

Control of Sexually Transmitted Diseases

Second edition



WORLD HEALTH ORGANIZATION
Regional Office for the Eastern Mediterranean

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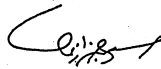
FOREWORD

The subject of sex, hence of the sexually transmitted diseases (STD) is a sensitive matter and is not easy to talk about openly. A lot of stigma is attached to STD and as a consequence, STD patients either avoid/delay seeking care or seek care from sources other than the public sector, some of which provide care, far below the minimum required standard. STD have not received the attention they deserve.

The extent of STD is not exactly known. However, STD are considered to be quite common and, to be responsible for high morbidity, serious complications and long lasting sequelae. More attention needs to be given to control of STD which will help not only in the prevention and cure of STD but also in the prevention of infection with human immunodeficiency virus (HIV) which causes the much dreaded acquired immunodeficiency syndrome (AIDS).

A number of Member States in the Eastern Mediterranean Region of WHO have developed and are implementing STD control programme with WHO collaboration. This document has been prepared to help these countries further in their programme as well as to help others which have yet to develop such programme. The document has been deliberately made concise and brief but it covers all important aspects of STD control. It may be used to prepare guidelines suited to the local situation in the individual countries. Such guidelines may include more details on important aspects, as appropriate.

It is hoped that this document will prove to be useful for control of STD in all Member States of the Region. Comments and suggestions on this document are welcome and will be appreciated.



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Regional Director

PREFACE TO THE SECOND EDITION

The first edition of this document was well received and went quickly out of print. Since then, control of sexually transmitted diseases (STD) has received higher priority in the countries of the Eastern Mediterranean Region and the control programmes have been expanded, creating greater demands for this document. Meanwhile, valuable comments and suggestions on the document were received from various quarters. These were considered while revising the document for the second edition.

In the second edition, the data on STD in the Eastern Mediterranean Region have been updated. The syndromic approach to STD case management has been elaborated further. Emphasis has been placed on the need for STD case management in a comprehensive manner, including treatment, education, counselling, use of condoms and partner management. A new section on "Follow-up of STD patients" has been added.

It is hoped that this document will continue to be useful to all those who are involved in one way or other in the prevention and control of STD.

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1. INTRODUCTION

Sexually transmitted diseases (STD) constitute a group of diseases which are mainly transmitted during sexual contact. Some of them may also be transmitted through blood or from the infected mother to the new-born baby. The commonest and obvious symptoms of STD include urethral discharge, vaginal discharge (in women), genital ulcer, lower abdominal pain (in women), scrotal swelling (in men), inguinal bubo and inflammation of the eye in the new-born. They are caused by a wide variety of pathogens such as viral (*human immunodeficiency virus*, *hepatitis B*, *herpes simplex*, *human papilloma virus*), bacterial (*Neisseria gonorrhoeae*, *Treponema pallidum*, *Haemophilus ducreyi*, *Calymmatobacterium granulomatis*, *Gardnerella vaginalis*), chlamydial (*Chlamydia trachomatis*), fungal (*Candida albicans*), protozoal (*Trichomonas vaginalis*) and ectoparasites (*Sarcoptes scabiei*).

STD are very common in the world and cause high morbidity with illness, complications and sequelae such as pelvic inflammatory disease, urethral stricture, infertility, and cervical cancer. STD can cause an increased risk of ectopic pregnancy in women that may prove fatal due to sudden and severe bleeding following rupture of the fallopian tube. The sequelae of STD are not limited to the patients only. In two-thirds or more of pregnant women with early syphilis, the infection passes through the placenta to the foetus. If pregnant women are suffering from STD, there may be consequences for the foetus and new-born baby such as spontaneous abortion, premature birth, still birth, perinatal death, low birth weight, and infection of the eyes and lungs and congenital syphilis.

STD are common in both developed and developing countries. STD including infection with human immunodeficiency virus (HIV) which is predominantly due to sexual transmission are the most important cause of illness among young adult men (15-44 years) and the second most important cause after maternal causes among young adult women in the the developing world. They rank in the top ten causes of health days lost by adults in the urban areas of the developing world. It has been estimated that complications from STD may be responsible for 17% of productive life years lost to disease in urban areas of sub-Saharan Africa.

Widespread changes in the pattern of STD infections are occurring in the world. Historically, gonorrhoea and syphilis are the two STD which were widely known. Their rates have declined over the recent years in the industrialized countries and also in a number of developing countries. On the other hand a number of new STD have been recognized recently and their rates are increasing rapidly. These include trichomoniasis, candidiasis, non-gonococcal urethritis, genital wart, chancroid, lymphogranuloma venereum, genital herpes, hepatitis B, and granuloma inguinale. In many countries chlamydial infections, genital herpes and genital warts are now more common than gonorrhoea and syphilis.

Although STD are preventable and a number of them curable, efforts to reduce and control the STD problem have been very limited especially in the developing countries. The main reasons responsible for **failure to control STD** include the following:

- Low priority has been given to allocation of resources for STD control because STD are associated with behaviours which are socially, culturally and legally unacceptable.
- The magnitude of STD problem including their incidence, prevalence, complications and sequelae is not well understood and is usually underestimated.
- Control efforts have concentrated on symptomatic patients who are usually men, ignoring a large number of asymptomatic individuals who are usually women. For example, up to 80% of women infected with *Neisseria gonorrhoeae* or *Chlamydia trachomatis* and 50% of women infected with *Trichomonas vaginalis* are either asymptomatic or consider their symptoms to be normal physiological manifestations of the ovarian cycle.
- STD care has been provided mainly through specialized clinics, such as STD or dermato-venereology clinics, which provide inadequate coverage and are stigmatizing, especially for women.
- Undue emphasis has been given to etiological diagnosis before initiating treatment although facilities for such diagnosis are severely limited and are available in only a few major centres.

- Some of the effective drugs are expensive and cannot be afforded in many countries where low cost drugs, although ineffective in many instances, are still being given because of limited financial resources.
- There is a general lack of simple and inexpensive laboratory tests.
- There has been very little effort for primary prevention or for such components of secondary prevention as education, counselling, promotion and use of condom, and partner management. These subjects are, in general, sensitive to speak about.
- Not all STD, except the classical ones, are well recognized, by the care providers. Diseases recently recognized as STD are not fully understood by many care providers.

With the emergence and spread of acquired immunodeficiency disease (AIDS), which is essentially an STD, the situation is changing and **STD control has started receiving attention** in a number of countries due to a number of factors which include the following:

- The modes of transmission of AIDS are the same as other STD: sexual (predominantly), through blood and blood products, and from mother to new-born infant.
- There is a strong association between STD and HIV infection. The presence of genital ulcer due to STD such as syphilis and chancroid increases the risk of HIV infection by many-fold. Some studies have shown that the increase in the risk may be as much as nine-fold. Even the inflammatory changes due to STD such as gonorrhoea, chlamydia infection and trichomoniasis significantly increase the risk of HIV transmission, although not to the same extent as the genital ulcer. The risk of HIV transmission is increased in either direction. A person with STD is more likely to get HIV-infection than a person without STD. On the other hand, an HIV-infected person with STD is more likely to transmit HIV infection to others than an HIV-infected person without STD. In a well conducted study in Tanzania, a good STD control programme using syndromic case management has been shown to reduce the incidence of HIV.

- Measures for prevention of AIDS and other STD are largely similar as so also the target groups for intervention.
- STD care services are important access points for persons at high risk not only for diagnosis and treatment but also for education and counselling for prevention.
- Trends in STD incidence and prevalence can be useful indicators for changes in sexual behaviours and are easier to monitor than trends in HIV seroprevalence.

2. EPIDEMIOLOGY OF STD

2.1 Global epidemiology

Epidemiological trends of STD vary in different parts of the world. In western Europe, there has been a significant decline in the incidence of gonorrhoea and chlamydial infection. This decline which began before AIDS was discovered or before large scale AIDS prevention activities were implemented is probably due to wide availability of STD treatment, sex education in schools, and condom promotion. On the other hand the incidence of STD is increasing in eastern Europe and central Asia.

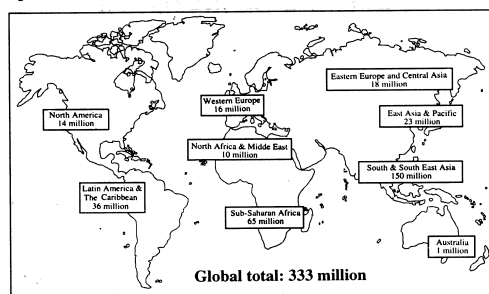
STD is a major health problem among adults in the developing countries. While reliable data are scarce, surveys carried out in Africa have shown much higher rates of gonorrhoea, syphilis and genital ulcers than in the industrialized countries. A few countries such as Chile, Costa Rica, Thailand and Zimbabwe have recently reported a declining trend of bacterial STD. While effective interventions may have played their part, it is essential to ascertain that it is a true decline.

Due to a considerable amount of underreporting and incomplete reporting, the exact extent of STD in the world is not known. However, on the basis of available data from various reports and studies, World Health Organization (WHO) has estimated that 333 million new cases of four curable STD (gonorrhoea, syphilis, chlamydia infection and trichomoniasis) occurred in the world during 1995 (Figure 1). Trichomoniasis accounts for the largest number of these cases, followed by chlamydial infection, gonorrhoea and syphilis in that order (Table 1). When other STD whose incidence is not insignificant are also considered, it becomes clear that STD are responsible for high morbidity and mortality in the world. About 1 million cases of STD occur every day in the world.

STD are more common in urban areas than in rural areas in the developing countries owing to disproportionately larger number of men than women leading to the probability of casual sex, economic instability, poverty and deterioration of health and social services. The incidence of STD varies with the geographical region of the world (Table 2).

In terms of unit population, prevalence and incidence rates are highest in sub-Saharan Africa, followed by south and south-east Asia, and Latin America.

Figure 1 Worldwide estimate of curable new STD* cases in adults, 1995



* gonorrhoea, chlamydial infection, syphilis and trichomoniasis

Table 1 Estimated new cases of curable STD in the world in 1995

Disease	Estimated number of new cases
Syphilis	12 million
Gonorrhoea	62 million
Chlamydia infection	89 million
Trichomoniasis	170 million
Total	333 million

Table 2 Estimated new cases of curable STD (000s) by geographical region in 1995

Geographical Region	Syphilis	Gonorrhoea	Chlamydia	Trichomoniasis
North America	140	1 800	4 000	8 000
Western Europe	200	1 200	5 000	10 000
Australasia	10	130	300	1 000
Latin America & Caribbean	1 300	7 100	10 000	18 000
Sub-Saharan Africa	3 500	16 000	15 000	30 000
North Africa & Middle East	620	1 500	2 900	4 600
Eastern Europe & Central Asia	100	2 300	5 000	10 000
East Asia & Pacific	330	3 000	6 200	13 000
South & South-East Asia	5 800	29 000	40 000	75 000

and the Caribbean (Figure 2) The rates are comparatively lower in North Africa and Middle East.

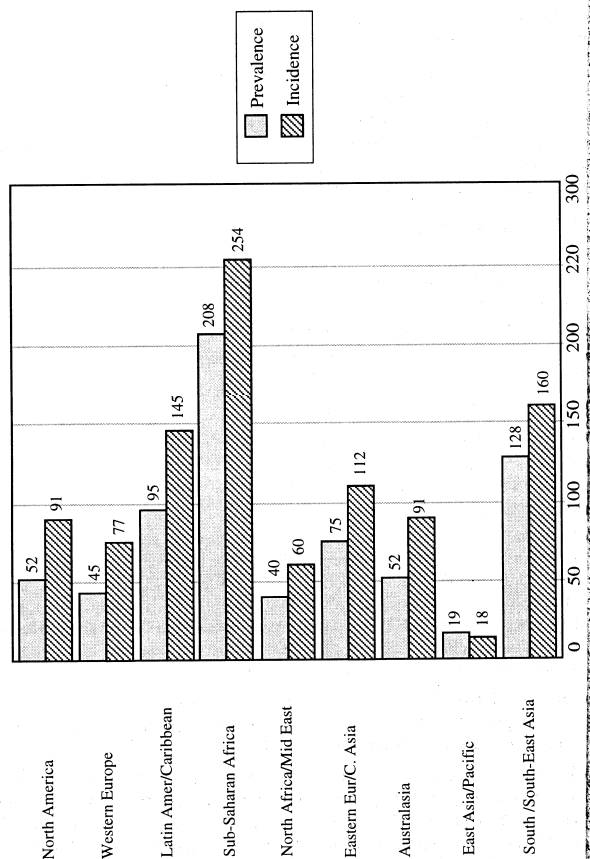
STD rates are high among young adults between 15 and 29 years of age and pose an important problem because of their lack of easy access to STD services and condoms and their frequent and multiple sex partners. Another problem in STD control is the large number of asymptomatic infections particularly among women leading to under-detection, continued transmission of infection, and complications and sequelae.

2.2 Regional epidemiology

The exact extent of STD in the Eastern Mediterranean Region (EMR) of WHO is not known. The usual source of report for any communicable disease is the public sector. However, report of STD in general and from the public sector in particular suffers from several **deficiencies** some of which are listed below.

- STD have not received the priority they deserve and are not given due attention.
- A lot of stigma is attached to STD.
- Only a small minority of STD patients seek care from the public sector.
- Those who seek care in the public sector do so from various sources such as STD specialists (dermato-venereologists), gynaecologists, urologists, internists and general practitioners.
- Only the classical STD such as gonorrhoea, syphilis and chancroid are well understood, recognized and reported while a number of new STD are not fully understood and are, hence, not reported. STD clinics are usually attached to Dermatology clinic or Infertility clinic in many places and no separate data for STD are available. Similarly, STD patients attending gynaecology clinics may be included among the diseases of reproductive system rather than being reported as STD.
- More emphasis was given to etiological diagnosis ignoring a large number of asymptomatic infections especially among women while facilities for such diagnosis are limited to a few centres only.
- There is no system for reporting by the private sector which provides care to a large majority of STD patients. Reporting of STD by the public sector is incomplete and irregular at best and non-existing at worst in the EMR countries. The importance of reporting is not recognized by all concerned sections. This is further aggravated by the lack of efforts to collect complete and regular reports systematically.

Figure 2 Estimated STD prevalence and incidence per 1 000 pop. by region in 1995



No comprehensive studies have been conducted to find out the extent of STD in the countries of the EMR, except in a limited scale in a few countries and for a few diseases. For example, pregnant women are screened for syphilis in a few countries only and donated blood is screened for HIV infection in a number of countries.

STD patients avoid the public sector clinics due to the following reasons:

- The subject of sex is a taboo and a lot of stigma is attached to STD; hence many STD patients try to hide the occurrence of STD and avoid seeking treatment especially from the public sector, delay treatment, or take self-treatment.
- The public sector clinics are usually crowded and lack privacy and confidentiality.
- There is usually an inadequate supply of drugs and condom which serves as a disincentive to the patients for seeking care.
- A number of health care providers are moralistic and judgemental and their attitudes discourage the STD patients from seeking care.

Efforts have been initiated to develop the STD reporting system in the EMR countries. STD reporting has begun in a few countries. However, it is still incomplete and irregular in many of them while it has yet to be started in other countries. STD cases based on etiological diagnosis were reported from 12 countries in 1995 and 3 countries in 1996 (Table 3).

Table 3 STD cases reported in 1995 and 1996 based on etiological diagnosis from EMR countries

Diagnosis	Number of cases	
	1995 (n=12)	1996 (n=3)
Gonorrhoea	30 233	6 283
Syphilis	6 947	635
Chlamydia	9 667	17 600
Chancroid	5 562	823
Trichomoniasis	61 091	12 658
Candidiasis	32 788	16 731
TOTAL	146 288	54 738

In addition to the above reported cases, STD cases based on syndromic diagnosis were reported in 4 countries in 1995 and 6 countries in 1996 (Table 4). The commonest syndrome was vaginal discharge followed by urethral discharge and genital ulcer.

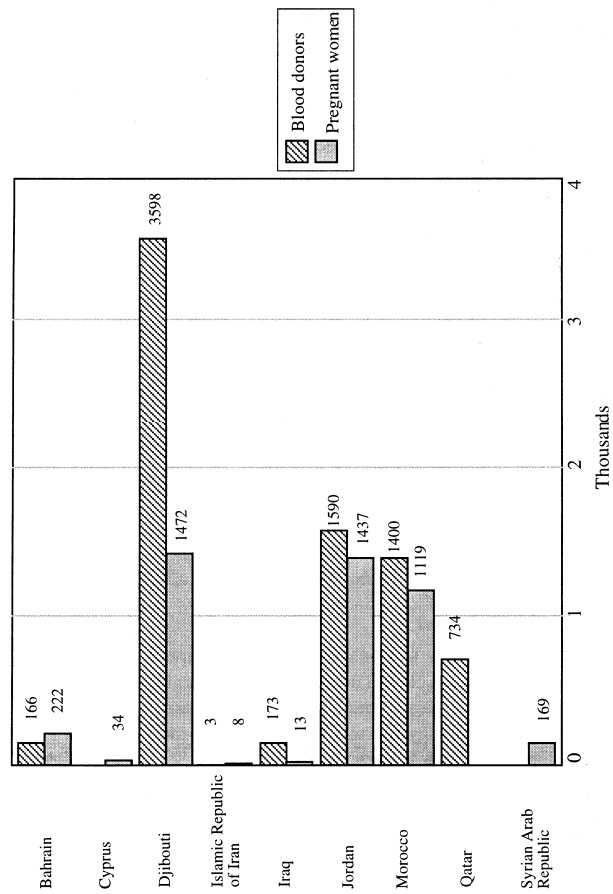
Table 4 STD cases reported in 1995 and 1996 based on syndromic diagnosis from EMR countries

Diagnosis	Number of cases	
	1995 (n=4)	1996 (n=6)
Urethral discharge	37 712	37 246
Vaginal discharge	108 373	121 253
Genital ulcer	10 084	11 726
TOTAL	156 169	170 225

Information from routine screening of pregnant women gives a reasonably fair idea of the prevalence of syphilis among sexually active general population. Similarly, results of screening of blood donors also provides an indication of the prevalence among the general population. According to information from eight EMR countries on routine screening of pregnant women and blood donors for syphilis (Figure 3), the prevalence of syphilis determined by the positive serological test ranged from 3 to 3,598 per 100,000 among pregnant women and 8 to 1,472 per 100,000 among blood donors (Figure 3).

The above data of reported STD cases which are mainly limited to a few centres in the public sector must be considered as a gross under-estimate of the actual number of cases due to the reasons cited earlier. Based on information received from various sources, it is estimated that about 10 million new cases of the four curable STD (gonorrhoea, syphilis, chlamydia and trichomoniasis) occur annually in countries of the Region.

Figure 3 Syphilis prevalence per 100 000 in 1995 among pregnant women and blood donors



3. DIAGNOSIS OF STD

The type and accuracy of diagnosis of STD will depend upon the availability of laboratory diagnostic facilities at the health institutions. Such facilities either do not exist at all or exist at a limited scale in most of the developing countries. For a few STD such as condylomata acuminata laboratory tests are not available for diagnosis or cannot accurately confirm the diagnosis. Where facilities are available, all patients suspected to be suffering from STD should be evaluated for syphilis, gonorrhoea, chlamydial infection and HIV. The health facilities may broadly be divided into three levels for the purpose of diagnosis.

3.1 Basic level

At the basic level where there is no experienced physician nor a microscope syndromic diagnosis may be based on the signs and symptoms, as for example urethral discharge, vaginal discharge and genital ulcer. As some of the syndromes, particularly among women, may be due to causes other than STD an assessment of risk for STD will help make the diagnosis. WHO has developed flow-charts for the common syndromes (Annex 1). As any one particular syndrome may be caused by more than one microorganism treatment will be given for more than one pathogen.

3.2 Intermediate level

At the intermediate level where there is an experienced physician with or without a microscope, clinical diagnosis about the etiology of the STD may be made by the physician, based upon the experience about the signs and symptoms, supported by microscopic examination where available. However such clinical diagnosis has been found to have low sensitivity and specificity and hence, syndromic diagnosis is preferable.

3.3 Advanced level

At the advanced level where there is an experienced physician and fully equipped laboratory, full etiological diagnosis may be made within the

limitations of laboratory diagnostic tests. The tests to be performed will depend on the causative pathogens. Tests for the common pathogens are given below:

Neisseria gonorrhoeae (gonorrhea): can be diagnosed by Gram staining of urethral smear in men and women and endocervical smear in women for detecting Gram negative intracellular diplococci. If the smear is negative, culture should be done.

Chlamydia trachomatis (non-gonococcal urethritis and lymphogranuloma venereum): cannot be detected by direct light microscopy. Antigen detection test based immunofluorescence or enzyme linked immunosorbent assay (ELISA) of the fluid in which the urethral or endocervical swab has been placed or culture is required.

Candida albicans (candidiasis): can be diagnosed by detection of Gram positive yeasts and hyphae in smears taken from high vaginal exudates.

Trichomonas vaginalis (trichomoniasis): motile trichomonads can be detected in wet preparation from the liquid medium in which a high vaginal swab has been placed provided that light is reduced by closing the shutter; and also by culture which is more costly and less widely available.

Gardnerella vaginalis (bacterial vaginosis) can be diagnosed by the reduction in the number of lactobacillus and by the presence of "clue cells" (cornified squamous epithelial cells heavily coated with bacteria). The vaginal discharge has a fish-like odour which is heightened by adding 5-10% potassium hydroxide.

Treponema pallidum (syphilis)

Primary and Secondary Stage:

- a) Dark field microscopy for spirochetes in exudates from lesions
- b) Serological tests for syphilis: do not become positive for at least 2 weeks after appearance of primary lesion.
 - i) Specific tests: Fluorescent treponemal antibody absorption (FTA-Abs) test becomes positive during the third week of primary lesion. *Treponema pallidum* haemagglutination (TPHA) test takes longer to become positive. Both tests remain positive for life even after effective treatment.

- ii) Venereal Disease Research Laboratory (VDRL) test and rapid plasma reagin (RPR) are less specific but quantitative tests and are useful for screening and prognostic purposes. These are flocculation tests which depend upon the presence of a less specific antibody (reagin). Rise in titre by fourfold or more in sequential testing or history of sexual exposure indicates infectious syphilis.

Congenital syphilis: detection of IgM antibodies specific to *Treponema pallidum*.

Neurosyphilis: Negative serological test of cerebrospinal fluid excludes neurosyphilis but a positive test requires careful interpretation.

Herpes simplex virus (genital herpes): Herpes virus antibody test using RIBA or microimmunofluorescent methods or culture and identification of *herpes simplex virus* type 1 and 2.

Haemophilus ducreyi (chancroid): detection by culture and identification.

Calymmobacterium granulomatis (granuloma inguinale): detection of Gram negative encapsulated bacterium.

Papilloma virus (genital wart or condylomata acuminata): cannot be cultured.

4. OBJECTIVES OF STD CONTROL

Although the STD are very common causing high morbidity, complications and sequelae and many of them can be cured with drugs, there has been very limited efforts to control STD and hence very little success to reduce the incidence and prevalence of STD. As a consequence, the STD are spreading rapidly all over the world, especially in the developing countries. The reasons for such a state of affairs have already been cited in Chapter 1.

With the emergence and spread of the pandemic of AIDS which is also a sexually transmitted disease, the situation is changing and STD control is now receiving more attention. STD control programmes have been formulated in a number of countries and include well defined objectives, strategies, interventions and activities.

The main **objectives** of STD control are:

- to interrupt the transmission of STD infection in order to reduce the incidence;
- to decrease the duration of infection in order to reduce the prevalence, thereby to prevent the development of diseases, complications and sequelae; and
- to reduce the risk of HIV infection.

The above objectives can be achieved through well designed strategies directed at primary as well as secondary prevention.

5. STRATEGIES FOR STD CONTROL

STD control should include not only the strategy for treatment of curable STD but also the strategy for prevention of transmission of infection. In other words adequate emphasis must be given to educational interventions for prevention of transmission, in addition to providing care to the STD patients. STD patients should be managed in a comprehensive manner which includes treatment and prevention

5.1 Primary prevention

Primary prevention aims at preventing the occurrence of new infection by decreasing or interrupting the transmission of infection, thereby reducing the incidence. As a matter of fact, this is the only strategy available for control of incurable STD such as HIV and other viral infections. The main interventions under this strategy are:

5.1.1 **Education** of the people, particularly those at increased risk of acquiring infection, about the risk of transmission and about the ways to protect themselves from infection through safer sexual behaviours such as mutual fidelity, avoidance of premarital and extra-marital sex, safer sexual acts such as non-penetrative sex and use of condoms. People should also be educated about the association between HIV and other STD and about the increased risk of HIV transmission among STD patients. Examples of people at increased risk of STD include prostitutes, bar girls, homosexuals, long distance truck drivers, sailors and migrant workers. Each country should identify such groups for targeting educational interventions. Appropriate media and messages should be used for education according to the target audience. Because of similarities between AIDS and other STD, integration of educational interventions for AIDS and STD will be more cost-effective.

5.1.2 **Use of condoms** whenever there is a risk of infection. This will include education about the proper use of condoms and making the condom available, accessible and affordable. Promotion and use of

condoms for prevention of HIV infection have resulted into a marked reduction in the incidence of STD in some countries.

Understanding of knowledge attitude, behaviours and practices (KABP) of the target audiences through simple studies on their perceptions of the importance of STD, their knowledge about STD, their health care seeking behaviour and the constraints on their seeking care is essential in order to design appropriate interventions and messages. Such studies may be quantitative such as KABP survey and key informant survey or qualitative such as focus group study. Such studies may be carried out on general or specific populations.

5.2 Secondary prevention

The main aim of secondary prevention is to treat STD infection early so as to reduce the duration of infection, hence the prevalence and thus prevent the development of disease, complications and sequelae. It also aims to prevent the transmission of infection from the index patients to their sexual partners. It includes the following interventions.

- 5.2.1 **Promotion of early care seeking behaviour:** The earlier the treatment of STD, the better it is. But due to the stigma attached to STD, many STD patients do not seek care at all, or delay seeking care, thus increasing the risk of complications and sequelae and of further spread of infection to their partners as well as increasing their own risk of acquiring HIV infection. Community surveys carried out for other purposes such as KABP survey may include questions to gather information on care seeking behaviours and patterns of service utilization.

The need for early treatment should be emphasized in all educational interventions about STD, including those for primary prevention. People should be educated on the need to consult if they are at risk either due to their own sexual behaviours or due to sexual behaviours of their partners and on the need to seek care early when the symptoms or signs appear. Education should particularly be directed at people at increased risk of acquiring

STD. Improvement in the physical environment of health care facilities and ensuring privacy and confidentiality will also help encourage the patients to seek early care.

- 5.2.2 **Treatment:** STD patients should be treated adequately and promptly. Treatment must begin at the first encounter at the health care facility irrespective of whether or not the laboratory test is to be performed. It has been observed that many patients do not return for the test results and thus, opportunity for treatment and cure will be lost if treatment is not started at the first visit. So, treatment should be based on syndromic diagnosis. Syndromic approach to case management is, of course, the only option available at those places where there are no laboratory facilities. Treatment should be accessible, effective and acceptable.

Accessible care: STD patients seek care from different sources including self treatment; care from informal sector such as traditional practitioners and quacks; pharmacies; private sector clinics; and public sector clinics. Either of the private or public sector can include STD specialists, urologists, gynaecologists, internists and general practitioners. Paramedical staff also provide care in many primary health care centres. Community surveys such as KABP or focus group study may help identify the sources of care as well as the constraints to use of the public sector. Whatever the source of care, it should be accessible to the patients.

Effective care: Effective treatment is an absolute requirement in an STD control programme. Effective treatment encourages patients to seek care while failure to cure discourages the patients from seeking care from the clinic and diverts them to other places where comprehensive care including public health measures may not exist or may be poorly provided. Care can be made effective through

- training of health care providers;
- distribution of manuals, guidelines and flow-charts;
- provision of adequate facilities for consultation and examination;

- consistent availability of appropriate drugs; and
- consistent supplies of condom.

Acceptable care: Accessible and effective care are essential but do not necessarily mean acceptable services. Unless potential patients are prepared to use them, they are valueless. Integrated care is generally more acceptable than specialized STD clinics because of stigma. Acceptability of care can be enhanced by

- ensuring privacy and confidentiality in the clinics;
- destigmatizing STD;
- improving attitude and communication of care providers;
- making charges affordable;
- providing effective drugs;
- offering services at convenient time and shortening waiting periods; and
- improving the physical environment in the clinic.

5.2.2.1 Syndromic treatment: The main principle behind this treatment is that STD patients are treated at the first encounter with the health care provider. Although STD can be caused by a large number of pathogens, these pathogens fortunately produce a common set of symptoms and signs i.e syndromes which can be easily recognized. These syndromes include urethral discharge, vaginal discharge in women, genital ulcer, lower abdominal pain in women, scrotal swelling in men, inguinal bubo and neonatal conjunctivitis. Under syndromic case management, treatment is begun once the diagnosis of STD syndrome is made after taking history, physical examination and if necessary, risk assessment. Flow-charts have been developed to deal with each of the STD syndromes (Annex 1).

While syndromic treatment is the only approach available at places without laboratory facilities, it holds equally good at places with laboratory facilities. For a few STD, sophisticated laboratory facilities are required and for a few other STD confirmatory tests

are not yet available. Furthermore, many patients do not return for results of laboratory tests if such tests are prescribed and treatment deferred until test results are available. Hence, the opportunity of treating STD patients will be lost, with adverse consequences on the patients and with the probability of further spread of infection to others. Thus syndromic treatment at the first encounter is essential to reduce the loss of patients to treatment. So, even at places with laboratory facilities, treatment should be initiated at the first encounter with the health care provider on the basis of syndromic diagnosis and laboratory tests ordered as required at the same time. Treatment should be reviewed later when the test results become available.

As any one syndrome may be caused by more than one pathogen, the syndromic treatment regimen includes treatment for the commonly causing pathogens of the particular syndrome. While this may result into over-treatment in some cases, it will be beneficial for most cases as mixed infections are quite common and some of the infections cannot be confirmed or ruled out with simple diagnostic tests. For example, urethral discharge is commonly caused by gonorrhoea or chlamydial infection, often mixed infection and while gonorrhoea can be easily confirmed by laboratory tests, tests for confirming chlamydial infection are not available in many health facilities. Thus urethral discharge should be treated with drugs for both gonorrhoea and chlamydia. Table 5 lists the common causes of STD syndromes.

It is not necessary to treat all pathogens. Some infections cause minor symptoms and resolve themselves. In some instances treatment for one pathogen may be effective for another pathogen as well. There is no cure for some pathogens. Based on these facts, treatment recommended for STD syndromes is given in Table 6. The flow-charts (Annex 1) should be followed while giving these treatments. A high cure rate has been observed with syndromic treatment in a number of studies. Efficacy of syndromic treatment can be improved by periodic studies to determine the prevalence of causative pathogens responsible for the syndromes and antimicrobial sensitivity of drugs. An effective STD control programme with syndromic case management has also been shown to reduce the incidence of HIV infection.

Table 5 Common causes of STD syndromes

Syndrome	Pathology	Causes
Urethral discharge	Urethritis	<i>Neisseria gonorrhoeae</i> <i>Chlamydia trachomatis</i> <i>Trichomonas vaginalis</i> <i>Candida albicans</i>
Vaginal discharge	Vaginitis	<i>Trichomonas vaginalis</i> <i>Candida albicans</i> <i>Gardnerella vaginalis</i>
	Cervicitis	<i>Neisseria gonorrhoeae</i> <i>Chlamydia trachomatis</i>
Genital ulcer	Syphilis sore	<i>Treponema pallidum</i>
	Chancroid	<i>Haemophilus ducreyi</i>
	Vesicular sore	<i>Herpes simplex</i>
Lower abdominal pain	Pelvic inflammatory disease	<i>Neisseria gonorrhoeae</i> <i>Chlamydia trachomatis</i> Anaerobic bacteria
Scrotal swelling	Inflammation	<i>Neisseria gonorrhoeae</i> <i>Chlamydia trachomatis</i>
Inguinal bubo	Lymphogranuloma venereum	<i>Chlamydia trachomatis</i>
Ophthalmia neonatorum	Neonatal conjunctivitis	<i>Neisseria gonorrhoeae</i> <i>Chlamydia trachomatis</i>

Table 6 Recommended treatment regimen for STD syndromes

Syndrome	Treat for
Urethral discharge	Gonorrhoea, Chlamydia
Vaginal discharge	Gonorrhoea, Chlamydia, Vaginitis
Genital ulcer	Syphilis, Chancroid
Lower abdominal pain (women)	Pelvic inflammatory disease
Scrotal swelling	Gonorrhoea, Chlamydia
Inguinal bubo	Lymphogranuloma venereum
Neonatal conjunctivitis	First for Gonorrhoea, and if not cured, then for Chlamydia

The suggested drugs for treatment of STD syndromes are given in Annex 2.

5.2.2.2 Etiological treatment: Effective treatment is essential for the success of STD control. The optimal management of STD includes the definitive identification of the causative organisms (etiological diagnosis) and treatment with the most effective drugs. However, this requires experienced care providers, laboratory diagnostic facilities and effective drugs which are usually not available in the primary health care (PHC) settings or even in many special clinics.

For effective treatment, effective drugs must be chosen. *Neisseria gonorrhoeae* has developed chromosome or plasmid-mediated resistance to penicillin in many countries and also lately to tetracyclines and fluoroquinolones; multiresistant strains of *Haemophilus ducreyi* are emerging; and resistance of *Trichomonas vaginalis* to metronidazole has been reported. Periodic studies to determine the antimicrobial sensitivity of drugs are required to help select the appropriate drugs. Such studies have indicated the need for using third generation antimicrobial drugs for treating some STD in many countries.

The list of drugs suggested for STD is given in Annex 2. This list has been prepared as a quick reference guide and should be adapted to the local situation according to availability, efficacy and affordability of the drugs. The drugs should be selected after assessment of individual patients. In general, the selected drugs should be

- efficacious so that they can cure the infection;
- inexpensive so that they can be afforded;
- of no or low toxicity so that they are tolerated;
- preferably be in single dose, if available, to avoid non-adherence; and
- administered orally, if available, so that they are acceptable.

5.2.3 **Education and counselling:** Education and counselling of patients with STD are very important not only for the current episode but also to prevent future episodes and should be provided at the first encounter at the clinic. The clinical setting provides a very good opportunity for education and counselling of STD patients. STD patients, by virtue of already being at increased risk, are likely to be more receptive to education and counselling. As the patients have developed a close rapport with care providers by disclosing their highly personal and confidential behaviour, they are likely to listen to and follow the advice of care providers.

Information should be provided to STD patients about the nature of STD, including the possible complications and sequelae, risk behaviours that lead to infection and ways of protection such as mutual fidelity within marriage, avoidance of pre-and extra-marital sex, safer sexual acts such as non-penetrative sex, and use of condom. The patients should also be educated about the risk of transmission of infection to their partners, about the need to either abstain from sexual intercourse until the infection is cured or to use condom in order to prevent transmission to their partners and about the need to treat their partners. The patients should also be counselled about the need to avoid risk behaviours in future in order to avoid another episode of STD. The patients should also be educated about the need for adherence to treatment i.e the need to complete the prescribed course of treatment lest the infection should relapse along with the risk of development of resistance of the microorganisms to drugs. Information should also be provided to STD patients about the association between HIV and other STD, particularly the increased risk of HIV infection among STD patients.

As change in behaviour does not occur easily with information alone, the patients should be counselled adequately. Care providers should listen to the patients, understand the problems and barriers facing the patients, win their trust and confidence and help them understand the risk of infection, the need to avoid risk behaviours, the ways of protecting themselves from infection and the importance of adherence to treatment.

Because of the sensitive nature of STD and the need to maintain privacy and confidentiality, interpersonal communication between the STD patients and care providers is the best means of education. It may be supplemented by printed material, video film and group session among STD patients.

5.2.4 Use of condoms: STD patients must use condoms consistently during sexual intercourse in order to prevent transmission of infection to their partners, until the infection is cured. Alternatively, they should abstain from sexual intercourse until their infection is completely cured. Otherwise, they will transmit the infection to their partners. To avoid getting STD in future, they should either abstain from risk behaviour or use condoms consistently. The patients should be taught how to use a condom correctly and should either be provided with condoms or be informed about where to get it. For consistent use, condoms should be available, accessible and affordable.

5.2.5 Partner management: The occurrence of STD means that the patients (index patients) acquired the infection during sexual intercourse with their sex partners. They got the infection due to their own risk behaviour or due to the risk behaviour of their partners. The index patients in turn might have already transmitted the infection to other partners. Even though the index patients may be cured of the present episode with treatment, they may be reinfected again by their partners who continue to harbor the infection, if not treated simultaneously with the index patients. It is, therefore, essential to trace and treat all sex partners in order to break the vicious circle. Some of the partners, especially women, may be asymptomatic but all partners, whether symptomatic or asymptomatic, should be treated. This must be fully explained to the index patients.

Partner management should be voluntary, confidential and non-coercive. Partners may be contacted by any of the following ways:

- ¹ Index patients may inform their partners of the risk of infection and may bring them to the clinic for assessment and treatment.

1 Index patients may inform their partners of the risk of infection and advise them to consult the same clinic or any other clinic.

1 Index patients may provide the names and addresses of their partners whom the clinic staff will contact.

It may not be easy to contact the partners in all cases. The index patients may not like to disclose their infection to their partners and hence may not be willing to disclose the identity of their partners. In casual sexual encounters, the index patients may not know the identity of their partners. The patients and/or their partners may not fully understand the nature of the disease and may not cooperate. Many of sexual partners of STD patients will be **women** who usually fail to seek care because

- they are frequently asymptomatic or poorly symptomatic;
- they are unaware of their being at risk as they themselves might not have risky behaviours while their partners have;
- they are unaware of the significance of the symptoms;
- they are reluctant to seek care for fear of stigmatization or discrimination; and
- services may be inaccessible, unaffordable or unacceptable.

The above may also apply to male partners of homosexuals or bisexuals. Whoever the partners, intensive efforts through education and counselling must be made for contacting, assessing and treating the partners as well.

Partners should be treated for the same STD syndrome as the index patient. In addition, if partners were assessed and were found to have another syndrome, they should be treated for the other syndrome as well.

5.2.6 Follow-up: Patients treated for STD should be followed up at the end of the prescribed treatment. Usually it will be in 7 days, but may be earlier in some cases if the situation demands. During follow-up, patients should be assessed about the state of their

illness, i.e. relief from symptoms and signs, lack of improvement, progression of illness or development of complications, and about adherence to treatment. The patients should also be asked whether they followed the advice about abstinence from sexual intercourse, about the use of condoms and about the treatment of their partners.

With syndromic treatment, more than 95% of STD patients will be cured of the disease. They will be relieved of their symptoms and signs at the time of follow-up visit. If not, persistence of symptoms and signs may be due to

- poor adherence to treatment,
- reinfection or
- treatment failure.

The patients should be assessed about the above causes. If the cause is poor adherence to treatment or reinfection, the patients will need further education and intensive counselling. If the cause is treatment failure, which may be assumed if the patients have adhered to treatment regimen and have either abstained from sexual intercourse or consistently used condoms correctly, laboratory investigations should be carried out to find out the causative pathogen and drug sensitivity, or the patients should be referred to a referral centre. If this is not feasible, the patient should be treated with an alternative drug regimen (see 5.2.2).

Whatever the state of illness at the time of follow-up, the opportunity should be used to reinforce education about prevention of infection in future.

6. SCREENING AND CASE FINDING

In addition to management of STD patients who seek care, there are other situations which provide an opportunity for identifying persons with STD and treating them. Such opportunity arises when individuals who are not directly seeking health care are screened or when individuals who are seeking care for reasons other than STD are tested. Those found positive should be educated, counselled and treated.

6.1 Screening

The following individuals who are not directly seeking health care are usually or frequently tested serologically for syphilis:

- **Blood donors:** are routinely screened in most of the countries for syphilis and for other transfusion-transmitted infections. All countries should try to screen all blood donations for syphilis.
- **Pre-employment:** testing for syphilis is included in the medical examination before employment in the military and many other jobs in a number of countries.
- **Premarital:** In industrialized countries and a number of developing countries, premarital screening for syphilis has been made compulsory by legislation.
- **Pre-education:** A number of educational institutions requires test for syphilis as a part of medical examination before admission.

In any type of screening, it is essential to maintain strict confidentiality about the test results and to ensure that the identity of the positive individuals is not passed on to others. Those found positive should either be treated or be advised about the need for treatment and where to consult.

6.2 Case finding

Case finding followed by treatment has an important role in control of STD. The following groups of individuals who are seeking health care for reasons other than STD can be considered for case finding:

- **Pregnant women:** Pregnant women attending antenatal clinics are routinely tested serologically for syphilis as a part of medical examination in a number of countries. Such screening should be routinely carried out in all countries. Those found positive should be treated. Apart from curing the women of the infection, treatment will also prevent congenital syphilis. This is one of the most cost-effective strategies for STD control, particularly for congenital syphilis. The rate of congenital syphilis can be used as one of the indicators for the success or failure of an STD control programme. Apart from syphilis serology, the attendance in antenatal clinic should also be used as a good opportunity for assessing the risk for other curable STD such as gonorrhoea, chlamydial infection and trichomoniasis which are frequently asymptomatic in women and for assessing the need for treatment and/or investigations.
- **Women attending family planning clinics:** are routinely examined medically before being advised about the family planning method. Such examination should include the assessment for STD for all women, particularly those who are being advised to use an intrauterine device.
- **Sexual partners of STD patients:** may not be aware of the risk of infection and hence may not be seeking care. But contacting and treating them as a part of active case finding is very important as described earlier (5.2.5).

7. MONITORING AND EVALUATION

Monitoring and evaluation are important to estimate the magnitude of STD problem, to understand the trends and to assess the effectiveness of interventions. They should be an integral part of the STD control programme. While monitoring is an ongoing activity carried out through the reporting system, surveillance, observations and field visits, evaluation is carried out periodically at intervals of 3 to 5 years.

7.1 Reporting

STD are notifiable in many countries but the reporting in most of the developing countries is highly incomplete and is limited to a few centres in the public sector whereas most of the patients seek care from the private sector. The reported cases are considered to represent a tiny fraction of the actual number of cases. The following measures should be taken in order to improve the reporting system.

- The reporting system should cover all health care facilities treating STD patients, both in the public as well as in the private sector. To obtain better cooperation from all, particularly from the private sector, there should be no need for identifying features of the patients and all information should be kept strictly confidential.
- Care providers are usually very busy and should not be expected to collect and provide too much information in the report. Minimum information such as age group, sex and diagnosis should be asked from them. A simple tally sheet in which the care provider makes a mark once for every patient will serve the purpose for keeping the records at the health care facilities. All health care facilities should use the tally sheet for syndromic diagnosis (Annex 3a). In addition, health care facilities with laboratory investigations should also use the tally sheet for etiological diagnosis (Annex 3b). One tally sheet of each should generally be enough for one month in most of the facilities. If necessary more than one sheet may be used.

- At the end of each month, the health facilities should send the monthly report on STD cases, from the tally sheets, to the national STD programme through appropriate channels. A simple reporting form giving the minimum required information such as age group, sex and diagnosis should be devised. The reporting form based on syndromic diagnosis (Annex 4a) should be used by all health facilities. In addition, those centres which have facilities for etiological diagnosis, should also send the report of STD cases based on etiological diagnosis (Annex 4b).
- The results of the serological screening of pregnant women and blood donors for syphilis should also be reported regularly by the laboratories. If other groups are also screened, they should also be reported.

7.2 Surveillance

The development of a satisfactory reporting system may take quite some time. Even then complete and regular reporting may not be guaranteed as has been seen with a number of notifiable diseases. As monitoring trend of the STD is very important, an active surveillance system should be instituted at an early stage of the STD control programme. In the beginning, the number of surveillance sites (sentinel sites) should be small so that they are easier to manage. Such sentinel sites should represent different geographical locations, both urban as well as rural areas, PHC centres as well as hospitals, and public as well as private sectors. Only those sites that are willing to cooperate should be selected. It is not necessary for sentinel sites to report continuously. Interval reporting such as one week every month or one month every 3 to 6 months may give valid information on trends of STD. Trends observed in sentinel sites may be extrapolated to the whole area provided that there is no dramatic change in the characteristics of sentinel sites over time.

Sentinel surveillance should be developed gradually in stages. It is better to have a smaller number of functioning sites providing simpler data than a larger number providing too much data but not functioning well. At an early stage, information should be gathered on cases based on syndromic diagnosis from a few selected sites. Syndromic reporting should then be extended to other sites, followed by etiological reporting from a few selected sites and finally by etiological reporting from more sites.

7.3 Evaluation

Periodic evaluation provides information on the performance of the STD control programme and guidance for improving the programme. Even routinely collected information e.g. reported STD cases, prevalence of syphilis among pregnant women, etc., gives an indication about the status of performance. WHO has developed the following prevention indicators (PI) to evaluate the programme:

- PI-6: Proportion of STD patients seeking STD care in health care facilities who were properly assessed and treated appropriately according to the national standards.
- PI-7: Proportion of patients seeking care for STD at health care facilities who were educated and counselled on condom and partner notification.
- PI-8: Proportion found serologically positive for syphilis among pregnant women, 15-24 years, attending antenatal clinic who were tested for syphilis.
- PI-9: Number of reported episodes of urethritis in the last 12 months among men aged 15-49 years.

PI-6 and PI-7 are measured through health facility survey in which the care providers are observed and interviewed. They are observed for their performance regarding history taking, examination, diagnosis, treatment, and education and counselling of the patients seeking STD care. They are interviewed to find out their knowledge and attitude about STD. PI-8 is determined by analyzing the laboratory data. PI-9 is measured as a part of general population survey which also has other PIs for AIDS.

7.4 Special studies

Two special studies are of particular importance for STD control. One of them aims to determine the causative pathogens responsible for the STD syndromes. This is essential to validate the syndromic approach to STD case management. The other aims to determine the sensitivity of the pathogens to drugs. This is essential for selecting the appropriate and effective drugs either for syndromic or for etiological treatment of STD. These studies should be carried out periodically, every two to three years.

8. SUPPORTING ACTIVITIES

Treatment of STD is one of the essential elements of STD control. STD control can be improved by a number of supporting activities.

8.1 Training

Training of care providers and other staff related to STD control is very important in order to improve the effectiveness of the STD control programme. The most cost-effective way will be to review and revise the existing curriculum so that all relevant components of the programme are covered. This will ensure that all future graduates will be adequately trained in STD control. Those who are already on the job will need training and refresher training. Training should be geared to improve knowledge, skill and attitude. Training materials should also be made available.

8.2 Guidelines

Operational guidelines and manuals are very useful during training and are also useful as reference materials while on the job. They set the national standards for STD control and describe how to implement the interventions and activities including case management. Flow-charts have been developed by WHO for syndromic management of STD syndromes (Annex 1) which is a new concept for many care providers. A flow-chart usually consists of three steps—defining the clinical problem, making the decision about diagnosis and deciding the actions to be taken for management including treatment, education and counselling. There may be additional steps while assessing the individual patients. The flow-charts should be reviewed and adapted to the local situation, particularly for the risk assessment for vaginal discharge in women. Guidelines and flow-charts should be available in all health facilities which provide care to STD patients.

8.3 Logistics

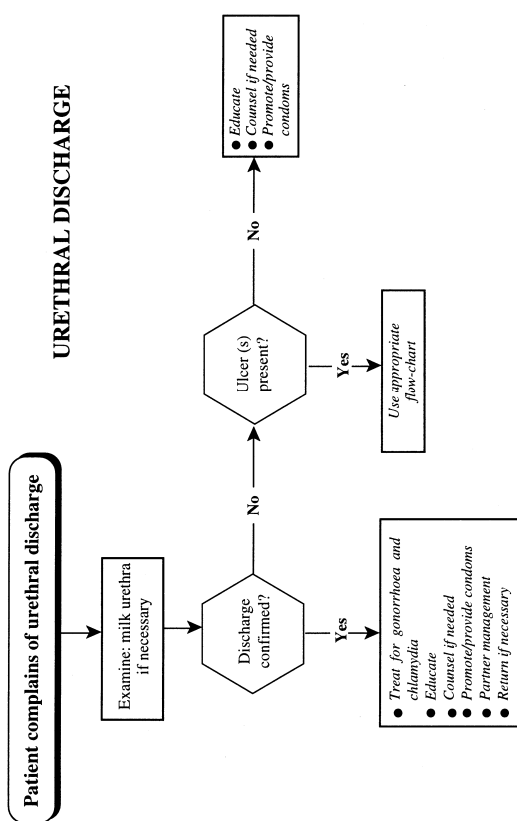
Adequate and consistent supply of effective drugs and condom is essential for STD control in general and for making care acceptable in particular. This should be ensured with a good logistics management system.

8.4 Health care facilities

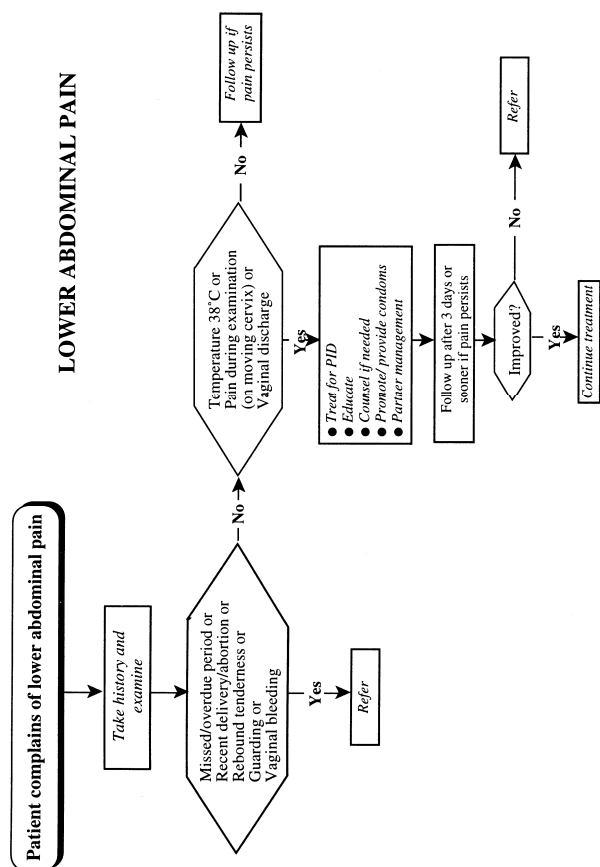
A good physical environment is necessary to make the care services acceptable to STD patients. There should be adequate space for ensuring privacy and confidentiality. The waiting time should be kept at a minimum. Integration in the PHC system will help reduce stigmatization.

8.5 Laboratory facilities

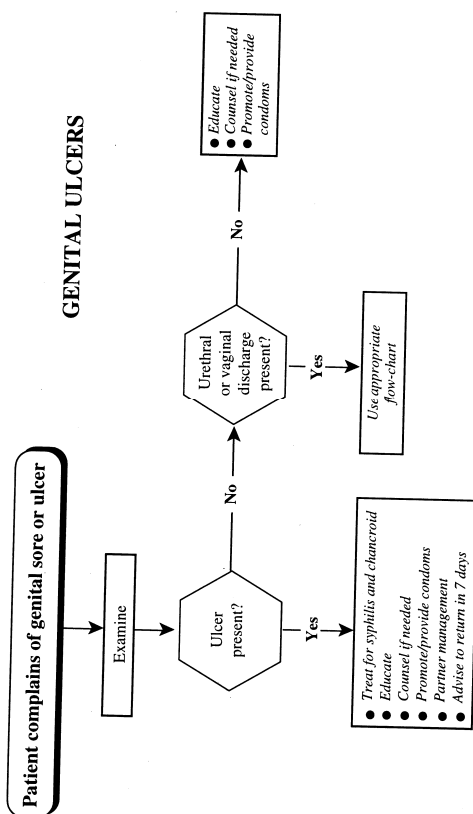
Syndromic case management which is the primary component of STD control is the treatment of STD patients based essentially on signs and symptoms even without laboratory tests. But that does not mean that the laboratory has no role at all in STD control. Laboratory tests are useful in many situations, such as treatment failures in syndromic case management, management in referral centres, etiological treatment, screening of pregnant women and blood donors for syphilis, prevalence survey for causative pathogens responsible for the syndromes and antimicrobial sensitivity study.

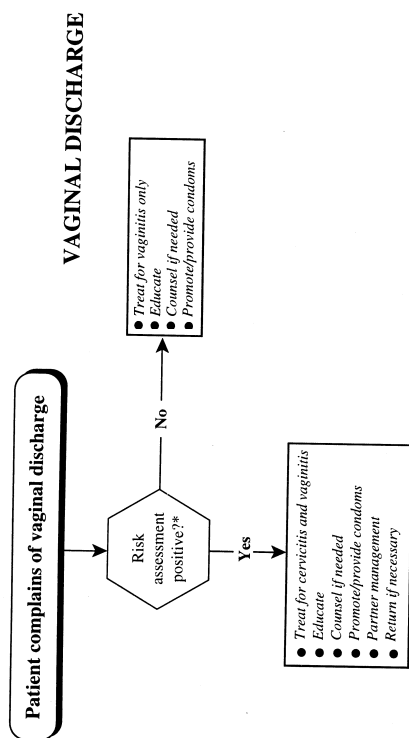


LOWER ABDOMINAL PAIN



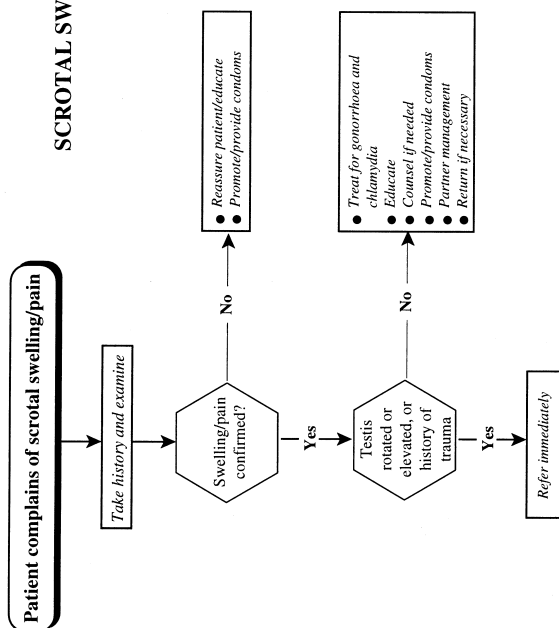
GENITAL ULCERS



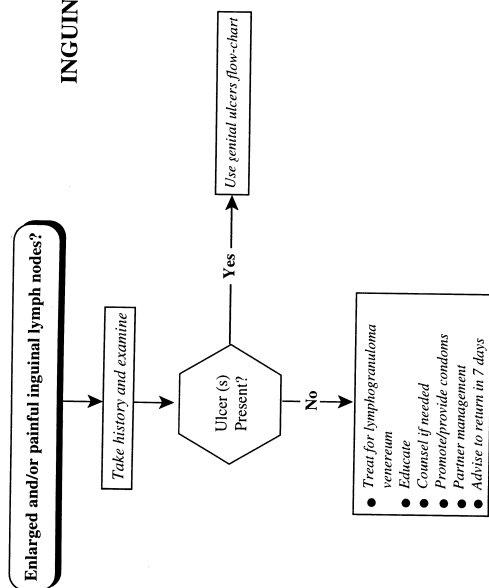


* Positive = partner symptomatic or any two of: age < 21 years; single; > 1 partner; new partner in past 3 months

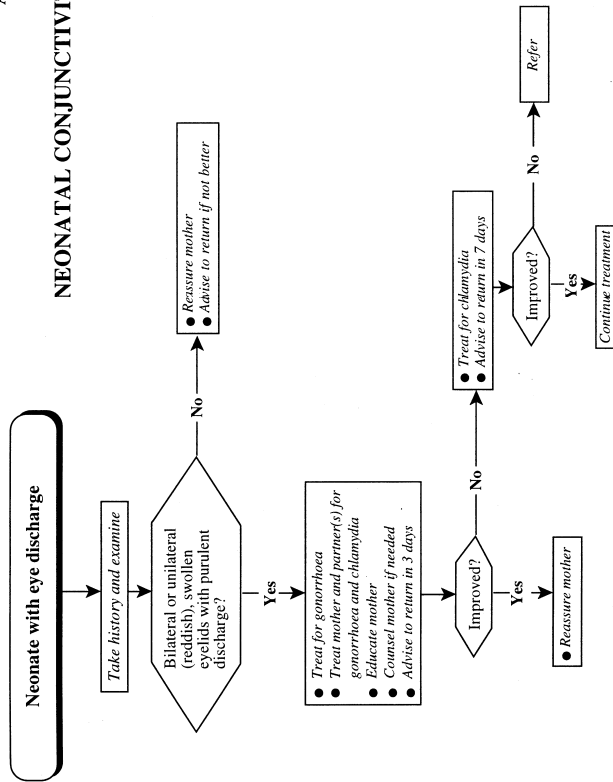
SCROTAL SWELLING



INGUINAL BUBO



NEONATAL CONJUNCTIVITIS



Drugs suggested for treatment of STD

Disease	Cause	Treatment
Gonorrhoea	<i>Neisseria gonorrhoeae</i>	Ceftriaxone 250mg or Spectinomycin 2g IM 1 dose; or Ciprofloxacin 500mg or Cefixime 400mg oral 1 dose; or Kanamycin 2g IM 1 dose; or Thiamphenicol 2.5g oral OD x 2 days; or Sulfamethoxazole 400mg/trimethoprim 80mg 10 tablets oral OD x 3 days
Uncomplicated genital/anal infection		
Pharyngeal infection		Ceftriaxone 250mg IM 1 dose; or Sulfamethoxazole 400mg/trimethoprim 80mg 10 tablets oral ODx3 days
Disseminated infection		Ceftriaxone 1 g IM or IV OD or Spectinomycin 2g IM BD for 7 days For meningeal involvement for 2 weeks, for endocardial involvement for 4 weeks
Conjunctivitis		Ceftriaxone 250mg or Spectinomycin 2g IM1 dose; or Ciprofloxacin 500mg oral or Kanamycin 2g IM 1 dose
Ophthalmia neonatorum		Ceftriaxone 50mg/kg (maximum 125 mg) or Spectinomycin 25mg/kg (maximum 75mg) or Kanamycin 25mg/kg (maximum 75mg) IM 1 dose
Lymphogranuloma venereum	<i>Chlamydia trachomatis</i>	Tetracycline 500mg QID or Doxycycline 100mg BD or Erythromycin 500mg QID or Sulfadiazine 1 g QID oral for up to 14 days
Nongonococcal urethritis	<i>Chlamydia trachomatis</i>	Tetracycline 500mg QID or Doxycycline 100mg BD or Erythromycin 500mg QID oral for 7 days
Candidosis	<i>Candida albicans</i>	Nystatin pessary 100 000 IU 2 pessaries nightly 2 weeks; or Clotrimazole or miconazole 200mg intravaginally daily for 3 days; or Fluconazole 150mg oral 1 dose or Itraconazole 200mg oral 2 doses
Trichomoniasis	<i>Trichomonas vaginalis</i>	Metronidazole 2g oral 1 dose or for nonresponse 400-500mg BDx7 days Clotrimazole pessary
Pregnant and lactating women		
Neonates		Metronidazole 5mg/kg oral TDSx5 days
Bacterial vaginosis	<i>Gardnerella vaginalis</i>	Metronidazole 400-500mg oral BDx7 days
PID	<i>Neisseria gonorrhoeae/Chlamydia trachomatis</i>	As for uncomplicated gonorrhoea, followed by Doxycycline 100mg BD oral or Tetracycline 500mg QID oral + Metronidazole 500mg TDS oral for 10 days
Ambulatory		
Hospitalized patients		Ceftriaxone 250mg IM BD + doxycycline 100mg oral or IV BDx4 days; or Ciprofloxacin 500mg + doxycycline 100mg + metronidazole 400-500mg oral BD for 4 days
Severely ill		Gentamycin 1.5mg/kg + clindamycin 900mg IV TDS minimum 4 days followed by tetracycline or doxycycline orally for 10 days

Drugs suggested for treatment of STD (Cont.)

Disease	Cause	Treatment
Syphilis	<i>Treponema pallidum</i>	Benzathine benzylpenicillin 2.4m IU IM 1 dose 2 sites or Procaine benzylpenicillin 1.2 m IU IM ODx10 days
Early (>2yr)		Procaine benzylpenicillin 1.2m IU IM ODx3 weeks or Benzathine benzylpenicillin 2.4m IU IM weeklyx3 dose
Late (>2yr)		Benzathine benzylpenicillin 4m IU IV 4 hourly x 2 weeks; or Procaine benzylpenicillin 1.2m IU IM OD + probenecid 500mg QID oral for 2 weeks
Neurosyphilis		Benzathine benzylpenicillin 25 000 IU/kg IV or IM BDx10 days; or Procaine benzylpenicillin 50 000 IU/kg IM ODx10 days
Congenital (<2yr)	CSF abnormal	Same as above or Benzathine benzylpenicillin 50000 IU/kg IM 1 dose
	CSF normal	Benzathine benzylpenicillin 20 000-30 000 IU/kg IV daily for 2 weeks in divided doses rising to maximum of 2.4 m IU daily
Congenital (<2yr)		Tetracycline 500mg oral QIDx15 days or Doxycycline 100mg oral QIDx15 days (30 days for late syphilis)
Patients allergic to penicillin	Non-pregnant adult	Erythromycin 500mg oral QIDx15 days
	Pregnant women	Erythromycin 7.5 - 12.5 mg/kg oral QIDx30 days
	Children	
Genital herpes	Human virus 1 & 2	Aciclovir 200 mg oral 5 times daily for 7 days for primary attack and for 5 days for subsequent attacks
Chancroid	<i>Haemophilus ducreyi</i>	Erythromycin 500mg oral TDSx7 days or Ciprofloxacin 500mg oral or Ceftriaxone 25 mg IM or Spectinomycin 2 g IM 1 dose or Sulfamethoxazole 400mg/trimethoprim 80mg 2 tablets oral BD x 7 days
Granuloma inguinale	<i>Calymmatobacterium granulomatis</i>	Sulfamethoxazole 400mg/trimethoprim 80mg 2 tablets oral BD x 2 weeks. For unresponsive cases tetracycline 500mg oral QIDx2 weeks or chloramphenicol 500mg oral QIDx3 weeks or Gentamycin 1mg/kg IM TDSx3 weeks
Genital warts		Podophyllum resin 10-25% in compound tincture of benzoin or podophyllotoxin (less toxic) locally weekly maximum 4 times

1. The above guide is for the purpose of quick reference only.
2. The drugs to be used should be selected after assessment of individual patients.
3. Selection of drugs is also subject to local availability.
4. The drugs have been listed in order of preference, but subject to above conditions.
5. A single-dose oral regimen should be used whenever this is an effective option.
6. Antimicrobial sensitivity of drugs should be considered wherever available
7. Other guidelines should be consulted for details.

Tally sheet for STD cases based on syndromic diagnosis

Name of health facility:

Dates: From _____ to _____

Syndromic diagnosis	Number of new cases by sex and age group														Total
	Male							Female							
	0-4	5-14	15-19	20-29	30-39	40-49	50+	0-4	5-14	15-19	20-29	30-39	40-49	50+	
Urethral discharge	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	
	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	
	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	
	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	
Vaginal discharge (women)	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	
	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	
	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	
	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	
Genital ulcer	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	
	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	
	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	
	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	
Lower abdominal pain (women)	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	
	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	
	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	
	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	
Scrotal swelling (men)	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	
	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	
	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	
	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	
Inguinal bubo	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	
	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	
	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	
	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	
Neonatal conjunctivitis	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	
	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	
	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	
	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	
Total	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	
	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	
	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	
	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	

For every STD patient, cross one "v" vertically in the appropriate cell according to diagnosis, sex and age like this: $\#$
 Cross only at the first visit for the current episode. Do not cross for the follow-up visit for the current episode.
 At the patient comes for another episode of STD, cross again.

At the end of the month, calculate the total horizontally and vertically.
 One sheet is usually enough for one month. However, add more sheet(s), if necessary.

Tally sheet for STD cases based on etiological diagnosis

Name of health facility:

Dates: From

to

Etiological diagnosis	Number of new cases by sex and age group														Total
	Male							Female							
	0-4	5-14	15-19	20-29	30-39	40-49	50+	0-4	5-14	15-19	20-29	30-39	40-49	50+	
Syphilis	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000
Gonorrhoea	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000
Lymphogranuloma venereum	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000
Nongonococcal urethritis	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000
Chancroid	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000
Trichomoniasis	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000
Pelvic inflammatory disease (women)	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000
Bacterial vaginosis (women)	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000
Candidiasis	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000
Genital herpes	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000
Granuloma inguinale	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000
Genital wart	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000
Neonatal conjunctivitis	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000
Other STD	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000
Total	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000

For every STD patient, cross one "0" vertically in the appropriate cell according to diagnosis, sex and age. Like this ♂
 Cross only at the first visit for the current episode. Do not cross for the follow-up visit for the current episode.
 If the patient comes for another episode of STD, cross again.
 At the end of each month, calculate the total horizontally and vertically. Add more sheet(s) if necessary.

STD report based on syndromic diagnosis

Country:	Period of report:	Date of report:	Number of new cases by sex and age group (years)														
			Male							Female							
			0-4	5-14	15-19	20-29	30-39	40-49	50+	0-4	5-14	15-19	20-29	30-39	40-49	50+	Total
Syndromic diagnosis																	
Urethral discharge																	
Vaginal discharge (women)																	
Genital ulcer																	
Lower abdominal pain (women)																	
Scrotal swelling (men)																	
Inguinal bubo																	
Neonatal conjunctivitis																	
Total																	

3. The report should be based on syndromic diagnosis.

4. 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.

1. This report of STD 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.

Result of serological test for syphilis

Persons tested	During this period		Cumulative for this year	
	No. tested	No. +ve	No. tested	No. +ve
Blood donors				
Pregnant women				
STD patients				
Others				
Total				

1. The report should include data from all blood banks and laboratories, public and private.

2. The report should be forwarded quarterly and annually.

Remarks

STD report based on etiological diagnosis

Country: _____ Period of report: _____ Date of report: _____

Etiological diagnosis	Number of new cases by sex and age group (years)										Total				
	Male					Female									
	0-4	5-14	15-19	20-29	30-39	40-49	50+	0-4	5-14	15-19		20-29	30-39	40-49	50+
Syphilis															
Gonorrhoea															
Lymphogranuloma venereum															
Non-gonococcal urethritis															
Chancroid															
Trichomoniasis															
Pelvic inflammatory disease															
Bacterial vaginosis															
Candidiasis															
Genital herpes															
Granuloma inguinale															
Genital wart															
Neonatal conjunctivitis															
Other STD															
Total															

1. This report of STD 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.

Result of serological test for syphilis

Persons tested	During this period		Cumulative for this year	
	No. tested	No. +ve	No. tested	No. +ve
Blood donors				
Pregnant women				
STD patients				
Others				
Total				

1. The report should include data from all blood banks and laboratories, public and private.
 2. The report should be forwarded quarterly and annually.

Remarks