The fluid in a fluctuant bubo is usually pus and the pus should be removed. This is done by using a needle attached to a syringe. The procedure is to clean the skin by swabbing with spirit, then insert the needle into the soft portion of the bubo through normal skin and suck back the plunger of the syringe. Suck out as much pus as possible. If in a bubo there are many separate areas of fluctuation repeat this procedure for each fluctuant area. If fluctuation develops in a bubo after a person has been treated with the appropriate antibiotics this does not mean that there has been treatment failure, and there is no need to repeat the course of antibiotics. You should simply aspirate the bubo every 3 days if necessary. At times the pus may be so thick that you will only be able to aspirate it with a wide bore needle.

6.6 Acute scrotal swelling in men

In the history and examination of men who present with acute swelling of one or both of the testes the following features should be looked for:

- history of trauma
- elevated and/or rotated testis
- irreducible inguinal hernia
- ill and toxic patient.

If you think that the patient has any of these serious signs then refer him for specialist opinion after initiating resuscitatory measures such as setting up an intravenous line. If the patient has none of the above features you should treat him for *both* gonococcal and chlamydial infection. The flow-chart for the management of acute scrotal swelling is shown in Figure 6.

For **gonococcal infection** give:

Ceftriaxone 250 mg IM in a single dose, *or*

Spectinomycin 2 g IM in a single dose, *or*

Ciprofloxacin 500 mg orally in a single dose, *or*

Cefixime 400 mg orally in a single dose, *or*

Kanamycin 2 g IM in a single dose, *or*

Thiamphenicol 2.5 g orally daily for 2 days, *or*

Sulfamethoxazole 400 mg/trimethoprim 80 mg 10 tablets orally daily for 3 days.

PLUS for **chlamydial infection** give:

Tetracycline 500 mg orally 4 times daily for 7 days, *or*

Doxycycline 100 mg orally twice daily for 7 days, *or*

Erythromycin 500 mg orally 4 times daily for 7 days.

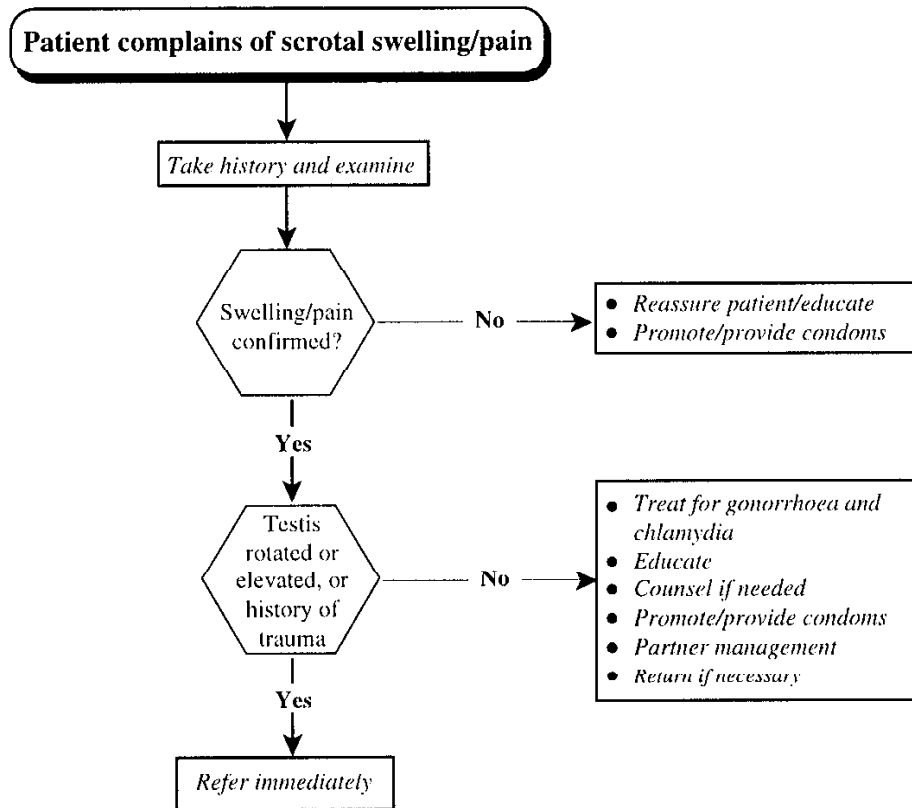


Figure 6 Flow-chart for the management of acute scrotal swelling

7. PROVIDING HEALTH EDUCATION

7.1 General

An important aspect of syndromic case management of STD is the provision of health education to the patient on an individual basis. During this session clinicians should not only provide information but also allow the patient to ask questions. Clinicians often feel that they are limited by time constraints and may not be able to fulfil the role of educator. However, it is important to realize that the patient has already formed a link with the clinician in that he/she has divulged extremely confidential information regarding his/her own behaviour to the clinician and will probably absorb any information that is provided by the clinician. Additionally, the clinician–health educator can, by asking a few more questions, make some kind of assessment of the patient's own perceptions about his/her risk status. The most important reason for providing education during STD consultation is that the person sitting in front of the clinician with STD has placed himself/herself at risk for acquiring HIV infection and if the opportunity is not taken to deliver the education messages at this very moment then the next time the patient returns might well be the time that he/she has picked up HIV. It is essential to assess the patient's personal risk status for STD.

Persons with STD should be educated in the following areas:

- nature of infection and possible complications
- mode of transmission of infection
- relationship between HIV infection and other STDs
- importance of treatment compliance
- importance of abstention from sexual activity until cured
- risk reduction through safer sexual behaviour and safer sex acts
- proper use of condoms
- how partner(s) may also be treated
- importance of returning for a follow-up examination.

7.2 Provide information on the nature of the infection and possible complications

In providing information about the nature of the infection the following messages should be delivered:

- *STDs may lead to serious complications.*
- *The infection may affect the patient's fertility.*
- *The infection can be spread to the spouse.*
- *Some infections remain completely silent, particularly in women.*
- *An infected pregnant woman can infect the baby in the womb or during childbirth.*
- *Infections such as syphilis can cause permanent heart and brain damage if untreated.*
- *Infections such as HIV infection can kill the infected person.*

7.3 Provide information on the mode of transmission of the infection

Patients should be made to understand how they have become infected. Deliver the following messages:

- *The infection that you have has come to you by having sexual relations with someone who also has the infection.*
- *Your partner may or may not have any symptoms or signs of the infection and may not know that he/she is infected.*

It may be necessary at times to explain to patients that some STDs, such as syphilis and HIV infection, may be acquired through blood transfusions.

7.4 Provide information on the interrelationships between HIV infection and other STDs

It is important that the patient with STD realizes that HIV infection is acquired in exactly the same way as the infection that he/she has now. Explain:

- *HIV infection, which causes AIDS, is an STD which a person picks up by having sex with someone who is already infected.*
- *AIDS is therefore just like any other STD.*
- *Your infection today can be treated and we can make you better, BUT, if you become infected with HIV then we cannot treat you because there is no cure for HIV infection.*
- *If you have an STD like the one that you have at present and you have sex with someone who has HIV, it is very likely that you will pick up HIV.*
- *The presence of other STDs makes a person more easily able to pick up HIV. Also a person who has an STD and also HIV is more likely to infect his/her partners with HIV as well.*

7.5 Emphasize the importance of treatment compliance

Make sure the patient understands the importance of treatment compliance. Pass on the following messages:

- *The infection that you have today can be treated, and you will feel much better very quickly.*
- *You should make sure that you complete the full course of treatment that you will receive today.*
- *All medicines should be taken as prescribed, even after your symptoms and signs have disappeared.*
- *If you do not complete the treatment properly then complications may develop, and you will remain infectious to partners and there is a likelihood that the medicines may not work the next time.*

7.6 Emphasize the importance of abstention from sexual activity until cured

It is advisable that patients refrain from sexual activity until cured especially since there is a greater likelihood of acquiring HIV infection if exposed to it while there is genital inflammation. If however, a patient cannot abstain from sex then condoms should be used. Explain:

- *Even though you are starting the correct treatment today you should not take part in sexual intercourse until the treatment has been completed and all signs of the disease have gone.*
- *This is important because you could spread the infection to your partner(s) and you are still more likely to become infected with HIV if you have sex with someone with HIV infection while you are taking treatment for STD.*

7.7 Conduct an assessment of the patient's personal risk status for STD

The patient in front of you became infected because of his/her own risky behaviour or that of his/her partner. But simply advising patients to change their behaviour does not really have the desired effect. In a one-to-one consultation you may be able to make an impact on the patient. In trying to determine the patient's risk level you must find out why the patient engaged in the behaviour that led to the infection. Is this simply a one-off episode? Is it likely that the same thing may occur again in future? Try and assess why a person has engaged in risky behaviour and then try and make him/her understand the risk involved. If a patient is able to comprehend his/her own risk status then he/she may well be able to do something to alter it.

The patient may not have engaged in any kind of risky behaviour and yet became infected. This is the situation when an erring person becomes infected and brings home the infection to the spouse. The risk status of an innocent spouse is the fact that she/he is married! A patient's risk level may be linked to his/her occupation. The risk status of a man employed as a long-distance truck driver is the repeated separation from his wife and family. A risk status of a sex worker is that she has many sexual partners. Some patients will state that the taking of alcohol made him take part in risky behaviour; in this case the taking of alcohol is the risk status.

The risk status may be different in each and every situation and therefore you should actively carry out an analysis of the risk level in every patient with STD. An assessment may be made by inquiring about the personal sexual behaviour, use of alcohol, type of occupation, partner's risk status, patient's own protective behaviour.

Once some knowledge is obtained regarding the patient's risk the patient can be advised accordingly. For example the sex worker should engage in safer sexual activity and use condoms 100% of the time or engage in non-penetrative sex only. The truck driver should practise abstention while on his travels, reduce the duration of his trips, use condoms all the time, or even take his wife with him on his travels. The patient who is influenced by alcohol intake should change his drinking habits or carry condoms with him all the time. The problem comes when the wife of a promiscuous husband becomes infected. The only risk that this woman is taking is having sex with her husband. In such a situation both partners need to be counselled repeatedly with the emphasis on changing the husband's behaviour.

8. PROVIDING A SUPPLY OF CONDOMS

Your patient has already demonstrated that he/she is at risk of acquiring STDs including HIV. You have already listed all the options available to the patient to avoid becoming infected in the future. Behaviour change will certainly help in preventing future infections. However, behaviour change is extremely difficult to achieve especially after one short consultation. Until the patient decides to change his/her behaviour he/she needs condoms.

The use of condoms is also essential to prevent transmission of STD from the STD patient to his/her partner, if the patient does not abstain from sexual intercourse until cured.

All patients with STD should be offered a supply of condoms. If condoms are available for distribution at your clinic then give the patient some. Otherwise tell the patient where he/she may obtain condoms. Condoms may be purchased from a pharmacy.

Do not assume that the patient knows how to use a condom. You should demonstrate how a condom should be used. Condom use demonstration is discussed in Section 7.9.

9. ARRANGING FOR TREATMENT OF PARTNERS

9.1 General

For every patient that you treat for STD there is at least one other person who has the infection. As health care providers it is your duty to inform the index patient of the services available for the treatment of partners. In many countries no such service is available. But even if there are no formal partner referral and treatment services you as clinicians should tell the patient that his/her partner needs to be treated and where the partner may be able to receive treatment. Usually we say to the index patient that the partner should go to his/her nearest clinic for treatment. This may well suffice, but in the formative stages of setting up treatment services for contacts the so-called “nearest clinic” may not know what to do with the partner. Therefore some form of training is necessary and there is a need for treatment guidelines for the management of symptomatic and asymptomatic partners.

When a partner referral service is not available there is merit in issuing the index patient with partner referral slips to pass on to his/her partner(s). The referral slip should not have the name of the index patient and the diagnosis should be coded. The slip could bear a simple instruction for the clinician at the receiving health centre stating that the bearer should be treated for the STD that is indicated by code. Initially, while you are setting up treatment facilities for partners the index patient could be told to inform his/her partner to return to the clinic where the index patient was treated.

Persons attending for STD care may not know the names and addresses of their partners. Many STD patients will not wish to divulge the names and addresses of their partners. Not many people with STD will wish to go and meet up with the source of their infection, particularly if money has been exchanged for sex.

It is important to make the index patient realize that he/she is the only person who knows the source of the infection. It is also important to make the index patient realize that the partners may have no symptoms or signs and that if the partners are not treated they will continue to infect others and are also likely to develop serious complications.

Index patients should also be made to realize that all secondary contacts, i.e. all the persons with whom the index patient has had sex after having sex with the source, are also infected and they need to be treated. Spouses who are secondary contacts may have no symptoms at all and need to be treated before complications of infection occur.

9.2 Managing partners of people with STD

Once you have traced a contact then you should treat him/her. The treatment that you will offer will depend on what STD syndrome the index patient had. The nature of the index patient's illness will be found on the referral slip.

The person who has been traced may have no symptoms at all and hence may not understand the need for treatment. Therefore you should spend some time in talking to him/her and explain why treatment is necessary. The asymptomatic nature of STD should be

explained and the patient should be made to understand that complications may develop despite the absence of symptoms.

In addition to treatment the contact should also receive comprehensive case management including: information regarding the nature of the infection, methods of preventing infection, proper use of condoms, and risk reduction behaviour and information on how other partners can be treated. The contact should be given partner referral slips for his/her other partners as well.

If the contact has symptoms and signs of an STD syndrome he/she should be treated for this as well as for the STD syndrome that the index patient was treated for.

9.3 Treatment to be given to partners

The partner should be offered comprehensive care as detailed in Section 2 of this guide. If you have no facilities for examining the contact the following treatment should be given regardless. The antibiotics that will be given will depend on the STD syndrome that the index patient was treated for. The following guide should be used.

For partners of a man with urethral discharge:

Give treatment for gonorrhoea and chlamydial infection

For partners of a patient with genital ulcers:

Give treatment for syphilis and chancroid

For partners of a patient with inguinal bubo and genital ulcers:

Give treatment for syphilis and chancroid

For partners of a patient with inguinal bubo without genital ulcers:

Give treatment for lymphogranuloma venereum

For partners of a man with acute scrotal swelling:

Give treatment for gonococcal and chlamydial infection

For partners of a woman with vaginal discharge:

Give treatment for gonorrhoea and chlamydial infection

For partners of a woman with pelvic inflammatory disease:

Give treatment for gonococcal and chlamydial infection

10. ARRANGING FOR A FOLLOW-UP EXAMINATION

It is important for patients to return for a follow-up examination at the end of the prescribed treatment. Usually this will be at the end of 7 days. However in persons receiving longer courses of treatment a follow-up examination should be arranged at the end of 7 days of treatment. All patients should be told to return sooner than the arranged date of follow-up examination if their symptoms get worse. During the follow-up visit patients are asked about symptoms and are examined to make sure that signs do not still persist and to make sure that complications of infection are not developing. Since patients will be treated with highly efficacious drugs the first time round it is expected that over 95% of patients will be free of symptoms and signs at the follow-up visit. If there are no signs of the original infection and there are no signs of any new infection, the patient need not attend for further follow-up. Always take the opportunity to educate the patient regarding the prevention of infection in future.

In persons who continue to have symptoms and signs when reviewed consider the following:

- there has been poor treatment compliance,
- there has been re-infection, or
- there has been treatment failure.

In such patients you should decide what the reason for persistence of symptoms is. Then you will take the necessary action. In order to decide you should ask the patient when he/she last had sexual intercourse. If this took place during the period of treatment then re-infection may be assumed to have occurred. In addition, ask the patient whether he/she has completed the full course of treatment. If the patient states that he/she is left with more than one day's supply of treatment then it may be assumed that there has been poor treatment compliance.

Treatment failure may be assumed if the patient has taken his/her medication regularly and has abstained from sexual intercourse during the treatment period. Some people may not respond to the first-line treatment offered. It is estimated that treatment failure will occur in less than 5% of patients. If treatment failure is the case, then the patient will need to be re-assessed and will require referral to a centre where laboratory facilities are available. The reason for treatment failure is usually antimicrobial resistance. Recently an increasing treatment failure rate has been noted in persons with STD who are also immunosuppressed with HIV infection. It is advised that persons who fail to respond to first-line treatment should be referred to a specialist centre for further investigations. If it is not possible to refer the patient for investigations or if laboratory facilities for the full investigation of STD are not available in a country, then it is advisable to treat the patient with one of the alternative treatment regimens listed in Section 6 of this guide.

11. MATERNAL SYPHILIS

11.1 General

Syphilis during pregnancy needs special attention. First the infection can have an adverse outcome on the pregnancy and, second, the infection can be transmitted to the fetus resulting in congenital syphilis.

Syphilis is caused by the spirochete *Treponema pallidum*. The infection is transmitted from one person to another during sexual intercourse; it may also be transmitted from a pregnant woman to her fetus, and it may be transmitted through blood transfusion if the blood donor has early syphilis. Congenital syphilis occurs as a result of transplacental infection of the fetus during a phase of spirochaetemia. Treponemes are present in the blood during the early stages of infection, i.e. during primary, secondary and early latent stages of infection. The effects of maternal syphilis on the outcome of pregnancy include any of the following:

- abortion
- macerated stillbirth
- infection evident in the baby at the time of birth
- baby develops features of congenital syphilis during the first 6 weeks of life
- baby develops no features of infection but serological tests for syphilis are positive
- child has no clinical or serological evidence of syphilis.

Syphilis may be classified into two broad groups: congenital and acquired syphilis (see Table 2). Within each of these groups the infection may be subdivided into early and late stages. Early congenital and acquired syphilis is infectious while in the late stages the infection is not transmissible. Early acquired syphilis is defined as primary syphilis, secondary syphilis and early latent syphilis (i.e. less than 2 years old).

11.2 Clinical features of acquired syphilis

The clinical features of acquired syphilis in adults include the following.

a) Primary syphilis

This usually presents as a genital or extra-genital ulcer. The ulcer is called the primary chancre. The incubation period for the development of the primary chancre on average is about 21 days, but may be as short as 9 days and as long as 90 days.

Table 2 Classification of syphilis

Congenital	Acquired
<i>Early</i> Failure to thrive, mucocutaneous, visceral, latent	<i>Early</i> Primary, secondary, meningovascular, latent
<i>Late</i> Latent, stigmata, gummatous, neurologic (latent, meningovascular, parenchymatous)	<i>Late</i> Latent, gummatous, cardiovascular, neurologic (latent, meningovascular, parenchymatous)

Table 3 Features of late acquired syphilis

Gummatous syphilis	Cardiovascular syphilis	Neurosyphilis (latent, meningovascular, parenchymatous)
• Diffuse infiltrative lesions • Isolated space occupying lesions	• Asymptomatic aortitis • Aortic incompetence • Angina pectoris • Aortic aneurysm	• Optic atrophy • Tabes dorsalis • General paresis

b) Secondary syphilis

This usually develops 2 to 4 months after initial infection. The patient develops skin rashes, papules on the skin and mucous membrane, ulcers in the mouth, generalized lymph node enlargement, condylomata lata in areas of moisture and friction and occasionally visceral manifestations.

c) Latent syphilis

In this stage there are no clinical features of syphilis. The only abnormality being positive serological tests for syphilis. Latent syphilis is subdivided into early latent syphilis when the infection is less than 2 years duration and late latent syphilis when the infection is more than 2 years duration. In latent syphilis the cerebrospinal fluid should be examined to determine whether there has been neurological involvement despite there being no overt clinical signs. If a patient has abnormal cerebrospinal fluid findings and no abnormal clinical features then it may be stated that the patient has latent neurosyphilis.

d) Late syphilis

This usually occurs 4 years after the initial infection. Late syphilis may be subdivided into gummatous syphilis, cardiovascular syphilis and neurosyphilis. Patients may develop various different clinical features depending on which organ and tissues have been mainly affected. Some features of late acquired syphilis are shown in Table 3.

11.3 Serological tests for syphilis

The two main groups of serological tests for syphilis are the non-specific tests and the specific tests. The non-specific tests detect a part of the IgG molecule called "reagin" in the serum. Reagin is produced during the course of syphilis and appears in the serum about 5 weeks after infection occurs. The reagin tests are not specific for syphilis and may be positive in a number of other infectious and non-infectious conditions including leprosy, tuberculosis, leptospirosis, malaria, lupus erythematosus, rheumatoid arthritis and even normal pregnancy. The specific tests for syphilis detect an anti-treponemal antibody and are hence specific for the infection. However the specific tests for syphilis may be positive in severe lupus erythematosus and severe rheumatoid arthritis. It should also be noted that none of the non-specific or specific tests for syphilis can differentiate between syphilis and yaws or endemic syphilis.

a) Non-specific tests for syphilis

The Venereal Disease Research Laboratory (VDRL) test and the rapid plasma reagin (RPR) test are the non-specific tests for syphilis. The former requires a microscope to read the test result while the latter is performed on a card and is therefore preferred. The tests become positive 5 to 13 weeks after infection and hence are not diagnostic tests. However, the tests become negative 12 to 24 months after adequate treatment and are, therefore, good prognostic tests. The tests can also become negative in untreated or “burnt out” syphilis. The advantage of the tests is that they can be quantified. Results of treatment can be monitored by serially measuring the titre at which the tests are positive. If 3 months after treatment the titre falls to a low level then cure can be assumed. If however the titre rises four-fold after falling to a low level after treatment then either relapse or reinfection has occurred and re-treatment is indicated.

b) Specific tests for syphilis

The fluorescent treponemal antibody absorbed (FTA-Abs) test and the *Treponema pallidum* haemmagglutination assay (TPHA) are specific tests and indicate treponemal infection if they are positive. Once a person has tested positive he/she remains positive for life even after successful treatment. If successful treatment is given very early after infection has occurred the tests may become negative after 24 months. The tests are good diagnostic tests but not good prognostic tests. False-positive results are rare. The FTA-Abs becomes positive 3 weeks after infection has occurred while the TPHA becomes positive at 4 to 5 weeks after infection.

NOTE. None of these tests distinguish between sexually transmitted syphilis and endemic syphilis including yaws and bejel.

11.4 Diagnosis of syphilis during pregnancy

Women attending gender specific clinics, such as antenatal clinics, form an ideal group for screening for certain STDs. The opportunity should be taken during the antenatal clinic visit to offer attendees clinical examinations and laboratory tests to detect infections which may be present and which are asymptomatic. All antenatal clinic attendees should be examined for STDs and if these are found they should be treated. An important reason for carrying out screening for some of the STDs at the time of the antenatal consultation is that infections such as syphilis, gonorrhoea and chlamydial infection may be transmitted to the fetus and neonate resulting in disastrous consequences in the infant. HIV infection is also transmitted transplacentally and perinatally, however routine screening for HIV infection in pregnancy is not a productive exercise as no treatment can be offered for HIV infection at this time. There are reports that anti-retroviral therapy given during the late stages of pregnancy and during labour reduces the risk of perinatal transmission of the infection to the neonate by two-thirds.

The antenatal visit provides an opportunity for screening for STD as the patient will be subjected to a physical examination and possibly have blood and urine tests carried out during the regular visits.



At the first antenatal visit, in addition to the regular routine procedures that are normally carried out, all women should have a history taken, genital examination and blood specimen collected for the following.

a) History to establish whether the patient is at risk for STD

Try and establish whether the patient is at risk for cervicitis by finding out whether her partner has any STD, whether she has symptoms related to STD such as vaginal discharge and genital ulcers, and whether she is unmarried. These factors have been tested in some countries within the Region but may not be universally applicable. Studies carried out in women with vaginal discharge and in asymptomatic women attending family planning clinics have shown that an affirmative answer to any one or more of the questions listed is associated with gonococcal and/or chlamydial infection.

b) Genital and pelvic examination

An inspection of the external genitalia should always be carried out. You should look for genital ulcers, bubos, rashes, lymph node enlargement and vaginal discharge. A speculum examination should also be carried out if possible and the cervix and vaginal epithelium should be inspected. If the patient has a genital ulcer then she should be treated syndromically for genital ulcer disease. If a woman has a yellow or purulent vaginal discharge or if there is discharge coming from the cervix she should be treated for gonococcal and chlamydial cervicitis.

c) Collect a blood specimen

A venous blood sample should be collected and the rapid plasma reagin (RPR) test should be performed on the serum. This test can be carried out at the antenatal clinic and the patient should wait for the result. The RPR test is performed on the serum and is an easy test to perform. It is carried out on a card. It should be noted that the RPR test is a non-specific tests and in those patients found to be positive the sample of blood should be sent to the laboratory for a titre to be measured and a confirmatory test to be carried out. However all patients found to be positive by the VDRL or RPR tests should be treated for syphilis without delay.

11.5 Management of syphilis during pregnancy

a) Women with genital ulcer disease

All women with genital ulcers should be treated syndromically for both syphilis and chancroid as described previously (see Section 6). The treatment of genital ulcer disease is summarized below.

For syphilis give:

For women who are allergic to penicillin give erythromycin 500 mg orally 4 times daily for 15 days.

PLUS for **chancroid** give:

Erythromycin 500 mg orally 3 times daily for 7 days, *or*

Ceftriaxone 250 mg IM in a single dose, *or*

Spectinomycin 2 g IM in a single dose.

b) Women found to have positive syphilis serology

Pregnant women found to be RPR positive should be given benzyl benzathine penicillin in a dose of 2.4 million units. This dose is given as two intramuscular injections at separate sites because of the large volume. Treatment is repeated weekly for two more weeks, i.e. a total dose of 7.2 million units. For women who are allergic to penicillin erythromycin is given in a dose of 500 mg orally 4 times a day for 15 days. Infants born to such mothers should be treated with benzyl benzathine penicillin 50 000 units/kg body weight as a single intramuscular injection, and women treated with erythromycin during pregnancy should be re-treated with doxycycline or tetracycline after they have stopped breast-feeding.

12. CONGENITAL SYPHILIS

12.1 General

One of the most serious complications of STD is the development of congenital syphilis. This infection occurs as a result of the transplacental transmission of *Treponema pallidum*. The infection of the fetus may lead to fetal wastage, neonatal disease and long term systemic features which occur as result of damage to fetal tissue and organs during the developmental stages. Congenital syphilis leaves the child scarred for life through no fault of its own.

12.2 Clinical features of congenital syphilis

Congenital syphilis occurs as a result of *in utero* infection of the fetus. Depending on the severity of fetal infection the following may occur.

Early congenital syphilis

Early congenital syphilis is defined as syphilis of less than 2 years duration. In a child born with clinical evidence of syphilis the features are of severe and overwhelming sepsis with generalized bullous lesions, hepatosplenomegaly, anaemia, pneumonia and cyanosis. The neonate is in danger of imminent death and should be treated promptly. The bullae contain serosanguinous fluid teeming with spirochetes. This however does not occur commonly as severe fetal infection usually results in a macerated stillbirth.

More commonly, however, an infant aged 2 to 12 weeks is brought in with a history of failure to thrive and having a generalized papulo-squamous rash. The rash may cover the entire body but usually affects the buttocks, thighs, face, palms and soles. There may be generalized lymphadenopathy, hepatosplenomegaly and anaemia, and there may be fissuring of the skin at the angles of the mouth, at the nostrils and at the anus. In areas of moisture and friction the flat grey lesions of condylomata lata may be found. Occasionally there may be nasal obstruction and a blood-stained nasal discharge. The mother may state that the child has a hoarse cry. It should be noted that the infection is disseminated and any organ of the body may be affected. Hence the signs of congenital syphilis are numerous. Table 4 summarizes some of the clinical features of early congenital syphilis.

Table 4 **Clinical features of early congenital syphilis**

Skin and mucous membrane lesions	Visceral lesions
• Bullous lesions • Papulo-squamous rash • Condylomata lata • Nasal mucositis • Laryngitis • Skin fissuring at angles of the mouth, nostrils and anus • Alopecia or hirsuties • Nail dystrophy	• Meningitis • Pneumonitis • Lymphadenopathy • Hepatitis • Hepatosplenomegaly • Anaemia, jaundice, thrombocytopaenia • Glomerulonephritis, nephrotic syndrome • Osteitis, periostitis, epiphysitis

Latent congenital syphilis

Latent congenital syphilis is infection in a child who has no clinical features of syphilis but in whom the serological tests for syphilis are repeatedly positive. The diagnosis is usually made on the routine testing of a child whose mother has serological evidence for syphilis. Note that in areas where yaws or endemic syphilis are common the results of syphilis serology in a child should be interpreted with caution.

Early latent congenital syphilis is syphilis of less than 2 years duration and late latent congenital syphilis is latent syphilis of more than 2 years duration.

It should be noted that a diagnosis of latent syphilis should only be made after a thorough examination to rule out any clinical features of syphilis has been carried out. In children with latent syphilis an examination of the cerebrospinal fluid (CSF) should also be carried out to exclude latent neurosyphilis.

Late congenital syphilis

Late congenital syphilis is defined as congenital syphilis of more than 2 years duration.

Late latent congenital syphilis

Latent infection is diagnosed on the finding of positive serological tests for syphilis in a child over 2 years of age who has no clinical features of the infection and in whom a CSF examination shows no evidence of infection.

Stigmata of congenital syphilis

Unfortunately some children who have had congenital syphilis carry the tell-tale scars of early infection for the rest of their lives. These features are called the stigmata of congenital syphilis and include: saddle nose, due to the collapse of the bridge of the nose; rhagades (scars of healed skin fissures at the angles of the mouth, around the nostrils and around the anus); abnormality of the teeth and bones; opacification of the corneas; painless swelling of the joints; nerve deafness.

All the stigmata of congenital syphilis are extremely rare, even in areas where congenital syphilis is common.

Gummatous congenital syphilis

Syphilitic gumma may appear as diffuse infiltrative lesions of the skin, mucous membrane, viscera and periosteum, or they may appear as space-occupying lesions. The diagnosis can only be made on histological examination of lesions in children who have positive syphilis serology.

Congenital neurosyphilis

Brain and spinal cord involvement may occur during the early and the late stages of congenital syphilis.

12.3 Diagnosis of congenital syphilis

The diagnosis of congenital syphilis is suspected when an infant presents with the typical features just described. All infants born to seropositive mothers should be examined at birth and each month. Positive serological tests in the infants serum may simply reflect the passive transfer of maternal antibodies and may not indicate active infection in the child. In a non-infected child the maternal antibodies will disappear after about 3 months.

The finding of IgM antibodies specific to *T. pallidum* in the infant's serum is indicative of active infection in the infant. This IgM specific fluorescent treponemal antibody-absorbed (IgM FTA-Abs) test is the most reliable test to perform to confirm the diagnosis of congenital syphilis in an infant.

Neurological complications in early congenital syphilis include meningitis and meningovascular infection. It is important to examine the cerebrospinal fluid in infants who have congenital syphilis. In infants with congenital syphilis radiological examinations of the long bones may reveal periostitis and epiphysitis.

12.4 Prevention of congenital syphilis

Congenital syphilis is a preventable infection and need not occur at all. This may be achieved through:

- actively screening all pregnant women for syphilis
- actively treating syndromically all pregnant women presenting with genital ulcers.

The routine screening of pregnant women for syphilis by means of an RPR test during the first antenatal visit and again, if they are considered to be at high risk, in the third trimester. Those found to be positive should be treated immediately with intramuscular benzathine benzylpenicillin as described in Section 11.5b). The RPR test may be performed at the clinic. The test is performed on a sample of the patient's serum and takes 8 minutes for the result to be ready. The test is performed on a card and special equipment is not needed.

It is recommended that all antenatal clinics carry out the RPR on all new pregnant women and ask the patient to wait for the results. If the test is positive then the patient is treated before she leaves the clinic. The husband (partner) of the infected woman should also be treated.

12.5 Management of congenital syphilis

In children with overt clinical features of congenital syphilis a 10-day course of benzylpenicillin 50 000 units/kg daily in two divided doses, *or* procaine benzylpenicillin 50 000 units/kg daily by intramuscular injection for 10 days should be given.

In children born to mothers who were adequately treated during pregnancy and in whom there are no clinical signs of congenital syphilis, a single IM dose of benzathine benzylpenicillin 50 000 units/kg may be given.

13. OPHTHALMIA NEONATORUM

13.1 General

Ophthalmia neonatorum is also known as neonatal conjunctivitis and is defined as purulent conjunctivitis occurring in a baby during the first month of life. The common causes of ophthalmia neonatorum include *N. gonorrhoeae* and *C. trachomatis*. Other causes include pyogenic bacteria such as the staphylococci and the streptococci, and the coliform organisms.

The infection usually causes purulent conjunctivitis and the child develops swelling and redness of the eyelids associated with a purulent discharge. Ophthalmia neonatorum caused by *N. gonorrhoeae* can lead to involvement of the cornea (keratitis) and when this resolves the healing process leads to scarring of the cornea and therefore the child becomes blind. Occasionally gonococcal infection can lead to perforation of the cornea and then the infection will destroy the eye totally (panophthalmitis). Ophthalmia neonatorum caused by *C. trachomatis* and the other pyogenic bacteria does not usually cause keratitis or panophthalmitis.

Ophthalmia neonatorum occurs as a result of undetected and untreated maternal cervical infection. The conjunctivitis is caused by bacteria that are present in the mother's birth canal. Mothers of children with ophthalmia neonatorum usually have asymptomatic cervicitis or may have such mild symptoms that they do not seek medical care for them.

13.2 Prevention of ophthalmia neonatorum

Ophthalmia neonatorum is entirely preventable and all attempts should be made to prevent its occurrence. Prevention may be achieved by the early detection and effective treatment of maternal infection and by administering antimicrobial agents into the eyes of neonates as soon as they are born. Methods of prevention are described below.

a) Detecting and treating maternal infection

Women with gonococcal or chlamydial cervicitis often have no symptoms at all. If symptoms do occur, they are usually vaginal discharge and possibly dysuria. Both these symptoms are common during pregnancy and the pregnant woman may not feel that she needs medical attention for them.

- It is necessary that all women attending antenatal clinics should be examined for cervicitis and, if this is detected, should be treated promptly.
- The sexual partners of all men with urethral discharge should be sought and treated for cervicitis even if they do not themselves have symptoms.
- An assessment for risk for cervicitis should be made when women attend antenatal clinics. This type of risk assessment in symptomatic women has been described in Section 4 of this guide.

b) Ophthalmia prophylaxis

As soon as possible after birth all babies should have 1% tetracycline eye ointment instilled into their eyes. This has become a routine procedure in many countries throughout the world and the method has saved the sight of many “at-risk” babies.

The procedure is a simple one. All it requires is a tube of 1% tetracycline eye ointment and a person to instil the medication. The procedure is as follows:

- As soon as possible after the birth of the baby, clean the baby's face and eyes with dry cotton wool.
- Open the baby's eye by gently pulling down on the lower eyelid and cheek and pulling up on the upper eyelid.
- Instil 1% tetracycline eye ointment into the lower conjunctival sac of the eye.
- Repeat the procedure with the other eye.

As the baby's face and eyelids are swollen and oedematous at the time of birth, take care and make sure that the ointment is placed in the lower conjunctival sacs of the eyes and not on the eyelids or cheeks.

In some countries ophthalmia prophylaxis is carried out using a dilute solution of silver nitrate. Silver nitrate solution is useful in preventing gonococcal ophthalmia neonatorum but its use in preventing chlamydial ophthalmia neonatorum is still being studied.

13.3 Management of ophthalmia neonatorum

Early effective treatment is necessary in order to prevent the disastrous effects of gonococcal ophthalmia neonatorum. All babies with purulent conjunctivitis should be treated for gonococcal infection in the first instance. The mother and father of the baby should receive treatment for gonococcal and chlamydial infection as well.

The flow-chart in Figure 7 gives guidance on the management of neonates with ophthalmia neonatorum. The management of neonates with purulent conjunctivitis may be summarized as follows:

All neonates with purulent conjunctivitis in the first month of life should be treated for **gonococcal infection** with:

Ceftriaxone 50 mg/kg body weight in a single IM dose (maximum 125 mg), *or*

Spectinomycin 25 mg/kg body weight in a single IM dose (maximum 75 mg), *or*

Kanamycin 25 mg/kg body weight in a single IM dose (maximum 75 mg).

If the infection has not cleared completely in 72 hours commence treatment for **chlamydial infection** with:

Erythromycin 50 mg/kg body weight per day in three divided doses for 14 days.

The mother and father of all neonates with purulent conjunctivitis need to be treated for both gonococcal and chlamydial infection.

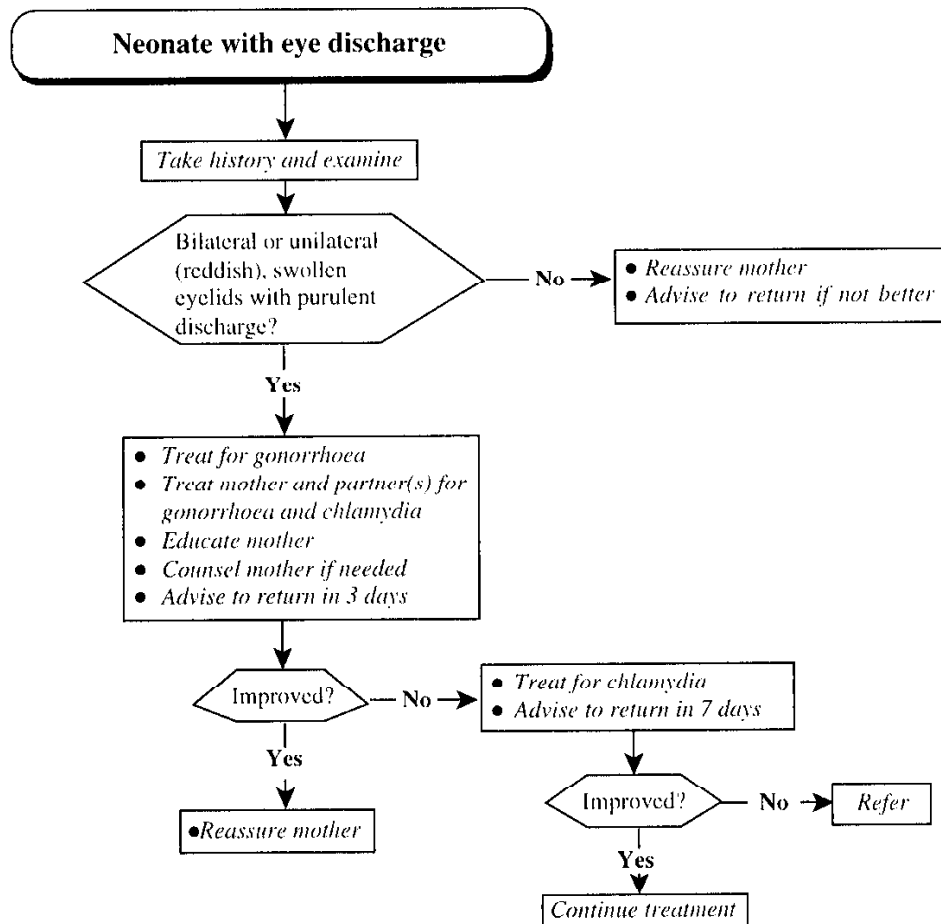


Figure 7 Flow-chart for the management of neonatal conjunctivitis

14. REPORTING STD CASES

14.1 General

An assessment of the size of the epidemic of STDs is necessary so that policy-makers and health planners can provide human and material resources needed to cope with the problem. If a large number of cases of gonorrhoea or chancroid are to be treated then appropriate quantities of effective drugs will need to be made available. Another reason for estimating the size of the epidemic is to determine whether interventions for the control of STD are actually working. The trend in the size of the epidemic is an important indicator of the success of interventions.

It should be noted that patients with STD may receive care in both formal and informal facilities. Accredited facilities include public and the private sector health facilities, while unaccredited facilities include traditional healers and drug vendors. In some countries pharmacists are accredited and prescribe antibiotics for people with STD, while in other countries pharmacists are not allowed to prescribe antibiotics but nonetheless do so. Hence when an estimate of the size of the epidemic is to be made these factors should be considered.

14.2 Reporting systems

a) Universal reporting

A universal system of reporting is one in which all health centres routinely and regularly report the number of patients seen and treated at health care facilities throughout the city or country. In this system all health centres submit the reports of the numbers of clinic attendances on a monthly basis. The submitted reports do not provide detailed information regarding every patient but do provide essential information. The information is collected on tally sheets and is collated locally and then sent to the epidemiology unit in the ministry of health or AIDS/STD control programme.

If reporting is complete and regular then the system of universal reporting is the ideal method of finding out the real magnitude of the problem. The system is dependent on the commitment and concerted effort of all health officers.

b) Reporting from sentinel sites

Reporting from sentinel sites is also a useful method of assessing the size of the epidemic. Sentinel sites are chosen randomly and should represent both urban and rural settings. Details of all cases of STD treated at the identified sites are obtained in a standard format. Details from sentinel sites may include age, sex, marital status, syndromic diagnosis, etiologic diagnosis and response to treatment. Any other important information may also be collected. Again the system is dependent on the health worker who fills out the forms. The completed forms are usually collated at a central level, usually at the epidemiology unit of the ministry of health and then quarterly reports are sent out from the central level so that the front-line health workers can use the information locally.

c) Reporting from laboratories

A number of infections are diagnosed after laboratory tests have been carried out. In the system where reporting occurs from the laboratory, the laboratory that makes the diagnosis reports the number of cases diagnosed on a monthly basis to the central epidemiology unit. This method is useful when all laboratories conscientiously report conditions diagnosed.

This system of reporting is used in many countries for reporting the number of cases that have been found to be HIV positive. The diagnosis of HIV infection is usually made only after a blood test is carried out. Laboratories usually submit to the ministry of health the number of tests that have been found to be positive. Apart from age and sex of the patient no other details are submitted. The details reported in this system could be made as elaborate as one would like.

14.3 A simplified reporting system

All clinics should report the cases of STD that are treated at their facilities. This applies to facilities in both the public and private sectors.

The reporting system need not be a complex one. As part of the health information system most public health facilities already report the number of cases that are seen at the clinics. In general, the system of reporting is through the use of tally sheets which are filled out by each health worker as they see patients. At the end of each month the figures are collated and monthly totals are calculated. Consolidated figures are recorded and sent to the central epidemiology unit where the data is collated on a national basis and reports are sent out each quarter.

The tally sheet has a list of diagnoses, against which appear columns for age groups and sex. Within the columns are a large number of circles. Each time a health worker sees a patient a line is drawn through one of the circles in the appropriate column against the appropriate diagnosis. For the reporting of STD, the tally sheet in most countries simply has "STD" in the "Diagnosis" column. However by the simple addition of a small number of STD syndromes in the "Diagnosis" column, the value of the tally sheet would be greatly enhanced.

Tally sheets have been developed for the specific purpose of recording the number of cases of STD that are treated at health facilities. Such tally sheets may be used in addition to the larger tally sheets covering all other conditions. The recording of STD cases should be based on syndromic diagnosis and the tally sheet should include the following STD syndromes: urethral discharge, genital ulcers, vaginal discharge, lower abdominal pain in women, acute scrotal swelling, inguinal bubo and neonatal conjunctivitis. These conditions are all treated on a regular basis and the syndromic diagnosis is easy to make.

The system is entirely dependent on health-worker motivation. All health workers should be trained in the proper use of the tally sheet and once trained they should all report the number of episodes of STD that they treat. The information obtained would be invaluable.

An example of a tally sheet for recording STD episodes is shown in Figure 8. This tally sheet is used as follows.

a) General information

At the top of the tally sheet there is a space for you to fill out the name of your health facility. One tally sheet should be used for a period of one month. The tally sheet which is given to you should be filled out only by you. Other clinicians examining and treating patients at your health facility should each have his/her own tally sheet so that there is no duplication of reporting. When you first start to use the tally sheet fill in the commencement date.

The tally sheet has a number of rows and a number of columns. In the column headed by "Diagnosis" you will find a list of the common STD syndromes. Then there are two broad columns, one headed "Males" and the other headed "Females". Within these large columns are a number of narrower columns each headed by an "Age group". Along each syndrome and under an "Age group" are collections of 5 circles (zeros "0"). For each STD patient that you treat you should draw a vertical line with a pen through one of the zeros like this "Ø". Each zero "0" that has a line through it will indicate a patient treated by you.

NOTE. Do not enter patients' names. Remember that the management of your patients is not altered in any way at all. You should manage your patients as you have always done.

b) Entering details of patients

Once a diagnosis of an STD syndrome is made, cross off a "zero" in the appropriate row and in the appropriate age group and sex column. This entry is made at the time you see the patient.

c) Recording episodes of illnesses

Each time you see a patient do the following:

- Decide what the patient's illness is
- Note the patient's gender (sex)
- Note the patient's age
- Then draw a line through one of the zeros "0" in the appropriate row and column.

d) Examples

The following examples will help explain what is required of you:

- If you see a female patient, 23 years old and you find that she has lower abdominal pain, draw a vertical line through one of the zeros "0" in the FEMALE section, in the AGE GROUP 20–29 years, along the row marked LOWER ABDOMINAL PAIN.
- If you see a 29 year-old man with urethral discharge, draw a vertical line through one of the zeros "0" in the MALE section, in the AGE GROUP 20–29 years, along the row marked URETHRAL DISCHARGE.
- If you see a 31 year-old man who has genital ulcers, draw a vertical line through one of the zeros "0" in the MALE section, in the AGE GROUP 30–39 years, along the row marked GENITAL ULCERS.

